

## Trailer cranes



Power of Aluminium

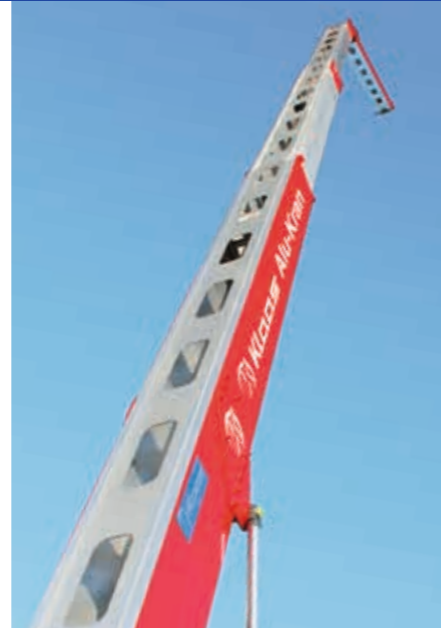




# Distinctively Klaas - more than just height

Since its foundation in 1933, the Klaas family company has developed into one of the leading manufacturers of mobile cranes with aluminium booms. „Klaas“ stands for innovative, high-performance and high-quality products that are geared to the requirements and daily tasks of our customers. The focus is not only on heights and ranges of our equipment, but also on its quality, reliability and safety. Experienced employees with a lot of product know-how form the basis for this as well as ultra-modern production facilities and machines.

Klaas aluminium cranes help to make heavy work easier and offer efficient solutions for a wide range of applications. Over 6,000 cranes delivered speak for themselves and make Klaas the world's no. 1.



## Boom system - 100 % aluminium

The most striking trademark of a Klaas crane is its boom. Its special feature: All boom elements are made of 100 % high-strength aluminium and are manufactured as box sections using friction stir welding. This low-temperature method ensures particularly high strength „as if milled from solid material“. Even in the joints, the stability is comparable to the original solid material. Attachments are mainly milled from the solid material and then fastened with locking ring bolts. The mast elements have precisely calculated recesses in the area of the upper and lower chords, which are machined by Klaas. This gives the mast its Klaas-typical hole pattern and offers smaller wind-exposed areas and a lower dead weight.

The base mast is erected and supported by two stable luffing cylinders. They stabilise it against lateral forces and, as a strong double, guarantee particularly smooth mast movements and a maximum of safety.



## Fly jib

Klaas builds cranes for practical use: with an extremely strong fly jib. Because much more decisive than the maximum load capacity of a crane are its reach and performance values that it achieves in daily work. The fly jib is connected to the base mast via sturdy aluminium articulated plates. Two protected folding jib cylinders together with the Klaas kinematics ensure a radius of movement of the folding jib from 0° to 165°. The electronic monitoring in the folding point cylinders guarantees optimum load absorption in every angular position. The K350 E works with a single, the K400 work a double hydraulically telescopic fly jib. The first two elements can be extended and retracted by remote control using Klaas rope technology, extension 3 extends by its own weight.

### The advantages of the folding jib:

- By extending the folding jib, the maximum hook height is significantly increased. This means that roof areas at the rear can also be reached if structural conditions or scaffolding prevent the main mast from being extended further.
- Twin luffing cylinders ensure high stability and quiet working even in windy conditions.
- On the K21-30 RS and the K23-33 RS, the extensions are manually telescopic. Automatically engaging pins ensure easy retraction and extension of the folding tip elements.
- By extending the hydraulically telescopic folding jib „in the air“, the K350 E and the K400 can be set up and used even on particularly narrow construction sites. And this even with a mounted working platform.



## Telescoping technology

The heart of the telescoping process is the patented Klaas rope technology: A telescoping winch with two retraction and extension cables each ensures that the mast elements are extended evenly and safely - even at a flat angle and under load. Slack rope formation is not possible thanks to the single-layer winding. The individual mast elements are moved in telescopic operation over rollers and sliding strips made of high-strength plastic. This means: smooth gliding with low wear and tear and extremely low-maintenance operation. As the rope technology is very easily accessible, the material and working time costs are significantly lower than with many other systems when the rope is replaced due to wear.

An integrated electronic length measurement system permanently records the extended length of the mast and calculates the maximum possible load from this.



## Support system

### Electronic set-up automatic

Some Klaas trailer cranes have an electronic set-up automatic. In this case, the crane is completely set up via remote control. After an acoustic signal is sounded, all outriggers have the same pressure and the crane is optimally set up.

The pairs of outriggers are designed as V<sup>2</sup>- or H-outriggers and guarantee very good stability in every direction.

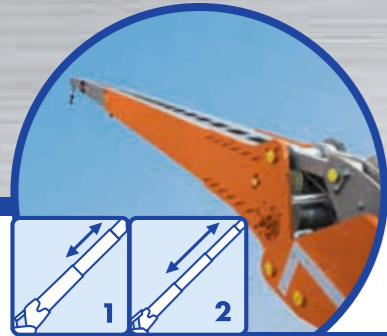
### Variable support

All Klaas cranes are equipped with massive support beams that can be extended in pairs or individually and variably. There is no pre-determined grid that restricts the operator, so that the available floor space can be used optimally. Long vertical supports allow a consistently large support surface even on uneven terrain and thus high performance values.

### Permanent support monitoring

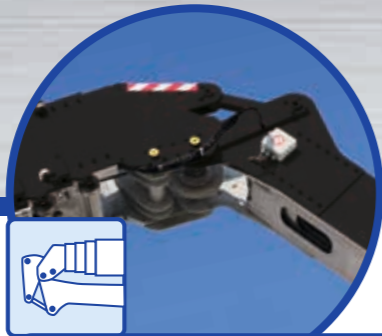
The automatic levelling of the supports at the push of a button guarantees sufficient pressure in all four support cylinders. Via the ASC control system, the pressure is permanently monitored during erection as well as during crane operation and displayed via remote control. In this way, it ensures even pressure distribution at all times and reacts to changing external conditions. All crane functions are only activated when all four outriggers have the same high pressure. If the pressure of the supports is insufficient, a safety shutdown occurs automatically.

# The Klaas advantages at a glance



## Hydraulic telescopic fly jib (K350 E und K400)

- Continuous extension of the fly jib via remote control enables fast crane set up even in narrow construction sites.
- The fly jib can also be hydraulically extended during working platform operation.



## Folding jib joint

- The newly designed hinge plate is „made from the solid“ and can therefore dispense with steel connecting elements. This saves weight and increases stability.
- The redesigned folding jib joint allows higher loads on the integrated extensions.
- Twin luffing cylinders ensure even more safety and protection against lateral forces.



## Klaas boom system

- All elements are made of 100% aluminium.
- Extremely solid special aluminium alloy with low (tare) weight.
- No loss of strength in the weld seam due to innovative friction stir welding process (FSW): as a result, the weld is as strong as the solid material.



## Double derricking cylinders

- Double derricking cylinders provide double safety
- Lateral force guides can be absorbed better. That makes the boom much more stable and resistant to vibration.
- Two derricking cylinders ensure a very low rate of twist when raising the boom.



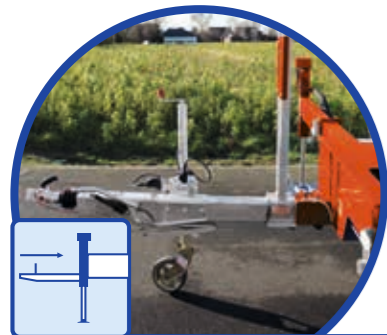
## Working platform

- The models K23-33 RS, the K350 E and K400 can be converted to a fully-fledged working platform in less than 5 minutes.
- The working platform can be swivelled left and right by 45° to either side.



## Self-drive mechanism

- The self-drive mechanism is controlled via the standard remote control.
- Simple manoeuvring in the tightest of spaces.

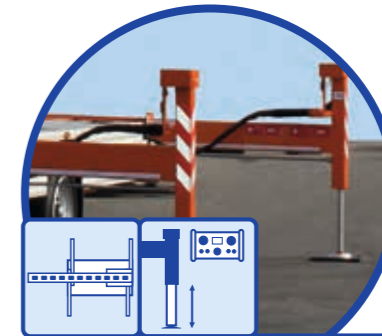


## Retractable drawbar

- The models K21-30 RS, K23-33 RS, K350 E and K400 are equipped with a retractable drawbar.
- Reduced total length makes erection of the crane on a small installation surface possible.



360° continuous rotation



## Automatic levelling

- Simplified set up of the crane via remote control
- Automatic levelling ensures optimum stability.
- The K23-33 RS, the K350 E and the K400 are equipped with a fully hydraulic support which, in conjunction with ASC outrigger monitoring, allows infinitely variable support widths, also in the direction of the outreach.
- The K280 has hydraulic support cylinders for stepless and variable height levelling.



## Crane control system

- Modern safety PLC for crane operation
- CAN-BUS control block allows especially sensitive and precise working.
- Radio remote control with LCD display enables the crane operation from different positions.
- In case of radio interference or working in sensitive areas the radio remote control can also be operated wirelessly with cable.
- The memory function enables the control to store two target points. Through this function, the crane moves automatically, in the safe hold-to-run operation mode, to the stored target point.



## Telescoping winch

- The rope technology, which is known from the fire engine ladder, allows rapid telescoping under load.
- The low deadweight of the ropes benefits jib length and load capacity.
- Rope technology is low-maintenance and very accessible.
- The integrated electronic length-measurement continuously records the current extension length from the mast and calculates the maximum possible load.



## Drive concept

- Diesel/petrol engine**
  - Depending on the model, the cranes are equipped with a powerful diesel engine or with a petrol engine for crane operation.
- Hybrid drive**
  - Equipped with 400 volt electric motor (400 V, 32 Amp.) and separate Diesel engine
  - Electric motor can be removed without tools for transport on the road.
- Battery-powered electric motor**
  - Powerful battery for long runtimes
  - Charging via 230-volt socket
  - Working platform operation possible with the K350 E



## Accessory fix system

- Thanks to the accessory fix system, your accessories are immediately within reach.
- No annoying fastening
- Due to accurately fitting brackets, road safety is guaranteed!



## Full panelling

- Spacious, lockable storage compartments
- Safe storage of tools and accessories
- Large storage space on the crane
- The aluminium chequer plate design gives the crane a high-quality and clean look.



## Personal safety mode

- The K350 E and the K400 are equipped with the personal safety mode according to BG guidelines, for the K23-33 RS this is optional.



## Mounting-/glass hook

- The K350 E and the K400 can be optionally equipped with a mounting hook function.
- The mounting hook enables extremely precise material transport. Area of use e. g. glass mounting with a vacuum lifter.

## Klaas<sup>2</sup>

- Double derricking cylinders
- Twin luffing fly jib cylinders

Twin luffing cylinders provide added stability and enable comfortable and safe operation. Load movements during slewing or under wind load are absorbed significantly better. This enables controlled and precise operation even in difficult conditions.



Back in 1933 Theodor Klaas founded what is now the medium-sized family-run company from Ascheberg in Westphalia. Working firstly as a building contractor, he used all his inventiveness after the Second World War to develop the first inclined lift, which makes work on building sites much easier.

His son Ludger, a trained electrician and master locksmith, joined the firm in 1969. He recognised the tremendous benefits of aluminium as a lightweight material and used it to make the first aluminium crane in 1993, which soon also made its breakthrough internationally. This innovation proved to be a milestone in the company's history and the basis for developing other special machinery, for example in the field of firefighting technology.

Today, firefighters all over the world work with the Klaas Alufiver, a multifunctional device for extinguishing fires and rescuing people. The two elevating work platforms „Theo“ and „Rudi“ also benefit from our many years of experience in the development of outriggers with work platform function: They convince with high performance values and easy handling.



To ensure that our products keep what we promise, most of the components are produced in the Ascheberg factory itself and only a few components are purchased in addition. This enables us to continuously ensure the quality and condition of our equipment. On the one hand, an effective quality management system certified according to DIN EN ISO 9001, which covers all areas of the company from development to production and distribution of our products, helps us to do this. On the other hand, it is also the meanwhile more than 300 employees

at our headquarters in Ascheberg and the nine service stations throughout Germany who are committed to the company with a lot of knowledge and experience. And so Klaas is now in its third generation of powerful and reliable partners for many craftsmen's businesses.



Equipment	K280	K21-30 RS	K23-33 RS City	K350 E	K400
Klaas Boom system	●	●	●	●	●
H-Outriggers	●	●	●	●	●
V <sup>2</sup> -Outriggers					●
Automatic levelling		○	●	●	●
1-fold hydraulic telescoping fly jib				●	
2-fold hydraulic telescoping fly jib					●
Twin luffing cylinders	●	●	●	●	●
Double derricking cylinders	●	●	●	●	●
Telescoping winch	●	●	●	●	●
Continuous rotation	●	●	●	●	●
Crane control system	●	●	●	●	●
Radio remote control	●	●	●	●	●
Self-drive mechanism	●	●	●	●	●
Diesel engine		●	●		●
Petrol engine	●				
Hybrid drive			○		○
Battery-powered E-Motor	○			●	
Full panelling		●	●	●	●
Retractable drawbar		●	●	●	●
Working platform			○	○	○
Accessory fix system	○	○	○	○	○
Personal safety mode			○	●	●
Mounting-/glass hook				○	○

Tech. specifications	K280	K21-30 RS	K23-33 RS City	K350 E	K400
Hook load (stand./opt.)	800 kg	1,500 kg	1,500 kg	1,600 kg	1,600 kg/3,000 kg
Hook height	25.50 m	29.80 m	32.80 m	31.00 m	34.30 m
Boom length	27.00 m	30.70 m	34.10 m	32.80 m	35.81 m
Outrigger width min.-max.	3.88 m - 4.88 m	2.85 m - 5.04 m	2.85 m - 5.04 m	3.60 m - 5.04 m	3.71 m - 5.46 m
Winch capacity	800 kg	1,500 kg	1,500 kg	1,600 kg	1,600 kg
Length of folding jib	4.50 m	1 extension, 9.12 m	3 extensions, 12.31 m	2 extensions, 10.70 m	3 extensions, 13.97 m
Vehicle dimensions	9.22x2.09x2.55 m	9.24x2.28x2.59 m	9.24x2.27x2.59 m	9.34x2.36x2.68 m	9.34x2.36x2.68 m
Total weight	2.8 - 3.5 t	3.5 t	3.5 t	3.5 t	3.5 t

○ optional equipment  
● standard equipment

# Throughout Germany - Service, rental and sale



## Service, rental and sale



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