

Operating Manual

Original Instructions



MINI LOADER

MAXDUTY IMPORTS

These instructions belong with the vehicle

NOTES

General pages refer to all models mentioned in the header. Text that refers to particular models is marked correspondingly.

The engine Operating Manual must be observed.

CAUTION!

BEFORE STARTING THE VEHICLE THIS OPERATING MANUAL MUST CAREFULLY READ, UNDERSTOOD AND OBSERVED.

THE REGULATIONS AND LAWS VALID IN THE COUNTRY IN WHICH THE VEHICLE IS OPERATED MUST BE OBSERVED. INOBSERVANCE COULD CAUSE INJURIES OF FATAL ACCIDENTS. THE REGULATIONS OF THE TRADE CO-OPERATIVE ASSOCIATIONS ARE LAW.

USE OF THE OPERATING MANUAL:

This operating manual is a guide for safe operation of the vehicle.

**CAUTION!**

!!!A RESPONSIBLE DRIVER IS A SAFE DRIVER!!!

Before you use the vehicle, read this operating manual carefully. The safety instructions contained here must be observed. Read the safety instructions regularly so that you do not forget them.

These instructions belong with the vehicle and must be always available.

If you have any questions, please contact your dealer or your nearest MAP FACTORY representative.

USE OF THE VEHICLE:

Your wheel loader can be used for various types of work. A thorough knowledge of the operating controls and their functions is a precondition for a safe and efficient use.

This operating manual is not an instruction book for loading work.

New drivers must always be appropriately trained before starting or operating the vehicle.

Without an appropriate training an efficient operation of the vehicle is not possible.

A risk of injury to the driver and other persons is also presented.

Operating Manual, Part A

Safety Instructions

Read Before Use



MINI LOADER

These instructions belong with the vehicle

TABLE OF CONTENTS, PART A

1	GENERAL.....	6
1.1	Scope.....	6
1.2	Naming Definitions.....	6
1.3	Construction and Equipment.....	6
1.3.1	Identification and Marking.....	6
1.4	Operating Manual.....	7
1.5	Prevention against Unauthorized Use.....	7
1.6	Tubes and Pipes.....	7
1.7	Operation.....	7
1.7.1	Driver Requirements.....	7
1.7.2	Driving License Requirements for Loader.....	8
2	OPERATION.....	8
3	GUIDE.....	10
4	TRANSPORTATION OF PASSENGERS.....	10
5	PREVENTATION AGAINST TIPPING AND ROLLING OVER.....	10
6	PROTECTION AGAINST FALLING OBJECTS.....	11
7	OPERATION IN ENCLOSED SPACES.....	11
8	ACTIONS ON THE INTERRUPTION OF WORK.....	11
9	INSTALLATION, SERVICE, MAINTENANCE.....	12
9.1	Servicing.....	12
9.2	Towing, Transporting.....	12

9.3 Modifications and Welding Work.....	13
9.4 Roll-over Protection Structure (ROPS).....	13
10 MONITORING.....	14
10.1 Control.....	14
10.2 Testing.....	14
11 GENERAL SAFETY INSTRUCTIONS.....	15
11.1 Attachments.....	15
12 PROPER USE.....	17
13 WARNING SYMBOLS-SYMBOLS D'AVERTISSEMENT-WARNBIDZEICHEN.....	19

General

1.1 Scope

These safety instructions apply to loaders, dozers, diggers and special machines that are referred to as loader. This induces their attaching parts.

The ambient temperature of the loader working is -20~46°C.

The storage temperature of the loader is not required, but before long time storage, the coolant must be drained from the engine.

1.2 Naming Definitions

Loader

In these safety instructions, are vehicles with attachment tools to loosen, scoop, transport and drop earth, stones and other materials, whereby, the transport of the load is mainly performed by moving the loader.

Dozer

In these safety instructions, are vehicles with attachments that can loosen, pick up, transport and deposit earth, whereby, the material is not transported.

Digger

In these safety instructions, are vehicles with digging attachments that can loosen, pick up, transport and deposit earth, whereby, the loosening a picking up of earth is achieved through movement of the attachment.

Special Machines

In these safety instructions, are vehicles or equipment to load, move, transport or level earth or stones, whereby, according to its construction, this type of vehicle can only be used for special earth moving work.

1.3 Construction and Equipment

1.3.1 Identification and Marking

Every loader must have a durable identification plate with the following information on it:

-Manufacturer

-Year of manufacture

-Model number

-Type

On loaders that are centre-pivot steered, additional signs that contain the following information must be placed where they are clearly visible in the area of the centre-pivot.



CAUTION!

STANDING IN THE AREA OF THE CENTRE-PIVOT IS STRICTLY FORBIDDEN!

1.4 Operating Manual

An operating manual must be available for each loader. It must contain information for the safe operation of the vehicle that is presented in a clear and easily understandable form. The instructions must be presented in the language of the country in which the vehicle is operated.

The operating manual must always accompany the vehicle, or, be available in the operating environment.

1.5 Prevention against Unauthorized Use

The use of unattended loaders must be prevented. This can be achieved by removing the ignition key or locking the vehicle.

1.6 Tubes and Pipes

Tubes and pipes on loaders must be installed so that eventual mechanical and thermal damage is avoided. **Tubes and pipes must always be inspected prior to using the vehicle.**

Tubes and pipes in the area of the driver and operating areas, must be installed or covered so that the driver cannot be injured if a tube or pipe bursts.

The existence and affectivity of this safety measure must be checked before every use.

1.7 Operation

Loaders may only be properly operated through observation of the manufacture's operating manual.

1.7.1 Driver Requirements

Driving or servicing of loaders may only be performed by persons who:

1. Are 18 years of age.
2. Are physically and mentally fit.
3. Have been instructed on how to drive of service earth moving machinery and have proved their competence to the employer.
4. It is to be expected from, that they can reliably perform the tasks with which they have been entrusted.

They must have the permission of the employer to drive or service the loader.

1.7.2 Driving License Requirements for Loader

For driving on public roads:

Wheel loaders with up to 20 km/h

Maximum speed according to construction type

Do not require registration and can be driven with a class L driving license. The only requirement is an operation permit, in which the vehicle is entered as a “self-driving working vehicle”. The operation permit is given by the vehicle registration office. The operator is responsible to affect a corresponding policy of insurance. He has to settle with the insurance company whether the wheel loader is insured via the company liability insurance or whether a separate liability insurance is required.

Wheel loaders with over 20-25km/h

Maximum speed according to construction type

May be driven with a class L driving license, however, they must be registered for road use. For this, an official number plate (green) and a vehicle third party insurance is required.

Wheel loaders with over 25-40km/h

Maximum speed according to construction type

Vehicles with up to 3.5t permitted maximum weight are only allowed to be driven on open roads with a class B driving license. Vehicles with over 3.5t and up to 7.5t permitted maximum weight are only allowed to be driven on open roads with a class C and class T driving license.



CAUTION!

**DIFFERENT REGULATIONS MAY APPLY IN OTHER COUNTRIES!
PLEASE OBTAIN THE APPLICABLE INFORMATION BEFORE USING THE
VEHICLE.**

2 Operation

1. The driver must restrict the vehicle speed to the applicable environmental conditions, so that the vehicle can be stopped at all times and cannot be turned over.
2. During vehicle movement, the driver must ensure at all times that the attachments remain as close to the ground as possible.
3. On particularly steep slopes and inclines, the load must be kept on the upward slope side of the vehicle.
4. Freewheeling (driving with the clutch pressed), is not permitted on downward slopes. On loaders without a load adjustable gearbox, the appropriate gear for the

conditions is to be selected before driving a downward slope, and is not to be changed during the vehicle movement.

5. The driver must apply the seat belt at all times when operating loaders, dozers and diggers with roll protection.
6. Never drive backwards with the accelerator fully pressed, make sure that the speed is always appropriate to the prevailing conditions.
7. Operating the drive-direction switch during operation may lead to accidents. The loader will drive, without warning, in the opposite direction.
8. Operating controls are only allowed to be operated from the driver's or operator's position. Before leaving the vehicle, the driver must lower the load arm, set all control-valves to the neutral position and apply the brake.
9. The driver is only allowed to work with the loader when no persons are present in the danger areas.
10. The driver must display warning signs when a danger for persons is present.
11. The driver must be aware of soft ground, electrical cables (exposed and sub surface), gas and water pipes. He must mark the position of underground cables and pipes and leave sufficient distance between himself and exposed electrical cables and buildings.
12. Collapsing materials can cause accidents, e.g. avoid loading in front of a high wall or digging below walls.
13. During vehicle mounting and dismounting, you must always face the direction of the vehicle. Make sure that foot steps and shoe soles are clean and dry. Do not jump from the vehicle. Do not hold on to vehicle levers, but instead, on to the vehicle handrails.
14. Incorrect working clothes can lead to injuries, as loose clothing can become caught on parts of the vehicle. You should always wear appropriate protective clothing during your work; this includes a protective helmet, overalls, ear protection and gloves.
15. Turn spotlights off when you drive on public roads to avoid blinding other road users.
16. Before driving on public roads you must make sure that the vehicle equipment (lighting equipment etc) complies with the rules of the motor vehicle construction and use regulations, and, that the vehicle has a certificate to operate from the motor vehicle testing authority. With this certificate to operate, the vehicle is accepted as a self-driving working vehicle.

3 Guide

1. If the driver's vision is restricted in his working area due to influences on the working conditions (obstructions), he must be guided, or the working area must be cordoned off.
2. Only reliable people are permitted to be employed as a guide. They must be trained in their tasks before beginning their responsibilities.
3. Hand signals must be established to enable good communication between the driver and guide. The signals are only to be given by the driver and guide.
4. The guide must be clearly visible at all times. He must remain within the driver's field of vision.

4 Transportation of Passengers

1. Drivers of loaders are only allowed to carry passengers in areas in which the transporting of passengers is permitted by the manufacturer.
2. Loaders may only be mounted or dismounted after permission has been granted by the driver and the vehicle has been brought to a halt.
3. Passengers are not permitted to be transported on the vehicle's working attachments.
4. Loader attachments may not be used as a platform.

5 Presentation against Tipping and Rolling Over

1. To avoid the danger of tipping over, earth moving vehicles must always remain at a safe distance from the edges of crumbling land, excavations, mounds and slopes. The employer, or his appointed deputy, must determine the safe distance from such danger areas according to the firmness of the underlying ground.
2. Earth moving vehicles must be secured against the danger of rolling or slipping when used in the vicinity of trenches, shafts, graves, slopes and banks.
3. Loaders are only permitted to be used in dedicated tipping areas, when installations in the tipping area are present that prevent the vehicle from running off or crashing.

6 Protection against Falling Objects

1. When a danger of falling objects is present, earth moving vehicles must be fitted with a resistant protective roof for the driver's or operator's positions.
2. When undertaking earth or rock movement in quarries or trenches, diggers are to be positioned so that the driver's position and access to the driver's position are not on the wall side of the vehicle.

7 Operation in Enclosed Spaces

In enclosed spaces, loaders that are driven by a combustion engine are only allowed to be used when they have a low exhaust emission.

Engines must be operated and serviced so that exhaust emissions remain as low as possible. When loaders with a combustion engine are operated in closed rooms, you must make sure that the room has a sufficient air flow (opening of windows and doors etc) so that a good supply of breathable air is constantly present.

8 Actions on the Interruption of Work

1. Before leaving the driver's(operator's)position, the driver(operator)must ensure that:
 - the attachments are turned off
 - Unintentional movement of the vehicle is prevented through engaging the safety measures designed to prevent such movement.
2. If the driver leaves the vehicle, in addition to the requirements of paragraph 1 above, he must ensure that use of the vehicle by unauthorized persons are sufficiently prevented.
3. During breaks and on the cessation of work, the loader driver must ensure that the vehicle is on hard and even ground; in sloping areas the vehicle must also be prevented from rolling or slipping.
4. Never leave the vehicle in unsupervised areas. Accidents can be avoided through the erecting of warning barriers in public areas or when vision is reduced (e.g. at night).

9 Installation, Service. Maintenance

9.1 Servicing

1. Loaders may only be loaded, transferred or removed in accordance with the operating manual and under the supervision of a qualified person who has been appointed by the employer.
2. Loaders must be sufficiently braked during installation work, servicing and maintenance.
3. The engine must be switched off before all servicing and maintenance work. This may only be contravened when the servicing or maintenance work cannot be performed without the engine being on.
4. Before any servicing and maintenance work on non-isolated electrical equipment is carried out, the loader's engine must be disconnected from the battery or starter motor to avoid an inadvertent starting of the engine.
5. Servicing and maintenance work may only be carried out when the working equipment has been prevented from moving through placing on the ground, supporting or equivalent procedures.
6. During servicing and maintenance work the centre-pivot joint must be locked. Standing in the area of the centre-pivot is strictly forbidden when the engine is running.
7. The circuit diagram must be observed when electrical parts are connected or disconnected. Incorrect connection can lead to damage.

9.2 Towing, Transporting

1. Loaders may only be towed with an approved tow bar or rope, together with suitable equipment for the connection of tow bars and ropes to the loader.
2. Drive slowly when towing. Persons are not permitted to stand in the area of the tow bar or rope.
3. Loaders are only permitted to be towed when the brake system and steering are fully functional.
4. During loading or transporting of loaders, aids are to be used to prevent the inadvertent movement of the loader. The loader is to be kept free from mud, snow and ice so that ramps can be negotiated without the danger of slipping.

9.3 Modifications and Welding Work

Technical modifications are not permitted to be undertaken by the vehicle operator without the express permission of the manufacturer. Some machine parts are made of cast-iron. Welded joints in cast-iron can lead to weak points or cracks.

9.4 Roll-over Protection Structure(ROPS)

The vehicle is equipped with a Roll-over Protection System(ROPS). Working with a damaged ROPS can lead to serious accidents. A modified or improperly repaired ROPS is also dangerous. After an accident, a ROPS is only to be repaired by an approved person.

The EC permits the delivery and operation of vehicles that do not have roll protection if accepted by the relevant employer's liability insurance association. This is entirely dependent on the type of terrain on which the vehicle is to be used. Before the removal of roll protection, or, before buying a vehicle without roll protection, the permission from the governing employer's liability insurance association must be obtained.

In case of any part of the ROPS is affected by a plastic deformation and or rupture (e.g. by roll-over, tip-over or object impact), the ROPS has to be replaced according to manufacturer's specifications.

10 Monitoring

10.1 Control

1. The driver must check the correct function of the controls before every shift. He must also visually inspect the loader for any obvious faults.
2. The driver must check the correct function of the brake and the limit installation and limit warning device before using the hoist.
3. The driver must report any problems found to his superior, he must also inform his relief driver of any problems
4. Where faults mean a deterioration of the operating safety of the loader, the loader is not to be operated until the problem has been cured.
5. You must perform the following checks when the vehicle has been standing for a long period of time. We recommend that you also carry out these checks after particularly long shifts.



CAUTION!

THE CHECKS HELP TO ENSURE THE FUNCTIONAL ABILITY OF THE VEHICLE AS WELL AS YOUR OWN SAFETY.

- Check the following items for cleanliness and damage:
- Rods, cylinder, rod eye-ends, radiator
- Handrails and footsteps
- Make sure warning signs are present
- Inspect the engine for signs of damage or missing parts
- Check working attachments for completeness
- Check rod eye-ends and joints for condition and rigidity
- Check the engine for oil, fuel and antifreeze
- Check all screws for security of attachment
- Check tyre pressure

10.2 Testing

1. Loaders must be inspected by a trained person prior to first operation (commissioning), and, before being put into operation after major modifications.
2. Loaders should be inspected by a trained person (approved workshop) once a year. They should be inspected by a trained person (approved workshop) once a year. They should also be inspected at more regular intervals by an appropriately trained person depending on their operating conditions and prevailing circumstances.
3. The inspection results must be recorded in writing and kept at least until the next inspection.

11 General Safety Instructions

11.1 Attachments

Only use HAIYATE approved attachments for your vehicle.

Attachments may only be installed and operated after the applicable operating manual has been carefully read and understood.

Before use, it must be ascertained through practice, that the operating person is familiar with the attachments, the controls and their function.

Remember:



SAFETY FIRST

For all work, the appropriate tool must be used for the job to be carried out. For example, if too big a shovel is used for heavy materials, this could weigh down the equipment causing undue stress which will ultimately shorten the vehicle life.

Before disconnection, the working attachment must be lowered to ground level and supported against falling over. If this is not done, the attachment could tip over and cause serious injury. You must exercise particular care on slopes and inclines.

Engine/Steering Failure:

The engine must be immediately turned off after an engine or steering failure.

Engine:

The engine cover may not be removed when the engine is running.

Spark Emission from the Exhaust:

Spark emissions from the exhaust or electrical installation can cause explosions or fires. Avoid working in closed environments where inflammable materials, steam or dust is present.

Only park or leave the vehicle in a place that is secured against fire.

Battery:

Batteries that contain frozen electrolyte can explode when used or charged. Working with a frozen battery is strictly forbidden. Fully charged batteries cannot freeze.

Battery Gases:

Batteries give off gases that can explode. Keep all sparks and naked flames away from batteries.

Closed rooms in which batteries are used or charged must have a sufficient supply of fresh air.

Never check the charged state by connecting the terminals together, always use approved test equipment instead.

Battery Connections:

The negative pole of the vehicle is connected to earth. When connecting the battery, the negative (-) cable is always connected last. When disconnecting the battery, the negative (-) cable is always disconnected first.

Diesel Fuel:

Diesel fuel is flammable. Keep naked flames away from the vehicle and never smoke in the vicinity of the vehicle when filling up or working on the engine. Turn the engine off when you fill up with fuel. You can avoid fires and burns by observing these precautions.

Petrol Mixture:

Never fill the vehicle with petrol, or mix petrol with diesel fuel. Petrol gives off highly inflammable fumes.

Hydraulic Oil:

A fine jet of hydraulic oil ejected under great pressure can penetrate the skin. Use a piece of card when you look for small leaks. If oil does penetrate the skin you must immediately seek the assistance of a doctor.

Hydraulic Pressure:

Hydraulic oil under system pressure can lead to serious injuries. Before the connection or disconnection of equipment the engine must be switched off and the lever selected to “pressure release of pipes”. Make sure that the engine cannot be switched on when a pipe is open.

Different high pressure pipes are used on **MAPFACTORY** vehicles. When demanding replacement pipes note the DIN (German Standard) number on the pipe or the connector.

Monitoring Equipment:

Working with the vehicle is not permitted when one of the control lights is not working.

When the engine is running no control lights may be illuminated. If this happens, turn the engine off immediately. Let the fault be immediately cured. The vehicle may only be operated once the failure has been cured.

Protection against Injuries by Metal Splinters:

You must wear protective glasses when driving bolts in or out. Flying metal splinters can cause serious injuries. Always use a soft face hammer or a brass drift.

Tyre Condition:

Exploding tyres can cause serious injuries. Do not work with damaged, incorrect or worn tyres.

Standing under Attached Parts:

Standing under attachments is not permitted.

Before each operation, the attachment must be lowered and the brake applied.

12 Proper Use



WHEEL LOADERS ARE NOT ALLOWED TO BE USED IN OPEN TERRAIN OR FOR CONSTRUCTION WORKS.

Loaders are not permitted to be used as towing vehicles for trailers or trailer equipment.

When used for works which do not fall within the responsibility of the agricultural trade cooperative association the valid regulations of the competent trade co-operative association have to be observed.

For further information please contact the trade co. operative association.

SG950 loaders are built in accordance with current technology and technical safety standards.

However, dangerous situations can still arise when using our vehicles. Therefore, our loaders and attachments are only to be used in a technically perfect condition. The safety regulations must be strenuously observed, when failures arise, the use of the vehicle and attachments is to be immediately ceased, the vehicle may only be used again once the problem has BEEN CURED.

According to the rules for the prevention of accidents of the agricultural trade-cooperative association vehicles that are used to stack large bales have to be equipped with protective devices against falling objects(VSG3.1,paragraph13).

Some of our vehicles are fitted with devices to prevent driving off or starting, which should never be immobilized. If these devices are faulty, the vehicle is not to be used until the fault has been cured.

Compliance with the operating and servicing instructions and the servicing regulations constitute proper use of the vehicle.

Loaders are to be used exclusively for the breaking up, loosening, loading, stacking, moving and distribution of bulk and unit loads.

Palette forks are for the picking up, transportation, stacking and placing of unit loads and palette materials.

Feed transport and **distribution appliances** are exclusively for the transportation, loading, and distribution of feed, silage and straw.

The **crocodile gripper** serves the safe transport of straw and dung and the breaking-up of compressed dung; as well as materials that could fall from a fork.

Other **special appliances** are to be exclusively used for the purpose for which they are designed.

Loaders are only permitted to be used on level ground, in yards, and-with the appropriate operating permission of the motor vehicle construction and use regulations-in suitable public areas. The maximum stable operating load must be observed.

**CAUTION!**

OPERATION IS STRICTLY FORBIDDEN ON SLOPES, OR, IF A DANGER OF TIPPING OR FALLING OBJECTS IS PRESENT.

A DANGER OF FIRE THROUGH SPARKS IS PRESENT WHEN OPERATING IN THE VICINITY OF FLAMMABLE MATERIALS (HAY, STRAW, PAPER ETC). IN SUCH ENVIRONMENTS, HOFTRAC AND WHEEL LOADERS ARE ONLY TO BE USED IN ACCORDANCE WITH THE PERTAINING LEGAL DIRECTIVES.

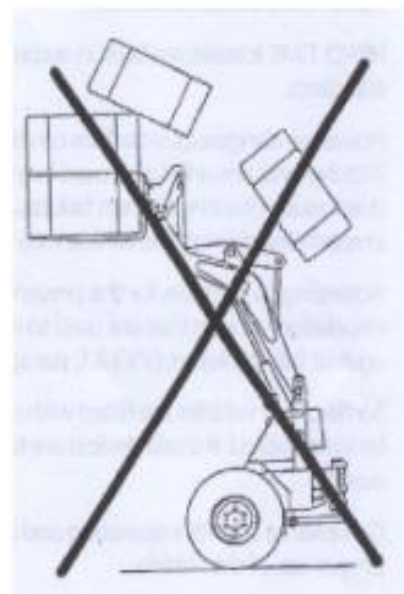
CAUTION

During the transportation of bails, **NEVER** transport more than one bail at a time. Falling bails can cause serious injuries.

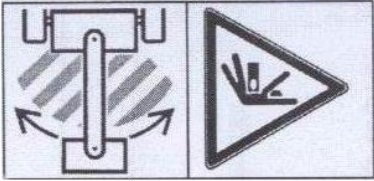
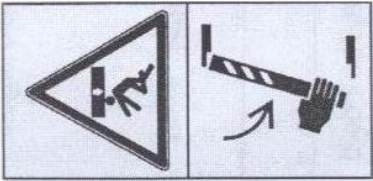



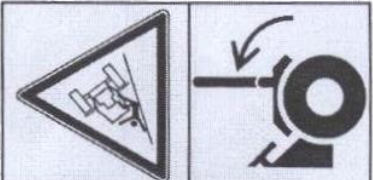
You must work with great care at all times.

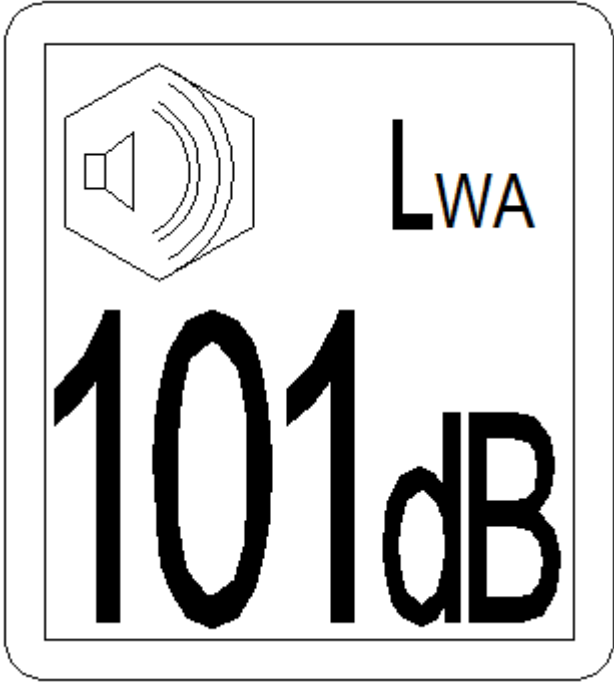
The manufacturer also offers special stacking equipment and safety appliances. These include:

- Round and oblong bail stackers
- Round and oblong bail stacking appliance cabin
- Driver's cabin
- Driver's protective cabin
- Bail protection bar (can be retro-fitted)



13 Warning Symbols

SYMBOLS	EXPLANATION
	Stay clear of articulation area while engine is running.
	Attach support before getting into hazardous area.
	Never reach into rotating auger.
	Do not open or remove safety shields while engine is running.
	Stay clear of raised boom and bucket.
	If the working conditions permit, the roll bar must always be locked in safety position.

 <p>The image shows a noise symbol within a rounded rectangular border. On the left is a speaker icon with sound waves. To its right is the text 'LWA'. Below these elements, the value '101 dB' is written in a large, bold, sans-serif font.</p>	<p>Noise symbol</p>

Operating Manual, Part B

Description and Operation



MINI 750

These instructions belong with the vehicle

TABLE OF CONTENTS, PART B

14	Operating Levers and Instruments.....	25
14.1	Operating Lever.....	25
14.2	Control and Warning Lights.....	27
14.3	Switches and Buttons.....	29
14.4	Switches and Buttons Optional Extras.....	30
15	Mechanic Quick Change System for Tool Attachments.....	31
15.1	Coupling.....	31
15.2	De-coupling.....	32
16	Operation.....	33
16.1	Before Getting into the Vehicle.....	33
16.2	Adjustment of the Driver's Seat.....	33
16.3	Safety Belt.....	34
16.3.1	Putting on the Safety Belt.....	34
16.3.2	Detaching the Safety Belt.....	34
16.4	Battery disconnecting switch.....	34
16.5	Before Switching on the Engine.....	35
16.6	Starting the Engine.....	36

16.7	Preparation for Road Use.....	37
16.8	Departure.....	37
16.9	Parking the Vehicle.....	39
16.10	Departure.....	40
16.11	Inching.....	41
16.12	Change of Drive Direction.....	41
16.13	Parking the Vehicle.....	42
16.14	Working at High Temperatures.....	42
16.15	Operation at Low Temperatures.....	43
16.16	Fuel System.....	44
16.16.1	Fuel Types.....	44
16.16.2	Fuel Filter.....	44
16.16.3	Fuel for Low Temperatures.....	44
16.16.4	Petrol.....	45
16.16.5	Refuelling.....	45
16.16.6	Draining of Deposits from the Fuel Tank.....	45
17	Optional Ancillary Equipment.....	46
17.1	Introduction.....	46
17.2	Light Material Shovel/Earth Shovel.....	47
17.2.1	Safety.....	47
17.2.2	Installing the Load shovel.....	47
17.2.3	Operation.....	47
17.2.4	Operating Devices.....	47
17.2.5	Working with the Load Shovel.....	48
17.3	Crocodile Gripper.....	50
17.3.1	Safety.....	50

17.3.2	Working with the Crocodile Gripper.....	50
17.3.3	Installing the Crocodile Gripper.....	50
17.3.4	Operation.....	50
17.3.5	Operating Element.....	50
18	Towing.....	51
18.1	Towing over Longer Distances.....	51
18.2	Towing over Shorter Distances.....	51
18.2.1	MINI 750.....	51
18.2.2	MINI 750.....	51
19	Transport and Lifting	52
19.1	Transport	52
19.2	Lifting	53
20	Technical Data.....	53
20.1	Engine.....	53
20.2	Dimensions.....	55

14 OPERATING LEVERS AND INSTRUMENTS

14.1 Operating Lever

- 1、 Instrument panel
- 2、 Accelerator pedal
- 3、 Operating lever for load arm/drive
- 4 、 Operating lever for additional hydraulic equipment connection.
- 5 、 Driver's seat
- 6 、 Parking brake

To apply the parking brake, pull the lever up. Push the button and lower the lever to release the brake. When the button is released, the control light goes off. When parking the vehicle, the parking brake must always be applied.

- 7、 Inch pedal
- 8、 Steering wheel turning knob

After cold start the idle speed RMP can be increased slightly with this screw. **Set the desired engine RMP with the accelerator pedal and then fix the set position with the setting screw.** When the system runs smoothly (system warm), reduce the idle speed RPM. A high idle speed can cause accidents as the loader starts immediately after the throttle pedal has been operated.

The movement of the steering control corresponds to the intended direction of steering.

**CAUTION!**

OPERATING THE DRIVE-DIRECTION SWITCH DURING FAST DRIVE CAN CAUSE ACCIDENTS. THE VEHICLE WILL DRIVE SUDDENLY IN THE OPPOSITE DIRECTION. APPLYING THE PARKING BRAKE WILL CAUSE THE VEHICLE TO STOP. CONSULT A QUALIFIED PERSON BEFORE DRIVING THE VEHICLE FOR THE FIRST TIME.

WHEN YOU DRIVE THE VEHICLE FOR THE FIRST TIME, CHOOSE A LARGE, FLAT AREA.

14.2 Control and warning lights

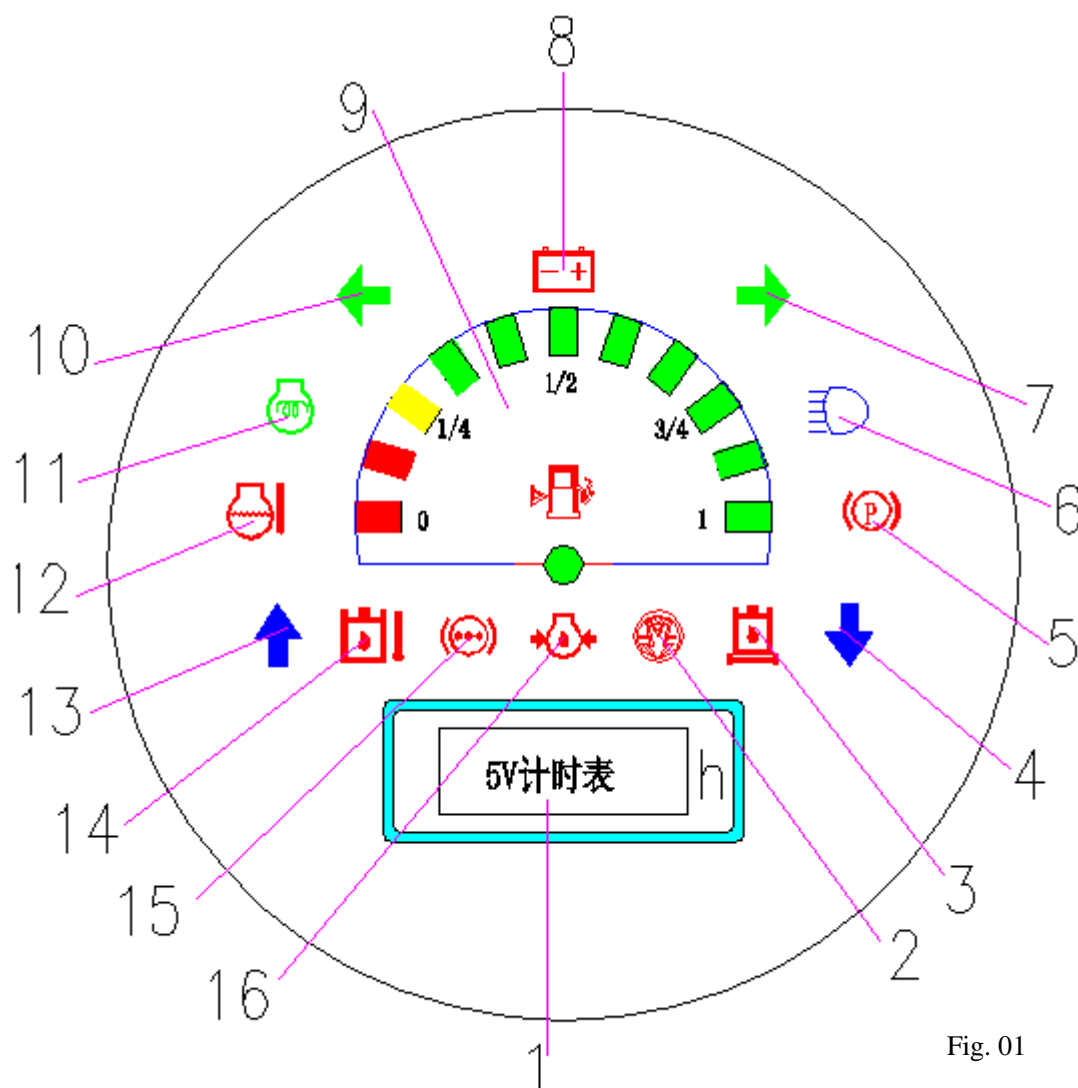


Fig. 01

ITEM	DESIGNATION	FUNCTION	SYMBOL
1	Operating time counter	Calculates the operating time of the vehicle. Maintenance and inspection have to be scheduled based on the reading of the counter.	See fig. 01
2	Air filter blocking warning light	Illuminates when the air filter is blocked.	See fig. 01
3	Oil contamination warning light	Illuminates when the engine oil is contaminated seriously.	See fig. 01
4	Rearward drive control light	Rearward drive-direction	See fig. 01
5	Parking brake control light	The parking brake has been applied.	See fig. 01
6	Front spotlight rocker switch	Push the switch downward to switch on the front spotlights.	See fig. 01

7	Right steering control light	right steering	See fig. 01
8	Generator warning light	Illuminates when the battery has not been charged.	See fig. 01
9	Fuel gauge	Indicates the fuel level.	See fig. 01
10	Left steering control light	Left steering	See fig. 01
11	Glow plug control light	Illuminates when the engine is preheated.	See fig. 01
12	Water temperature warning light	Illuminates when the engine water temperature is approximately 112°C.	See fig. 01
13	Forward drive control light	Forward drive-direction	See fig. 01
14	Hydraulic oil temperature	illuminates when the hydraulic oil temperature is too high.	See fig. 01
15	Barometric pressure warning light		See fig. 01
16	Engine oil pressure warning light	illuminates when the engine oil pressure is too low.	See fig. 01
17	Preheating controller	Switch on the engine when the glowing filament glows.	See fig. 02
18	Front/back spotlights rocker switch	Push the switch downward to switch on the front or back spotlight.	See fig. 02

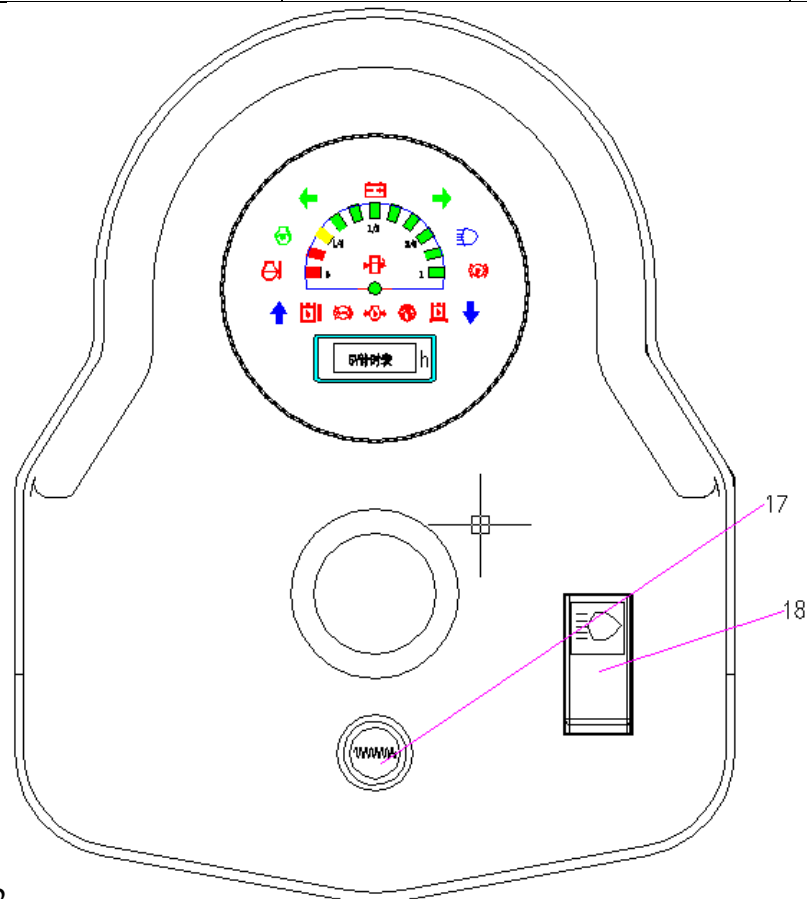


Fig.02

14.4 Lever for Load Arm

The single movements are executed as follows:

- rearward position-to raise the load arm
- forward position-to lower the load arm
- forward position(against resistance)-
to engage the floating position of the load shovel
- to the right side-to extend the shovel
- to the left side- to retract the shovel

For combined movements, the lever can be moved between the four main positions.

The working speed is dependant on the RPM of the engine and on the position of the lever.

The lever is returned to its neutral position from each position (except floating) by a return-spring.

When operating with floating selected, the shovel remains on the ground due to its own weight.

Depending on the ground conditions, the shovel opposition moves to adapt to the ground unevenness.

14.5 Lever for Additional Hydraulic

To operate the “hydraulic connection of the load arm/hydraulic locking of the quick change system”, move the control lever on the right side of the load arm lever, this lever returns automatically to its neutral position.

- lever in left position(L)-unlocked
- lever in right position(R)-locked

Operation of the hydraulic connection when the three-way cock is in the forward position:

- Lever in left position(L)
- left coupling under pressure
- return flow through right coupling
- Lever in right position(R)
- right coupling under pressure
- return flow through left coupling

During normal operation, the three-way cock remains in the “Locking” position, so that the tool attachments can be coupled or uncoupled from the driver’s position. The three-way cock is only moved if hydraulically operated tool attachments are to be used.

When the vehicle is equipped with an **electro valve** (optional extra) the level for the additional hydraulic equipment is omitted. During normal operation the functions of the control lever are the same as described under item 1.6. If you want to use the functions of the additional control lever, press the lower button at the lever. During normal operation the functions of the control lever are the same as described under item 1.6.

15 MECHANIC QUICK CHANGE SYSTEM FOR TOOL ATTACHMENTS

The vehicle is equipped with a mechanic quick change system, for different tool attachments, as standard. This allows the driver to make a quick and uncomplicated coupling and de-coupling of the attachments from his position.

The handle for the remote control of the mechanical quick-change system is located on the top left side of the arm spar.

The operator can reach this handle without getting off the vehicle.

15.1 Coupling

Drive towards the tool attachment and push the quick change system of the vehicle into the receptacle of the attachment. Then lift the load arm and retract the attachment. Turn the lever of the locking bolt to the left. The locking bolt is pushed under spring pressure into the lock of the attachment. Make sure that the bolt has entered the lock.



CAUTION!

FOR HYDRAULICALLY OPERATED TOOL ATTACHMENTS, AFTER HAVING PICKED UP AND LOCKED THE TOOL ATTACHMENT, THE ENGINE MUST BE SWITCHED OFF. AFTERWARDS, MOVE THE OPERATING LEVER SEVERAL TIMES IN BOTH DIRECTIONS, SO THAT THE HYDRAULIC CONNECTION IS WITHOUT PRESSURE.

Pass the hydraulic tubes through the eyes provided therefore on the attachment and the load arm, to the hydraulic connection. Remove the protective cap of the hydraulic rapid action coupling and make sure that the connections are clean. Plug the rapid action coupling into the connections of the additional hydraulic equipment. Put the protective caps together to prevent them from getting dirty. Check the hydraulic system of the tool attachment and the hydraulic rapid action coupling for tightness.

To do this, switch on the engine and move the tool attachment in both directions.



CAUTION!

A FINE JET OF HYDRAULIC OIL EJECTED UNDER GREAT PRESSURE CAN PENETRATE THE SKIN. DO NOT USE YOUR FINGERS WHEN LOOKING FOR SMALL LEAKS. DO NOT MOVE YOUR HEAD TOO CLOSE TO THE SUSPECTED SPOT. USE AN OIL-RESISTANT CARD AND INSPECT IT FOR OIL. IF IT DOES PENETRATE THE SKIN IMMEDIATELY CONSULT A DOCTOR.

15.2 De-coupling



CAUTION!

BEFORE DE-COUPLING, LOWER THE TOOL ATTACHMENT ON EVEN GROUND. ON UNEVEN GROUND TOOL ATTACHMENTS CAN TIP OVER RESULTING IN PERSONAL INJURIES.

Close the tool attachment and shut off the engine.

Move the operating lever for the additional hydraulic equipment several times in both directions to release the hydraulic connection of pressure.

Pull the locking bolt up and press it to the right to unlock the tool attachment.



CAUTION!

A SMALL QUANTITY OF OIL MAY ESCAPE WHEN YOU DISCONNECT THE HYDRAULIC RAPID ACTION COUPLING. COLLECT ANY OIL IN A SUITABLE CONTAINER TO PREVENT ENVIRONMENTAL POLLUTION (LEAK-FREE COUPLINGS ARE AVAILABLE AS AN OPTIONAL EXTRA).

Disconnect the hydraulic coupling and put on the protective caps. Draw the hydraulic tubes out of their conduits and place them over the tool attachment. Pull up the locking bolt and press it to the right. Set the tool attachment onto the ground, extend and lower the attaching frame.



CAUTION!

ONLY EXTEND THE ATTACHING FRAME UNTIL THE LOCK DOES NOT IMPEDE THE LOWERING OF THE ATTACHING FRAME.

16 OPERATION

16.1 Before Getting Into The Vehicle

Observe the daily maintenance schedule (see part C, Maintenance/Trouble Shooting). Do not hold on to the levers when getting in the vehicle.

 **ATTENTION! ONLY GET IN THE VEHICLE FROM THE LEFT SIDE.**

16.2 Adjustment of the Driver's Seat

The driver's seat can be adjusted as required to prevent strains and fatigue. Adjust the driver's seat so that all operating levers are easy to reach and the pedals can be depressed completely when you are seated with your back against recline.

The following adjustments are possible:

- forward/backward- adjustment(Fig.-1)
Pull the lever up, adjust the seat, and then push the lever down.
Make sure that the seat has completely engaged
- Weight adjustment (Fig.-2)
Push the lever down depending on the driver's weight.
Low weight:
Push the lever (Fig.-3) down completely and release.
The handle moves automatically up and the seat can be adjusted to the corresponding weight.



16.2.1 Vibration

The vibration total value to which the hand-arm system does not exceed 2.5m/s^2 .

The highest root mean square value of weighted acceleration to which the whole body does not exceed 0.5m/s^2 .

 **CAUTION!**

**ALWAYS PUT ON THE SAFETY BELT WHEN OPERATING THE VEHICLE.
EXCHANGE DAMAGED PARTS OF THE SAFETY BELT OR THE LOCK.**

16.3 Safety belt

16.3.1 Putting on the Safety Belt

Sit down correctly.

Pull the belt over your hips and engage the lock.

Do not adjust the belt too loose or too tight.

16.3.2 Detaching the Safety Belt

Press the button and remove the belt from the belt lock. Repair or replace damaged parts of the belt or the lock.

16.4 Battery disconnecting switch (Optional Extras)

The battery disconnecting switch is located under the engine cover and is used to disconnect the complete electrical system from the battery in case of an emergency (e.g. cable burning). We recommend to switch off the battery overnight to prevent a possible discharge of the battery of cable burning. If the switch head is pulled off, the switch can also be used as additional theft protection.

When the switch head is pulled off, the aperture must be imperatively covered with the protective cap, to prevent any moisture from penetrating into the switch.



CAUTION!

THE BATTERY DISCONNECTING SWITCH MUST NOT BE SWITCHED LOAD.BEFORE INSERTING THE IGNITION KEY, THIS SWITCH MUST FIRST BE OPERATED. FOR SWITCHING OFF PROCEED IN REVERSE ORDER.

16.5 Before Switching on the Engine

1. Apply the parking brake
After having parked the vehicle, the parking brake must always be applied.
2. Checks before starting the engine:
 - Walk round the vehicle(see " Before getting in ").
 - Remove dirt and waste from the driver's cabin.



CAUTION!

THE OPERATING ELEMENTS OF THE VEHICLE MUST ALWAYS BE CLEAN AND DRY.

1. Remove or fix all loose parts.
2. Check the driver's cabin for loose or missing screws, bolts etc. Insert or tighten, when necessary.
3. Verify the function of the following equipment:
Lights, control lights, signal horn, indicators, all switches, direction indicator, hazard lights, screen washer and screen wipers.
4. Adjust the driver's seat.
5. Put on the safety belt.
6. Push the forward/reverse drive lever into the neutral position.
The engine can only be started, when the drive-direction lever is in the neutral (-0-) position.

16.6 Starting the Engine

1. Before starting the engine, make sure that nobody is within the danger areas of the engine or the vehicle. After repair, check that all protective devices have been installed and all tools have been removed from the engine. Do not use any further starting aids (e.g. starting pilot).
Danger of accidents!



2. Depress the accelerator pedal.
3. Start the engine.
 - put on the safety belt first
 - Insert the key-position 0=no operating voltage
 - Turn key left against spring pressure-position 3=Preheating
 - When the preheating controller illuminates
 - Turn key right-position 2=Starting
 - Release the key as soon as the engine starts. The key returns to position 1 and the control lights extinguish.



CAUTION!

AT TEMPERATURES BELOW 0°C, THE ENGINE TURNS AT A LOWER SPEED FOR A CERTAIN TIME DUE TO THE GREATER VISCOSITY OF THE HYDRAULIC AND ENGINE OIL THE LOWER THE AMBIENT TEMPERATURE, THE LONGER THE TIME REQUIRED FOR PREHEATING. TO AVOID DAMAGE TO THE ENGINE, DO NOT INCREASE THE RPM IMMEDIATELY. OBSERVE THE PRESSURE INDICATOR OF THE HYDRAULIC FILTER.

4. Use the engine RPM regulator to set the idle, and verify that all control lights have extinguished. Repair eventual faults.
5. RPM regulator:
After cold start the idle speed RPM can be increased slightly with this screw. **Set the desired engine RPM with the accelerator pedal and then fix the set position with the setting screw.** When the system runs smoothly (system warm), reduce the idle speed RPM. A high idle speed can cause accidents as the loader starts immediately after the throttle pedal has been operated.
6. Start without interruption for max. 20 seconds. If the engine does not start, repeat starting after one minute. If the engine fails to start again, look for the cause using the trouble shooter's guide (see Engine Operating Manual).

16.7 Preparation for Road Use



CAUTION!

BEFORE DRIVING ON OFFICIAL ROADS, MAKE SURE THAT THE VEHICLE CORRESPONDS TO THE APPROPRIATE REGULATIONS AND THAT THE DRIVER HAS A VALID DRIVING LICENCE.

1. Secure the tool attachments!
2. Attach the protective cover to the shovel.
3. The shovel must be empty and lifted into the transport position!
4. Check the lights!
Make sure that the headlights and the rotating light, if fitted, are in working order!
5. Set all hydraulic control valves to position O.
6. When driving on public roads the vehicle must have the corresponding certificates for road use.
7. Lock the operating lever!

16.8 Departure

After preheating the engine (IMPORTANT) and releasing the parking brake, start the vehicle as described below.



OPERATING INSTRUCTIONS

AFTER HAVING RELEASED THE PARKING BRAKE, THE VEHICLE IS STARTED BY DEPRESSING THE ACCELERATOR PEDAL THE VEHICLE MUST ALWAYS STAY UNDER CONTROL WHILE DRIVING [AY ATTENTION TO OBSTACLES AND POSSIBLE DANGERS.

DO NOT PLACE YOUR FEET ON THE BRAKE INCH PEDAL



CAUTION!

WHEN DRIVING, REGULATE THE ENGINE RPM WITH THE ACCELERATOR PEDAL ONLY. THE RPM MAY NOT BE ADJUSTED BY MEANS OF THE THROTTLE HAND LEVER.

16.8.1 Check the driver's seat and the safety belt

- Make sure that the safety belt is put on correctly.
- Make sure that the driver's seat is adjusted correctly.

a) Release the parking brake

b) Make sure that it is safe to drive off, then depress the throttle pedal into the desired drive direction.

Throttle pedal to the front = Forward drive

Throttle pedal to the rear = Rearward drive

The vehicle starts smoothly.

c) By operating the throttle pedal and the accelerator pedal the drive speed can be adjusted infinitely variable. To stop the vehicle depress the brake pedal and move the throttle pedal in the 0-position.

Drive slowly and monitor the steering and the brakes. Stop when steering or brakes are not working correctly. If in doubt, assume that there is a part or parts which are damaged.

16.8.2 Hydraulic overdrive

By operating the corresponding lever at the control valve for the lifting hydraulic the hydraulic overdrive is switched on. The tool attachment, however, cannot be lifted or retracted.

16.8.3 Stopping the vehicle

1. Decelerate
2. Move the throttle pedal slowly to the 0-position.



CAUTION!

THE HYDRAULIC SYSTEM HAS ONLY A POOR BRAKE FUNCTION. ALWAYS USE THE SERVICE=FOOT BRAKE WHEN A HIGHER BRAKE FUNCTION IS REQUIRED.

16.8.4 Change of drive direction

1. Decelerate.
2. When the vehicle has almost stopped, move the throttle pedal into the other drive direction.
3. Drive off.



CAUTION!

OPERATING THE THROTTLE PEDAL WHEN DRIVING CAN CAUSE FATAL ACCIDENTS OR PERSONAL INJURY.

16.8.4 Pushing Operation

The more the throttle pedal and the accelerator pedal have been depressed, the higher is the pushing force. The maximum pushing force is achieved just before the tyres start to slip.

16.9 Parking the Vehicle

- only in designated areas that are fire-protected.

1. Stop the vehicle
2. Apply the parking brake



CAUTION!

BEFORE SETTING DOWN THE TOOL ATTACHMENTS, MAKE SURE THAT NO PERSONS ARE WITHIN THE DANGER AREAS AS THIS COULD CAUSE FATAL ACCIDENTS OR PERSONAL INJURY.

3. Lower the tool attachments onto the ground.
After having lowered the tool attachments onto the ground, continue until the attachments start to bear the weight of the vehicle.
4. Stop the engine by turning the ignition key and remove the ignition key when you leave the vehicle.
5. Switch off all switches that are not required.
Before leaving the vehicle, make sure that all switches have been switched off. If required, hazard warning lights and/or the parking light may be switched on.
6. Getting out of the vehicle and securing the vehicle.
When getting out of the vehicle use the hand rails and the foot step.
7. When parking on inclines use a wheel chock.

16.10 Departure

OPERATING INSTRUCTIONS

AFTER HAVING RELEASED THE PARKING BRAKE AND CHOSEN THE DRIVE-DIRECTION, THE VEHICLE IS STARTED BY DEPRESSING THE ACCELERATOR PEDAL WHILE DRIVING, KEEP THE SHOVL NEAR TO THE GROUND TO ENSURE A GOOD VISIBILITY AND A HIGHER STABILITY OF THE VEHICLE THE VEHICLE MUST ALWAYS STAY UNDER CONTROL PAY ATTENTION TO OBSTACLES AND POSSIBLE DANGERS. DO NOT PLACE YOUR FEET ON THE BRAKE OR THE INCHPEDAL.



CAUTION!

WHEN DRIVING, REGULATE THE ENGINE RPM WITH THE ACCELERATOR PEDAL ONLY. THE RPM MAY NOT BE ADJUSTED BY MEANS OF THE RPM CONTROLLER (IF INSTALLED).

1. Release the parking brake.
2. Operating the drive-direction switch
Choose the speed according to the actual circumstances and the work to be done.
After having chosen the drive direction, the vehicle is only started when the parking brake (visual indication) has been released.
 - Make sure that the tool attachments are in the drive position. Release the parking brake.
 - Make sure that it is safe to drive off, and then depress the accelerator pedal. The vehicle starts smoothly.
 - Drive slowly and monitor the steering and the brakes. Stop when steering or brakes are not working correctly. If in doubt, assume that there is a part or parts which are damaged.

16.11 Inching

The speed of the vehicle is proportional to the accelerator pedal position.

- low engine RPM = low driving speed
- high engine RPM = high driving speed

The pump flow rate is infinitely variable and can be reduced by depressing the inch pedal on the left side of the steering column. Therefore, a very slow driving speed is also possible at a high engine RPM.

16.12 Change of Drive Direction

1. Decelerate.
2. When the vehicle has almost stopped, move the drive-direction switch into the other position.
3. Depress the accelerator pedal.

It is not necessary to operate the inch pedal at each change of the drive direction.



CAUTION!

OPERATING THE DRIVE-DIRECTION SWITCH AT A HIGH DRIVING SPEED CAN CAUSE FATAL ACCIDENTS OR PERSONAL INJURY. THE VEHICLE WILL DRIVE, WITHOUT WARNING, IN THE OPPOSITE DIRECTION.

16.13 Parking the Vehicle

- only in designated areas that are fire-protected
- 1. Stopping the vehicle
Stop the vehicle smoothly by releasing the accelerator pedal and gradually depressing the inch pedal. Then depress the foot brake.
- 2. Applying the Parking Brake
Pull up the parking brake lever. Make sure that the control light illuminates (visual indicator).



CAUTION!

BEFORE SETTING DOWN THE TOOL ATTACHMENTS, MAKE SURE THAT NO PERSONS ARE WITHIN THE DANGER AREAS.

- 3. Lower the tool attachments onto the ground.
After having lowered the tool attachments onto the ground, continue until the attachments start to bear the weight of the vehicle.
- 4. Stop the engine by turning the ignition key.
- 5. Remove the ignition key when you leave the vehicle.
- 6. Switch off all switches that are not required.
Before leaving the vehicle, make sure that all switches have been switched off. If required, hazard warning lights and/or the parking light may be switched on.
- 7. Getting out of the vehicle and securing the vehicle.
When getting out of the vehicle use the hand rails and the foot step. The tank cover should be locked. When parking on inclines use a wheel chock.

16.14 Working at High Temperatures

To avoid damaging the vehicle, take the following precautions when you work at high temperatures:

- 1. Use engine oil of the correct viscosity.
(see liquids, lubricants, volumes and specifications)
- 2. Use the correct coolant mixture.
- 3. Regularly check the radiator and the oil cooler.
Ensure the correct level of coolant. Make sure that there are no leaks.
- 4. Keep the radiator clean.
Regularly remove dirt from the radiator and engine. (*See chapter C "Cooling Systems"*).
- 5. Regularly check the fan belt and the oil cooler fan.
- 6. Regularly check the preliminary filter of the engine (if fitted).
Check the dust valve and remove dust if necessary (see engine air filter).

16.15 Operation at Low Temperatures

At low temperatures, take the following precautions to facilitate starting and to avoid damaging the vehicle.



CAUTION!

AT TEMPERATURES BELOW 0 ° C, THE ENGINE TURNS AT A LOWER SPEED FOR A CERTAIN TIME DUE TO THE GREATER VISCOSITY OF THE HYDRAULIC AND ENGINE OIL. THE LOWER THE AMBIENT TEMPERATURE, THE LONGER THE TIME REQUIRED FOR PREHEATING. TO AVOID DAMAGE TO THE ENGINE, DO NOT INCREASE THE RPM IMMEDIATELY. OBSERVE THE PRESSURE INDICATOR OF THE HYDRAULIC FILTER.

1. Use engine oil of the correct viscosity (see liquids, lubricants, volume and specifications).
2. Use fuel for low temperatures.
3. Use the correct coolant mixture.
4. Check if the battery is completely charged.
5. Top up the fuel tank at the end of each working shift.
6. Protect the vehicle during breaks.
7. Install a cold starting aid.

At low temperatures of -18°C or less, an additional starting aid, such as fuel, oil and coolant heaters, can become necessary. For an appropriate starting aid, please consult your local dealer or one of our representatives.



CAUTION:

DO NOT CONNECT TWO BATTERIES IN SERIES TO GENERATE A STARTING VOLTAGE OF 24 V. THIS MAY LEAD TO A BURNING OUT OF THE INTAKE MANIFOLD HEATER AND THE STARTER MOTOR.

16.16 Fuel System

16.16.1 Fuel Types

Diesel of high quality is a precondition for a correct engine performance.

16.16.2 Fuel Filter

A preliminary filter with water separator is installed before the fuel pump to eliminate large dirt particles. A plastic ring is located inside the casing of the preliminary filter. If this plastic ring floats, water has penetrated into the filter casing, and the casing, as well as the filter, have to be cleaned. Replace the fuel filter and the preliminary filter at regular intervals as specified. See the Engine Operating Manual!

16.16.3 Fuel for Low Temperatures

Use special winter fuel types at temperatures below 0° C. These fuel types have a lower viscosity and restrict the formation of wax in the fuel (the wax may impede the fuel flow through the filter). To reduce the formation of wax, it is also possible to add special agents which improve the fuel flow.

16.16.4 Petrol



CAUTION!

DO NOT USE PETROL FOR THIS VEHICLE. DO NOT MIX PETROL WITH DIESEL; THE PETROL RISES TO THE SURFACE INSIDE THE FUEL TANK AND GIVES OFF INFLAMMABLE VAPOURS. FUEL IS FLAMMABLE. KEEP THE VEHICLE AWAY FROM OPEN FLAMES. DO NOT SMOKE WHEN REFUELLING OR WHEN WORKING OR WHEN WORKING ON THE ENGINE. STOP THE ENGINE BEFORE FUELLING. IGNORANCE OF THESE INSTRUCTIONS MAY CAUSE FIRE.

16.16.5 Refueling

- Unscrew the cap of the filler neck.
- Top up fuel.

If possible use a fine filter in the filling line.



Use only clean fuel, as even the smallest dirt particles can cause rapid wear or malfunctions. Use only fuel types of known brands, As the best method of cleaning fuel is through precipitation, the fuel should not be circulated after delivery and must be stored for at least one day. Do not keep opened barrels outdoors, as variations in temperature may result in heavy condensation. Use only winter fuel types at temperatures near and below freezing point (see Engine Operating Manual). Refueling out of large, stationary containers is recommended. Avoid as far as possible refueling from barrels. If you do, observe the following instructions:

1. To avoid disturbing deposited contamination, do not roll or tilt the barrels before refueling.
2. Protect the end of the refueling pipe with a fine-meshed sieve and keep it approximately 15cm away from the bottom of the barrel.
3. Topping up of the fuel tank should be done using a funnel sieve with cloth filter and a fine sieve in the tank neck of the vehicle.
4. Always keep the barrels used for refueling tidy. Gross negligence when refueling cannot be compensated by an efficient fuel filter, as this only separates the smallest impurities out of the fuel.

Top up the tank with the correct fuel type at the end of each day to avoid condensation during the night.

16.16.6 Draining of Deposits from the Fuel Tank

From time to time, water and deposits that have collected at the bottom of the fuel tank must be drained off. This is especially recommended at temperatures below freezing-point and in weather conditions that accelerate condensation. Before refueling, remove the drain plug at the bottom of the fuel tank and drain all deposits that have collected.

17 OPTIONAL ANCILLARY EQUIPMENT

17.1 Introduction

Contact the responsible representative when you are interested in further equipment.

Before installing, operating and servicing the equipment, read carefully the corresponding operating instructions of the manufacturer. Consult the responsible representative if you have any questions.

If the hydraulic system of your vehicle has to be modified for the use of ancillary equipment, consult our representative. The laying of hydraulic tubes has to be carried out by qualified personnel.



REMEMBER SAFETY FIRST

Use the appropriate tool for the job to be carried out. Do not use too big a shovel for heavy material, this could weigh down the equipment causing undue stress which will ultimately shorten the vehicle life.



CAUTION! REMEMBER THAT SNOW, LOOSE MATERIAL, AND MUD ALTER THE GROUND CONDITIONS, GROUND SUBSIDENCE OR COLLAPSING MATERIALS CAN CAUSE ACCIDENTS.

17.2 Light Material Shovel/Earth Shovel

17.2.1 Safety

Observe the safety instructions and the maximum admissible load capacities (see technical data).



CAUTION!

THERE ARE MANY DIFFERENT MATERIALS, EACH HAVING THEIR OWN SPECIAL PROPERTIES. USE THE LIGHT MATERIAL SHOVEL FOR LIGHT BULK MATERIALS, SUCH AS CORN, CONCENTRATED FEED STUFF ETC, AND THE EARTH SHOVEL FOR HEAVY BULK MATERIAL, SUCH AS GRAVEL, SAND ETC.

17.2.2 Installing the Load Shovel

See " Coupling of the Tool Attachments " .

17.2.3 Operating

Practice using the load shovel before first application.

Depending on the experience of the driver, the work to be done and the type of material, certain deviations from these instructions may become necessary.

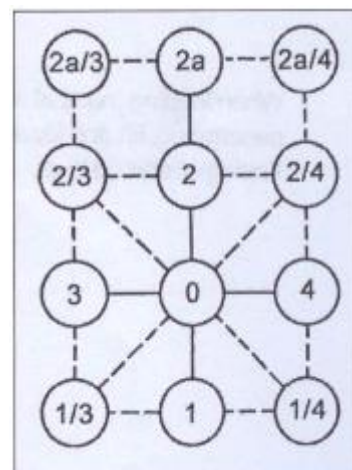
17.2.4 Operating Devices

The load shovel is operated with the operating lever (see operating instructions). Use extreme care when operating the load shovel.

When emptying the load shovel and to load other vehicles it is recommended to execute two movements simultaneously, e.g. lifting and extending or lowering and retracting. To do this the movements on the control lever must be superimposed.

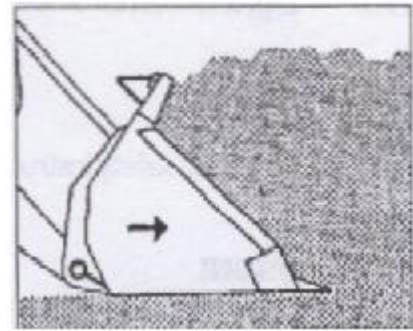
0	=	neutral position
1	=	lifting
2	=	lowering
2a	=	floating position
3	=	retracting
4	=	extending

The floating position is used to level a surface. Lower the point of the load shovel on to the ground. Engage the control lever in position 2a so that the load shovel lies on the ground, born by its own weight.

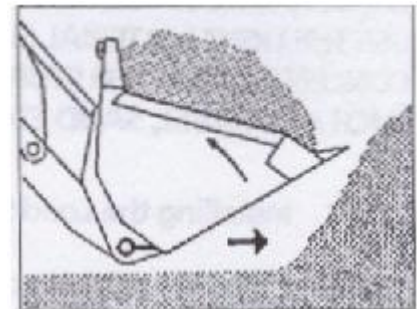


17.2.5 Working with the Load Shovel

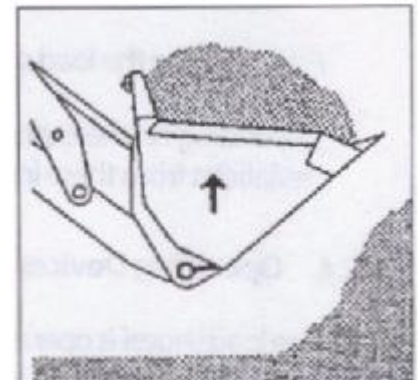
To take up loose material, lower the load shovel and adjust the edge parallel to the ground.



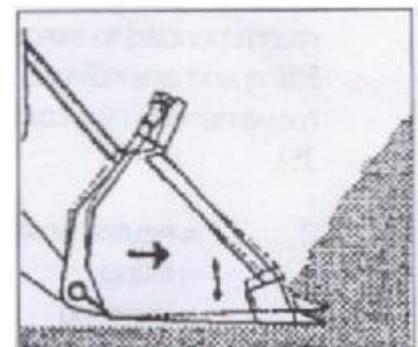
Now drive towards the material to be loaded. The driving speed depends on the type of material and the working conditions.



Lift the load arm slightly to load the front axle and to avoid a slipping of the tyres (also manually possible by " inching "). Retract the shovel when it is full.



Retract the filled load shovel. Change the drive-direction and move the shovel in to the transport position to guarantee secure driving and steering.



When loading material the load shovel has difficulties penetrating, lift and lower the load shovel by operating the tipping operating lever.

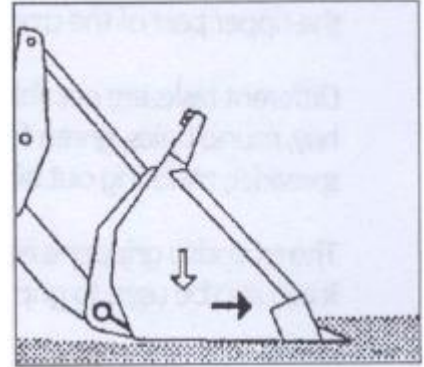
If the transport distance to the dumping place is relatively far, lift the shovel to a position where it does not touch the ground.



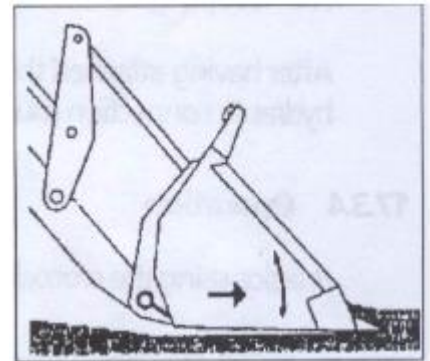
CAUTION!

TRANSPORTING WITH A LIFTED AND FULLY LOADED SHOVEL IS DANGEROUS; THE LOWER THE POSITION OF THE SHOVEL, THE MORE FAVOURABLE THE DISTRIBUTION OF VEHICLE WEIGHT. THIS IS ESPECIALLY IMPORTANT WHEN TURNING OR DRIVING.

To take up soft material, lower the shovel onto the ground and extend it until a digging angle has developed. Drive forward so that the edge of the shovel penetrates the ground. Afterwards, reduce the tipping angle to cut an even layer of ground and to avoid a slipping of the tyres.



To take up hard material, lower the shovel onto the ground and extend until a digging angle has developed. When driving forward, press the shovel slightly downward, so that it penetrates the ground. Avoid an extreme slipping of the tyres, Then reduce the tipping angle, and, while driving forward, operate the tipping operating lever to lower and lift the shovel, and to load the front axle constantly.



17.3 Crocodile Gripper

17.3.1 Safety

Observe the safety instructions as well as the maximum admissible load capacities (see technical data).

17.3.2 Working with the Crocodile Gripper

To guarantee stability, make sure that the crocodile gripper is always kept near to the ground. Tip the upper part of the crocodile gripper hydraulically downward.

Different takes are possible with the crocodile gripper, such as: transport of silage fodder, loose hay, round bales, green fodder and farmyard manure, loading of towed vehicles and fertilizer spreader, mucking out of cow, pig and horse stables and many more.

The crocodile gripper is especially suited for the gripping of load material. In certain circumstances it can also be used to grip loose branches and smaller trunks or for feeding tasks.

17.3.3 Installing the Crocodile Gripper

See " Coupling of Tool Attachments " .

After having attached the crocodile gripper with the quick change system, the additional hydraulic connection must be connected.

17.3.4 Operation

Practice using the crocodile gripper before first application.

17.3.5 Operating Element

The crocodile gripper is operated with the operating lever for the additional hydraulic equipment (see operating instructions). When working with the crocodile gripper operate the lever with extreme care.

18 TOWING

Never forget that towing may cause further damage to the vehicle .if possible, repair the vehicle on the spot.

If the engine is operative, the tool attachment is de-coupled. The operation depends on the actual condition of the vehicle and the hydraulic circuits.

Towing is only allowed with tow ropes of a sufficient diameter .the breaking strain of the ropes must be triple that of the traction power of the towing vehicle .the tow rope can be fixed at the support in the part of the vehicle or at the plate of the load arm.

18.1 Towing over longer distances

Only tow for a short distance that is necessary to bring the vehicle out of the danger area .never tow the vehicle longer distance as the hydraulic motors may be damaged .load the machine on an appropriate transporter.

18.2 Towing over shorter distances

Only tow at a slow driving speed (approx.5km/h) and for a maximum distance of 0.5km .only tow for a distance that is necessary to bring the vehicle out of danger areas. When towing over longer distances, the engine may overheat and become damaged.

18.2.1 MINI 750

Move the throttle pedal into the desired direction .tow the vehicle.

18.2.2 MINI 750

Safeguard the hydraulic system before towing.

For forward and rearward drive, remove the protective caps (if existing) from the valves. Loosen the nuts (Fig.18-3 and 4) and turn threaded shanks (Fig.18-1 and 2) until they are flush with the nuts.

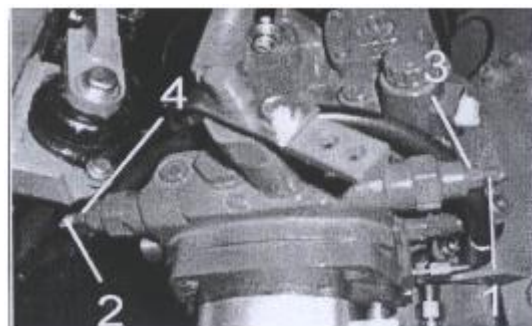


Fig.18



CAUTION !

DO NOT TURN THE THREADED SHANKS FURTHER THAN DESCRIBED ABOVE, AS IMPORTANT PARTS OF THE VALVED MAY BE DAMAGED.AFTER TOWING, TURN THE THREADED BOLTS (Fig.18-1 AND 2) OUT UNTIL THEY STOP AND SECURE WITH THE COUNTER NUTS (Fig.18-3 AND 4).

19 TRANSPORT AND LIFTING

19.1 transport

1. Before loading the vehicle on a transporter, remove any dirt.
2. For further instructions on parking the vehicle on the transporter please refer to the chapter “stopping and parking”. For transport, secure the vehicle correctly on the loading area. Lashing straps can be passed over the centre joint and the foot step. When handling by crane, lifting tackle is required.
3. Blocking the centre-pivot steering:
The vehicle must be parked straight.
Loosen the locking pins ((Fig.19.1-1) and move the lever to the rear.
Secure the lever with the locking pin (Fig.19.1-2) on the bolt provided therefore on the rear carriage.
4. To loosen the centre-pivot steering locking proceed in reverse order.

19.2 Lifting

Before lifting the whole loader, ensure the back lifting bolts is tightened and the lifting ropes can bear enough drawing force.

During lifting, ensure the whole loader is horizontal and pay attention to what is going on around the loader.

Don't move for longer distance during lifting the loader.

20 TECHNICAL DATA

20.1

ENGINE

- 3 cylinder perking diesel engine
- Cubic capacity: 1131cm³
- Power: 18.5kw(24.8 BHP) at 2800rpm

LOADER CAPACITY

- Operating weight: 1500kg
- Tipping load in shovel, vehicle straight,
Load arm horizontal: 798kg
- Tipping load in shovel, vehicle at angle 43°
Load arm horizontal: 498 kg
- Tipping load in pallet fork, vehicle straight,
Load arm horizontal: 527 kg
- Tipping load in pallet fork, vehicle at angle 43°

Load arm horizontal: 306 kg

Admissible load capacity

- On uneven ground: 60% of the tipping load, vehicle at angle 68°
- On even ground: 80% of the tipping load, vehicle at angle 68°

(The operating weight, lifting forces, the tipping load etc. will change depending on the ancillary equipment and tyres used)

Capacities please refer to table “capacities”, part C

- Hydraulic system incl.tank:40L
- Diesel tank: 32L
- Engine oil: 4L
- Gear:
 - Rear axle: 1.5L
 - Front axle: 1.5L

Hydraulic system

- Working hydraulic
Flow rate: abt. 33l/min.
- Driving hydraulic
Flow rate: abt. 84l/min.
Working pressure: 305bar

Drive (driving speed):

- Gear: 0-12km/h

Electrical system:

- Operating voltage: 12 volt
- Battery: 45 Ah

Steering:

- Fully-hydraulic centre –pivot steering with double with action cylinder
- Rotating angle: $\pm 12^\circ$
- Steering hydraulic:
Flow rate: abt. 33l/min.
Working pressure: 190bar

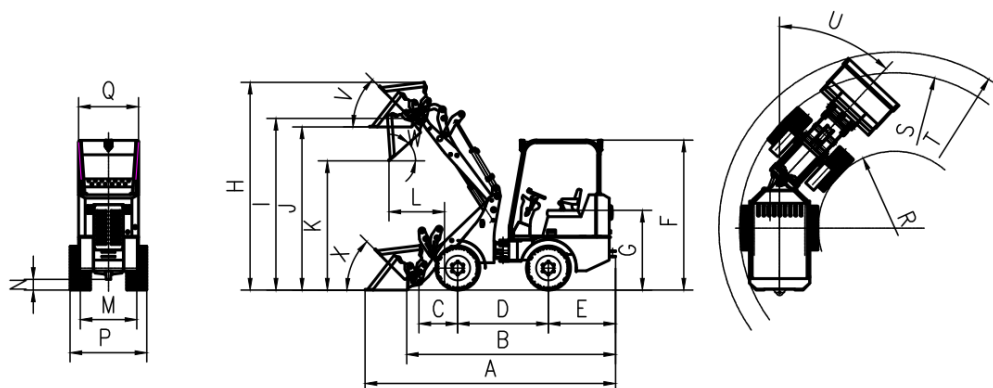
Noise rating:

- MINI 750 101dB(A)

The emission sound pressure level at the operator’s station is 83 dB(A).

The operator should be wear the earmuffs.

20.2 Dimensions



	Dimensions(mm)	standard
A	Total length with standard bucket	3690
B	Total length without bucket	3100
C	Axle center up to bucket hinge pin	580
D	Wheelbase	1360
E	Rear overhang	1010
F	Height to top of ROPS bar	2250
G	Seat height	1250
H	Total working height	3115
I	Max. height of bucket pivot	2570
J	Overhead loading height	2420
K	Max. dumping height	1900
L	Operating distance for K	830
M	Track width	760
N	Ground clearance	190
P	Total width	950
Q	Bar width	900
R	Inside turning radius	1250
S	Radius at the outer edge	2320
T	Max. turning radius	2640
U	Turning angle	43°
V	Rollback angle at max. lifting height	45°
W	Dumping angle	43°
X	Back-roll angle on the ground	45°

*Dimensions with standard tyres 27×8.5-15