



**SCHAEFF**

A **YANMAR** BRAND

# HEAVY WHEEL LOADERS



**TL160**

**TL210**

**TL260**

**TL310**

# IN A CLASS OF THEIR OWN

Schaeff Heavy Wheel Loaders combine compact dimensions with impressive productivity for outstanding value. Their strengths really come to the fore in applications including earth moving, road construction, recycling, wood processing, agriculture and certain areas of the alternative energy industry.



▶ **TL160**

Operating weight	9,200 kg
Engine power	74,5 kW (102 HP)
Bucket capacity	1.5 - 3.0 m <sup>3</sup>



▶ **TL210**

Operating weight	12,500 kg
Engine power	119 kW (162 HP)
Bucket capacity	2.0 - 3.5 m <sup>3</sup>



▶ **TL260**

Operating weight	14,400 kg
Engine power	128 kW (174 HP)
Bucket capacity	2.5 - 4.5 m <sup>3</sup>



▶ **TL310**

Operating weight	17,600 kg
Engine power	149 kW (203 HP)
Bucket capacity	3.0 - 6.5 m <sup>3</sup>



## CONTENTS

Schaeff Heavy Wheel Loaders	2
Applications	4
Walkaround	6
Power: Loading Technology and Travel Drive	8
Power: Engine and Hydraulics	10
Productivity	12
Operator Comfort	14
Ease of Operation	16
Options	18

# READY FOR ANYTHING

With over 50 years' experience in heavy wheel loader technology, Schaeff has the specialist knowledge to deliver high quality machines for the widest range of applications.

**What this means for you:**

- ! Large selection of loader sizes.
- 👁 Snap coupling with good visibility of attachments.

## EARTH MOVING



Fast work cycles thanks to fluid bucket movements and high manoeuvrability allow operators to shift more earth.

## ROAD CONSTRUCTION



With a compact design and high manoeuvrability road construction applications are undertaken with ease.

## RECYCLING



Ideally suited to recycling applications with specialised cooling and pressurised cab environments available.

## AGRICULTURE



With impressive lifting heights, various cab lift mechanisms and high-powered engines, the widest variety of tasks are handled with ease.

## MATERIAL HANDLING



Precise articulated steering and transverse engine installation ensure ease of operation when transporting heavy ballast and stone.

## BACK LOADING



High tear-out and lifting forces thanks to a combination of high stability and parallel and Z-kinematics.

# PRODUCTIVE AND POWERFUL



ROPS/FOPS cab and fully glazed second door.

Ergonomic cab with excellent rear visibility and climate control system for operator comfort.

High-performance cooling system with reversible fan for greater productivity.

Short tail with transverse engine installation provides optimum stability and excellent rear visibility.

High performance engines with impressive power development even at low speeds.

Wide-opening hood for easy service access.

Low wear multi-disc brakes integrated in the axles providing protection from dirt and damage.

High-performance steel chassis with outstanding ground clearance for access to the toughest job sites

Continuously variable travelling speed up to 40 kph for reduced journey times.

Powerful loading technology with SP-kinematics combining the advantages of parallel and Z-kinematics.

Outstanding overhead loading height, large dumping widths and powerful tear-out and lifting forces.

Load sensing hydraulic system (LUDV) delivers hydraulic power only when needed.

Single-lever pilot control with integrated direction of travel switch for simple directional changes.

Additional 'Versa Steer' steering mode as standard for optimal control and reduced operator fatigue.

# ECONOMICAL

Schaeff Heavy Wheel Loaders are designed to be powerful in operation with low operating costs for an enhanced return on customer investment.

## HYDROSTATIC TRAVEL DRIVE – EFFICIENT PERFORMANCE

High work performance with low fuel consumption: The load-limit-controlled VarioPower hydrostatic travel drive enhances mobility during use – easy, fast and economical.

- ▶ The driver always gets maximum torque for maximum transverse force.
- ▶ Brake wear is reduced because the wheeled loader is hydrostatically braked.
- ▶ The machine travels with optimum traction from a standstill up to 40 kph without shifting.
- ▶ At high speed, a travel motor is disengaged, which in turn lowers fuel consumption.

Two travel motors ensure powerful starts and more power for difficult work. Travel speed and transverse force adapt automatically to the site demands.

### What this means for you:

- ! The hydrostatic drive delivers powerful performance and lower fuel consumption.
- 4x4 Permanent four-wheel drive.
- Reduced brake wear.

## HIGH PERFORMANCE LOADING TECHNOLOGY

The SP loading kinematics combine the force of the Z-kinematics with the advantages of P-kinematics.

- ▶ Large dumping widths, high tear-out and lifting forces in all bucket positions.
- ▶ The bucket and stacking device are guided exactly parallel over the entire lifting height.

### Pure control

The optional load oscillation damping system increases productivity by reducing the movement of the load whilst in transit.





# PURE POWER

## UNDER THE HOOD

The very fuel efficient four and six cylinder engines offer a high number of loading cycles per tank. The constant power throughout the speed range from 1,400 to 2,200 rpm yields high torque when starting out and maintains sufficient reserves if operation becomes more difficult. The transversally installed engine acts as a counterweight, increasing stability allowing for higher tipping loads. The lighter overall design reduces the fuel consumption. The compact design allows the driver to manoeuvre with ease. With the wide-opening one-piece hood, all engine components are easily accessible for routine maintenance and servicing.

### What this means for you:

-  Increased stability and higher tipping loads with transversally installed engine.
-  Reduced fuel consumption thanks to lighter overall design.
-  Excellent rear visibility with a short engine hood.
-  Higher manoeuvrability thanks to the compact design.
-  Long maintenance intervals at 500 hours.

## THE HYDRAULICS

The SP load kinematics are ideally supplemented by load-sensing high-pressure hydraulics. Steering and working movements are smooth and easy thanks to hydraulic pilot control. All loading functions can be controlled simultaneously with pressure limiting valves preventing the system from being overloaded. With thermostatic control, the hydraulic fluid warms up quickly, helping avoid wear from cold oil.

### What this means for you:

-  Load sensing hydraulic system (LUDV) delivers hydraulic power only when needed.
-  Efficient performance as working hydraulics act independently from drive hydraulics.
-  Thermostatic control for hydraulic oil.

# FULL POWER AHEAD

## INCHING DEVICE

Engine power is diverted from the travel hydraulics into the working hydraulics, allowing for optimised productivity and accurate movement.



## SMOOTH, EFFECTIVE BRAKING

Reduced wear, multi-disc brake running in the oil bath with long service life. The brakes are integrated in the axles and thereby protected from damage and dirt. The hydraulically powered 2-circuit brake system offers the highest possible safety.

## UNIQUE COOLING SYSTEM

The hydrostatic, temperature-controlled fan drive operates only when required, reducing fuel consumption and noise levels. The air intake innovatively located behind the cab takes in less contaminants thereby reducing cleaning and maintenance requirements.

## ROAD LICENCE

All heavy wheel loaders can be licensed for road travel – thus saving transport costs.

### What this means for you:

-  Inching pedal gives operators precise control.
-  Powerful and precise loading technology.
-  The unique cooling system reduces fuel consumption and service expense.



# BUILT AROUND THE DRIVER

## COMFORTABLE AND FUNCTIONAL

A workplace that is designed to enhance the operator experience, providing exceptional comfort, safety and productivity. Stepping into the generously proportioned cab, operators can enjoy the comfort from the hydraulic suspension seat and air conditioning, which comes as standard. Ergonomically designed instrument panels ensure that the driver has everything important in view whilst the telescopic steering column can be height and angle adjusted for additional comfort.

### What this means for you:

-  Excellent visibility for ease of manoeuvring and productivity.
-  Noise dampening and reduced vibrations.
-  Operator is relaxed and focused, improving productivity thanks to the comfortable hydraulic suspension seat.
-  Coolant/hydraulic level display from the cab.
-  Comfortable working temperature thanks to standard air conditioning system.
-  Overpressure system for cab protection ventilation is optional.
-  Second door on the right for better visibility to the side.



# POWERFUL AND PRECISE

## ONE OPERATING LEVER – ALL FUNCTIONS

All travelling and work movements of the wheeled loader are precisely controlled with the multi-function joystick, allowing the left hand to remain on the steering wheel. With the right hand, the driver controls the following functions:

- ▶ Operation of the loading hydraulics
- ▶ Operation of the additional control circuit
- ▶ Floating position
- ▶ Switching the direction of travel from forward to reverse



## OPTIMUM DELIVERY

In all steering movements, the hydraulic power adapts to the exact requirement thanks to the load sensing hydraulic system with variable LUDV flow rate (load-independent flow distribution).

## SELF-LOCKING DIFFERENTIAL

The automatic self-locking differential supplies optimum power to the wheels for increased traction in difficult and shifting terrain allowing the operator to concentrate fully on the job.

## STEERING

The central articulated steering with extreme steering angle lock provides operators with complete control in the narrowest sites. With the rear axle suspension and articulated steering operators enjoy excellent off-road mobility and driver comfort.

## VERSA STEER

Operators can select Versa-Steer mode when working in applications that require numerous steering movements. This causes the steering wheel to behave like a joystick. Small movements equate to full wheel lock thereby reducing operator effort and increasing productivity.

### What this means for you:

-  Simple operation via an operating lever increases productivity.
-  High operating reliability thanks to the operator-friendly arrangement of the operating and warning lights.
-  Reduced steering effort from innovative steering control. The combination of articulated steering and rear axle suspension increases productivity.
-  Keep working in slippery conditions with reduced wheel slip thanks to the self-locking differential.





# HIGHER FURTHER

The Schaeff loader arm lift mechanism makes all the difference: high volume performance, fast work cycles, precise operation and enormous power development in all work movements.

With optional extensions, you can attain even more impressive lifting heights while significantly expanding the action radius.

## ROBUST CONSTRUCTION

The 3-point suspension of the bucket consists of 80 mm bucket hinge pins. To protect material while working, the bucket anchor points are located directly on the lifting frame. Sealed bearing points on the lifting frame/bucket make for increased service life.

## MAXIMUM DUMP HEIGHT

Extended lifting frames are available as an option in a 0.65 and 1.25 meter size.

### What this means for you:

-  Large bucket opening and ideal bucket angle make for productive filling.
-  High tear-out/rack-back force over the entire lifting range, especially in the highest position – important for buckets with hydraulic clamping device.
-  Excellent view of attachments.
-  Suspension point quick-change device: Many different work attachments can be used.

## USE WITH PALLET FORK

The Schaeff lift mechanism is perfectly suited for use with pallet fork thanks to 100% parallel guidance. Depending on the model, up to 3.94 m stacking height and cargo loads of up to 9 tonnes can be transported.

## ALWAYS THE RIGHT TOOL

With the right tool, a Schaeff wheeled loader can handle a wide variety of work.

### The choice is yours

- ▶ Universal bucket (4-in-1)
- ▶ Grab bucket (compost bucket)
- ▶ High-tilt bucket
- ▶ Fork carrier
- ▶ Quick-change device
- ▶ Timber grab

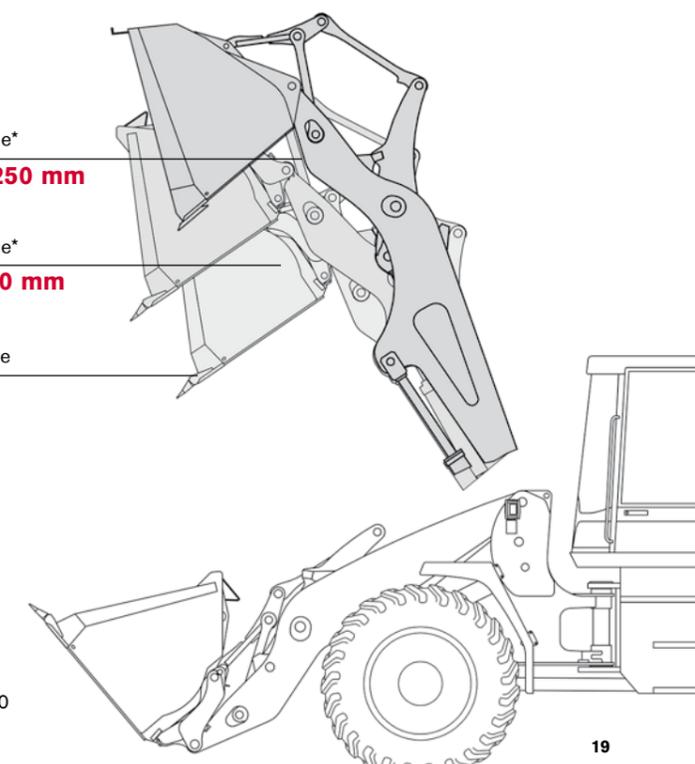
Extended lifting frame\*

**Increase of 1,250 mm**

Extended lifting frame\*

**Increase of 650 mm**

Standard lifting frame



\* from TL210

# SPECIFICATIONS

## ENGINE

Manufacturer, model	Perkins, 1104 D-44T
Type	4-cylinder turbocharged diesel engine, EC phase III A, COM (2008)
Combustion	4-stroke cycle, direct fuel injection
Displacement	4400 cm <sup>3</sup>
Net power rating at 2200 rpm (ISO 9249)	74.5 kW (102 hp)
Cooling system	Water

## ELECTRICAL SYSTEM

Nominal voltage	24 V
Lighting system in compliance with German and European standards	

## POWER TRANSMISSION

Hydrostatic drive, closed circuit, independent from loader hydraulics. Perfected driving automatics, automatic adjustment of drawbar pull and speed. Hydraulic motor power shift providing two speed ranges. Infinitely variable speed control forward and reverse. 4-wheel drive from reduction gear on rear axle via cardan shaft to front axle. Brake inching pedal.

2 speed ranges:	
"Low"	0-6 kph
"High"	0-20 kph

4 speed ranges (high-speed version optional):	
"Low"	0-6 / 0-20 kph
"High"	0-12 / 0-40 kph

## AXLES

Front: Rigid planetary final drive axle. Limited slip-type differential 45%.  
Rear: Oscillating (with cushioning) planetary final drive axle, with integrated reduction gear. Limited slip-type differential 45%.  
Angle of oscillation ±12°

## TIRES

Standard	15.5 R 25 VUT Bridgestone
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## BRAKES

Service brake: Hydraulically actuated two-circuit power brake system. Oil-immersed multi-disc brakes in both axles, acting on all 4 wheels via 4-wheel drive.  
Auxiliary brake: Hydrostatic drive provides dynamic braking.  
Parking brake: Spring-loaded brake acting on multi-disc brakes on both axle shafts.

## STEERING

Articulated, 2 steering cylinders with final positioning damping on both sides, fully hydraulic through Load-Sensing priority valve, quick and easy steering even at engine idle-running speed.  
Total steering angle 80°

## FLUID CAPACITIES

Fuel tank	140 l
Hydraulic system (incl. tank)	93 l

## OPERATING DATA, STANDARD EQUIPMENT

Operating weight (ISO 6016)	9200 kg
Tipping load, straight at full reach (ISO 14397-1), direct mounting / QAS	6575 / 6215 kg
Tipping load, articulated at full reach (ISO 14397-1), direct mounting / QAS	5780 / 5440 kg
Total length, bucket on ground	6690 mm
Total width	2300 mm
Turning radius at outside bucket edge	5395 mm
Wheelbase	2760 mm
Total height (top of cab)	3050 mm



## HYDRAULIC SYSTEM

Pump capacity	max. 99 l/min
Working pressure	310 bar
Control unit: Proportional hydraulic valve with 3 control circuits. Simultaneous, independent control of all movements. Single, four-way control lever (multi-function lever) for 1 tilt and 2 lift cylinders with integrated travel direction selector switch and switch for additional control circuit. Float position in control circuit "Lowering", electro-hydraulically operated. Additional control circuit electrically operated with preselection of flow rate and impulse/continuous operation.	

## LOADER FRAME

Loader frame with TSP-linkage, attachments directly mounted.	
General-purpose bucket (ISO 7546)	1.60 m <sup>3</sup>
Lift capacity at ground level (ISO 14397-2)	85,500 N
Breakout force at bucket edge (ISO 14397-2)	86,000 N

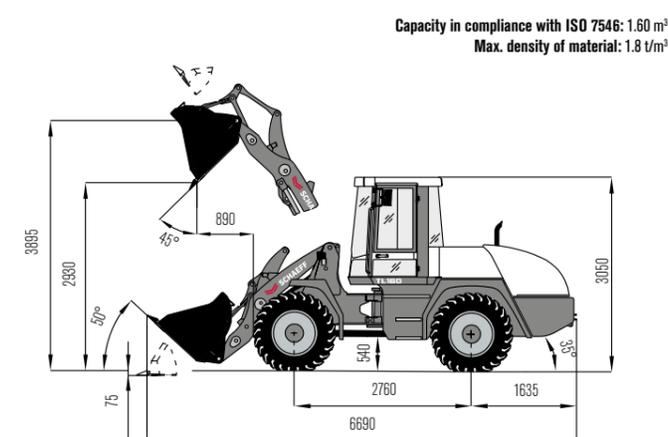
## FORK LIFT ATTACHMENT

Operating load over the total lift and steering range	3200 (3500*) kg
Operating load in transport position, approx. 300 mm above ground level, total steering range	3500* kg
Width of fork carrier	1900 mm
Length pallet forks (140x50 mm)	1120 mm
Stability factor	1.25
Operating load determined on level ground = 80 % of tipping load, articulated	

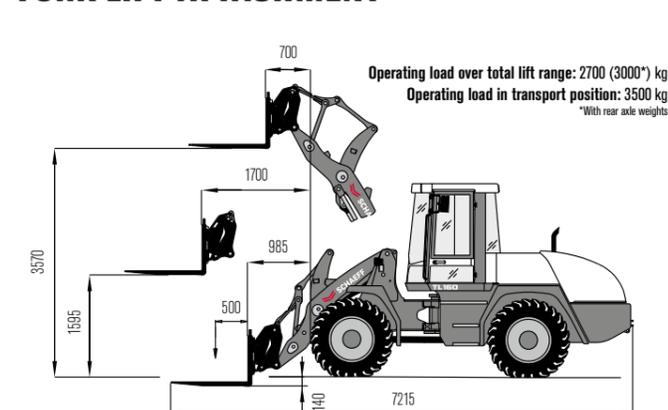
## CAB

Rubber-mounted full-vision steel cab, ROPS (acc. to ISO 3471) and FOPS (acc. to ISO 3449) certified. Cab featuring two doors, electric windshield intermittent wipers and washer (front and rear), tinted panoramic safety glass, sliding window on left-hand side.  
Driver's seat MSG85 (standard version) with hydraulic cushioning and lap belt, weight-adjustable, in compliance with ISO 7096 and ISO 6683.  
Cab heating with 3-speed heater fan (choice fresh air/recirculating air) and windshield defroster, front and rear.  
Automatic climate control.  
Tilt adjustable steering wheel.  
2 working floodlights, front.  
Battery disconnecter.  
Sound level values in compliance with EC-directives.  
\*With rear axle weights

## DIMENSIONS GENERAL-PURPOSE BUCKET



## FORK LIFT ATTACHMENT



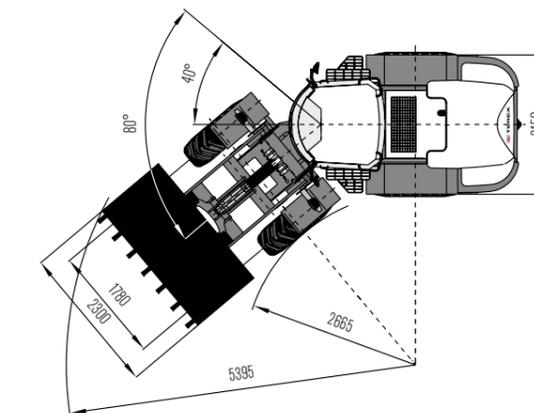
## BUCKET TYPE

	Capacity	Density	Width	Dump height
General-purpose bucket, quick-attach system (QAS), teeth	1.50 m <sup>3</sup>	1.8 t/m <sup>3</sup>	2300 mm	2890 mm
General-purpose bucket, QAS, bolt-on cutting edge	1.50 m <sup>3</sup>	1.8 t/m <sup>3</sup>	2300 mm	2850 mm
General-purpose bucket, directly mounted	1.60 m <sup>3</sup>	1.8 t/m <sup>3</sup>	2300 mm	2930 mm
General-purpose bucket, directly mounted, bolt-on cutting edge	1.60 m <sup>3</sup>	1.8 t/m <sup>3</sup>	2300 mm	2890 mm
Earth bucket, QAS	1.70 m <sup>3</sup>	1.6 t/m <sup>3</sup>	2300 mm	2890 mm
Earth bucket, QAS, bolt-on cutting edge	1.70 m <sup>3</sup>	1.6 t/m <sup>3</sup>	2300 mm	2790 mm
Earth bucket, directly mounted	1.80 m <sup>3</sup>	1.6 t/m <sup>3</sup>	2300 mm	2800 mm
Earth bucket, directly mounted, bolt-on cutting edge	1.80 m <sup>3</sup>	1.6 t/m <sup>3</sup>	2300 mm	2760 mm
Multi-purpose bucket, QAS	1.25 m <sup>3</sup>	1.6 t/m <sup>3</sup>	2300 mm	2890 mm
Multi-purpose bucket, QAS, bolt-on cutting edge	1.25 m <sup>3</sup>	1.6 t/m <sup>3</sup>	2300 mm	2850 mm
Light-material bucket, QAS, bolt-on cutting edge	2.20 m <sup>3</sup>	1.2 t/m <sup>3</sup>	2300 mm	2740 mm
Light-material bucket, QAS, bolt-on cutting edge	2.60 m <sup>3</sup>	0.8 t/m <sup>3</sup>	2500 mm	2710 mm
High-tip bucket	1.50 m <sup>3</sup>	1.2 t/m <sup>3</sup>	2300 mm	4360 mm

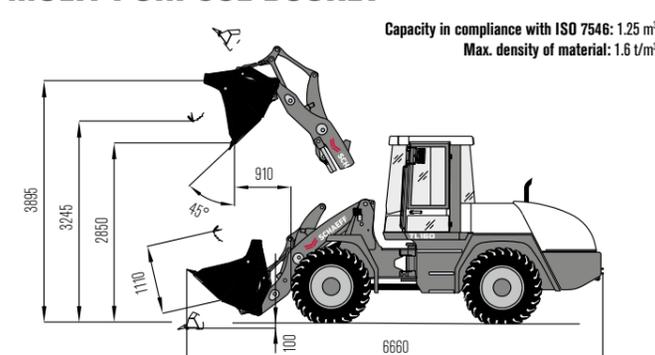
## EXAMPLES OF MATERIAL DENSITIES

Granite, basalt, sand (damp), gravel (damp), slate:	1.8 - 2.2 t/m <sup>3</sup>	Topsoil, clay, mineral coal:	1.1 - 1.6 t/m <sup>3</sup>
Sandstone, gypsum, limestone, soil (damp), sand (dry), gravel (dry):	1.5 - 1.8 t/m <sup>3</sup>	Wood chips (dry), compost, coke:	0.2 - 1.0 t/m <sup>3</sup>

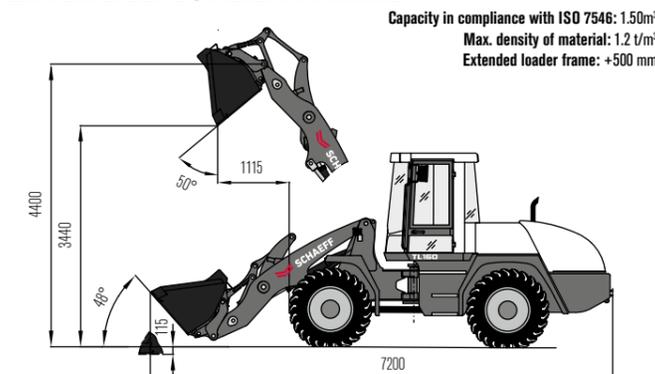
# TL160



## MULTI-PURPOSE BUCKET



## EXTENDED LOADER FRAME



## OPTIONAL EQUIPMENT

### TIRES

15.5-25 EM 60 12 PR
15.5-25 R 25 GP-2B L2 Goodyear
15.5 R 25 XHA Michelin
17.5 R 25 XHA Michelin
17.5-25 EM SGL 12 PR Goodyear
17.5 R 25 X-Mine D2 Michelin
Non-standard tires available on request

### FRONT ATTACHMENTS

General-purpose bucket*	1.60 m <sup>3</sup>
Earth bucket*	1.80m <sup>3</sup>
Light-material bucket*	2.20 m <sup>3</sup>
Light-material bucket*	2.60 m <sup>3</sup>
High-tip bucket*	1.50 m <sup>3</sup>
Multi-purpose bucket*	1.25 m <sup>3</sup>
Front ripper with 4 prongs	
Fork lift attachment: Fork carrier, 1,900 mm wide	
Forks, 1120 mm long, 140 mm wide, 50 mm high	
Load hook, attachable on fork arms	
Load hook integrated in quick-attach system	
Crane jib with rigid arm	
Sweeper, snow blade	

\*optionally with bolt-on cutting edge

### DRIVER'S STAND

Operator's seat MSG85 (comfort version), hydraulic damping, extra-high backrest, weight-adjustable, lap belt

Air-cushioned operator's seat MSG 95 (premium version) with orthopedic lumbar support, extra-high backrest, adjustable armrests, headrest, seat and backrest heating

### ENGINE

Diesel exhaust cleaner	Catalyst
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### HYDRAULIC SYSTEM

Open return	4th control circuit, proportional
Hydraulic outlet for front hand-held hammer	4th control circuit, electrical
Hydraulic installation 3rd additional control circuit, tube design	

### CAB

Height- and tilt-adjustable steering wheel	Pressurized cab
Right-hand door with sliding window	Independent diesel heating with timer
Working floodlight, rear	Air conditioning
Yellow beacon	Working floodlights, Xenon system

### OTHER OPTIONAL EQUIPMENT

High-speed version 40 kph	Filling with biodegradable hydraulic oil, ester-based, BIO-E-HYD-HEES
Electrical tank refilling pump	Special creep versions available on request
Pilot-controlled hose-rupture valves for lift and tilt cylinders	Dynamic scales, with printer
Back-up alarm for reverse travel	Ride control system
Central lubrication system	Protection for cardan shaft
Versa-Steer steering system	Guard for front window
Automatic bucket return positioner	Guard for front lights
Automatic bucket return positioner incl. lift height limitation	Guard for rear lights
Anti-theft device (immobilizer)	Rear axle weights
Extended loader frame (+500 mm)	Further optional equipment available on request



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