

Telescopic Handlers TL 441-10 - TL 451-13

Litronic®

Litronic®

Lift Height: 10.0 m - 13.0 m

Lift Capacity: 4.1 t - 5.0 t



LIEBHERR

Courtesy of Crane.Market

TL 441-10

Litronic®

Lift height: 9.6 m
Lift capacity: 4.1 t
Engine power: 74 kW / 101 HP
Infinitely variable hydrostatic travel drive with fully electronic working hydraulics control

TL 451-10

Litronic®

Lift height: 9.6 m
Lift capacity: 5.0 t
Engine power: 74 kW / 101 HP
Infinitely variable hydrostatic travel drive with fully electronic working hydraulics control

TL 441-13

Litronic®

Lift height: 13.0 m
Lift capacity: 4.1 t
Engine power: 74 kW / 101 HP
Infinitely variable hydrostatic travel drive with fully electronic working hydraulics control

TL 451-13

Litronic®

Lift height: 13.0 m
Lift capacity: 5.0 t
Engine power: 74 kW / 101 HP
Infinitely variable hydrostatic travel drive with fully electronic working hydraulics control



Performance

The Liebherr telescopic handlers stand out with their high lifting forces and precision of operation. At the same time, powerful working hydraulics, an infinitely variable hydrostatic travel drive and excellent manoeuvrability guarantee fast work. The versatile and extremely sturdy construction machines always allow the driver to quickly and safely convert the power of the machine into working output.

Efficiency

The Liebherr telescopic handlers offer clear economic benefits. Intelligent control combined with high-performance individual components guarantee low fuel consumption. Ease of servicing was an important factor from the development stage onwards. This means that Liebherr telescopic handlers reduce service and maintenance costs.

Reliability

Liebherr telescopic handlers are designed for durability and can handle the challenges of day-to-day use over a long service life. The new telescopic handlers have been tested under the most punishing conditions. Tried-and-tested systems such as the boom design and the drive concept guarantee the accustomed Liebherr quality. This means the machines offer maximum reliability, safety and availability.

Comfort

The cab was specially developed with the comfort of the driver in mind. A spacious interior, perfect visibility in all directions and ergonomically arranged controls make operating the machine as pleasant and relaxing as possible. The driver can control all travel and working hydraulics functions with his right hand on the joystick.





Intelligent hydraulics

- Load sensing: the working hydraulics pump always delivers the exact quantity of oil required. This protects the components and saves fuel.
- Liebherr hydraulic control: the Liebherr control system precisely converts all joystick movements into the corresponding working movement – simultaneously and regardless of the load to be moved.



Liebherr travel drive

- The Liebherr telescopic handlers are based on the tried-and-tested hydrostatic travel drive.
- The speed can be infinitely varied for driving without shifting gear, and absolutely no jolts.
- Benefits of the hydrostatic drive at a glance: no brake wear, low fuel consumption, fast and precise manoeuvring.

Performance

The new telescopic handlers from Liebherr are designed for maximum performance even under the most difficult conditions. High bearing loads, manoeuvrability, intuitive operation and high-performance travel and working hydraulics components make working easier than ever before.

High bearing loads

Excellent weight distribution

With a favourable centre of gravity and a long wheel base, the Liebherr telescopic handlers have outstanding lifting force and stability both for loading and stacking.

Improved boom design

The sturdy telescopic handler can carry heavy loads and withstand even the most punishing conditions.

Intelligent interaction

High-performance working hydraulics

The generously sized working hydraulics allow fast working cycles and plenty of power in reserve.

Liebherr travel drive

The travel drive guarantees excellent driving performance in every situation.

State-of-the-art diesel engine

The proven, powerful engine ensures the accustomed quality and reliability, even in the most demanding situations.

Compact and manoeuvrable

Simple selection of steering modes

All steering modes can be selected using a rotary switch: front-wheel steering, four-wheel steering and crab steering. The driver does not need to straighten the wheels in between.

Minimum turning circle

A large steering angle allows a very small turning circle and therefore efficient operation in restricted spaces.



Compact and manoeuvrable

- With turning circles under 3.80 m, the Liebherr telescopic handlers are the leaders in their class.
- The mudguards and counterweight are within the turning circle – which means all the sensitive components are protected from damage.



High bearing loads

- The robust boom design allows heavy bearing loads in lifting operation.
- Large bearings allow maximum performance and minimum wear throughout the service life.



Easy maintenance

- All maintenance points on the engine and the hydraulic system are easily accessible, thus reducing daily maintenance to a minimum.
- The optional central lubrication system even further reduces maintenance work.



Flexible and versatile

- Liebherr offers a wide range of specially developed attachments, including forks, buckets and pivoting working platforms.
- If the telescopic handler is fitted with a hydraulic quick hitch system, the attachments can be changed at the touch of a button.

Efficiency

The Liebherr telescopic handlers are all-rounders that make a decisive contribution to the efficiency of your vehicle fleet. Many different optional attachments allow universal use and increased utilization of the machines. Top performance, low fuel consumption and minimum maintenance guarantee economy throughout the service life of the machine.

An all-rounder

An impressive variety of attachments

The wide range of attachments make the Liebherr telescopic handlers all-rounders. A simple fork, a cable winch or a raised working platform – there is no challenge that cannot be mastered.

Versatile and flexible

Numerous options such as a ride control, automatic bucket return-to-dig, float position function and side shifting on stabilisers allow the machines to be configured for any application.

Reliable everywhere

The oscillating rear axle (with optional lock) and the level compensation system contribute towards safety and reliability on any terrain.

Low operating costs

Low fuel consumption

The perfect interaction between the hydrostatic travel drive and the diesel engine helps save fuel even on longer journeys. Intelligent options such as electronic engine control reduce fuel consumption during loading.

Easy maintenance

All parts requiring maintenance are easily accessible. In addition, the long maintenance intervals reduce costs.



Autopower – power whenever you want it

- The unique autopower function (optional) regulates the engine speed and therefore the speed of the working hydraulics according to the deflection of the joystick, thus allowing fuel-saving driving throughout the day.
- Fast working hydraulics and finely metered travel drive without using the inch pedal – exclusive to Liebherr telescopic handlers.



Precise side shifting

- Telescopic handlers on wheels can be shifted sideways inch-by-inch using the crab steering function.
- When the machine is on stabilisers* the driver can use the optional side shifting function to move the load sideways without having to move the machine.

* TL 441-13 and TL 451-13



Reliable safety systems

- An audible and visible overload warning system provides early warning of dangerous situations while stacking.
- The automatic load cut-off (which can be optionally disabled) prevents forward tilting. Before this can happen, all movements of the working hydraulics are slowed down.

Robust design

- The tried-and-tested protection systems prevent wear and physical damage to the electronics.
- Condensate cannot accumulate so there is no danger of short circuits.
- High utilisation and value is secured over the long term.



Reliability

Robustness and reliability characterise the Liebherr telescopic handlers. Mature technology and high-quality materials and workmanship guarantee maximum reliability.

Quality right down to the last detail

Tried-and-tested components

Only components that have been tested under the most punishing conditions are used in Liebherr telescopic handlers.

Sturdy yet sophisticated design

Hydraulic cylinders and hoses are protected inside the boom. The main frame and underfloor are sealed.

Comprehensive safety concept

Automatic overload warning system

The driver is constantly informed of the load status of the machine.

Liebherr load torque limitation

An audible and visual overload warning device keeps the operator aware of the machine's remaining lifting capacity at all times. Load moment limiting is a standard feature: it automatically reduces the speed of the power hydraulics and thus enables the nominal maximum load to be approached in safety. If the load continues to increase, the load moment limiter automatically inhibits any functions that could lead to the machine overturning. From that moment on, only movements that restore a safe operating margin are permitted.

Excellent Liebherr service

Fast, reliable help

When you buy a Liebherr telescopic handler, you enter a solid, long-term partnership. All the manufacturing plants and dealers guarantee optimum service and accessibility. Fully trained customer service mechanics demonstrate their expertise and repair skills on site. 98% of all spare parts are available in stock and can be sent at very short notice.



Closed main frame

- The main frame is closed, which means the components inside cannot be damaged by falling parts.
- The closed underfloor and large ground clearance provide protection even on difficult terrain.
- The engine compartment can be specially sealed for very dusty environments.



Liebherr Service

- Every hour counts when it comes to the efficiency of a construction machine. That's why Liebherr's spare parts service works round the clock for our customers, even at weekends and on bank holidays.
- All-round expertise ensures that all maintenance is carried out effectively. Specially trained service technicians provide reliable help.



Seat comfort and ergonomics

- The driver's seat has spring suspension and can be adjusted in three directions for maximum comfort.
- The steering column is easily adjustable in both height and length (option).



Optimum visibility in all directions

- The large windows provide a perfect all-around view.
- The innovative protective design of the roof window provides a perfect view of the load while also protecting the driver.

Comfort

The cab of the telescopic handler is an ideal workplace. It provides an excellent all-around view, has a spacious interior, guarantees safety, and its ergonomic controls allow relaxed and productive operation.

Unhindered view

Low pivot point

Good visibility was a main priority during development. Therefore, the pivot point was placed as low as possible to also allow an unhindered view to the rear and the right.

Safety and large windows

The soundproofed ROPS/FOPS cab guarantees safe and pleasant operation. Thanks to the large windows, the driver always has a good view of the surroundings.

Non-fatiguing, efficient operation

Ergonomic cockpit

The seat can be individually adjusted for the driver. Additionally the steering column can be optionally adjusted in height and length.

One-hand operation

All the functions of the boom can be controlled using the joystick. Even forward and reverse direction can be selected on the joystick, which means the driver can always keep one hand on the steering wheel.

Liebherr fine control function

For particularly demanding tasks, the driver can reduce the speed of the working and travel hydraulics for precise, safe and relaxed operation.

Adjustable travel dynamics

Gentle, normal or aggressive travel hydraulics actuation can be selected at the touch of a button. This means the driving characteristics can be adapted to bucket or fork operation.



Precise operation

- By activating the fine control function, the driver can reduce the speed of the working and travel hydraulics.
- This allows extremely sensitive control of all movements.



Perfect rear view

- The pivot point of the boom is positioned extremely low in order to guarantee the best visibility.
- The driver has an excellent view of the most critical areas behind and to the right of the cab.



Training and continuing education

- We continually offer technical courses for our service technicians in modern training centres at our production plants.





Liebherr Service

At Liebherr, superior service is more than a promise it is a guarantee to every customer. Several production facilities and an extensive service network for construction equipment means: close proximity, efficient structures, and fast service reaction times.

High-performance service on a solid basis

Optimum service today and in the future

With Liebherr, customers can trust in long-term care and the security that comes from a real partnership. Our production facilities and service partners guarantee it.

Extensive service network

An extensive worldwide service network and service stations with the latest equipment guarantee fast support when needed.

Latest equipment

Our customer service technicians have all necessary diagnostic equipment and tools.

Knowledge ensures value

High-quality service through experience and training

Comprehensive know how ensures first-class and effective service and maintenance. This contributes significantly to availability and cost effectiveness. Liebherr customer service technicians receive intensive training and continuing education at the production plants. Their comprehensive knowledge provides you with fast, reliable service.

Continuous dialog with users

We utilize the expert knowledge and practical experience of our customers to consistently optimize our machines and services - real solutions for real situations.

Competent advice and service

Competent advice is a given at Liebherr. Experienced specialists provide decision-making support for your specific requirements: Application-oriented sales support, service agreements, value-priced repair alternatives, original parts management, preventive service measures, as well as remote diagnosis for troubleshooting and correction.

Highest-quality service

- Workshops with state-of-the-art equipment and customer-oriented service call planning guarantee a fast spare parts supply and provide the basis for high machine availability and cost effectiveness.



The latest measuring and diagnostic equipment

- Liebherr customer service technicians have the finest equipment available. This guarantees fast support on site.

Technical data



Engine

| | |
|--------------------------|---|
| John Deere diesel engine | 4045HF287 |
| | Emissions regulations according 97/68/EC, 2004/26 EC stage IIIA and EPA/CARB Tier 3 |
| Output (ISO 3046) | 74 kW / 101 HP at 2,400 rpm |
| Max. torque | 430 Nm at 1,400 rpm |
| Displacement | 4.5 l / 275 in ³ |
| Design | Four-cylinder in-line engine, water-cooled, turbocharger, air-to-air aftercooler |
| Fuel injection | Electronic direct injection |
| Air filter | Dry air filter with safety cartridge |
| Cooling | Hydrostatically powered, thermostatically controlled fan |
| Operating voltage | 12 V |
| Battery | 12 V / 170 Ah |
| Lighting dynamo | 12 V / 75 A |
| Starter | 4.2 kW |



Travel drive/control

| | |
|--------------------------|--|
| Design | Stepless hydrostatic travel drive with swash-plate variable displacement pump and Liebherr hydro motor in a closed circuit, forward and reverse travel achieved by changing the flow-direction of the variable displacement pump |
| Filtering | Pressure filter for closed circuit |
| Control | Via electronic accelerator and combined brake-inch pedal, constant adjustment of tractive force at maximum diesel engine speed. Changes of direction can be selected using multifunction joystick |
| Precise-control function | Two levels effective on travel drive |
| Travel speed | Stepless variable 0 – 25 km/h / 15.5 mph 0 – 20 km/h / 12.4 mph (optional) 0 – 40 km/h / 24.7 mph with 84 kW / 114 HP (optional) ⁽¹⁾ |

(1) = TL 441-10 and TL 441-13



Noise emission

| | |
|--------------------------------------|--|
| Operator sound exposure (ISO 6396) | $L_{pA} = 78$ dB(A) (Emission at the operator's position) |
| Exterior sound pressure (2000/14/EC) | $L_{WA} = 106$ dB(A) (Emission in the environment) |



Axles

| | |
|--------------|---|
| Drive | All-wheel drive |
| Front axles | Steering knuckle control, fitted to swing with a 5° oscillation on either side, stabilised by means of levelling cylinder |
| Rear axles | Steering knuckle control, fitted to swing with a 9° oscillation on either side |
| Differential | Automatic 45 % limited-slip differential in the front axle |
| Transmission | Planetary gear in the wheel hubs |



Brakes

| | |
|-----------------|---|
| Service brake | Deceleration effective on all four wheels by hydrostatic travel drive, hydrostatically operated wet multiple-disk brakes in the front axle (internal) |
| Emergency brake | Internal hydraulic spring-loaded brakes |



Operator's cab

| | |
|---------------|---|
| Cab | Flexible mounting, closed over-pressure ventilation, separate driver's doors with lockable upper part, integrated ROPS/FOPS structure, tinted safety glass at the front and roof panel, windscreen-wiper system for front and rear windscreen |
| Driver's seat | Cushioned driver's seat, adjustable four ways, with seat belt. Adjustable to suit weight of the driver |
| Ventilation | Pressure ventilation with fresh-air intake and filtering, 3-speed fan, 6 exit nozzles |
| Heating | Warm-water heating, defroster for front and rear windscreens |



Tyres

| | |
|-------------------------|--|
| Standard tyre equipment | 405/70-24 ⁽¹⁾ or 400/80-24 ⁽²⁾ |
| Design | Tubeless tyres on one-piece rims |
| Special tyre equipment | As specified by manufacturer |

(1) = TL 441-10 and TL 441-13, (2) = TL 451-10 and TL 451-13



Steering

| | |
|-------------------|---|
| Design | Hydraulic steering of front and rear axles |
| Types of steering | Front-axle steering (for driving on roads), all-wheel steering, crab steering |



Implement hydraulics

| | |
|--------------------------------|---|
| Hydraulic system | Supply according to loads (load-sensing axial piston pump) |
| Max. flow rate | 120 l/min / 26.4 Imp. gpm |
| Max. operating pressure | 300 bar / 4,350 PSI |
| LUDV control | Load-independent flow distribution for precise translation of simultaneous joystick movements into the appropriate operative movements, independent of external forces exerted on individual hydraulic components |
| Filtering | Return oil filter |
| Control | Single joystick control via Liebherr multi-function joystick, electronically controlled |
| Relief valves | Load-control valves on lifting, tilt, telescopic and stabilisers ⁽³⁾ cylinders; pilot-controlled pressure valves on frame levelling cylinder |
| Main telescope functions | Lifting, bucket crowd and telescoping proportionally controlled using multifunction joystick |
| Auxiliary implement hydraulics | 80 l/min / 17.6 Imp. gpm, joystick-controlled |
| Precise-control function | Two levels effective on implement hydraulics |



Service capacities

| | | |
|----------------------------------|----------------------------|-----------------------------------|
| Fuel tank | 120 l | 26.4 Imp. gal |
| Cooling system | 17 l | 3.7 Imp. gal |
| Engine oil (incl. filter change) | 11 l | 2.4 Imp. gal |
| Hydraulic tank | 95 l | 20.9 Imp. gal |
| Total hydraulics | 180 l/190 ⁽³⁾ l | 39.6/41.8 ⁽³⁾ Imp. gal |
| Differential gears, each | 6.7 l | 1.5 Imp. gal |
| Front axle hub, each | 0.75 l | 0.2 Imp. gal |
| Rear axle hub, each | 0.75 l | 0.2 Imp. gal |

(3) = TL 441-13 and TL 451-13

Technical data



Performance data

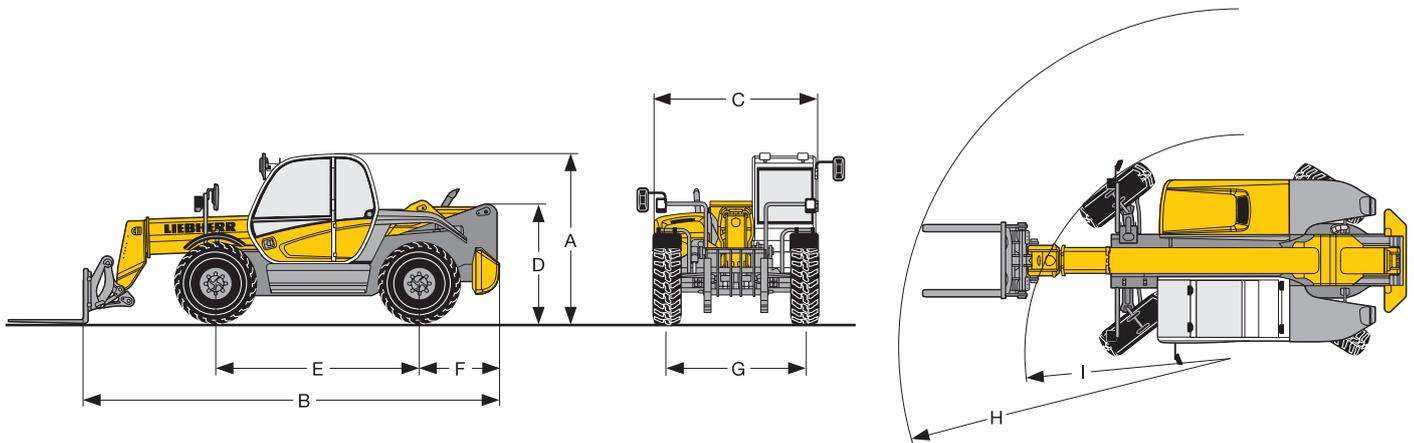
| | TL 441-10 | TL 451-10 |
|--|------------------------|------------------------|
| Operating weight with standard forks, without operator | 8,935 kg / 19,698 lb | 9,710 kg / 24,407 lb |
| Max. lift capacity | 4,100 kg / 9,039 lb | 4,999 kg / 11,021 lb |
| Max. lift height | 9,606 mm / 31'6" ft in | 9,632 mm / 31'7" ft in |
| Max. forward reach | 5,682 mm / 18'8" ft in | 5,644 mm / 18'6" ft in |



Cycle times

| | TL 441-10 | TL 451-10 |
|----------------------------|-----------|-----------|
| Cycle time at nominal load | | |
| Raising boom | 12.9 s | 13.2 s |
| Extending | 12.3 s | 12.4 s |
| Retracting | 8.1 s | 8.3 s |
| Bucket crowd | 3.6 s | 4.6 s |

Dimensions

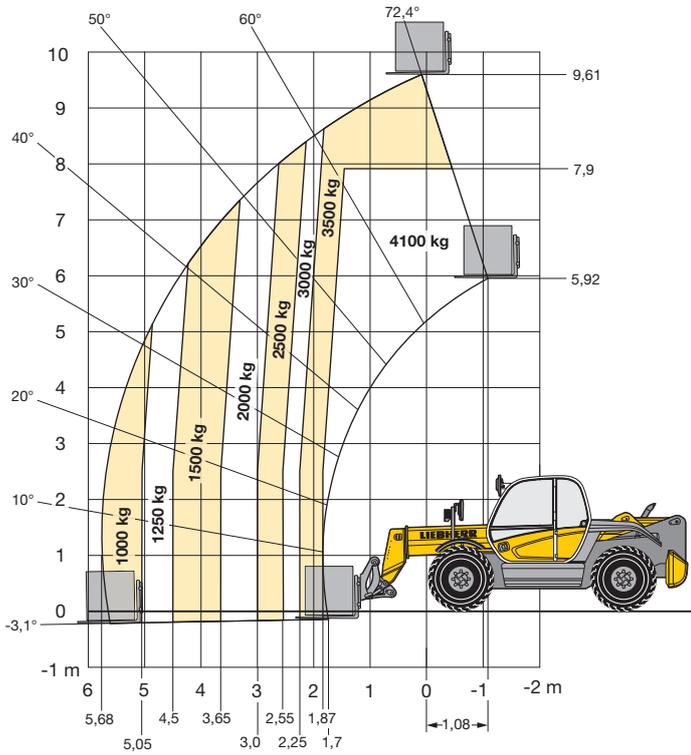


| Dimensions | | TL 441-10 | TL 451-10 |
|------------|---------------------------------------|-------------|----------------|
| A | Overall height (without any option) * | mm ft in | 2,435 8' |
| B | Overall length to front carriage | mm ft in | 5,930 19'5" |
| C | Overall width over standard tyres | mm ft in | 2,400 7'10" |
| D | Height at rear (without mirror) | mm ft in | 1,690 5'7" |
| E | Wheelbase | mm ft in | 2,950 9'8" |
| F | Rear overhang | mm ft in | 1,135 3'9" |
| G | Track gauge | mm ft in | 1,980 6'6" |
| H | Outside turning radius over forks | mm ft in | 5,171 17' |
| I | Outside turning radius over tyres | mm ft in | 3,720 12'2" |
| | Ground clearance (mid-vehicle) | mm ft in | 400 1'4" |

* Highest point are the plastic caps of the roof threads. All dimensions are measured with standard tyres.

Load charts (acc. to EN 1459, appendix B)

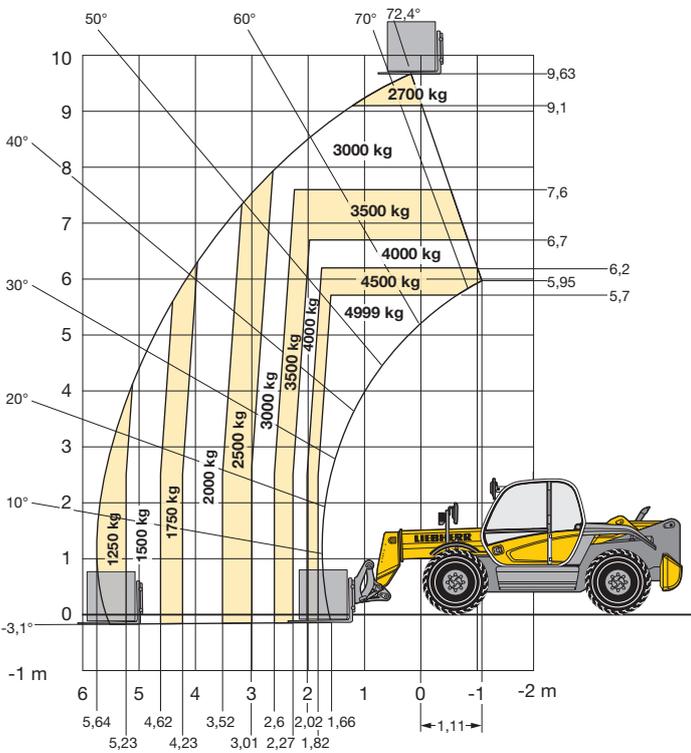
TL 441-10



Equipment

| | |
|---------------------|----------------------------|
| Carriage with forks | Forks 120 x 50 x 1100 mm |
| Tyres | MITAS MTP 04 - 405/70 - 24 |

TL 451-10



Equipment

| | |
|---------------------|-----------------------------|
| Carriage with forks | Forks 120 x 50 x 1100 mm |
| Tyres | Michelin POWER CL 400/80-24 |

Technical data



Performance data

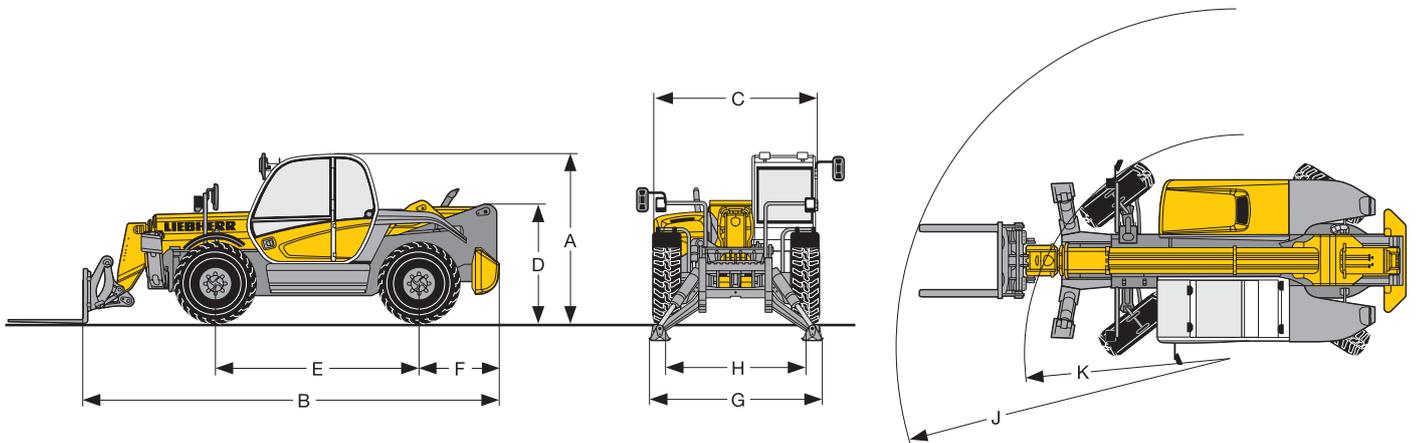
| | TL 441-13 | TL 451-13 |
|--|-------------------------|-------------------------|
| Operating weight with standard forks, without operator | 9,845 kg / 21,704 lb | 10,660 kg / 23,501 lb |
| Max. lift capacity | 4,100 kg / 9,039 lb | 4,999 kg / 11,021 lb |
| Max. lift height | 12,969 mm / 42'7" ft in | 12,976 mm / 42'7" ft in |
| Max. forward reach | 8,944 mm / 29'4" ft in | 8,906 mm / 29'3" ft in |
| Max. boom side-shift (optional) at max. forward reach | 530 mm / 1'9" ft in | 530 mm / 1'9" ft in |



Cycle times

| | TL 441-13 | TL 451-13 |
|----------------------------|-----------|-----------|
| Cycle time at nominal load | | |
| Raising boom | 13.5 s | 13.5 s |
| Extending | 16.6 s | 18.7 s |
| Retracting | 11.2 s | 12.7 s |
| Bucket crowd | 3.7 s | 4.6 s |

Dimensions



| Dimensions | | TL 441-13 | TL 451-13 |
|------------|---------------------------------------|--------------------------------|--------------------------------|
| A | Overall height (without any option) * | mm 2,435 ft in 8' | mm 2,461 ft in 8'11" |
| B | Overall length to front carriage | mm 5,884 ft in 19'4" | mm 5,884 ft in 19'4" |
| C | Overall width over standard tyres | mm 2,400 ft in 7'10" | mm 2,400 ft in 7'10" |
| D | Height at rear (without mirror) | mm 1,690 ft in 5'7" | mm 1,715 ft in 5'8" |
| E | Wheelbase | mm 2,950 ft in 9'8" | mm 2,950 ft in 9'8" |
| F | Rear overhang | mm 1,135 ft in 3'9" | mm 1,135 ft in 3'9" |
| G | Width over stabilisers | mm 2,500 ft in 8'2" | mm 2,500 ft in 8'2" |
| H | Track gauge | mm 1,980 ft in 6'6" | mm 1,960 ft in 6'5" |
| J | Outside turning radius over forks | mm 5,132 ft in 16'10" | mm 5,132 ft in 16'10" |
| K | Outside turning radius over tyres | mm 3,720 ft in 12'2" | mm 3,720 ft in 12'2" |
| | Ground clearance | mm 400 ft in 1'4" | mm 400 ft in 1'4" |

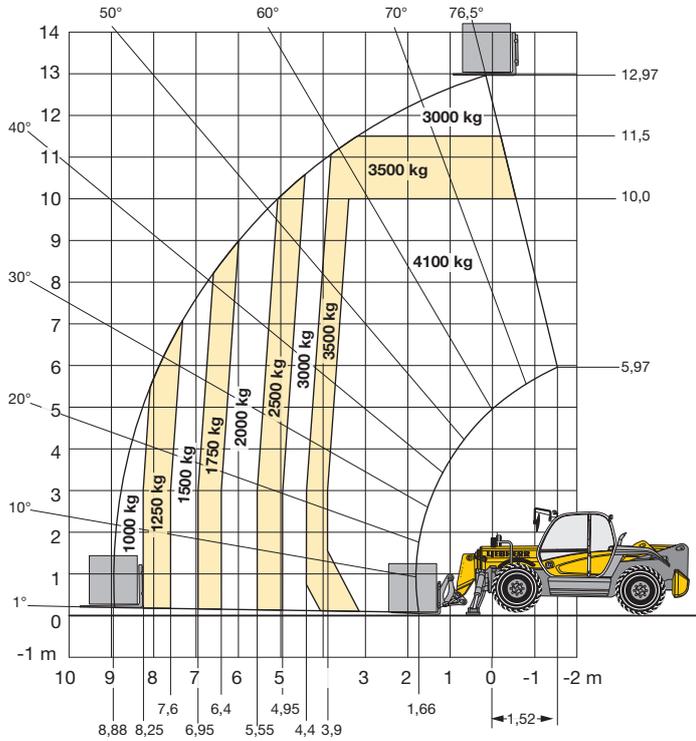
* Highest point are the plastic caps of the roof threads. All dimensions are measured with standard tyres.

Load charts (acc. to EN 1459, appendix B)

Equipment TL 441-13

Carriage with forks Forks 120 x 50 x 1100 mm
Tyres MITAS MPT 04 - 405/70 - 24

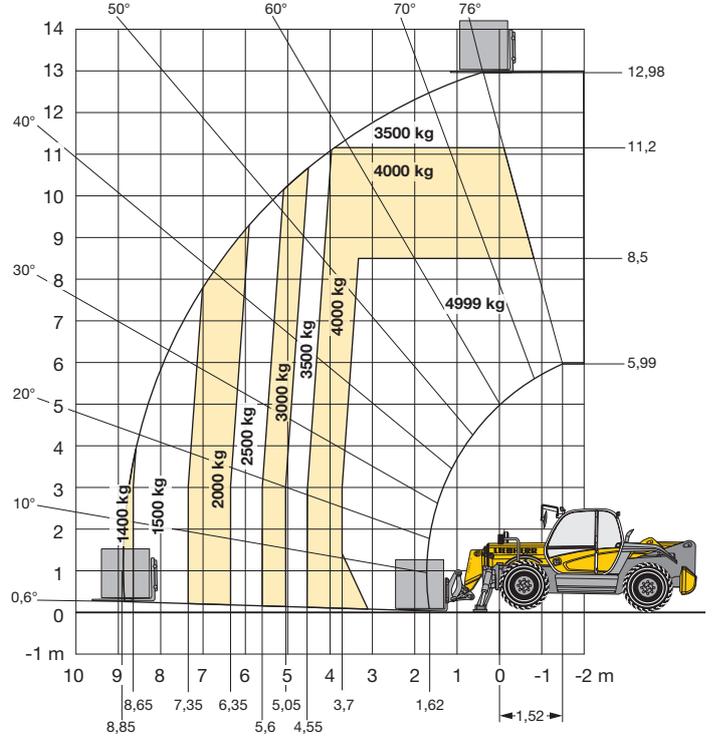
TL 441-13 - on stabilisers



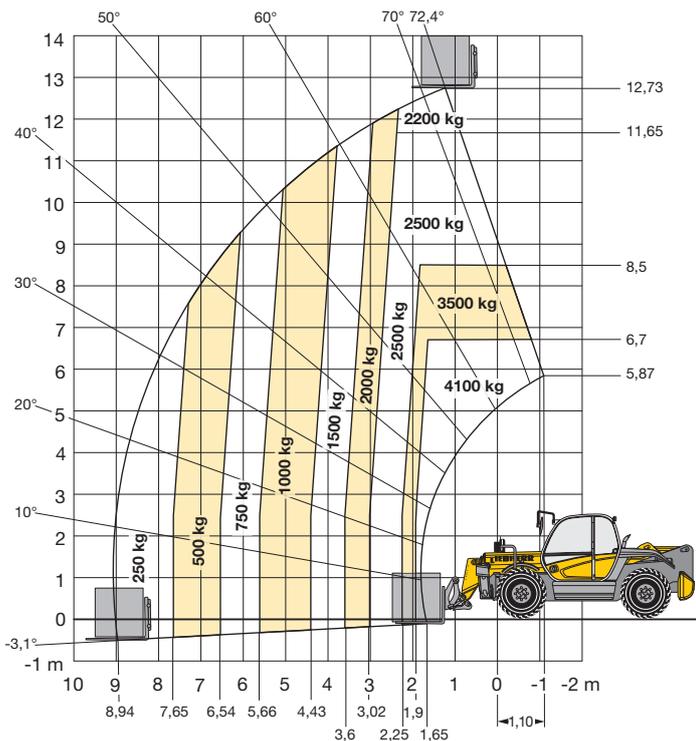
Equipment TL 451-13

Carriage with forks Forks 120 x 50 x 1100 mm
Tyres Michelin POWER CL 400/80-24

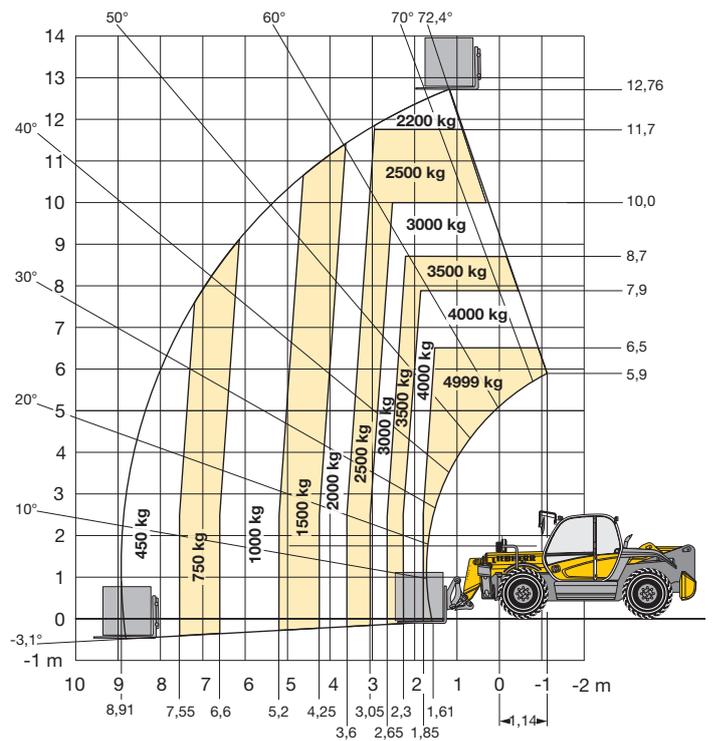
TL 451-13 - on stabilisers



TL 441-13 - on tyres



TL 451-13 - on tyres



Equipment



Basic machine

| | | |
|---|-----|---|
| 2-stage boom | (2) | • |
| 3-stage synchronised boom | (1) | • |
| John Deere 74 kW turbo diesel engine | | • |
| Front stabilisers, hydraulic | (1) | • |
| Hydrostatic fan-drive system | | • |
| 3 steering modes | | • |
| Frame levelling system | | • |
| 45% limited-slip differential in front axle | | • |
| Wheel chocks | | • |
| Cylinder support | | • |
| Towing hitch | | + |
| Diesel particle filter | | + |
| Rear-axle oscillation lock | | + |
| Filling with bio-degradable hydraulic oil | | + |
| Waste kit comprising seal engine compartment and main frame | | + |
| Reversible fan | | + |
| Special paint | | + |
| Road-use registration | (3) | + |



Travel drive

| | | |
|---|--|---|
| Automatic parking brake | | • |
| rpm limitation | | • |
| Adjustable travel drive | | • |
| Precise-control function | | • |
| Hydrostatic travel drive, stepless | | • |
| Combined inch-brake pedal | | • |
| 20 km/h / 12.4 mph limit | | + |
| 40 km/h / 24.7 mph speeder with 84 kW (3) | | + |
| Speed selection | | + |



Implement hydraulics

| | | |
|---|-----|---|
| Deactivation of implement hydraulics | | • |
| Reduced boom speed near tipping | | • |
| Electronic end-position damping of boom functions | | • |
| Precise-control function | | • |
| Load-sensing variable displacement pump | | • |
| LUDV – Load-independent flow distribution | | • |
| Auxiliary implement hydraulic circuit 1 | | • |
| Autopower function | | + |
| Boom suspension | | + |
| Memory function for constant flow rate | | + |
| Automatic bucket repositioning | | + |
| Float position | | + |
| Boom side-shift | (1) | + |
| Auxiliary implement hydraulic circuit 2 | | + |



Instruments

| | | |
|---|--|---|
| Mode for travel drive | | • |
| Hour meter | | • |
| Electronic overload warning system | | • |
| Travel speed | | • |
| Driving direction | | • |
| Precise-control function | | • |
| Full beam | | • |
| Fuel gauge | | • |
| Engine coolant temperature | | • |
| Steering mode | | • |
| Inclination indication | | • |
| Clock | | • |
| Preheat system – diesel engine | | • |
| Auxiliary implement hydraulic circuit 1 | | • |
| Constant flow rate | | + |
| Access platform mode | | + |
| Auxiliary implement hydraulic circuit 2 | | + |



Control and warning lights

| | | |
|---|-----|---|
| Battery charging | | • |
| Indicator system | | • |
| Diesel engine failure | | • |
| Electronic control | | • |
| Parking brake | | • |
| Synchrony of boom stages | (1) | • |
| Lifting capacity exceeded | | • |
| Hydraulic filter contamination indication | | • |
| Air filter | | • |
| Engine-oil pressure | | • |
| Emergency service | | • |
| Replenishing pressure closed circuit | | • |
| Road usage | | • |
| Overload warning system | | • |
| Control reversible fan | | + |



Attachments

| | | |
|---|--|---|
| Mechanical quick hitch | | • |
| Hydraulic quick hitch | | + |
| Towing hitch | | + |
| Access platform according to EN 280 | | + |
| Boom extension | | + |
| Bale clamp | | + |
| Container hooks | | + |
| Carriage with floating forks | | + |
| Carriage with fix forks | | + |
| Auxiliary implement hydraulic circuit rear | | + |
| Crane hooks | | + |
| General purpose bucket with and without teeth and/or cutting edge | | + |
| Light-material bucket | | + |
| Multi-purpose bucket | | + |
| Bucket with hydraulic grapple | | + |
| Side-dump bucket | | + |
| Winch | | + |



Electrical system

| | | |
|---------------------------------|--|---|
| Emergency stop button | | • |
| 12 V power socket | | • |
| Overload warning system cut-off | | • |
| Hazard warning lights | | • |
| Working light on boom | | + |
| Working light, rear | | + |
| Working lights, front | | + |
| Rotating beacon | | + |



Operator's cab

| | | |
|---|--|---|
| Pocket in driver's door | | • |
| Adjustable armrests | | • |
| Ashtray | | • |
| Hinged wing mirror | | • |
| Mat | | • |
| Document pocket | | • |
| Pressurised ventilation | | • |
| Mechanically cushioned driver's seat | | • |
| Travel-direction control switch integrated into joystick | | • |
| Precise-control function for travel or working hydraulics | | • |
| Bottle holder | | • |
| Split driver's door | | • |
| Hinged rear window | | • |
| Horn | | • |
| Interior light | | • |
| Intermittent windscreen-wiper system, front | | • |
| Coat hook | | • |
| Liebherr multifunction joystick | | • |
| Emergency exit | | • |
| Radio pre-installation | | • |
| ROPS/FOPS sound absorbent cab | | • |
| Windscreen-wiper system, rear | | • |
| Seat belt | | • |
| Tinted safety glass | | • |
| Warm-water heating | | • |
| Heated wing mirror | | + |
| Pneumatically cushioned driver's seat | | + |
| Fire extinguisher | | + |
| Interior mirror | | + |
| Air conditioning | | + |
| Two-way adjustable steering column | | + |
| Radio | | + |
| Back-up alarm | | + |
| Wiper, roof | | + |
| Protective ventilation system | | + |
| Screen guard for cab front windscreen | | + |
| Roll-down sun visor for windscreen and roof panel | | + |

• = Standard, + = Optional
 (1) = TL 441-13 and TL 451-13
 (2) = TL 441-10 and TL 451-10
 (3) = TL 441-10 and TL 441-13

Options and/or special attachments, supplied by vendors other than Liebherr, are only to be installed with knowledge and approval of Liebherr to retain warranty.

Other add-on equipment available on request.

