

Kalmar TT616i LoLo Tractor



INTELLIGENT POWER FOR CONTAINER TERMINALS

Kalmar Terminal Tractors provide uncompromising quality - always

Lift-on/lift-off (LO/LO) operations comprise about 90% of shipping trade around the world, of which almost all today is containerised cargo. The performance expectations for your container terminal's LoLo operations are hence high – efficiency and financial results go closely hand-in-hand.

LoLo operations consists of multilevel tasking and demanding performance requirements. Not only are the expectations on client-service and financial level high, but there are further demands from environmental side, too. To meet these ever-growing requirements, you need tools that are up to the job.

Kalmar Terminal Tractors can play key part in your container terminal's success story. Our unique and robust Kalmar TT616i has been designed specifically for heavy-duty use in ports and container terminals fulfilling the demands of that specific working environment.

Kalmar TT616i is also a shining example of our terminal tractors meeting the strictest requirements for driver comfort, performance at all levels and economy as well as environmental friendliness. Furthermore, the TT616i is highly adaptable to the customer's needs.

INTELLIGENT SOLUTIONS, PRACTICAL APPLICATIONS

When Cargotec first introduced its icon-series Kalmar terminal tractors, it was a start of a new era. icon stood for visible differences in efficiency, comfort and safety. Never before had so much thought gone into the improvements that had an impact at various levels.

The most remarkable research was carried out into the CAN-Bus (controller area network) interface. Hundreds of hours of testing and feed-back analysis from the experienced drivers keep the CAN-Bus still invincible.

Other factors, like robust frame structure, high lifting capacity and meticulous attention to detail make all the icon-series tractors unique.

TT616i can be adapted to manufacturing logistics and similar operational environments. The TT616i presents terminal operators with a great flexibility by deploying the most economical methods and meeting increasingly stringent environmental requirements. We strive that our product development meets our clients' needs on all levels.

We believe in supporting and enabling performance at all levels, from technology to personnel. The TT616i can deliver this promise with the superiority that only the market leader in this field can. Kalmar Terminal Tractors are a perfect combination of intelligence and performance.





Tropical conditions

Tropical cooling, tropical roof, air conditioning (optional)

Ergonomics

Side panel, power steering, easy access, air suspended cabin, air suspended seat, tall cabin

Access from and to cabin, safety

Wide steps, rear door, large even platform, good sturdy handles

Visibility

Large windows, half-cab design, no A-pillars

Maintenance

Electric cabin tilt, components visible, easy access to service points

Engine protection

Shutdown/alarm systems

Less damages

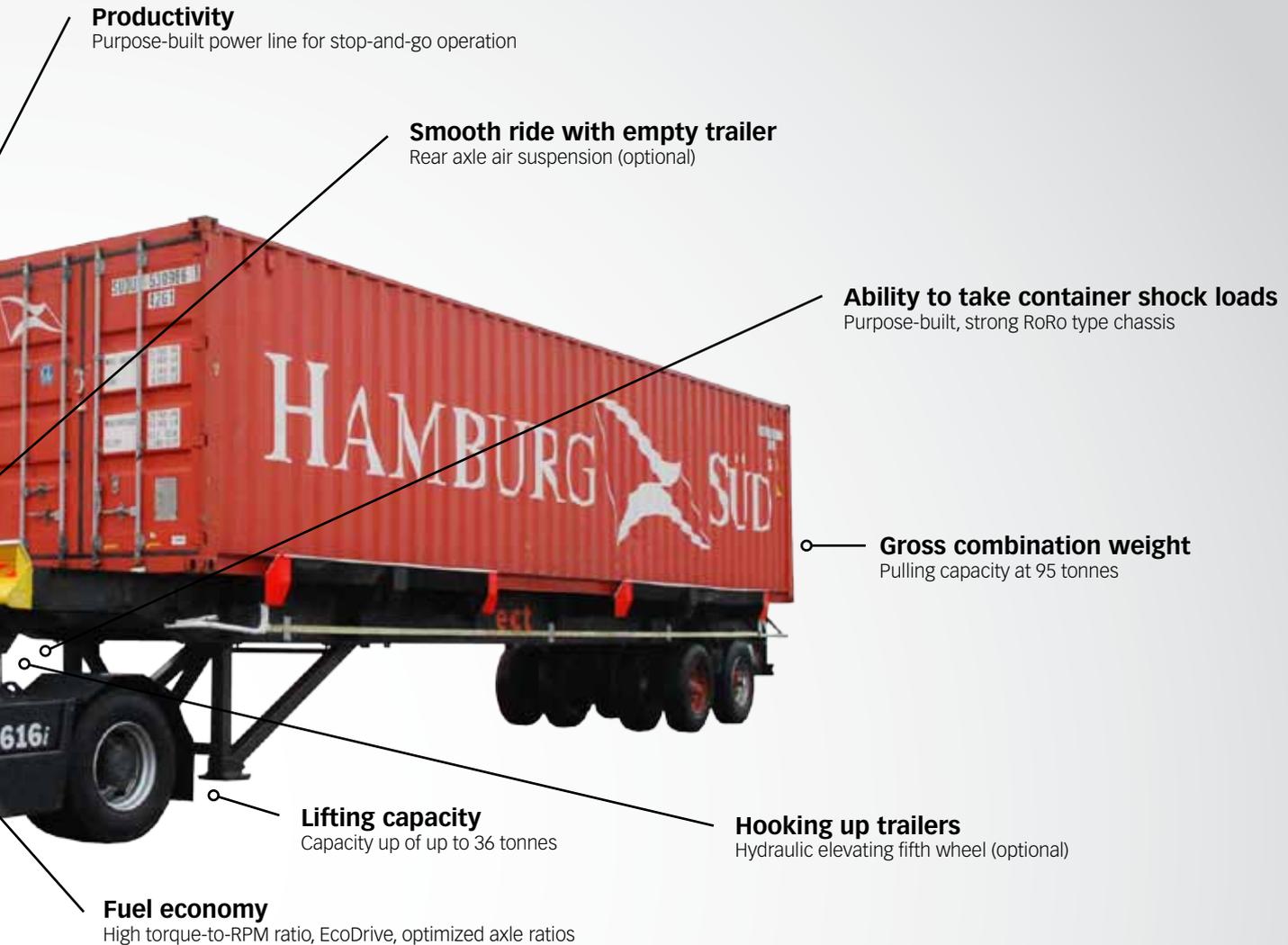
Sturdy all-around bumpers

Manoeuvrability

Wide steering angle, short wheelbase

The strongest performer in the market

Today's fast-paced container terminal operations need high-performance, easy-to-operate and reliable handling equipment. The Kalmar TT616i LoLo tractor has been designed to meet the needs of modern terminals, combining excellent manoeuvrability with the highest operational efficiency available. In fact, the TT616i is the most advanced and strongest LoLo tractor available today.



Productivity

Purpose-built power line for stop-and-go operation

Smooth ride with empty trailer

Rear axle air suspension (optional)

Ability to take container shock loads

Purpose-built, strong RoRo type chassis

Gross combination weight

Pulling capacity at 95 tonnes

Lifting capacity

Capacity up of up to 36 tonnes

Hooking up trailers

Hydraulic elevating fifth wheel (optional)

Fuel economy

High torque-to-RPM ratio, EcoDrive, optimized axle ratios

TESTED AND PURPOSE-BUILT

The TT616i has been tested and designed in close cooperation with customers. The prototype was tested in the busiest European ports by their most experienced terminal drivers dealing with LoLo operations. The tests gave us detailed feed-back and information, which we transferred into the final product. The result is a powerful, optimally-sized, agile two-wheel drive tractor for LoLo use in container terminal operations.

This product concept is yet another example of Kalmar’s customer focused design philosophy. The TT616i can be tailored to meet the precise demands of the customer’s operations and several unique performance-enhancing properties available as optional features.

CAN-BUS INTERFACE TECHNOLOGY

TT616i is equipped with the latest CAN-Bus interface technology. This in-built intelligence not only saves time and effort but also enhances performance and reduces costs.

Complete integration of the engine, transmission and the whole machine with this interface simplifies use and improves efficiency. Intelligent features, such as information generation and collection, make the operation and maintenance easier than ever before. The CAN-Bus enables you to achieve the maximum performance at all times.

AUTOMATION AT YOUR SERVICE

This new 4x2 LoLo tractor’s state-of-the-art automation features contribute to easier and more economical use. These features are heavily based on rigorous testing and feedback from experienced drivers that have participated in testing TT616i already at pilot stage.

The robust frame, which has been designed based on its heavier RoRo cousin, TR618i model, offers further many benefits, including excellent rigidity. TT616i also presents the highest lifting capacity available in the market today.



The CAN-Bus interface for intelligent performance

The CAN-Bus interface parameters are quick and easy to set, and the system also offers you an easy tractor customisation. It is as unique to your needs and requirements as possible.

THE BENEFITS OF CAN-BUS (CONTROLLED AREA NETWORK)

- All information and diagnostics readily available on driver's display
- Troubleshooting in just a fraction of the usual time
- Proportional lift boom control with the autorevs-up feature
- Standard blockings on engagement while the tractor is moving
- Makes customisation easy; Silent Drive, Weight Depending Speed limit etc.
- Autostop after adjustable idling time to protect the power line
- Fewer wire harnesses

FAULT DIAGNOSTICS

The CAN-Bus interface helps with maintenance planning by having all information and diagnostics readily available on the driver's display, allowing troubleshooting to take place in just a fraction of the usual time. Because fewer wire harnesses are employed the tractor is less prone to malfunction and maintenance is much easier.

ECODRIVE

As a standard feature the TT616i Kalmar EcoDrive provides two different shifting programs for empty & loaded trailer handling. The gearbox will automatically sense the weight of the trailer and determine the shifting schedule based on the weight of the trailer. This results in better fuel economy and greater pulling ability when needed. The optional automatic weight depending speed limit feature, prevents the tractor from speeding when bearing a heavy load.

The EcoDrive Function has been proven to reduce tyre wear and save fuel by keeping the tractor running in its most economical range.



AUTOMATIC PICK AND DROP

The automatic 'pick and drop' feature makes the driver's job much easier. With this feature the driver can operate much faster shortening the operational cycle significantly, and yet following all the safety aspects.

THE BENEFITS OF PICK AND DROP

- Automatic lifting and lowering of the lift boom to pre-adjusted heights. Driver just needs to touch the joystick to raise or lower the trailer/lift boom to a certain height.
- Protects trailer legs

SILENT DRIVE MODE

TT616i features an optional silent drive mode with rpm limit and reversing alarm bypass. Rpm limit and reversing alarm can also be configured separately from each other. The function can easily be triggered from:

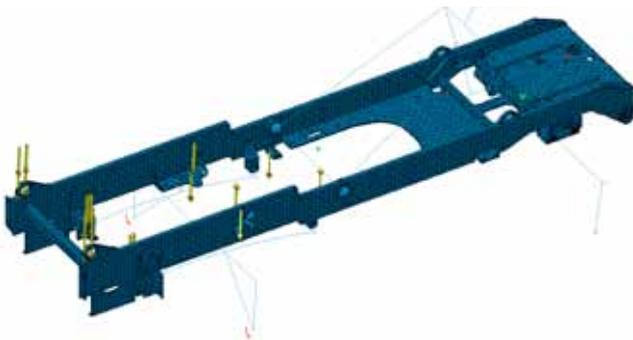
- a button/switch (manually)
- the clock (independent from the driver)





Heavy duty frame and chassis designed for port operations

TT616i features an unusually robust chassis and heavy duty frame which is based on TR618i, used in RoRo port operations. Its design is optimized by means of FEM analysis. Additionally it has an optional rear axle air suspension. Its bolted chassis components facilitate easy repair.



Purpose-built, strong RoRo type chassis is strongest in The market.





Safety and ergonomics support the best performance

The advanced design provides maximum efficiency, enhanced driver comfort and greater operational safety, whilst innovative technology helps operators plan for maintenance downtime.

The innovative design provides excellent all-around visibility and incorporates opening side windows, whilst high-quality materials create a quiet and productive driving environment. Access into and out of the cab – and onto the rear platform – is easy and safe.

The automatic transmission aids drivability with extremely smooth, barely noticeable gear changes. A clear and easy to read display keeps the driver informed of the tractor's operating status, whilst highly accurate steering is light and easy to use, offering excellent maneuverability.

Noise level (in accordance with Sfs-en 12053+al) in the cabin is max. 75 dB(a), measured at a distance of 200 mm from the driver's right ear at maximum revs.

The spacious driver's cabin is designed and certified according to safety (ROPS, ISO 3471:1994) standards. This is to ensure optimal ergonomics, safety and efficiency at work.



Through thorough and extensive research, testing and 3D-modelling, the perfect ergonomic interior design was achieved. All controls are within easy reach making working efficient yet comfortable.



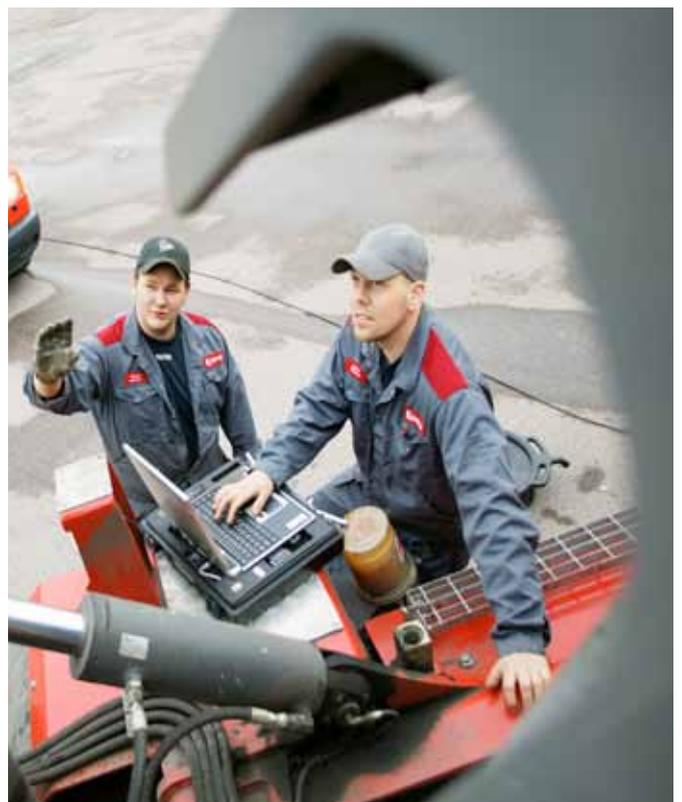
Great value for money with easy maintenance

The TT616i is designed to be easy to maintain on a daily basis. Access for daily checks and adjustment procedures, including access to many servicing points, has been simplified thanks to the integrated kerbside bonnet.

For more extensive maintenance work, the electric over-hydraulic pump system allows the cabin to be tilted to 45 degrees. With the CAN-Bus providing up-to-date information on any occurring maintenance needs, you are able to plan operations better.

High operational reliability combined with easy maintenance mean that this model is great value for money and a safe choice.

The tilting electric cabin makes components visible and accessible.





Sensitivity to environment is part of our philosophy

The tractor also incorporates EcoDrive function as a standard and Silent Drive function as an option, which have allowed us to keep noise and emissions to an all time low, minimizing any impact on the environment.

Environmental values have played a key role in the design of the Kalmar TT616i LoLo Tractor. Keeping in mind that some terminals are located close to residential areas where it is essential to avoid hazardous noise, particularly at night, the EcoDrive and Silent Drive functions have allowed us to minimize external noises and emissions. The machine can also run on diesel or biodiesel.

Kalmar EcoDrive provides two different shifting programs for empty and loaded trailer, hence saving fuel in the process.



Global presence and local service bring
our solutions closer to our customers.



Cargotec improves the efficiency of cargo flows by offering solutions for the loading and unloading of goods on land and at sea – wherever cargo is on the move. Cargotec's main daughter brands for cargo handling are Hiab, Kalmar and MacGregor. In addition, Cargotec's global network offers extensive services that ensure the continuous and reliable performance of equipment. www.cargotec.com



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