## GET IN AND BE ON YOUR WAY

The wheel loaders and telescopic wheel loaders: KL12.5/KL14.5/KL18.5/KL19.5/KL25.5/KL25.5T/KL25.5e





# Wide range of application possibilities Discover the all-wheel wheel loaders and telescopic wheel loaders in the 1.8 - 4.6 tonne class

The compact, efficient machines have been developed down to the finest detail and are characterised by the tried-and-tested design principle, which guarantees unbeatable manoeuvrability. Due to their narrow and low design, the machines are also in demand where large machines cannot fit: tight access roads, work in stables, warehouses or other confined conditions. Alongside the diesel engines, Kramer is also providing a 100% electric and emission-free version with the KL25.5e. Depending on the application and requirement, you can individually decide which machine is right for you.

# On the safe side with Kramer

The traditional Kramer brand has been established on the market for many years and in particular stands for one value: **Safety.** The high quality of the innovative machines is only one aspect: Kramer is also a reliable choice for customers and dealers because the experience and innovative power of the company provides investment and future security. In short – you are always on the safe side with Kramer: **"Kramer – on the safe side!"** 

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#### Machine highlight KL18.5 - KL25.5T Smart Ballast (KL18.5) Cabin design Loading systems

Machine comport and accessories Attachments Quickhitch system Tyres

Operating and performance data WHEEL LOADERS AND TELESCOPIC WHEEL LOADERS	KL12.5	KL14.5	KL <mark>18</mark> .5	KL <mark>19</mark> .5	KL <mark>19</mark> .5L
Engine output (optional) [kW]	18.5	28.5	34.3	34.3 (41.1)	34.3 (41.1)
Bucket capacity [m <sup>3</sup> ]	0.35	0.36	0.45	0.55	0.55
Lifting force [kN]	11.5	15.8	37	32.5	26.5
Bucket tipping load [kg]	1,200	1,400	1,800	1,980	1,780
Payload on pallet forks S=1.25 [kg]	750	900	1,200	1,600	1,450
Operating weight [kg]*	1,700 - 2,200	1,900 - 2,400	2,850 - 3,300	3,200 - 4,300	3,200 - 4,300

\* Weight with standard components and full tank + standard bucket + 75 kg operator weight (ISO 6016).

	KL <mark>25</mark> .5	KL <mark>25</mark> .5L	KL <mark>25</mark> .5T	KL25.5e	KL25.5eL
e output (optional) [kW]	34.3 (41.1)	34.3 (41.1)	34.3 (41.1)	23.2** / 25.2***	23.2** / 25.2***
t capacity [m <sup>3</sup> ]	0.65	0.55	0.65	0.65	0.55
force [kN]	32.5	26.5	32.5	32.8	33
t tipping load [kg]	2,340	2,140	2,500	2,800	2,377
ad on pallet forks S=1.25 [kg]	1,750	1,600	1,650	1,750	1,500
ting weight [kg]*	3,200 - 4,300	3,200 - 4,300	3,500 - 4,600	3,855 - 4,160	3,890 - 4,195

\*\* Drive system performance S2 60 min \*\*\* Work hydraulics performance S3 15%

Engine of Bucket Lifting for Bucket Payload

# ON THE SAFE SIDE

ne	Drive train Engines	
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# Why separate what belongs together? Kramer – A unique system

The Kramer brand stands for all-wheel steer loaders, telescopic wheel loaders and telehandlers with extreme manoeuvrability, off-road capability and high efficiency. Thanks to the time-tested and proven undivided chassis, the wheel-loaders are ultra-stable in all conditions.

Due to this special vehicle construction, there is no shifting of the centre of gravity through steering movements. On the basis of the Ackermann steering, only the wheels move during steering. Thus, high stability and maximum payloads are given even with a tight turning circle and on uneven ground conditions.







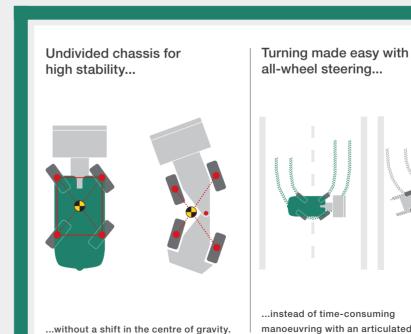
#### The advantages at a glance

#### High stability

The wheel loaders and telescopic wheel loaders are designed with an undivided chassis that prevents shifts in the centre you a high degree of manoeuvrability. Some of gravity - even with a full steering lock. steering manoeuvres therefore become un-The vehicles are therefore extremely stable and safe in operation, even when the going gets tough.

#### Enormous manoeuvrability

The all-wheel steering and the steering lock The undivided chassis prevents the distance of 38 degrees on the front and rear axle allow necessary, resulting in shorter cycle times.

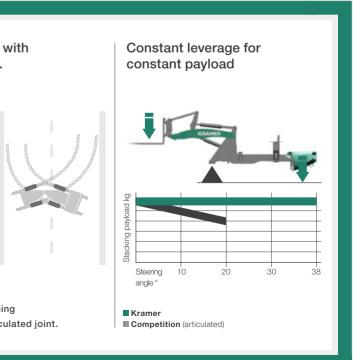


...instead of time-consuming manoeuvring with an articulated joint.



#### Constant payload

between the counterweight and the loading system from changing. The result: constant leverage that makes working safe in all load situations. In the process, the payload always stays the same, independent of the steering angle.



# Flexibility in use The right type of steering for every application

The undivided vehicle frame forms the basis for three (KL12.5, KL14.5) and two (KL18.5, KL19.5, KL25.5, KL25.5T, KL25.5E) different steering types. A wheel loader's design principle decides how it is used and for which applications. The steering system plays a crucial role in this.



#### All-wheel steering

- 2 x 38 degree steering angle on the front and rear axle ensure fast work cycles
- Optimised routes
- Tight turning circle



#### Front wheel steering (optional)

- Safe and familiar road travel at high speed
- Simple guidance of special attachments
- Familiar steering system
- Ideal for trailer operation



#### Crab steering (optional)\*

- Manoeuvrability in a confined space
- Precise positioning even in the most confined conditions
- Ground protection for sensitive sub-bases
- Easily drive away from walls and trenches

\* available for the models KL12.5 and KL14.5



All-wheel steering: particularly manoeuvrable in confined spaces

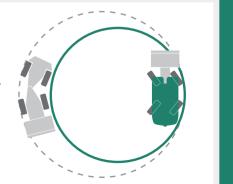
#### Comparison of all-wheel and articulated steering

Example: 360° turning manoeuvre via the external edge of the tyres

With the all-wheel steering, the turning circle is much smaller compared to the articulated steering (see green line). This is achieved by the steering lock on the front and rear axle, while only the front carriage moves with the articulated steering.

All-wheel steering

Articulated steering (competition)



# Compact dimensions and optimal power-to-weight ratio Performance in perfect proportion

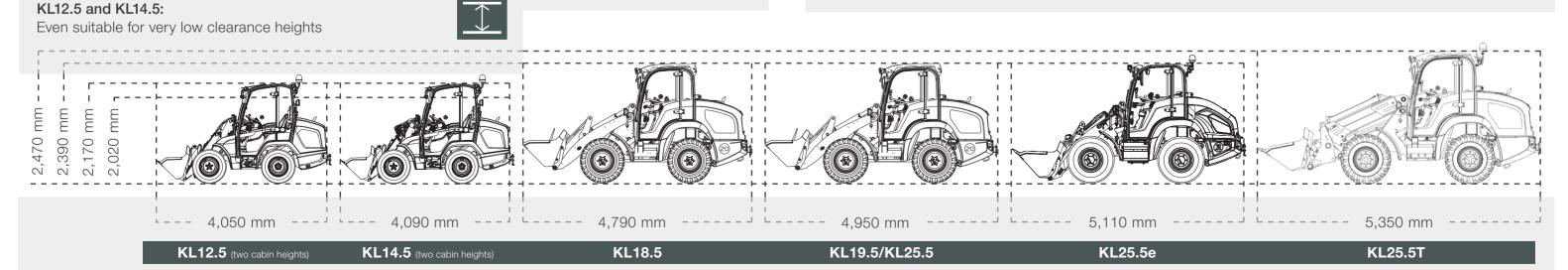
Compact Kramer wheel loaders and telescopic wheel loaders are among the most versatile machines on the farm. Tasks such as bale handling, silage cutting, materials handling or feeding and cleaning work can be taken care of efficiently and quickly. The machines are small enough to go anywhere and strong enough for their application.

The design principle of the undivided vehicle frame is responsible for the extremely compact dimensions. Furthermore, excellent power ratings are achieved due to the ratio of operating weight, payload and tipping load, which are unparalleled in this vehicle class.



#### Top performance of the dimensions and power-to-weight ratio:

- perfect ratio between payload and operating weight
- easy transport on 3.5 t trailer (KL12.5, KL14.5, KL18.5)
- economic use that saves time and fuel thanks to the small turning radius
- economic power-to-weight ratio





Low overall height of less than 2.5 m for versatile applications

# **Powerful engines** Efficient fuel consumption

The KL12.5 and KL14.5 wheel loaders are both equipped with exhaust emission Stage V Yanmar engines. The KL12.5 is powered by an 18.5 kW engine without an exhaust emission aftertreatment. The even more performance efficient KL14.5 is available with a 28.5 kW engine. Here, the exhaust emissions are treated with DOC, DPF and SCR.

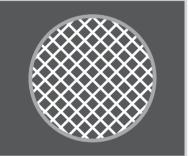
The models KL18.5 through to KL25.5T likewise have a Yanmar engine and fulfil the emission Stage V. The engines with 34.3 kW (standard) and 41.1 kW (optional for KL19.5, KL25.5, KL25.5T) are equipped with a DOC and DPF.

# Top performance of the engines:

- high torque and economical engines by Yanmar
- modern exhaust aftertreatment with DOC + DPF
- newest engine technology with exhaust emission Stage V

	KL <mark>12</mark> .5	KL <mark>14</mark> .5	KL <mark>18</mark> .5	KL <mark>19</mark> .5	KL <mark>25</mark> .5	KL <mark>25</mark> .5T
Engine overview	Standard	Standard	Standard	Standard (Option)	Standard (Option)	Standard (Option)
Engine manufacturer	Yanmar	Yanmar	Yanmar	Yanmar	Yanmar	Yanmar
Power output [kw/hp]	18.5 / 25	28.5 / 39	34.3 / 46	34.3/46 (41.1/55)	34.3/46 (41.1/55)	34.3/46 (41.1/55)
Exhaust after-treatment system	-	DOC + DPF				
Emission stage (EU exhaust emissions standard)	Stage V					

#### Exhaust after-treatment systems



#### Diesel oxidation catalytic converter (DOC)

These days, catalytic converters are used to reduce emissions in many cars and lorries. The diesel oxidation catalytic converter has the same functionality. Without the movement of mechanical parts, it triggers chemical reactions that reduce emissions.

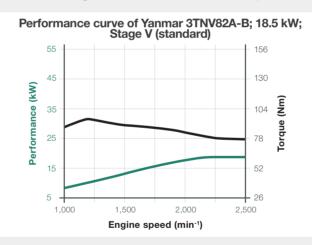


#### Diesel particulate filter (DPF)

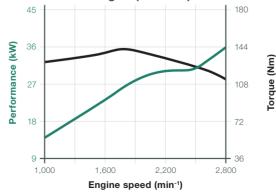
The diesel particulate filter is used in connection with an oxidation catalytic converter to remove most of the nitrogen oxides, soot particles and non-combusted hydrocarbons from the combusted diesel fuel. The diesel particulate filter contains a porous honeycomb structure that catches the soot when it passes through. When the soot has accumulated to a certain extent, the machine's electronic system triggers fuel injections, which brings the non-combusted fuel into the oxidation catalytic converter, which is located before the filter. There it triggers an exothermic reaction that heats the exhaust fumes so much that the soot in the diesel particulate filter is combusted. This process is also known as regeneration.

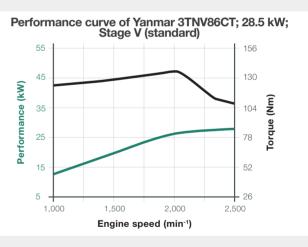


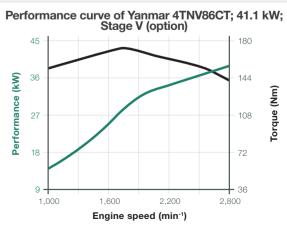
Optimised running smoothness: Economical and powerful engines in all Kramer models.



Performance curve of Yanmar 4TNV88C; 34.3 kW; Stage V (standard)







# Made for application Discover the product range of the compact class

#### The wheel loaders: KL12.5, KL14.5

The KL12.5 and KL14.5 wheel loaders are the smallest Kramer models. When designing and developing, the focus was on the simple and intuitive operation, which makes the working day far easier for the operator. With its very compact dimensions, they are great helpers when working in confined spaces. The machines are versatile in use thanks to their overall height and also allow for applications inside buildings, such as working in stables. The machines can easily be transported on 3.5 tonne trailers thanks to their very low net weight.



Modern design, technology, performance and comfort: The Kramer wheel loaders set standards.

Top-performance telescopic wheel loader KL25.5T:

- + 50% lift and tipping height
- + 42% stacking height
- + 38% load-over height

e.g. for storing straw and hay, stacking round bales, filling high-sided feed mixers or trailers

# The wheel loaders an KL25.5e

The wheel loaders and telescopic wheel loaders of the compact class are agile in their movements, dynamic in their power delivery and slim in their design. With an optimised power-to-weight ratio, a low shipping weight and constantly high payload, they are ideal helpers when it comes to stacking, loading material or feeding animals.

With the Kramer telescopic technology of the KL25.5T, even greater lift heights and reaches are reached comfortably, safely and precisely. The KL25.5e is completely free from emissions, unbelievably quiet and it provides the perfect working conditions for the operator and employees.





#### The wheel loaders and telescopic wheel loaders: KL18.5, KL19.5, KL25.5, KL25.5T,

#### KL12.5 / KL14.5

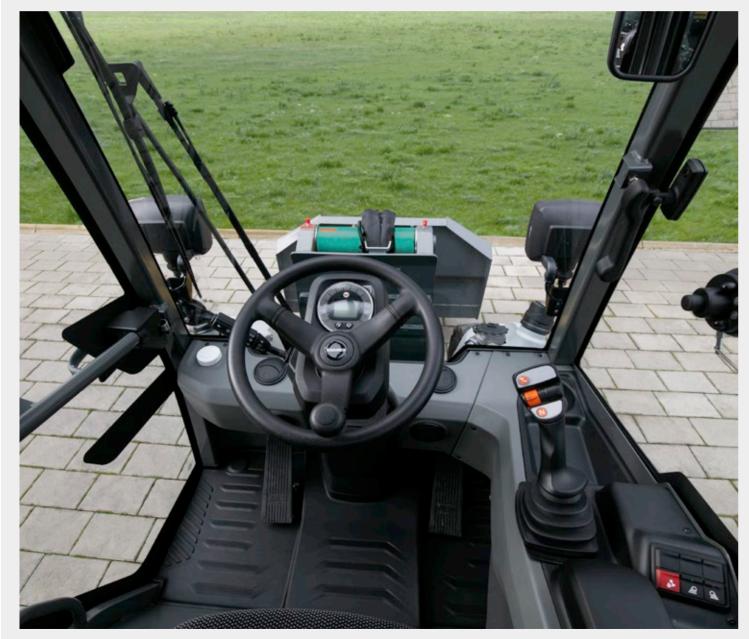
# Modern cabin design First-class comfort

Within the compact wheel loader sector, the innovative cabin design ensures added-value in terms of comfort and operator-friendliness, whereby the functionality and ergonomics are at the forefront.

Large glazed areas in combination with narrow cabin pillars provide excellent all-round visibility. The special hydraulic oil and diesel tank shape under the front window provide the operator with a perfect view of the attachment. There are many functional and ergonomic features, as well as numerous storage compartments in the side console. Furthermore, all of the important colour-coded switches are placed within reach of the right hand.



Comfortable joystick: Possible to switch between hare and tortoise on the joystick itself.



A spacious, quiet and extensively glazed cabin provides the perfect conditions to get through everyday operation safely.

### **Technical highlights**

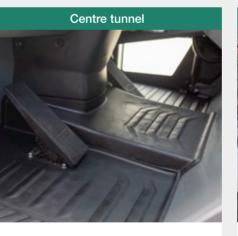
Simple operation - Innovative cabin design



The wide entry with an additional step ensures a comfortable entry and exit. Two handles attached to the cabin aid the operator in safely getting to their working area. Furthermore, the cabin door can be opened 180 degrees and can be locked to the machine.



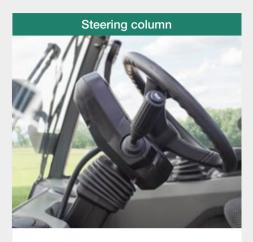
The feature on the KL14.5 includes three different operating modes that can be changed by pressing a button in order to meet the respective requirements most efficiently. The Power Mode (PWR) is suited to bucket work, the ECO Mode to stacking work or road travel and the Constant Speed Drive mode (CSD) to hydraulic attachments.



The centre tunnel in the cabin floor has a height of just 5 cm thanks to the design of the vehicle frame. Thus enabling the operator comfortable entry and exit. The centre tunnel is likewise covered with e rubber mat and can be easily cleaned.



by an attenuator. Easy access is thus provided to the cabin air filter and the main control unit. Cleaning the cabin floor can be performed very easily.



The optional incline-adjustable steering column can be adapted to the operator's needs. The steering wheel is made of a high-quality and non-slip material. Furthermore, there is a modern visual display with automatic indicator reset on the steering column.



A Continentall radio with USB connection and Bluetooth hands-free system is available as an option. The temperature and ventilation regulator is positioned in the side console. The optional air-conditioning system for the KL14.5 ensures a comfortable climate, even on the warmer days. Furthermore, the vehicle can be equipped with an automatic engine stop via seat contact.

#### KL12.5 / KL14.5

# **Different loading systems** Effortlessly work with loads

The loading systems for both machines are made of a high-strength and torsion-resistant box section. The large lift and tearout forces, as well as parallel guidance of pallet forks across the total height are achieved with Z-kinematics. The loading system's even more sturdy construction for the KL14.5 ensures even higher payload.

The automatic load stabiliser is optionally available. The load stabiliser dampens oscillations of the loading system and ensures maximum operational comfort. The safe handling of heavy loads is therefore also guaranteed on uneven terrain. The automatic function automatically switches on the load stabiliser from a speed of 8 km/h (transport operation) or automatically switches it off below 8 km/h (loading operation). In addition, it is possible to continuously activate or deactivate the load stabiliser for certain applications.

The visual position display for the fork (yellow) and bucket (red) can be found on the rocker arm, as well the tilt rod and indicates the position of the bucket and fork. As a result, a high level of precision is achieved in the inclination angle of the attachment to the ground. The position indication is a great benefit, particularly to the inexperienced operator or where operators are constantly changing, such as in agricultural large enterprises.





Automatic load stabiliser prevents the machine from swaying and reduces material loss.



Sturdy loading system with Z-kinematics, visual position indicator and optional load hook.

#### Top-performance wheel loaders KL12.5 and KL14.5:

- powerful lift capacity: KL12.5 - 11.5 kN KL14.5 - 15.8 kN
- spacious cabin with very good all-round visibility and a variety of options
- three types of steering for maximum flexibility
- Smart Driving PRO with the option of three operating modes for the KL14.5
- low-cabin available optionally as canopy or cabin version



#### Two cabin heights

It is possible to choose between two cabin heights. The low cabin with a height of 2.02 m ensures maximum vehicle compactness and is optionally available as a canopy or cabin version. The high cabin with a height of 2.17 m provides even better all-round visibility and creates the highest level of comfort for the operator.

#### Powerflow

The KL14.5 wheel loader is also characterised by its optional Powerflow auxiliary hydraulics. The hydraulics are compact in design on the left-hand side of the loading system and ensure perfect visibility of the attachment. No matter whether used with a snow blower, a mulcher or a sweeping machine - the KL14.5 is versatile in application with the Powerflow function and ready for use for any application at any time of the year.





Concept solution for system bearer	KL <mark>12</mark> .5	KL <mark>14</mark> .5
3rd control circuit [l/min]*	20	30
Powerflow performance hydraulics [I/min]*	-	56

\*max. pump values





Pressure release of 3rd control circuit

The button for optional pressure release of the 3rd control circuit is centrally fitted to the loading system. As a result, different attachments can be quickly and efficiently changed without the need to switch off the engine.

# <section-header>КССВСУКССССО Account of the Action of the

**Loading system with Z-kinematics:** for high lift capacities and tear-out forces and an exact parallel guidance across the entire lift height.

Work efficiently thanks to the hydraulic quickhitch system, load stabiliser and visual position indicato for bucket and fork.

> Three steering types support maximum manoeuvrability. All-wheel steering as standard and the optional steering types like front wheel and crab steering provide more in terms of flexibility. Switching between the steering types is carried out mechanically.

Undivided vehicle frame for great manoeuvrability with constant stability.

SAF

CORS



#### Innovative cabin design

Glazed areas ensure optimal visibility. The wide step and the door which locks to the rear provide comfortable entry and exit. The side console contains many functional and ergonomic features. The incline adjustable steering column is also optionally available.

#### The driving speeds

can be easily changed while driving. With the KL14.5, it is also possible to obtain the drive system as a sprinter and achieve upto 30 km/h.

#### Two engine classes

by Yanmar with exhaust emission Stage V. KL12.5 is equipped with an 18.5 kW engine and KL14.5 with a 28.5 kW engine incl. DOC and DPF.

> Four wheel hub motors for sensitive work and high thrusting force.

Large selection of tyre options for a wide range of application areas.

#### KL18.5

# **Stacking at its best** Maximum flexibility in everyday work

The Kramer wheel loader KL18.5 is particularly distinguished by its low net weight. The machine weight can be adapted to every work situation due to the optional additional weight Smart Ballast, which is simply and inconspicuously positioned in the tail. With its manoeuvrability, high payload, stacking tipping load and transportability, the machine is suitable for the most varied application areas.

The performance package is complemented by safety, comfort and a wide range of options which enable all-year-round application.

Special development of the loading system ensures for high lift and tearout forces. Commercial pallets can be moved without any trouble.







# Top-performance wheel loader KL18.5:

- strong lift capacity of 37 kN
- perfect performance characteristics of 34.3 kW / 46 hp
- optimal transport weight of 2,685 kg incl. cabin
- high bucket pivotal point of 2,840 mm
- flexible Smart Ballast weights of a total of 100 kg



The Smart Ballast we portable 12.5 kg.

# Smart Ballast - optional auxiliary weights on the rear

The Smart Ballast weights enable adaptation of the machine's weight and the stacking tipping load up to 1,700 kg depending on the user's requirements, whereby it is possible to flexibly switch between the working and transportation situation.





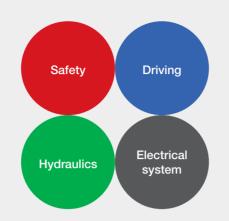
The Smart Ballast weights weigh a total of 100 kg. Each of the eight weights weighs a

#### KL18.5 - KL25.5T

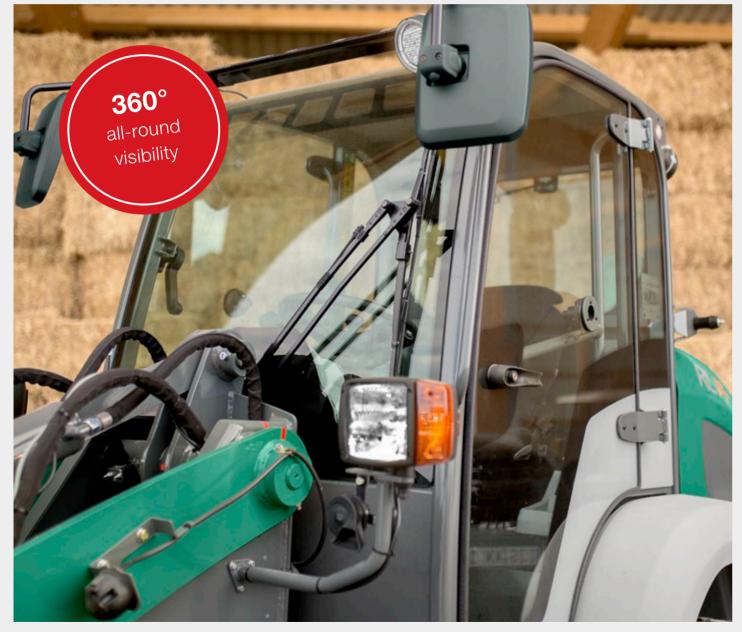
# **Comfort at work** Optimal working conditions

Easy operation and functionality are the focus of the machine series. From the operator's seat to the steering wheel, all details were consistently aligned with the needs of the operator. In doing so, the operator has a lot of room and always has everything in view.

The compact wheel and telescopic wheel loaders by Kramer have proven to be real space miracles in terms of cabin technology and their equipment ensures fatigue-free working for many hours. The clearly arranged operating elements create an environment in which the operator can work comfortably, focused and productively. The joystick, as the heart of the machine, enables safe, easy and intuitive operation.



**Colour-coding of the switches:** four colours for even more safety.



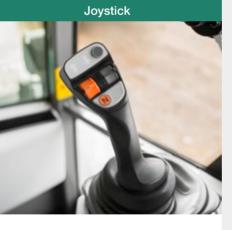
Panoramic cabin for an excellent overview of the attachment and the working environment.

# Cabin entry

**Technical highlights** 



The cabin can be accessed through the large entry area. The undivided vehicle frame also makes it possible to comfortably enter with the maximum steering lock. The entry is designed like steps. The grab handles are in an ergonomically favourable position to make it easier for the operator to enter and exit. The central seat position of the operator offers a 360° all-round visibility. "Blind spots" are avoided thanks to the particularly clearly arranged design. You can even see everything to the rear. Even with an extended telescopic loading system on the KL25.5T, the operator has a perfect view of the attachment.



The joystick shows its strengths above all when things get dark. In night mode, the different touch buttons and wheels are backlit with colour. The operator can therefore immediately identify the respective functions and will securely have everything in order.



The respective functional group is very quick and easy to identify due to the colour-coded switches. Red = safety, green = hydraulics, blue = travel and grey = electrical system. With this, the operator is guaranteed convenient and safe operation without the risk of being confused. The result is increased working efficiency for the operator.

# Simple operation - Innovative cabin design



The machines offer the best prerequisites for low clearance heights. All machines have a total height of under 2.5 m. It is possible to easily transport on a 3.5 t trailer due to the compact design of the KL18.5 wheel loader.



The powerful heater with window ventilation and heating nozzles in the footwell ensure comfortable working conditions, even on cold days. A fully integrated air-conditioning system is optionally available. The combined brake-inch pedal enables sensitive manoeuvring, even at high engine speeds.

#### KL18.5 - KL25.5T

# **Powerful hydraulics** For sensitively controlling the machine

Connect and disconnect different attachments, sensitive control, quick working cycles and all of this with a low noise level in the cab: The technology behind the work hydraulics of our machines makes this possible.

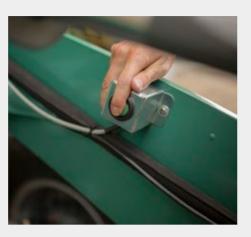
The work hydraulics are powered by powerful gear pumps, which ensure quick working cycles of the loading system, and enable the operation of special attachments via the 3rd control circuit, if necessary with continuous function.

> Pressure release of 3rd control circuit: Easily couple and uncouple attachments with hydraulic additional function



Concept solution for system bearer	KL <mark>18</mark> .5	KL <mark>19</mark> .5	KL <mark>25</mark> .5	KL <mark>25</mark> .5T
3rd control circuit [l/min]*	56	56	56	56
Powerflow performance hydraulics [l/min]*	-	90	90	90

\*max. pump values



#### **Powerflow\***

The machines can be equipped with various hydraulic attachments for the many areas of application and industry, and become true multi-functional tools.

No matter what work is due completion, whether used with a rotary sweeper, snow blower or mulcher, the Kramer wheel loaders can be used all year round.

\*not for the KL18.5



#### High-speed gearbox - variable up to 30 km/h

The variable hydrostatic high-speed gearbox provides optimal prerequisites up to 30 km/h. This provides the wheel loader both optimal tractive force and a lower diesel consumption.

The high-speed gears are used for movement on straights and on roads.

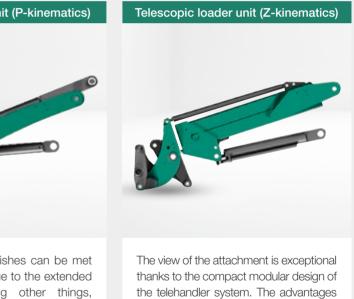


#### Three loading systems

Depending on requirements there are up to three different loading systems available. The standard and optional extended loader unit are both parallel-guided and ensure a consistent lift capacity as well as a safe operation during materials handling.

Standard loader unit (P-kinematics)	Extended loader unit
and the second s	and the second
The parallel-guided loader unit ensures constant lift capacity and a safe operation in materials handling. Due to the backwards-tilt angle of up to 45° and the dump angle of up to 45°, the wheel loader does not lose any material when using the bucket, even when it is very full, allowing for a complete emptying of the bucket.	Specific customer wish even more flexibly due t loader unit. Among the range, payload a are different when co standard loader unit.
Precise and safe working possible	<ul> <li>Optimal view of the q facility and the attach</li> </ul>

- High tear-out forces
- Precise parallel guidance over the entire lift height
- mm (KL19.5, KL25.5)



and lift height mpared to the

quickhitch hment

Increased lift height

• Extension of the loader unit by 190

of Z-kinematics: When tipping the bucket in with the same cylinder size, a greater tear-out force is generated as the piston side of the hydraulic cylinder is impinged when tipping in.

- High tear-out forces
- Good view of the quick coupler system and the attachment
- Additional load-over and stacking height as well as range and dump reach



Reduced operating costs through optimum power to weight ratio and compact dimensions.

Fatigue-free work

thanks to the spacious and ergonomic cabin, which is installed as a standard (KL25.5) or optionally.

High reliability

through easily accessible maintenance points and time-tested and proven components.

> Smart Ballast (KL18.5) easily and quickly adjust the payload and weight of the machine.

Variable drive system -th two types of steering (all-wheel steering and optional front wheel steering) and a vel speed of up to 30 km/h. Furthermore, there are two travel speeds av

Excellent traction

# zero emission

Innovation and sustainability are central values and driving forces in the development of new machines at Kramer. In this context, the search for alternative energy sources and drive technologies has been valid for a long time in order to develop sustainable, environmentally-friendly yet simultaneously powerful machines.

Electric mobility also plays an ever more important role in agriculture. One reason for this is because power produced in-house can be used. Not only the CO, emissions are reduced through the use of electric machines, but the noise emissions are also reduced to a minimum. In noise-sensitve areas, like at horse stables or a holiday farm with a lot of visitors, the KL25.5e is very well suited. Even working in stables, courtyard buildings, warehouses or greenhouses is noticeably more comfortable for both human and animal. The performance of the KL25.5e corresponds to that of a diesel wheel loader of the same size class and therefore does not lack in anything.



# Into the future with electric drive Its advantages at a glance

With the fully-electric wheel loader KL25.5e, CO, restrictions, soot particle limit values and noise emission values no longer play a role in daily work. This is because the fully-electric wheel loader works completely free of emissions, protects the environment and the end user, and scores high when it comes to efficiency and economy.









\* Data is dependent on machine equipment, application and environmental factors, and can deviate.

#### Ecological advantages

- lower carbon footprint
- no particulate matter pollution for the end user and the environment
- preservation resources

#### No exhaust gas emissions

- working indoors without any problems
- working in stables without exhaust gas pollution for humans and animals
- no impairment of air quality in urban applications because of complete zero emissions

#### Low noise emissions

- ideal for noise-sensitive areas, like stables and holiday farms
- perfectly suited to the inner local winter service

#### Economic advantages

- future-oriented technology
- low maintenance costs
- work up to 4 hours without interim charging\*

#### KL25.5e

# **Clear cab design** For the highest level of work performance

Ergonomics, efficiency and transparency are three significant benefits here. The spacious cabin provides a comfortable and low-noise quiet work space, which contributes to fatigue-free working.

The Kramer KL25.5e is equipped with a soundproof, vibration-dampened cabin with thermal insulation glazing as standard. The cabin is impressive internally with the detailing, such as the intuitive joystick and the optionally air-cushioned operator's seat. All the machine's important information is shown on the display. The colour-coded switches provide an extra degree of clarity and user friendliness. Furthermore, there are different storage options available to the operator.



Quickly accessible emergency switch, so that the machine can be immediately put into a safe status in an emergency.



Completely glazed cabin for an optimal view on all sides.

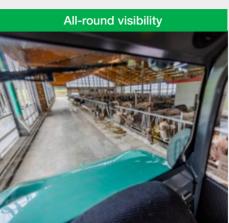
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# **Technical highlights**

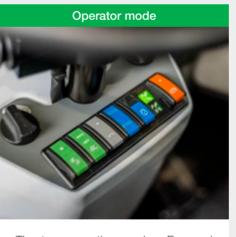
Simple operation - Innovative cabin design



The operator's cabin is easy and comfortable to access using a wide entry area. Included within this are two generous steps, which are organized one on top of the other. Furthermore, they are anti-slip and provide safety for the operator in any weather. The handles are easy to reach and affixed in easy-to-grab positions.

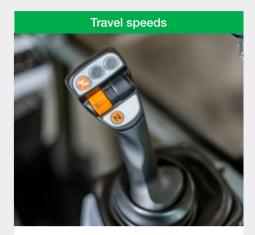


The free-visibility cabin and the ideally positioned B pillars provide excellent All-round visibility. A panoramic front windshield is installed as standard. The flat, sloping battery cover ensures an excellent view to the rear. Additionally, there is a fin in the middle of the cover for improved orientation when reversing.



The two operating modes, Eco and Power (PWR), can be determined using the toggle. In the Eco mode the travel speed is, among other things, reduced to maximum 14 km/h. As a result, the operator can save energy and gain additional running time. In PWR mode, the vehicle has the vehicle's full power capacity. The travel speed is maximum 20 km/h.

Alongside the air heater, the cabin also optionally has an energy-saving heated front and rear windscreen, heated seats and panel heating. Through this, specific areas are targetedly heated instead of the whole volume of air. The panel heating is in the vehicle's roof and beneath the operator's seat. Additionally, the cabin is well insulated with insulation matting so that the heat is not lost.



The button for both travel speeds is integrated into the joystick: Tortoise and hare. The operator has the option to comfortably adjust the maximum travel speed at any time. This is also possible while driving. The respective travel speed icon is shown on the display. The maximum travel speed is also dependent on the selected operating mode.





It is possible to additionally order a heater to pre-heat the cabin. A highquality Continental Bluetooth car radio with hands free, DAB+, AUX and USB is optionally available.



# Power for a working day Productive running times supported by recovery

The electric running time varies depending on many factors, like the driving behaviour, application type, machine equipment and the environmental conditions. It is possible to work up to 4 hours without intermittent charging.

Through recuperation - energy recovery - it is possible to extend the running time. As soon as the operator takes their foot off of the accelerator pedal, the drive system switches to recuperation. This means that the motion energy of the wheel loader is converted into electric energy and therefore recovered.





#### Everything at a glance

All the important information is presented on the display. Included herein, among other things, is the machine's remaining running time, recuperation, travel speed and even the charge status of the battery. This is displayed as a percentage. If the battery is being charged, then a thunderbolt on the battery symbol and the charge capacity is shown.



#### **Top-performance** fully-electric KL25.5e:

- no exhaust emissions and clearly reduced noise level
- powerful and high-quality lithium-ion battery with 37.5 kWh
- low maintenance costs when compared with the diesel machine
- maximum flexibility when charging due to different charging plug types
- easy access to charging plug

# Innovative battery technology Modern and flexible charging

The KL25.5e is equipped with a lithium ion battery with a capacity of 37.5 kWh. This has a guaranteed battery life of min. 5 years or 2,000 charging cycles. After this time, it is guaranteed that the battery has a residual capacity of min. 80%.

The lithium ion battery is monitored by a socalled Battery Management System (BMS). A battery heater has also been integrated into the battery, which ensure optimal operating temperature. Furthermore, the machine has a 9 kW AC on-board charger. The on-board battery charger is permanently installed in the machine. Thus, the battery can be charged using any customary, household outlet. It is likewise possible to charge at a wallbox or a public charging point. To prevent the electri wheel loader from overheating, it is equipped with a cooling system.



#### Charging cable

To charge the machine there are four different charging plug options available. The charge capacity is restricted by the type of charging plug and the charge capacity of the on-board charger. Where the on-board charger is 9 kW, the full charge capacity can only be achieved with the type 2 and CEE 5-pole plugs. The charging cables are stored in the rear under the battery cover.

• SchuKo mains plug 230V/16A • CEE, 3-pole 230V/16A (blue) • CEE, 5-pole 400V/16A (red) • Type 2 (IEC 62196)

#### Easy charging

There is a charging console under the battery cover in the rear ballast weight on the side of entry. It is possible to charge the battery up to 80% in approx. 3 hours.



Open the charging

charging cable to the

machine.

console and connect the



Activate pressure switch\* to start the charging procedure. The charge status indicator on the rear of the machine begins to flash.





The charge status indicator remains illuminated as soon as the charging procedure is automatically ended.



Activate pressure switch\* and remove the charger plug. Then close the charging bracket and store the charging cable.



BMS - Battery Management System monitors, for example, the battery's temperature. Efficiency and safety of the battery are increased and deep discharges are excluded.

#### Patented battery technology with a 96 V lithium-ion battery

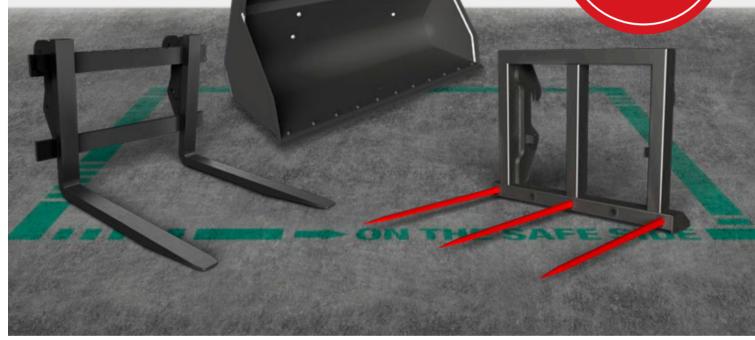
and a capacity of 37.5 kWh.

Recovery energy recovery: Automatic charging of the battery e.g. when going downhill. Optimal view to the rear as a result of the flattened battery cover design. Fast charge as a result of an integrated charger with up to 9 kW. Different charger cables and adapters are available.

# **Diverse tasks** Always the right attachments

Regardless of what challenges your application holds for you: With the different attachments, you will always have a handle on the situation. Thanks to the hydraulic quickhitch system, you can adapt your Kramer wheel loader to any situation in no time. Standard attachments can even be changed in less than 10 seconds.

The attachment is based on your needs. You can find out more about our attachments at: **www.kramer.de/attachments** 



Kramer quickhitch system - standard KL12.5, KL14.5, KL18.5, KL19.5, KL25.5, KL25.5T, KL25.5e



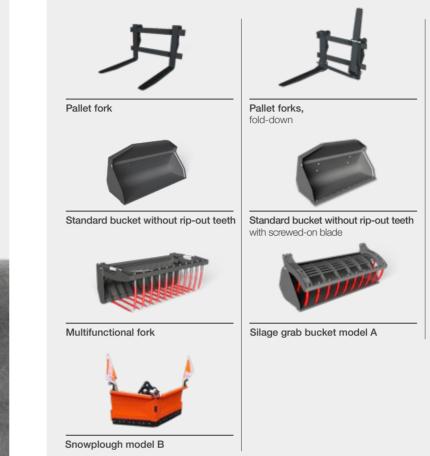




Change in record time!

With the hydraulic quickhitch system, the switching of tools can be easily executed from the cab. The lock pin is closed by using the touch slide on the joystick. When changing the attachments with the hydraulic auxiliary function, it is necessary for the operator to step out of the machine to manually couple the hoses.

# **Attachment range**



Exact specifications and availabilities of attachments vary by model and country. Your reliable Kramer dealer will be happy to help you.

#### Kramer quickhitch system - Smart Attach KL25.5e (optional)





Smart Attach is a hydraulic quickhitch system developed by Kramer, which is combined with an automatic coupler system. Manual changeover of hydraulic hoses is not required and the operator no longer needs to leave the machine. Operation is as follows directly from the cab using the joystick.



Pallet forks, hydraulic parallel adjustment



Bale spear



Rotary sweeper



Standard bucket with rip-out teeth

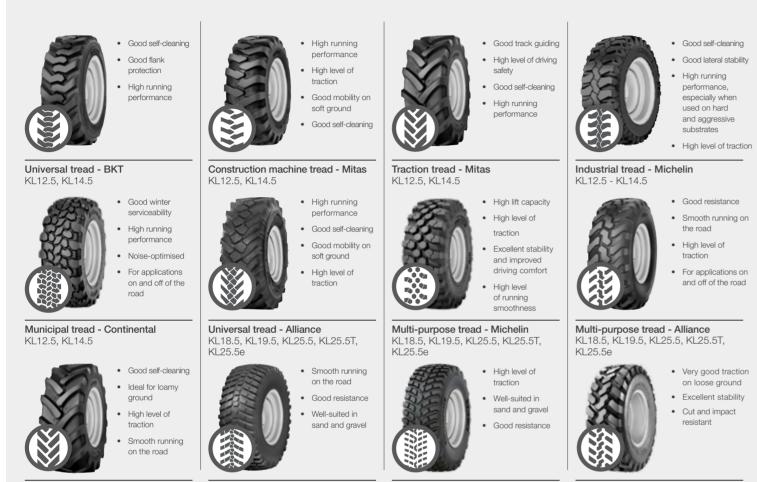


Round bale fork



Snowplough model A

# Tyre tread range



Traction tread - Mitas Premium KL18.5, KL19.5, KL25.5, KL25.5T

Municipal tread - Alliance KI 25 50











Multi-purpose tread - Firestone KL19.5, KL25.5, KL25.5T, KL25.5e

Choosing the right tyres is crucial when it comes to using your wheel loader. Exact tyre specifications and availabilities vary by model and country. Your reliable Kramer dealer will be happy to help you.





# **EquipCare - Telematics** All information at a glance

Always a step ahead, because EquipCare provides data, facts and answers to questions: Where is my machine right now, when is maintenance due and when does it make economic sense to replace wear parts? This helps you to avoid downtime and to extend the service life of your machine.

#### How does it work?

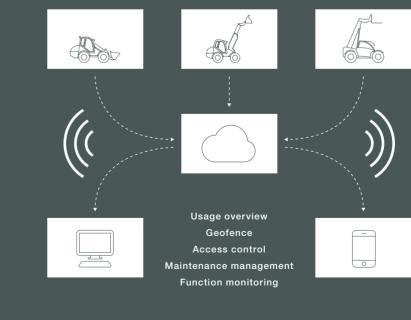
on all Kramer vehicles. It contains a telematics module, which collects If the machine leaves a previously defined data from the machines and sends it to the manager or app via a cloud. Here, as the Equipcare user, you can All events are shown here in detail, from view and assess the data.

portal for the telematics data of your precisely recorded. vehicles and is controlled via the computer. The EquipCare app is for The machine has recognised a problem? mobile access and keeps you informed about everything immediately, no matter dealer of this on site and they are where you are.

#### Your benefits:

EquipCare is installed as standard Thanks to EquipCare, we always know where your machine is located currently. geo-zone, you will receive a notification on your smartphone or your computer. the error message to the maintenance performed. All unnecessary downtime The EquipCare Manager is the main is avoided and the operating duration is

> The system automatically notifies your then able to perform an initial remote diagnosis to avoid a breakdown. Thanks to the proactive communication of your machine, you will be promptly informed about everything.



You can find more information at: www.kramer.de/equipcare



# **EQUIPCARE**

#### The telematics portal is available to you around the clock:



EquipCare Manager: The precise position or the GPS data of your machines can be viewed at any time in your password-protected area.

#### www.kramer.de/equipcarelogin



App The app provides you with a number of functions to access your machine data and information while on the go.

Simply download and install the app from the Google Play Store or the Apple App Store.

Go to the app

# **Top Performance**

**Dimensions and** power-to-weight ratio

### **Engines**

Wheel loaders KL12.5 and KL14.5

Wheel loader KL18.5

**Telescopic wheel loader** KL25.5T

Fully-electric wheel loader KL25.5e

- · perfect ratio between payload and operating weight
- economic use that saves time and fuel thanks to the small turning radius
- high torque and economical engines by Yanmar
- the latest exhaust emissions after-treatment with DOC + DPF
- strong lift capacity: KL12.5 11.5 kN, KL14.5 15.8 kN
- spacious cabin with very good all-round visibility and a variety of options
- Smart Driving PRO with the option of three operating modes for the KL14.5
- low-cabin available optionally as canopy or cabin version
- strong lift capacity of 37 kN
- perfect power ratings of 34.3 kW / 46 hp
- optimal transport weight of 2,685 kg incl. cabin
- flexible Smart Ballast weights of a total of 100 kg
- extra 50% lift height and dumping height
- extra 42% stacking height

• no exhaust gas emissions and clearly reduced noise level • low maintenance costs when compared with the diesel machine • different types charging plug provide maximum flexibility when charging

- easy access to charger plug

# **Technical Data**

Engine	Unit	KL12.5	KL14.5	KL18.5	KL19.5	KL25.5	KL25.5T	
Make	-	Yanmar	Yanmar	Yanmar	Yanmar	Yanmar	Yanmar	
Type/Model	-	3TNV82A	3TNV86CT	4TNV88C	4TNV88C (standard) 4TNV86CT (option)	4TNV88C (standard) 4TNV86CT (option)	4TNV88C (standard) 4TNV86CT (option)	
Output	kW	18.5	28.5	34.3	34.3 (standard) 41.1 (option)	34.3 (standard) 41.1 (option)	34.3 (standard) 41.1 (option)	
Max. torque	Nm at rpm	85.5 at 1,200	132.2 at 1,690	140.4 at 1,820	140.4 at 1,820 167 at 1,820 (option)	140.4 at 1,820 167 at 1,820 (option)	140.4 at 1,820 167 at 1,820 (option)	
Displacement	cm <sup>3</sup>	1,331	1,568	2,190	2,190 (standard) 2,091 (option)	2,190 (standard) 2,091 (option)	2,190 (standard) 2,091 (option)	
Exhaust emission stage	-	EU level V	EU level V	EU level V	EU level V	EU level V	EU level V	
Power transmission	Unit							
Drive	-			Variable, hydrost	atic drive system			
Travel speed	km/h	20	20 (standard) 30 (option)	20 (standard) 30 (option)	20 (standard) 30 (option)	20 (standard) 30 (option)	20 (standard) 30 (option)	
Axles	-		Axle carrier made of cast steel with Planetary steering Planetary stee					
Total oscillation angle	0	±7	±7	±8	±8	±8	±8	
Differential lock	%	Compensation differential hydraulic (option)	Compensation differential hydraulic (option)	100% (option FA)	100% (option FA)	100% front axle	100% front axle	
Service brake	-	Hydrostatically	Hydrostatically	Hydr. di	sc brake	Hydr. di	sc brake	
Parking brake	-	system, electr	nulti-plate braking ro-hydraulically ed to HA	mech. d	isc brake mech.		isc brake	
Standard tyres	-	27x10.5-15	27x10.5-15	10.5-18	10.5-18	12.0-18	12.0-18	
Steering and work hydraulics	Unit							
			Hydrostatic all	-wheel steering wi	th emergency stee	ring properties		
Steering system functionality	-		and crab steering tion)			neel steering ption)		
Functional work hydraulics	-			Gear	pump			
Steering cylinder	-		Double-actir	ng with independer	nt final position syr	chronization		
Steering lock max.	0	38	38	38	38	38	38	
Max. flow rate of pump	l/min	20	30	56	56	56	56	
Max. flow rate of pump optional	l/min	-	56	-	90	90	90	
Max. pressure	bar	240	240	240	240	240	240	
Quickhitch system	-	HV/V	VL - S		HV/W	/L - C		
Pilot operation	-			Hydi	raulic			
Pilot control of 3rd control circuit	-			Elec	trical			

# **Technical Data**

Kinematics	Unit	KL12.5	KL14.5	KL18.5	KL19.5	KL25.5	KL25.5T
Design system	-	Z-kinematics	Z-kinematics	P-kinematics	P-kinematics	P-kinematics	Z-kinematics
Lifting force calculation according to ISO 14397-2 hydraulic	kN	11.5	15.8	37	32.5	32.5	32.5
Tearout force calculation as per ISO 14397-2	kN	12.2	13.3	31.7	28	28	28
Lift cylinder raising/lowering	s	6 / 4.5	6 / 4.5	4.6 / 2.9	4.8 / 3.2	4.8 / 3.2	6.7 /5
Tilt in/tilt out tilt cylinder: (upper position of the loader unit)	S	2.4 / 3.3	2.2 / 2.4	2.6 / 3.1	2.1 / 2	2.1 / 2	3.5/3
Tilt-in / tilt-out angle	0	43 / 40	43 / 40	45 / 40	43 / 45	43 / 45	30 / 40
Bucket tipping load	kg	1,200	1,400	1,800	1,980	2,340	2,500
Stacking payload S=1.25	kg	750	900	1,200 (1,360)*	1,600	1,750	1,650
Capacities	Unit						
Fuel tank	I	48	48	60	60	60	60
Hydraulic oil tank	I	40	40	58	58	58	58
Electrical system	Unit						
Operating voltage	V	12	12	12	12	12	12
Battery / alternator	Ah/A	74 / 55	74 / 55	74 / 80	74 / 80	74 / 80	74 / 80
Starter motor	kW	1.7	1.7	2.3	2.3	2.3	2.3
Noise emissions**	Unit						
Measured value	dB(A)	99	99	100.3	100.3	100.3	100.3
Guaranteed value	dB(A)	101	101	101	101	101	101
Noise level at the operator's ear	dB(A)	80	80	79	79	79	79
Vibrations***	Unit						
Vibration total value of the upper extremities of the body	m/s²	< 2.5 m/s² (< 8.2 feet/s²)					
Maximum weighted average effective value of acceleration for the body	m/s²			< 0.5 m/s² (< 1 1.28 m/s² (4.1	.64 feet/s <sup>2</sup> )**** 9 feet/s <sup>2</sup> )****		

\* with Smart Ballast (8 x 12.5 kg)

\*\* Information: The measurement occurs as per the requirements of the standard EN 474 and the directive 2000/14/EC. Measuring station: Paved surface.

\*\*\* Uncertainties of measurement as specified in ISO/TR 25398:2006. Please instruct or inform the operator of possible dangers caused by vibrations.

\*\*\*\* On flat and solid ground with the corresponding driving style

\*\*\*\*\* Application in extraction under harsh environmental conditions

# **Technical Data**

Battery	Unit	KL25.5e		
Battery technology	-	Lithium ion battery		
Battery voltage class	V	96		
Guaranteed battery service life*	Years / cycles	5 / 2,000		
Battery capacity	kWh	37.5		
On-board charging capacity**	kW	9		
Charging time 230 V / 16 A Schuko 0 - 100%	h	18		
Charging time 230 V / 16 A CEE (blue, 3-pole) 0 - 100%	h	13.4		
Charging time 400 V / 16 A CEE (red, three-phase current, 5-pole) 0 - 100%	h	5.1		
Charging time 400 V / 16 A (Type 2 plug wallbox, IEC 62196) 0 - 100%	h	5.1 (depending on charging system)		
Running time up to	h	4 hours without intermittent charging		
Electric motor				
Drive system performance S2 60 min***	kW	23.2		
Work hydraulics performance S3 15%***	kW	25.2		
Power transmission	Unit			
Drive	-	Variable electric drive system		
Travel speed	km/h	20		
Axles	-	Planetary steering axle		
Oscillating angle	0	±8		
Differential lock	%	100% front axle		
Service brake	-	Hydraulic disc brake		
Parking brake	-	Electrically operated with Hill-Hold function		
Standard tyres	-	12.0-18		

**Technical Data** 

Steering and work hydraulics	Unit	KL25.5e
Steering system functionality	_	Hydrostatic all-wheel steering with emergency steering properties
		Front wheel steering option
Functioning of work hydraulics	-	Gear pump
Steering cylinder	-	Double-acting with independent final position synchronization
Steering lock max.	0	38
Max. flow rate of pump optional	l/min	54.5
Max. pressure	bar	230
Quickhitch system	-	HV/WL - C
Pilot operation	-	Mechanical
pilot control of 3rd control circuit	-	Electro-hydraulic
Kinematics	Unit	
Design system	-	P-kinematics
Lifting force calculation according to ISO 14397-2 hydraulic	kN	32.8
Tearout force calculation as per ISO 14397-2	kN	28.1
Lift cylinder raising/lowering	s	5.3 / 3.2
Tilt in/tilt out tilt cylinder: (upper position of the loader unit)	s	1.5 / 1.8
Tilt-in / tilt-out angle	0	48 / 42
Bucket tipping load	kg	2,800
Stacking payload S=1.25	kg	1,750
Capacities	Unit	
Hydraulic oil tank	I	40
Noise emissions*	Unit	
Measured value	dB(A)	84.7
Guaranteed value	dB(A)	87
Noise level at the operator's ear	dB(A)	71
Vibrations**	Unit	
Vibration total value of the upper extremities of the body	m/s²	< 2.5 m/s² (< 8.2 feet/s²)
Maximum weighted average effective value of acceleration for the body	m/s²	< 0.5 m/s² (< 1.64 feet/s²)*** 1.28 m/s² (4.19 feet/s²)***

\* After this time, it is guaranteed that the battery will exhibit a residual capacity of minimum \*\*\*\* according to EN 60034-1 80%. The battery can still be used afterwards.

\*\* Dependent on the respective voltage source (available socket and charging cable).

\* Information: The measurement occurs as per the requirements of the standard EN 474 and the directive 2000/14/EC. Measuring station: Paved surface.

\*\* Uncertainties of measurement as specified in ISO/TR 25398:2006. Please instruct or inform the operator of possible dangers caused by vibrations.

\*\*\* On flat and solid ground with the corresponding driving style

\*\*\*\* Application in extraction under harsh environmental conditions

# **Technical Data**

KL12.5: Standard loader unit	Unit	Standard bucket with rip-out teeth	Standard bucket without rip-out teeth	Power grab bucket with rip-out teeth	Power grab bucket without rip-out teeth
Bucket capacity	m³	0.35	0.35	0.23	0.23
Material density	t/m³	1.80	1.80	1.80	1.80
Attachment total length	mm	780	685	774	678
Total vehicle length without attachment	mm	3,460	3,460	3,460	3,460
Total vehicle length with attachment tilted max. 200 mm above ground	mm	4,050	3,980	4,090	4,020
Bucket width	mm	1,250	1,250	1,250	1,250
Bucket swivel point	mm	2,800	2,800	2,800	2,800
Load-over height	mm	2,680	2,680	2,600	2,600
Dumping height	mm	2,290	2,290	2,240	2,240
Dump reach	mm	260	260	200	200
Scraping depth	mm	60	60	140	140
Weight of attachment	kg	113	109	156	151

KL14.5: Standard loader unit Unit		Standard bucket with rip-out teeth	Standard bucket without rip-out teeth	Power grab bucket with rip-out teeth	Power grab bucket without rip-out teeth
Bucket capacity	m³	0.36	0.36	0.23	0.23
Material density	t/m³	1.80	1.80	1.80	1.80
Overall length of attachment	mm	829	753	677	773
Total vehicle length without attachment	mm	3,460	3,460	3,460	3,460
Total vehicle length with attachment tilted max. 200 mm above ground	mm	4,090	4,040	4,090	4,020
Bucket width	mm	1,400	1,400	1,400	1,400
Bucket swivel point	mm	2,800	2,800	2,800	2,800
Load-over height	mm	2,680	2,670	2,600	2,600
Dumping height	mm	2,260	2,240	2,240	2,240
Dump reach	mm	290	300	200	200
Scraping depth	mm	60	70	140	140
Weight of attachment	kg	129	137	189	183

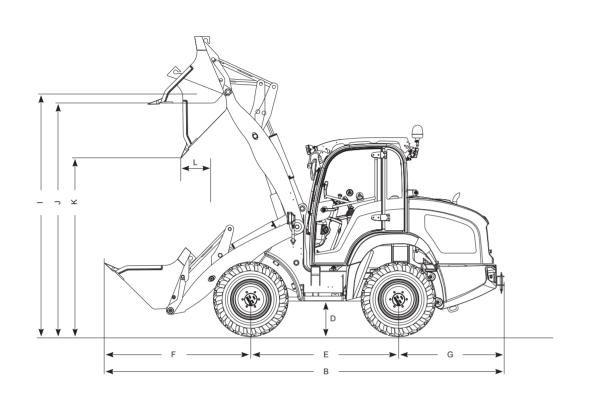
# **Technical Data**

KL25.5e: Standard loader unit	Unit	Standard bucket with rip-out teeth	Standard bucket without rip-out teeth	Standard bucket without rip-out teeth	Power grab bucket with rip-out teeth	
Bucket capacity	m <sup>3</sup>	0.65	0.65	0.80	0.57	
Material density	t/m³	1.80	1.80	1.60	1.80	
Attachment total length	mm	1,000	860	975	1,080	
Total vehicle length without attachment	mm	4,130	4,130	4,130	4,130	
Total vehicle length with attachment tilted max. 200 mm above ground	mm	5,110	5,010	5,090	5,110	
Bucket width	mm	1,650	1,650	1,850	1,650	
Bucket swivel point	mm	3,017	3,017	3,017	3,017	
Load-over height	mm	2,850	2,830	2,830	2,850	
Dumping height	mm	2,320	2,290	2,210	2,320	
Dump reach	mm	330	340	420	330	
Scraping depth	mm	110	130	130	110	
Weight of attachment	kg	244	244	291	479	

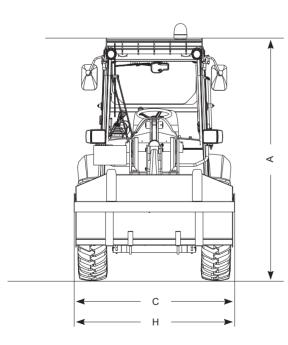
KL25.5eL: Extended loader unit Unit		Standard bucket with rip-out teeth	Standard bucket without rip-out teeth	Standard bucket without rip-out teeth	Power grab bucket with rip-out teeth	
Bucket capacity	m <sup>3</sup>	0.55	0.55	0.80	0.57	
Material density	t/m³	1.80	1.80	1.40	1.80	
Attachment total length	mm	950	820	980	1,080	
Total vehicle length without attachment	mm	4,440	4,440	4,440	4,440	
Total vehicle length with attachment tilted max. 200 mm above ground	mm	5,350	5,260	5,370	5,390	
Bucket width	mm	1,650	1,650	1,850	1,650	
Bucket swivel point	mm	3,280	3,280	3,280	3,280	
Load-over height	mm	3,080	3,070	3,070	3,080	
Dumping height	mm	2,590	2,560	2,450	2,550	
Dump reach	mm	420	420	540	450	
Scraping depth	mm	110	130	130	110	
Weight of attachment	kg	230	230	292	479	

# Dimensions

Side view



Front view



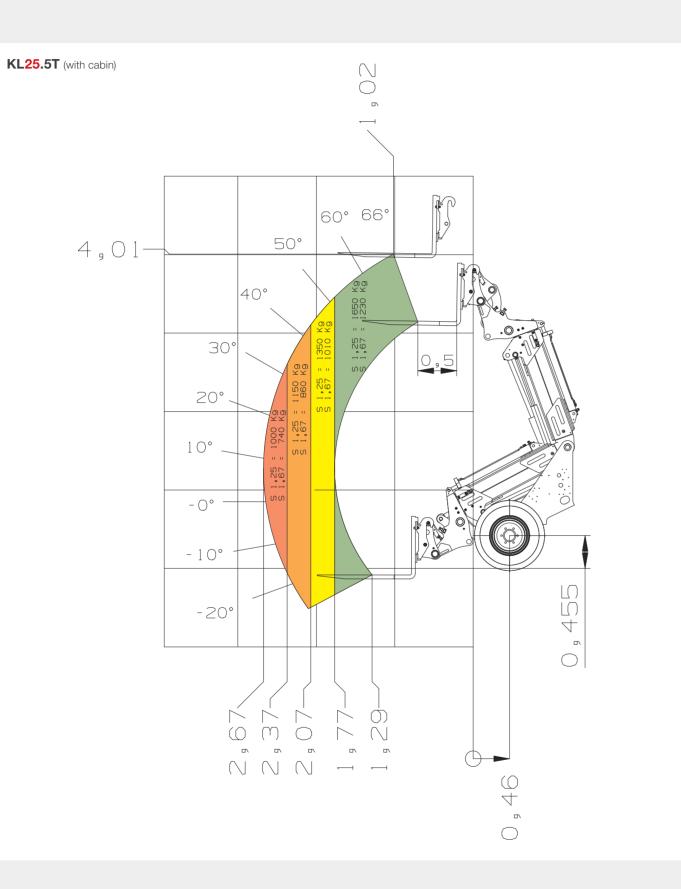
# **Dimensions**

Stand	ard equipment with standard bucket	Unit	KL12.5	KL14.5	KL18.5	KL19.5	KL25.5	KL25.5T	KL25.5e
А	Height*	mm	2,170 (standard) 2,020 (option)	2,170 (standard) 2,020 (option)	2,390	2,390	2,390	2,470	2,380
В	Length	mm	4,050	4,090	4,790	4,950	4,950	5,350	5,110
С	Width*	mm	1,260	1,260	1,590	1,590	1,595	1,595	1,600
D	Ground clearance	mm	220	290	280	280	280	280	265
E	Wheel base	mm	1,525	1,525	1,850	1,850	1,850	2,000	1,850
F	Centre of front axle to tip of teeth	mm	1,390	1,430	1,620	1,780	1,780	1,992	2,025
G	Centre of rear axle to end of vehicle	mm	1,140	1,140	1,320	1,320	1,320	1,320	1,235
н	Bucket width	mm	1,250	1,400	1,650	1,650	1,650	1,650	1,650
1	Bucket swivel point	mm	2,800	2,800	2,840	3,050	3,050	4,270	3,017
J	Load-over height	mm	2,680	2,680	2,610	2,890	2,900	4,010	2,850
К	Dumping height	mm	2,180	2,140	2,080	2,320	2,330	3,500	2,320
L	Dump reach	mm	260	290	270	315	315	810	330
-	Stacking height	mm	2,630	2,630	2,600	2,950	2,950	4,030	2,800
-	Turning radius (over tires)	mm	2,000	2,000	2,700	2,700	2,700	2,900	2,505

Standa	ard equipment with standard bucket	Unit	KL19.5L	KL25.5L	KL25.5eL
A	Height*	mm	2,390	2,390	2,380
В	Length	mm	5,140	5,140	5,350
С	Width*	mm	1,590	1,595	1,600
D	Ground clearance	mm	280	280	265
E	Wheel base	mm	1,850	1,850	1,850
F	Centre of front axle to tip of teeth	mm	1,970	1,970	2,265
G	Centre of rear axle to end of vehicle	mm	1,320	1,320	1,235
н	Bucket width	mm	1,650	1,650	1,650
1	Bucket swivel point	mm	3,300	3,300	3,280
J	Load-over height	mm	3,150	3,150	3,080
К	Dumping height	mm	2,650	2,650	2,590
L	Dump reach	mm	410	410	420
-	Stacking height	mm	3,200	3,200	3,030
-	Turning radius (over tires)	mm	2,700	2,700	2,505

\* with standard tyres

# Load-bearing capacity diagram



# Service and spare parts

Are you looking for appropriate spare parts or operating instructions for your Kramer machine? With Kramer maintenance and repair packages, there is a tailor-made spare part ready at hand for each machine. You will receive all of the required spare parts or operating instructions from our Kramer dealers. With our Kramer Dealer Locator, you can find your local dealer. Simply enter the sector, post code or residence.

#### Maintenance, diagnosis and repair

The certified technician at your distributor will ensure that your machine is back in use as quickly as possible. You can find more information about the repair and servicing of Kramer machines on our website.

#### **Original Spare Parts**

All spare parts that you can source from your Kramer dealer meet the strict requirements of our component manufacturers. Dimensional accuracy, performance, fit and availability can largely only be provided by the original part.

#### Warranty and safety

Security 24 / Security 36 / Security 48 / Security 60: With the extendable warranty to 24, 36, 48 or even 60 months, our customers can extend their carefree period. They are protected against all eventualities by tailor-made insurance coverage. Get advice from your dealer.

#### Education and training

The Kramer Academy is the modern training centre for the service technicians of the Kramer distributors. Here the mechanics learn everything they need to know to maintain Kramer machines and are constantly taught how new technical systems work. You can find more information at: **www.kramer.de/service** 



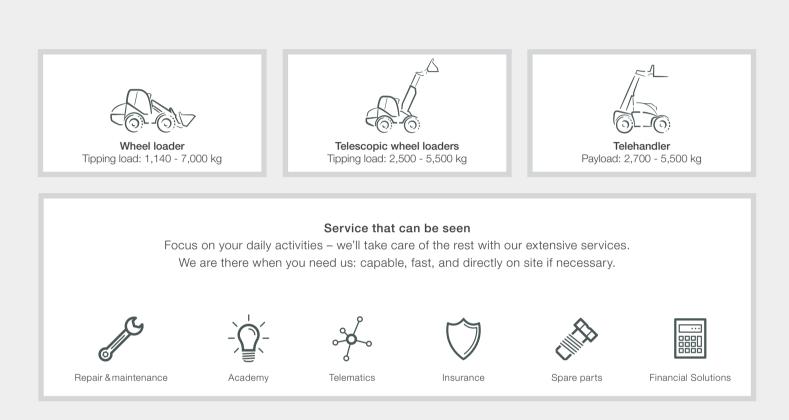






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