



# Operating Instructions



## Wheel Loader SKL 854

**Keep in a safe place for later use!**

**Place of safe keeping: Behind the driver's seat.**

Ausgabe • Edition

**2005-10**

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

**000854/0099>**

TEREX | SCHAEFF GMBH • D-74595 LANGENBURG

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|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>Introduction</b>  | <b>7</b>  |
| 1.1      | Warranty and Maintenance   | 8         |
| 1.2      | Copyright  | 8         |
| 1.3      | Notes on using the Operating Manual  | 8         |
| 1.4      | Regulations concerning environmental protection                              | 9         |
| 1.5      | Pictograms   | 10        |
| <b>2</b> | <b>Safety and Accident Prevention</b>  | <b>13</b> |
| 2.1      | Declaration of Conformity  | 13        |
| 2.2      | Introductory remarks   | 13        |
| 2.3      | Proper use   | 13        |
| 2.4      | General safety instructions  | 14        |
| 2.5      | Operation  | 14        |
| 2.6      | Danger zone  | 15        |
| 2.7      | Transport of persons   | 15        |
| 2.8      | Stability  | 15        |
| 2.9      | Driving  | 16        |
| 2.10     | Operation  | 16        |
| 2.11     | Guides   | 16        |
| 2.12     | Danger of falling objects  | 17        |
| 2.13     | Working in the vicinity of underground power lines                           | 17        |
| 2.14     | Working in the vicinity of overhead power lines                              | 17        |
| 2.15     | Operation in closed spaces   | 18        |
| 2.16     | Work stoppages   | 18        |
| 2.17     | Change of work attachments, maintenance, repair                              | 19        |
| 2.18     | Recovery, loading and transportation   | 20        |
| 2.19     | Monitoring and inspections   | 20        |
| 2.20     | Fire protection  | 20        |
| 2.21     | Emergency exit   | 21        |
| 2.22     | Notes concerning residual dangers  | 21        |
| <b>3</b> | <b>Technical Specifications</b>  | <b>23</b> |
| 3.1      | Views  | 23        |
| 3.1.1    | Dimensioned drawing with general-purpose bucket                              | 23        |
| 3.1.2    | Dimensioned drawing with multi-purpose bucket                                | 24        |
| 3.1.3    | Dimensioned drawing with fork lift attachment                                | 25        |
| 3.2      | Engine   | 26        |
| 3.3      | Electrical system  | 26        |
| 3.4      | Travel drive   | 26        |
| 3.5      | Brakes   | 27        |
| 3.6      | Hydraulic system   | 27        |
| 3.7      | Axles  | 27        |
| 3.8      | Tires  | 28        |
| 3.9      | Fuels, lubricants and coolants   | 28        |
| 3.9.1    | Fluid capacities   | 28        |
| 3.9.2    | Fuel, lubricant and coolant specifications                                   | 29        |
| 3.10     | Permissible loads in compliance with German Road Traffic Regulations (StVZO) | 30        |
| 3.11     | Sound level values, vibration  | 30        |
| 3.12     | Dimensions and weights   | 31        |
| 3.13     | Optional accessories   | 33        |

# Index

---

|          |   |           |
|----------|---|-----------|
| <b>4</b> | <b>Operation</b>  | <b>35</b> |
| 4.1      | Initial familiarization   | 35        |
| 4.2      | Display elements and operator controls                              | 36        |
| 4.3      | Engine  | 40        |
| 4.3.1    | Starting  | 40        |
| 4.3.2    | Monitoring the machine during operation                             | 41        |
| 4.3.3    | Switching off the engine  | 41        |
| 4.4      | Driver's seat / Steering wheel tilt adjustment                      | 42        |
| 4.5      | Heating/ventilation   | 43        |
| 4.6      | Lighting in compliance with German Road Traffic Regulations (StVZO) | 43        |
| 4.7      | Hydroinflation of tires   | 44        |
| 4.8      | Driving, steering and braking                                       | 45        |
| 4.8.1    | Driving   | 45        |
| 4.8.2    | Steering  | 47        |
| 4.8.3    | Brakes  | 47        |
| 4.8.4    | Driving on roads  | 48        |
| 4.8.5    | Switching off the machine (parking)                                 | 49        |
| <b>5</b> | <b>Working Operation</b>  | <b>51</b> |
| 5.1      | Operation - Loader  | 51        |
| 5.2      | Changing work attachments   | 53        |
| 5.2.1    | General   | 53        |
| 5.2.2    | Assembly of work attachments  | 54        |
| 5.3      | Notes on how to work with the machine                               | 56        |
| 5.3.1    | Loading   | 56        |
| 5.3.2    | Scraping and grading  | 56        |
| 5.3.3    | Excavating  | 56        |
| <b>6</b> | <b>Recovery, Loading and Transporting</b>                           | <b>57</b> |
| 6.1      | Recovery  | 57        |
| 6.2      | Loading with a crane  | 58        |
| 6.3      | Transport of the machine  | 58        |
| <b>7</b> | <b>Care and Maintenance</b>   | <b>59</b> |
| 7.1      | Intervals   | 59        |
| 7.2      | Regular oil analyses  | 60        |
| 7.3      | Warranty  | 60        |
| 7.4      | Inspection parts and aids   | 61        |
| 7.5      | Care and cleaning   | 62        |
| 7.6      | Notes for operation in winter                                       | 62        |
| 7.7      | Checking, maintenance and inspection plans                          | 64        |
| 7.7.1    | Initial inspection (hand-over inspection)                           | 64        |
| 7.7.2    | Daily and weekly tasks  | 66        |
| 7.7.3    | Overview of lubricating points                                      | 68        |
| 7.7.4    | Inspection plan   | 70        |
| 7.8      | Inspection and maintenance work                                     | 72        |
| 7.8.1    | Engine oil  | 72        |
| 7.8.2    | Changing the engine oil filter                                      | 74        |
| 7.8.3    | Cooling system - combined hydraulic oil-water cooler                | 74        |
| 7.8.4    | Fuel system   | 76        |
| 7.8.5    | Air filter, air intake  | 78        |
| 7.8.6    | Double V-belt   | 82        |
| 7.8.7    | Checking the valve lash   | 84        |

---

|           |   |            |
|-----------|---|------------|
| 7.8.8     | Brakes . . . . .                                  | 85         |
| 7.8.9     | Hydraulic oil tank . . . . .                      | 87         |
| 7.8.10    | Hydraulic oil return filter . . . . .             | 88         |
| 7.8.11    | Replacing the breather . . . . .                  | 89         |
| 7.8.12    | Axles . . . . .                                   | 90         |
| 7.8.13    | Wheels . . . . .                                  | 92         |
| 7.8.14    | Injection valves . . . . .                        | 93         |
| 7.8.15    | Electrical equipment . . . . .                    | 93         |
| 7.8.16    | Cab ventilation dust filter . . . . .             | 94         |
| 7.8.17    | Windshield washer system . . . . .                | 95         |
| 7.9       | Immobilization . . . . .                          | 96         |
| 7.9.1     | Preservation (temporary immobilization) . . . . . | 96         |
| 7.9.2     | During the immobilization . . . . .               | 96         |
| 7.9.3     | After immobilization . . . . .                    | 96         |
| <b>8</b>  | <b>Trouble-Shooting . . . . .</b>                 | <b>97</b>  |
| 8.1       | Engine . . . . .                                  | 97         |
| 8.2       | Table of faults . . . . .                         | 97         |
| <b>9</b>  | <b>Appendix . . . . .</b>                         | <b>101</b> |
| 9.1       | Hydraulic system . . . . .                        | 102        |
| 9.2       | Equipment options . . . . .                       | 104        |
| 9.2.1     | Ride control system (LSD) . . . . .               | 104        |
| <b>10</b> | <b>Keyword index . . . . .</b>                    | <b>107</b> |



## 1 Introduction

You decided to buy a TEREX | Schaeff SKL 854 Wheel Loader.

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

These Operating Instructions contain all information necessary for the correct use of the machine.

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

This Operating Manual must be read thoroughly and understood before commissioning the machine and is always to be kept within reach at all times.

Please contact your dealer immediately if you need any further explanations or anything is unclear.

Special equipment and attachments are not included in this Operating Manual.

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.



### **Attention**

*Any modifications of TEREX | 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.*

Please always quote the vehicle type and vehicle identification number when making an inquiry and for all correspondence.



### **Attention**

*The vehicle identification number of the machine is stamped onto the type plate (1/1).*

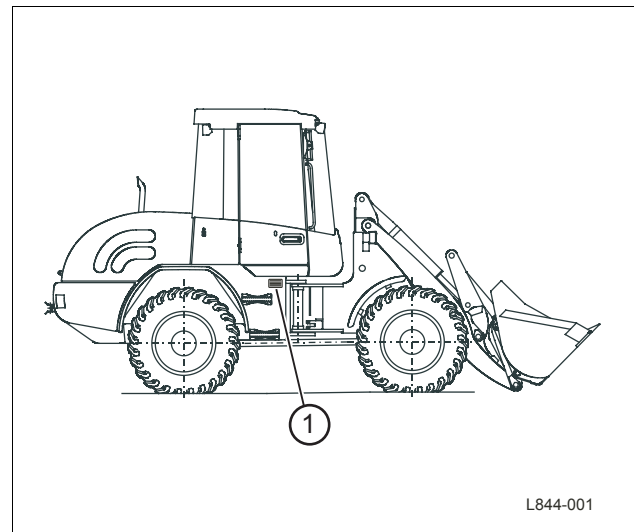


Fig. 1 Type plate

# 1 Introduction

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## 1.1 Warranty and Maintenance

The warranty period covers 12 months, 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 TEREX | 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 fuels, lubricants, and coolants will prevent malfunction.

Trained specialist personnel are responsible for any servicing of the machine which requires expert knowledge. This means that inspections and repair work must be performed by your dealer's customer service personnel.

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 to ensure that the machine is constantly in good working order and enjoys a reasonable service life.

Insist that only original TEREX | Schaeff spare parts are used for all repair work which may arise. In this way, you will have a product of lasting high quality, thereby ensuring that your machine maintains its original condition.

## 1.2 Copyright

The Operating Manual is protected by copyright laws. It must not be copied, disseminated or used for competitive purposes, either fully or in part, without prior written permission.

## 1.3 Notes on using the Operating Manual

### Presentation of Figures and Items

(1/1) = Figure 1, Item number 1

### Presentation of cross references to Chapters and activities

→ 1.4, 7 = Chapter/Section 1.4, Page 7

### Pictogram "Danger to life"



#### **Danger to life**

*This indicates a potential danger represented by the machine which, if appropriate precautions are not taken, may result in death.*

### Pictogram "Danger of injury/machine damage"



#### **Danger of injury/machine damage**

*This indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property/equipment damage.*

### Pictogram "Attention"



#### **Attention**

*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 Regulations concerning environmental protection

Applicable environmental requirements must be observed for all tasks performed on and with the machine.

During installation, repair and maintenance tasks, particular care must be taken that substances that would damage the environment such as:

- lubricating grease and oils
- hydraulic oils
- fuels
- coolants
- cleaners containing solvents

are not allowed to come in contact with the soil or the water system.

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

If the substances listed above do reach the soil, the leak or outlet must be stopped immediately and the fluid must be cleaned up with a suitable absorbent material. If necessary, the soil involved must be removed. Absorbent materials and removed soil must be disposed of properly. Applicable environmental requirements must be observed.

# 1 Introduction

## 1.5 Pictograms

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




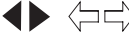









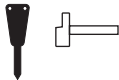














| Symbol  | Description   | Symbol  | Description                  |
|---|---|---|------------------------------|
|    | Danger to life  |    | Horn                         |
|    | On machine:<br>Caution, maintain safety distance<br>In Operating Manual:<br>Danger of injury/machine damage |    | Direction indicator LT/RT    |
|    | Attention   |    | Working floodlight           |
|    | Battery charge indicator  |    | High-beam indicator          |
|    | Preheating  |    | Rotating beacon              |
|   | Engine oil pressure   |   | Hazard warning system        |
|  | Engine oil temperature  |  | Hydraulic rock breaker       |
|  | Engine oil level  |  | Working hydraulics shut-off  |
|  | Coolant temperature   |  | Unlocked                     |
|  | Coolant level   |  | Locked                       |
|  | Air filter  |  | Float position               |
|  | Fuel, fuel level  |  | On machine:<br>Safe distance |
|  | Hydraulic oil<br>Hydraulic oil level  |  | Danger of injury             |
|  | Hydraulic oil temperature   |  | Danger of crushing           |

Table 1 Pictograms on the machine









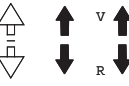





| Symbol  | Description                             | Symbol  | Description                                      |
|---|---|---|--|
|  | Hydraulic oil filter clogging indicator |  | Observe guidelines given in the Operating Manual |
|  | Fan for heating/ventilation             |  | Grease gun                                       |
|  | Windshield washer and wiper system      |  | Operating mode indicator<br>Operating hours      |
|  | Parking brake                           |  | Lashing points                                   |
|  | Travel direction<br>FWD/REV             |  | Suspension points for loading by crane           |
|  | Travel speed, FAST                      |  | First-aid kit                                    |
|  | Travel speed, SLOW                      |  | Fire extinguisher                                |

Table 1 Pictograms on the machine

# 1 Introduction

---

## 2 Safety and Accident Prevention

### 2.1 Declaration of Conformity



#### **Declaration of Conformity**

*The machine conforms to all basic requirements of the relevant European guidelines.*

*Conformity has been proven. The corresponding documentation and original of the Declaration of Conformity are kept by the manufacturer.*

*A copy of the Declaration of Conformity is attached to the sales documentation.*

### 2.2 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" (BGR 500, 2.12) and "Vehicles" (BGV D29) 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 accident prevention 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.

### 2.3 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 material is normally done by positioning the earth-moving machine.

The mounting 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 is regarded as improper use. The supplier cannot be held responsible for any damage resulting from improper use. The risk is carried solely by the user.

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 Safety and Accident Prevention

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### 2.4 General safety instructions

- It is important to refrain from any working methods which impair safety.
- The earth-moving machine is only to be used with a cabin or canopy.
- The earth-moving machine is only to be used if it is in a safe and operational condition.
- The manufacturer's Operating 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 equipment on earth-moving machines must not be deactivated or removed.
- Protective clothing must be worn during operation. Rings, scarves and unbuttoned jacket should 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 (emergency 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.
- Doors, windows, covers, flaps etc. must be closed or secured against slamming shut if in an open condition.

### 2.5 Operation

Earth-moving machines are only to 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
- and who 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 and controls are only to be operated from the driver's seat.

The earth-moving machine is only to 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 kept free of dirt, grease, oil, ice and snow.

## 2.6 Danger zone

- No-one is allowed to 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 operational movements of the earth-moving machine, its work implements and attachments, or by swinging out or falling loads.
- The machine operator is only to work the earth-moving machine if no-one is in the danger zone.
- The machine operator must give a warning signal to anyone who might be in danger.
- The machine operator must stop work with the earth-moving machine if someone 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.

## 2.7 Transport of persons

The transport of persons on the machine is forbidden.

## 2.8 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 must 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 Safety and Accident Prevention

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### 2.9 Driving

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.

The safety belt must be fastened.

The windows must be clean and clear 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 must be selected and the gear lever not be moved during downhill travel (road or off-road gear).

On steep drops and uphill gradients, the load must be carried on the uphill side, if possible, 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 observed 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 factory premises, traffic regulations should be applied in the proper manner. This should also apply with regard to drivers' licenses.

### 2.10 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 lock of the quick-mount hitch. Work attachments are to be carefully moved at low height. During this check the danger zones of earth-moving machines have to be free of personnel.

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

If a cab does not have the required protection, the driver of this vehicle must leave the driver's stand while the work equipment is being swung overhead.

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

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

### 2.11 Guides

Guides must be easily recognizable, for example by means of reflective clothing. They must remain within the machine operator's vision field.

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

## 2.12 Danger of falling objects

Earth-moving machines are only to be used where there is a danger of falling objects if the operator's stand has a canopy (FOPS). A front guard must be employed if there is a risk of materials breaking through 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 is only to be performed by earth-moving machines where there is no danger to persons and where the machine is equipped with a canopy, cab-mounted front guard and appropriate operating equipment.

See regulations book "Demolition work" (ZH 1/614) published by the Tiefbau-Berufsgenossenschaft (Civil Engineering Employer's Liability Insurance Association).

## 2.13 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 earth-moving 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.

## 2.14 Working in the vicinity of overhead power lines

If the earth-moving machine is being used in the vicinity of overhead power lines and trolley wires, a safety distance which varies depending on the nominal voltage of the overhead line must be maintained between the lines and the earth-moving machine and its work equipment, 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 kV   | Safety distance in meters |
|-------------------------|---------------------------|
| – 1                     | 1.0                       |
| > 1 to 110              | 3.0                       |
| > 110 to 220            | 4.0                       |
| > 220 to 380            | 5.0                       |
| unknown nominal voltage | 5.0                       |

Table 2 prescribed safety distances

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.

Both overhead lines and operating equipment may swing out in windy conditions, 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 include

- switching off the power,
- re-routing the overhead line,
- cabling, or
- limiting the operating zone of earth-moving machines

## 2 Safety and Accident Prevention

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### 2.15 Operation in closed spaces

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

### 2.16 Work stoppages

Before rest periods and at the end of the working day, the driver of the earth-moving machine must park the machine on ground which has sufficient carrying capacity and is as level 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.

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

Earth-moving machines are only to 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 engine and ensure that it cannot be started up by unauthorized persons (e.g. removing ignition keys).

### 2.17 Change of work attachments, maintenance, repair

Earth-moving machines are only to 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 is only to 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 machine must be suitably secured by chocks so that it cannot roll away whenever work is performed, particularly under the machine.

The work equipment must be secured against movement by lowering it to the ground or equivalent measures, e.g. cylinder supports, trestles. As long as the engine is running, the unprotected working and articulation range must not be entered.

When jacking up earth-moving machines, all 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 using operating 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. This requirement can 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, it 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 left in the hydraulic system.

- Before working on the electric system or when performing arc-welding on the machine, the connection to the battery must be disconnected.
- 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, it must be covered with insulating material. Tools should never be placed on or near the battery.

Protective devices of moving machine parts are only to be opened or removed after 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 are only to be welded following consultation with the manufacturer and in accordance with recognized welding principles.

Protective structures (ROPS, FOPS) are not to be welded or drilled in any way.

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. Used properly, there is no particular danger to health. The safety specification sheets from the oil companies must be observed.

Only the hoses specified by the manufacturer may be used.

Hydraulic hoses must be routed and assembled by expert personnel.

Smoking and naked flames are prohibited in the vicinity of fuel or batteries.

## 2 Safety and Accident Prevention

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### 2.18 Recovery, loading and transportation

Earth-moving machines are only to be recovered if adequate towing vehicles are used.

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

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

The traveling gear and crawler unit 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.

### 2.19 Monitoring and inspections

The machine must be submitted to a general inspection according to the existing Accident Prevention Regulations valid in the user's country. 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 after significant 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 kept until the next inspection takes place.

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

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

- damage to the outer layer which reaches 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 should only be checked after 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 is not to be used until these have been eliminated.

### 2.20 Fire protection

- Switch off the engine when filling the fuel tank and take special care as long as the engine is hot.
- Never smoke or handle open flames whilst refueling the tank of the machine.



The fire extinguisher must be kept in the cab.

The fire extinguisher symbol must be attached.

### 2.21 Emergency exit

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

### 2.22 Notes concerning residual dangers

#### Failure of hydraulic system

If the hydraulic system fails because the diesel engine is not running, the hydraulic pump is damaged or hydraulic oil has been lost, only the following emergency functions can still be performed:

- manual steering (without servo assistance) and
- lower work equipment (only if ignition is switched on)

## 2 Safety and Accident Prevention

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### 3 Technical Specifications

#### 3.1 Views

##### 3.1.1 Dimensioned drawing with general-purpose bucket

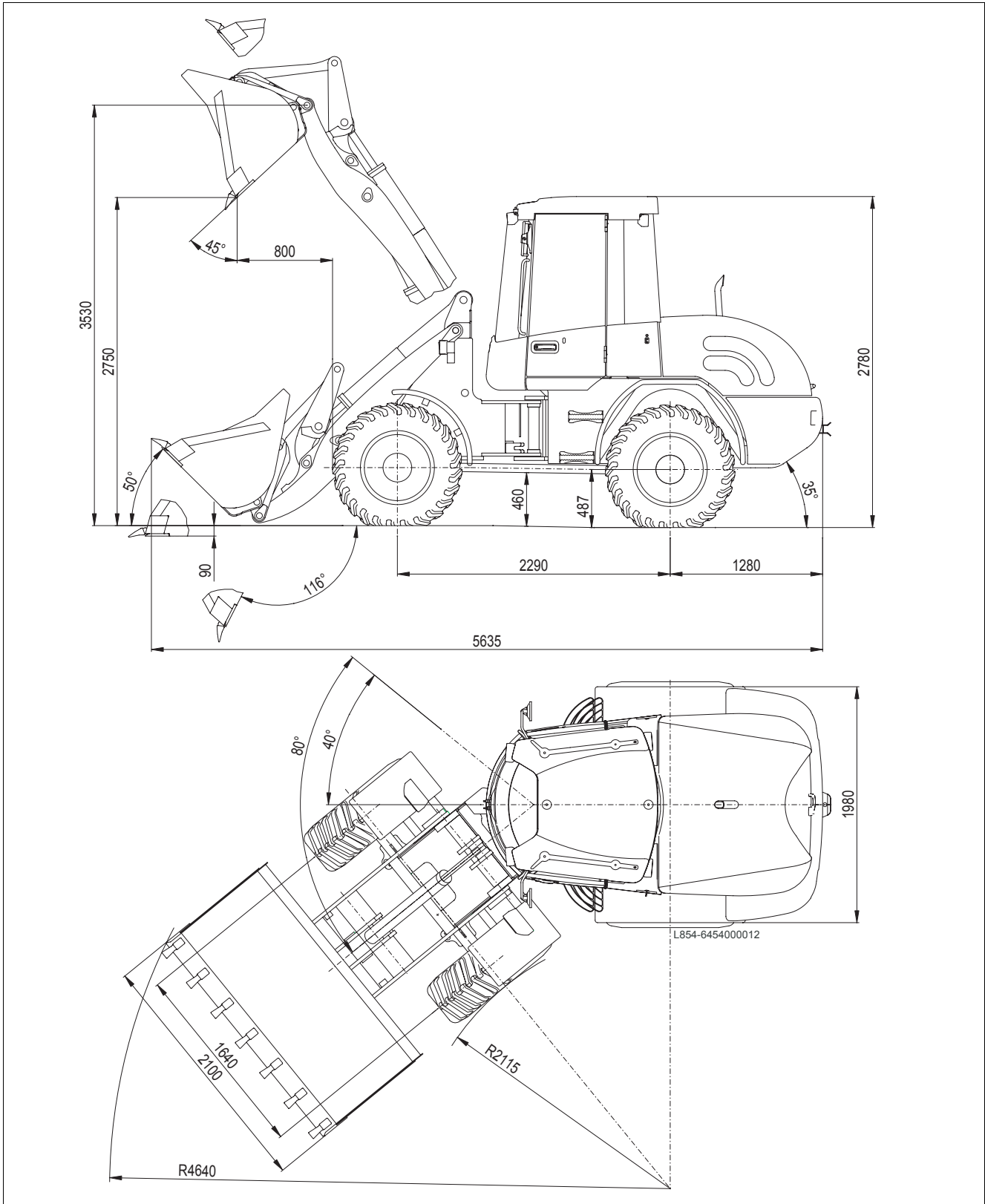


Fig. 2 Dimensioned drawing with general-purpose bucket and 405/70 R 20 tires

### 3 Technical Specifications

#### 3.1.2 Dimensioned drawing with multi-purpose bucket

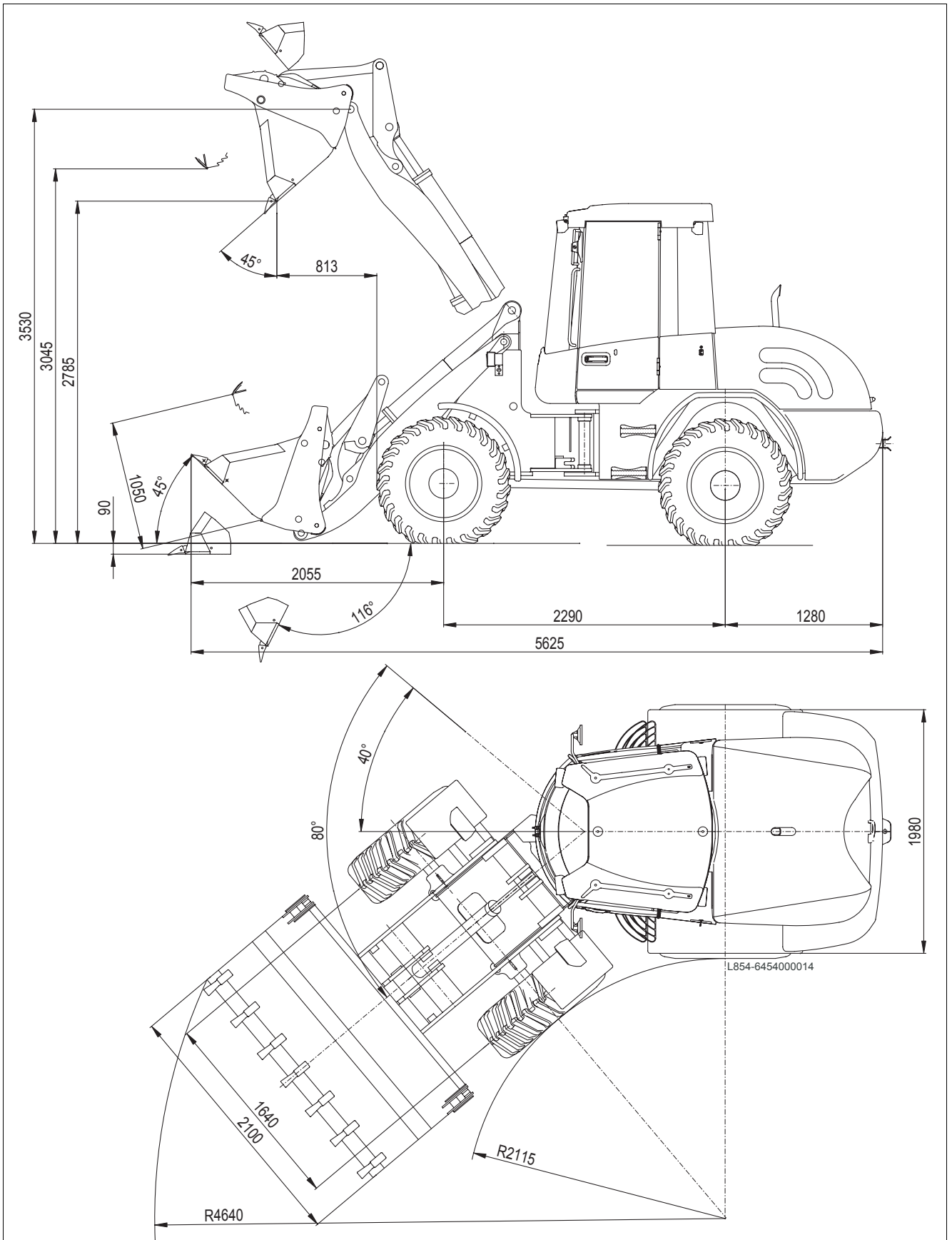


Fig. 3 Dimensioned drawing with multi-purpose bucket and 405/70 R 20 tires

3.1.3 Dimensioned drawing with fork lift attachment

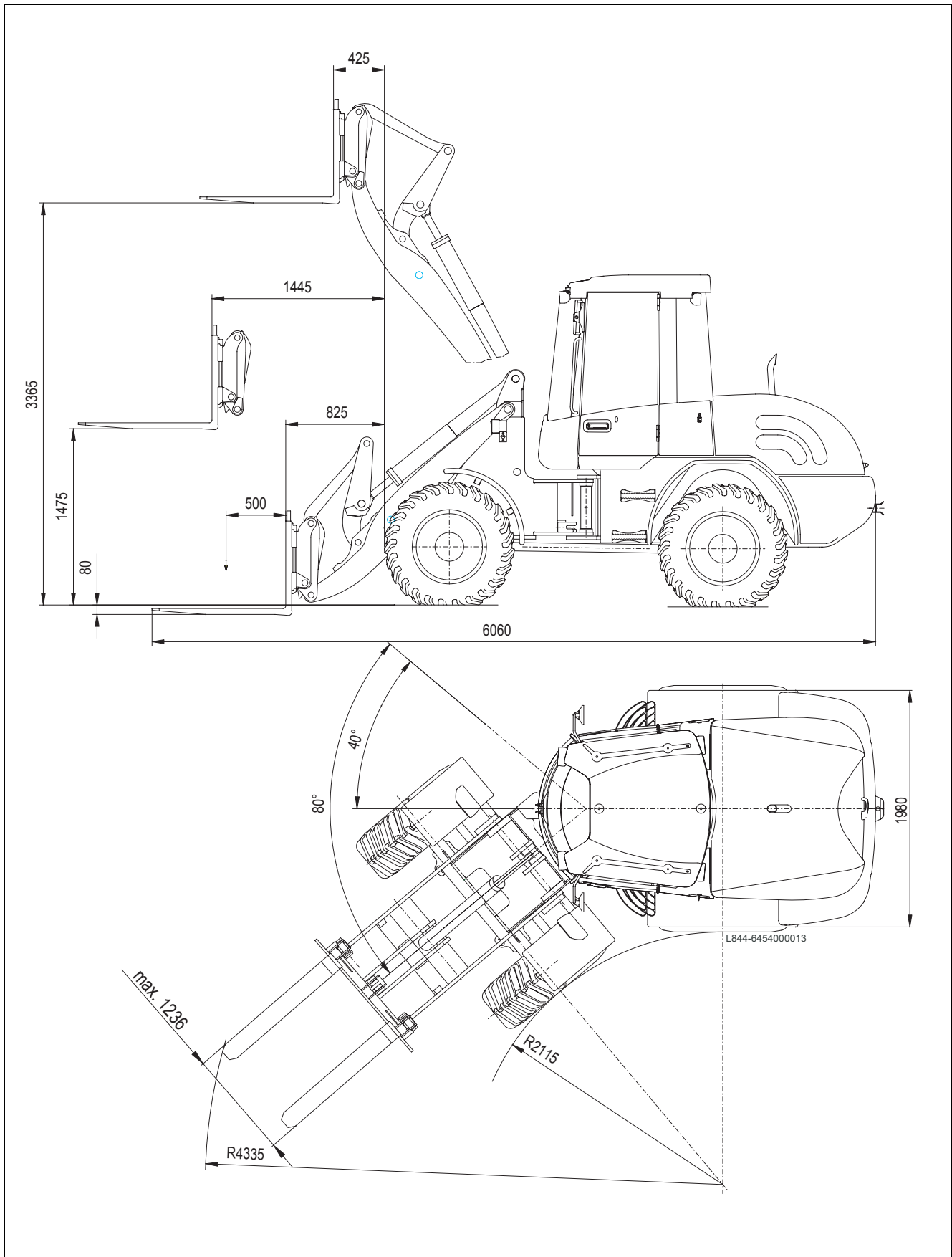


Fig. 4 Dimensioned drawing with fork lift attachment and 405/70 R 20 tires

### 3 Technical Specifications

#### 3.2 Engine

| Engine  |  |
|---|--|
| Manufacturer                                      | Perkins  |
| Type  | 1104C-44 four-stroke diesel engine   |
| Design  | 4-cylinder in-line engine<br>4-stroke diesel engine with direct fuel injection, exhaust-gas optimized (EPA TIER 2) |
| Displacement                                      | 4400 cm <sup>3</sup>   |
| Power output according to DIN 70020               | 61.5 kW at 2200 rpm  |
| Max. torque                                       | 302 Nm / 1400 rpm  |
| Specific fuel consumption at nominal engine speed | 211 g/kWh  |
| Cooling   | Water-antifreeze mixture for all-year operation  |
| Heating   | Fresh air with heat exchanger connected to coolant circuit   |
| Max. inclined position                            | 30° in all directions  |
| Engine lubricating-oil supply                     | Observe the overturning limit angle of the machine!  |

Table 3 Technical specifications - engine

#### 3.3 Electrical system

| Electrical system |   |
|-------------------|---|
| Operating voltage | 12 V  |
| Battery           | 12 V – 105 Ah / 760 A (EN) / 450 A (DIN)  |
| Alternator        | 14 V – 75 A   |
| Starter           | 3.0 kW  |
| Cold-starting aid | 1 glow element per cylinder   |
| Lighting system   | in compliance with German Road Traffic Regulations (StVZO)<br>with Halogen H 4 headlamps<br>2 front working floodlights |

Table 4 Technical data - electrical system

#### 3.4 Travel drive

| Travel drive                      |   |                 |                 |                 |
|-----------------------------------|---|-----------------|-----------------|-----------------|
| Travel drive                      | Variable displacement pump, flange-mounted directly onto diesel engine, two-stage variable displacement motor with power shift on rear axle reduction gear.<br>High-speed version featuring rear axle manual transmission shiftable in standstill position.<br>Suction return filter in the form of a tank insert filter. |                 |                 |                 |
| Driving speed                     | Forward - Reverse   |                 |                 |                 |
|                                   |   | <b>SKL 854</b>  | <b>SKL 854S</b> |                 |
|                                   |   |                 | Travel range I  | Travel range II |
|                                   | Travel range "Work"   | 0 – 6.0 km/hour | 0 – 6.0 km/hour | 0 – 19 km/hour  |
|                                   | Travel range "Road"   | 0 – 20 km/hour  | 0 – 11 km/hour  | 0 – 36 km/hour  |
| Power transmission                | Hydrostatic travel drive with advanced driving automatics. Automatic adjustment of propulsive force and speed. Continuous speed regulation forward and in reverse. Four-wheel drive via propeller shaft connection.   |                 |                 |                 |
| Max. operating pressure - driving | 440 bar   |                 |                 |                 |

Table 5 Technical specifications - travel drive

### 3.5 Brakes

| Brakes                             |  |
|------------------------------------|--|
| Service brake (standard)           | Hydraulically actuated center-mounted drum brake, acting on all four wheels via four-wheel drive.  |
| Service brake (high-speed version) | Hydraulically actuated center-mounted drum brake, acting on all four wheels via four-wheel drive, and inboard-mounted disc brake on rear axle. |
| Parking brake                      | Mechanically actuated center-mounted drum brake on front axle.   |
| Additional brake                   | Hydrostatic through closed-circuit travel drive.   |

Table 6 Technical specifications - brakes

### 3.6 Hydraulic system

| Hydraulic system          |  |
|---------------------------|--|
| Hydraulic pump            | Gear pump on throughdrive of variable displacement pump<br>Max. pump capacity: 76 l/min<br>Operating pressure, steering: 175 bar<br>Operating pressure, loading: 250 bar   |
| Priority valve            | Priority supply of hydraulic oil to steering through load-sensing system, ensuring that all the available oil can be provided if necessary. Rapid steering movements even at low engine revs.  |
| Steering                  | Fully hydraulic, proportionally acting articulated steering. Two double-acting steering cylinders.   |
| Total steering angle      | 80°  |
| Loader installation       | Double-acting work cylinders, one lift cylinder and one tilt cylinder.<br>Control valve with 3 control circuits.<br>Electro-hydraulically operated float position for "Lower" work function.<br>Single, four-way control lever (joystick) with integrated direction-of-travel switch, float position switch and switch for additional control circuit. |
| Auxiliary control circuit | Max. oil flow 76 l/min<br>Max. operating pressure 230 bar  |
| Hydraulic oil cooler      | Thermostatically controlled  |

Table 7 Technical specifications - hydraulic system

### 3.7 Axles

| Axles                          |   |
|--------------------------------|---|
| Front axle                     | Rigidly mounted planetary drive axle with self-locking differential and integrated center-mounted drum brake. |
| Rear axle (standard)           | Oscillating planetary drive axle with self-locking differential and integrated reduction gear.                |
| Rear axle (high-speed version) | Oscillating planetary drive axle with self-locking differential and integrated 2-stage reduction gear.        |
| Rear axle oscillating angle    | ± 12°   |

Table 8 Technical specifications - axles

## 3 Technical Specifications

### 3.8 Tires

| Tire size | Type      | Profile        | Tire pressure in bar front | Tire pressure in bar rear |
|-----------|-----------|----------------|----------------------------|---------------------------|
| 405/70    | R 20      | EM 01          | 3.2                        | 3.0                       |
| 425/75    | R 20      | XM 27 TL       | 2.0                        | 1.5                       |
| 14.5-20   | MPT 10 PR | E 91           | 3.2                        | 2.0                       |
| 16/70-20  | EM 10 PR  | E 91-2         | 3.2                        | 2.4                       |
| 365/80    | R 20 EM   |                | 4.0                        | 3.2                       |
| 375/75    | R 20 XM   | 27 TL Michelin | 3.2                        | 2.4                       |

Table 9 Technical specifications - tires



*Special tires available on request!*

*If solid-rubber or foamed tires are used, special measures must be taken and restrictions apply.*



#### **Attention**

*The tire pressure refers to standard equipment. During fork lift operations, the tire pressure of the front wheels must be increased by at least 0.5 bar.*

### 3.9 Fuels, lubricants and coolants

#### 3.9.1 Fluid capacities

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

| Fluid capacities   | in liters (l) | Fuels and lubricants                   |
|--|---------------|--|
| Fuel tank  | 110.0         | Diesel fuel                            |
| Engine with oil filter   | 8.5           | Engine oil (change quantity)           |
| Hydraulic oil, tank and system                                 | 93.0*         | Hydraulic oil                          |
| Hydraulic oil tank   | 62.0          | Hydraulic oil (oil change quantity)    |
| Service brake  | 0.25          | ATF-oil                                |
| Front axle center housing                                      | 7.8           | Transmission oil                       |
| Rear axle center housing and transmission (standard)           | 8.4           | Transmission oil                       |
| Rear axle center housing and transmission (high-speed version) | 9.3           | Transmission oil                       |
| Wheel hubs, front / rear axle                                  | 0.85 each     | Transmission oil                       |
| Coolant  | 17.5          | Mixture of water, additives and glycol |

Table 10 Fluid capacities

\* The hydraulic oil quantity depends on the equipment level of the machine.

## 3.9.2 Fuel, lubricant and coolant specifications





| Use                 | Code designation according to Bi <sup>1</sup> | Prescribed fuels, lubricants and coolants for Central Europe |  | Remarks   |
|---------------------|---|--|--|---|
|                     |   | Designation  | Specification, standards, Quality  |   |
| Engine              | –   | Diesel fuel  | EN 590<br>ASTM D975 1-D / 2-D  |  <b>Attention</b><br>Before using RME fuels (rape oil methyl ester), it is essential to consult your responsible TEREX   Schaeff dealer for further details.   |
| Engine              | EO 1540 A                                     | Engine oil   | SAE 15W-40<br>API CF4<br>ACEA E3 or E2   | See also engine manufacturer's Operating Manual.  |
| Hydraulic system    | HYD 1040                                      | Hydraulic oil or multi-grade engine oil                      | HVLP 46<br>or<br>SAE 10W-40  | The following viscosity limit values must be observed (according to ASTM 445):<br>at 100°C min. 8 mm <sup>2</sup> /s (cSt)<br>at –10 °C approx. 1500 mm <sup>2</sup> /s (cSt)   |
|                     | BIO-E-HYD-HEES                                | Biodegradable hydraulic oil on a synthetic ester base        | Filling according to customer specifications. Brand label on the machine.<br> <b>Machine damage</b><br>caused by non-mixable bio oils.<br><ul style="list-style-type: none"><li>Do not mix bio oils from different manufacturers.</li></ul> |  <b>Attention</b><br>When changing from mineral to biodegradable hydraulic oils, the tank and the hydraulic system must be completely drained, cleaned and flushed.<br><br>For further details before changing oils, please consult your responsible TEREX   Schaeff dealer. |
| Axles<br>Wheel hubs | GO 90 LS                                      | Transmission oil   | SAE 85W-90LS<br>API-GL 5   | Alternative recommendations<br>SAE 90LS<br>SAE 80W-90LS   |
| Lubricating points  | MPG-A   | Multi-purpose, lithium-soap based grease                     | K2K-30<br>DIN 51825  |   |
| Brake               | ATF   | Brake oil  | ATF<br>Type A Suffix A<br>Dexron-IID   |   |
| Cooler              |   | Mixture of water, additives and glycol                       |  <b>Machine damage</b><br>due to incorrect coolant and mix proportions.<br><br>Observe the information on the cooling system given in the engine manufacturer's Operating and Maintenance Manual.   | The antifreeze is factory-set to approx. –25 °C.  |

Table 11 Specification of fuels, lubricants and coolants

<sup>1</sup> In conformity with the regulation lubricants of the Main Association of the German Building Industry e.V.

### 3 Technical Specifications

#### Alternative recommendation for other temperature ranges

##### Engine oil

In compliance with API CG 4 or CH 4 and in compliance with ACEA E3 or E5

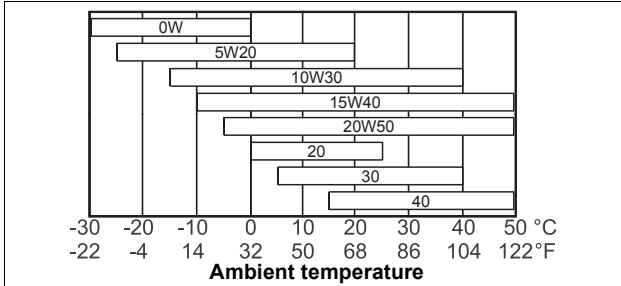


Fig. 5 Recommended viscosity classes applying to engine oil

##### Hydraulic oil

In compliance with DIN 51524.T3 HVLP

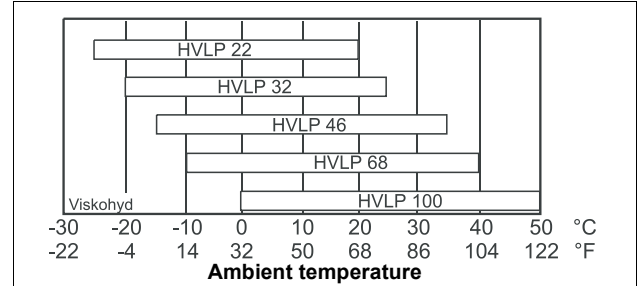


Fig. 6 Recommended viscosity classes applying to hydraulic oil

### 3.10 Permissible loads in compliance with German Road Traffic Regulations (StVZO)

| Permissible loads in compliance with German Road Traffic Regulations (StVZO) |                       |
|--|-----------------------|
| Permissible total weight   | see type label,       |
| Permissible axle load, front   | and / or              |
| Permissible axle load, rear  | General Certification |

Table 12 Permissible loads in compliance with German Road Traffic Regulations (StVZO)

### 3.11 Sound level values, vibration

| Sound level values                      |  |                               |
|---|--|-------------------------------|
| Guaranteed sound power level:           | > 000854/0214<br>- 000854/0171, 0172, 0202, 0211 | $L_{WA} = 103 \text{ dB (A)}$ |
| Guaranteed sound power level:           | 000854/0215 ><br>+000854/0171, 0172, 0202, 0211  | $L_{WA} = 102 \text{ dB (A)}$ |
| Sound pressure level (at driver's ear): |  | $L_{PA} = 76 \text{ dB (A)}$  |

Table 13 Sound level values in compliance with directive 2000/14/EC and EN 474

| Vibration values                       |                      |                 |
|--|----------------------|-----------------|
| Effective values of acceleration below | 0.5 m/s <sup>2</sup> | for entire body |
| and                                    | 2.5 m/s <sup>2</sup> | for upper limbs |

Table 14 Vibration values in compliance with directive 98/37/EEC and EN 474