



Wheel loaders

## TORION

956 644 537 SINUS

738 T SINUS Telescopic wheel loader

639 535 530 Small series

**CLAAS**











With five series, there's one to match your business.

Smooth and efficient material handling is an essential part of your agricultural business. Loads ranging from tens of kilograms to several tonnes need to be moved over long or short distances, just above the ground or high overhead in keeping with the space available at each individual site. This calls for specialist equipment such as the TORION wheel loaders, which are on top of their field and precisely matched to the size of your business.

Get even more out of your business with a TORION wheel loader in the large or medium performance class. The agile, fast TORION SINUS models are specialists for moving heavy loads in tight spaces and reach impressive lifting heights in the telescopic wheel loader variant. You'll love the agility and economy of the small series in your everyday work.

- Large series: Impresses with high-end features and is ideal for handling large volumes in biogas plants or multi-company agricultural businesses.
- Medium series: Delivers outstanding flexibility in intensive livestock farming and all farmyard, clamp and field work.
- SINUS series: Impresses as a comfortable, fast all-rounder for expansive operations and performs efficiently even in tight spaces.
- Telescopic wheel loader: Combines all of the positive features of the SINUS series and reaches remarkable lift heights thanks to a bucket pivot point at 4.96 m.
- Small series: Cuts a great figure as a robust all-rounder for businesses with tight spaces and low access heights.



TORION <sup>1</sup>		Large series		Medium series			SINUS series			T SINUS telescopic wheel loaders	Small series		
													
		2014	1913	1611 P	1611	1285	956	644	537	738	639	535	530
Operating weight <sup>2</sup>	kg	20,000	19,000	15,200	15,810	13,570	9,070	6,390	5,550	7,000	5,700	4,970	4,600
Tipping load, fully articulated <sup>2</sup>	kg	12,700	11,500	9,400	10,250	8,000	5,575	4,430	3,750	3,800	3,900	3,500	3,000
Max. bucket pivot point height	mm	4,150	4,150	3,980	3,980	3,875	3,720	3,345	3,215	4,960	3,340	3,190	3,180
Rated output (ISO 14396)	kW/hp	183/249	163/222	168/228	138/188	116/158	76/103	54/73	54/73	54/73	55/74	55/74	34/46
Height over the operator's cab	mm	3,370	3,370	3,250	3,250	3,250	3,025	2,780	2,750	2,790	2,630	2,480	2,480
Width with standard tyres <sup>3</sup>	m	2.65	2.65	2.48	2.48	2.48	2.38	2.09	1.92	2.09	1.96	1.78	1.78

<sup>3</sup> Standard tyres: 2014 and 1913 / 23.5 R 25 (L3), 1611P, 1611 and 1285 / 20.5 R 25 (L3), 956 / 17.5 R 25 (L3), 644 / 405/70 R 18 (L2), 537 / 365/70 R 18 (L2), 738T / 400/70 R 20 (L3), 639 / 400/70 R 18 (L3), 535 and 530 / 340/80 R 18 (L3)

<sup>1</sup> With Z-kinematics (738 T SINUS: telescopic arm with integrated Z-kinematics), implement carrier with quick-change system and earthmoving bucket

<sup>2</sup> The values shown apply with the tyres specified above and include all lubricants, full fuel tanks, ROPS/FOPS cab and the operator. Tyre sizes and additional equipment impact on the operating weight and tipping load (fully articulated tipping load acc. to ISO 14397-1).



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TORION for your  
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# The comfortable all-rounder. TORION 956 / 644 / 537 SINUS.

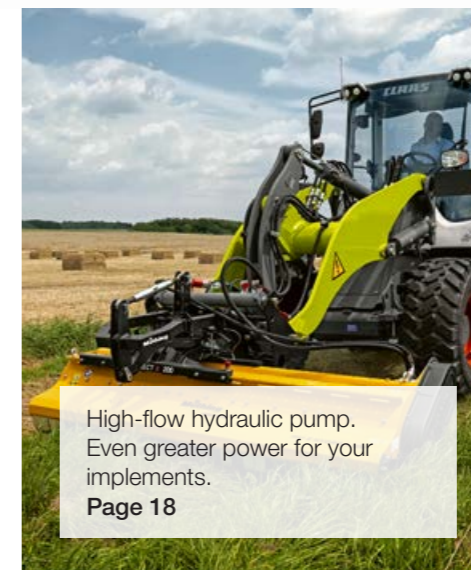


Double steering. A small turning radius and excellent stability thanks to a combination of articulated steering (30° on each side) and a steered rear axle (25° on each side).  
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SMART SHIFTING ground drive. Added agility thanks to continuous acceleration.  
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Effective damping. Greater operating comfort and outstanding protection for the machine.  
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High-flow hydraulic pump. Even greater power for your implements.  
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## Agile, fast and powerful.

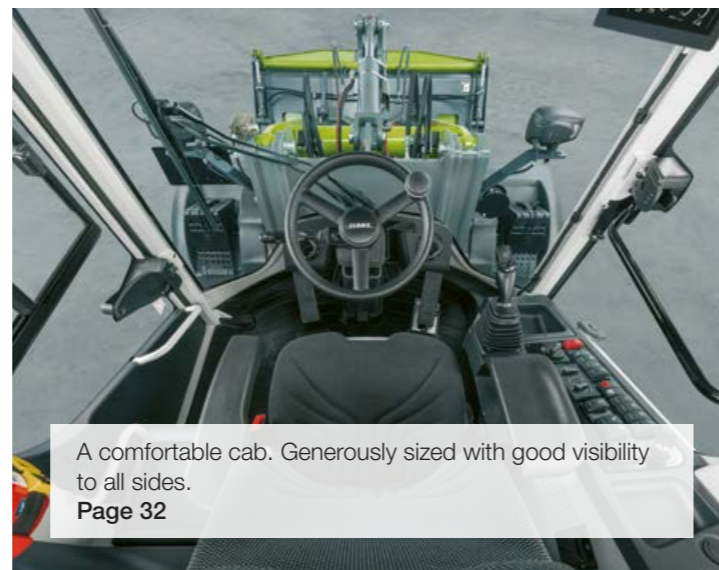
The three models in the SINUS series are the premium wheel loaders in the 5-9-ton category. With any of these machines, your business benefits from an agile, powerful all-rounder that offers the operating comfort of a top-range model and moves fast and efficiently across expansive operations.

### Start your machine and enjoy the benefits.

- SMART SHIFTING ground drive: Accelerate continuously without losing traction at any point.
- Maximum speed of 40 km/h: Save time and work more productively.
- Articulated steering and steered rear axle: Work safely thanks to a highly stable machine that needs little space for turning and performs efficiently even in constrained spaces.
- High-lift mast: With the TORION 956, you'll lift up to 4.8 t up to 4.00 m high.
- High-flow hydraulic pump: Have your implements perform at their maximum.



40 km/h maximum speed. High top speed for greater productivity.  
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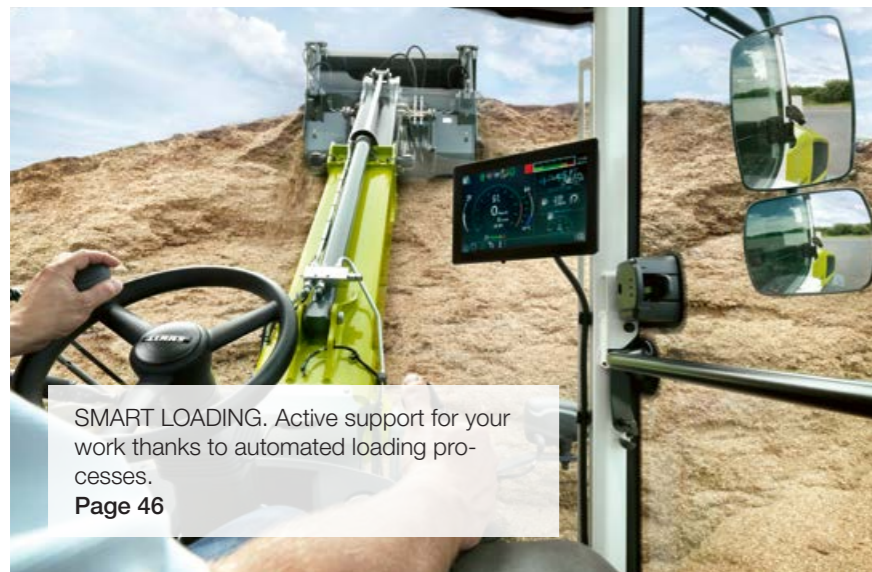


A comfortable cab. Generously sized with good visibility to all sides.  
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High-lift mast. A bucket pivot point above 4.00 m in the TORION 956 SINUS.  
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# The best of two worlds. TORION 738 T SINUS telescopic wheel loaders.



SMART LOADING. Active support for your work thanks to automated loading processes.  
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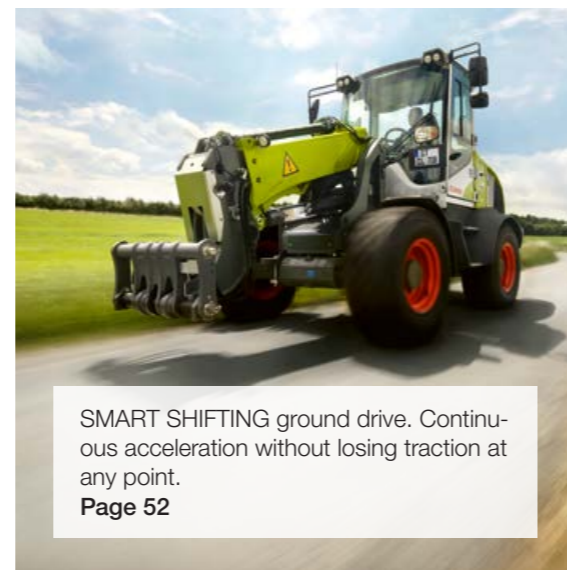
Effective damping. High operating comfort and protection for the machine.  
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Intuitive terminal. Greater comfort thanks to a customisable 9" touch screen.  
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A 4.96-m bucket pivot point. Greater unloading height combined with high stability.  
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SMART SHIFTING ground drive. Continuous acceleration without losing traction at any point.  
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SINUS steering. A small turning radius and excellent stability thanks to articulated steering (30° on each side) and a steered rear axle (25° on each side).  
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Agile and safe to great heights.

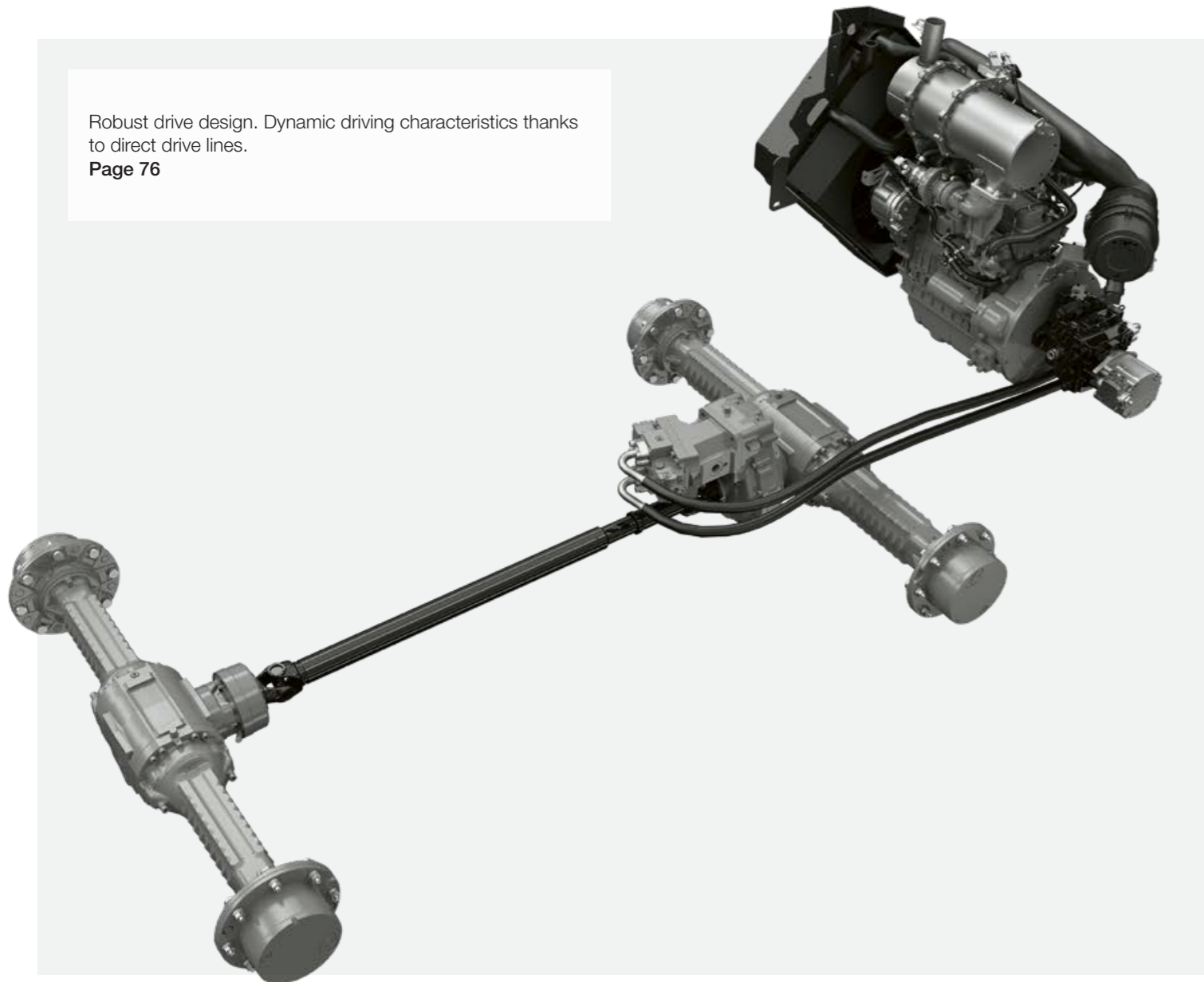
The TORION 738 T SINUS combines the agility of a double-steered SINUS wheel loader with an impressive lift height that is otherwise only achieved by telehandlers. It loads, lifts and stacks huge loads with outstanding stability and makes itself just as universally useful in expansive operations as in constrained spaces.

**Handle more and be more productive.**

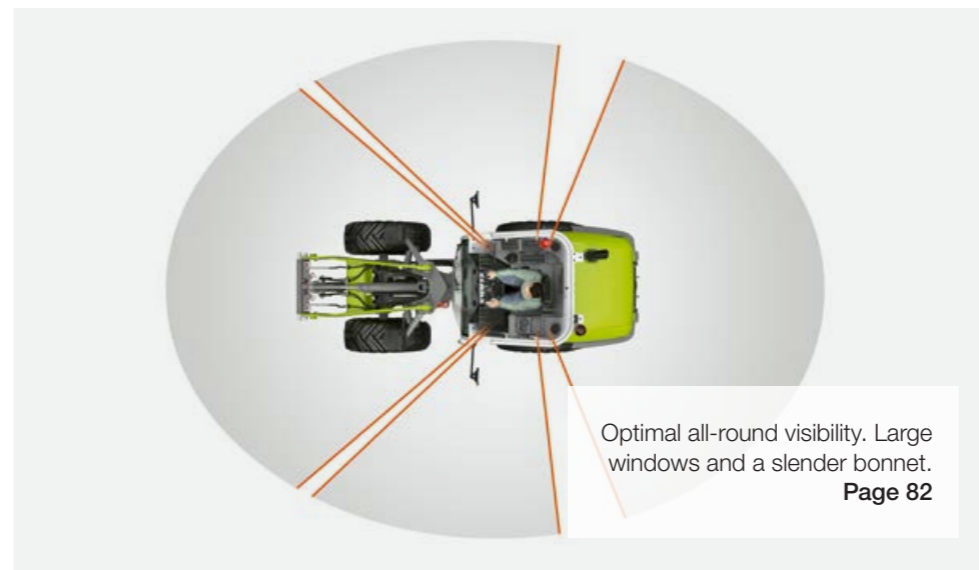
- Greater unloading height: Fully articulated, you'll be able to lift 2.3 t stably all the way to the top.
- SMART LOADING: Benefit from programmable lifting and lowering heights, automatic bucket return, automatic telescopic arm retraction and dynamic load limitation.
- SMART SHIFTING ground drive: Thanks to a two-stage, actively synchronised ground drive, you'll reach a top speed of 40 km/h continuously.
- Articulated steering and steered rear axle: You'll need little space for turning and work highly efficiently even in constrained spaces.

# A strong performer in the barn. TORION 639-530.

Robust drive design. Dynamic driving characteristics thanks to direct drive lines.  
**Page 76**



High-lift mast. Optionally greater reach and lifting height.  
**Page 68**



Optimal all-round visibility. Large windows and a slender bonnet.  
**Page 82**

Intuitive control concept. Clearly laid out displays and self-explanatory switches.  
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Optimised Z-kinematics. Safe and secure fork control across the full lifting range.  
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Small turning radius. Joint with 40° angle of articulation and 10° angle of oscillation.  
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Conical mast. Clear view of the implement and load.  
**Page 69**



## Low, powerful and robust.

The two smallest TORION models are ideal for livestock businesses or businesses growing specialist crops. These machines are specialists for transporting goods in tight, low spaces. Thanks to their compact design, they are highly stable. They can be operated intuitively even by inexperienced drivers and impress through their agility and economy.

### Climb in and get lifting.

- Robust drive design: Direct drive lines and high-quality materials make this machine incredibly reliable.
- Central articulated pendulum joint: A 40° angle of articulation, 10° angle of oscillation and low centre of gravity provide outstanding stability and agility.
- With the optionally available Z-High-Lift mast, you increase the reach and lifting height.
- Optimised Z-kinematics: Always work safely, as loads rest firmly on the fork at all times.
- Generous glazing: Enjoy unobstructed visibility all around the wheel loader. The windscreen extends all the way down to the feet, the rear window is domed, and the pillars are located towards the front.



## TORION

956 644 537 SINUS

Trust a loader unit that thinks like you.

Loader unit



#### Pile on the work.

Handling even more goods in a short period of time, stacking bales high, lifting heavy loads in tight spaces – the TORION SINUS does everything to make your day more productive. Its hydraulic system copes with any challenges. The optimised Z-kinematics provides for safe and comfortable work with a pallet fork. SMART LOADING driver assistance systems ensure efficient loading cycles and reduce operator workloads every minute of every working day.



# Lift high and work safely.

## Two lift masts for every requirement.

The higher your wheel loader's reach, the more versatile it becomes. The two larger TORION SINUS models are available with a standard mast or high-lift mast. As a result, you can reach an impressively high bucket pivot point above 4.00 m (956) or 3.78 m (644).

The effective suspension increases your driving comfort, gives greater safety when moving heavy loads and protects the machine's components.



### High-lift mast (956 / 644)

With dump-over heights of up to 3.64 m (956) or 3.45 m (644), you'll load both trucks and loader wagons with high loading sills quickly and easily.



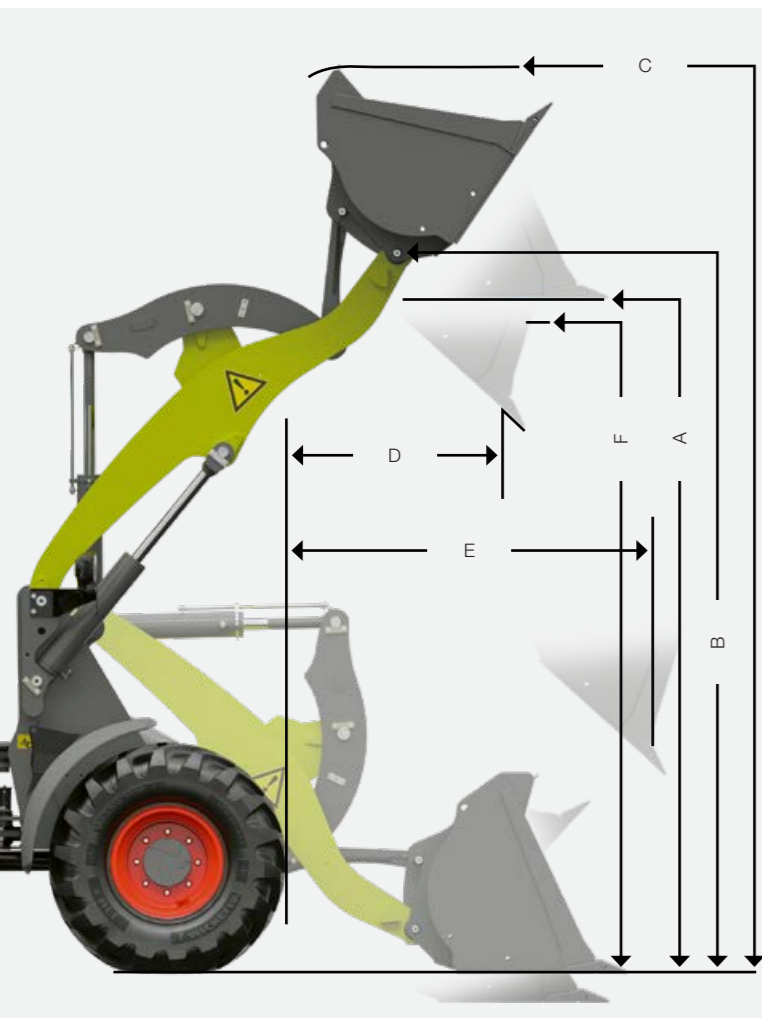
### Sturdy implement carrier (956).

- Very strong cast design
- Zero-play bearing for heavy-duty applications
- Hydraulic locking pins



### Low-maintenance implement carrier (644 / 537).

- Clean and well-protected hydraulic lock
- Durable and low-maintenance
- Good view of the front implement



### Easier work, greater productivity.

- Fitted with an earthmoving bucket, the high-lift mast gives you a maximum dump-over height of 3.64 m (956) or 3.45 m (644).
- Fully articulated, you're able to lift over 4.8 t (TORION 956 SINUS).
- With a 44° dumping angle, your maximum reach is 1.90 m.
- Robust, low-maintenance implement carriers provide a good view of the implement.
- Thanks to the optimised Z-kinematics, you always work safely, as loads rest firmly on the fork at all times.
- The mast is easily and comfortably controlled via the multi function lever or joystick.

Kinematics	TORION SINUS						
	956	644	537				
<b>Z-kinematics and earthmoving bucket</b>							
A	Max. height to bucket base	m	3.50	3.78	3.14	3.58	3.01
B	Max. bucket pivot point height	m	3.72	4.01	3.34	3.78	3.21
C	Max. height to bucket top	m	4.79	5.02	4.26	4.68	4.04
D	Reach at max. lift height and 42° dumping angle	m	0.78	0.86	0.91	0.87	0.81
E	Max. reach at 42° dumping angle	m	1.63	1.91	1.64	1.93	1.50
F	Dump-over height	m	3.37	3.64	3.00	3.45	2.87
	Max. tipping load, fully articulated	t	5.57	4.82	4.43	3.75	3.75
	Breakaway force	kN	68	70	55	59	48
<b>Z-kinematics and pallet fork</b>							
	Max. lift height	m	3.57	3.86	3.17	3.61	3.04
	Max. reach	m	1.46	1.70	1.33	1.64	1.23
	Reach at max. lift height	m	0.61	0.64	0.57	0.50	0.52
	Max. tipping load, fully articulated	t	4.12	3.64	3.50	3.09	2.93
	Payload on uneven ground	t	2.47	2.18	2.10	1.85	1.82
	Payload on level ground	t	3.30	2.90	2.50	2.47	2.30

STD = standard mast, HL = high-lift mast



## Powerful working hydraulics.

Whether pushing or lifting heavy loads or loading with precision, the hydraulic system of the TORION SINUS provides all the power you need for your implements. All models can be equipped with up to two additional hydraulic circuits.

### High-flow hydraulic pump for greater power.

If you work with implements such as hydraulically driven sweepers or mulchers, which require high volumes of oil, simply activate the high-flow hydraulic pump via an in-cab switch. The TORION 644 SINUS then delivers 31 l/min greater hydraulic capacity and the TORION 537 SINUS 35 l/min more.

- TORION 956 SINUS: 115 l/min as standard
- TORION 644 SINUS: 93 l/min as standard, 121 l/min with high-flow
- TORION 537 SINUS: 70 l/min as standard, 105 l/min with high-flow



### The right output for every job.

- A powerful hydraulic system for your everyday work
- High-flow hydraulic pump for more power when working with demanding hydraulic applications
- Easy operation via the joystick or multifunction control lever

### Easily accessible hydraulic connections.

Both the front and rear are equipped with hydraulic connections with quick couplers. The front additionally features a pressure-free return line and an additional leakage oil line with connection to the implement carrier. In the TORION 956 SINUS, a variant with pressure-free return is also available in addition to the double-acting hydraulic circuit.



All connections are easily accessible and well-protected on the implement carrier (956)



Pressure-free return at the front and an additional leakage oil pipe with connection to the implement carrier (644 / 537)



TORION 956 SINUS optionally with a pressure-free hydraulic return at the rear

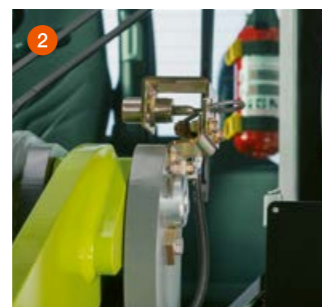


SMART LOADING optimises the loading process.

The lift limit stop and bucket return provide support when handling large weights with repetitive operations. You are able to speed up the loading cycle by predefining the machine's required mast and bucket positions.

The lift limit stop ensures that the mast stops at precisely the dumping height and bottom position you have set. Once this is defined, all you need to do is to move the multifunction control lever to bring the mast into the correct position.

The automatic bucket return is ideal for loading operations where the bucket needs to be returned repeatedly to a certain position near ground level. Once defined, the bucket is automatically moved into this position during loading operations.



The bucket return (1) and lift height limiter (2) can be set mechanically for each individual implement

**Active support.**

- It's quick and easy to set the required loading positions.
- The bucket is automatically moved into the defined positions.

- Reduced operator movements take strain off the arm and hand, and operators work precisely, safely and without fatigue.
- Your loading cycles become more efficient.
- Your implements are exposed to less wear.

Precisely the output you need.

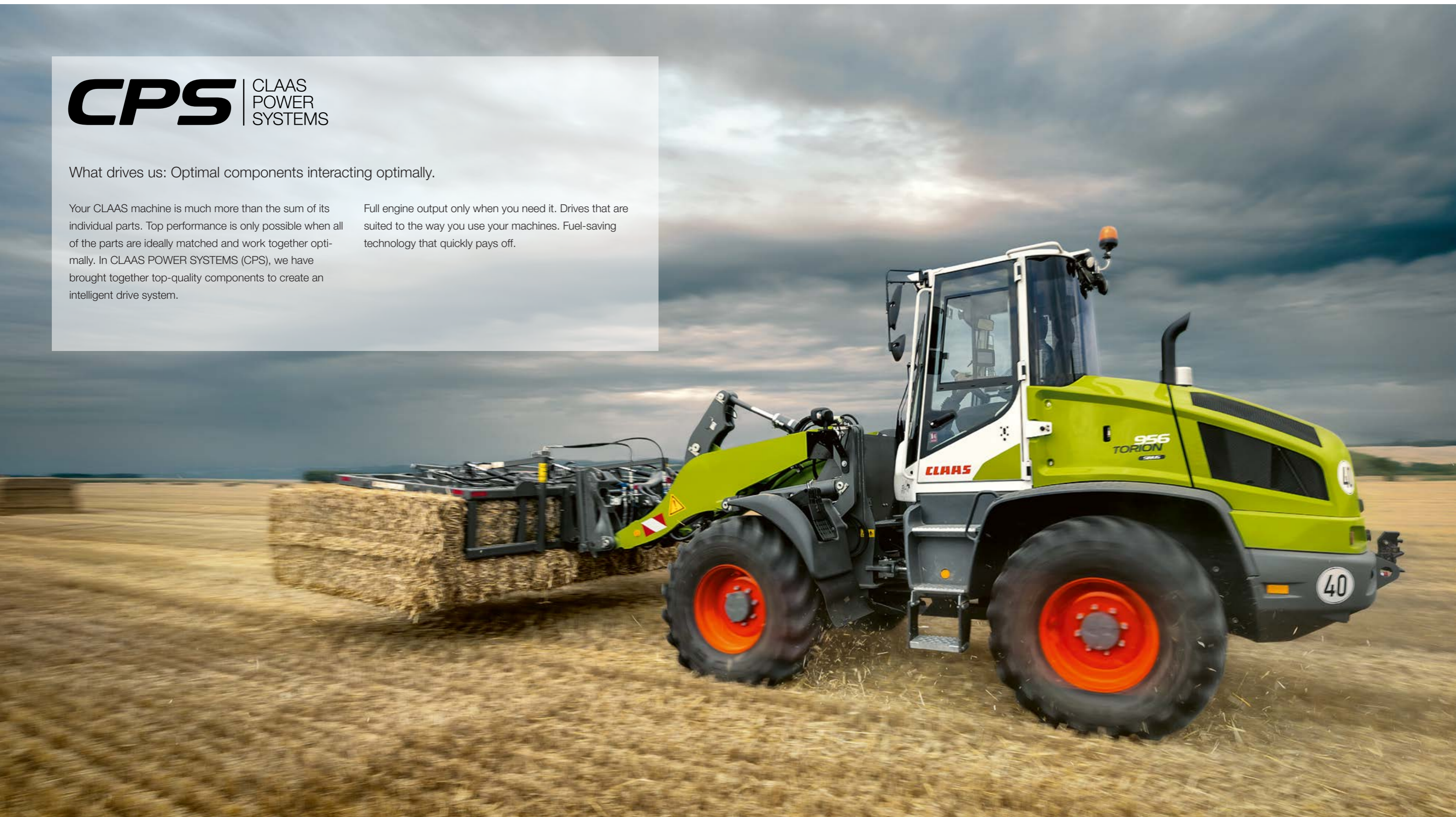
# CPS

CLAAS  
POWER  
SYSTEMS

What drives us: Optimal components interacting optimally.

Your CLAAS machine is much more than the sum of its individual parts. Top performance is only possible when all of the parts are ideally matched and work together optimally. In CLAAS POWER SYSTEMS (CPS), we have brought together top-quality components to create an intelligent drive system.

Full engine output only when you need it. Drives that are suited to the way you use your machines. Fuel-saving technology that quickly pays off.





## Powerful, economical and clean.

With the TORION SINUS, you and your business get a wheel loader that delivers a lot and consumes little. Its compact design, low operating weight and efficient engines all help ensure that you work economically even in heavy-duty operations.



## Robust 4-cylinder engines.

The TORION 956 SINUS features a 4-cylinder DPS engine, which delivers 78 kW (106 hp). The two TORION 644 and 537 SINUS models are powered by 4-cylinder Yanmar engines delivering 54 kW (73 hp). All engines have wastegate turbochargers, which significantly improve the dynamics of the ground drive.

Each TORION SINUS meets the requirements of the Stage V emission standard. In the TORION 956 SINUS, the exhaust gas aftertreatment comprises a diesel particulate filter (DPF) with integrated diesel oxidation catalytic converter (DOC) and SCR technology. The urea tank has a capacity of 18 l and is installed centrally, as is the 155-l fuel tank. In the TORION 644 and 537 SINUS, exhaust gas aftertreatment comprises a diesel particulate filter (DPF) and integrated diesel oxidation catalytic converter (DOC).

## Ideal weight distribution.

The engine position is only one of numerous factors that contribute to the excellent stability of the TORION SINUS. The engine is mounted at the rear and thus also acts as a counterweight.

## A clean radiator.

The TORION SINUS cleans the radiator and radiator intake surfaces automatically via a reversible fan. The fan reverses its direction of rotation at regular intervals and blows coarse dirt particles and fine dust out of the system.

The radiator's air filter is located directly behind the cab, where it is well protected against dust and dirt. If you regularly work in dirty environments, the installation of an optional air filter cyclone is recommended to pre-clean the air intake.

## Many benefits under the hood.

- Clean Stage V engines deliver high performance and low consumption.
- Wastegate turbochargers improve the driving dynamics.
- The radiator and radiator intake surfaces are cleaned automatically.
- The rear-mounted engine increases stability.



# You'll enjoy SMART SHIFTING.



## Continuous acceleration.

The powerful lifting capacity of the TORION is equalled by its ease on the move. You'll love its agility and driving dynamics. The two-level, actively synchronised SMART SHIFTING ground drive allows you to accelerate continuously without ever losing traction. With a top speed of 40 km/h, you'll get to your destinations faster even over longer distances.

## Hydrostat with two driving ranges.

The TORION SINUS features a hydrostatic drive system combined with a 2-gear transmission. You select the driving range with a switch and then have infinitely variable control of the speed via the ground drive pedal. Jarring gear changes with an associated loss of traction are now a thing of the past.

Driving range	Speed ranges
F1	0-18 km/h
F2	0-40 km/h

## 40 km/h maximum speed

The speed of the TORION SINUS is unparalleled among wheel loaders in this weight category. You'll save lots of time if there are large distances between your locations or barns. The ground speed can be limited to 18 km/h when working in tighter spaces.



In the TORION 956 SINUS, an automatic self-locking differential ensures reliably good traction even in challenging terrain. In the TORION 644 and 537 SINUS models, the locking differential can be activated manually.

## Enjoy better driving dynamics.

- Thanks to its actively synchronised SMART SHIFTING ground drive, the TORION is both agile and dynamic.
- Accelerate continuously without losing traction.
- Choose between two ranges.
- A maximum speed of 40 km/h increases your materials handling performance in expansive operations.
- Locking differentials improve traction, prevent wheel slip and protect your tyres.

# Double steering and twice the lifting performance.

## Small turning radius.

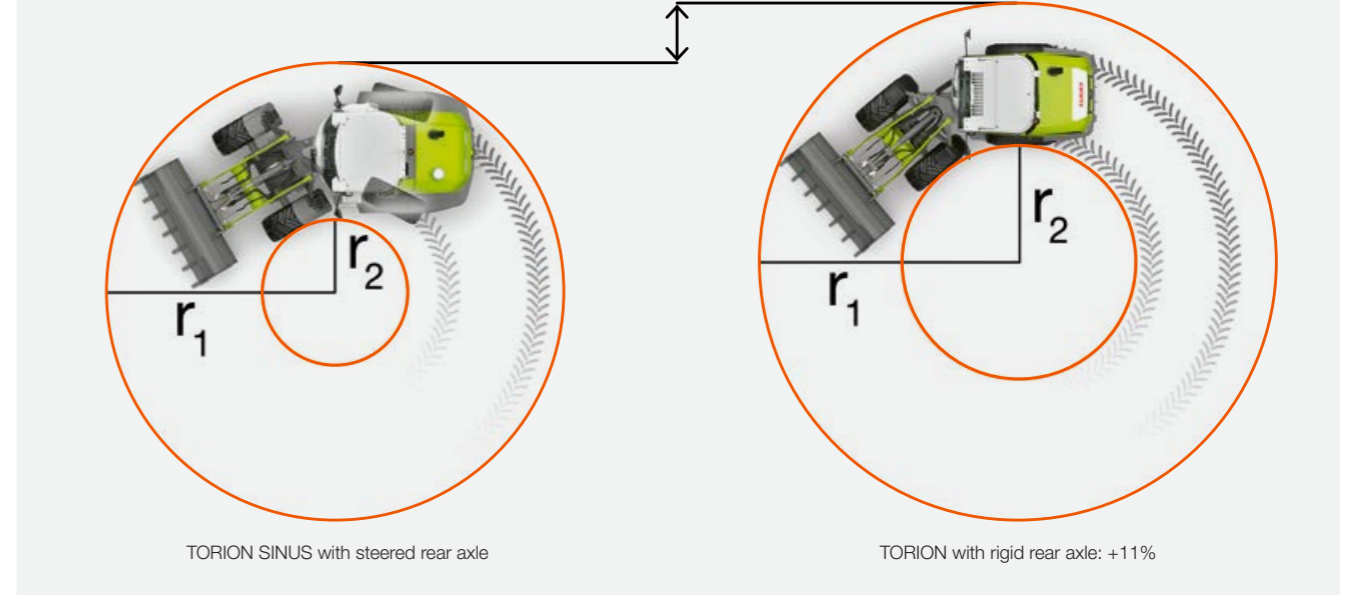
Businesses working in constrained spaces need agile wheel loaders with high payloads and maximum stability and protection against tipping.

That's precisely what the chassis of the TORION SINUS is designed for. The machine is steered not only via the central articulated pendulum joint, but also via the rear axle. The front chassis is connected to the rear stub axles via two steering rods. As soon as you articulate the wheel loader from the steering wheel, the rear axle is also steered in sync.

You'll feel the benefits in every operation. You'll need less turning space than with a wheel loader without steered rear axle. You are safely protected against tipping even when working on uneven terrain, and you'll handle tightly constrained spaces with ease. Because the TORION SINUS articulates less even at the maximum steering angle, it is considerably more stable and can handle heavier loads.



## Small turning radius.



## Twice the steering.

The combination of articulated pendulum joint and Ackermann steering is what makes the TORION SINUS so agile. The robust, durable articulated pendulum joint pivots 30° towards either side, and the rear axle allows up to 25° towards either side.

This large angle of oscillation ensures great stability even if the wheel loader twists towards the side on uneven ground. The TORION 644 and 537 SINUS pivot 8° towards each side at the centre. The TORION 956 SINUS provides for a 5° angle of oscillation at the centre plus an additional 5° at the rear axle, thanks to preloaded rubber dampers.

## Effective damping.

The TORION SINUS features a number of damping elements to increase your driving comfort and protect the machine during use.

These include oscillation damping and a set of layer springs in the articulated pendulum joint to dampen shocks and support the ground contour following of the wheel loader. This also ensures that the machine does not contort as it oscillates. Rubber dampers in the articulated pendulum joint prevent the front chassis from impacting against the rear chassis. Rubber elements in the articulated pendulum joint assist in returning the steering to its central position.

SINUS		956	644	537
Wheelbase	m	2.60	2.15	2.15
Outside turning radius at the bucket edge (r1)	m	4.45	4.22	3.88
Inside turning radius with standard tyres (r2)	m	1.53	1.49	1.42

The SINUS models with double steering achieve these small turning circles with steering angles of 30° at the centre and 25° at the rear.

## Stay agile even in tight spaces.

- Lift more with greater stability thanks to the unique SINUS chassis.
- Stay agile in any conditions thanks to double steering.
- Effective oscillation dampers ensure high driving comfort.

You'll feel the comfort.

Plenty of room for relaxed work.

The spacious, ergonomic comfort cab provides the optimal environment for you to operate comfortably, safely and productively every working day. The workspace is thoroughly thought-out down to the detail and impresses with plenty of space around the head and legs. All controls are easily reached, and the cab offers excellent all-round visibility thanks to generous windows.





## More comfort at work.

When you feel comfortable and safe inside a machine, you'll work at your best. The cab of the TORION SINUS is designed for fatigue-free work. It impresses with plenty of space, extensive comfort features and excellent all-round visibility.

### Greater comfort, less strain.

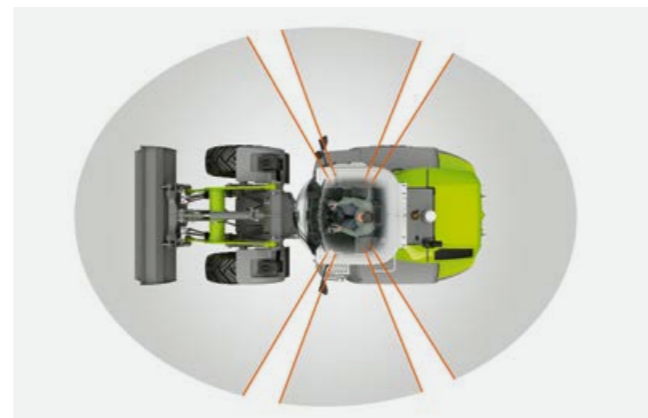
For more productive work, leave any stress behind as you enter the cab. A heated seat with air suspension and a high back rest offers maximum comfort. The steering wheel can be adapted to individual preferences via the three positions of the adjustable steering column. The multifunction control lever or joystick is integrated into the right armrest and moves with the seat.

### Safety counts.

If you need to move a wheel loader in tight spaces, you know how important it is to have an unrestricted view of the equipment and surroundings. With a generous windscreen, only four slim pillars and a slender bonnet design, the TORION SINUS provides 360° visibility.

Up to eight LED or halogen work lights and backlit controls support you during work at night or in poorly lit buildings.

Visual and acoustic alerts such as the reversing horn substantially improve operating safety.



### Work comfortably and safely.

- Spacious cab and extensive comfort features for fatigue-free work
- Excellent view of equipment and surroundings

- Powerful work lights for precise work in the dark
- Visual and acoustic alerts for greater operating safety

- Enjoy an unrestricted view to all sides thanks to only four slender cab pillars.
- The tall windscreen gives a good view of the front wheels.
- The high cab roof provides plenty of space around the head and a spacious feeling.
- Adjust the steering wheel to your preference thanks to three steering column positions.

- Operate the mast comfortably thanks to the multi function lever or joystick directly on the driver's seat.
- The cab offers plenty of storage space and options.
- The heated, air-suspended low-frequency seat provides excellent comfort.
- The easily adjustable air conditioner maintains temperatures precisely.
- The level cab floor is easy to clean.



### Easy to use.

The multifunction control lever moves with the seat and allows you to control the lift mast and implement intuitively. The robust toggle switches are illuminated as soon as you have activated the respective function. The air conditioning controls are integrated into the control unit.

### Comfortable to operate every time, every use.

Apart from the general comfort features in the cab, it is the ergonomic layout of the instruments and the intuitive operation that are decisive for the quality of work achieved. Everything in the TORION SINUS, from the multifunction control lever to the control unit and information system, is designed with functionality in mind to ensure that you operate it with ease from the very first use.

### You'll feel at home in this machine in no time.

- All functions are easily accessible on the right-hand side
- Clearly laid out 7" terminal in the TORION 956 SINUS
- On-board computer with colour display in the TORION 644 / 537 SINUS

The control unit for the machine and safety functions is easily accessible on the right-hand side. Each control is operated via a robust switch to ensure that you can always act quickly and directly.

### Everything at just the right place.

Both the ergonomic joystick and the optional multifunction control lever are integrated into the armrest. These controls move with the seat and are therefore always safely and comfortably at your fingertips.



### Clearly laid out 7" terminal (956).

The height-adjustable 7" colour terminal in the TORION 956 SINUS keeps you informed about all key parameters. All machine data relevant for operation are quick and easy to read and adjust. The video feed from the rear camera is integrated.



### Self-explanatory 3" on-board computer display (644 / 537).

The TORION 644 and 537 SINUS models feature a 3" colour on-board computer display to keep you informed with all relevant information in a compact format. All icons in the display are self-explanatory and easy to read.



## Maintenance reduces both wear and costs.

Ease of access is decisive for all maintenance works. Everything that is difficult to reach or even just to inspect is often forgotten about or ignored. The faster you can access maintenance points, the less time-consuming and costly your service works will be.



13-pin rear socket for use with a trailer



### Automatic central lubrication.

Regular lubrication reduces wear. The automatic central lubrication system ensures that all maintenance intervals are scrupulously observed. Lubrication cycles can be adapted to your operating conditions via the display or keyboard, with a choice of three cycles.

The central lubrication tank is located in the entry area, where you can easily inspect fill levels every day. If the level falls below the recommended minimum, an LED alert lights up on the keypad. Lubrication can be applied manually at any time between intervals at the push of a button.



### Easily accessible on-board electronics.

The TORION SINUS is equipped with a 13-pin socket at the rear for operating a trailer. Another 7-pin socket is located right at the front at the light bracket.

### Low-maintenance radiator assembly.

All components of the radiator assembly are designed very robustly to ensure that they handle long maintenance intervals well. This also applies to the air filter. An (optional) air filter cyclone cleans the air intake so that the air filter stays cleaner throughout operation.



### Easy access.

All key locations in the TORION SINUS are safely, easily and cleanly accessible – while standing on the ground. All inspection points and fluid levels are easily visible. The clearly laid out components in the engine compartment are easily reached.

### Quick and easy maintenance.

- All key locations are easily accessible.
- An automatic central lubrication reduces wear.
- The radiator and air filter have long maintenance intervals.



## TORION

738 T SINUS telescopic wheel loader

Your loader unit has everything under control.



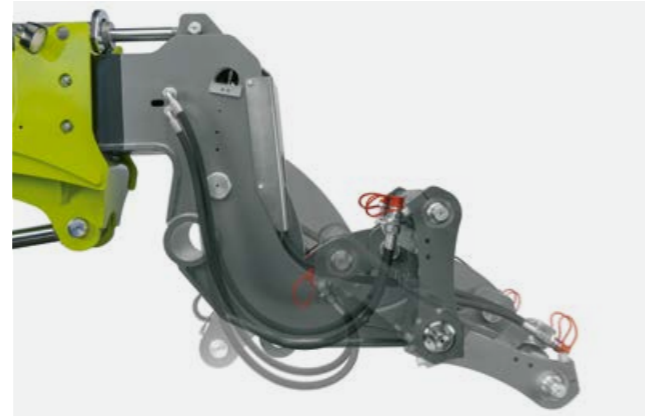
4.96 m with dynamic load limitation.

No other wheel loader stacks goods as high and as safely as the TORION 738 T SINUS. Its bucket pivot point is at an impressive 4.96 m. The hydraulic system lifts 2.3 t payload across the full lifting range. The dynamic load limitation automatically regulates the loading process whenever you move within the critical range.

## Bucket pivot point at a height of 4.96 m

The robust telescopic arm with integrated Z-kinematics is designed for ultimate loads. In terms of tipping load, payload, range and dump-over height, this wheel loader opens up entirely new dimensions thanks to its stable design.

- 3,800 kg maximum articulated tipping load
- 2,300 kg maximum payload of the loading fork
- 2.69 m maximum reach of the loading fork
- 4.80 m maximum lift height of the loading fork

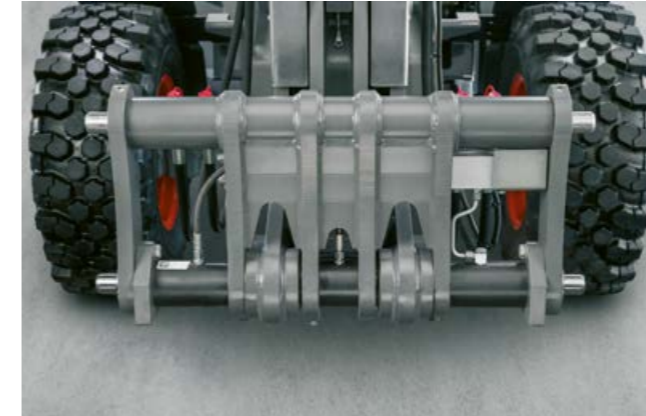


## Z-kinematics with optimised self-levelling linkage.

The impressive Z-kinematics delivers not only maximum breakaway forces and rapid dumping speeds, but also safe and secure fork control. The fork tilts back slightly as it is raised, so that loads are always firmly supported and cannot slide off.

## Ingenious implement carrier.

The implement carrier is designed as a compact unit. The bucket pivot point and locking point are on one line. The carrier is almost frameless and provides an optimal view of all coupling points. The hydraulic quick-attachment system allows you to switch between implements in no time.



## The specialist for high demands.

- Greater unloading height with a 4.96-m bucket pivot point
- Greater payload thanks to a very stable design
- Greater flexibility with a quick-attachment system
- Greater comfort with end-position damping

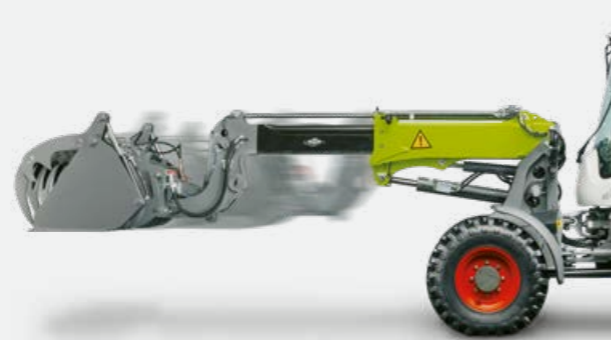
The implement carrier supports an angle of rotation of 172°. When working with a bucket, this means that the bucket is always completely filled at the bottom and completely emptied at the top. An intensive suspension increases your driving comfort, gives greater safety when moving heavy loads and protects the machine's components.

## Powerful lifting performance and high loading comfort.

The powerful telescopic arm delivers impressive lifting heights and large ranges. Even heavy loads can be stacked easily and

safely. You do not need to make manual adjustments, and there are no losses of loads.

With the (optional) end-position damping, which can be set from the terminal, you'll load comfortably and gently in any situation. You can fill and dump the bucket at top speed, and the end-of-travel damping ensures that the machine suffers virtually no shocks.



## Unrivalled specifications.

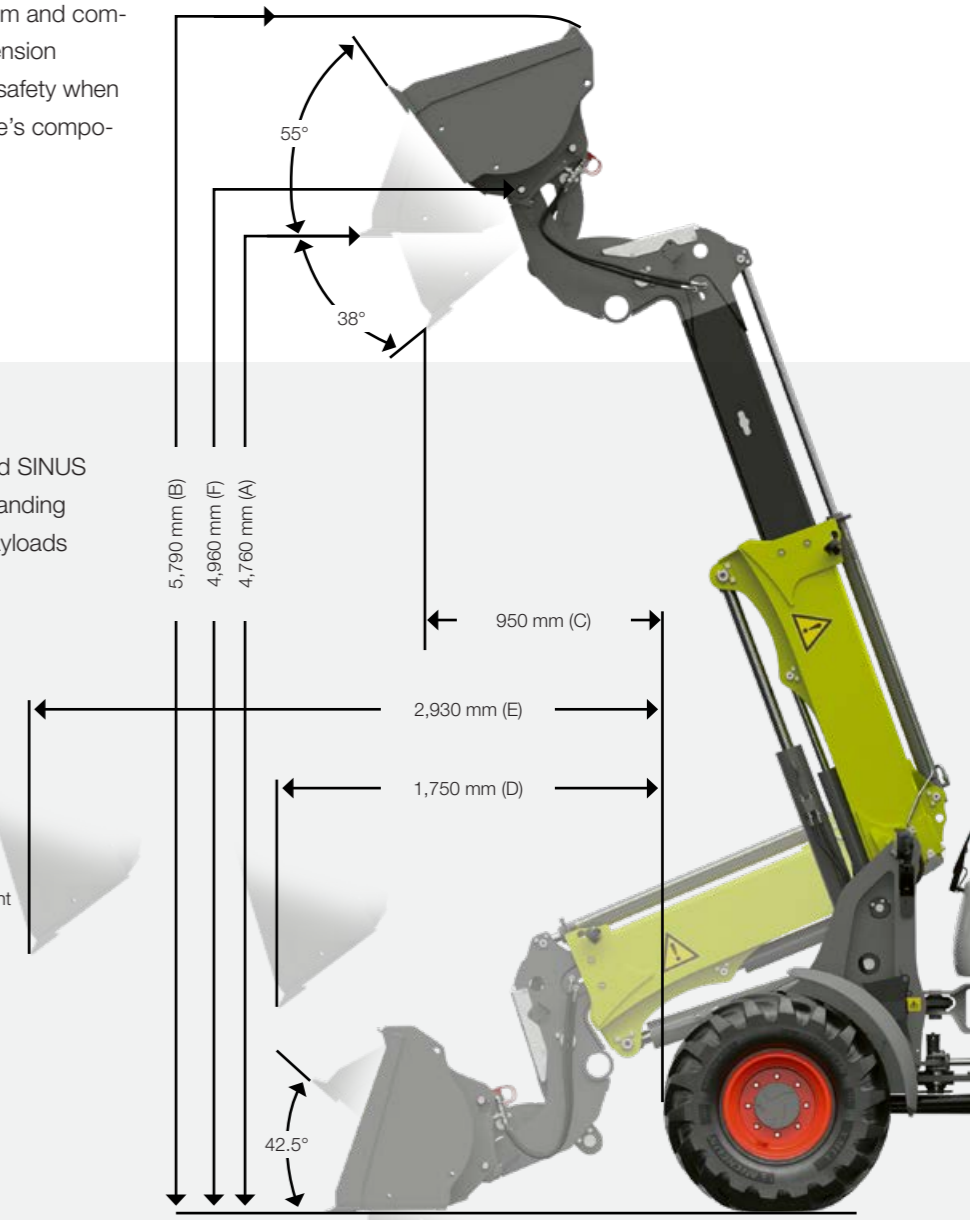
Its engine mounting position, construction and SINUS steering give the TORION 738 T SINUS outstanding stability in any terrain, enabling it to handle payloads that are unrivalled in its category:

- 2.3 t up to a height of 4.70 m
- 1.3 t up to a width of 2.90 m

## TORION 738 T SINUS.

With Z-kinematics, implement carrier with quick-attachment system and earthmoving bucket.

- A Max. height to bucket base
- B Max. height to bucket top
- C Reach at max. lift height and 38° dumping angle
- D Max. reach at 42° dumping angle
- E Max. reach at 42° dumping angle, fully extended
- F Max. bucket pivot point height
- Max. digging angle 42.5°, max. dumping angle 55°



## Powerful working hydraulics.

Handling heavy loads, lifting them high and far and loading with precision – the hydraulic system of the TORION 738 T SINUS provides you with plenty of power for your implements. Its telescopic arm houses two independent hydraulic circuits whose hoses can be replaced without you needing to remove the boom.

### More hydraulic power for implements.

If you frequently use implements that require high volumes of oil, for example hydraulically driven sweepers or mulchers, you can equip the TORION 738 T SINUS with a high-flow hydraulic pump. As a result, you'll have 31 l/min greater hydraulic capacity.

- Maximum supply volume in the standard version: 93 l/min
- Maximum supply volume with high-flow: 121 l/min
- Maximum operating pressure: 230 bar

The high-flow hydraulic pump is conveniently activated as required via a switch in the cab.

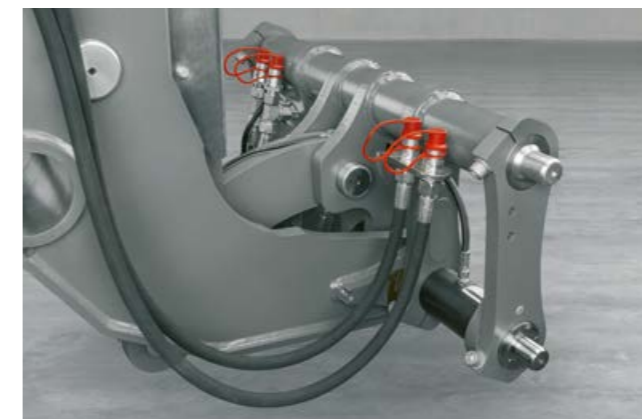


### The right output for every job.

- A powerful hydraulic system for your everyday work
- Optional high-flow hydraulic pump for more power in heavy-duty applications
- Easy control of hydraulic functions via the joystick or multifunction control lever

### Easily accessible hydraulic connections.

The TORION 738 T SINUS offers an adequate number of hydraulic connections with quick-release couplers. At the rear, you'll find a double-acting hydraulic connection for operating the hydraulic functions of your implements. A third and fourth hydraulic control circuit are provided at the front together with a pressure-free return line and an additional leakage oil line on the implement carrier.



Additional control circuits are optionally available for the front and rear



## Optimise your loading processes.

SMART LOADING is an assistance system that comes into its own when handling heavy weights with repetitive operations. You only need to define your preferred lift mast and bucket positions once to speed up your loading cycles. These posi-



tions are then easily activated from the multifunction control lever or joystick or by just pressing a button. Uniquely in this category, the dynamic load limitation automatically regulates the loading process whenever you move within the critical range.

### Four ways in which SMART LOADING reduces strain.

- 1 Lifting and lowering height limiter (programmable)
- 2 Automatic bucket return position
- 3 Dynamic load limitation
- 4 Display of the mast and implement carrier position on the terminal



### Programmable lifting and lowering height limiters (2).

The combination of a programmable lowering height and the automatic retraction of the telescopic arm is unique on the market. The lifting and lowering height limiters ensure that the mast stops at precisely the dumping height and bottom position you have set. Once this is set, all you need to do is to move the multifunction control lever to bring the mast into the correct position. The mast and bucket position are displayed on the 9" touchscreen. Thanks to the dampened mast end points, your loading processes are essentially shock-free. The end-position damping of the lifting and tipping kinematics can be set individually.

### Automatic bucket return.

The automatic bucket return is ideal for loading operations where the bucket needs to be returned repeatedly to a certain position near ground level. The bucket is then automatically moved into this position, which can be defined individually for each bucket type, during loading operations.



### Dynamic load limitation (1).

The TORION 738 T SINUS supports you with dynamic load limitation to ensure that you always work safely even when performing challenging loading tasks. The load limitation is integrated into the machine controls and responds reliably whenever you enter critical ranges.

Angle and pressure sensors in the loader unit monitor your loading operations continuously. Whenever you approach the safety limit, the machine automatically and dynamically slows down its movement through to a soft stop. The load is lowered slowly, and abrupt braking movements, which could cause pitching or bouncing, are therefore avoided. The current load state is displayed on the 9" colour touchscreen. This allows you to monitor the utilisation of your machine's capacity at all times.



The lifting and lowering height limits are displayed on the 9" touchscreen

### Active support.

- The machine automatically regulates the loading process within the critical range.
- Preferred loading positions are activated automatically.
- Your loading cycles become substantially more efficient.
- You work safely and without fatigue.



A drive line to match your challenges.



What drives us: Optimal components interacting optimally.

Your CLAAS machine is much more than the sum of its individual parts. Top performance is only possible when all of the parts are ideally matched and work together optimally.

In CLAAS POWER SYSTEMS (CPS), we have brought together top-quality components to create an intelligent drive system. Full engine output only when you need it. Drives that are suited to the way you use your machines. Fuel-saving technology that quickly pays off.

**CPS** | CLAAS  
POWER  
SYSTEMS

# High performance and low consumption.

## Powerful, economical and clean.

With the TORION 738 T SINUS, you and your business get a telescopic wheel loader that delivers the power to make your daily work easier.

Its compact design, low operating weight and efficient engines all help ensure that you work economically even in heavy-duty operations.

### Robust 4-cylinder engines.

The TORION 738 T SINUS is powered by a 4-cylinder Yanmar engine with an output of 54 kW (73 hp).

The engine complies with the Stage V emission standard and features a wastegate turbocharger, which significantly improves the ground drive dynamics.

Exhaust gas aftertreatment comprises a diesel particulate filter (DPF) with integrated diesel oxidation catalytic converter (DOC).

### Ideal weight distribution.

The engine position is only one of numerous factors that contribute to the excellent stability of this telescopic wheel loader. The engine is mounted at the rear and thus also acts as a counterweight.



### Plenty of power under the hood.

- The clean Stage V engine delivers high performance and low consumption.
- The wastegate turbocharger improves the driving dynamics.
- The radiator and radiator intake surfaces are cleaned automatically.
- The rear-mounted engine acts as a counterweight and increases stability.

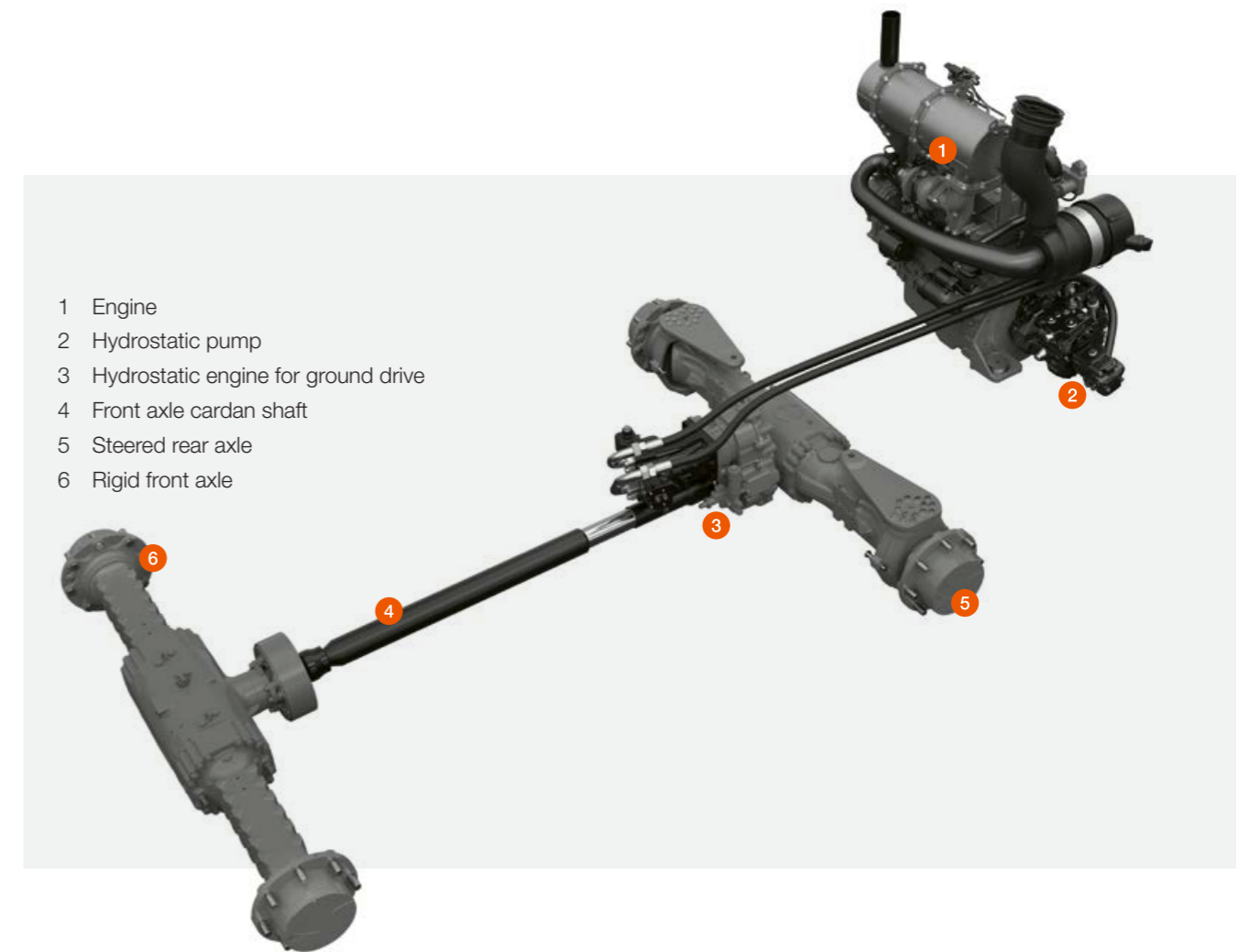


### A clean radiator.

The TORION 738 T SINUS cleans the radiator and radiator intake surfaces automatically via a reversible fan. The fan reverses its direction of rotation at regular intervals and blows coarse dirt particles and fine dust out of the system.

The radiator's air filter is located directly behind the cab, where it is well protected against dust and dirt. If you regularly work in dirty environments, the installation of an optional air filter cyclone is recommended to pre-clean the air intake.

SMART SHIFTING makes you a lot faster.



**40 km/h maximum speed**

Get your jobs done faster with the TORION 738 T SINUS. You'll save lots of time if there are large distances between your locations or barns. The ground speed can be limited to 20 km/h when working in tighter spaces.

The locking differential, which can be activated manually in critical situations, ensures excellent traction even in difficult terrains.

**Continuous acceleration.**

The powerful lifting capacity of the TORION 738 T SINUS is equalled by its ease on the move. You'll love its agility and driving dynamics. The two-level, actively synchronised SMART SHIFTING ground drive allows you to accelerate continuously without ever losing traction. With a top speed of 40 km/h, you'll get to your destinations faster even over longer distances.

**Hydrostat with two driving ranges.**

The TORION 738 T SINUS features a hydrostatic drive system combined with a 2-gear transmission. You select the driving range with a switch and then have infinitely variable control of the speed via the ground drive pedal. Jarring gear changes with an associated loss of traction are now a thing of the past.

Driving range	Speed ranges
F1	0-20 km/h
F2	0-40 km/h

**Enjoy better driving dynamics.**

- Thanks to its actively synchronised SMART SHIFTING ground drive, this machine is both agile and dynamic.
- Accelerate continuously without losing traction at any point.
- Choose between two ranges.
- A maximum speed of 40 km/h increases your materials handling performance in expansive operations.
- Locking differentials improve traction, prevent wheel slip and protect your tyres.



When it's a long way between jobs, the TORION 738 T SINUS moves swiftly between locations at a ground speed of up to 40 km/h.



## Small turning radius.

Businesses working in constrained spaces need an agile telescopic wheel loader with a high payload and maximum stability and protection against tipping. That is precisely what the chassis of the TORION 738 T SINUS is designed for.

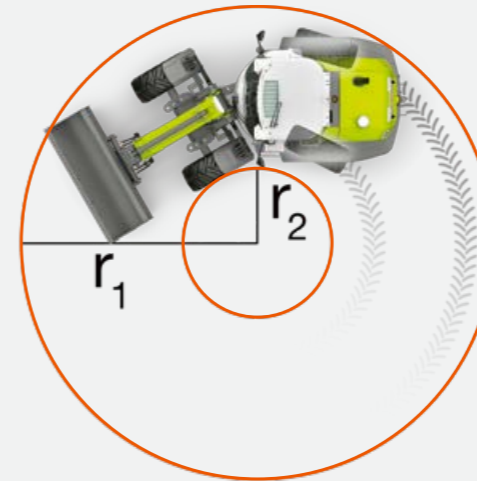
The machine is steered not only via the central articulated pendulum joint, but also via the rear axle. The front chassis is connected to the rear stub axles via two steering rods. As soon as you articulate the wheel loader from the steering wheel, the rear axle is also steered in sync.

You'll feel the benefits in every operation. You'll need less turning space than with a wheel loader without steered rear axle. You are safely protected against tipping even when working with a fully extended arm, and you'll handle tightly constrained spaces with ease. Because the TORION 738 T SINUS articulates less even at the maximum steering angle, it is considerably more stable and can handle heavier loads.

## Twice the steering.

The combination of articulated pendulum joint and Ackermann steering is what makes the TORION 738 T SINUS so agile. The robust, durable articulated pendulum joint pivots 30° towards either side, and the rear axle allows up to 25° towards either side.

## Agility in tight spaces.



## Stay agile even in tight spaces.

- Lift more with greater stability thanks to the unique SINUS chassis.
- Stay agile in any conditions thanks to double steering.
- Effective oscillation dampers ensure high driving comfort.

A large angle of oscillation ensures great stability even if the wheel loader twists towards the side on uneven ground. The TORION 738 T SINUS pivots 8° towards each side at its articulated pendulum joint.

## TORION 738 T SINUS

Wheelbase	m	2.15
Outside turning radius at the bucket edge (r1)	m	4.22
Inside turning radius with standard tyres (r2)	m	1.49

The TORION 738 T SINUS with double steering achieves its small turning radius with steering angles of 30° at the centre and 25° at the rear.

## Effective damping.

The TORION 738 T SINUS features a number of damping elements to increase your driving comfort and protect the machine during use. These include oscillation damping and a set of layer springs in the articulated pendulum joint to dampen shocks and support the ground contour following of the wheel loader. This also ensures that the machine does not contort as it oscillates.

Rubber dampers in the articulated pendulum joint prevent the front chassis from impacting against the rear chassis. Rubber elements in the articulated pendulum joint assist in returning the steering to its central position.



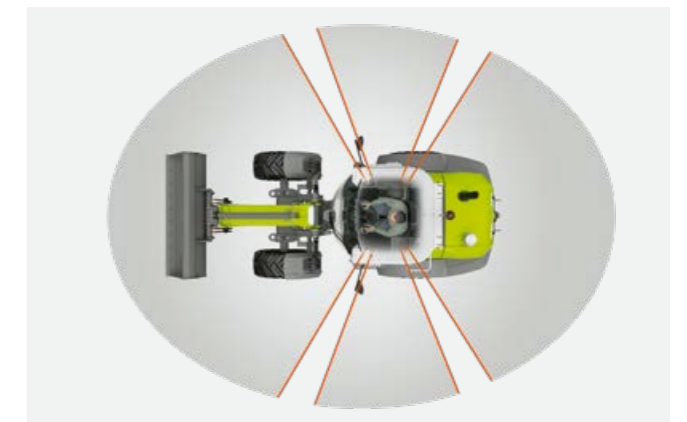
Rubber dampers in the articulated pendulum joint increase operator comfort

This workplace lifts your productivity.



Intuitive 9" touchscreen terminal.

The ergonomic comfort cab provides an optimal environment for you to operate comfortably and productively every working day. At the heart of this spacious workspace with generous windows is a 9" touchscreen with intuitive functions, which assists you in working safely and precisely thanks to a load torque display and rear camera.



## More comfort at work.

When you feel comfortable and safe inside a machine, you'll work at your best. The cab of the TORION 738 T SINUS is designed for fatigue-free work. It impresses with plenty of space, extensive comfort features and good all-round visibility.

### Greater comfort, less strain.

For more productive work, leave any stress behind as you enter the cab. A heated seat with air suspension and a high back rest offers maximum comfort. The steering wheel can be adapted to individual preferences via the three positions of the adjustable steering column. The multifunction control lever or joystick is integrated into the right armrest and moves with the seat.

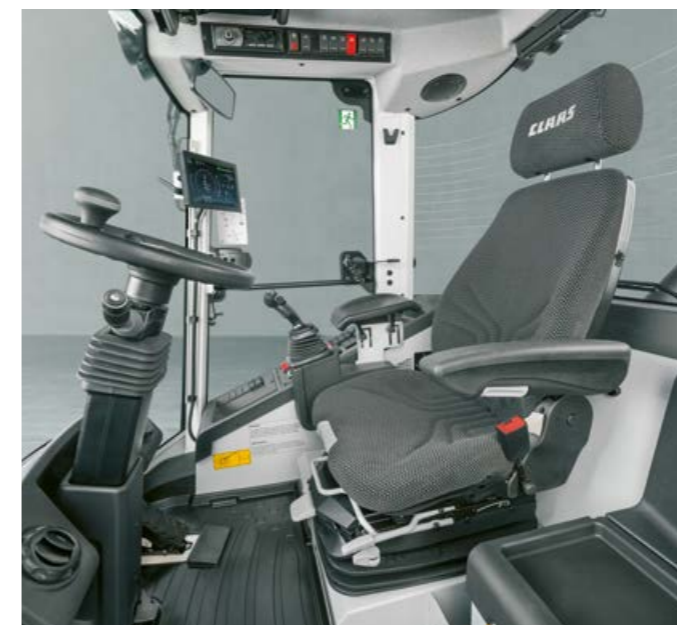
### Safety counts.

If you need to move a telescopic wheel loader in tight spaces, you know how important it is to have an unrestricted view of the equipment and surroundings. With a generous windscreen, only four slender side pillars and an optimised bonnet design, the TORION 738 T SINUS provides 360° visibility.

Up to eight LED or halogen work lights and backlit controls support you during work at night or in poorly lit buildings. Visual and acoustic alerts such as the reversing horn substantially improve operating safety.

### Benefits to make you more productive.

- Enjoy an unrestricted view to all sides thanks to only four slender cab pillars.
- The tall windscreen gives a good view of the front wheels.
- The high cab roof provides plenty of space around the head and a spacious feeling.
- Adjust the steering wheel to your preference thanks to three steering column positions.
- Operate the mast comfortably and without fatigue thanks to the multi function lever or joystick directly on the driver's seat.
- The cab offers ample storage space and plenty of options.
- The heated, air-suspended low-frequency seat provides excellent comfort.
- The easily adjustable air conditioner maintains temperatures precisely.
- The left access door and right window can be opened 180° and locked in this position.
- The level cab floor is easy to clean.



### Built for your comfort.

- Spacious comfort cab with plenty of room for your head and legs
- Extensive comfort features for fatigue-free work
- Excellent view of equipment and surroundings
- Powerful work lights for precise work in the dark
- Visual and acoustic alerts for greater operating safety



Comfortable to operate every time, every use.

Apart from the general comfort features in the cab, it is the ergonomic layout of the instruments and the intuitive operation that are decisive for the quality of work achieved. Everything in the TORION 738 T SINUS, from the multifunction control lever to the control unit and 9" touchscreen, is designed with functionality in mind to ensure that you operate it with ease from the very first use.

**You'll feel at home in this machine in no time.**

- Only loader in its class with a 9" touchscreen
- High-precision multifunction control lever or joystick for the mast and implement
- All functions are easily accessible on the right-hand side



**Intelligent 9" touchscreen**

Unique in its class: The TORION 738 T SINUS is equipped with a height-adjustable 9" colour touchscreen to keep you informed about all key parameters. Machine data relevant for operation are easy to read and set up. The current load state of the dynamic load limitation is displayed very clearly.

**Numerous assignment options.**

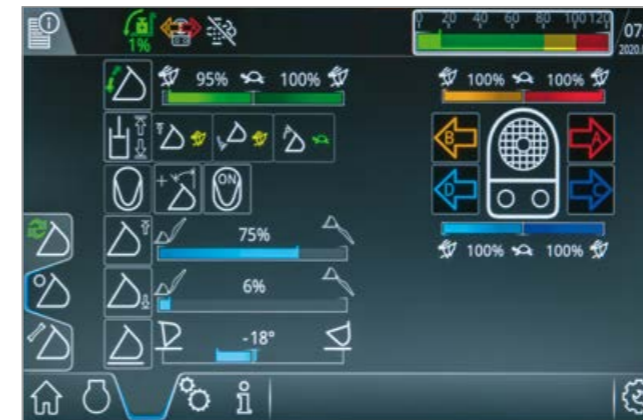
You can configure the terminal to suit your individual needs. Keys can be assigned in various ways, and you have a choice between light and dark mode. Setting the values for the lifting and lowering height limiter, bucket return and end-position damping is a breeze.

**High-precision control.**

The ergonomic multifunction control lever is integrated into the armrest. The lever moves with the seat and is therefore always safely and comfortably at your fingertips. Control the lift mast and implement intuitively and precisely with only a single lever.

**Intuitive operation.**

The control unit for the machine and safety functions is easily accessible on the right-hand side. Each control is operated via a robust toggle switch to ensure that you can always act quickly and directly. The switches are illuminated as soon as you have activated the respective function. The air conditioning controls are integrated into the control unit.





## Maintenance reduces both wear and costs.

Ease of access is decisive for all maintenance works. Everything that is difficult to reach or even just to inspect is often forgotten about or ignored. The faster you can access maintenance points, the less time-consuming and costly your service works will be.



All components in the engine compartment are easily accessible and clearly laid out

### Easy access.

All key locations in the TORION 738 T SINUS are safely, easily and cleanly accessible – while standing on the ground. All inspection points and fluid levels are easily visible. The clearly laid out components in the engine compartment are easily reached.

### Automatic central lubrication.

Regular lubrication reduces wear. The automatic central lubrication system ensures that all maintenance intervals are scrupulously observed. Lubrication cycles can be adapted to your operating conditions via the display or keyboard, with a choice of three cycles.

The central lubrication tank is located in the entry area, where you can easily inspect fill levels every day. If the level falls below the recommended minimum, an LED alert lights up. Lubrication can be applied manually at any time between intervals at the push of a button.

### Easily accessible on-board electronics.

The TORION 738 T SINUS is equipped with a 13-pin socket at the rear for operating a trailer. Another 7-pin socket is located right at the front at the light bracket.

### Low-maintenance radiator assembly.

All components of the radiator assembly are designed very robustly to ensure that they handle long maintenance intervals well. This also applies to the air filter. An (optional) air filter cyclone cleans the air intake so that the air filter stays cleaner throughout operation.

### Quick and easy maintenance.

- All key locations are easily accessible.
- An automatic central lubrication reduces wear.
- The radiator and air filter have long maintenance intervals.

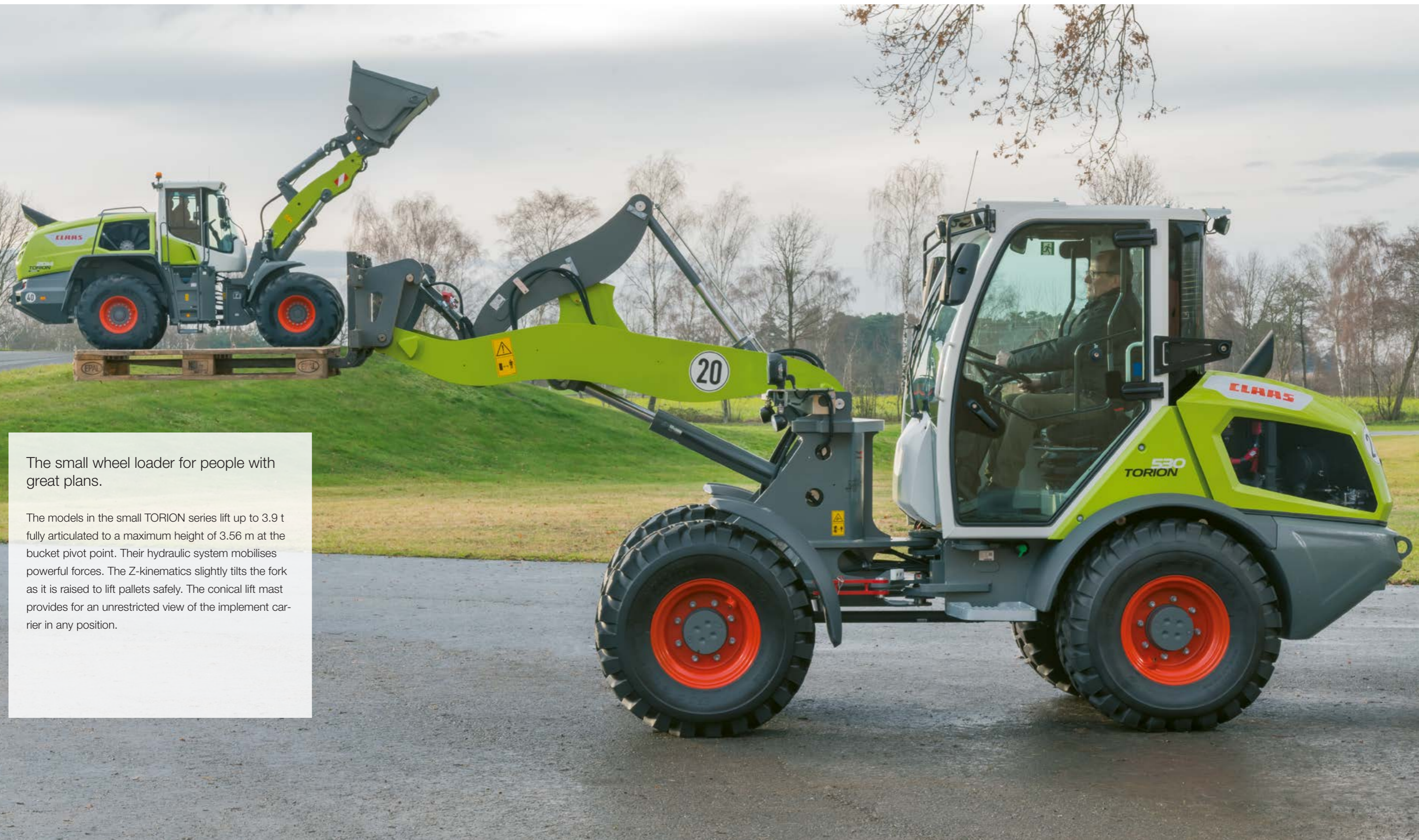




## TORION

639 535 530 Small series

Put a lot on your loader unit's plate.



The small wheel loader for people with great plans.

The models in the small TORION series lift up to 3.9 t fully articulated to a maximum height of 3.56 m at the bucket pivot point. Their hydraulic system mobilises powerful forces. The Z-kinematics slightly tilts the fork as it is raised to lift pallets safely. The conical lift mast provides for an unrestricted view of the implement carrier in any position.

Kinematics		TORION					
		639		535		530	
<b>Z-kinematics and earthmoving bucket</b>			<b>ST</b>	<b>HL</b>	<b>ST</b>	<b>HL</b>	<b>ST</b>
A	Max. height to bucket base	m	3.14	3.36	2.99	3.14	2.98
B	Max. bucket pivot point height	m	3.34	3.56	3.19	3.34	3.18
C	Max. height to bucket top	m	4.24	4.39	4.02	4.14	3.98
D	Reach at max. lift height and 42° dumping angle	m	0.82	0.77	0.72	0.7	0.69
E	Max. reach at 42° dumping angle	m	1.61	1.71	1.49	1.58	1.46
F	Dump-over height	m	2.98	3.18	2.82	2.97	2.82
	Max. tipping load, fully articulated	t	3.9	3.6	3.50	3.3	3.0
	Breakaway force	kN	57	58	47	50	40
<b>Z-kinematics and pallet fork</b>			<b>ST</b>	<b>HL</b>	<b>ST</b>	<b>HL</b>	<b>ST</b>
	Max. lift height	m	3.17	3.38	3.02	3.17	3.01
	Max. reach	m	1.32	1.45	1.23	1.35	1.23
	Reach at max. lift height	m	0.56	0.51	0.47	0.47	0.47
	Max. tipping load, fully articulated	t	3.1	2.9	2.7	2.6	2.3
	Payload on uneven ground	t	1.9	1.7	1.6	1.5	1.4
	Payload on level ground	t	2.5	2.3	2.1	2.0	1.9

## Conical mast with Z-kinematics.

The TORION's standard mast with compact Z-kinematics is designed for high demands. Its very high breakaway force and fast dumping speed make this machine ideal for stockpile removal operations. The bucket is quick and easy to fill for increased materials handling productivity.

When working with a bucket, you can reach dump-over heights of 3.18 m (639), 2.97 m (535) or 2.82 m (530). Fitted with a pallet fork, the TORION achieves loading heights of 3.38 m (639), 3.17 m (535) or 3.01 m (530). The fork is safely and securely controlled across the entire lifting range in the process. Intensive oscillation damping on the axles increases operator comfort, allows even heavy loads to be handled safely and protects the machine's components.



### Accurate self-levelling linkage.

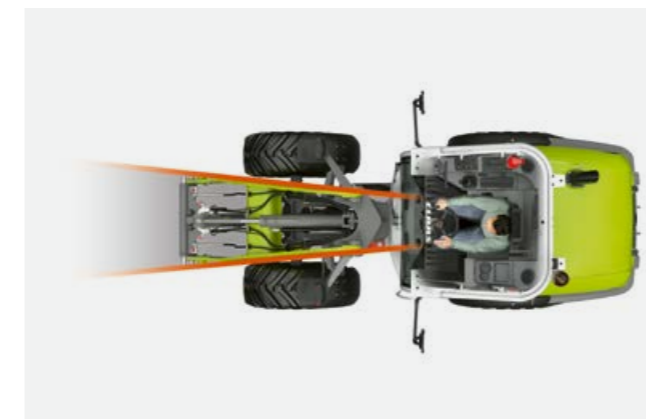
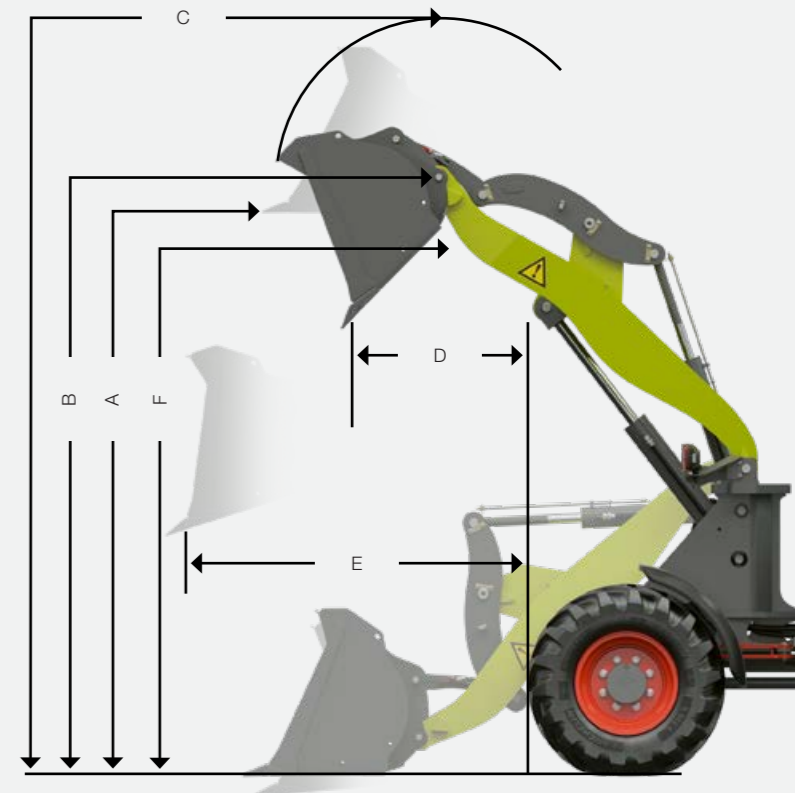
- The fork<sup>1</sup> is securely controlled across the entire lifting range.
- You work with great precision without any need for manual adjustments.

<sup>1</sup> A pallet fork with matching mounting angle is required for the optimised Z-kinematics.

### Everything to make your work easier.

- The robust implement carrier impresses with high lifting and breakaway forces.
- Fitted with an earthmoving bucket, the conical mast and optional high-lift kinematics give you a maximum dump-over height of 3.18 m.
- The Z-kinematics controls the pallet fork safely and securely.
- Control the lift mast and implement conveniently with a single multifunction control lever / joystick.
- The rear-mounted engine acts as a counterweight.

STD = standard mast, HL = high-lift mast



### Conical mast.

- The mast tapers towards the cab.
- You always have a good view of the implement.
- The robust construction is designed for a long service life.



### Robust implement carrier.

- The welded, reinforced frame withstands high loads.
- Zero-play bearing for less wear.
- You work with high lifting and breakaway forces.



**Powerful working hydraulics.**

Whether pushing or lifting heavy loads or loading with speed and precision, the hydraulic system of the small TORION series provides all the power you need for your implements. As a result, you get your work done quickly and are ready for essentially any challenge your business throws at you.

- 80 l/min at 230 bar in the TORION 639
- 70 l/min at 230 bar in the TORION 535
- 61 l/min at 230 bar in the TORION 530



**Two additional control circuits.**

At the front of the TORION, you'll find two additional control circuits. These make your work easier whenever you use implements with double-acting control circuits such as sweepers or grab buckets. A leakage oil line and pressure-free return are also available as additional options. A third hydraulic circuit is available upon request for the rear.

**Easily accessible hydraulic connections.**

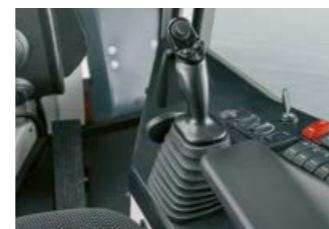
All hydraulic connections are easily accessible on the implement carrier. At the same time they are so well-protected between the pillars that you can trust their long service life. A swivel screw fitting prevents kinking in the hoses.



**More safety when working with sensitive goods.**

The optionally available reduced tipping speed not only protects the mast components when working with heavy loads, it also ensures safe working with hazardous materials and sensitive goods. Burst pipe protection devices on the lift and tilt cylinders prevent uncontrolled lowering of the mast and attachment.

Hydraulic system		639	535	530
Type		Gear pump + throttle valve block		
Valves		Open-centre hydraulic system		
Max. pump capacity	l/min	80	70	61
Max. operating pressure	bar	230		
Working cycle time at rated load				
Lifting	s	6.5	5.4	5.1
Dumping	s	2.1	1.7	1.4
Lowering (empty)	s	5.9	3.9	3.3



Climb in and get lifting: Control the lift mast and implement intuitively in three variants.

**Plenty of power and easy operation.**

- A powerful hydraulic system for your everyday work
- Intuitive operation via a multifunction control lever or joystick, additional lever or buttons

Save fuel with intelligent technology.



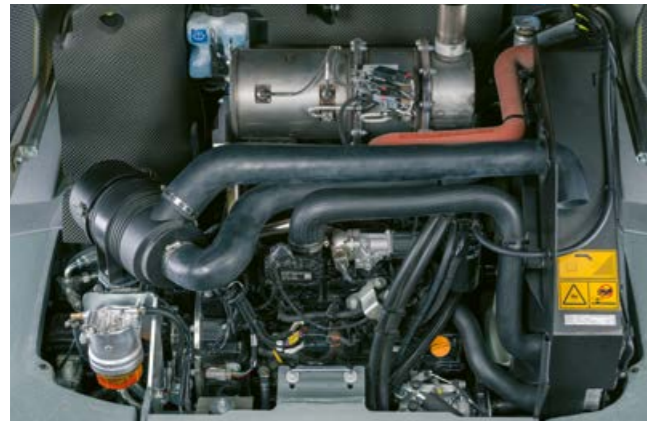
# CPS

CLAAS  
POWER  
SYSTEMS

What drives us: Optimal components interacting optimally.

Your CLAAS machine is much more than the sum of its individual parts. Top performance is only possible when all of the parts are ideally matched and work together optimally. In CLAAS POWER SYSTEMS (CPS), we have brought together top-quality components to create an intelligent drive system.

Full engine output only when you need it. Drives that are suited to the way you use your machines. Fuel-saving technology that quickly pays off.



## Powerful, economical and clean.

With a small series TORION, you and your business get a wheel loader that delivers more and consumes less. Its compact design, low operating weight and efficient engines all help ensure that you work economically even in heavy-duty operations. In designing the TORION, we have paid particular attention to an optimal weight distribution to ensure that you can rely on its excellent stability. The centre of gravity has been lowered. The engine is mounted at the rear and thus acts as a counterweight.

### Robust 4-cylinder engines.

All TORION engines are robust and low-maintenance. They easily deliver the power this agile all-rounder needs for any of the diverse applications in your business. The TORION 639 and 535 feature a turbo engine with an output of 55 kW / 74 hp. The TORION 530 is powered by an engine with an output of 34 kW / 46 hp.

### Effective exhaust gas aftertreatment.

Each TORION complies with the Stage V emission standard. Exhaust gas aftertreatment comprises a diesel particulate filter (DPF) with integrated diesel oxidation catalytic converter (DOC). SCR technology is not required.



### Individual regeneration.

- Automatic filter regeneration occurs without any intervention while the machine is operating.
- Manual regeneration is started easily at the push of a button.
- Regeneration can be temporarily switched off when conditions are unfavourable.

### Economise on fuel but not on power.

- A compact design, low operating weight and efficient engines reduce fuel consumption.
- Enjoy greater stability thanks to a low centre of gravity and the rear-mounted engine acting as a counterweight.

### Continuous cooling performance.

The robustly designed, generously dimensioned radiator assembly in the TORION provides sufficient cooling power in any climate. You can trust its continuous cooling performance even when driving uphill or in high temperatures. If you work in very dusty conditions, the radiator assembly can be equipped with an additional filter to reduce the required maintenance time.

### Effective engine air intake system.

In the TORION, fresh, pre-cleaned air is drawn in from the radiator assembly. This ensures improved cylinder filling, cleaner combustion and greater output. The air filter is readily accessible on the left side of the machine's engine compartment. A dust extractor valve efficiently removes coarse dirt and dust particles from the filter to protect the filter and extend maintenance intervals.



- The generously dimensioned radiator assembly delivers ample cooling power in any climate.
- The air filter is easily accessible and low-maintenance.



## Continuous acceleration.

You'll love the TORION's robust drive design with direct drive lines. This design offers high agility and excellent driving dynamics in any kind of use. Enjoy continuous acceleration thanks to a hydrostatic ground drive with two driving ranges. Jarring gear shift points and the associated loss of traction are now a thing of the past.

## Safe braking.

Pressing gently on the brake/inching pedal allows the ground speed to be continuously decreased, with the engine speed remaining the same. Fully depressing the pedal automatically decreases the ground drive down to zero and activates the service brake.

All three models feature drum brakes on the cardan shaft. The 639 and 535 models are equipped with a dual-circuit brake system in which the rear axle also has an internal wet multi-disc brake with hydraulic control.



Hydrostatic transmission with self-locking braking action

## High-precision driving.

The small TORION series features a continuously variable hydrostatic ground drive to make your work a breeze. The drive is built from high-quality, durable materials and delivers impressively comfortable driving characteristics. As a result, you'll drive the TORION accurately in any speed range and adjust its thrust precisely. Driving performance is identical in both forward and reverse travel.

An automatic self-locking differential with a locking value of 45° ensures consistently good traction even in difficult terrain. It reliably prevents wheel slip and protects the tyres.

## Two driving ranges.

You have a choice of two driving ranges to adapt the TORION to any conditions of use. You select the driving range with a switch and then have infinitely variable control of the speed via the ground drive pedal.

Driving range	Speed ranges		
	639	535	530
F1	0-6 km/h	0-6 km/h	0-6 km/h
F2	0-30 km/h	0-30 km/h	0-20 km/h

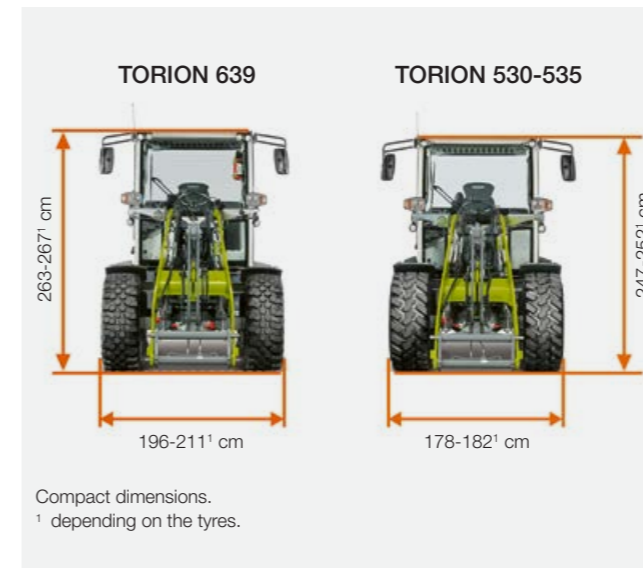


The creep-speed function is ideal for tasks such as sweeping or bedding down, which require a high oil flow at a low ground speed. In this mode, the machine is driven at a constant speed in a set inching position. You control the required flow of hydraulic oil with the accelerator pedal via the engine speed.

## Progressive driving comfort.

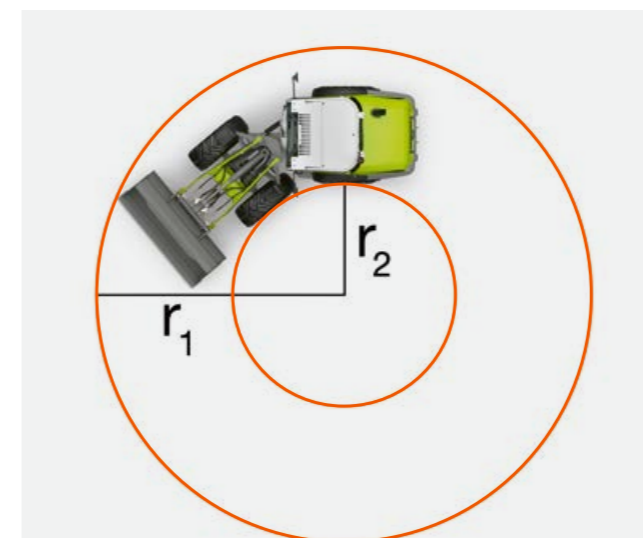
- The robust, direct drive design delivers both agility and great driving dynamics.
- Accelerate the TORION continuously without losing traction.
- Choose between two ranges.

The TORION gets into any barn.



**Compact dimensions.**

The small TORION series owes its high flexibility to its slender and low design. Its compact dimensions and low operating weight enable efficient operations even in tight spaces. This allows you to transport high payloads safely and ensures that you benefit from outstanding materials handling productivity.



**Small turning radius.**

The central articulated pendulum joint between the front and rear chassis has a double-acting steering cylinder at its heart, which provides for a 40° angle of articulation on both sides. This allows you to turn the TORION safely even in tight spaces.

TORION		639	535	530		
		Z-ST	Z-HL	Z-ST	Z-HL	Z-ST
Outside turning radius at the bucket edge (r1)	m	4.50	4.54	4.37	4.38	4.32
Inside turning radius with standard tyres (r2)	m	2.09	2.09	2.09	2.09	2.09

A large 10° angle of oscillation balances out uneven ground and, together with the rigid-mounted planetary axles, ensures high stability during all loader operations.

**Powerful, agile and safe.**

- Hardly any wheel loader in the 50 kW class offers such great flexibility, reach and driving dynamics.
- The central articulated pendulum joint with a 40° angle of articulation allows you to turn in the tightest of spaces.
- A 10° angle of oscillation reliably balances out uneven ground.
- A low centre of gravity ensures outstanding operating safety.

**A specialist for tight spaces.**

Even the small TORION models deliver great performance. A low centre of gravity and compact design ensure that you handle high payloads with excellent stability.

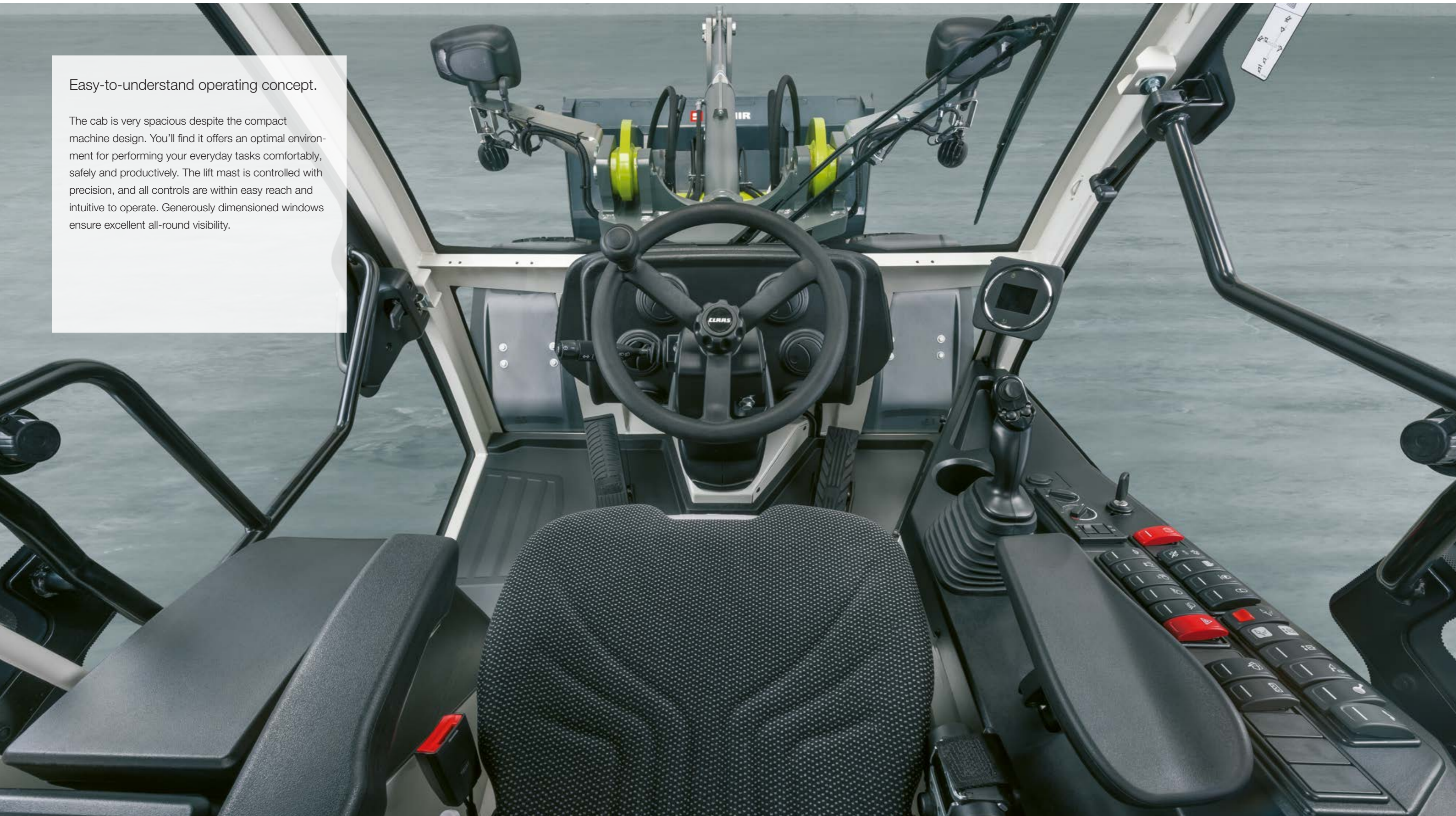
Benefit from this machine's smart design every minute you operate it. You'll work safely without tipping in uneven terrain, need very little turning space and won't be thwarted by low access heights.





Easy-to-understand operating concept.

The cab is very spacious despite the compact machine design. You'll find it offers an optimal environment for performing your everyday tasks comfortably, safely and productively. The lift mast is controlled with precision, and all controls are within easy reach and intuitive to operate. Generously dimensioned windows ensure excellent all-round visibility.





Small wheel loader with outstanding comfort.

When you feel comfortable and safe inside a machine, you'll work at your best. The cab of the TORION is designed for fatigue-free work. It impresses with plenty of space, extensive comfort features and good visibility of the implement and surroundings.

**Greater comfort, less strain.**

For more productive work, leave any stress behind as you enter the cab. A heated seat with air suspension and a high back rest offers relaxing comfort. The steering wheel angle can be continuously adapted to individual preferences. The multifunction control lever or joystick is integrated into the right armrest and moves with the seat.

**Safety counts.**

If you need to move a wheel loader in tight spaces, you know how important it is to have an unrestricted view of the equipment and surroundings. With a generous windscreen, only four slim side pillars and a slender bonnet design, the TORION provides 360° visibility.

A range of lighting options is available to ensure your safety when working at night or in poorly lit buildings. Choose the option that best matches your wheel loader's main use. Visual and acoustic alerts such as the reversing horn substantially improve operating safety.

- Operate the loader unit comfortably and without fatigue thanks to the multi function lever or joystick.
- Enjoy an unrestricted view to all sides thanks to slender cab pillars located towards the front.
- The tall windscreen gives a good view of the front wheels.
- The convex rear window and slender bonnet provide a good view towards the rear.
- The generous interior with a 1.50-m high cab offers plenty of space.
- Adjust the steering wheel to your preference thanks to a steering column with infinitely variable three-way adjustment.
- The cab offers plenty of storage space and options.
- The heated, air-suspended seat provides excellent comfort.
- The display unit shows clear information about all operating states.
- The left access door and right window can be opened 180° and locked in this position.

**Work comfortably and safely.**

- Spacious cab and extensive comfort features for fatigue-free work
- Excellent view of equipment and surroundings
- Powerful work lights for precise work in the dark



You'll feel at home in this machine in no time.



Intuitive operation for more productivity.

From the controls for the lift mast and implements through to the ergonomically accessible control unit for machine and safety functions – everything in the TORION is designed to be functional and easy to use from the very first time you work with this machine.

**High-precision control.**

Both the ergonomically designed joystick and the optional multifunction control lever are integrated into the console within easy reach on the right side of the seat. Both instruments are always safely and comfortably at your fingertips so you can operate the TORION intuitively and precisely. All functions can be controlled accurately thanks to hydraulic pilot control.

The top of the multifunction control lever features a mini-joystick, which allows you to control a third hydraulic circuit easily with your thumb, without needing to take your hand off the lever.



**Colour display unit.**

The self-explanatory displays and icons are easy to read in any light conditions. Information about all key parameters is available at a glance so you're always informed about the machine's operating states.

**Make light of heavy work.**

- The intuitive control concept is easy to understand even by novice drivers.
- The clearly laid out switches and displays are self-explanatory.
- The lift mast and kinematics are easily operated via a multifunction control lever or joystick, additional lever or buttons.
- The multifunction control lever or joystick move with the seat so you can work safely.



All maintenance points are within quick and safe reach.



Maintenance reduces both wear and costs.

Ease of access is decisive for all maintenance works. Everything that is difficult to reach or even just to inspect is often forgotten about or ignored. The faster you can access maintenance points, the less time-consuming and costly your service works will be.

**Easy access.**

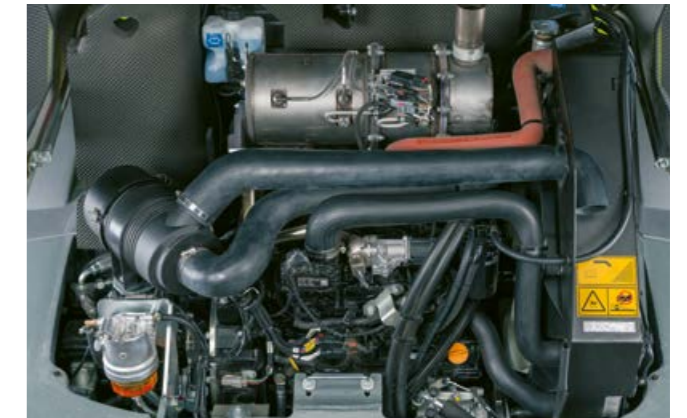
All key locations in the TORION SINUS are safely, easily and cleanly accessible – while standing on the ground. All inspection points and fluid levels are easily visible. The engine air filter and other key components in the engine compartment are clearly laid out and easily reached.

**Automatic central lubrication.**

Regular lubrication reduces wear. The central lubrication system ensures that all maintenance intervals are scrupulously observed. Lubrication can be applied at any time between intervals at the push of a button.



The oil filler neck for the hydraulic oil is located in a clean area under the bonnet. The oil level can be easily read directly through a clearly visible sight glass.



**Easily accessible on-board electronics.**

The basic central terminal compartment is easily accessible in a protected compartment on the right-hand side of the cab. The TORION SINUS is equipped with a 13-pin socket at the rear for operating a trailer. Another 7-pin socket is located right at the front at the light bracket.

**Quick and easy maintenance.**

- All key locations are easily accessible.
- An automatic central lubrication reduces wear.
- The basic central terminal compartment is well-protected on the right-hand side of the cab.



The comfortable all-rounder.  
TORION 956 / 644 / 537 SINUS.



The best of two worlds.  
TORION 738 T SINUS  
telescopic wheel  
loaders.



A strong performer  
in the barn.  
TORION 639 / 535 / 530.

The TORION impresses.

The models in the SINUS series are the premium wheel loaders in the 5-9-ton category. With any of these machines, your business benefits from an agile, powerful all-rounder.

The new TORION 738 T SINUS combines the agility of a double-steered SINUS wheel loader with an impressive lift height that is otherwise only achieved with a telehandler.

The two smallest TORION models are ideal for livestock businesses or businesses growing specialist crops. These machines are specialists for loading and transporting goods in tight, low spaces.

- Articulated steering and a steered rear axle: Work safely thanks to a highly stable machine that needs little space for turning.
- High-lift mast: Lift up to 4.8 t up to 4.01 m high (TORION 956).
- High-flow hydraulic pump: Have your implements perform at their maximum.
- SMART LOADING: An automatic bucket return and lifting and lowering height limiters speed up your loading operations
- Economical engine: The 4-cylinder DPS engine in the 956 SINUS (76 kW / 106 hp) and the 4-cylinder Yanmar engine in the 644 / 537 SINUS (54 kW / 73 hp) work efficiently and comply with the Stage V emission standard.
- Dynamic SMART SHIFTING ground drive: Accelerate continuously without losing traction.
- Maximum speed of 40 km/h: Save time and work particularly productively.
- Generous comfort cab: Relaxed work with good all-round visibility.

- Telescopic arm with integrated Z-kinematics: The 4.96-m bucket pivot point delivers impressive unloading heights.
- Articulated steering and a steered rear axle: Work safely thanks to a highly stable machine that needs little space for turning.
- High-flow hydraulic pump: Have your implements perform at their maximum.
- SMART LOADING: Benefit from lifting and lowering height limiters, automatic bucket return and dynamic load limitation.
- Economical engine: The 4-cylinder Yanmar engine with an output of 54 kW / 73 hp works efficiently and complies with the Stage V emission standard.
- SMART SHIFTING ground drive: Thanks to an actively synchronised ground drive, you'll reach a top speed of 40 km/h continuously.
- Intelligent 9" touchscreen: Get information about all key parameters at a glance.
- Generous comfort cab: Relaxed work with good all-round visibility.

- Central articulated pendulum joint: A 40° angle of articulation, 10° angle of oscillation and low centre of gravity provide outstanding stability and agility.
- With the optimised Z and optionally available Z-HL kinematics, you work safely at all times.
- Economical engines: The 4-cylinder Yanmar engines with an output of up to 55 kW / 74 hp work efficiently and comply with the Stage V emission standard.
- Robust drive design: Direct drive lines ensure high agility and seamless driving dynamics at speeds of up to 30 km/h.
- Conical mast: Enjoy unrestricted visibility of the implement carrier.
- Good all-round visibility: The windscreen extends all the way down to the feet, and the rear window is domed.
- Easy operation: The intuitive control concept is easy to understand even by novice drivers.



**Greater reliability for your machine.**

Increase your operational reliability, minimise the repair and breakdown risk. MAXI CARE offers you predictable costs. Create your own individual service package to meet your particular requirements.

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**Specially matched to your machine.**

Precision-manufactured parts, high-quality consumables and useful accessories. Choose our comprehensive product range to be certain to receive precisely the right solution and ensure that your machine is 100% reliable.



**For your business: CLAAS FARM PARTS.**

CLAAS FARM PARTS offers one of the most comprehensive ranges of multi-brand parts and accessories for all agricultural applications on your farm.



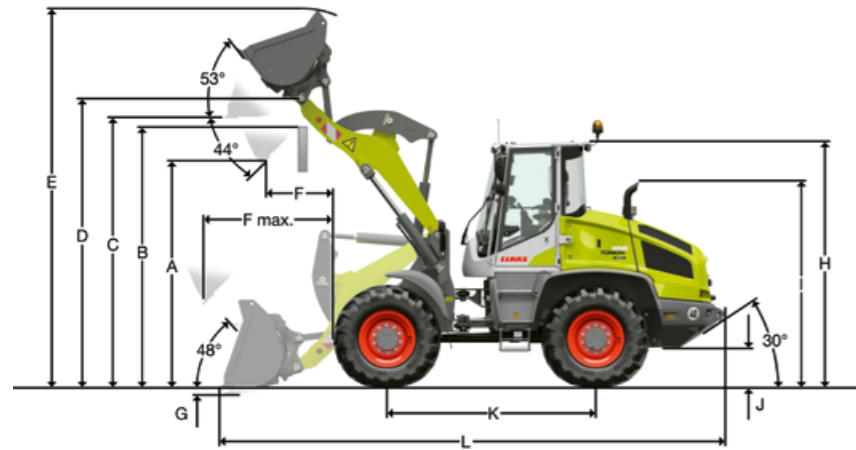
**Global supply.**

The CLAAS Parts Logistics Center in Hamm, Germany, stocks almost 200,000 different parts and has a warehouse area of over 183,000 m<sup>2</sup>. This central spare parts warehouse delivers all ORIGINAL parts quickly and reliably all over the world. This means that your local CLAAS partner can supply the right solution for your harvest or your business within a very short time.



**Your local CLAAS distributor.**

Wherever you are, you can count on us to always provide you with the service and the contact persons you need. Your CLAAS partners are on hand in your local area, ready to support you and your machine around the clock. With know-how, experience, commitment and the best technical equipment. Whatever it takes.



## TORION 956 SINUS.

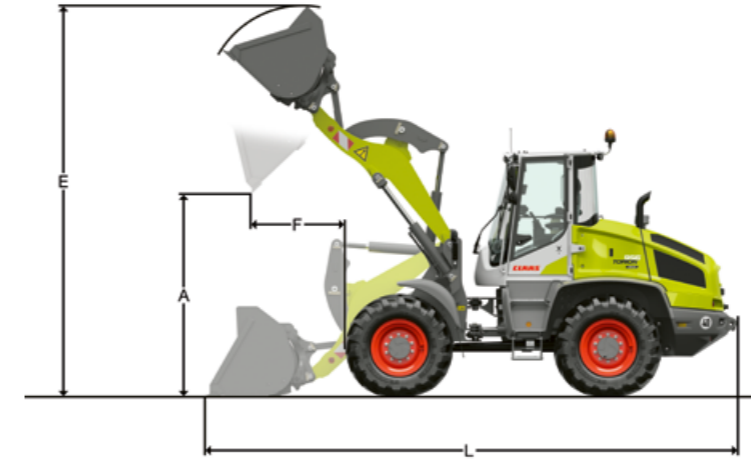
With Z-kinematics, implement carrier with quick-attachment system and earthmoving bucket.

	TORION 956 SINUS	
	STD	HL
Loading geometrics	ZK-SW	ZK-SW
Cutting tool	USM	USM
Mast length	mm 2400	2645
Bucket capacity according to ISO 7546 <sup>1</sup>	m <sup>3</sup> 1.40	1.30
Bucket width	mm 2400	2400
Material density	t/m <sup>3</sup> 1.8	1.6
Dumping height at max. lift height and 44° dumping angle (A)	mm 2915	3170
Dump-over height (B)	mm 3370	3645
Max. height to bucket base (C)	mm 3500	3785
Max. height to bucket pivot point (D)	mm 3720	4010
Max. height to bucket top (E)	mm 4795	5020
Reach at max. lift height and 44° dumping angle (F)	mm 785	860
Max. reach at 44° dumping angle (F max.)	mm 1630	1915
Digging depth (G)	mm 70	125
Height above cab (H)	mm 3080	3080
Height above exhaust (I)	mm 2525	2525
Ground clearance (J)	mm 430	430
Wheelbase (K)	mm 2600	2600
Overall length (L)	mm 6360	6750
Overall length to outside edge of implement carrier	mm 5600	5960
Overall length to bucket pivot point	mm 5445	5781
Turning radius over outside bucket edge	mm 4450	4675
Breakaway force	kN 68	70
Tipping load, straight <sup>2</sup>	kg 6095	5275
Tipping load, fully articulated	kg 5575	4825
Operating weight <sup>2</sup>	kg 9070	9120
Tyre size	17.5 R 25 L3	

<sup>1</sup> The bucket capacity can be approx. 10% greater in practice than as calculated according to ISO 7546. The bucket filling level depends on the material.

<sup>2</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).

STD = standard lift mast, HL = high-lift mast, ZK-SW = Z-kinematics incl. quick-attachment system, USM = grader blade



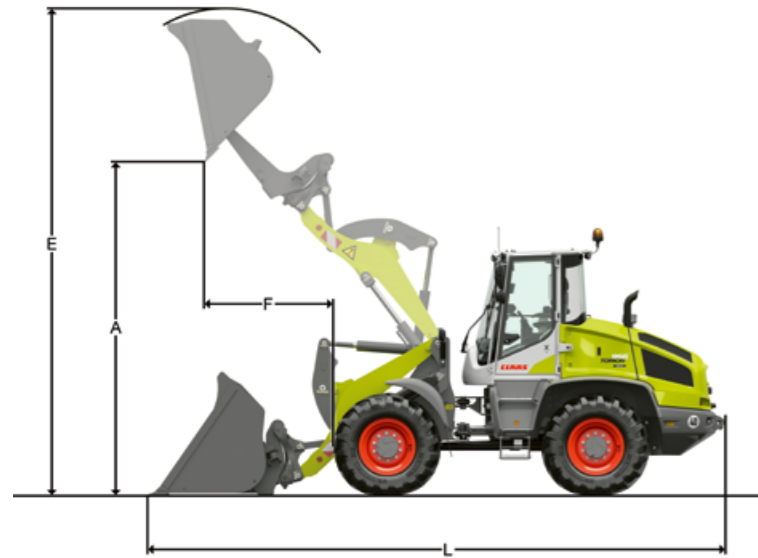
## TORION 956 SINUS.

With Z-kinematics, implement carrier with quick-attachment system and light material bucket.

	TORION 956 SINUS	
	STD	HL
Loading geometrics	ZK-SW	ZK-SW
Cutting tool	USM	USM
Bucket capacity	m <sup>3</sup> 2	2
Material density	t/m <sup>3</sup> 1.3	1.0
Bucket width	mm 2500	2500
Dumping height at max. lift height (A)	mm 2745	3020
Max. height to bucket top (E)	mm 4970	5265
Reach at max. lift height (F)	mm 1010	1020
Overall length (L)	mm 6540	6865
Tipping load, straight <sup>1</sup>	kg 5680	4955
Tipping load, fully articulated	kg 5200	4535
Operating weight <sup>1</sup>	kg 9250	9350
Tyre size	17.5 R 25 L3	

<sup>1</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).

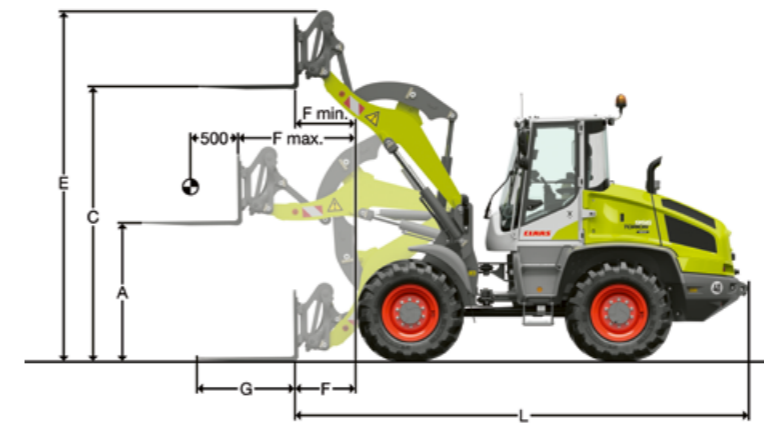
STD = standard lift mast, HL = high-lift mast, ZK-SW = Z-kinematics incl. quick-attachment system, USM = grader blade



**TORION 956 SINUS.**

With Z-kinematics, implement carrier with quick-attachment system and high-tip bucket.

High dumping weight	TORION 956 SINUS	
	STD	HL
Loading geometrics	ZK-SW	ZK-SW
Cutting tool	USM	USM
Bucket capacity	m <sup>3</sup> 2.2	1.8
Material density	t/m <sup>3</sup> 1.0	1.0
Bucket width	mm 2500	2200
Dumping height at max. lift height (A)	mm 4200	4580
Max. height to bucket top (E)	mm 5760	6060
Reach at max. lift height (F)	mm 1400	1470
Overall length (L)	mm 6965	7300
Tipping load, straight <sup>1</sup>	kg 4655	4150
Tipping load, fully articulated	kg 4260	3800
Operating weight <sup>1</sup>	kg 9985	9870
Tyre size	17.5 R 25 L3	



**TORION 956 SINUS.**

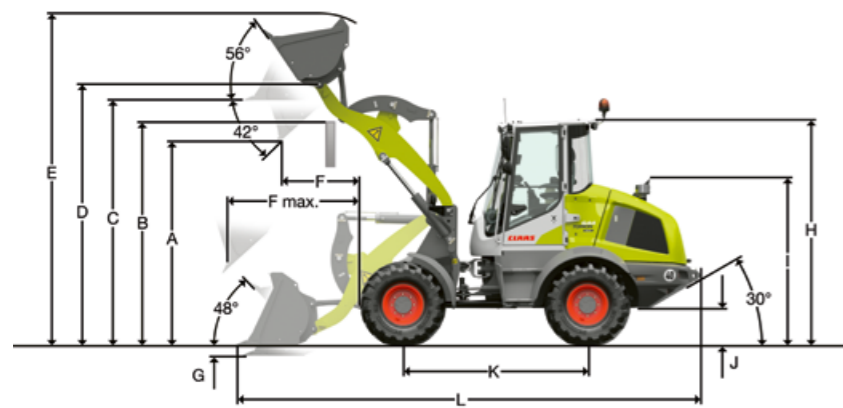
With Z-kinematics, implement carrier with quick-attachment system and pallet fork.

High dumping weight	TORION 956 SINUS	
	STD	HL
Loading geometrics	ZK-SW	ZK-SW
Mast length	mm 2400	2645
Lift height at max. reach (A)	mm 1745	1724
Max. lift height (C)	mm 3575	3865
Max. height to over fork carrier (E)	mm 4495	4785
Reach in loading position (F)	mm 765	1095
Max. reach (F max.)	mm 1460	1705
Reach at max. lift height (F min.)	mm 615	645
Fork tine length (G)	mm 1200	1200
Basic machine overall length (L)	mm 5640	5970
Tipping load, straight <sup>1</sup>	kg 4500	3980
Tipping load, fully articulated	kg 4120	3640
Permissible payload capacity on uneven ground = 60% of the articulated static tipping load <sup>2</sup>	kg 2475	2185
Permissible payload capacity on level ground = 80% of the articulated static tipping load <sup>2</sup>	kg 3300	2900
Operating weight <sup>1</sup>	kg 8930	9030
Tyre size	17.5 R 25 L3	

<sup>1</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).  
 STD = standard lift mast, HL = high-lift mast, ZK-SW = Z-kinematics incl. quick-attachment system, USM = grader blade

<sup>1</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).  
<sup>2</sup> According to EN 474-3  
 STD = standard lift mast, HL = high-lift mast, ZK-SW = Z-kinematics incl. quick-attachment system



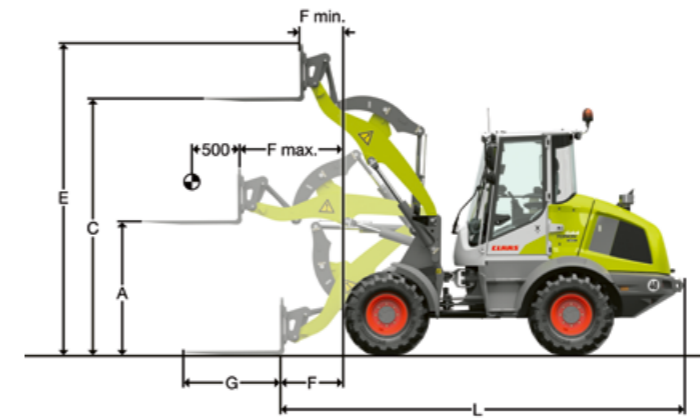


**TORION 644 / 537 SINUS.**

With Z-kinematics, implement carrier with quick-attachment system and earthmoving bucket.

	TORION 644 SINUS		TORION 537 SINUS
	STD	HL	STD
Loading geometrics	ZK-SW	ZK-SW	ZK-SW
Cutting tool	USM	USM	USM
Mast length	mm 2250	2560	2150
Bucket capacity according to ISO 7546 <sup>1</sup>	m <sup>3</sup> 1.20	1.00	0.90
Bucket width	mm 2330	2100	2050
Material density	t/m <sup>3</sup> 1.8	1.8	1.8
Dumping height at max. lift height and 42° dumping angle (A)	mm 2645	3145	2550
Dump-over height (B)	mm 3000	3450	2870
Max. height to bucket base (C)	mm 3145	3585	3015
Max. height to bucket pivot point (D)	mm 3345	3785	3215
Max. height to bucket top (E)	mm 4260	4680	4040
Reach at max. lift height and 42° dumping angle (F)	mm 910	875	815
Max. reach at 42° dumping angle (F max.)	mm 1645	1935	1500
Digging depth (G)	mm 95	110	80
Height above cab (H)	mm 2810	2810	2750
Height above exhaust (I)	mm 2060	2060	2030
Ground clearance (J)	mm 295	295	285
Wheelbase (K)	mm 2300	2300	2150
Overall length (L)	mm 5815	6170	5495
Overall length to outside edge of implement carrier	mm 4900	5285	4660
Overall length to bucket pivot point	mm 4830	5200	4590
Turning radius over outside bucket edge	mm 4225	4325	3885
Breakaway force	kN 55	59	48
Tipping load, straight <sup>2</sup>	kg 4850	4100	4070
Tipping load, fully articulated	kg 4430	3750	3750
Operating weight <sup>2</sup>	kg 6390	6630	5550
Tyre size	405/70 R 18 L2		365/70 R 18 L2

<sup>1</sup> The bucket capacity can be approx. 10% greater in practice than as calculated according to ISO 7546. The bucket filling level depends on the material.  
<sup>2</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).  
 STD = standard lift mast, HL = high-lift mast, ZK-SW = Z-kinematics incl. quick-attachment system, USM = grader blade

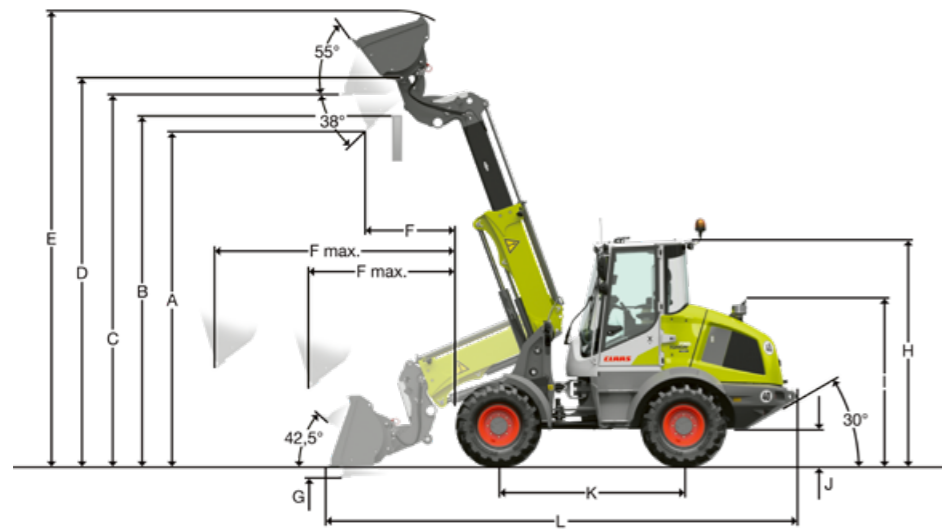


**TORION 644 / 537 SINUS.**

With Z-kinematics, implement carrier with quick-attachment system and pallet fork.

	TORION 644 SINUS		TORION 537 SINUS
	STD	HL	STD
Loading geometrics	ZK-SW	ZK-SW	ZK-SW
Lift height at max. reach (A)	mm 1500	1490	1450
Max. lift height (C)	mm 3175	3615	3045
Max. height to over fork carrier (E)	mm 3840	4280	3715
Reach in loading position (F)	mm 810	1200	740
Max. reach (F max.)	mm 1330	1640	1235
Reach at max. lift height (F min.)	mm 570	500	525
Fork tine length (G)	mm 1200	1200	1200
Basic machine overall length (L)	mm 5040	5425	4825
Tipping load, straight <sup>1</sup>	kg 3840	3400	3215
Tipping load, fully articulated	kg 3500	3090	2930
Permissible payload capacity on uneven ground = 60% of the articulated static tipping load <sup>2</sup>	kg 2100	1850	1820
Permissible payload capacity on level ground = 80% of the articulated static tipping load <sup>2</sup>	kg 2500	2470	2300
Operating weight <sup>1</sup>	kg 6175	6490	5445
Tyre size	405/70 R 18 L2		365/70 R 18 L2

<sup>1</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).  
<sup>2</sup> According to EN 474-3  
 STD = standard lift mast, HL = high-lift mast, ZK-SW = Z-kinematics incl. quick-attachment system



**TORION 738 T SINUS.**

With Z-kinematics, implement carrier with quick-attachment system and earthmoving bucket.

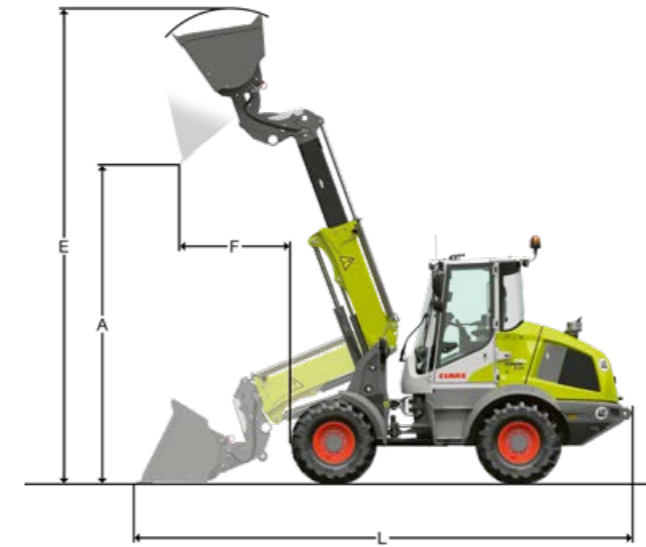
		TORION 738 T SINUS	
		TK-SW	
Cutting tool		USM	
Mast length	mm	2475 / 3650	
Bucket capacity according to ISO 7546 <sup>1</sup>	m <sup>3</sup>	0.90	
Bucket width	mm	2200	
Material density	t/m <sup>3</sup>	1.80	
Dumping height at max. lift height and 38° dumping angle (A)	mm	4320	
Dump-over height (B)	mm	4500	
Max. height to bucket base (C)	mm	4760	
Max. height to bucket pivot point (D)	mm	4960	
Max. height to bucket top (E)	mm	5790	
Reach at max. lift height and 38° dumping angle (F)	mm	950	
Max. reach at 42° dumping angle (F max.)	mm	1750 / 2930	
Digging depth (G)	mm	90	
Height over the operator's cab <sup>2</sup> (H)	mm	2790	
Height above exhaust (I)	mm	2020	
Ground clearance (J)	mm	305	
Wheelbase (K)	mm	2300	
Overall length (L)	mm	5835	
Overall length to outside edge of implement carrier	mm	5150	
Overall length to bucket pivot point	mm	5070	
Turning radius over outside bucket edge	mm	4225	
Breakaway force	kN	49	
Tipping load, straight <sup>3</sup>	kg	4300	
Tipping load, articulated	kg	3800	
Operating weight <sup>3</sup>	kg	7000	
Tyre size		400/70 R 20 L3	

<sup>1</sup> The bucket capacity can be approx. 10% greater in practice than as calculated according to ISO 7546. The bucket filling level depends on the material.

<sup>2</sup> With the optional wiper for the roof window, (H) increases by 50 mm.

<sup>3</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).

TK-SW = telescopic lift mast with Z-kinematics incl. quick-attachment system, USM = grader blade



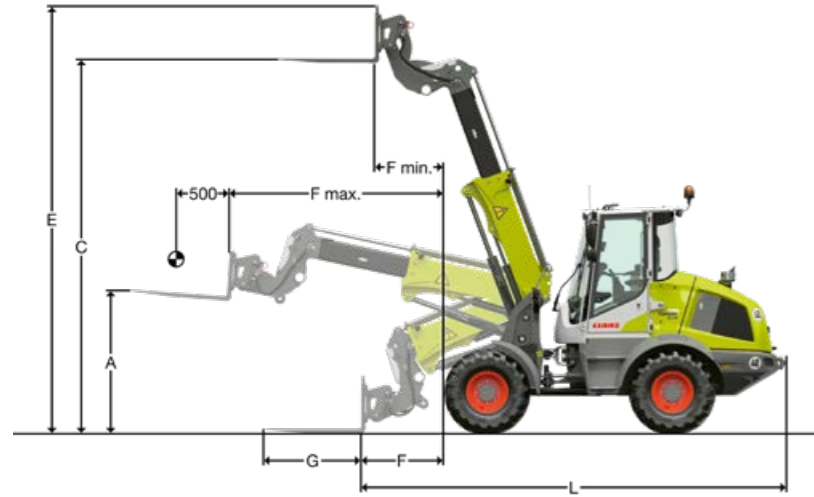
**TORION 738 T SINUS.**

With Z-kinematics, implement carrier with quick-attachment system and light material bucket.

		TORION 738 T SINUS	
		TK-SW	TK-SW
Cutting tool		USM	USM
Bucket capacity	m <sup>3</sup>	1.6	2.0
Material density	t/m <sup>3</sup>	1.0	0.8
Bucket width	mm	2400	2400
Dumping height at max. lift height (A)	mm	4165	4085
Max. height to bucket top (E)	mm	5790	5950
Reach at max. lift height (F)	mm	1055	1170
Overall length (L)	mm	6050	6195
Tipping load, straight <sup>1</sup>	kg	4100	4050
Tipping load, fully articulated	kg	3650	3600
Operating weight <sup>1</sup>	kg	7100	7150
Tyre size		400/70 R 20 L3	

<sup>1</sup> The values shown apply for the tyres specified, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 143971).

TK-SW = telescopic lift mast with Z-kinematics incl. quick-attachment system, USM = grader blade



### TORION 738 T SINUS.

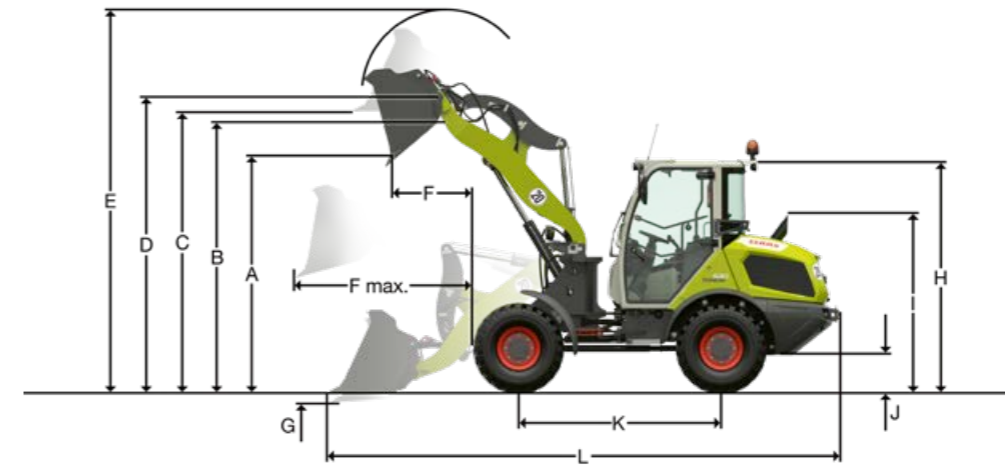
With Z-kinematics, implement carrier with quick-attachment system and pallet fork.

		TORION 738 T SINUS
		TK-SW
Lift height at max. reach (A)	mm	1530
Max. lift height (C)	mm	4800
Max. height to over fork carrier (E)	mm	5460
Reach in loading position (F)	mm	1030
Max. reach (F max.)	mm	1515 / 2695
Reach at max. lift height (F min.)	mm	660
Fork tine length (G)	mm	1200
Basic machine overall length (L)	mm	5270
Tipping load, straight <sup>1</sup>	kg	3400
Tipping load, fully articulated	kg	3050
Permissible payload capacity on uneven ground = 60% of the articulated static tipping load <sup>2</sup>	kg	1800
Permissible payload capacity on level ground = 80% of the articulated static tipping load <sup>2</sup>	kg	2300
Operating weight <sup>1</sup>	kg	6800
Tyre size		400/70 R 20 L3

<sup>1</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change the operating weight and tipping load (fully articulated tipping load according to ISO 14397-1).

<sup>2</sup> According to EN 474-3

TK-SW = telescopic lift mast with Z-kinematics incl. quick-attachment system



### TORION 639 / 535 / 530.

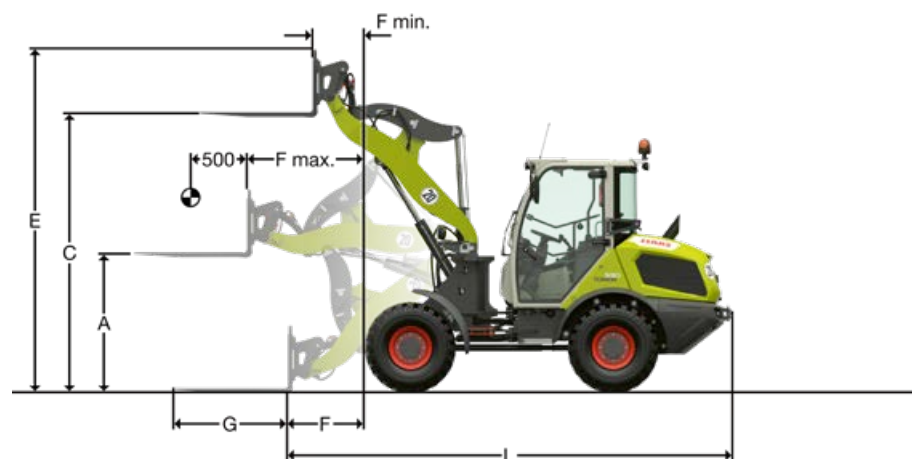
With Z-kinematics, implement carrier with quick-attachment system and earthmoving bucket.

TORION	639		535		530
	STD	HL	STD	HL	STD
Loading geometrics	ZK-SW	ZK-SW	ZK-SW	ZK-SW	ZK-SW
Cutting tool	Z	Z	Z	Z	Z
Mast length	mm	2300	2430	2200	2320
Bucket capacity according to ISO 7546 <sup>1</sup>	m <sup>3</sup>	1.0	0.9	0.8	0.7
Material density	t/m <sup>3</sup>	1.8	1.8	1.8	1.8
Bucket width	mm	2100	2050	1900	1800
Dumping height at max. lift height and 42° dumping angle (A)	mm	2625	2875	2505	2680
Dump-over height (B)	mm	2980	3180	2825	2965
Max. height to bucket base (C)	mm	3140	3355	2990	3140
Max. height to bucket pivot point (D)	mm	3340	3555	3190	3340
Max. height to bucket top (E)	mm	4240	4385	4020	4140
Reach at max. lift height and 42° dumping angle (F)	mm	815	765	720	695
Max. reach at 42° dumping angle (F max.)	mm	1605	1710	1490	1580
Digging depth (G)	mm	80	60	50	65
Height above cab (H)	mm	2630	2630	2480	2480
Height above exhaust (I)	mm	1890	1890	1890	1890
Ground clearance (J)	mm	325	325	325	325
Wheelbase (K)	mm	2150	2150	2150	2150
Overall length (L)	mm	5495	5605	5395	5500
Turning radius over tyres	mm	3945	3945	3850	3850
Turning radius over outside bucket edge	mm	4495	4540	4370	4380
Breakaway force (SAE)	kN	57	58	47	50
Tipping load, straight <sup>2</sup>	kg	4400	4100	3950	3650
Tipping load, fully articulated	kg	3900	3600	3500	3250
Operating weight <sup>2</sup>	kg	5700	5700	4970	4920
Tyre size		400/70 R 18		340/80 R 18	

<sup>1</sup> The bucket capacity can be approx. 10% greater in practice than as calculated according to ISO 7546. The bucket filling level depends on the material.

<sup>2</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change operating weight and tipping load (40° articulated tipping load according to ISO 14397-1).

STD = standard lift mast, ZK-SW = Z-kinematics incl. quick-attachment system, HL = high-lift mast



## TORION 639 / 535 / 530.

With Z-kinematics, implement carrier with quick-attachment system and pallet fork.

TORION	639		535		530
	STD	HL	STD	HL	STD
Loading geometrics	ZK-SW	ZK-SW	ZK-SW	ZK-SW	ZK-SW
Lift height at max. reach (A)	mm	1465	1465	1355	1355
Max. lift height (C)	mm	3170	3380	3020	3170
Max. height to over fork carrier (E)	mm	3840	4050	3685	3835
Reach in loading position (F)	mm	830	995	795	940
Max. reach (F max.)	mm	1315	1450	1225	1345
Reach at max. lift height (F min.)	mm	560	510	465	470
Fork tine length (G)	mm	1200	1200	1200	1200
Basic machine overall length (L)	mm	4745	4905	4710	4845
Tipping load, straight <sup>1</sup>	kg	3500	3300	3050	2850
Tipping load, fully articulated <sup>1</sup>	kg	3080	2900	2700	2550
Permissible payload capacity on uneven ground = 60% of the articulated static tipping load <sup>2</sup>	kg	1850	1700	1600	1500
Permissible payload capacity on level ground = 80% of the articulated static tipping load <sup>2</sup>	kg	2,450 <sup>3</sup>	2,300 <sup>3</sup>	2,100 <sup>3</sup>	2,000 <sup>3</sup>
Operating weight <sup>1</sup>	kg	5580	5600	4930	4950
Tyre size		400/70 R 18	400/80 R 18	340/80 R 18	340/80 R 18

<sup>1</sup> The values shown apply for the tyres specified above, including all lubricants, full fuel tanks, ROPS / FOPS cab and driver. Tyre size and additional equipment change operating weight and tipping load (40° articulated tipping load according to ISO 14397-1).

<sup>2</sup> According to EN 474-3

<sup>3</sup> Payload capacity limited by tilt cylinders

STD = standard lift mast, ZK-SW = Z-kinematics incl. quick-attachment system, HL = high-lift mast

TORION	956 SINUS	644 SINUS	537 SINUS	738 T SINUS
<b>Tyres<sup>1</sup></b>	<b>Vehicle width<sup>2</sup></b>			
540/70 R 24 Michelin XMCL, AS	mm	2445	—	—
500/70 R 24 Firestone Duraforce UT, I	mm	2430	—	—
500/70 R 24 Trelleborg TH 400, AS	mm	2400	—	—
17.5 R 25 Michelin XTLA (L2), I	mm	2380	—	—
17.5 R 25 Bridgestone EM VJT, I	mm	2360	—	—
17.5 R 25 Goodyear RT-3B (L3), I	mm	2380	—	—
17.5 R 25 Michelin XHA (L3), I	mm	2380	—	—
17.5 R 25 Bridgestone VUT, I	mm	2360	—	—
17.5 R 25 Goodyear TL-3A+L3, I	mm	2380	—	—
550/65 R 25 Bridgestone EM VTS (L3), I	mm	2470	—	—
550/65 R 25 Michelin XLD65 (L3), I	mm	2470	—	—
15.5/55 R 18 Dunlop SPPG7, I	mm	—	2050	1920
405/70 R 18 Mitas EM-01, I	mm	—	2090	1960
405/70 R 18 Dunlop SPT9, I	mm	—	2080	1950
405/70 R 18 Firestone UT, I	mm	—	2090	1960
365/80 R 20 Mitas EM-01, I	mm	—	2050	1920
365/80 R 20 Dunlop SPT9, I	mm	—	2040	1910
365/80 R 20 Firestone Duraforce UT, I	mm	—	2050	1920
405/70 R 20 Mitas EM-01, I	mm	—	2090	1960
405/70 R 20 Dunlop SPT9, I	mm	—	2080	1950
400/70 R 20 Firestone Duraforce UT, I	mm	—	2080	1950
400/70 R 20 Michelin Bibload	mm	—	2080	1950
400/70 R 20 Nokian TRI	mm	—	2085	1955
400/70 R 20 Firestone R8000, AS	mm	—	2080	1950
400/70 R 20 Michelin XMCL, AS	mm	—	2090	1960
400/70 R 20 Trelleborg TH400, AS	mm	—	2080	1950
340/80 R 18 Firestone Duraforce UT, I	mm	—	—	1900
365/70 R 18 Dunlop SPT9, I	mm	—	—	1920
365/70 R 18 Mitas EM-01, I	mm	—	—	1920

TORION	639	535	530
<b>Tyres<sup>1</sup></b>	<b>Vehicle width<sup>2</sup></b>		
340/80 R 18 Firestone Duraforce UT (L3), I	mm	1900	1760
365/80 R 20 Dunlop SP T9 (L2), I	mm	1910	1770
365/70 R 18 Dunlop SP T9 (L2), I	mm	—	1780
15.5/55 R 18 Dunlop SP PG7 (L2), I	mm	1920	1780
365/80 R 20 Firestone Duraforce UT (L3), I	mm	1920	1780
365/70 R 18 Mitas EM-01 (L2), I	mm	—	1780
365/80 R 20 Mitas EM-01 (L2), I	mm	1920	1780
340/80 R 18 Vredestein Endurion (L3), I	mm	1920	1780
405/70 R 18 Dunlop SP T9 (L2), I	mm	1950	1810
405/70 R 20 Dunlop SP T9 (L2), I	mm	1950	1810
400/70 R 20 Firestone Duraforce UT (L3), I	mm	1950	1810
400/70 R 20 Firestone R8000 UT, AS	mm	1950	1810
400/70 R 20 Michelin BIBLOAD (L3), I	mm	1950	1810
400/70 R 20 Nokian Hakkapeliitta TRI (L2)	mm	1950	1810
400/70 R 20 Trelleborg TH400, AS	mm	1950	1810
405/70 R 18 Firestone Duraforce UT (L3), I	mm	1960	1820
400/70 R 20 Michelin XMCL, AS	mm	1960	1820
405/70 R 18 Mitas EM-01 (L2), I	mm	1960	1820
405/70 R 20 Mitas EM-01 (L2), I	mm	—	1820
400/70 R 18 Vredestein Endurion (L3), I	mm	1960	1820
400/70 R 20 Vredestein Endurion (L3), I	mm	1960	1820

<sup>1</sup> The values shown are indicative and may differ in practice.

<sup>2</sup> About tyres

I = industrial tread, AS = field tread

TORION		956 SINUS	644 SINUS	537 SINUS	738 T SINUS	639	535	530
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#### Loader unit

Operating weight <sup>1</sup>	kg	9070	6390	5550	7000	5700	4970	4600
Mast variants available		Z / Z High-Lift	Z / Z High-Lift	Z	Z	Z / Z High-Lift	Z / Z High-Lift	Z
Tipping load, fully articulated (max.) <sup>2</sup>	kg	5575	4430	3750	3800	3900	3500	3000
Tipping load, straight <sup>2</sup>	kg	6095	4850	4070	4300	4400	3950	3400

#### Engine – Stage V / Tier 5

Manufacturer		DPS	Yanmar	Yanmar	Yanmar	Yanmar	Yanmar	Yanmar
Model		4045HB551	4TNV98CT	4TNV98CT	4TNV98CT	4TNV86CHT	4TNV86CHT	4TNV88C
Layout / number of cylinders		R 4	R 4	R 4	R 4	R 4	R 4	R 4
Cubic capacity	l	4.50	3.32	3.32	3.32	2.09	2.09	2.19
Rated output acc. to ECE R120	kW/hp	76/103	54/73	54/73	54/73	55/74	55/74	34/46
Nominal engine speed	rpm	2400	2400	2400	2400	2500	2500	2650
Max. torque acc. to ECE R120	Nm	420	280	280	280	263	263	140
Engine speed at max. torque	rpm	1400	1800	1800	1800	1690	1690	1950
Exhaust aftertreatment		DPF + DOC + SCR	DPF + DOC	DPF + DOC	DPF + DOC	DPF + DOC	DPF + DOC	DPF + DOC

#### Hydraulic system

Gear pump, priority valve	l/bar	115/240	93/210	70/230	93/230	80/230	70/230	61/230
Additional gear pump	l/bar	–	+28/240 (optional)	+35/240 (optional)	+28/240 (optional)	–	–	–
Flow rate distribution		LS valve		Throttle valve control				
Filtration			Return-line filter in hydraulic tank					

#### Cab

Hand-arm vibration acc. to ISO 5349-1:2001	m/s <sup>2</sup>			<2.5				
Whole body vibration acc. to ISO/TR 25398:2006	m/s <sup>2</sup>			0.31 - 1.28				
In-cab sound pressure level acc. to ISO 6396	dB(A)	70		73			79	

#### Working cycle time at rated load

Kinematics variant		Z	Z	Z	Z	Z	Z	Z
Lifting	s	6.90	5.60	4.90	5.20	6.50	5.40	5.10
Dumping	s	3.00	2.00	1.70	2.00	2.10	1.70	1.40
Lowering (empty)	s	4.90	4.10	3.50	4.00	5.90	3.90	3.30
Telescoping out / in	s	–	–	–	4.00 / 3.00	–	–	–



#### Articulated tipping load.

The articulated tipping load is the load at the implement's load centre that will cause the wheel loader to tip over the front axle. In this situation the machine is in its least stable position with the lift mast extended horizontally and the wheel loader fully articulated.



#### Payload.

According to ISO 14397-1, the payload must not exceed 50% of the articulated tipping load. This is equivalent to a safety factor of 2. The permitted payload can be calculated as follows:

$$\text{Payload (t)} = \text{articulated tipping load (t)} / 2$$

#### Bucket size.

Calculate the maximum usable bucket size based on the payload:

$$\text{Bucket size} = \text{payload (t)} / \text{specific material weight (t/m}^3\text{)}$$

● Standard ○ Optional □ Available – Not available

TORION		956 SINUS	644 SINUS	537 SINUS	738 T SINUS	639	535	530
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#### Ground drive

Transmission type		Hydrostatic, 2-level automatic transmission						Hydrostatic	
Driving ranges	km/h	0 - 18 / 0 - 40	0 - 18 / 0 - 40	0 - 18 / 0 - 40	0 - 18 / 0 - 40	0 - 6 / 0 - 30	0 - 6 / 0 - 30	0 - 6 / 0 - 20	
Max. top speed	km/h	40	40	40	40	30	30	20	

#### Tank capacity overview

Fuel tank – diesel	l	155	90	90	90	65	65	65
Urea tank	l	18	–	–	–	–	–	–
Hydraulic oil – total quantity	l	115	102	102	110	71	71	71

#### Axles

Front axle		Rigid						
Rear axle <sup>3</sup>		Articulated pendulum joint with 5° oscillation on each side / 5° via rubber dampers at the rear axle / 25° Ackermann steering on each side	Articulated pendulum joint with 8° oscillation on each side / rigid rear axle / 25° Ackermann steering on each side			Articulated pendulum joint with 10° oscillation on each side / rigid rear axle		
Front differential lock		45° self-locking differential in both axles	100% lock in front axle, manual switching			45° self-locking differential in both axles		
Angle of articulation (on each side)	°	30	30	30	40	40	40	

#### Service brake

Type		Dual circuit brake system (drum brake and wet multiple disc brake)						Hydraulically operated drum brake
Location		Drum brake at the front axle input and wet multi-disc brake acting on the rear axle						Axle input on front axle

#### Parking brake

Type		Negative brake system acting on the wet multi-disc brake in the rear axle						Negative brake system acting on the drum brake
Location		Rear axle						Axle input on front axle

TORION		956 SINUS	644 SINUS	537 SINUS	738 T SINUS	639	535	530
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#### SMART LOADING

Lifting and lowering height limiter (programmable)		–	–	–	●	–	–	–
Lifting height limit stop (manual)		○	○	○	–	–	–	–
Dynamic load limitation		–	–	–	●	–	–	–
Automatic bucket return position		●	○	○	○	–	–	–
Carrier arm and implement carrier angle display (terminal)		–	–	–	●	–	–	–

<sup>1</sup> The values shown vary depending on the tyres, earthmoving bucket (bucket capacity acc. to ISO 7546 may be up to 10% larger in practice; the bucket fill level depends on the material moved) and kinematics variant used; they apply including all lubricants, full fuel tanks, ROPS/FOPS cab and operator. Tyre sizes and additional equipment impact on the operating weight and tipping load.

<sup>2</sup> According to ISO 14397-1

<sup>3</sup> The oscillation angle is limited depending on the tyres used.

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● Standard ○ Optional □ Available – Not available

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