



## Wheel Loader



# OPERATING INSTRUCTIONS

Language version: **US**

Edition: **2010-07**

Order number: **5780211304**

From vehicle ID No.: **TL08020101>**

Translation of the original operating instructions

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Wheel Loader

# TL80

Product: 2010 TEREX TL80 Wheel Loader Operator Workshop Manual[5780211304]  
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**Please complete before commissioning the wheel loader:**

**Vehicle model:** .....

**Vehicle ID No.:** .....

**Year of construction:** .....

**Commissioned on:** .....

**Dealer:**

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## 1 Introduction

You decided to buy a **Terex TL80 Wheel Loader**.

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

This operating manual contains all the information and instructions that are required to handle the machine correctly. Please read them carefully before putting the machine into operation and make sure that they are kept at hand at all times.

Should you need further explanations or should anything be 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 **Terex** 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.*

Please state the vehicle type and vehicle identification number when making inquiries or orders, and in all written correspondence.



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

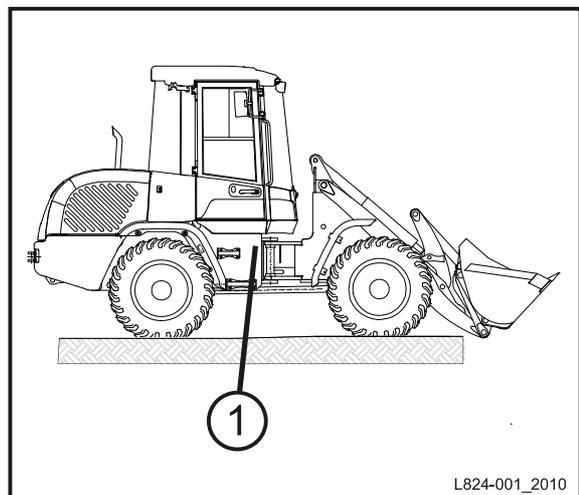


Fig. 1 Type label

# 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** 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. 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 Terex 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.

## 1.2 Copyright

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

This operating manual is copyrighted. It contains technical specifications and documentation which shall not, either in whole or in part, be reproduced, transmitted or used for the purpose of competition without our express permission.

## 1.3 Notes on using the Operating Instructions

### References to pictures and items

The references to pictures and items contained in the text, such as (*Fig. 12/4*) or (*12/4*) mean figure 12, item 4.

The figures shown in this manual partly contain additional equipment.

### Symbol "Danger "



*This symbol indicates a high risk of injuries. Strictly observe the safety instructions.*

### Symbol "Warning "



*Not abiding by the information indicated by this symbol might cause substantial property or equipment damage. Strictly observe the safety instructions.*

### Symbol "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.

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

- lubricating oil and grease
- hydraulic oil
- fuel
- coolant
- cleaning fluids containing solvents

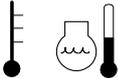
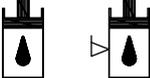
do not seep into the ground or the sewerage system.

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

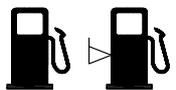
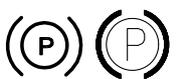
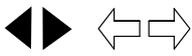
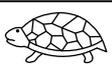
If above-mentioned liquids seep into the ground, their escape must be stopped immediately and the liquid be bound with suitable binding agents. If necessary, the soil involved must be removed. Absorbent materials and removed soil must be disposed of properly. The environmental standards currently valid must be observed.

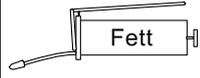
## 1.5 Pictograms

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

Symbol	Description
	Danger
	In Operating Instructions: <b>Warning</b> On machine: <b>Caution</b>
	Note
	Battery charge indicator
	Preheating
	Engine oil pressure
	Engine oil temperature
	Engine oil level
	Coolant temperature
	Coolant level
	Air filter
	Hydraulic oil Hydraulic oil level
	Hydraulic oil temperature
	Hydraulic oil filter clogging indicator

# 1 Introduction

Symbol	Description	
	Horn	
	Fuel Fuel level	
	Blower Heating/ventilation	
	Windshield washer and wiper system	
	Parking brake	
	Direction indicator LT/RT	
	Working floodlights	
	High-beam indicator	
	Rotating beacon	
	Travel direction FWD/REV	
	Travel FAST	speed
	Travel SLOW	speed
	Working hydraulics shut-off	
	Unlocked	
	Locked	
	Float position	

Symbol	Description
	Hazard warning system
	Operating mode indicator Operating hours
	Lashing points
	Suspension points for loading by crane
	First-aid kit
	Fire extinguisher
	On machine: Safety distance
	Danger of crushing
	Danger of injury
	The relevant notes in the operating instructions should be observed
	Grease gun Lubricating point

## 2 Safety and Accident Prevention

### 2.1 Introductory remarks

#### Declaration of Conformity

*The machine complies with the fundamental requirements stipulated in the applicable European guidelines.*

*Conformity has been proven. The respective documents and the original of the Certificate of Conformity are kept by the manufacturer.*

*A copy of the Certificate of Conformity is attached to the sales documents.*

<b>EC declaration of conformity according to the machinery directive 2006/42/EC</b>	
1.	We hereby declare that the earth-moving machine of type <b>TL 80:</b> <b>Wheel Loader: TL80</b> <b>Vehicle ID No.: TL0802</b> <b>Actual productivity: 59 HP</b>
2.	complies with the following applicable regulations: 2006/42/EC, 2004/108/EC (EMC), RL 2000/14/EC Appendix VIII (noise emission)
3.	Representative sound power level: 100,0 dB (A)
4.	Guaranteed sound power level: 101 dB (A)
5.	Applied harmonized standards: EN ISO 12100-2
6.	Applied European standards: EN 474-1 EN 474-3
7.	Document editor, who is authorized to compile technical documentation: Maik Schulze, D 74564 Crailsheim, Kraftwerkstraße 4, Germany
8.	Voluntary type examination performed as well as certification in accordance with RL 2000/14/EC Appendix VIII at: Fachausschüsse Bau (BAU) und Tiefbau (TB) Prüf- und Zertifizierungsstelle im BG-PRÜFZERT 80687 Munich, Germany
<p>The EC declaration of conformity only applies if the earth-moving machine is used in accordance with the operating instructions. It includes the use of original Terex work attachments and other work attachments, which are mentioned in the operating instructions or in other Terex documentation for application at this earth-moving machine.</p> <p>Replaceable equipment manufactured by Terex or third party manufacturers may only be installed and used if the installation at the affected earth-moving machine is performed by Terex. In all other cases, special written approval is required from Terex.</p> <p>Date of the declaration of conformity 29.12.2009</p> <p>Langenburg</p>	
<b>Terex GmbH</b> Geschäftsbereich Terex Schaeff	Schaeffstraße 8 74595 Langenburg, Germany

## 2 Safety and Accident Prevention

### 2.2 Location of safety signs

The safety signs are located in the following positions on the machine:

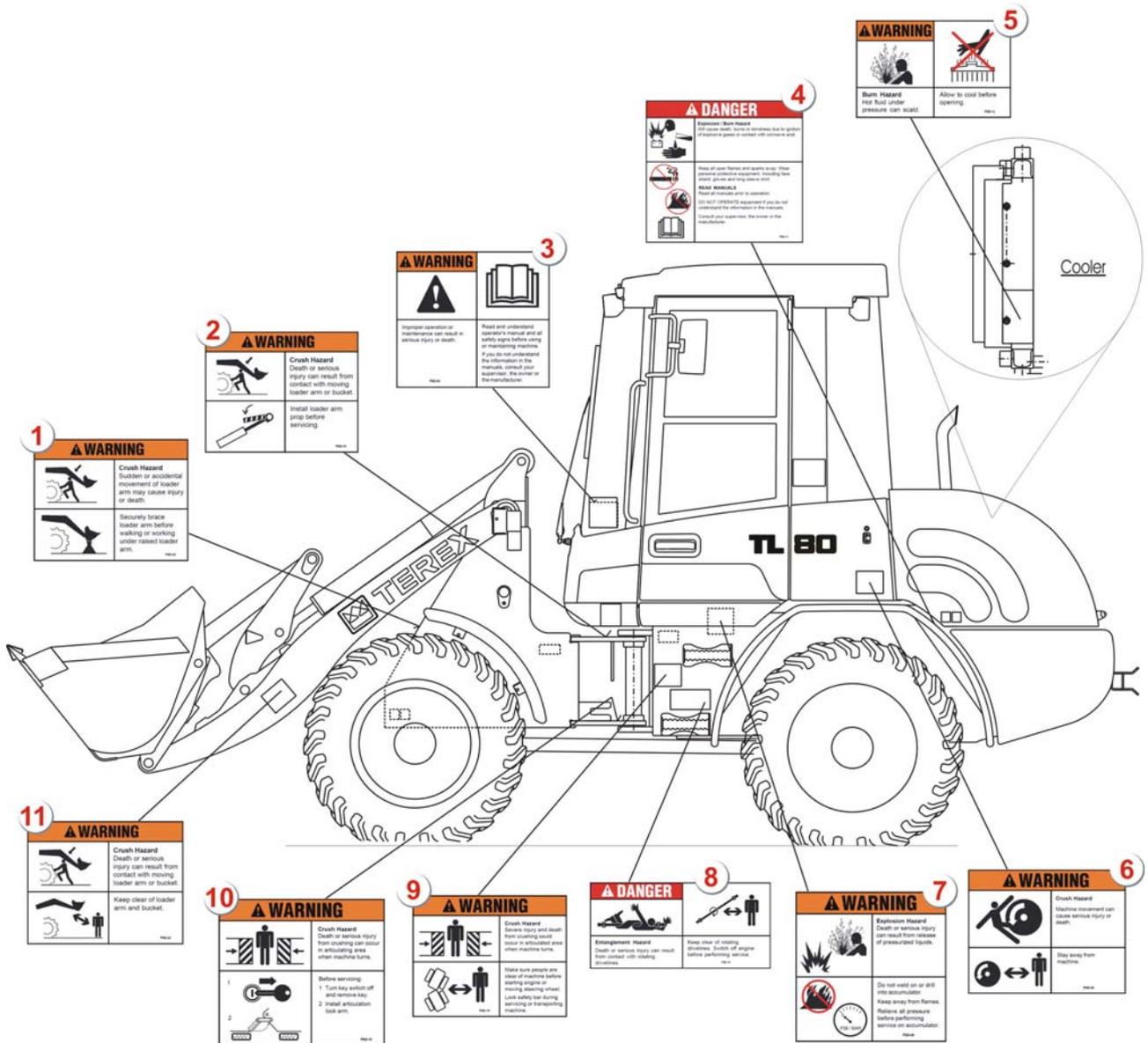


Fig. a Locations of safety signs 1

- 1 Crush hazard
- 2 Crush hazard
- 3 Operator's manual
- 4 Explosion / Burn hazard
- 5 Burn hazard
- 6 Crush hazard
- 7 Explosion hazard
- 8 Entanglement hazard
- 9 Crush hazard
- 10 Crush hazard
- 11 Crush hazard

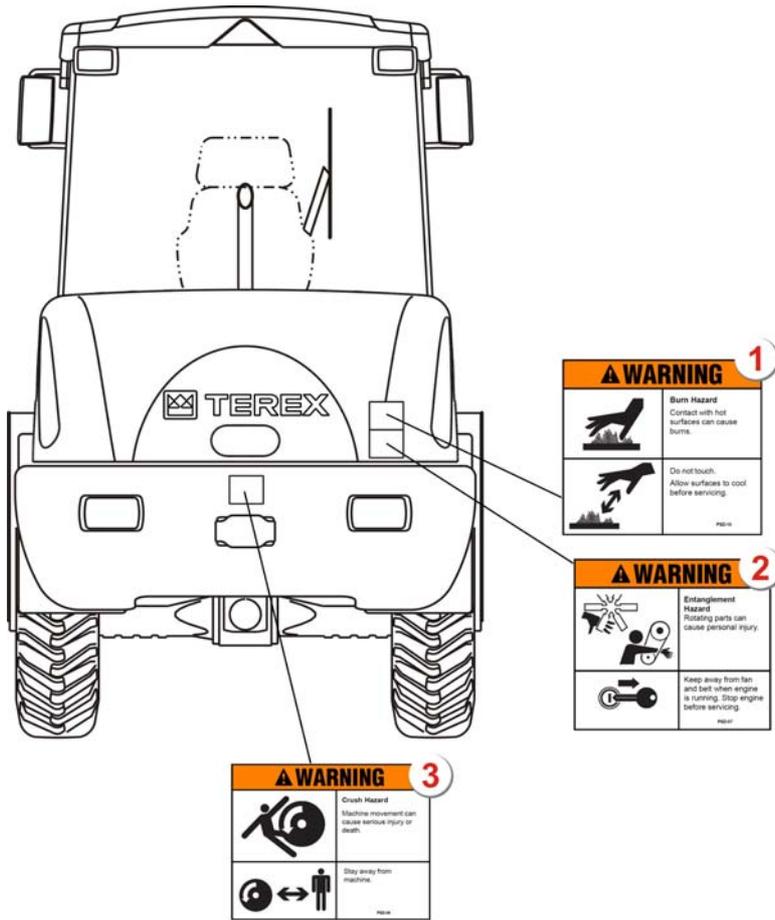


Fig. b Locations of safety signs 2

- 1 Burn hazard
- 2 Entanglement hazard
- 3 Crush hazard

## 2 Safety and Accident Prevention

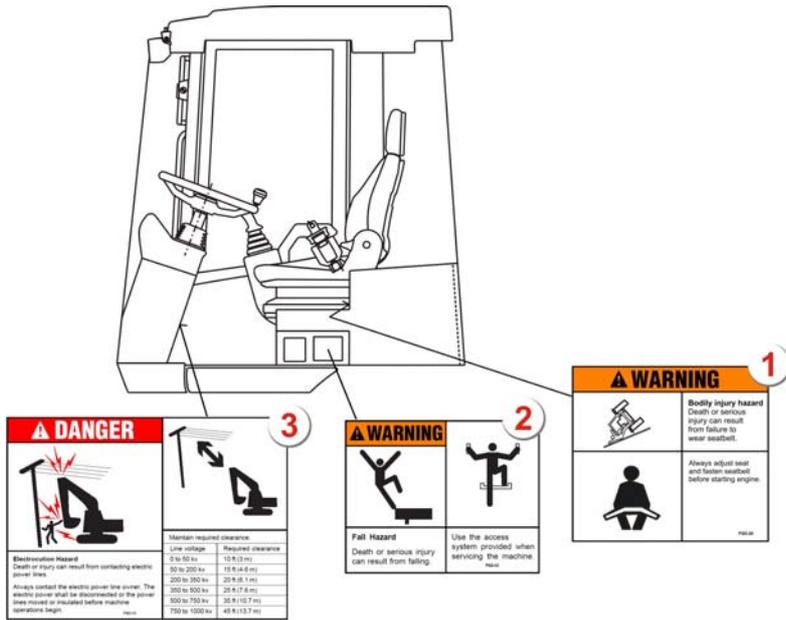


Fig. c Locations of safety signs 3

- 1 Bodily injury hazard
- 2 Burn hazard
- 3 Electrocution hazard

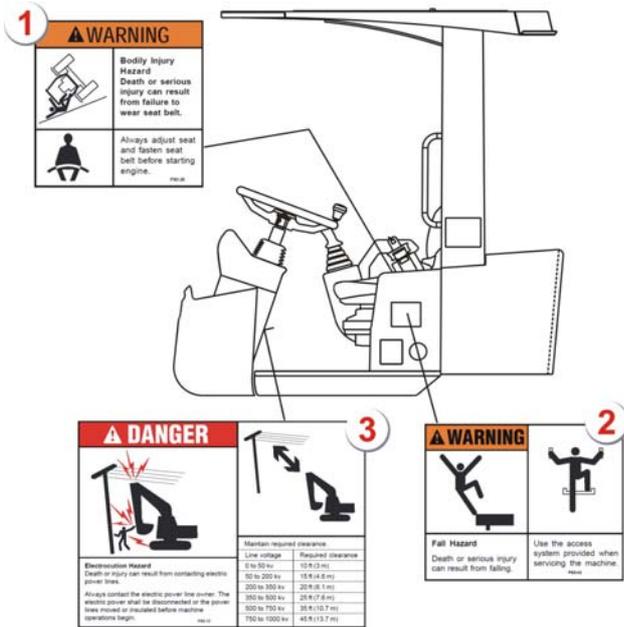


Fig. d Locations of safety signs 4

- 1 Bodily injury hazard
- 2 Burn hazard
- 3 Electrocution hazard

### Servicing and replacing safety signs

- The safety of the operator always has to come first.
- Safety signs must always be kept in good condition and legible.
- Replace any safety sign which has been damaged or disappeared.
- Use mild detergents and water to clean the safety signs.
- Do not use any detergents containing solvents.
- Always specify machine serial number and language when ordering safety signs.

## 2 Safety and Accident Prevention

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### 2.3 Preliminary remarks

Read the operating instructions thoroughly and follow the notes on safe operation before putting the earth-moving machine into operation.

National safety regulations - e.g. the Accident Prevention Regulations, "Earth-Moving Machinery" (BGR 500 Chapter 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 road safety measures must also be observed. Such duties could also apply in respect of e.g. handling hazardous goods or the wearing of personal safety gear.

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

### 2.4 Intended 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 assembly of special work attachments such as multi-purpose bucket, side-dump bucket, broom, fork lift attachment etc. allows the machine to perform the corresponding applications.

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. This risk is borne solely by the user.

Strict compliance with the operating and maintenance instructions and the performance of maintenance work, as well as adherence to the maintenance intervals is also part of intended use.

### 2.5 General safety notes

- It is important to refrain from any working methods which impair safety.
- The earth-moving machine is only to be used if 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 equipment on earth-moving machines must not be deactivated or removed.
- Protective 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 (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.
- Open doors, windows, covers, flaps, etc. must be closed or secured so that they cannot slam shut.

### 2.6 Operation

Earth-moving machines shall 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 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 free of dirt, grease, oil, ice and snow.

## 2 Safety and Accident Prevention

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### 2.7 Danger zone

- Nobody must be allowed to remain in the danger zone of an earth-moving machine.



*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 is only to work the earth-moving machine if nobody is in the danger zone.
- The machine operator must give a warning signal to persons who may 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. 1.6 ft) 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.

### 2.8 Transport of persons

The transport of persons on the machine is forbidden.

### 2.9 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.

### 2.10 Travel operation

Before putting the earth-moving machine into operation, the driver's seat, mirrors and operator 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 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, in order to increase stability.

Before driving downhill, the appropriate gear for the terrain must be selected and the gear lever shall not be moved during downhill travel (on-road or off-road gear).

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 earth-moving machine according to the traffic regulations valid in the user's country 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.

### 2.11 Working Operation

Daily before start of operation and after every attachment change, 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 nobody must be allowed to remain in the danger zone of the earth-moving machine.

The machine operator shall 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 cabin does not have the required protection, the driver of this vehicle must leave the operator'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 Safety and Accident Prevention

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### 2.12 Guides

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

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

### 2.13 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 cabin.

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 if the machine is equipped with canopy, cabin-mounted front guard and the appropriate work implement.

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

### 2.14 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 need be.

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.

### 2.15 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 Volt	Safety distance in feet
- 1,000 V	3.3 ft
more than 1 kV - 110 kV	9.8 ft
more than 110 kV - 220 kV	13.1 ft
more than 220 kV - 380 kV	16.4 ft
nominal voltage unknown	16.4 ft

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.

### 2.16 Operation in closed rooms

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

### 2.17 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 shall 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 and controls 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 Safety and Accident Prevention

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### 2.18 Crane operations

Load hook applications are the hoisting, transporting and lowering of loads with the aid of a fixing device (rope, chain, etc.), whereby the assistance of personnel is required to attach and release the load. Such work covers e.g. the lifting and lowering of pipes, tubing rings or containers.

Earth moving equipment may only be operated in the context of using lifting gear if it is equipped and approved for such work.

Earth moving equipment may only be used for lifting gear applications if it is equipped with the following safety devices:

- Secure attachment of loading implements
- Table of carrying capacity
- Overload warning device
- Hose-rupture safety valve on boom cylinder

If earth-moving machines are used for load hook applications, personnel attaching loads is only to approach the boom from the side and with the machine operator's permission. The machine operator is only to give his permission if the earth-moving machine is standing still and the work equipment is not in motion.

Personnel guiding the machine and attaching loads must always remain in the machine operator's field of vision.

Only use certified fixing devices (ropes, chains, shackles) which are of adequate dimensions. Protective gloves must always be worn when working with fixing devices.

Loads may only be fastened which do not exceed the lifting capacities of the machine and the lifting gear.

Loads may only be fastened at the load hook provided for this purpose.

Loads must be attached in such a way that they cannot slip or fall out.

Do not carry loads over persons.

Loads must be carried as close to the ground as possible and be prevented from swinging.

Earth-moving machines may only move with an attached load if the path of travel is fairly level and if the machine operator's view of the driving zone is guaranteed.

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

Earth-moving machines shall 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-attach system is correctly fastened and locked.

#### Work on e.g.

- brake systems,
- steering systems,
- 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 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.

Stabilize the earth-moving machine that has been lifted with the work attachment, immediately after lifting with a supporting structure. 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 hydraulic system 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 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.

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

Swallowing lubricants as well as long and repeated skin contact can be hazardous to health and should therefore be avoided. 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 shall 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.

### **2.20 Recovery, loading, transportation**

Earth-moving machines are only to be loaded onto recovery vehicles if 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 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 Safety and Accident Prevention

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### 2.21 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 after 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 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 may 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.

### 2.22 Fire prevention

- 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 cabin (operator's stand). The fire extinguisher symbol must be attached.

### 2.23 Emergency exit

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

### 2.24 Other 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).

3 Technical data

3.1 Views

- General-purpose bucket and parallel kinematics

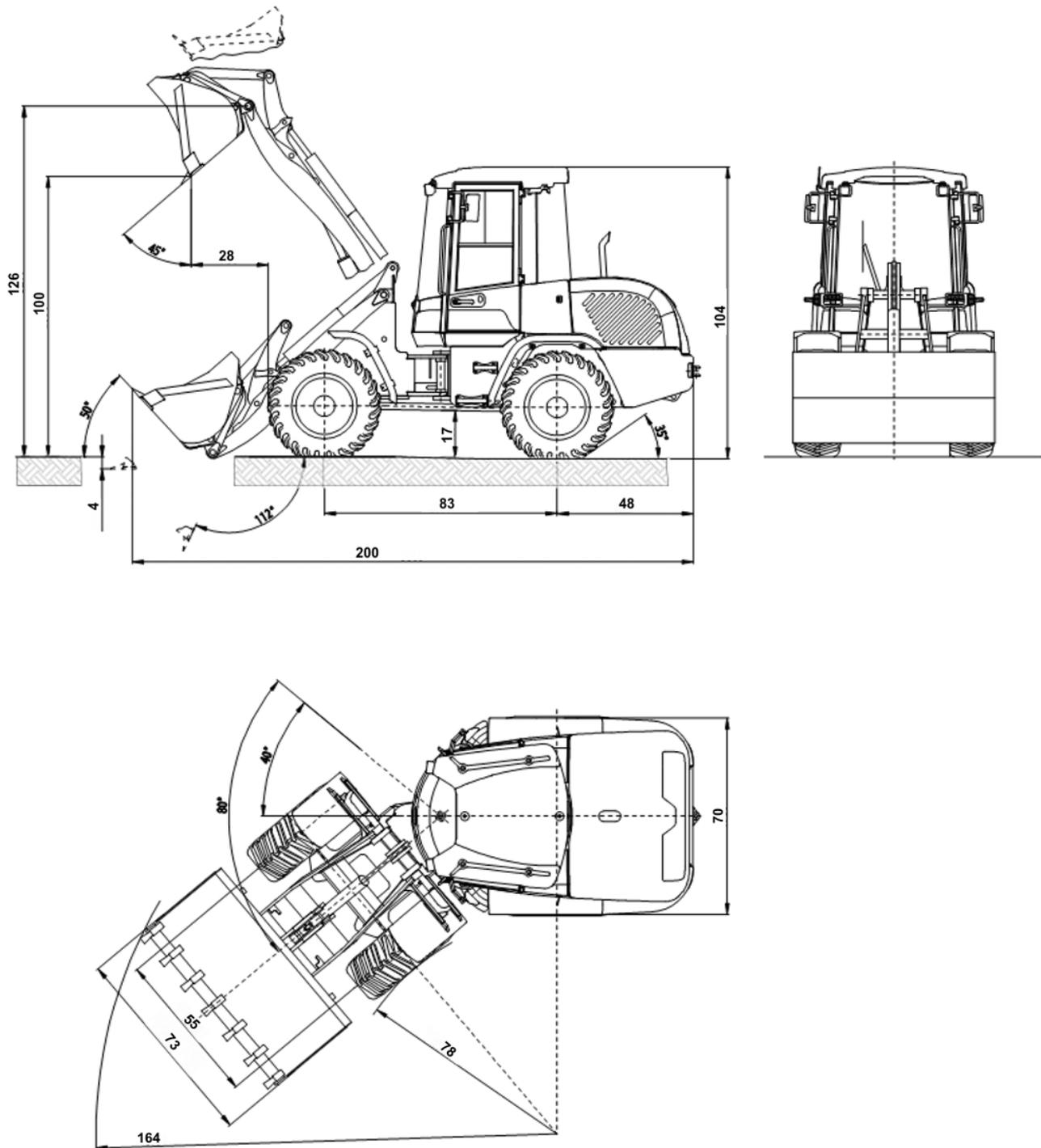


Fig. 3 Dimensioned drawing - standard bucket and parallel kinematics  
Tires 405/70 R18

### 3 Technical data

- Multi-purpose bucket and parallel kinematics

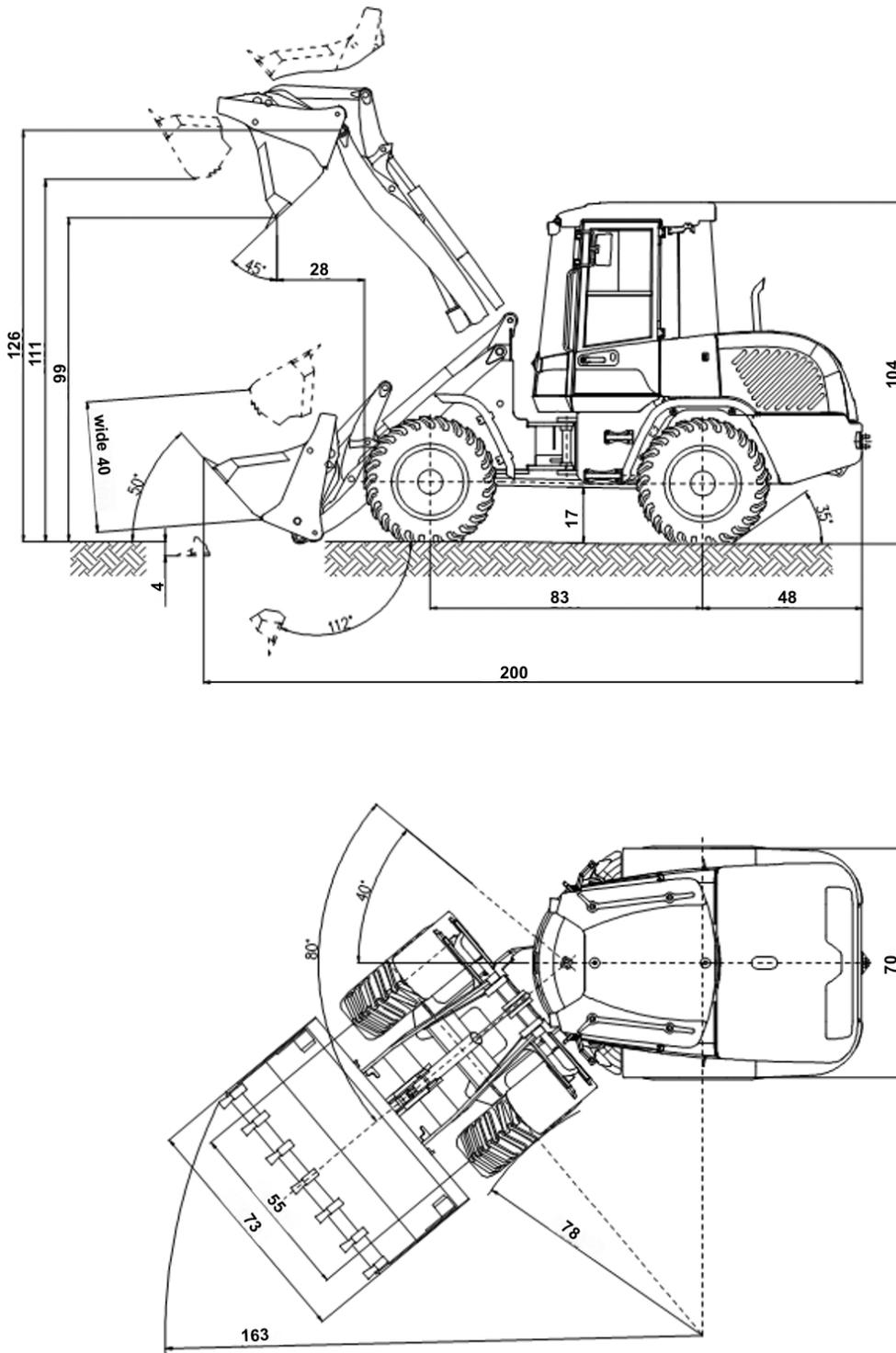


Fig. 4 Dimensioned drawing - multi-purpose bucket and parallel kinematics  
Tires 405/70 R 18

- Fork lift attachment and parallel kinematics

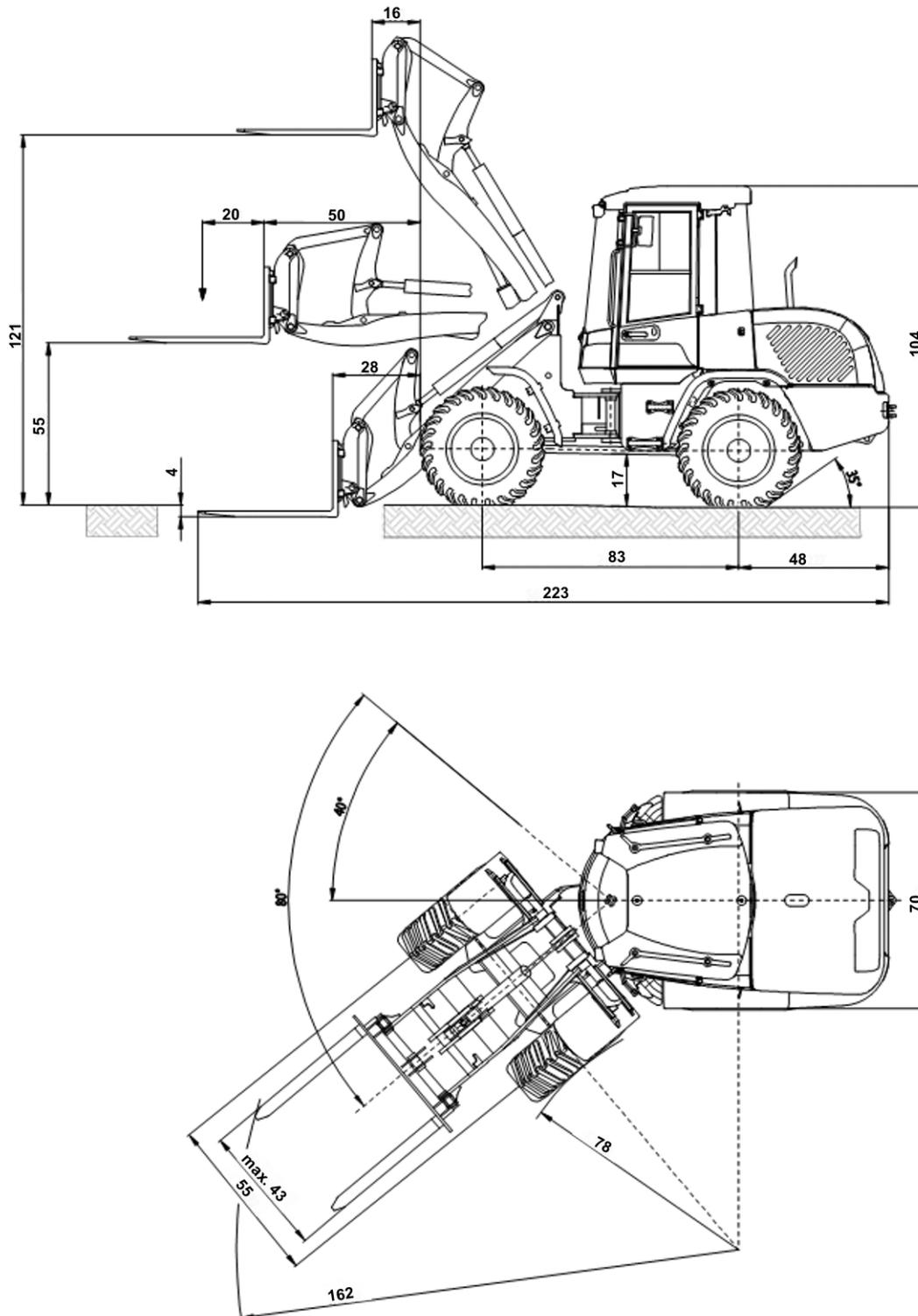


Fig. 5 Dimensioned drawing - fork lift attachment and parallel kinematics  
Tires 405/70 R 18

### 3 Technical data

- General-purpose bucket and Z kinematics

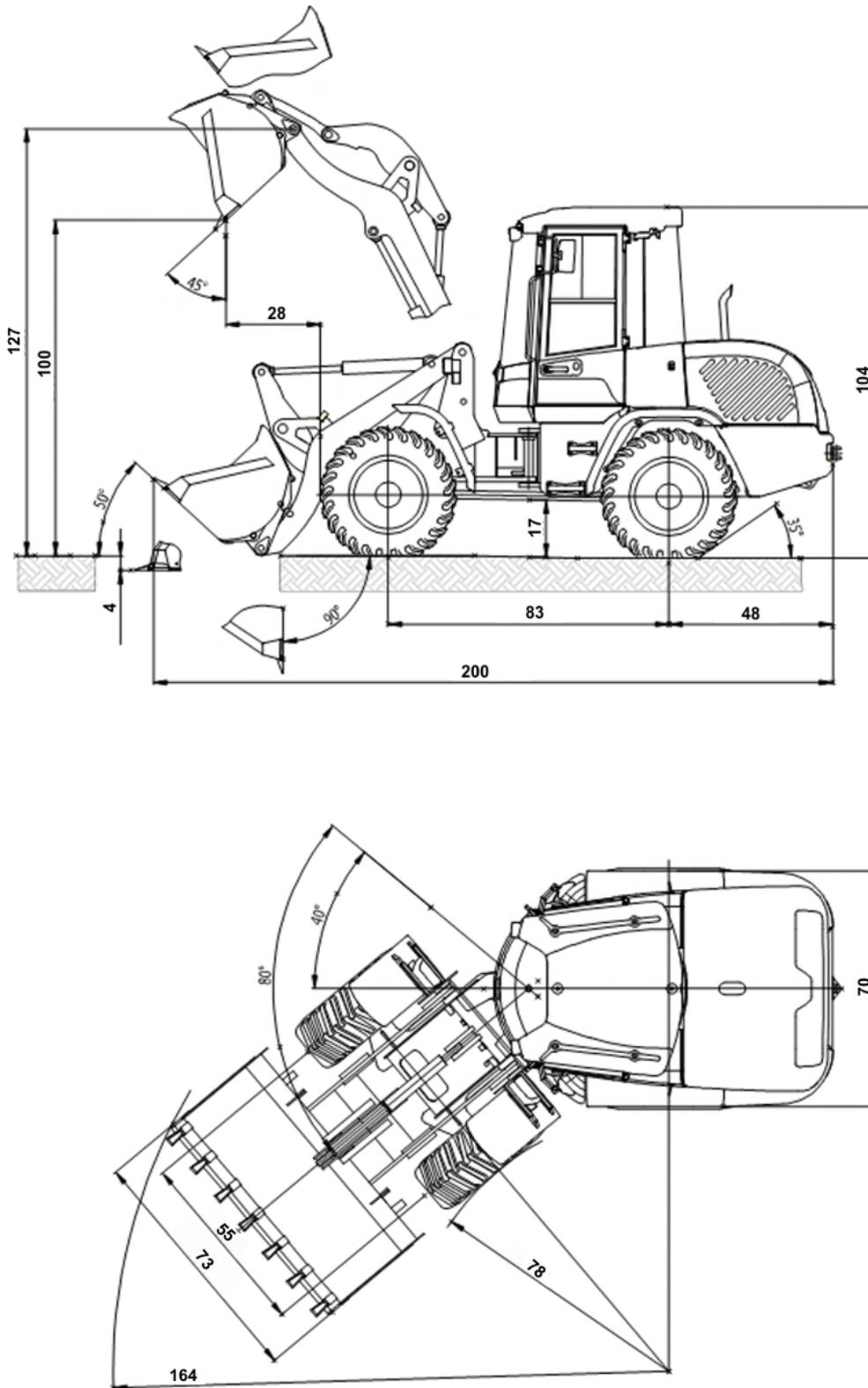


Fig. 6 Dimensioned drawing - standard bucket and Z kinematics  
Tires 405/70 R18

- Multi-purpose bucket and Z kinematics

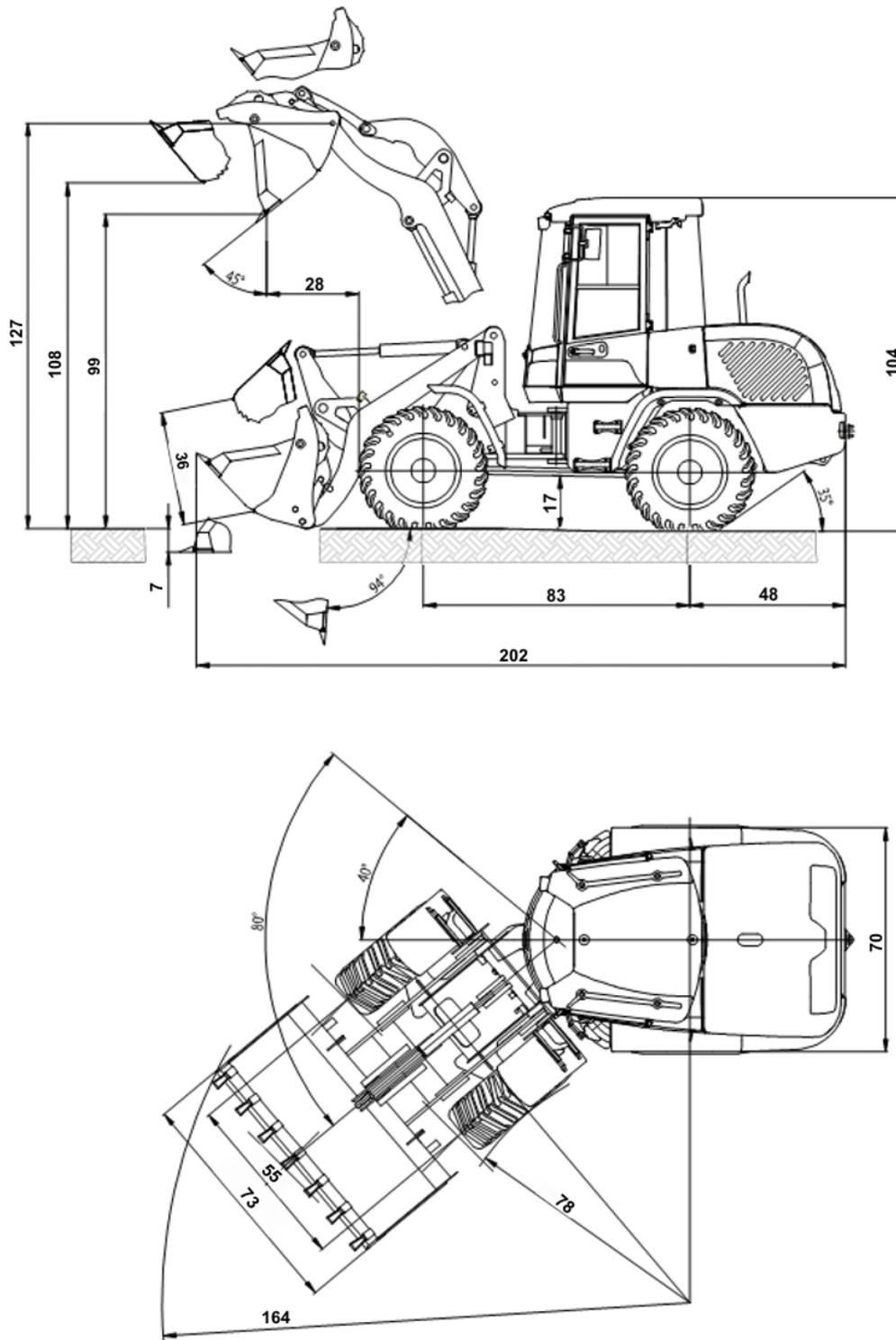


Fig. 7 Dimensioned drawing - multi-purpose bucket and Z kinematics  
Tires 405/70 R18

- Fork lift attachment and Z kinematics

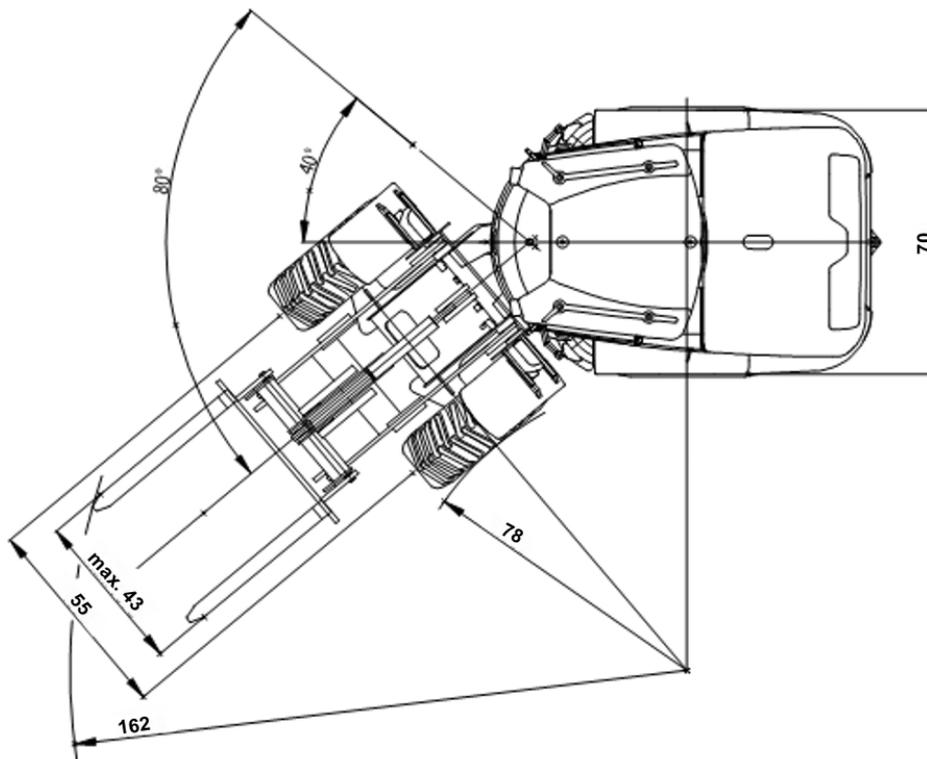
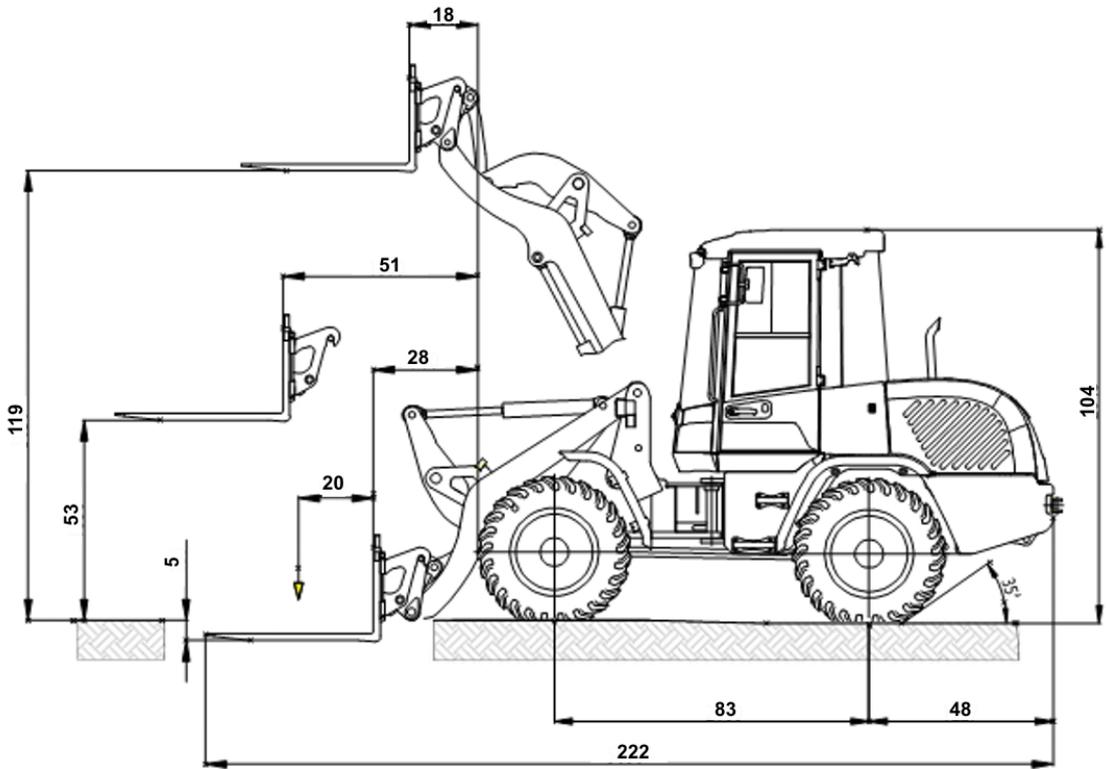


Fig. 8 Dimensioned drawing - fork lift attachment and Z kinematics  
Tires 405/70 R18

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