Operating Instructions

SCHAEFF TEREX

Wheel Loader
SKL 823

AUSGABE • EDITION

2002-06

GÜLTIG AB FZ-ID.NR. • VALID FROM SERIAL NO. • A PARTIR DU NO. DE SERIE

823/0100>

SCHAEFF-TEREX GMBH&CO KG • D-74595 LANGENBURG

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Order no.: **6 460 622 015**
Vehicle identity no.: *823/0100>*
Issue: *2002-06*

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1 Introduction

1.1 General

You decided to buy the **SCHAEFF SKL 823 Wheel Loader**.

The confidence placed in this model will be rewarded by the efficient and economical performance of the machine.

These operating instructions contain all information necessary for the correct use of the machine. Please read them carefully before putting the machine into operation and make sure that they are kept at hand at all times.

If your require additional information or if any point is unclear, please contact your dealer immediately.

Special equipment and attachments are not included in these operating instructions.

We reserve the right to make improvements on the machine within the scope of impending technical developments, without incurring any obligation to change these operating instructions.

*Any modifications of **SCHAEFF** products and their equipment using extras and work attachments which are not included in our product range require our written approval. If our approval is not sought, our warranty expires, as does our product liability for any resulting consequential damage.*

*The **vehicle identity number** of the machine is stamped on the identification plate located below the cab, on the front right-hand side.*

Please state the vehicle type and the vehicle identity number (1/1) when making inquiries or orders, and in all written correspondence.

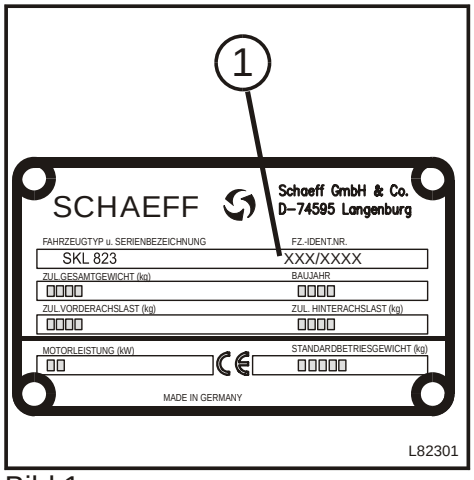


Bild 1

1.2 Warranty and Maintenance

The warranty period covers **1,000 operating hours**, not exceeding a maximum of twelve months, whichever comes first, beginning with the day the machine is handed over or put into operation.

Safe working conditions and good working order of the machine are prerequisites for efficient work. Your **SCHAEFF** Wheel Loader fulfils these requirements when correctly handled and when serviced and maintained as specified.

Careful observation of the machine whilst in function and the use of the specified lubricants will prevent malfunction.

Trained specialist personnel are responsible for any servicing of the machine which requires expert knowledge. Inspections and repairs must therefore be carried out by your dealer's customer service.

In respect of possible claims for damages during the warranty period, all work specified in the maintenance and inspection plan must be carried out at the specified intervals.

After the warranty period, too, regular maintenance must be performed in order to ensure that the machine is constantly in good working order and enjoys a reasonable service life.

Insist that only **original SCHAEFF spare parts** are used in the event of any repair work. In this way, you will have a product of lasting high quality, thereby ensuring that your machine maintains its original condition.

1.3 Notes on using the instruction book

References to pictures and items

The references to pictures and items contained in the text, such as "Figure 12/4" mean figure 12, item 4 (Bild = Figure).

The figures shown in this list partly contain additional equipment.

Symbols

"DANGER"

This symbol is employed for a high risk of injury to persons. It is essential that the safety notes are observed.

"WARNING"

This symbol is employed for information whose non-compliance may lead to severe material damage. It is essential that the safety notes are observed.

"NOTE"

This symbol is employed for information containing important notes about the correct use and / or how to proceed. Non-compliance may lead to malfunction.

1.4 Environmental standards

When operating or working on the machine the environmental standards currently valid must be observed at all times.

When performing installation, maintenance and repair work, special care must be taken to ensure that ecologically harmful substances such as

- lubricating oil and grease
- hydraulic oil
- fuel
- coolant
- liquid detergents containing solvent

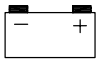
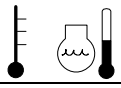
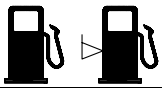
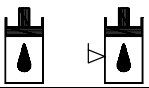
do not seep into the ground or the sewerage system.

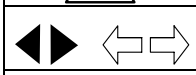
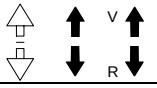
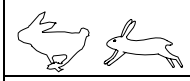
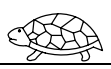
These substances must be kept, transported, collected and disposed of in suitable containers.

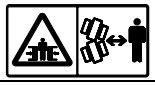
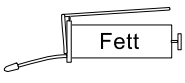
If above-mentioned liquids seep into the ground, their escape must be stopped immediately and the liquid be bound with suitable binding agents. If necessary, the contaminated soil must be excavated. Binding agents and excavated material must be disposed of in the proper manner. The environmental standards currently valid must be observed.

1.5 Pictograms

The following table explains the meaning of the pictograms which may be attached to your machine.

Symbol	Description
	Danger
	In Operating Instructions: WARNING On machine: CAUTION
	Note
	Battery charge indicator
	Pre-heating
	Engine oil pressure
	Engine oil temperature
	Engine oil level
	Coolant temperature
	Coolant level
	Air filter
	Fuel / Fuel level
	Fan Heater / Ventilation
	Windshield wash/ wipe system
	Hydraulic oil Hydraulic oil level

Symbol	Description
	Hydraulic oil temperature
	Hydraulic oil filter clogging indicator
	Horn
	Operating status Operating hours
	Parking brake
	Brake accumulator pressure
	Hazard warning system
	Direction indicator, left/ right
	Working floodlight(s)
	Upper beam indicator
	Direction of travel, forward/ reverse
	Rotating beacon
	Lashing points
	Suspension point for loading by crane
	Travel speed, fast
	Travel speed, slow

Symbol	Description
	Working hydraulics cut-off
	Unlocked
	Locked
	Float position
	Engine speed control
	Only shift at standstill
	High speed
	First-aid kit
	Fire extinguisher
	Bucket return positioner Lift frame height limitation
	Shock absorption
	On machine: Keep safety distance
	Danger of crushing
	Danger of injury
	Observe notes in Operating Instructions
	Grease gun Lubricating point

1.6 Copyright

This instruction book is intended for use by personnel responsible for operation, maintenance, repair and supervision of the machine.

1 Introduction

2. Safety and Prevention of Accidents

2.1 Introductory remarks

Before putting the earth-moving machine into operation, read these operating instructions carefully and strictly observe the indicated references for safe operation.

National safety regulations - e.g. the Accident Prevention Regulations, “Earth-Moving Machinery” (VBG 40) and “Vehicles” (VBG 12) in the Federal Republic of Germany - must also be complied with when operating the earth-moving machine.

In addition to the operating instructions, legal regulations governing road traffic and road safety measures must also be observed. Such requirements could also apply in respect of handling hazardous goods or the wearing of personal safety gear, for example.

Furthermore, safety laws governing work in particular locations (tunnels, adits, quarries, pontoons, contaminated areas, etc.) must likewise be observed.

2.2 Proper use

The earth-moving machine with standard bucket equipment is intended solely for work which is suitable for the function of the machine and its work implements.

Such work involves loosening, taking up, transporting and dumping soil, rock or other materials as well as loading these materials on trucks, conveyor belts or other means of transport, when the transport of the loading material is normally done by positioning the earth-moving machine.

The assembly of special work implements such as multi-purpose buckets, side-dump buckets, sweepers, fork lift attachments, etc. allows the machine to perform above mentioned work.

Any usage above and beyond that specified here, e.g. the transport of persons or the usage of the lift equipment as work platform, and any non-compliance with the manufacturer’s instructions is regarded as improper use. The manufacturer shall not be liable for damage resulting from improper use. This risk is borne solely by the plant operator.

Compliance with the operating and maintenance instructions, the performance of maintenance work as specified and adherence to replacement intervals all form part of the concept of proper use.

2.3 General safety notes

It is important to refrain from any working methods which impair safety.

The earth-moving machine may only be used when it is in a safe, operational condition.

The manufacturer's instructions must be complied with for operation, maintenance, repair, assembly and transportation.

The plant operator must provide additional special safety instructions, wherever necessary, for specific local conditions.

The operating instructions and any information pertaining to safety must be carefully kept in the driver's cab.

The operating instructions and safety notes must be complete and fully readable.

Safety devices on earth-moving machines shall not be deactivated or removed.

Protective work clothing must be worn during operation. Rings, scarves and unbuttoned jackets are to be avoided. Protective goggles, protective boots, helmets, gloves, reflecting jackets, ear-muffs, etc. may be required.

Before commencing work, information must be obtained on first aid and possible means of rescue (ambulance, fire brigade, helicopters).

A check must be carried out to ensure that the first aid box is at hand and that its contents comply with regulations.

Personnel must be aware of the location and method of operation of the fire extinguishers on the earth-moving machine as well as on-site fire-warning and fire-fighting equipment.

Loose parts such as tools or other accessories must be secured to the earth-moving machine.

Open doors, windows, covers, flaps, etc. must be closed or secured so that they cannot slam shut.

2.4 Operation

Earth-moving machines may only be independently operated and serviced by persons who

- are physically and mentally suitable
- have been instructed in the operation or maintenance of earth-moving machines and have demonstrated this ability to the plant operator
- can be expected to perform their allocated duties reliably

All such persons must be of the legal minimum age.

They must be designated by the plant operator to operate or service the earth-moving machine.

Operating equipment may only be operated from the driver's seat.

The earth-moving machine may only be ascended and entered using the entrances and surfaces intended for this purpose.

It is the driver's responsibility to ensure that the operator's stand, entrances and other surfaces of the earth-moving machine which have to be stepped on are free of dirt, grease, oil, ice and snow.

2.5 Danger zone

No one may enter the danger zone of earth-moving machines.

The danger zone encompasses the area around the earth-moving machine in which persons may be injured by movements of the earth-moving machine during operation, its work implements and attachments, or by swinging out or falling loads.

The machine operator may only work the earth-moving machine when no one is in the danger zone.

The machine operator must give a warning signal to persons who may be in danger.

The machine operator has to stop work with the earth-moving machine if anyone remains in the danger zone despite the warning.

To ensure no danger of crushing, a sufficient safety distance (min. 0.5 m) must be kept from solid objects, e.g. buildings, excavation slopes, scaffolding, other machines, etc.

If the above safety distance cannot be maintained, the area between solid objects and the working zone of the earth-moving machine must be blocked off.

If conditions are such that the machine operator's view of the driving and working zone is restricted, he must be guided or the driving and working zone must be marked by a solid barricade.

2.6 Transport of persons

The transport of persons on the machine is forbidden.

2.7 Stability

The earth-moving machine must be used, driven and operated in such a manner that its stability against overturning is ensured at all times.

The machine operator must drive at speeds which are suitable for local conditions.

The permitted payload of the earth-moving machine shall not be exceeded.

The earth-moving machine must remain at a sufficient distance from the edges of quarries, pits, mounds and slopes to ensure there is no risk of falling.

Earth-moving machines must be secured so that they cannot roll or slip when in the vicinity of excavations, shafts, ditches, pits and slopes.

2.8 Travel operation

Before putting the earth-moving machine into operation, the driver's seat, mirrors and operator's controls must be adjusted so as to ensure safe working.

A safety belt (seat belt), if installed, must always be fastened.

The windows must be clean and free of ice.

Driving tracks must be designed so as to ensure smooth, safe operation, i.e. they must be sufficiently wide, on ground which has as few slopes as possible and sufficient carrying capacity.

Downhill tracks must be set out in such a way that earth-moving machines can be safely braked.

Before driving downhill, the appropriate gear for the terrain must be selected and the gear lever shall not be moved during downhill travel (high gear or low gear).

On steep drops and uphill gradients, the load must be carried on the uphill side, if possible, in order to increase stability.

The carrying capacity of bridges, cellar roofs, vaults, etc. must be verified before the earth-moving machine can drive over them.

The internal dimensions of constructions must be noted before entering underground passages, tunnels, etc.

It is the plant operator's responsibility to ensure that equipment such as first-aid box, warning triangle, hazard lights are kept with the machine according to the traffic regulations valid in the user's country (e.g. in Germany "StVZO") and that the driver has the appropriate license as required by the national traffic laws of the country in question.

Outside areas covered by general traffic regulations, e.g. on construction sites, traffic regulations should be applied in the proper manner. This should also apply with regard to drivers' licenses.

2.9 Operation

Daily before commencing work and after every change of work attachments, the machine operator must check the correct fastening of the work attachments as well as the correct locking of the quick-mount hitch. Work attachments are to be carefully moved at low height. During this check no one shall be in the danger zone of earth-moving machines.

The machine operator may only swing the work equipment over occupied driver's seats, operator consoles and workplaces of other machines when these are protected by overhead guards (FOPS).

If a cab does not have the required protection, the driver of this vehicle must leave the operator's stand when the work equipment has to be slewed overhead.

The vehicles must be loaded in such a manner as to ensure that there is no overloading and no material can be lost during travel. The vehicle must be loaded from the lowest possible height.

Unloading points must be arranged in such a way as to avoid longer stretches in reverse.

At dumping points, earth-moving machines may only be operated when suitable measures have been taken to prevent rolling or falling.

2.10 Guides

Guides must be easily recognizable, e.g. by means of reflective clothing. They must remain within the machine operator's field of sight.

While guiding the machine, guides shall not be given other jobs which may distract them from their task.

2.11 Danger of falling objects

Earth-moving machines may only be used where there is a danger of falling objects when the operator's stand has an overhead guard (FOPS). A front guard must be employed if there is a risk of materials breaking into the cab.

In front of walls e.g. of stacked materials, earth-moving machines must be positioned and operated in such a way that the driver's seat and entry to the driver's seat are not situated on the side facing the wall.

Demolition work may only be performed by earth-moving machines where there is no danger to persons and if the machine is equipped with overhead guard (canopy), front guard mounted on cab and the appropriate work implement.

See regulations book "Demolition work" (ZH 1/614) published by the Tiefbau-Berufsgenossenschaft (the employer's liability insurance association).

2.12 Working in the vicinity of underground power lines

Before commencing excavating work using earth-moving machines, it must be determined whether any underground power lines are present in the intended working zone which may present a danger to persons.

If underground power lines are present, their exact position and course must be determined in consultation with the proprietor or operator of the lines, and the necessary safety precautions decided and implemented.

The course of power lines in the work area must be clearly marked, under supervision, before commencing any excavation work. If the position of lines cannot be determined, search ditches must be dug - manually, if needed.

If underground power lines are encountered unexpectedly or they or their protective covers are damaged, the machine operator must discontinue work immediately and notify the supervisor.

2.13 Working in the vicinity of overhead power lines

When the earth-moving machine is being used in the vicinity of overhead power lines and trolley wires, a safety distance which varies depending upon the nominal voltage of the overhead line must be maintained between the lines and the earth-moving machine and its work equipment, in order to prevent current overspill. This also applies to the distance between these lines and attached implements or loads.

The safety distances specified below must be complied with:

Nominal voltage in Volt	Safety distance in meters
- 1000 V	1.0 m
over 1 kV - 110 kV	3.0 m
over 110 kV - 220 kV	4.0 m
over 220 kV - 380 kV	5.0 m
nom. voltage unknown	5.0 m

In the observation of safety distances, all working movements of earth-moving machines, e.g. positions of the work equipment and the dimensions of attached loads must be taken into consideration. Uneven ground which would cause the earth-moving machine to be inclined and thus nearer to overhead lines must also be taken into account.

During work in windy conditions, both overhead lines and work equipment may swing out, thus reducing the safety distance.

If it is impossible to maintain sufficient distance from overhead power lines and trolley wires, the plant operator must consult with the proprietor or operator of the overhead lines to find other safety precautions to prevent current overspill.

Such measures could be, e.g.

- Switching off the current
- Re-routing the overhead line
- Cabling, or
- Limiting the work zone of earth-moving machines.

2.14 Operation in closed rooms

If earth-moving machines are to be used in closed rooms, these areas must be sufficiently ventilated and the special regulations observed.

2.15 Work stoppages

Before rest periods and at the end of the working day, the driver of the earth-moving machine must park the latter on ground which has sufficient carrying capacity and is as even as possible, and must secure it against unintended movement.

Before rest periods and at the end of the working day, the driver must lower the work equipment onto the ground or secure it so that it cannot move about.

The driver may not leave the earth-moving machine when the work equipment has not been lowered to the ground or secured.

Earth-moving machines may only be parked in places where they do not present an obstacle, e.g. on the construction site or to plant traffic. Warning devices, e.g. triangles, warning cordons, flashing or hazard lights are to be used if necessary.

Before leaving the operator stand, the driver must bring all operating equipment into home position, switch off the working hydraulics and apply the brakes.

If the driver is leaving the earth-moving machine unattended, he must first turn off the drive motors and ensure that they cannot be started up by unauthorized persons (e.g. removing ignition keys).

2.16 Change of work attachments, maintenance, repair

Earth-moving machines may only be converted, maintained or serviced under the guidance of a suitable person designated by the plant operator and following the manufacturer's operating instructions.

After every change of work attachments, the driver must convince himself that the quick-mount hitch is correctly fastened and locked.

Work on e.g.

- braking,
- steering,
- hydraulic and
- electric systems

of the machine may only be carried out by expert personnel specially trained in these areas.

Stability must be ensured during all type of work on the machine at all times.

The work equipment must be secured against movement by lowering it to the ground or equivalent measures, e.g. cylinder supports, trestles. With the engine running, the unprotected articulation range of articulated loaders shall not be entered.

When jacking up earth-moving machines, jacking devices must be positioned so that they cannot slip. Jacks must be positioned and applied absolutely straight, without tilting.

Raised earth-moving machines must be supported by suitable structures such as crosswise stacks of planks, square timbers or steel trusses.

Earth-moving machines which are raised with work equipment must be stabilized by a supporting structure immediately after lifting. Work under raised machines which are only supported by their hydraulics is forbidden.

The engine/motor(s) must be turned off prior to all maintenance and repair work. These requirements may only be ignored in the case of maintenance or repair work which cannot be performed without the engine/motor(s) running.

When performing maintenance and repair work on the hydraulic system, the latter must be relieved of pressure. With the engine turned off, lower the work equipment to the ground and actuate all hydraulic control levers until there is no pressure in the hydraulic system.

Before working on the electrics or when performing arc-welding on the machine, the connection to the battery must be interrupted.

When disconnecting the battery, first the negative pole then the positive pole must be disconnected. The battery must be re-connected in reverse order.

During repair work around the battery, the battery must be covered with insulating material. Tools should never be placed on or near the battery.

Protective devices of moving machine parts may only be opened or removed when the drive has been switched off and cannot be switched on again by unauthorized persons.

Protective devices are e.g. engine/motor covers, doors, protective grating, trim.

Upon completion of assembly, maintenance or repair work, all protective devices must once more be attached in the proper manner.

Load-bearing parts of earth-moving machines may only be welded following consultation with the manufacturer and in accordance with recognized welding principles.

Canopies (ROPS, FOPS) shall not be welded or drilled in any way.

Alterations, such as welding of the hydraulic system, may only be undertaken with the manufacturer's permission.

Before commencing work on the hydraulic system, the operating pressure, pilot pressure, back pressure and pressure inside the tank must be let off.

Swallowing lubricants, or long and repeated skin contact, can be hazardous to health. When used properly, there is no particular danger to health. The safety specification sheets from the mineral companies must be observed.

Only the hoses specified by the manufacturer may be used.

Hydraulic hoses must be routed and assembled by expert personnel.

In the vicinity of fuel or batteries, smoking and naked flames are prohibited.

2.17 Recovery, loading, transportation

Earth-moving machines may only be loaded onto recovery vehicles when adequate towing vehicles are used.

The tow fixing points specified by the manufacturer must be employed.

For loading and transportation, earth-moving machines and all necessary auxiliary equipment must be secured against unwanted movement.

The traveling gear and track-laying gear of earth-moving machines must be sufficiently cleaned of mud, snow and ice to ensure that ramps can be driven up without risk of slipping.

When transporting the earth-moving machine on trucks, flatbed trailers, or by rail, it must be sufficiently secured with chocks and by attachment to the lashing points.

Before setting off, the route to be taken must be examined to determine whether the roads are wide enough, entrances and passages under bridges are large enough and that roads and bridges have sufficient carrying capacity.

2.18 Monitoring and inspections

The machine must be submitted to a general inspection according to the existing UVV-regulations (Accident Prevention Regulations). This inspection must be carried out by an expert (e.g. machine engineer or machine foreman):

- before the machine is put into operation for the first time and before the machine is again put into operation when essential modifications have been made
- at least once a year
- in the meantime, according to operating conditions and local environments

The results of this inspection have to be recorded in writing and this record has to be kept until the next inspection takes place.

Prior to every work shift, the machine operator must check the earth-moving machine according to the maintenance and inspection plan.

Hydraulic hoses must be replaced as soon as the following damage are recognized:

- Damage to the outer layer which reach the intermediate layer
- Embrittled patches on the outer layer
- Deformations when under pressure or without pressure which differ from the original shape of the installed hose
- Leaks
- Damage to hose fittings or to the connection between the fitting and the hose

The coolant level shall only be checked when the engine has cooled down; the cap must be turned carefully in order to let off excess pressure.

Prior to operations, the machine operator must check the function of the safety devices.

The machine operator must advise the supervisor immediately - and his replacement, if there is a change of operator - with regard to any shortcomings.

In the event of shortcomings which jeopardize the operating safety of the earth-moving machine, it shall not be used until these have been eliminated.

2.19 Fire protection

The fire extinguisher must be kept in the cab. The fire extinguisher symbol must be attached.

2.20 Emergency exit

The right-hand cab door acts as an emergency exit.

2.21 Other dangers

Failure of hydraulic system

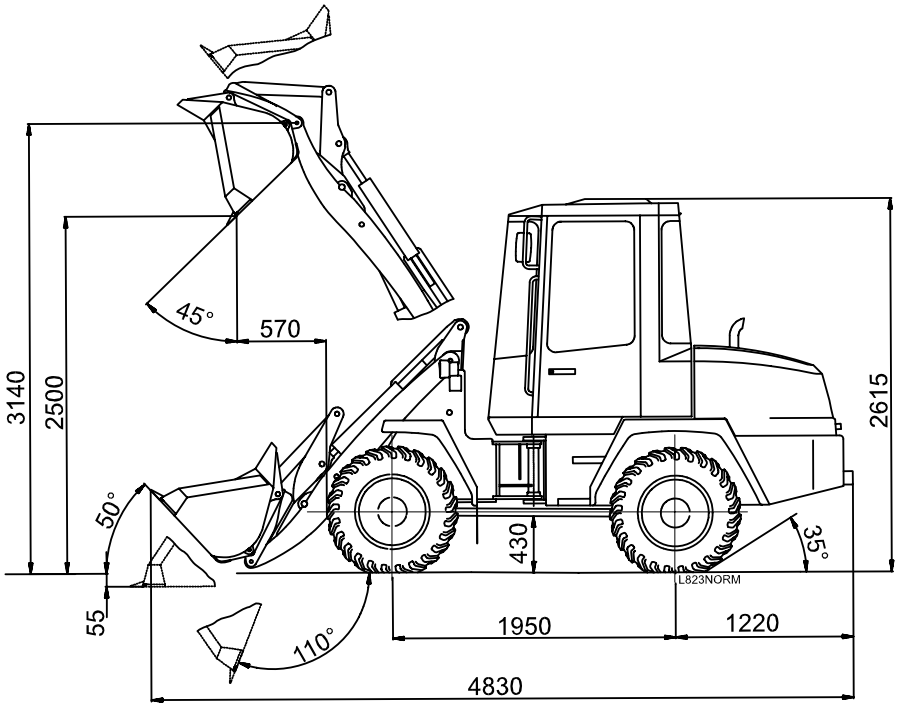
If the standstill of the diesel engine, a defect of the hydraulic pump or the loss of hydraulic oil leads to the failure of the hydraulic system, only the following **EMERGENCY functions** remain possible:

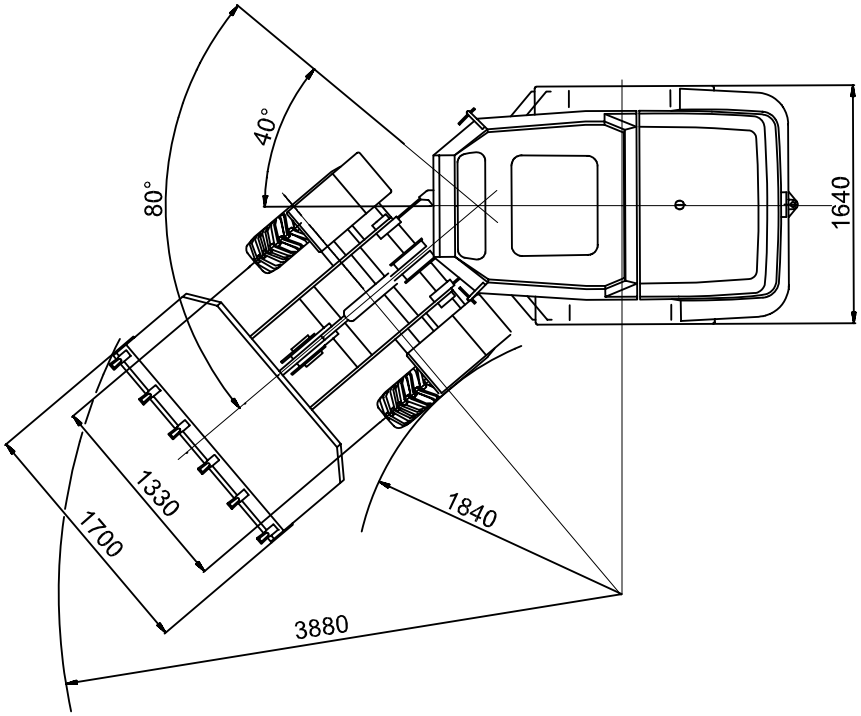
- manual steering (not servo-assisted) and
- lower work equipment (only if ignition is switched on)

3 Technical Data

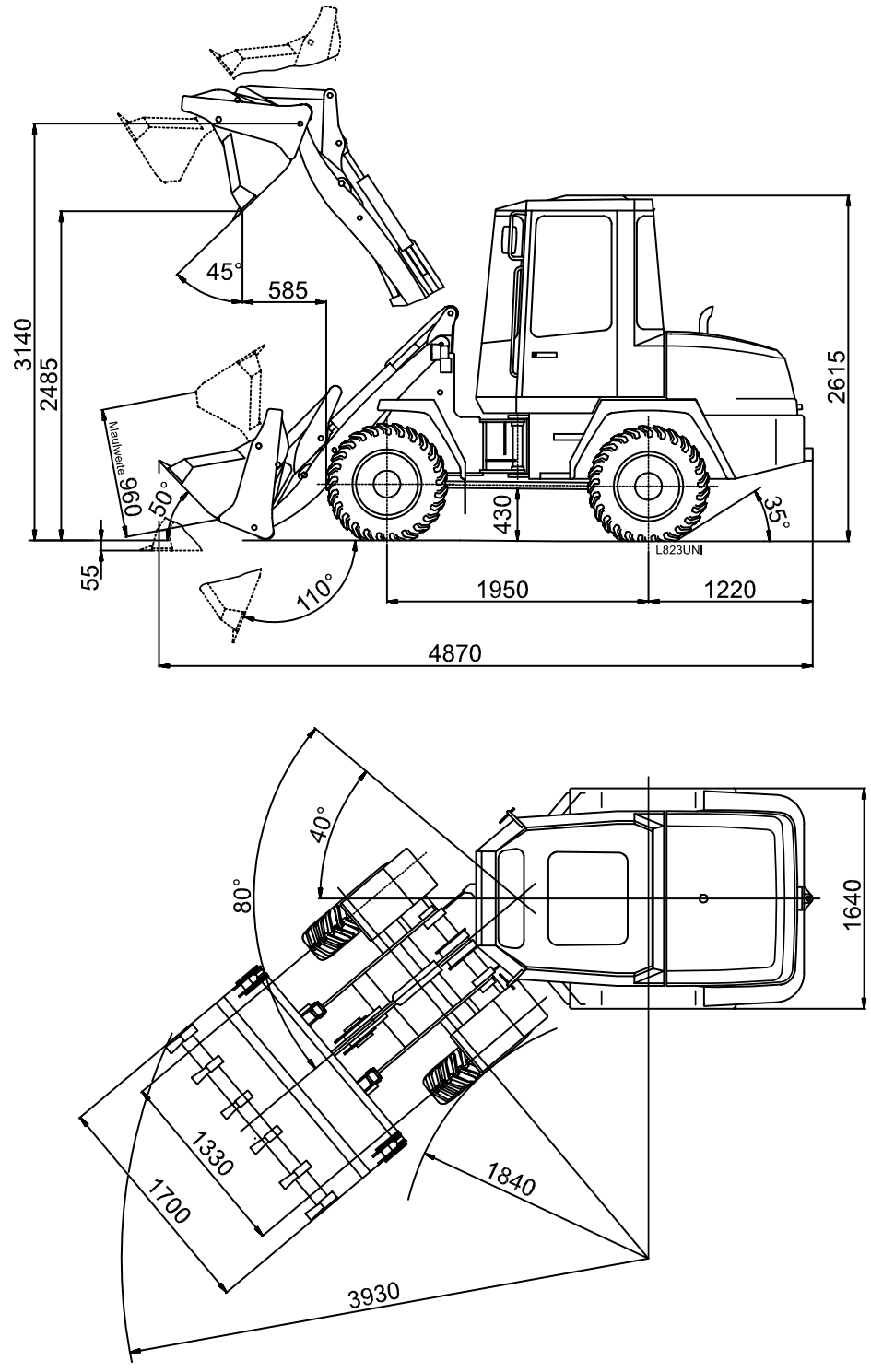
3.1 Views

- General-purpose bucket



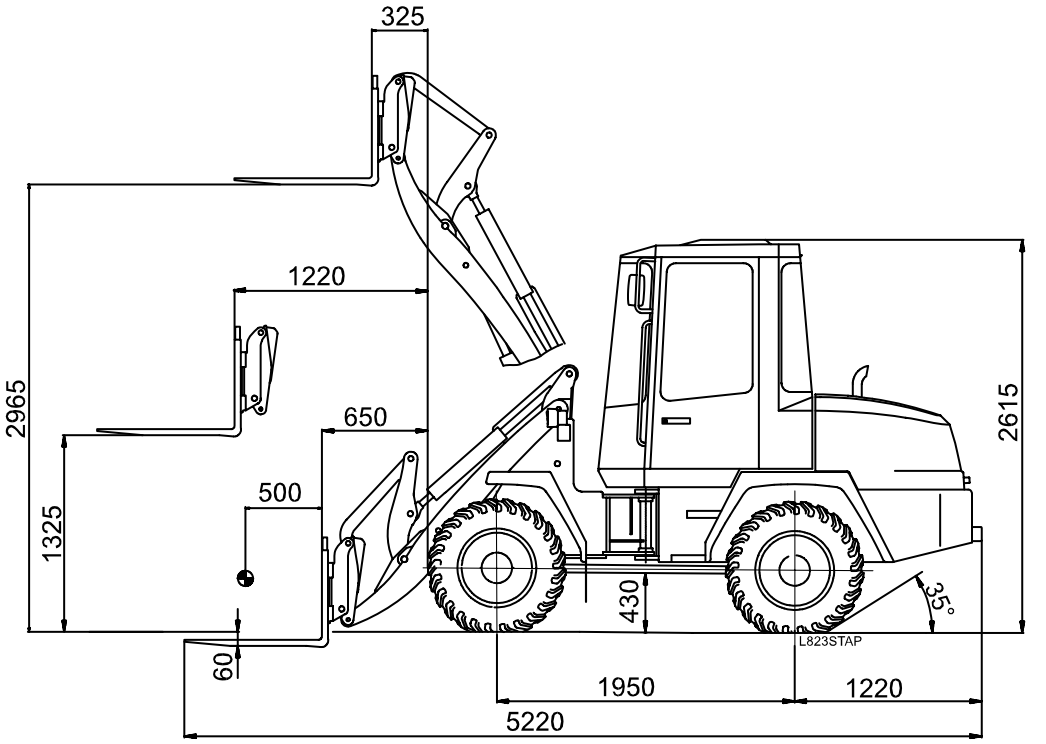


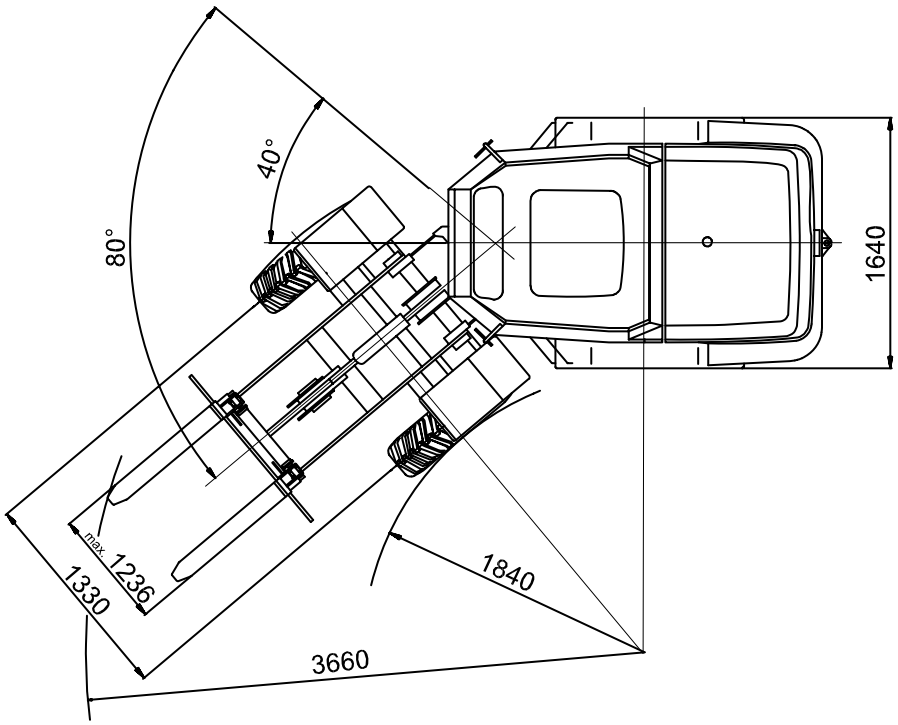
- Multi-purpose bucket



Maulweite - Opening width

- Fork lift attachment





3.2 Diesel engine

Make:	Perkins
Type:	704 - 30
Design:	4-cylinder, in line
	Four-stroke diesel engine with direct fuel injection
Displacement:	3,000 cm^3
Power to DIN 70020:	37.0 kW at n=2,400 rpm
Torque:	max. 186 Nm / 1,600 rpm
Specific fuel consumption:	215 g/kWh
Cooling:	Water-antifreeze for all-year operation
Heating:	Fresh air with heat exchanger connected to coolant circuit

3.3 Electrical system

Operating voltage:	12 V
Battery:	12 V / 105 Ah / 450 A
Generator:	12 V 65 A three-phase current
Starter:	2.5 kW
Starting aid:	Glow plugs
Lighting system:	Halogen H4 floodlights acc. to Regulations Authorizing the Use of Vehicles for Road Traffic (StVZO) in Germany

3.4 Travel drive

Travel drive:	Variable displacement pump, flange-mounted directly onto diesel engine, two-stage variable displacement motor with power shift on the rear axle reduction gear.
	Suction filter in the form of a fixed tank filter.
Travel speed:	Forward - Reverse
	Standard version
	Gear range I "Work": ..... approx. 0-6.5 km/h
	Gear range II "Road": ..... approx. 0-20 km/h
	High-speed version
	Gear range I "Work" ..... approx. 0-6.5 km/h
	Gear range II "Road": ..... approx. 0-30 km/h

Power transmission:	Hydrostatic travel drive in closed circuit with automatic adjustment of propulsive force and speed due to load-limit control of variable displacement pump.
	Infinitely variable speed control forward and reverse.
	Four-wheel drive via propeller shaft connection
Travel operating pressure:	max. 440 bar

3.5 Brakes

Service brake:	Hydraulically actuated center-mounted drum brake on front axle, combined with hydrostatic brake of travel drive.
	The brake acts on all four wheels via four-wheel drive.
Parking brake:	Mechanically actuated drum brake on front axle.
Auxiliary brake:	The hydrostatic travel drive in the closed circuit acts as an additional non-wearing auxiliary brake.

3.6 Hydraulic system

Hydraulic pump:	Gear pump on diesel engine power take-off
	Max. pump capacity: 37.5 l/min. Operating pressure, steering: 175 bar Operating pressure, loading: 250 bar
Priority valve:	Priority supply of hydraulic oil to steering by means of **load-sensing system**, which ensures that all the available oil can be provided to the steering if necessary In this way, rapid steering movements are possible even at low revs.
Steering:	Fully hydraulic, proportionally acting articulated steering by means of steering control unit and two double-acting steering cylinders.
Total steering angle:	80°
Loading system:	Double-acting work cylinders, one lift cylinder and one patented dump cylinder with double end rod.
	3-circuit control valve
	Electro-hydraulically operated float position for “Lower” function.
	Single, four-way control lever (joystick) with integrated direction-of-travel switch, float position switch and switch for additional control circuit.
	Combined return suction filter in the form of a fixed tank filter.
Hydraulic oil radiator:	Thermostatically controlled

3.7 Axles

***Front axle*:** ..... Rigidly mounted planetary final drive axle with self-locking differential and integrated center-mounted drum brake.

Rear axle:..... Oscillating planetary final drive axle with self-locking differential and integrated reduction gear.

Oscillating angle: ± 12°

3.8 Tires

Tire size	Type	Profile	Tire pressure, front	Tire pressure, rear
365/70	R 18	SPT 9	3.0	2.0
10.5-18	MPT 8 PR	TG 32	3.0	2.0
12.5-18	MPT 8 PR	E 91	2.0	1.8
15.5/55	R 18	MPT	2.5	1.8
335/80	R 18 XM	27 TL Michelin	2.5	2.0
335/80	R 18	SPT 9	2.5	2.0

Non-standard tires available on request!

During fork lift operations, the tire pressure of the front wheels must be increased by at least 0.5 bar.

3.9 Lubricants

3.9.1 Filling quantities

Fuel tank:	approx.	72.0	lt.	diesel fuel
Engine with oil filter:	approx.	8.2	lt.	engine oil (change qty.)
Hydraulic oil, tank and system:	approx.	61.0	lt.	hydraulic oil
Hydraulic oil tank:	approx.	46.0	lt.	hydr. oil (change qty.)
Service brake:	approx.	0.25	lt.	ATF-oil
Front axle center housing:	approx.	6.5	lt.	transmission oil
Rear axle center housing:	approx.	6.5	lt.	transmission oil
Transmission:	approx.	1.5	lt.	transmission oil
Wheel hubs, front/rear axles:	each approx.	0.35	lt.	transmission oil
Coolant:	approx.	13.0	lt.	water with anti-corrosion agent and antifreeze

All values stated are approximate values.
The level marking is always the decisive factor.

3.9.2 Fuel, lubricant and coolant specifications

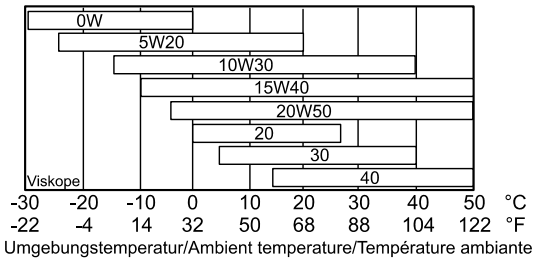
Application	Code designation acc. to Bi [1)]	Prescribed fuels, lubricants and coolants for Central Europe		Remarks
		Designation	Specification, Standards, Quality	
Engine	--	Diesel fuel	DIN 51601 ASTM D975 1-D / 2-D	*Before using RME-fuels (**r**ape oil **m**ethyl **e**ster), it is essential to consult your responsible **SCHAEFF** dealer for further details.*
Engine	EO 1540 A	Engine oil	SAE 15W-40 API CF4	See also engine manufacturer's instructions
Cooling for engine	SP-C	Coolant	Antifreeze based on ethylene glycol	See also engine manufacturer's instructions
Hydraulic system	HYD 1040	Hydraulic oil or multi-grade engine oil	HVLP D 68 or SAE 10W-40	**the following viscosity limit values must be kept (according to ASTM 445)** at 100° C min. 10 mm ^{2}/s (cSt) at -10° C approx. 1,500 mm ^{2}/s (cSt)
	BIO-E-HYD-HEES	Biodegradable hydraulic oil on synthetic ester base	Filling according to customer specifications. Brand label on machine. **Do not mix** biodegradable oils of different suppliers.	The same viscosity specifications apply as for mineral hydraulic oils. *When changing from mineral to biodegradable hydraulic oils, the tank and hydraulic system must be completely drained, cleaned and flushed.* *For further details before changing oils, please consult your **SCHAEFF** dealer.*
Axles, Wheel hubs, Transmission	GO 90 LS	Transmission oil	SAE 80W-90LS API-GL 5	Alternative recommendations SAE 90LS SAE 85W-90LS
Lubricating points	MPG-A	Multi-purpose, lithium-soap based grease	K2K-30 DIN 51825	
Brake	ATF	Brake oil	ATF Type A Suffix A Dexron-IID	

[1)] In conformity with the regulation lubricants of the Main Association of the German Building Industry e.V.

Alternative recommendation for other temperature ranges

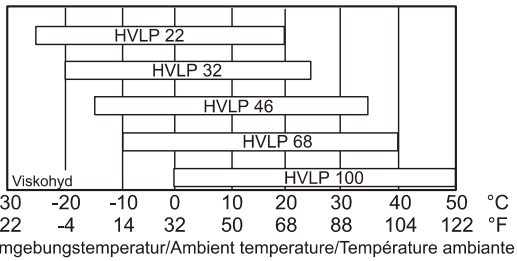
Engine oil

according to API CG 4 or CF 4 and
according to ACEA E3 or E2



Hydraulic oil

according to DIN 51524.T3 HVLP



3.10 Permissible loads in accordance with StVZO

(Regulations Authorizing the Use of Vehicles for Road Traffic in Germany)

Permissible gross weight	⇨see nameplate
Permissible axle load, front.....	or
Permissible axle load, rear	⇨General Operating License

3.11 Sound level values, vibration

Sound level values in compliance with directive 2000/14/EC and EN 474

Guaranteed sound power level:	Driver's cab	Canopy
Sound pressure level:	$L_{W(A)}$ 99 dB (A)	L_{WA} 100 dB (A)
	$L_{p(A)}$ 75 dB (A)	L_{pA} 85 dB (A)

Vibration values in compliance with directive 98/37/EEC and EN 474

Weighted r.m.s. value of acceleration is **below**	0.5 m/s^2	for entire body
and	2.5 m/s^2	for upper limbs

3.12 Dimensions and weights

Data referring to general-purpose bucket and 12.5-18 MPT 8 PR tires

Operating weight with standard equipment: ..... approx.	3,900	kg
Total length on ground:.....	4,830	mm
Total width:	1,700	mm
Height over cab:.....	2,615	mm
Wheel base:.....	1,950	mm
Tire base:.....	1,330	mm
Rear overhang angle:	35	°
Ground clearance beneath propeller shaft:.....	430	mm
Turning radius at outside edge of bucket in transport position:	3,880	mm
Turning radius at inside edge of tires:.....	1,840	mm
Turning radius at outside edge of tires:.....	3,510	mm