Taian

Wheel Loader DY50

-Operating Manual-

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FORWARD

You have opted for a TAIAN loader – thank you very much for putting your trust in us.

Your TAIAN loader is a powerful product with robust technology and a wide range of applications to aid you in your day-to-day work. In order to familiarise yourself with your loader in a quick, comprehensive manner, please read this operating manual attentively.
In addition to the information regarding operation, this operating manual also contains important maintenance and operating instructions for conserving the value of your loader. Furthermore, we will show you how to operate your loader in an environmentally sound manner.

Should you have any questions or problems relating to your loader, please contact your

TAIAN partner or importer. They will be happy to respond to your questions, suggestions or criticisms at any time.

We are confident that you will be very satisfied with your new TAIAN loader.

Taian Tengyu Heavy Industrial Co., Ltd.

PREFACE

This operating manual describes how to operate and service the loader. It provides operating and maintenance personnel with the necessary knowledge of the loader‘s functional relationships in order to allow them to handle the loader safely and securely, to service/inspect it professionally, to clean and take care of it, and observe the technical safety regulations.

Observing the specifications in this operating manual assures:

- proper, safe, professional operation of the loader
- professional service, cleaning and care of the loader
- observance of the required technical safety regulations

If required, the user/operator should supplement the operating manual with instructions and regulations regarding environmental protection and national regula- tions relating to accident prevention.

NOTE

The operating manual must always be located in the loader or at the place where it is being used.

• operation, including setup, emergency maintenance during operation, care, disposal of auxiliary materials and operating materials as well as disposal of the entire loader.
• maintenance (inspection, servicing, care).
• transport.

NOTE

This operating manual is not designed for purposes of extensive maintenance work. Such work must be performed by approved professionals.

Should you have questions about this operating manual, please contact your dealer. You are welcome to use the TAIAN Service.

1 BASIC INFORMATION

The operator is responsible for obtaining insurance coverage. Operators must check with their insurance company to determine whether the loader is covered in their company liability policy, or whether a separate liability policy must betaken out.

Each new user must be instructed before using the loader for the first time.

1.1 Explanation of the pictograms used in this operating manual

To ensure safe operation and maintenance of the wheel- loader, it is necessary that you follow all the instructions in this operating manual.

The following pictograms and the signal words DANGER, CAUTION, PLEASE NOTE, and the adjacent text, indicate dangers and instructions.

DANGER

Warning of potential accidents and injuries from electrical current

DANGER

Warning of potential accidents and injuries.

CAUTION

Warning of potential technical damage.

NOTE

Important general instructions.

ENVIRONMENTAL NOTE

Important general instructions for environmental protection.

Instructions for using the operating manual:

- Read the operating manual carefully before starting up the loader
- Observe all the safety instructions
- Follow the regulations and laws applicable at the place of use
- Follow the regulations of the Accident Prevention & Insurance Associations
- Always keep the operating manual in a clean, orderly state together with the loader.

If it is not possible to rule out danger to persons or mate- rial during work according to the loader‘s intended use, these dangers will be indicated by means of pictograms. Instructions

relate to the direction of travel of the loader; this means that, when directional information is given, it can be assumed that this refers to the direction of travel of the loader.

1.2 Intended use

DANGER

Unintended use can endanger the lives of operating personnel or other persons and cause injuries or extensive material damage.

The loader has been built according to the best available technology and the approved safety regulations. How- ever, use of the loader can still present a danger to the user or third parties in terms of life and limb, or can result in damage to the loader or other material assets.
The loader may only be operated as intended, bearing in mind safety aspects and possible dangers. The operating manual must be followed, and the loader must be in a technically faultless condition. In particular, malfunctions that could adversely affect safety must be corrected immediately.

The loader is used to pick up and load material by moving the loader forward, taking into account the safety instructions / regulations and time periods listed by FORWAY in the operating manual. One work cycle consists of picking up, lifting, transporting and unloading the material.
Similar uses of the loader with alternative attachments which do not change the safety requirements for the loader but modify the way in which it is used are only acceptable when attachments that have been expressly approved by TAIAN are employed. Special conditions apply if you use additional TAIAN attachments.

Intended use also includes following the operating man- ual and observing the servicing, inspection and maintenance conditions.

Any use above and beyond the normal scope of application of the loader, for example:

- lifting or transporting people
- using it as a working platform
- using it to lift or transport loads without providing work equipment for it
- pulling trailer loads
- use following unprofessional emergency maintenance/repairs.
- use after a significant change has been made to the loader.

is not considered to be intended use!

1.3 Warranty and liability

The CE symbol documents that the loader has been manufactured to conform with the valid EC Directives.

NOTE

The manufacturer/supplier is not liable for damage resulting from unintended use. The operator/user is the sole bearer of this risk.

Please observe the following points:

• Do not make any changes to the wheel loader.

• Use only TAIAN -approved attachments for your loader.

• The loader many only be started up, operated and serviced as described in the operating manual.

• Use the loader only if all the safety and protection devices are intact.

• Observe the monitoring systems during operation.

• Repairs may only be carried out by trained profes- sionals.

• Follow the operating manual exactly.

NOTE

The operating manual must always be located in the loader or at the place where it is being used.

2 BASIC SAFETY INSTRUCTIONS

DANGER

The loader is equipped with a “starter lock/drive lock“ which may under no circumstances be put out of operation. Danger of accidents! Loaders may only be used on suitable terrain in farmyards or, with an operating license according to the Road Traffic Licensing Regulations, on suitable public land.

- Use the loader and attachments only as intended and in a technically faultless state.
- Observe the safety regulations precisely.
- Follow the operating manual and the inspection regulations.
- Observe the permissible payloads.

• Please observe that, when using the loader outside the sphere of responsibility of the agricultural trade association, the regulations applicable for the responsible trade association shall apply.

NOTE

Should the loader be used by a private person or by other persons who are both operators and users, then they must also observe all safety instructions. Observance of the organizational safety instructions and the safety instructions relating to the selection and qualification of personnel in particular are basic duties. If there are no trained personnel for the various tasks, the operator/user must attend to this. In case you require training sessions or instruction/training personnel, TAIAN Service and our agents will be happy to help you.

2.1 Organizational measures

The following safety instructions are directed at the operator / user of the loader.

• Always keep the operating manual on hand at the place of operation of the machine, for example in the tray provided for it.

• As a supplement to the operating manual, universally valid legal and other binding regulations relating to road traffic, compulsory coverage, accident prevention and environmental protection must be observed, and users must be instructed to observe them. This applies in particular to the maximum speed, depending on the model and the permissible total weight of the loader.

• If required, instruct that personal protective equipment be worn. This applies particularly to the handling of harmful substances at the location of use.

• Supplement the operating manual with instructions, including supervisory and reporting requirements, taking into account differences between various companies, e.g. with regard to the organization of work, work processes or personnel used.

• Personnel who have been assigned duties using the loader/users must have read the operating manual before starting work, especially the chapter Basic Safety Instructions. This applies particularly to personnel used only occasionally, for machine setup or servicing, for example.

• Observe all safety instructions and danger warnings on the loader and in the operating manual.

• Make sure that all safety instructions and danger warnings on the machine are legible.

• Should the loader change its operating behavior in a way that affects safety, shut down the loader immediately and correct the malfunction or have it corrected.

• Do not make any changes, attachments or conversions to the loader that will adversely affect safety with- out the consent of TAIAN. This also applies to the installation and adjustment of safety devices and valves as well as welding work on load-bearing parts.

- Replacement parts and operating and auxiliary materials must conform to the technical requirements specified by TAIAN. This is always the case for original replacement parts.
- Replace the hydraulic hose lines at the specified time intervals, even if no defects are discernible which could adversely affect safety.
- Adhere to the compulsory time limits specified in the operating manual for regular checks/inspections.
- Workshop equipment appropriate for the work is absolutely mandatory for carrying out servicing and repairs.
- Make the location and means of operation of the fire extinguishers known, and consider the options for fire detection and fighting.
- According to the valid regulations, every operator / user is obliged to decide for him/herself whether a falling-object protective structure (FOPS) must be used. This means that the operator / user must check the conditions him/herself at each place in which the loader is used, and decide whether a FOPS should be attached and what category this should be.
If the loader is equipped with a cab / driver canopy, it must be checked with the Category 1 FOPS.
- The operator is solely responsible for requirements and obligations resulting from the accident prevention regulations, the environmental regulations, the maximum speed depending on the model, the permissible total weight and the dimensions of the loader, and which do not concern the state of the loader (basic requirements according to MRL 98/37/ EC). This applies particularly to the requirements of the road traffic regulations (registration number requirement), and the driving license and insurance requirements.

2.2 Selection and qualification of personnel / basic duties

- Work on or with the loader may only be performed by reliable personnel.

Please observe the minimum legal age.
Please particularly observe the legal regulations for driving license requirements regarding the maximum speed depending on the model and the permissible total weight of the loader.

- Only trained, instructed personnel may be used. The responsibilities of the personnel for operating, set- ting up, servicing and repairing the loader must be clearly defined.
- Ensure that only personnel assigned to work on or with the loader do so.
- The operator must define the responsibility of the machine driver, also regarding traffic regulations, and allow him/her to reject unprofessional instructions from third parties.
- Personnel being trained, educated, instructed or participating in a general training program may only work on or with the machine under constant supervi- sion of an experienced, authorized supervisor.
- Work on the machine‘s electrical equipment may only be carried out by an electrician or by trained persons under the direction and supervision of an electrician in accordance with electronic rules.

- Work on the chassis, brakes and steering system may only be performed by trained, specialized personnel.
- Only trained, specialized personnel with specific knowledge of and experience in hydraulics may work on hydraulic units.

2.3 Safety instructions for certain operating phases

The safety instructions are directed at all persons involved in work on or with the loader.

2.3.1 Safety instructions for normal operation

- Refrain from any measures that could put safety into question.
- Before starting work, familiarize yourself with the working environment in which you will be using the loader.

The working environment includes, for example, obstacles in the working and traffic area, the bearing capacity of the ground and the necessary safeguarding of the location to allow it to be used as a public traffic area.

- Take precautions to ensure that the loader is operated only in a secure, functioning state.
- Only operate the loader if all the protection devices and safety devices, e.g. detachable protection devices, sound absorbers and exhaust equipment, are present and functioning.
- Check the loader at least once a day for visible defects.
- Should any changes occur (including changes in the operating behavior), shutdown the loader immediately, secure it and correct the defects right away.
- In the case of malfunctions, shut down the loader immediately, secure it and correct the malfunctions right away.
- Start and operate the loader only from the driver‘s seat.
- When switching on and off, observe the indicator displays in accordance with the operating manual.
- Make sure no one is located in the danger area of the loader before you start the engine.
- Before beginning to work/drive, check whether the brakes, steering, signal and lighting systems are functional.
- Before driving the loader away, always check that the accessories are placed so that they will not cause accidents.
- When driving on public roads, lanes and squares, observe the valid road traffic regulations and put the loader into a condition permissible for the road beforehand.
- As a matter of principle, turn on the lights when dark or the visibility is poor.
- When driving through underpasses, gates, bridges, tunnels, overhead lines, etc., always make sure that you have enough clearance above and on both sides and a sufficient safety margin.
- Always keep sufficient distance to excavations, embankments and the edges of piled up material.

- Refrain from any method of working that could adversely affect the loader‘s stability. This also includes the duty to pass on information regarding the ap- proved carrying capacity (=payload) for the relevant loader attachments. (carrying capacity / approved payload are specified in the operating manual).
- Do not drive transversely on slopes; always keep work equipment and load near the ground, especially when driving down slopes.
- When driving down a slope, always adjust your driving speed to take account of the respective conditions. Always reduce your speed before reaching a downhill slope, and not after you have reached it.
- The load must be located on the uphill side during driving on downhill or uphill slopes.
- As a matter of principle, always secure the loader from accidentally rolling away and against unauthorized use. Turn off the engine, put on the parking brake, lower the work equipment, take the key out of the ignition and, if necessary, employ a wheel chock.

2.3.2 Safety instructions for other operating modes

These safety instructions refer to special tasks relating to the use of the loader and servicing tasks - as well as emergency maintenance during operation or work concerning disposal of the auxiliary and operating materials.

- Observe the adjustment, maintenance and inspection tasks and deadlines as specified in the operating manual, including the specifications regarding replacing parts / partial equipment.
- Adjustment, maintenance and inspection tasks such as replacing parts may only be carried out by specialized personnel.
- Before maintenance work or other work can begin, operating personnel must be informed. Appoint a supervisor.
- For all work relating to the operation, conversion or adjustment of the loader and its safety devices, make sure that all switching on and off is performed according to the instructions in the operating manual.
- For all work relating to servicing, maintenance and repairs, observe the instructions in the operating manual for maintenance work and adhere to the time limits specified.
- Secure the maintenance area, allowing as large a space as required.
- If the loader is being completely shut off during servicing and maintenance work, please observe the fol- lowing (see the chapter “Securing the Loader“):

- Secure the loader from being accidentally turned back on by taking the key out of the ignition.
- Attach a warning note to indicate that the loader is being worked on.
- Only carry out servicing and maintenance work if the loader is parked on an even, hard surface and secured from rolling away and buckling.

- If maintenance work can only be carried out when the work equipment (= lift frame) is raised, support it with a suitable safety support.

• For all work relating to servicing, maintenance and repairs, observe the instructions in the operating manual for maintenance work and adhere to the time limits specified.

• Secure the maintenance area, allowing as large a space as required.

• If the loader is being completely shut off during servicing and maintenance work, please observe the following (see the chapter “Securing the Loader“):

- Secure the loader from being accidentally turned back on by taking the key out of the ignition.

- Attach a warning note to indicate that the loader is being worked on.

- Only carry out servicing and maintenance work if the loader is parked on an even, hard surface and secured from rolling away and buckling.

- If maintenance work can only be carried out when the work equipment (= lift frame) is raised, support it with a suitable safety support.

• When they are replaced, individual parts and larger assemblies should be carefully attached and secured to the lifting gear. Use only suitable, technically fault- less lifting gear and load-handling equipment with sufficient lifting capacity. Do not stand or work under suspended loads.

• Only experienced persons may be assigned the tasks of slinging loads and instructing crane operators. The instructor must be within view of the operator or within speaking distance of him or her.

• For assembly above head height, use only climbing aids and working platforms which are intended for this purpose, or which are safe for use in this situation. Do not use machine parts as climbing aids. Keep all handles, steps, pedestals, platforms and ladders free of dirt, snow and ice.

• Clean the entire loader, especially the connections and threaded connections, with oil, fuel or care products when beginning maintenance and servicing work. Use lint-free cleaning rags and no aggressive cleaning agents.

• Before cleaning the loader with water or by steam jet (high-pressure cleaner) or with other cleaning agents, cover up / seal off all the openings into which water, steam and cleaning agents are not permitted to enter.

Electrical components, inlets and outlets for the engine‘s combustion air and tank openings are particularly at risk.

Completely remove the covers / seals after you have finished cleaning.

• Before restarting, retighten any threaded connections loosened during servicing and repairs, in particular for oil or fuel lines. When carrying out maintenance and servicing work, check all the lines and threaded connections for leaks and tight fit.

• Should it be necessary to remove safety devices during setup, servicing or repairs, reinstall and check the safety devices immediately after finishing the work.

• Repairs to ROPS or FOPS protective structures may only be carried out by authorized specialized personnel. In case of doubt, always completely replace ROPS or FOPS protective structures.

• Make sure that operating and auxiliary aids and replacement parts are disposed of safely and in an environmentally sound way.

2.4 Safety instructions for particular types of danger

2.4.1 Transporting packaged goods

DANGER

Danger of accidents from falling objects!
Never transport several large bales or crates simultaneously!
It is prohibited to use loaders without driver canopy
or cabin for large bales or packaged goods.
Falling objects or stacks of bales can cause serious or
fatal injuries.

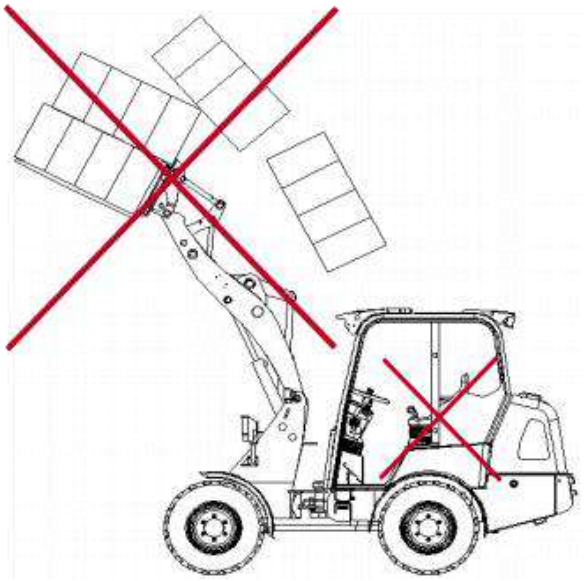


Fig. - 2 Transport of large bales or packaged goods

2.4.2 Electrical power

• Regularly check the loader‘s electrical equipment. Defects, such as loose plug connections or cables with burnt insulation, must be eliminated immediately.

• Immediately shut off the loader in the event of faults in the electrical system.

• Use only original fuses with the specified current.

• Keep the loader at a sufficient distance from over- head power lines and other electrical lines of more than 50 V. Danger to life! Make yourself aware of the safety margins to be observed.

- After touching power lines:

- Do not leave the loader.
- Drive the loader away from the danger area!
- Warn any people around the loader not to get any nearer and not to touch the machine.
- Arrange to have the power turned off.
- Do not leave the loader until it is safe to say that the damaged line touched is no longer live.

2.4.3 Gas, dust, steam, smoke

- Due to exhaust gases from the diesel engine, the loader may only be operated in sufficiently well ventilated rooms. Make sure that there is sufficient ventilation in closed rooms before starting the loader.
- Observe the valid regulations for each location.
- Only carry out welding, burning or grinding work if it is expressly permitted. Do not allow a danger of fire or explosion to arise.

Before welding, burning or grinding work, make sure that there is sufficient ventilation, and clean any dust and flammable substances from the loader and its surroundings.

- Wear appropriate personal protective equipment (breathing filter, protective suit) for protection against specific dangers, e.g. poisonous gases, cor- rosive steam, poisonous (i.e. containing toxins) surroundings, etc.

2.4.4 Hydraulics, pneumatics

- Squirting oil can result in injuries and fires.

Check all the lines, hoses and threaded connections regularly for leaks and any visible damage. Eliminate leaks and damage immediately.

- Open only to depressurized hydraulic and pneumatic systems.

Always depressor sections of the system and pres- sure lines before beginning repair work. Please also observe the relevant instructions in this operating manual.

- Hydraulic and pneumatic lines must be profession- ally routed and fitted. Only authorized, specialized personnel may perform this work. Make sure that you do not swap over any connections. The length and quality, and especially the pressure and tempera- ture resistance, as well as the fittings for hydraulic and pneumatic lines must comply with the relevant standards.

2.4.5 Noise

- All the loader‘s sound-proofing devices must be in their protection position during operation.

2.4.6 Oils, grease and other chemical substances

- Observe the valid safety regulations for the respective product when handling oil, grease and other chemical substances.
- Exercise caution when handling hot operating and auxiliary aids – you could burn or scald yourself.
- Smoking and open flames are prohibited during fuel-ling. Danger of fire or explosion!
- Caution! Extreme danger of fire or explosion!

Do not use petrol as an additive. Use conventional winter diesel fuel when the outside temperature is low.

2.5 Transporting and towing / restarting

- Only tow, load or transport the loader according to the operating manual.
- Maintain the specified transport position, the permissible maximum speed and the permissible maximum distance during towing.
- Use only a suitable means of transport, and lifting gear with sufficient lifting capacity.
- Only restart the loader according to the operating manual.

2.6 Final decommissioning / dismantling

- For the final decommissioning/dismantling of the machine, drain all the operating and auxiliary aids and dispose of them in an ecologically sound way.
- Make sure that the loader cannot be restarted.
- The remaining machine body must be disposed of via suitable, specialized companies / collection sites.

2.7 Safety labels used

DANGER

Never remove safety stickers. Replace any damaged stickers.

Safety sticker 1

Danger

Do not stand near the loader dur- ing operation.

Do not go under the lift frame when raised.

Safety sticker 2

Danger

Danger of injury from moving parts.

Never open the protection devices when the engine is running.

Safety sticker 3

Danger

Never stand in the unsecured danger area.

Use the safety supports.

Safety sticker 4

Danger

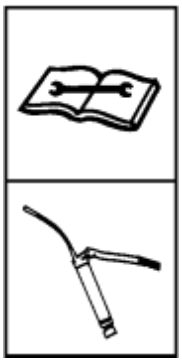
The rollover bar should always be locked in protection position, in- sofar as this is possible given the working conditions.

Safety sticker 5

Danger

Take out the ignition key prior to servicing and repair work.

Please observe the operating manual when carrying out servicing and repair work.

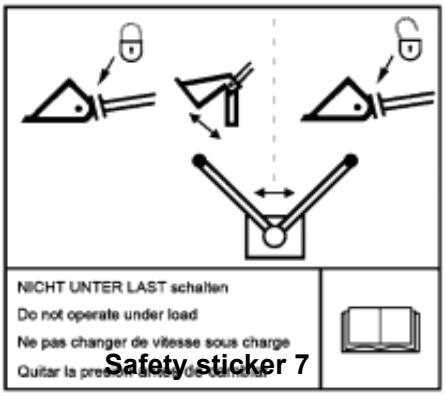


Safety sticker 6

Danger of technical damage

Grease the center joint daily before placing into operation.

Additional details can be found in the operating manual.



Safety sticker 7

Danger

When using hydraulically activated attachments the lever must always be in the „Hydraulic connection“ position.

Safety sticker 8

Danger of technical damage

Close both doors before tilting the cab.

2.8 Safety devices

2.8.1 Battery disconnect switch

CAUTION

Ensure that you cover the opening with a protective cap when you pull off the switch head so that moisture cannot penetrate into the switch.

Never switch the battery disconnect switch under load! Activate the switch first before inserting the ignition key. Proceed in the reverse sequence when stopping!

The switch can be used to quickly disconnect the entire electrical system from the battery in the event of an emergency. Switch off the battery overnight to prevent it from potential discharge or damage. You can also use the switch as an additional anti-theft device by pulling off the switch head.

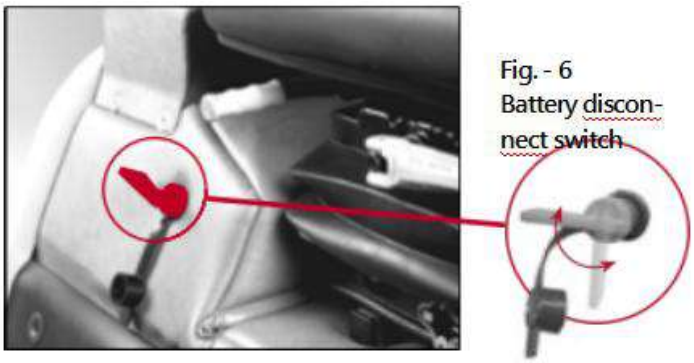


Fig. - 6 Battery disconnect switch

- Turn the switch lever to the left:

- The battery is disconnected from the electrical system.

- Turn the switch lever to the right:

- The battery is connected to the electrical system.

2.8.2 Safety belt

Fig. - 7 Safety belt

Fasten the safety belt for all work with the loader!

The loader is equipped with a safety belt on the driver‘s seat (Fig. – 7).

2.8.3 Lift frame locking system

NOTE

The lift frame can be secured against unintentional operation by means of a locking mechanism.

If you have switched on the locking mechanism, it is not possible to operate the lift frame. The fact that the lift frame is locked is not shown via indicator lights, but instead can be seen from the position of the switching lever (Fig. - 9).

CAUTION

Danger due to unintentional operation of the lift frame during travel on the road.
Always lock the lift frame prior to driving on the road, by engaging the locking mechanism.
Always lock the lift frame prior to leaving the load- er.
Do not release the locking mechanism until you are seated in the driver‘s seat and are ready to commence work.

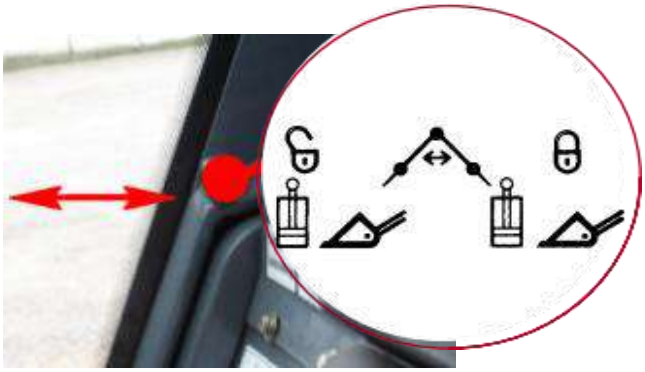


Fig. - 9

Lever for the locking mechanism of the lift frame
Apply the locking system for the lift frame by shifting the lever located to the right of the driver‘s seat Item 1 (Fig. - 9).

- Move the switching lever to the rear:

- the locking system is now on.

- Move the switching lever forwards:

- the locking system is now off.

3 TECHNICAL DATA

3.1 Technical description

The loader consists of the vehicle frame, the drive and the axles. The vehicle frame contains all the drive and control units for the standard configuration. The vehicle frame consists of the front carriage with the lift frame, and the rear carriage, in which the drive unit is situated. They are connected by an articulated swivel joint.

Drive

The loader is driven by a diesel engine, which powers the steering and working hydraulics and the driving hydraulics.

The transfer case, which transfers the force to the rear axle and (via the propeller shaft) to the front axle, is driven via the driving hydraulics.

The axles are designed as rigid axles.

Brakes

The travelling drive also functions as the service brake. It operates on the front and rear axles. The brake is actuated via the braking-inching pedal. Furthermore, the braking-inching pedal is used to actuate the hub brake on the differential. The parking brake also operates mechanically on this hub brake.

Steering

The fully hydraulic articulated swivel steering system operates via a dual action cylinder.

Hydraulics

The loader has two hydraulic systems supplied by a hydraulic oil tank:

- hydrostatic drive
- steering and working hydraulics

The hydrostatic drive consists of an axial piston variable displacement pump, which drives an axial piston variable displacement motor. The axial piston variable displacement pump is flanged to the diesel engine, the axial piston variable displacement motor to the transfer case.

Displacement is automatic and continuous, but depends on the speed and load. The driving speed is dependent on the engine‘s speed and the machine‘s load. The driving application begins with the target engine speed, and ends with the maximum speed of the engine, achieved by means of the accelerator pedal. Depending on the loader‘s load, the variable displacement pump is automatically adjusted so that the most favourable speed

is maintained. The more the loader is burdened (when carrying a load or driving uphill), the lower the driving speed will be. This adjustment control allows the entire range of performance to be utilised optimally. Actuating the inching pedal (inching delay, pedal to left in relation to direction of travel) also influences the control, allow- ing the loader to be slowed down by fine reductions in the engine speed, right down to the loader coming to a standstill.

A gear hydraulic pump supplies the steering and working hydraulics with oil. The gear pump is flanged to the drive‘s variable displacement pump.

The hydraulic system is equipped with relief valves, filters and oil coolers.

Electrical system

The electrical system has an operating voltage of 12 volts. The consumers and their supply lines are fused.

Equipment

The loading equipment consists of the lift frame with an integrated mechanical or hydraulic quick-change receptacle, lifting and tipping cylinders and the appropriate attachments.

The loader is equipped with a rolloverprotective structure (ROPS).

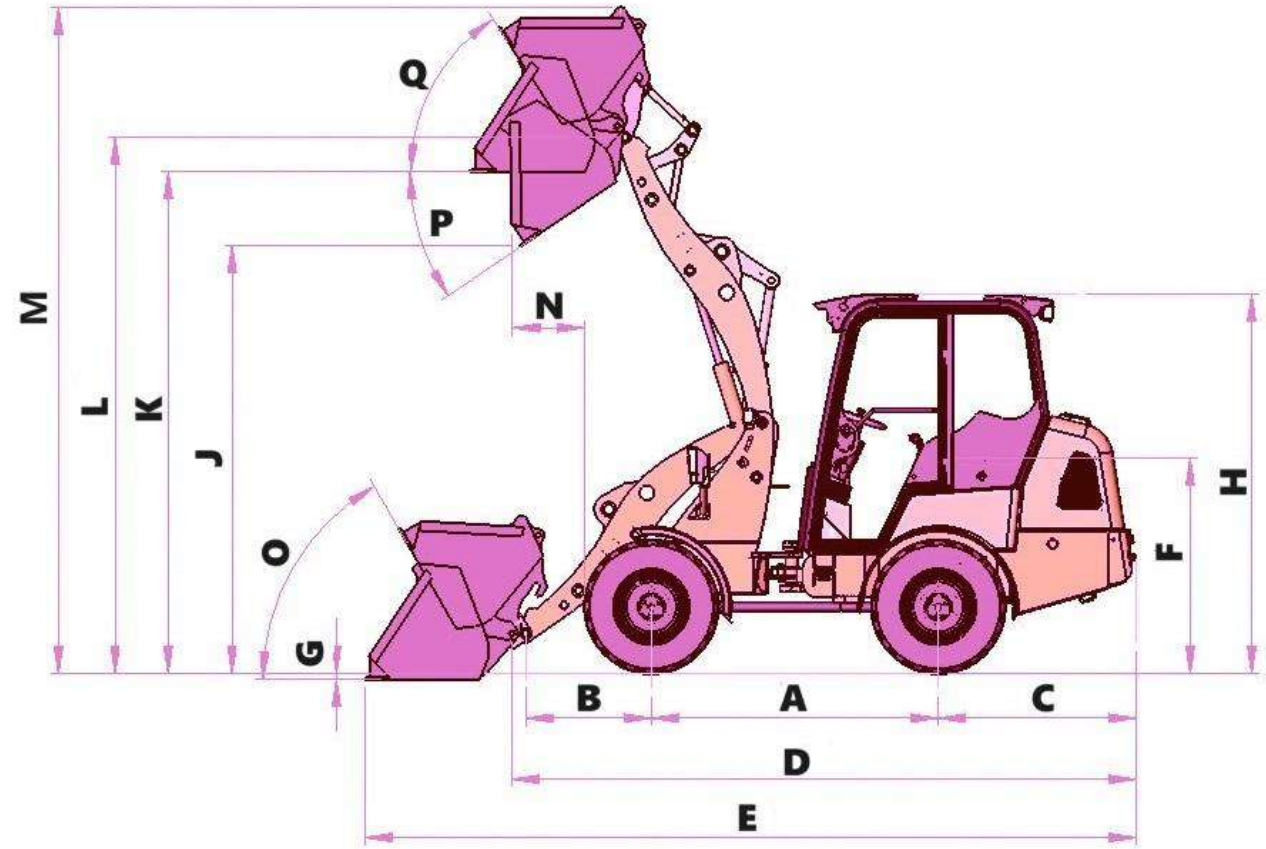
3.2 Loader data

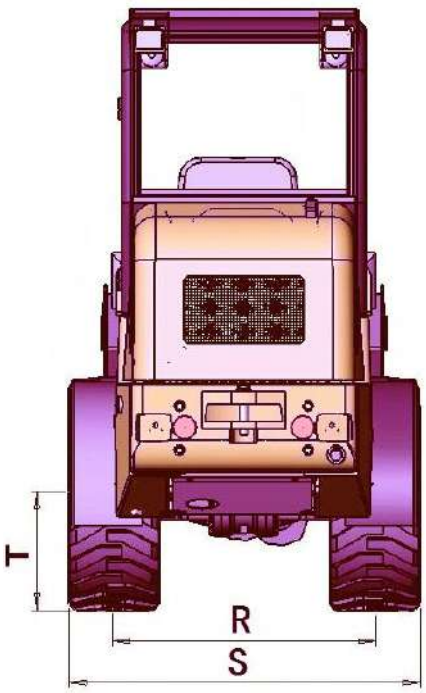
Engine	
4-cylinder Yanmar diesel engine*	
Output	34,3kW / 47HP at 2800 rpm
Type	Yanmar 4TNV88C water-cooled
Displacement	2190cm^3
**Steering*	
Fully hydraulic articulated swivel steering	
Rotating angle	± 12°
Turn angle	± 50°
Electrical system	
Working voltage	12 volts
Battery	74 Ah
Drive (driving speed)	

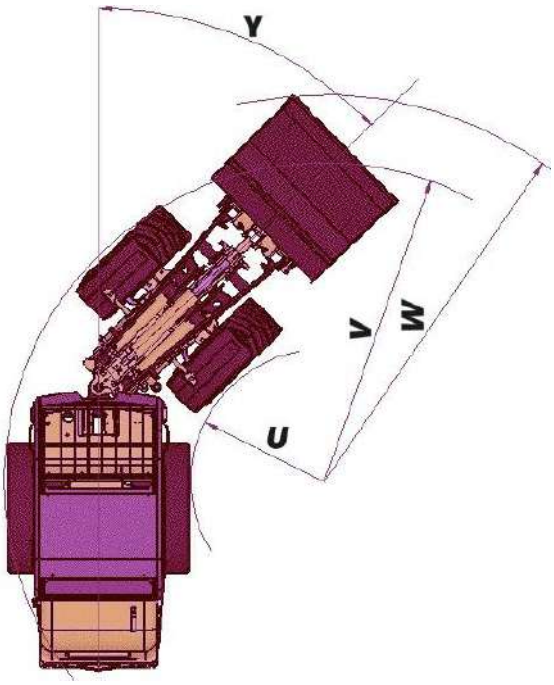
Please ask the manufacture for more information if you ordered with a different engine.

1. Speed	0 – 7 kph
2. Speed	0 – 20 kph
Hydraulics	
Driving hydraulics	
Flow rate	128 l/min
Working pressure	400 bar
Working hydraulics	
Flow rate	56 l/min
Working pressure	210 bar
Steering hydraulics	
Flow rate	56 l/min
Working pressure	180 bar
Vibrations (weighted effective value)	
Upper extremities	no more than 2.5 m/s²
Feet or seat surface.	1,69 m/s²
Weight specifications	
Operating weight	2800 kg
Permissible total weight	3200 kg
Permissible axle load per axle	2400 kg
Permissible payload with shovel	1400 kg
Permissible payload with pallet fork	1250kg
Noise values	
Average noise output level **LwA**	100
Guaranteed noise output level **LwA**	101
Specified sound power level **LpA**	83

3.3 Dimensions







Dimensions with 19.0/45-17 tires.

Item	Designation	Value	Unit
A	Wheelbase	1733	mm
B	Axle centre to bucket pivot-point	730	mm
C	Rear overhang	1196	mm
D	Overall length without bucket	3779	mm
E	Overall length with standard bucket	4850	mm
F	Height of seat*	1360	mm
G	Scraping depth*	37	mm
H	Height to rollover bar*	2340	mm
J	Max. dumping height*	2548	mm
K	Overhead loading height*	3059	mm
L	Max. height of bucket pivot point*	3264	mm
M	Total working height*	4036	mm
O	Reverse roll angle on ground	47	°
P	Max. dumping angle at max. lift height	40	°
Q	Reverse roll angle at max. lift height	47	°
R	Track width*	1120	mm
S	Overall width*	1560	mm
T	Ground clearance*	252	mm
U	Inside turning radius*	850	mm
V	Radius at outer edge*	2460	mm
W	Maximum turning radius (depends on bucket width)	2679	mm
Y	Turn angle	43	°

*In the event of deviating tires or reverse wheel rims the dimensions will change.

3.4 Factory signs

A factory sign is permanently attached to the loader on the right side of the front carriage (Fig. -11).

It lists the following information:

- Manufacturer
- Year built
- Vehicle ID no.
- Type
- Engine power
- Axle loads
- Operating weight
- Permissible total weight

In addition, the vehicle ID is engraved on the right side of the rear end near the entry area (Fig. -11/1).

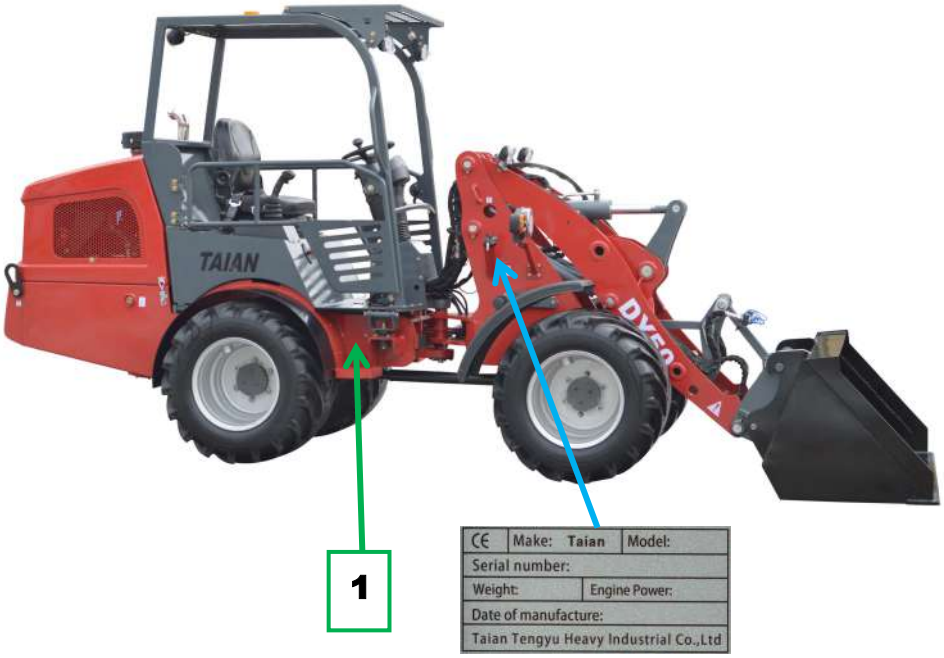


Fig. - 11 Vehicle ID no.

In addition, the following loader components each have their own rating plate:

- The diesel engine;
- The axial piston variable displacement pump (hydraulic transmission pump);
- The oil motor (hydraulic traction engine);
- The axles.

4 DESCRIPTION OF THE INDICATOR, WARNING AND CONTROL ELEMENTS

4.1 Operating elements and instruments for steel proof canopy

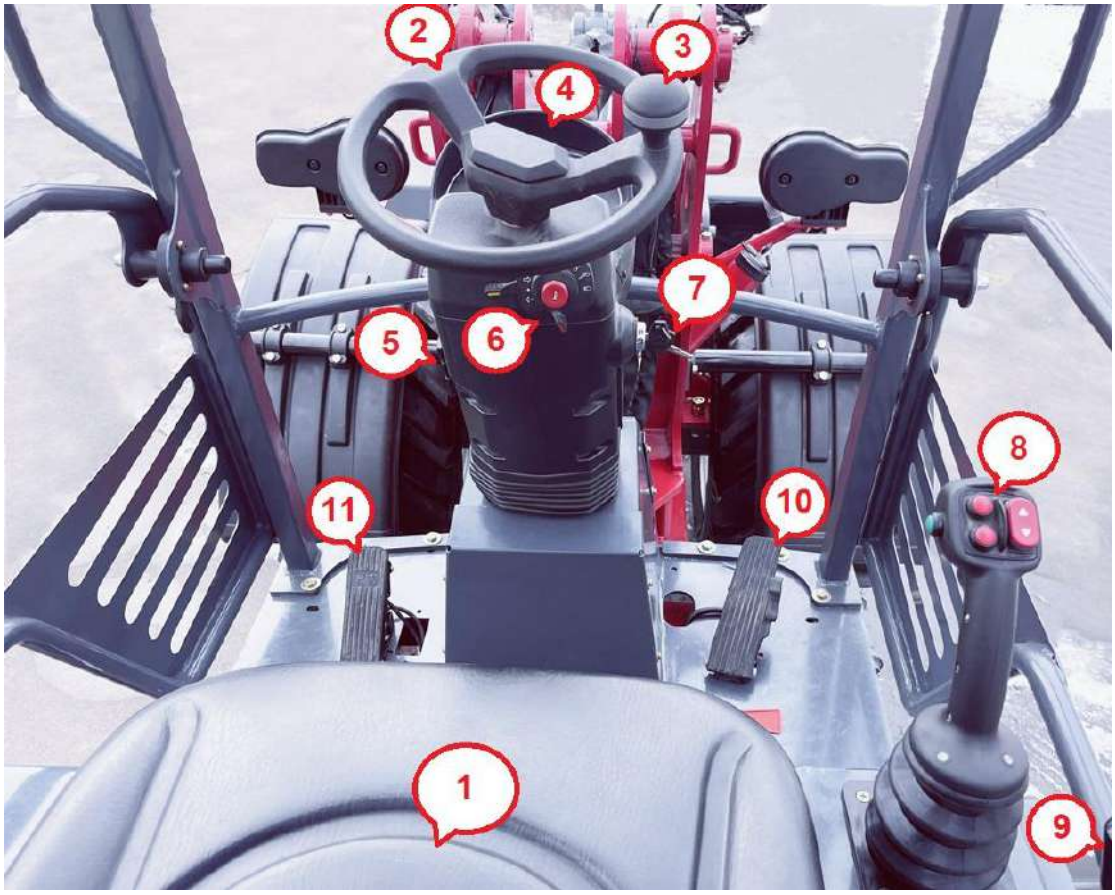


Fig. - 12.1 Operating elements

Item	Designation
1	Driver‘s seat
2	Steering wheel
3	Steering wheel turning knob
4	Instrument panel
5	Rocker Switches
6	Operating lever for lighting, blinkers and signal horn
7	Ignition Key
8	Operating lever for load arm / drive
9	Operating lever for additional hydraulics
10	Accelerator
11	Braking-inching pedal

Fig. - 12.2 Operating elements

Item	Designation
12	Main Power Switch
13	Weight adjustment knob
14	Lengthwise adjustment handle
15	Operating lever for parking brake

Fig. - 12.3 Operating elements

Item	Designation
16	Regeneration Switch

4.2 Indicator lights and warning lights

DANGER

Danger of accidents from malfunctions! Should a red indicator light be illuminated when the engine is running, turn off the engine immediately. Resolve the fault (see troubleshooting and emergency maintenance). Do not continue working with the loader until the fault has been resolved.

CAUTION

Immediately turn off the engine if a light marked with this * symbol is illuminated in the adjacent table.

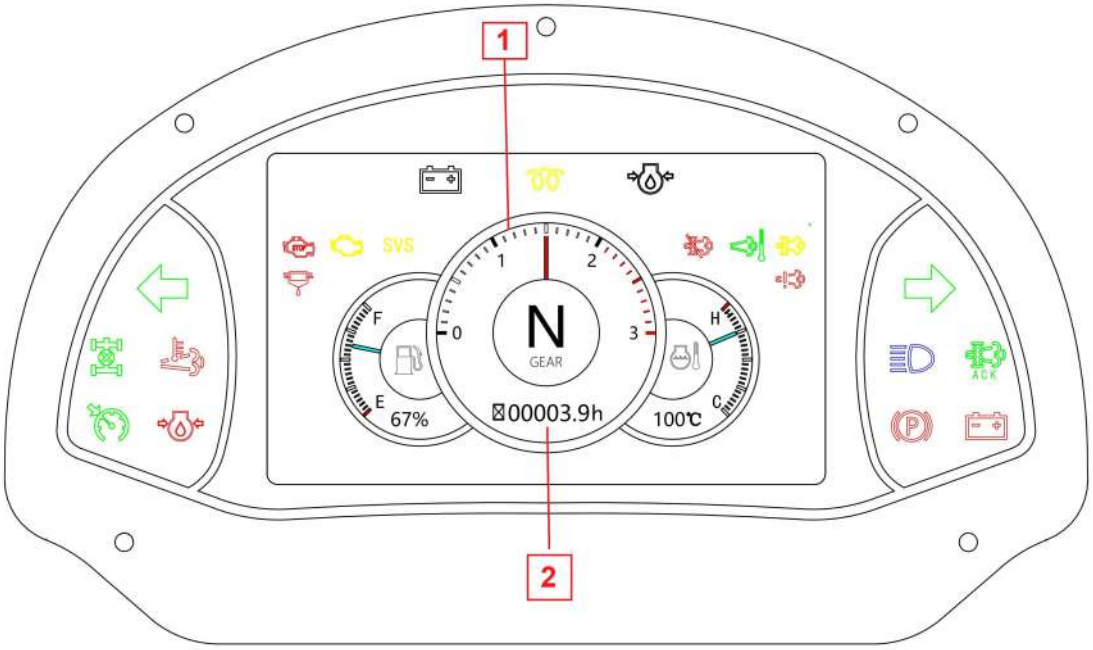


Fig. - 13 Indicator and warning lights

Sign	Instructions	Sign	Instructions
	Turn Left		Turn Right
	Differential		High Beam
	Pre-heating		Regeneration validation (Green)
	Oil-Water Separation		Parking Brake Indicator
	Engine oil pressure warning		Charging Indicator
	Engine Failure Light		Low Engine oil pressure warning
	Engine Failure Warning		High Water Temperature Warning (>100℃)

SVS	System Failure		Regeneration prohibited
	Exhaust high temperature		Regenerative state
	Voltmeter		Regeneration request (Yellow)
	Fuel Meter		Regen request (Red)
N GEAR	Gears (F/R/N/H) “**F**-Front; **R**-Reverse; **N**:Neutral; **H**:High speed”		
“**1**”	Engine tachometer	“**2**”	Hourmeter

DANGER

Danger of accidents from malfunctions! Should a red indicator light be illuminated when the engine is running, turn off the engine immediately. Resolve the fault (see troubleshooting and emergency maintenance). Do not continue working with the loader until the fault has been resolved.

CAUTION

Immediately turn off the engine if a light marked with this * symbol is illuminated in the adjacent table.

4.3 Switches / toggle switches for steel proof canopy

Fig. - 14 Switches / toggle switches

Item	Designation	Symbol
J1	Hazard warning lights	
J2	Top Warning light	
J3	Confluence switch	P_{x2}
3	Turning lights	
4	Front lights	

4.4 Driver's cabin

D1：Door lock

D2&D3:　Latch

4.4.1Door interior

C1:Brake pedal

C2:Power switch

C3:Hand brake

C4:Joystick

C5:Steering unit

C6:Driver seat

C7:Radio

C8:Cabin inside lamp

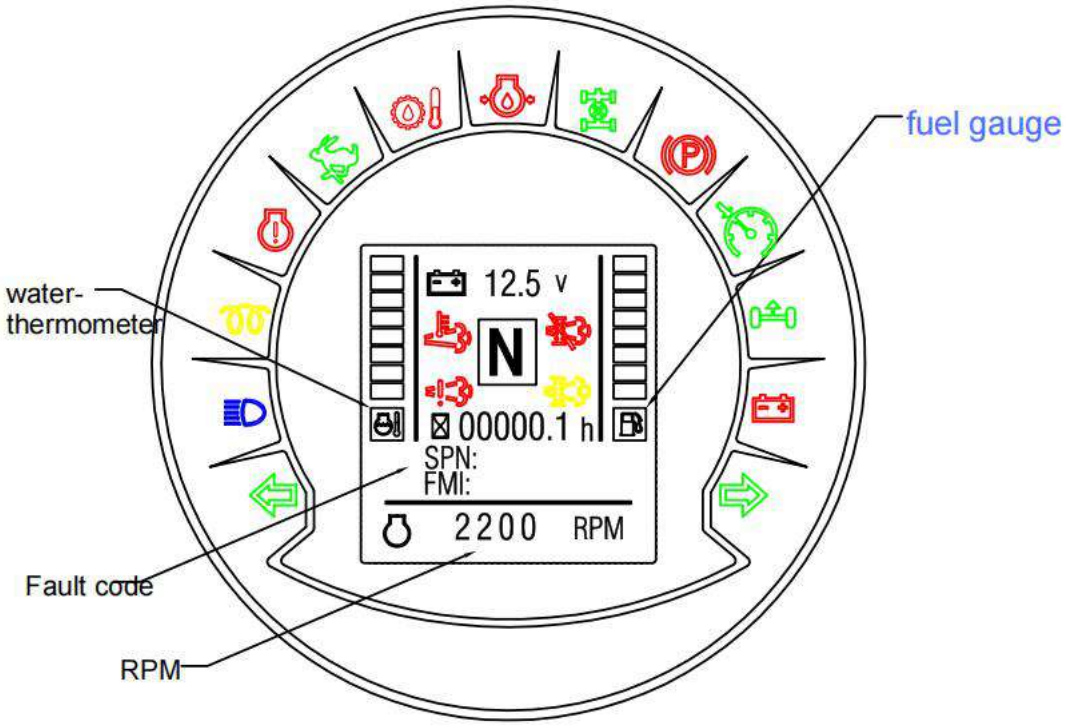
C9:Air conditioner vent

※Remark:

1.When the power switch arrow turn down:Power off

2.When the power switch arrow turn left:Power on

Dashboard for closed cabin



Sign	Instructions	Sign	Instructions
	Turn Left		Turn Right
	Differential		High Beam
	Pre-heating	ACK	Regeneration validation (Green)
	Oil-Water Separation	P	Parking Brake Indicator
	Engine oil pressure warning		Charging Indicator
STOP	Engine Failure Light		Low Engine oil pressure warning
	Engine Failure Warning		High Water Temperature Warning (>100℃)
SVS	System Failure		Regeneration prohibited
	Exhaust high temperature		Regenerative state
	Voltmeter		Regeneration request (Yellow)
	Fuel Meter		Regen request (Red)
N GEAR	Gears (F/R/N/H) “**F**-Front; **R**-Reverse; **N**:Neutral; **H**:High speed”		
“**1**”	Engine tachometer	“**2**”	Hourmeter

4.4.2 Joystick

1. **Push the joystick forward to <A>,** the boom drops down.
2. **Pushing the joystick back to <B>,** the boom lifts up.
3. **Pushing the joystick to the right <C>,** the attachment tipping down.
4. **Pushing the joystick to the left <D>,** the attachment tipping up.

***Multifunctional Joystick Buttons functions*:**

- **Button 1,** shift gears with High/Low Speed;
- **Button 2&3, Hydraulic output control (PTO-1) ,**when press button 2, the 4 in 1 bucket open;when press button 3, the 4 in 1 bucket close;
- **Rocker switch 4,** it controls the machine move Forward/Reverse.
- **Button 5 :**Differential lock; ;
- **Button 6**:No function now
- **Lever 8**:Hydraulic output control (PTO-2)

Option Joystick-C

Sign	Instructions	Sign	Instructions
	Electrical Output - 1		Electrical Output - 2
	Constant Hydraulic Oil flow (Hold about 3 seconds)	A	Gear Shift(F/N/R)
B	PTO - 1 / Pin Cylinder Control		High/Low Speed
	Horn	D	Shift button of PTO-1 & Pin Cylinder Control *
C	PTO - 2		Differential
D+B:Pin Cylinder Control			

NOTE

- **For attachments needing stable hydraulic flow** (e.g., snow blower, lawn mower): Press **M + C** for a few seconds to activate constant hydraulic output. Press **C** again to cancel the setting.

- **For attachments needing stable electric power:** Press **M + Flasher-1** or **M + Flasher-2** to provide constant electric output.

4.4.3 Switch and rocker buttons

Item	Designation	Symbol
J1	Hazard warning lights	
J2	Small lights/head lamps	
J3	Top Warning light	
J4	Confluence switch	P_{x2}
J5	Regeneration prohibited	
J6	Regen request (Red)	
J	A/C air volume	
J8	temperature of cooling air	

※AC Remark:

When you want to use cooling air ,we have to first shut off the Heat air switch of Engine ,turn it to down arrow as below image.

4.4.4 Vehicle lighting

Check lights, direction indicator lampss before each journey.

The Left steering column switch is used to switch the lighting, turn signal functions.

Operating the vehicle lighting

1. Turn lever forward ( ). The front small bar lights and rear small lights are switched on.

2. Turn lever further forward ( ). The dipped headlight are switched on.

3. Move the lever downwards ( ). High beam is switched on.

4.Push the steering column switch forwards in direc- tion **I**.

⇨ The control light ⇔ flashes.

⇨ Turn signal on the right flashes.

5。 Pull the steering column switch backwards in direc- tion **II**.

⇨ The control light ⇔ flashes.

⇨ Turn signal on the left flashes

4.4.5 Working lights signal

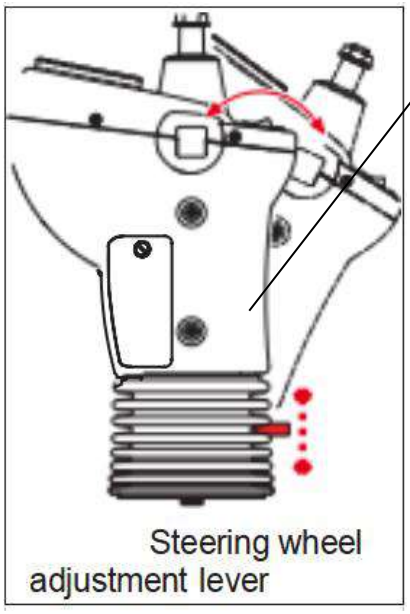
▪ Press the J2 rocker to the first gear ,the front small lights and head lights will be lighting

▪ Press the J2 rocker to the second gear ,the front small lights and head lights and rear head lights will be lighting

4.4.6 Operating the wiper

Symbol	Function
	Front window Wiper switch
OFF	Wiper off
LO	Medium speed wiper
H1	High-speed wiper

4.4.7Adjusting the steering wheel



The tilt of the steering column can be individually adjusted according to body size.

1. Push the lever down and hold it.
   The steering wheel is unlocked.
2. Adjust the steering wheel.
3. Release the lever.
   The steering wheel is adjusted and locked

4.4.8 Horn

The horn is operated with steering column switch.

- Press the switch on the steering column switch.

The horn sounds.

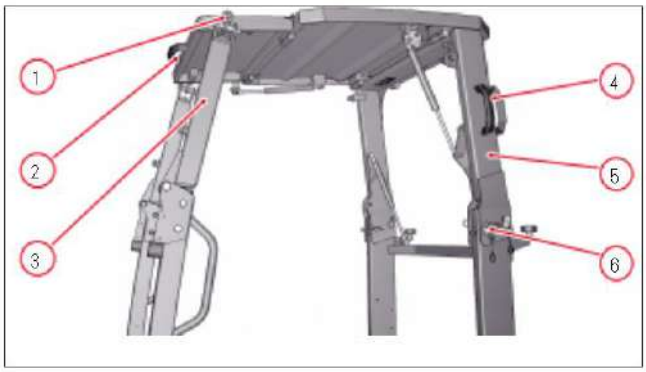
- Release the switch on the steering column switch.The horn no longer sounds.

4.5 Option:Description of the foldable overhead guard

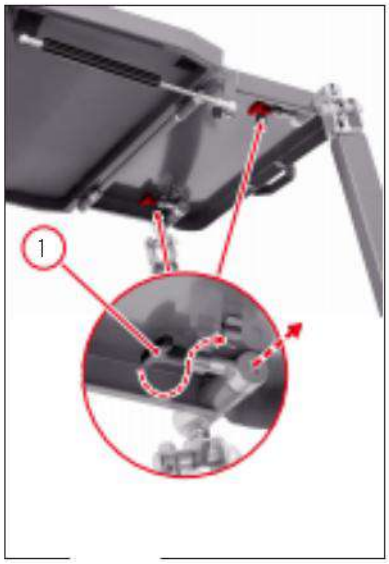
The folding overhead guard can be folded down if required. This makes it possible for the vehicle to drive through low passages through which the vehicle would otherwise not be able to pass

1.Two locking pins for front supports

2 .Handle for front roof section
3 .Front supports
4 .Two handles for rear support
5 .Rear support
6 .Two locking pins for rear support



23.1.2.1 Folding down the overhead guard



Preparation

1. Park the vehicle on a stable, level and dry surface.
2. Apply the parking brake.
3. Lower the mast to the ground.
4. Switch off the vehicle.

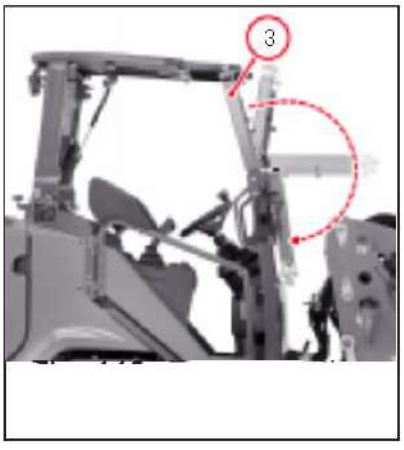
⇨ The overhead guard can be folded down.

Unlock the locking pin

1. Pull both levers of the locking pins **1** down out of the clamp.
2. Pull out the locking pin.
3. Press both levers of the locking pins upward into the other clamp.

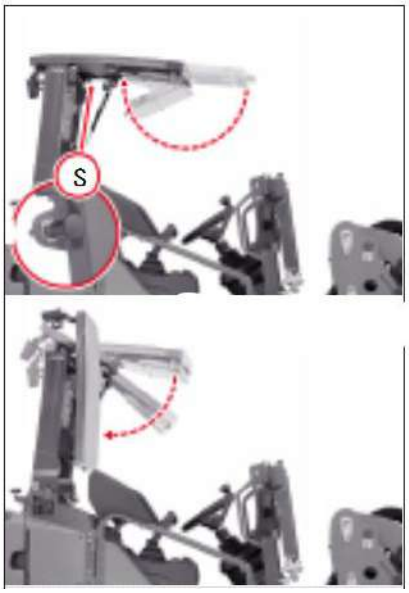
⇨ The locking pins are loosened

Fold the front supports forward



1. Press front supports **3** slightly outward to fold down.
2. Grasp the front part of the roof by the handle and lift it slightly.
3. Fold both front supports forward.
4. Engage the front supports in the folded position in the brackets.

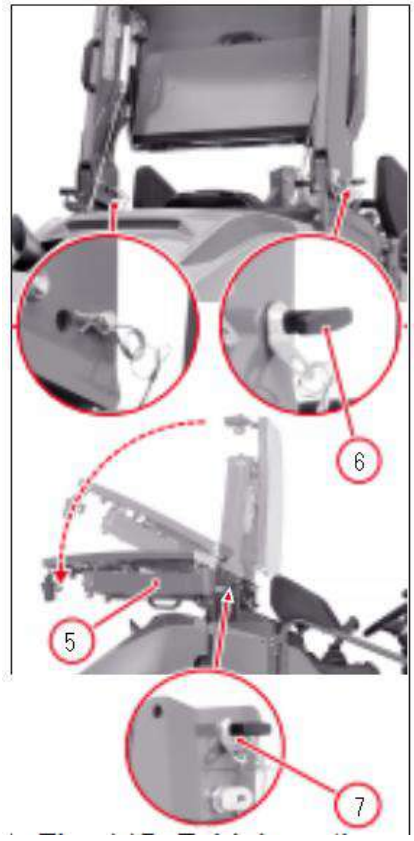
⇨ Supports are locked



Use the provided handle **2** to fold down the front roof section.
where on the roof of the folding EPS overhead guard you must hold the handle when folding it down. It is not possible to jam the hands in this area.

1. Grasp the front part of the roof by the handle and pull it downwards.
2. Fold the front roof part under the rear roof part.
3. Pull the folded roof down and fold it back until the locking pin **S** engages.

⇨ Roof parts are folded.



Fold down the rear supports

✓ Roof parts are folded.

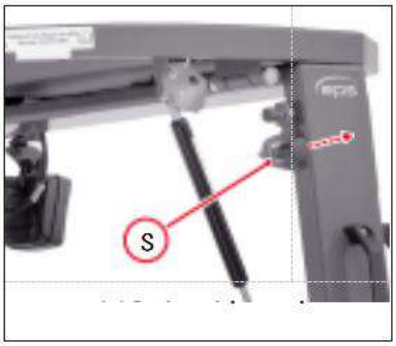
1. Remove the locking pin of the securing pin **6**.
2. Remove both securing pins **6** of the rear supports.
3. Fold back the rear support **5** together with the folded roof parts until they rest on the rubber buffers.

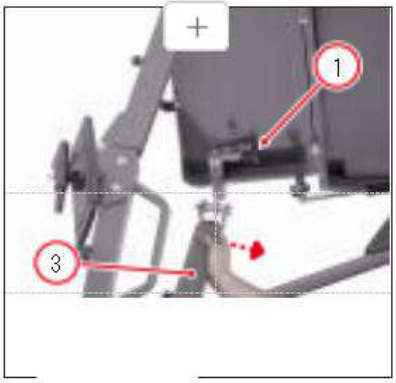
⇨ Rear support is folded down.

4. Reinsert and secure securing pin **6** of the rear sup- ports.

⇨ The bolt on the left is now used to secure the roof in the folded position. To do this, insert the bolt into hole **7** of the left rear support.

⇨ The overhead guard is folded down





To bring the overhead guard into the protective position, proceed in the reverse order to "Fold down the overhead guard":

✓ Prepare the vehicle as described in "Folding down the overhead guard".

1. Fold up the rear supports with the folded-in roof sec- tions and secure them with the securing pins.
2. Pull the securing pin **S** and unfold the folded roof sections.
3. Fold up the front supports.
4. To insert the front locking pins **1**, pull the front sup- ports **3** slightly outwards.

⇨ When the overhead guard is fully unfolded and all pins are secured, the vehicle can be used again

5 OPERATING AND OPERATION

CAUTION

Read the operating manual before starting up the loader.

Only operate the loader from the driver‘s seat. Observe the safety regulations.

Receive instruction from expert personnel before you drive the loader the first time. Your first attempts at driving should be carried out on spacious premises. Check the condition of the loader before begin- ning work.

Have the loader checked by specialized personnel be- fore restarting it following long periods of disuse.

5.1 Before starting up

5.1.1 Fueling

DANGER

Lower the lift frame and turn off the engine to fuel the loader.

Fire hazard – diesel fuel is flammable! Do not smoke and avoid fire and open flames when fueling.

Do not use gasoline. Use only diesel fuel. Do not add gasoline to diesel fuel.

Diesel fuel is hazardous to your health. Wear appropriate gloves.

In the event of an accident involving fuel, immediately inform the persons responsible.

Use only clean, conventional high-grade diesel fuel to operate the loader.

If at all possible, use a fine filter in the filling line.

OPERATING AND OPERATION

CAUTION

ENVIRONMENTAL NOTE

Diesel fuel is hazardous to the environment. Do not

allow it to be released uncontrollably into the environment.

Immediately soak up with binding material any fuel that has leaked, overflowed or been spilled, and dispose of it in an ecologically sound manner.

Immediately inform the persons responsible if fuel has been released into the environment.

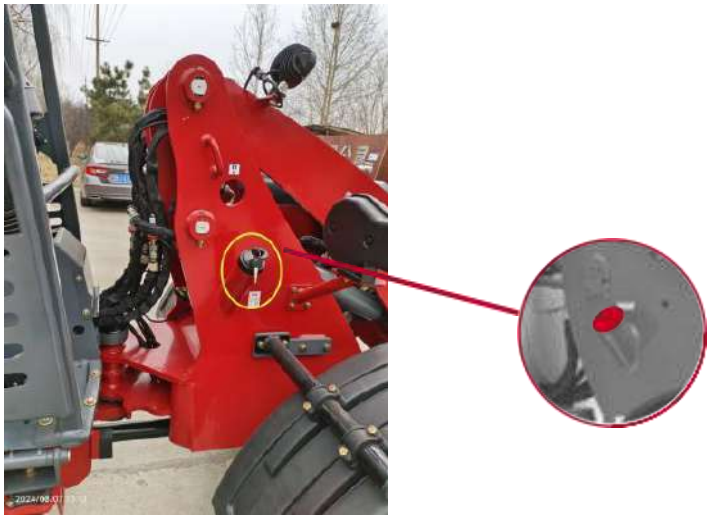


Fig. - 16 Fuel filler neck

• The diesel tank is located in the front carriage of the loader. The tank‘s filler neck is located on the right side of the front carriage (Fig. – 16).

• Remove the lid of the filler neck.

• Fuel the loader‘s tank through the filler neck. Do not remove the filter from the filler neck!

• Carefully close the tank lid after fuelling.

5.1.2 Getting in

DANGER

Danger of accidents from defects! Do not work with the loader if defects put the operational safety of the loader is at risk. Correct any defects immediately.

Check that the safety devices are present and operative each time before you start up the loader.

Danger of accidents from damaged tyres! Check the tyres each time before commencing work.

Danger of accidents from becoming stuck or slipping! Keep the operating elements clean. Follow the daily maintenance schedule.

Check before getting in

- Check that the loader is clean and undamaged.
- Check that the handles and steps are in good condition and clean.
- Check that all safety components are present and fully functional.
- Check that the rods, cylinders, hinge pins and coolers are clean.
- Check that all the screws, joints and hinge pins fit tightly.
- Check that all the signs are present and in good condition.
- Check the loader for oil, fuel and coolant leaks.

Check:

• Engine oil level

• Hydraulic fluid level

• Coolant level

• Fuel level

• Check the condition of the tyres, e.g. for incisions or signs of wear. Check the tyre pressure! Ensure that the tyres are inflated to the proper pressure (see tyre pressure table).

• Ensure that the engine covers and the caps for the fuel tank and hydraulic fluid.

Getting in

DANGER

Danger of slipping while getting in!

Check that the handles and steps are in good condi- tion and clean.

Please use the attached handles and steps.

Always get in and out with your face turned toward the loader.

5.1.3 Adjusting the driver‘s seat

DANGER

Danger of accidents from distractions!

Do not adjust the driver‘s seat while driving, but rather only when the loader is stopped.

You can adjust the driver‘s seat to fit your height and posture. This keeps your muscles relaxed and prevents you from tiring while working.

Adjust the seat so that you can comfortably reach the levers and pedals with your back against the backrest.

You can adjust the seat in the following ways (Fig. - 20):

1. Front and Back adjustment:

There is level of front and back of seat adjustment. Adjust the front and back while sitting in the seat by turning the the handle.

5.1.4 Safety belt

DANGER

Danger of injury! Put on your safety belt for all work.

Do not run the safety belt over solid or fragile objects (e.g. glasses, keychain).

Check the belt and buckle before using them.

Replace the belt or buckle immediately if they are damaged.

NOTE

Make sure that the belt is set neither too tightly nor too loosely.

Putting it on:

1. Sit in the driver‘s seat with your whole back touching the backrest.
2. Pull the belt over your lap.
3. Press the safety belt tongue into the belt lock until it engages.

Removing it:

Press the red button on the belt lock.

5.2 Starting up

PLEASE NOTE

The warning and indicator lights display fault mes- sages from the equipment.

All the toggle switches are switched on by moving them to the down position.

DANGER

Danger of accidents! Do not drive the loader if the entire lighting system or individual functions are not working.

5.2.1 Before starting the engine

DANGER

Danger of injury! Check that no-one is on or near the loader.

Danger of injury from slipping! Keep the operating elements clean and dry, as they could slip out and the loader could lose control.

Danger of accidents from falling or rolling objects! Remove or tighten all loose objects in the cab.

Danger of accidents from poor visibility! Make sure that the cab windows and exterior mirrors are clean and position the exterior mirrors so that you have a good view from your seat of the area immediately behind the loader.

Danger of accidents from missing safety devices! Make sure that all safety devices are fitted, that (after repairs) all tools have been removed and that the engine bonnet is closed.

1. Perform the „Check before getting in“ prior to starting the engine (see the chapter “Getting in“).
2. Adjust the driver‘s seat and the steering column as needed.
3. Adjust the rear view mirror / exterior mirror.
4. Put on your safety belt.

5.2.2 Starting the engine

DANGER

Danger of injury!

Check that no one is in the loader‘s danger area!

Do not use any combustible starting aids (e.g. Start pilot)!

Danger of accidents!

Do not use the loader if the “starter lock/driving lock“ does not function.

Only start the loader from the driver‘s seat.

CAUTION

Due to the high viscosity in the hydraulic system and engine oil circuit at temperatures below 0°C, major technical damage can occur if speed is increased immediately.

Let the engine run for a certain period of time at low speed if temperatures are below 0°C.

The lower the outside temperatures, the longer the warm-up phase.

Observe the hydrofilter‘s pressure display.

Do not under any circumstances tow-start the loader to start the engine. This could damage the hydraulic system.

Turn off the engine immediately if the warning lights do not go out when the engine is running.

Have the malfunction rectified immediately. Do not use the loader again until the malfunction has been rectified.

Do not suddenly turn off the engine at full load, but rather allow it to idle for 3 minutes before turning it off it tho equalize the temperature.

Description of the starting process

Use the ignition key to start the loader‘s engine (Fig.- 29).

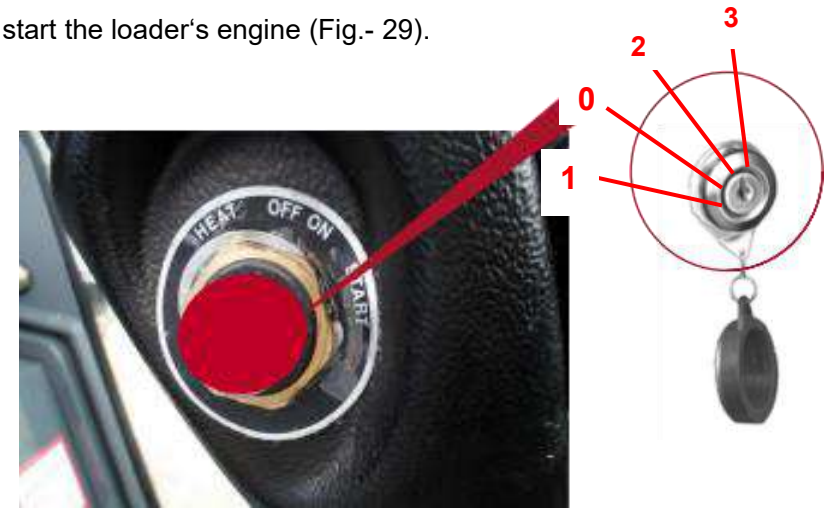


Fig. - 29 Ignition switch

1. Push the foot accelerator.
2. Starting:

- Insert the key - level 0 = no operating voltage.
- Turn the key to the left against the spring pressure until the heater-plug indicator is illuminated

Level 1 = Preheating

At low temperatures, preheat the engine at level 1 for a maximum of 1 minute.

- Turn the key to the right - level 2 = operating voltage;

The indicator lights (oil pressure, dynamo) must be illuminated

- Continue to turn the key to the right against the spring pressure - level 3 = starting
- Let go of the key as soon as the engine starts - the key will return to level 2 - and the indicator lights will go out.

3. Check if all the indicator lights have gone out, and correct any possible defects before driving off with the loader.

If the engine does not start

CAUTION

It is absolutely not possible to start the engine by tow-starting the loader. This could damage the hydraulic system.

• Attempt to start the loader for a maximum of 20 seconds.

• Wait one minute.

• Repeat the starting process.

• If the engine will not start after two attempts, look for the cause in the malfunction table (“Trouble- shooting and emergency maintenance“) or contact a specialist garage.

5.3 Drive operation

5.3.1 Getting ready to drive

CAUTION

Before you start driving, make sure that the machine complies with the relevant local regulations and has a valid operating license.

1. Secure the attachment:

– Ensure that the bucket has been emptied and has been lowered to transport position.

– Put the tooth guard on the bucket.

2. Check the lighting system and, if applicable, the function of the rotating beacon. Switch off the work lights.

3. Put all the hydraulic control valves in 0 position. 4. Fasten your safety belt.

5. Make sure that you can drive off safely.

5.3.2 Description of the drive hydraulics

The hydrostatic drive consists of an axial piston variable displacement pump, which drives an axial piston diesel engine. The axial piston variable displacement pump is flanged onto the diesel engine, while the axial piston diesel engine is flanged onto the transfer case. Displacement is automatic and continuous, but depends on speed and load. The driving speed depends on the engine speed and the machine load. The driving application begins with the target engine speed; the maximum speed is attained when the engine reaches maximum speed, which is dependent upon operation of the accelerator. Depending on load, the variable displacement pump is automatically adjusted so that the most favourable speed is maintained. The more the loader is burdened (when carrying a load or driving uphill), the lower the driving speed will be. This adjustment control allows the entire range of performance to be utilized optimally. Actuating the inching pedal (inching delay, left pedal in relation to direction of travel) also influences the control, allow- ing the loader to be slowed down by fine reductions in the engine speed, right down to the loader coming to a standstill.

5.3.3 Driving

DANGER

Danger of accidents from the loader tipping over! Keep the lift frame lowered while driving.

Adjust your speed according to the type of work and respective conditions. Always keep the loader under control while driving.

Watch for people or obstructions in the danger area.

CAUTION

Danger of damage to the brake system!

Do not drive with the handbrake set. Be aware of whether the handbrake indicator light is illuminated. Release the handbrake before driving away.

PLEASE NOTE

Indicator lights will show you the drive directions and gears selected.

DANGER

Danger of accidents from incorrect actuation of the drive direction switch!

Never actuate the drive direction switch while driving. The loader will move in the opposite direction without any warning. Use the switch only according to the manual. Change the drive direction and the gears only when the loader is stopped.

Observe each of the indicator lights when changing direction / gears.

Be careful when driving in snowy and icy conditions – reduce your driving speed considerably in the event of bad weather.

When driving downhill, always reduce your driving speed before reaching the slope, rather than on it. Do not rest your feet on the braking-inching pedal.

Stop driving immediately if you detect malfunctioning of the drive, steering or brakes. Do not restart the loader until the malfunction has been rectified.

Changing drive directions

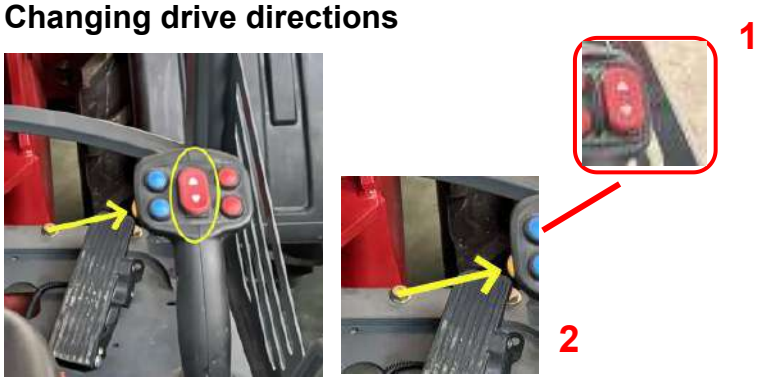


Fig. - 31 Changing direction

Use the slide switch item 1 (Fig. – 31) to change the load- er‘s drive direction. After the engine has been started, the gear changer is in 0 position.

- Drive direction switch in middle position:

– Gear changer in Neutral

- Push the drive direction switch forward:

– Indicator light “1“ (Fig. - 13) lights up.

The loader moves in a forward direction.

- Push the drive direction switch back:

– Indicator light “14“ (Fig. - 13) lights up.

The loader moves in a backwards direction.

Switching gears

The loader has an overdrive and a crawler gear. Use the button Item 2 (Fig. – 31) to shift the loader‘s gears.

With the DY50, overdrive is automatically engaged when the engine is started.

- Press the button:

- The loader shifts from overdrive to crawler gear. Indicator light “6“ (Fig. - 13) lights up.

- Press the button again:

- The loader shifts from crawler gear to overdrive. Indicator light “7“ (Fig. - 13) lights up.

Driving off with the loader

- Release the parking brake after the engine has warmed up.

– The parking brake indicator light will shut off. The loader is ready to be driven.

- Select the drive direction by actuating the drive direction switch.

– The indicator light shows the drive direction selected. You can drive off.

- Push the accelerator.

– The loader will smoothly come up to speed.

The loader‘s driving speed is proportional to the accelerator‘s displacement.

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

Braking and stopping

Activate the braking-inching pedal adjacent to the steering column on the left in order to change the driving speed independently of the engine rpm. The first part of the pedal‘s path adjusts the drive back down, then the brake system is activated. Pushing the braking-inching pedal allows you to continuously reduce the pump flow rate, without wear and tear, until the loader has come to a halt. This also allows you to drive very slowly at a high engine speed.

- Reduce the loader‘s driving speed by decreasing the engine speed.
- To brake the loader, step on the braking-inching pedal.
- To stop, step on the braking-inching pedal until the loader has come to a stop.
- Shift to neutral.
- Pull the lever for the parking brake.

Changing the drive direction

DANGER

Danger of accidents from incorrect actuation of the drive direction switch! Never actuate the drive direction switch while driving. The loader will move in the opposite direction without any warning. Use the switch only according to the instructions in the manual.

PLEASE NOTE

It is not necessary to depress the inching pedal fully every time you change direction.

1. Reduce the driving speed until the loader has come to a halt.
2. Move the drive direction switch in the other direction.
3. Push the accelerator so that the loader starts moving.

5.3.4 Stopping and parking

DANGER

Danger of accidents due to people in the danger area.

Make sure that there are no people in the loader‘s danger area when you stop and park the loader.

Park the loader only in appropriate fire-safe places.

PLEASE NOTE

Secure the loader for stopping and parking as described in the chapter “Securing the Loader“!

5.4 Work operation

DANGER

Read and observe the “Basic Safety Instructions“!

Danger of accidents due to people in the danger area. Make sure that no one is in the loader‘s danger area. Before beginning work, check the control elements for function!

Danger of accidents from wrong attachments! Use only attachments approved by TAIAN. Before beginning work, check that attachments are undamaged, fit tightly, and that they are locked correctly to the lift frame.

Danger of accidents from the lift frame making sudden, uncontrolled movements! Before beginning work, with the parking brake on, activate all the lift frame‘s functions several times until the stop to remove a possible vacuum in the hydraulic cylinders.

In the event of power loss (failure of the engine and/or driving or working hydraulics), lower the lift frame to the ground immediately and relieve the control circuits and hydraulic lines of pressure. Read the chapter “Measures If the Energy Supply Fails“.

5.4.1 Each time before starting work

DANGER

- Examine the loader for visible defects prior to each work shift.
- Check the function of the operating equipment.
- Check the function of the brakes and warning devices.
- Report any defects to the supervisor and, when changing shifts, to the driver taking your place.
- Perform the “Check before getting in“ prior to getting in (see the chapter “Getting in“).

5.4.2 Foldable rollover bar

DANGER

Danger of accidents from the loader tipping over. The rollover bar should always be locked in protection position, insofar as this is possible given the working conditions. Only fold the rollover bar back if this is absolutely necessary in order to allow work to be carried out (e.g. if it is necessary to drive through low doorways).

5.4.3 Control lever for the lift frame

DANGER

Danger of accidents from the loader tipping over! Keep the lift frame lowered while driving.
Danger of accidents from the lift frame making uncontrolled movements! Never change to „float position“ with the lift frame raised. The float position may only be switched on when the lift frame is lowered.
Danger of accidents!
Actuate the lift frame and attachment only from the driver‘s seat.
Only work when you are calm and able to act care- fully. Abrupt, quick operation results in accidents. Always lower the lift frame when interrupting and ending work.

PLEASE NOTE

The float position of the lift frame is located on the “Lower“ function. If you let go of the control lever, it will automatically return to the 0 position (except when in float position).

Use the control lever to control the movements of the lift frame Item A (Fig. - 33). The control lever is located adjacent to the driver‘s seat on the right.

Float position

- Press the control lever Item A (Fig. - 33) forward across the resistance until it engages:

– The float position switches on.

- Pull back the control lever Item A across the resistance:

– The float position switches off.

Fig. - 33 Control lever for the lift frame

5.4.4 Operating lever for additional hydraulics

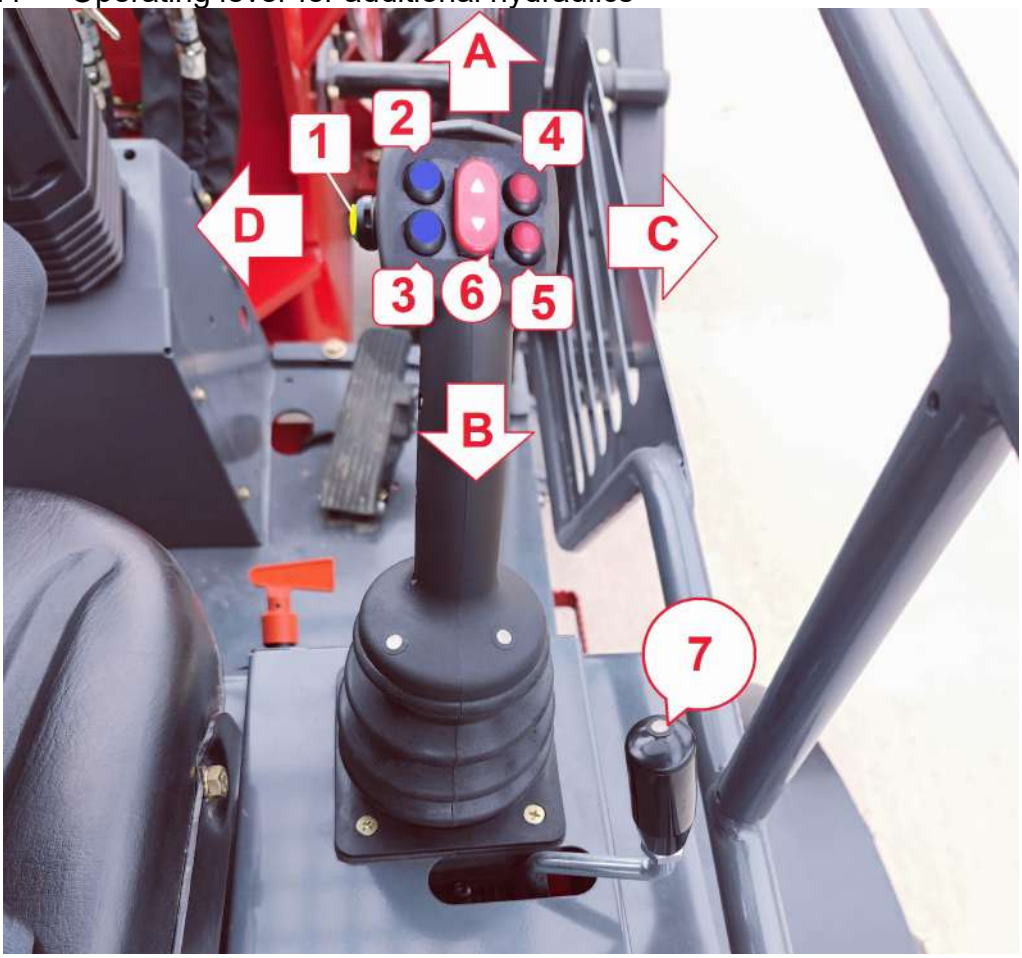


Fig. - 34 Operating lever for additional hydraulics

- Push the joystick forward to <**A**>, the boom drops down.
- Pushing the joystick back to <**B**>, the boom lifts up.
- Pushing the joystick to the right <**C**>, the attachment tipping down.
- Pushing the joystick to the left <**D**>, the attachment tipping up.
- **Button 1:**self-locking button, shift gears with High/Low Speed;
- **Button 2:**auto-reset button, for Differential lock function;
- **Button 3:**it is a Reserved button and has no function on it;
- **Button 4 & 5:**auto-reset button, for Hydraulic output control (PTO-1); or front plug pin control;
- **Rocker switch 6:**it controls the machine move Forward/Reverse.
- **Lever 7:**self-locking, Hydraulic output control (PTO-2);

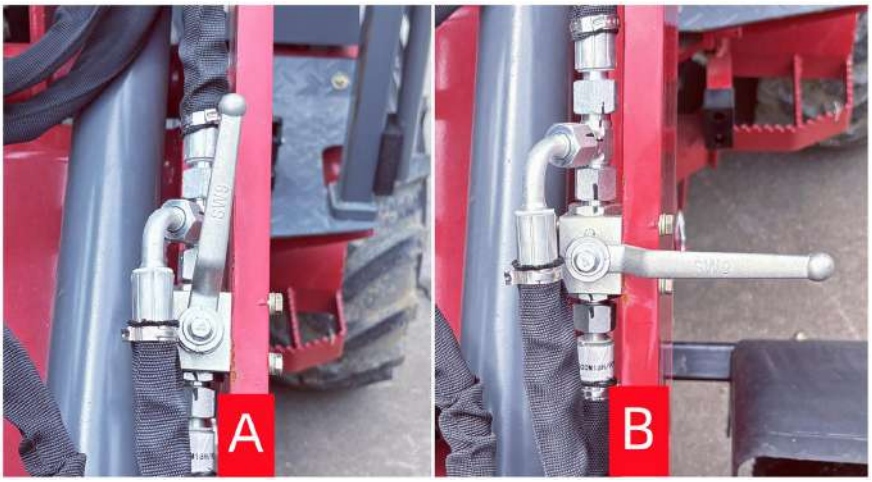


Fig. - 35 Three-way valve

The three -way valve is used for switching if the hydraulics flow to the plug pin of the quick hitch or to the PTO-1 connectors (Fig. - 35):

- Push the lever of three -way valve upward (Fig. - 35, **A**), it enables the hydraulics flow to the **plug pin** of the quick hitch;
- Push the lever of three -way valve to the right (Fig. - 35, **B**), it enables the hydraulics flow to the **PTO-1** connectors(Fig. - 36);

Quick change connectors

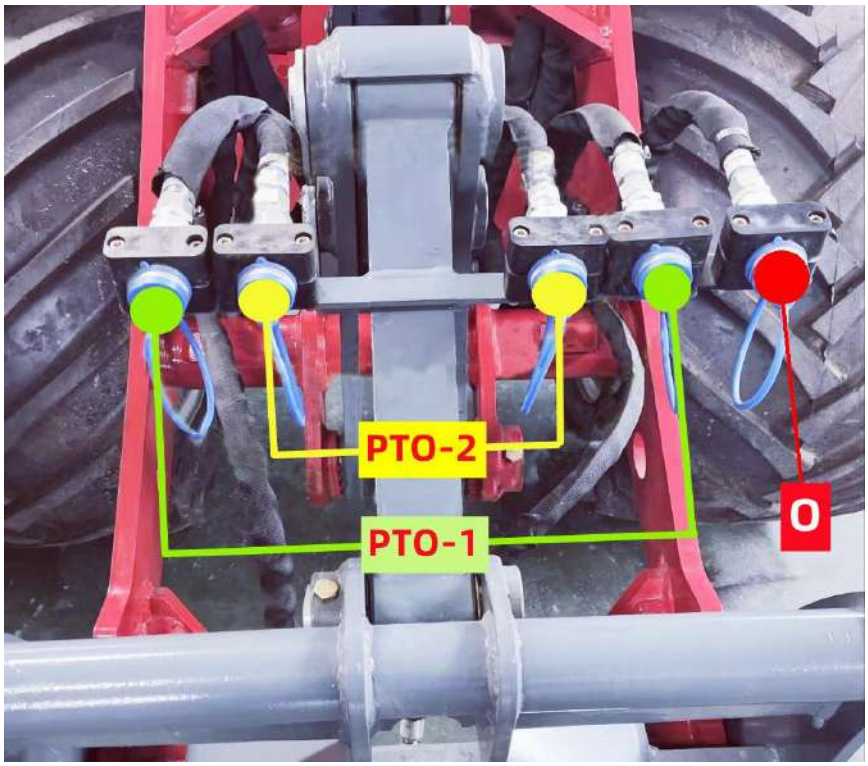


Fig. - 36 Quick change connectors

- The PTO-1 connectors are controlled by the joystick button 4 & 5 (Fig. - 34);
- The PTO-2 connectors are controlled by the Lever 7 (Fig. - 34);
- The marked "**O**" connector is optional and used for hydraulic overflow;

Operating the rear hydraulic connections

Some attachments installed at the rear of the vehicle require hydraulic connections at the rear of the vehicle.

1. **Rear hydraulic connection-1**
2. **Rear hydraulic connection-2**
3. **Rear hydraulic return oil connection**

For some attachments or trailers where components are driven by a hydraulic oil engine, an unpressurized return flow is required. This connection returns the return oil of the hydraulic oil engine directly to the hydraulic oil tank of the vehicle.

Remarks

The front hydraulic connections on the loader unit and the rear hydraulic connections cannot be operated at the same time for this function.

Operating the rear hydraulic connections

First disassembled the front hydraulic connections with attachment ,Then assemble the rear hydraulic connections with attachment .Finished that ,we can only use the rear hydraulic connections.

5.4.5 Differential pawl

CAUTION

Avoid damage to the transmission!

Only switch on the differential lock if the wheels are not moving.

Only use the differential lock for loading work on loose or slippery surfaces!

After releasing the button (item. 1, Fig. - 38), the differential can be locked occasionally. This is noticeable by more effort for steering. Try to release the differential lock by slight right / left steering movements or by changing the direction of travel.

Activate the differential pawl using the button, item 1, on the multi-function lever (Fig. - 38). With the differential pawl you can block the differential and thus prevent non-uniform wheel slip.

Fig. - 38 Switch for differential pawl

• Press the button 2 (Fig. - 38): The differential pawl switches on.

• Release the button 2 (Fig. -38): The differential pawl switches off.

5.4.6 Changing attachments

This operating manual describes only the use of the following attachments:

- Light cargo buckets
- Earth buckets
- Earth buckets with digging teeth
- Manure fork

If you wish to use additional attachments with your loader, please observe the following:

Should you use other attachments, observe the operating manuals for these attachments.

PLEASE NOTE

TAIAN is not liable for changes made without its approval.

CAUTION

Use only TAIAN-approved attachments for your loader. TAIAN is not liable in the event of other attachments being used.

Avoid overworking the loader. For heavy loads, do not use buckets that are too big.

Should new hydraulic hoses need to be fitted for a new attachment, please contact a specialist. Only specialized personnel may fit hydraulic hoses.

Various high-pressure hoses are used. Note the DIN designations on the hose and/or fitting when ordering replacements.

Observe the safety instructions for changing attachments.

1. Before assembly, start-up or maintenance, read the operating manual for the relevant attachment.
2. Consult a TAIAN dealer or TAIAN directly to receive approval for the conversion, if the hydraulic system needs to been converted for the attachment that will be used (e.g. depressurized return).
3. Select the attachment that will be used according to the type of work that will be carried out.
4. Practice using the attachment before working with it the first time. Familiarize yourself ahead of time with all the functions and control elements.

DANGER

Danger of accidents from wrong attachments! Use only TAIAN-approved attachments for your loader. Unapproved attachments could overload the loader. This could result in loader instability.

Danger of accidents from the loader tipping over! When there is a load on the tool, the loader‘s weight ratio changes! Do not exceed the approved payloads!

Drive only with the lift frame lowered.

When loading, adjust your driving speed to the material being loaded and environmental conditions.

Danger of injury from pressurized hydraulic fluid escaping (e.g. when hydraulic hoses are damaged)! Should you get hydraulic fluid on your skin or in your eyes, go to a doctor immediately.

Danger of accidents due to people in the danger area. Make sure that no one is in the loader‘s danger area. Danger of accidents from the uncoupled attachment tipping over.

Only personnel with sufficient specialized knowledge may replace attachments – should knowledge be lacking, experienced personnel must carefully train the responsible individuals.

Danger of injury from damaged attachments! Do not use damaged attachments.

Before beginning work, check that attachments are undamaged, fit tightly and are locked correctly. Do not carry out work if the receptacle / locking mechanism for the attachments is damaged.

Carry out work on the attachments only if the loader is secured as described in the chapter “Securing the Loader“

CAUTION

Unapproved attachments could overload the loader.

This can result in damage to the loader.

Coupling attachments not actuated by hydraulics

DANGER

Danger of accidents due to people in the danger area. Make sure that no one is in the loader‘s danger area.

Danger of accidents from releasing the hydraulic locking mechanism unintentionally! Always switch the three-way valve (Fig. - 35) to hydraulic connection as soon as the attachment is locked. Always check that the locking bolts (Fig. 39 + 40) are correctly locked.

Coupling using the mechanical quick-change system:

1. Drive the loader up to the attachment (Fig. - 39).
2. Bring the receptacle frame Item 1 under the mounting pocket Item 2.
3. Raise the lift frame and tilt in the attachment.
4. Turn the lever of the locking bolt Item 3 to the left so that the bolt engages in the tab of the attachment Item 4.
5. Check that the locking bolt fits correctly in the tab Item 4.

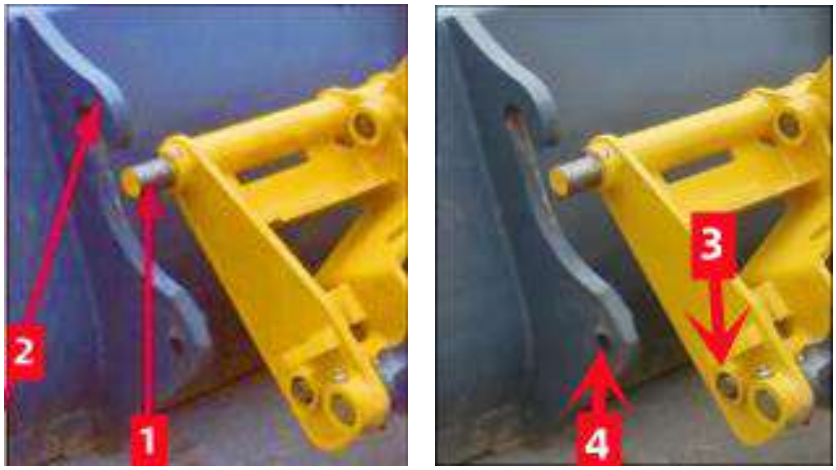


Fig. - 39 Coupling the mechanical locking mechanism

Coupling using the hydraulic quick-change system:

1. Drive the loader up to the attachment (Fig. -40).
2. Bring the locating bolt item 1 under the mounting hook item 2.
3. Raise the lift frame and tilt in the attachment.
4. Extend the locking bolt item 4 with the control lever for the additional hydraulics.
5. Check that both bolts are engaged in the locking holes item 3.
6. Turn off the engine and actuate the control lever for the additional hydraulics several times in both directions. This depressurizes the lines for the additional hydraulics.
7. Switch the three-way valve to “hydraulic connection“ (Fig. - 42).

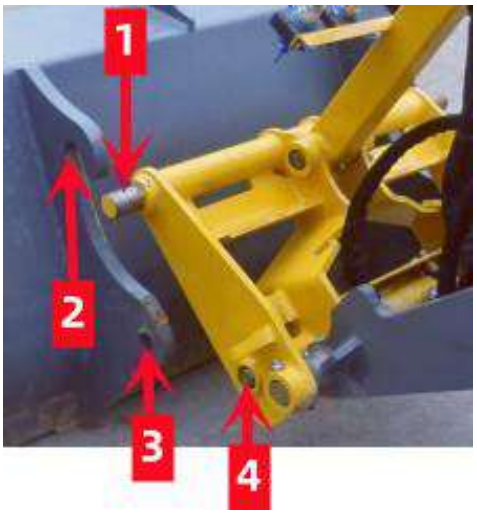


Fig. - 40 Coupling the hydraulic locking mechanism

Coupling attachments actuated by hydraulics

Danger of accidents due to people in the danger area. Make sure that no one is in the loader‘s danger area.

Danger of accidents from releasing the hydraulic locking mechanism unintentionally! Always switch the three-way valve (Fig. - 42) to hydraulic connection as soon as the attachment is locked.

Always check the connections of the additional hydraulics and that the locking bolts Item 1 + 4 (Fig.39/40) are correctly locked.

Danger of injury from pressurized hydraulic fluid escaping (e.g. when hydraulic hoses are damaged)!

Should you get hydraulic fluid on your skin or in your eyes, go to a doctor immediately.

CAUTION

Avoid dirt. Make sure that the hydraulic connections are clean.

Avoid damage to the three-way valve (Fig. - 35). Do not switch the valve when it is under pressure. Depressurize the additional hydraulics before switching the valve.

ENVIRONMENTAL NOTE

Hydraulic fluid is hazardous to the environment. Do not allow it to be released uncontrollably into the environment.

PLEASE NOTE

For attachments actuated by hydraulics, proceed the same as with attachments not actuated by hydraulics up until point 5. Then continue as described in the following points.

Coupling using the mechanical quick-change system:

6. Turn off the engine and actuate the control lever for the additional hydraulics several times in both directions. This depressurizes the lines for the additional hydraulics.
7. Plug the attachment‘s quick couplers in the appropriate connections for the additional hydraulics on the lift frame (Fig. - 41).
8. Check that there are no leaks in the attachment‘s hydraulic system and the quick couplers of the additional hydraulics. Carefully actuate the attachment.

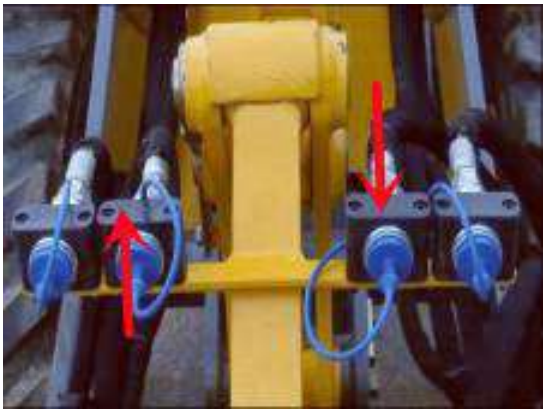


Fig. - 41 Connections for the additional hydraulics

Coupling using the hydraulic quick-change system:

6. Turn off the engine and actuate the control lever for the additional hydraulics several times in both directions. This depressurizes the lines for the additional hydraulics.
7. Switch the three-way valve to “hydraulic connection“ (Fig. - 42).
8. Plug the attachment‘s quick couplers in the appropriate connections for the additional hydraulics on the lift frame (Fig. - 41).
9. Check that there are no leaks in the attachment‘s hydraulic system and the quick couplers of the additional hydraulics. Carefully actuate the attachment.

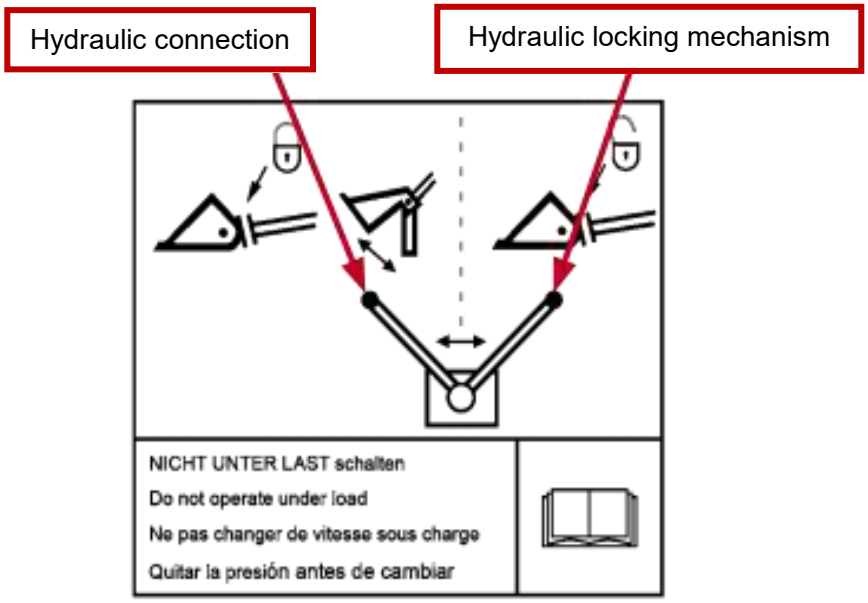


Fig. - 42 Switching the three-way valve

Uncoupling attachments not actuated by hydraulics

DANGER

Danger of accidents due to people in the danger area. Make sure that no one is in the loader‘s danger area.

Danger of accidents from the uncoupled attachment tipping over. Make sure the attachment is tightened. If necessary, secure the attachment with the supports provided. Place the attachment only on a solid, level foundation.

Uncoupling using the mechanical quick-change system:

1. Lower the attachment to the ground.
2. Pull the locking bolt out of the attachment‘s tab Item 4 (Fig. 39) using the lever Item 3 (Fig. 39) and turn the lever to the right so that it is locked in open position.
3. Lower the lift frame and tilt the attachment out.

(This releases the receptacle frame Item 1 (Fig. 39) from the mounting pocket Item 2 (Fig. 39))

4. Drive the loader backwards once the receptacle frame is free.

Uncoupling using the hydraulic quick-change system:

1. Lower the attachment to the ground.
2. Turn off the engine and actuate the control lever for the additional hydraulics several times in both directions. This depressurizes the lines for the additional hydraulics.
3. Switch the three-way valve to “hydraulic locking mechanism“ (Fig. -45).
4. Retract the locking bolts Item 4 (Fig. 40) with the operating lever for the additional hydraulics.
5. Lower the lift frame and tilt out the attachment.

This releases the locating bolts Item 1 (Fig. 40) from the mounting hooks Item 2 (Fig. 40).

6. Drive the loader backwards once the mounting hooks have been released.

Uncoupling attachments actuated by hydraulics

DANGER

Danger of accidents due to people in the danger area. Make sure that no one is in the loader‘s danger area.

Danger of accidents from the uncoupled attachment tipping over. Close attachments that have moving parts (e.g. crocodile grippers). Make sure the attachment is tightened. If necessary, secure the attachment with the supports provided. Place the attachment only on a firm, level surface.

ENVIRONMENTAL NOTE

When uncoupling the hydraulic connections, hold a pan under the additional hydraulics‘ quick couplers to catch any oil that might run out. Dispose of it in an ecologically sound way.

Uncoupling using the mechanical quick-change system:

1. Lower the attachment.
2. Turn off the engine and actuate the control lever for the additional hydraulics several times in both directions. This depressurizes the lines for the additional hydraulics.
3. Pull the quick couplers apart.
4. Put on the protective caps.
5. Place the hydraulic hoses over the attachment.

6. Continue as described in the section “Uncoupling attachments not actuated by hydraulics“, points 2 - 4.

Uncoupling using the hydraulic quick-change system:

1. Lower the attachment.
2. Turn off the engine and actuate the control lever for the additional hydraulics several times in both directions. This depressurizes the lines for the additional hydraulics.
3. Pull the quick couplers apart.
4. Put on the protective caps.
5. Place the hydraulic hoses over the attachment.
6. Switch the three-way valve to „hydraulic locking mechanism“ (Fig. -42).
7. Continue as described in the section “Uncoupling attachments not actuated by hydraulics“, points 4 -6.

5.4.7 Bucket

CAUTION

Avoid overloading. Observe the maximum permis- sible payload.

Operate the control lever carefully.

PLEASE NOTE

The light cargo bucket is used for light materials such as grain, maize and pellets.

The earth bucket is used for heavy materials such as gravel, sand, soil and stone.

Function

The light cargo bucket / earth bucket attachments are intended for loosening, picking up, transporting and dumping materials.

Attaching the bucket

Read the chapter „Coupling attachments not activated by hydraulics“

Operating element

Operate the bucket using the control lever for the lift frame. Read the chapter “Control lever for lift frame“.

Operation

PLEASE NOTE

Before carrying out work for the first time, practice handling the bucket.

When tilting out the bucket and loading vehicles, you can perform two work movements at the same time if necessary, e.g. lifting and tilting out or lowering and tilt- ing in. To do so it is necessary to overlay the movement on the control lever (Fig. - 43).

0 = Zero position

1 = Lift

2 = Lower

2a = Float position

3 = Tilt in

4 = Tilt out

5 = lock attachment

6 = unlock attachment

The float position facilitates stripping during resurfacing work. To do so, lower the bucket with the tip to the ground. Then engage the control lever in position 2a. The bucket now lies on the ground, free to move and burdened only by its own weight.

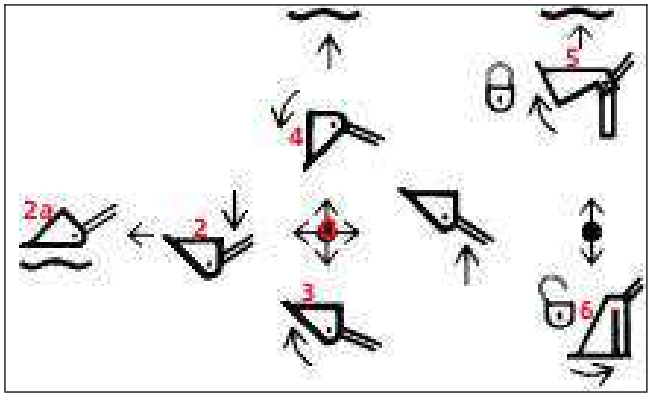


Fig. - 43 Control lever movements

Working with the bucket

DANGER

Danger of accidents from the loader tipping over! Drive only with the lift frame lowered. Especially when turning if the loader is jack-knifed, there is a danger of tipping. Drive at an appropriate speed. Do not use the loader if downhill slopes are too steep.

PLEASE NOTE

Adjust your driving speed when driving into the loading material, according to the type of material and the respective conditions.

Make sure that no excessive wheel slip occurs. Tire wear and fuel consumption will increase unnecessarily and the loader‘s performance will not be fully utilized.

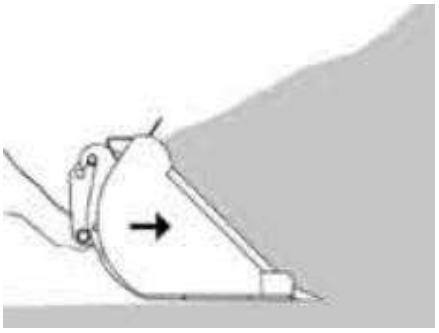


Fig. - 44 Loading work 1

Lower the bucket to pick up loose material so that it is parallel to the ground and move it into the material to be loaded. Here the driving speed should correspond to the type of material and the respective working condi- tions (Fig. - 44).

Now raise the lift frame slightly so that the weight is on the loader‘s front axle. This is to avoid excess wheel slip. You can also manually restrict wheel slip by inching.
If the bucket is filling up, tilt it in. You can now drive off with the filled bucket to the unloading site (Fig. - 45).
Drive straight up to the unloading site and do not lift the bucket until just before you have arrived there.

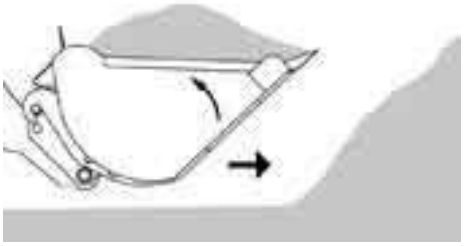


Fig. - 45 Loading work 2

If material is to be loaded which the bucket cannot easily penetrate, you can create an up-and-down movement with the scraping edge of the bucket. This makes it easy for the bucket to penetrate the material (Fig. - 46).

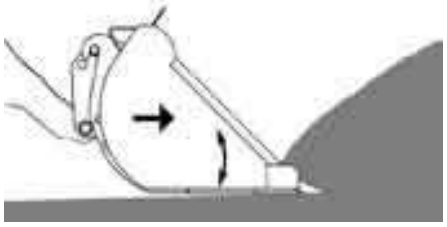


Fig. - 46 Loading work 3

Excavation work

Soft foundation:

Lower the bucket to the ground to lift out soft material and tilt the bucket forward until you have a digging angle. If you start driving the loader forward now, the bucket‘s digging edge will break into the ground. Now make the tilting angle flat to remove as even a layer as possible and to avoid a large amount of wheel slip (Fig. - 47).

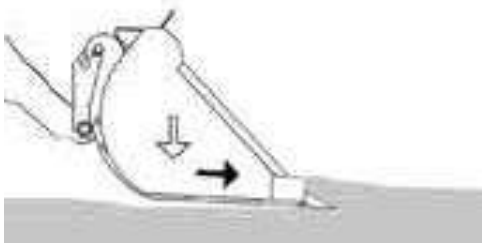


Fig. - 47 Excavation work 4

Hard foundation:

Lower the bucket to the ground to lift out hard material and tilt the bucket forwards until you have a digging angle. When you drive the loader forwards now, slightly press the bucket downwards so that it can break into the ground. Should the bucket‘s digging angle penetrate the ground, make the tilting angle flatter. Use the control lever to produce an up-and-down movement of the digging edge of the bucket (Fig. - 48).

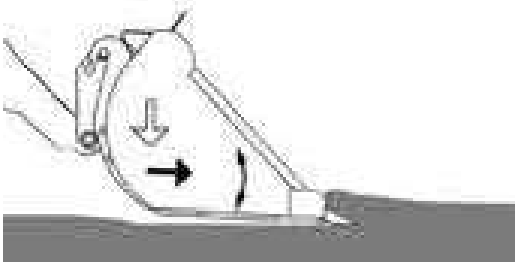


Fig. - 48 Excavation work 5

5.4.9 Measures in the event of the loader tipping over

CAUTION

Danger of engine damage!

Turn off the engine immediately if the loader gets into an extremely inclined position or tips over due to improper or careless operation.

Do not start the engine after the loader has been righted again.

Inform a specialist garage. The engine must be checked by trained, specialized personnel and be authorized to be operated again.

ENVIRONMENTAL NOTE

Danger of environmental damage!

Right the loader as soon as possible so that oil and fuel cannot escape.

Immediately soak up with binding material any oil or fuel that has leaked, and dispose of it separately from other waste in an ecologically sound manner.

5.4.10 Precaution measures for various weather conditions

At high outside temperatures

Take the following precautions at high temperatures to prevent the loader from being damaged:

• Regularly check the cooling system:

- Keep the water and oil coolers clean
- Make sure that the coolant level is always correct
- Use the proper coolant mix.
- Regularly check the cooling system for leaks
- Regularly check the condition and tension of the fan pulley

• Use engine lubricating oil of the proper viscosity class.

• Regularly check the engine air filter.

At low outside temperatures

DANGER

Danger of accidents due to a change in ground conditions. Snow, mud and ice can result in accidents.

Danger of accidents from poor visibility! Clear the cab windows of ice before beginning work.

PLEASE NOTE

At particularly low temperatures, i.e. -18°C or less, an additional starting aid may be necessary. Examples of this are a fuel, oil and coolant heater and additional batteries. Consult a specialist distributor.

CAUTION

Due to the high viscosity in the hydraulic system and engine oil circuit at temperatures below 0°C, major technical damage can occur if speed is increased immediately.

Let the engine run for a certain period of time at low speed if temperatures are below 0°C. The lower the outside temperatures, the longer the warm-up phase.

Observe the hydro filter‘s pressure display.

Do not switch two batteries in series to produce a starting voltage of 24 V.

Take the following precautions at low temperatures to prevent the loader from being damaged and to make the loader easier to start:

• Use the proper coolant mix.

• Use engine lubricating oil of the proper viscosity class.

• Use diesel fuel for low temperatures.

• Fill the fuel tank at the end of the work shift.

• Make sure the battery is always fully charged.

• Install the cold starting aid (see note above!)

5.5 Additional equipment

Loaders built for a maximum speed of more than 20km/h have special requirements for users/operators regarding licence requirements and required insurance.

It is still possible that registration and a licence plate may be required when driving on public roads.

The operator is solely responsible for meeting these requirements/obligations.

Changeover valve applies tilting in/out function to additional hydraulics

PLEASE NOTE

If the loader is equipped with an electric socket and changeover valve, the electric socket is switched via an additional pull switch (similar to Fig. – 49).

Function:

The function is switched using the switch, item 2 (Fig. – 53), on the multi-function lever. You can use this function to switch actuation of the hydraulic connections to the multi-function lever. Then you do not need to let go of the multi-function lever to activate the additional hydraulics.

Fig. - 53 Switch for changeover valve

Switching the changeover valve:

• Press the button Item 2 (Fig. – 53):

– The “tilting in“ function actuates the left hydraulic connection.

– The “tilting out“ function actuates the right hydraulic connection.

• Let go of the button Item 2 (Fig. – 53):

– The “tilting in“ function tilts the attachment in.

– The “tilting out“ function tilts the attachment out.

Hydro connection additionally via changeover valve

Function:

The function is switched using the switch, Item 2 (Fig. – 53), on the multi-function lever. This function allows you to activate additional hydraulic connections using the multi-function lever. This function is necessary if the standard hydraulic connections do not suffice for certain attachments. You can activate the standard hydraulic connections using the control lever for the additional hydraulics and the additional hydraulic connections using the multi-function lever.

The changeover valve is switched in the same way as in “Changeover valve applies tilting in/out function to additional hydraulics“.

Hydro connection additionally via additional control device

Function:

The function is switched using an additional control lever (Fig. – 54) adjacent to the driver‘s seat on the right.

This function allows you to actuate additional hydraulic connections. This function is necessary if the standard hydraulic connections do not suffice for certain attachments.

Fig. - 54 Additional control lever

Hydraulic PTO Confluence Switch.

Turn on this switch the flow of the PTO is combined the two pumps (Only turn on this switch "P_{x2}" when there's motor on the attachments).

Fig. - 54 Additional control lever

6 TOWING AND TRANSPORTING

DANGER

Only tow the loader if the steering and brakes are functional, and if it cannot be transported in any other way.

Only tow the loader using a tow bar or a tow cable.

Do not allow people in the danger area of the tow bar or tow cable while the loader is being towed.

Do not allow the tow bar or tow cable to become damaged; the fracture load must be at least three times as great as the tractor‘s pulling power.

The tractor must have sufficient pulling power. The tractor driver and the loader driver must agree on their intentions and proceed carefully.

Secure the loader against rolling away and from unauthorized use after it has been towed.

CAUTION

Danger of damage due to the hydraulic system over- heating!

Tow the loader only as far as necessary to retrieve it from the danger area, but not more than 500 meters.

The towing speed must not exceed 5 kph.

Use a transport machine for longer stretches, or repair the loader on-site.

Towing equipment

CAUTION

Do not use the towing equipment to pull trailer loads.

Fig. - 55 Towing equipment

Short-circuiting the drive

DANGER

Danger of accidents due to the driver‘s platform tip- ping over! Do not tow the loader until the driver‘s platform has been secured.

CAUTION

Danger of damage to the hydraulic system!

Screw in the stud bolts Item 1 (Fig. - 56) no further than described in point 3, since otherwise important valve parts of the axial piston variable displacement pump could be destroyed.

After towing the loader, unscrew the stud bolts again up to the stop and secure them with the hexagon nuts item 2 (Fig. - 56). Otherwise the loader cannot be driven.

Blocking the articulated joint

CAUTION

Always block the articulated joint before the loader is lashed.

Do not actuate the steering when the articulated joint is blocked.

After transporting the loader, release the buckling guard first.

The buckling guard Item 1 (Fig. – 57) is fitted to the rear carriage on the bolts attached for it and secured with spring cotters.

1. Drive the loader so that it stands straight.

2. Unscrew the spring cotters.
3. Move the buckling guard Item 1.
4. Secure the buckling guard with the spring cotters.

Release the blocking in the reverse order.

Fig. - 57 Buckling guard Articulated joint free

Articulated joint blocked

Moving the loader onto a transport vehicle

DANGER

Danger of accident due to improper loading.

Clean coarse dirt off the loader before loading and transporting it.

Use transport machines with appropriate load-bearing capacity (observe the operating weight of the loader).

Danger of accidents due to falling or slipping when loading the loader!

Exercise caution when loading and transporting under snowy and icy conditions!

Loading with crane

DANGER

Danger of accident due to improper loading.

Block the articulated joint before applying the hoist- ing tackle, using the buckling guard as described in the chapter “Blocking the articulated joint“.

Use only sufficiently dimensioned hoisting gear which is not damaged (observe the operating weight of the loader).

After loading on the transport machine, secure the loader as described in the chapter “Securing the loader“.

Use the attachment points (Fig. – 59) that are marked with stickers (Fig. – 58) to hook in the hoisting tackle. To do this, unscrew the screw which is holding the rear attachment eyelets, in order to turn these.

Fig. - 58 Attachment point stickers

Fig. - 59 Attachment points from rear

Independent driving onto the transport device

DANGER

Danger of accident due to improper loading.

Use only sufficiently dimensioned loading ramps that are not damaged (observe the operating weight of the loader).

There should not be any oil or grease on the transport surface and the loading ramps.

After driving the loader onto the transport machine, secure it as described in the chapter “Securing the loader“.

Block the articulated joint using the buckling guard as described in the chapter „Blocking the articulated joint“.

Lashing the loader

DANGER

Danger of accident due to improper loading.

Always block the articulated joint before the loader is lashed.

Use wheel chocks to prevent the loader from slipping or rolling away.

Lash the loader only to the special attachment points as depicted in Fig. – 62 .

Use lashing equipment with appropriate load-bear- ing capacity (observe the operating weight of the loader).

As attachment points to which to lash the loader, use the towing equipment and the attachment points marked with stickers (Fig. – 60), which are located on the steps on the right and the left (Fig. - 61).

Fig. - 60 Lashing point stickers

Fig. - 61 Lashing points from rear

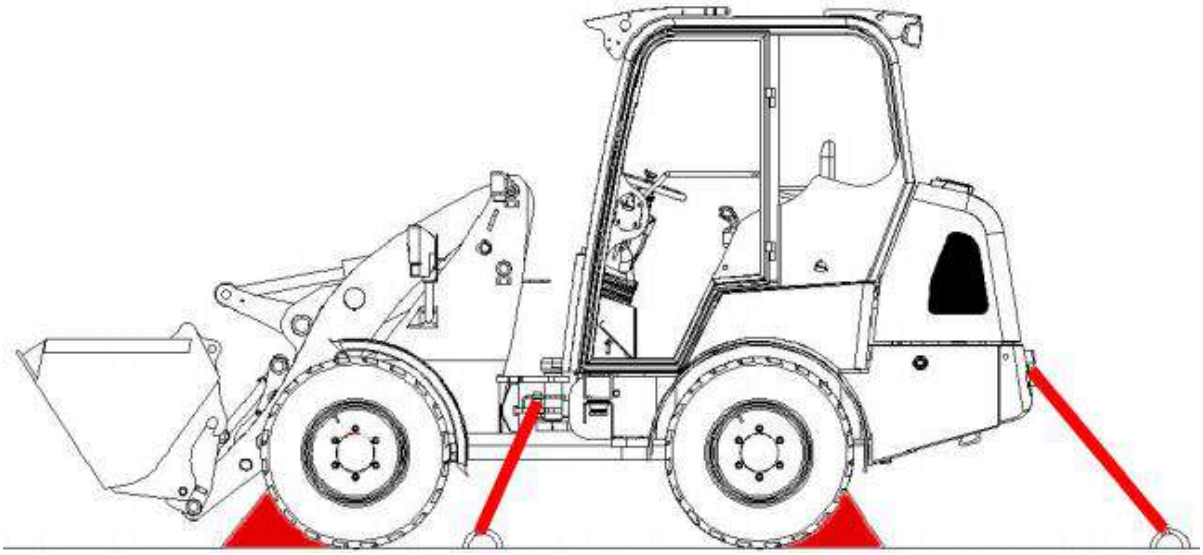


Fig. - 62 Lashing the loader

7 MEASURES IN THE EVENT OF POWER LOSS

DANGER

Danger of accidents due to uncontrolled lift frame movements!

Should the loader experience power loss, for example if the engine, the driving hydraulics or the working hydraulics fail, immediately but carefully lower the lift frame to the ground and relieve the individual control circuits of the working hydraulics from residual pressure by activating the control lever.

For loaders with countersunk brake valves, the lift frame may only be lowered and the residual pressure discharged exclusively by trained specialized personnel as described in the chapter “Relieving residual pressure in the hydraulic system“.

8 DISCHARGING RESIDUAL PRESSURE IN THE HYDRAULIC SYSTEM

DANGER

Caution! Danger of injury! A fine jet of hydraulic fluid under high pressure can pierce the skin. Go to a doctor immediately should you get hydraulic fluid in your eyes or on your skin. Open only depressurized hydraulic systems.

Even for a loader parked on a horizontal surface with its lift frame completely lowered and engine turned off, there can still be considerable residual pressure in parts of the hydraulic system.

Residual pressure reduces gradually at first. If a hydraulic system is to be opened immediately after being shut down, the system must be depressurized ahead of time.

PLEASE NOTE

As it is only possible to activate the lift frame and the attachment within a limited time if the engine fails, or if the hydraulic system fails, you must completely lower the lift frame immediately after an engine failure or hydraulic failure, and discharge the residual pressure in the hydraulic circuits.

Proceed as follows to reduce the residual pressure in the hydraulic circuits (adhere to the order of the individual work steps):

1. Lower the lift frame as far as it will go.
2. Turn off the engine.
3. Immediately after turning off the engine, actuate all the control levers and pedals for the hydraulic system several times in all directions.
4. Relieve the hydraulic tank by opening the filler neck, illustration 1 (Fig. – 63).
5. Remove the preload from the drive‘s system by opening the return filter, illustration 2 (Fig. – 63).

Illustration 1

Illustration 2

Fig. - 63 Reducing residual pressure

9 SECURING THE LOADER

The following instructions apply to stopping and parking the loader after daily operation, transporting the loader and to all servicing, inspection and repair work!

- Place the loader on an even, dry surface that can support sufficient weight.
- Lower the lift frame.
- Pull the parking brake and stop the motor.
- Switch off all electrical switches.
- Depressurize all control circuits and put all control levers in zero position.
- Secure the loader with the wheel chock.
- Clean dirt off the loader.
- Perform a visual inspection to make sure there are no leaks:

in the hydraulic system

in the cooling system

in the fuel system

- Perform a visual inspection for damage to the load- er, especially on the tires, attachments and locking mechanism for the attachments.
- Fill the fuel tank and check the other operating ma- terials.
- Secure the loader against unauthorized use: Remove the ignition key

Close the windows, doors, tank lid and engine hood.

Storing the battery:

- Remove the battery.
- Clean the battery.
- Charge the battery.
- Store the battery in a dry, well-ventilated room at approx. 20°C.
- Check the acid level once a month.
- Recharge the battery before installing it again. Restarting the loader
- Remove the engine preservative.

- Install the battery.
- Check the air pressure of the tires.
- Remove the preservative for the hydraulic cylinders‘ piston rods.
- Lower the loader.
- Check the functioning of the electrical system.
- Unblock the articulated joint.
- Vent the hydraulic system.
- Check the functioning of the steering and the brakes.

Remove preservatives from the engine

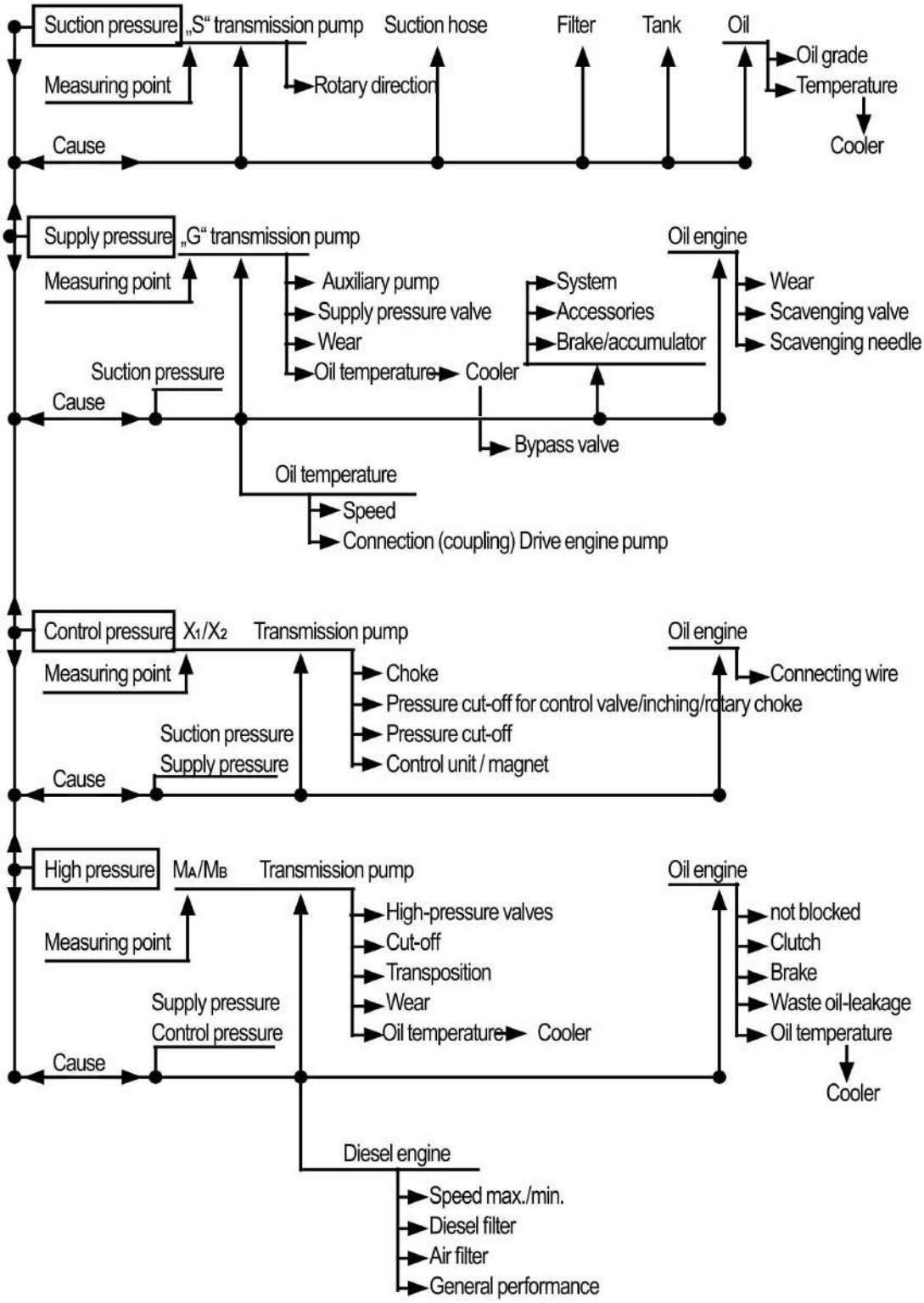
- Remove the closures from the intake and exhaust opening of the engine.
- Remove the anti-corrosion agent from the pulley.
- Install the fan belt.
- Drain the preservative oil and pour in engine oil.
- Start up the engine.
- Check the V-belt tension after the first two operating hours.

10 TROUBLESHOOTING AND EMERGENCY MAINTENANCE

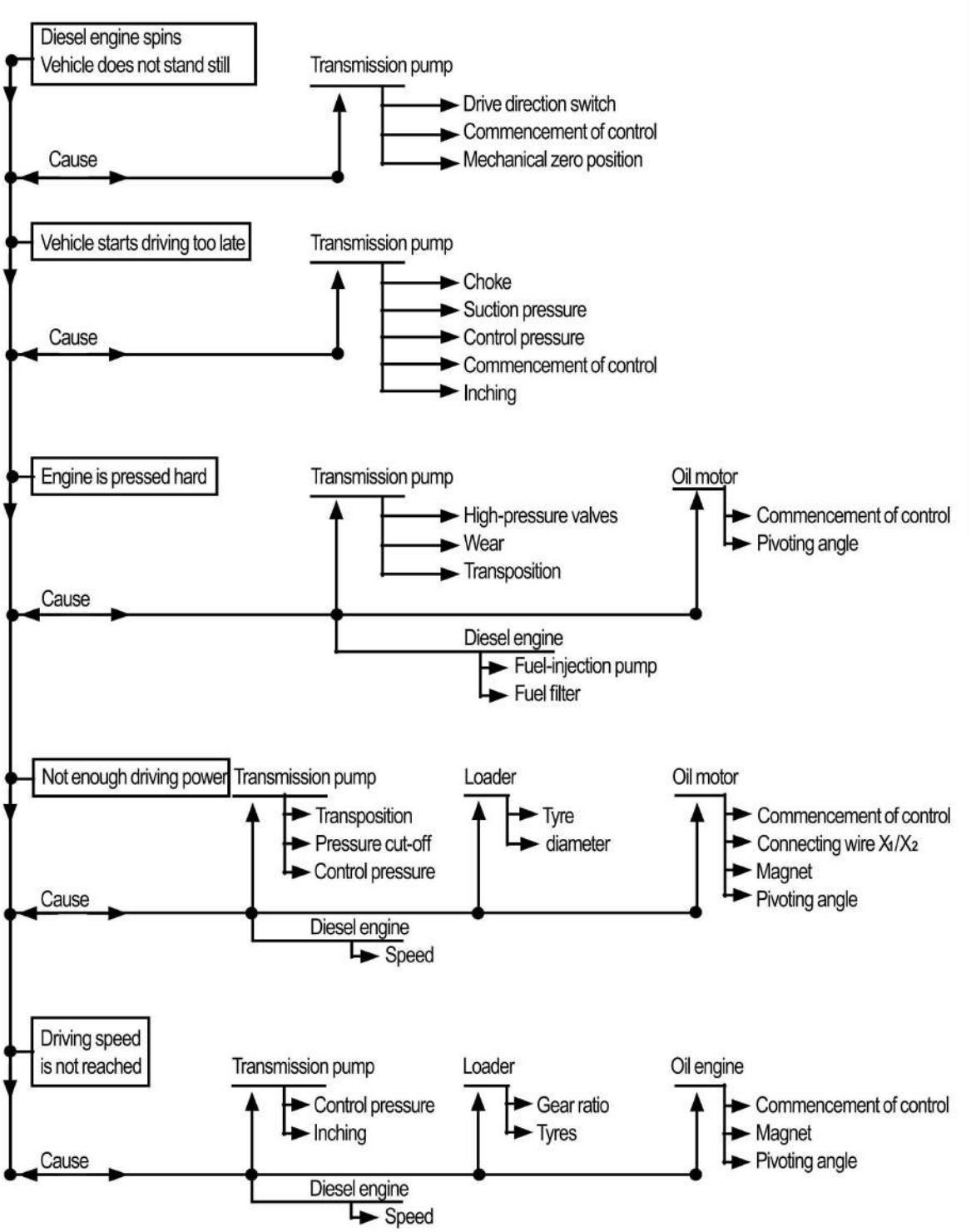
Fault / malfunction	Possible cause	Remedy
Engine does not start	Handbrake not set, drive direction switched	Set the handbrake, shift to 0
	Fuel tank empty	Fill up the tank and vent the fuel system if necessary
	Fuel filter clogged, paraffin separation in winter	Change the fuel filter, use winter diesel
	Release magnet on the engine does not at- tract	Check the fuses
	Fuel line is leaky	Retighten all the threaded connections and clamps
	Starting speed too low	Check and charge the battery, check that battery terminals fit tightly
Engine is running but loader will not drive	Set the handbrake	Release the handbrake
	Handbrake switch is defective	Replace the handbrake switch
	Inch cartridge is not in 0 position	Check and, if necessary, repair the inch car- tridge and brake shoe return spring
	The magnets on the transmission pump are not getting any power	Check the fuses, and have the multi-function lever and the electronics checked at the garage

Fault / malfunction	Possible cause	Remedy
The engine is getting too hot	The water / oil cooler on the engine is dirty	Clean it
	Coolant level is too low	Fill it up
	The thermostat is jammed	Have the thermostat replaced at the garage
	V-belt loosened from the fan blade	Tighten the V-belt
	Oil level is too low or too high	Adjust the oil level
The hydraulic system is get- ting too hot	Hydraulic oil cooler is dirty	Clean it
	V-belt loosened from the fan blade	Tighten the V-belt
	Hydraulic fluid level is too low	Top up the hydraulic fluid
	Load too high	Reduce the machine load, take breaks
Machine performance is too low	Air filter is dirty	Replace it
	Wrong fuel grade	Change the fuel
	Inching is stuck	Check, repair
	Engine speed is too low	Adjust it

Troubleshooting for transmission pump / oil engine



Troubleshooting for the loader



11 SAFETY INSTRUCTIONS FOR REPAIRS

The “Safety instructions for repairs“ section does not consist of instructions for repairs, but rather of safety instructions which, in addition to the generally valid safety regulations for repair work, refer to hazards that could occur during repair work, and of notes which should prevent the machine from being damaged during repairs.

Specific repair instructions are not included in this operating manual.

11.1 General safety regulations for repairs

Operating manual:

- Carry out repairs only if you have read and understood the operating manual.

Observe in particular:

- The basic safety instructions.
- The basic safety instructions for servicing and inspection.
- All warning signs and instructions attached to the loader.
- That the descriptions of work processes provide the necessary instructions only for experienced specialized personnel.
- That the operating manual is always kept with the loader

Repair personnel:

- Repair personnel must have specialized knowledge and experience in repairing this or comparable loaders.
- Should knowledge be lacking, training by experienced repair, e.g. TAIAN Service, should be carried out.

Blocking the articulated joint:

- Always block the articulated joint with the buckling guard when carrying out repair work in the bending region.
- Remove the blocking after completing the repair work.

Pre-stressed aggregates:

- Do not open the defective pre-stressed aggregates (e.g. accumulators); always completely replace them.

Removing components:

- Danger of burning from hot parts or fluids! Do **not** remove components when the loader is warm from operation.
- Depressurize pipes and hoses, cylinders, coolers, the hydraulic tank, pressure tanks and other systems or aggregates before beginning work.
- Replace defective components in a timely manner.

- Clean components carefully before removing them.
- Mark the parts removed in the correct order so that you do not make mistakes when installing them.
- When removing a component, plug the cleared connections, open holes and housing carefully so that no dirt can infiltrate.

Do not remove seals or sealing wax:

- Changing rated pressures for relief valves is prohibited without the express consent of TAIAN .
- Do not damage or remove seals and sealing wax on the engine, the pressure limiting valves and accumulators.

After completing the repair:

- Put protective paint on all uncoated machine parts to prevent corrosion damage.
- Install the cab mounting screws again after the repair work has been completed.
- Reattach all safety devices, covers and noise/vibration insulation after repair work has been completed.
- Check the functioning of the loader, in particular the parts repaired in trial operation. Make sure that no one is in the loader‘s danger area.
- Do not approve the loader for operation until all the loader‘s areas function properly.

11.2 Engine

- Carry out repair work only if the loader is secured as described in the chapter “Securing the loader“.
- Danger of injury from rotating parts and hot parts. Let the engine cool off first, after stopping the loader.
- Check the V-belt only when the engine is stopped.

11.3 Welding work

- Only people trained to weld may carry out welding work.
- Only certain authorized individuals under the super- vision of a competent person may weld containers which contain or have contained substances that are combustible, promote combustion, are explosive, or can, during welding, produce vapor, gas, mist or dust that are hazardous to health. Should you have problems or questions, it is imperative that you consult the TAIAN Service.

Before carrying out welding work on the loader

- Disconnect the battery as described in this operating manual.
- Disconnect the positive pole (terminal B+) on the generator.
- Switch OFF the battery disconnect switch (if present).
- Safeguard stripped terminals and connections against short-circuiting.
- Attach the welding current terminal in the immediate vicinity of the welding site.

Do not allow the welding current to pass through gears, bolts, articulated joints or hydraulic cylinders.

After welding has been completed:

- Reconnect all the electrical connections and check that they function.
- Connect the battery as described in this operating manual.

11.4 Hydraulic system

- Before carrying out repair work, depressurize the hydraulic system as described in the chapter “Discharging residual pressure in the hydraulic system“.
- Replace damaged and leaky hydraulic lines and hoses with new ones. Do not use used hoses.
- Replace hydraulic hoses after six years of use.
- Dispose of any leaking oil and waste containing oil in an ecologically sound manner.
- Observe the „Basic safety instructions for servicing and inspection“.

11.5 Brakes

- Repair work on brakes may only be carried out if the persons performing this work are suitably trained. In case of doubt, the work must be carried out by the TAIAN Service.
- Using a brake fluid other than the one specified by the manufacturer is prohibited.
- Observe the notes on health hazards and environ- mental protection when working with brake fluid.
- Carry out repair work on the brakes only if the loader is secured as described in the chapter “Securing the loader“.

12 FINAL SHUTDOWN OF THE LOADER / DECOMMISSIONING

ENVIRONMENTAL NOTE

Avoid environmental damage. Do not allow oil and waste containing oil to spill on the ground or get into bodies of water!

Dispose of different materials and operating fluids/ auxiliary materials separately and in an ecologically sound manner.

Should you no longer plan to use the loader as intended, make sure that it is shutdown, i.e. decommissioned, and disposed of according to the valid regulations.

Before disposing of the loader:

- Observe all the valid safety regulations regarding shutdown of the loader.
- Make sure that the loader cannot be operated from the time of shutdown to further disposal.
- Make sure that no environmentally hazardous operating fluids or fuel escape and that the machine poses no other dangers in the place where it is standing.
- Protect the loader against unauthorized use. Close all openings (doors, windows, engine hood) and secure the loader as described in the chapter „Securing the loader“.
- Attach all the safety devices.
- Eliminate leaks on the engine, tanks and hydraulic system.
- Remove the battery.
- Store the loader in a place protected against access by unauthorized persons.

Disposing of the loader:

- Subsequent recycling of the loader must take place in accordance with the current state of the art at the time of recycling, taking into account the accident prevention regulations.
- Dispose of all parts at the sites provided for them, depending on the material.
- Take care to separate the materials when recycling.
- Make sure that operating and auxiliary aids are dis- posed of in an ecologically sound manner.

13 APPENDIX

13.1 Ordering replacement parts

CAUTION

Use only “original TAIAN replacement parts“ for your loader!

PLEASE NOTE

Please always provide us with the following data for ordering replacement parts. This is the only way we can assure smooth processing of your order and de- livery of the replacement parts.

- TAIAN- machine type
- Specify the chassis number of the machine (see rating plate)

For the engine, specify the respective engine number

- Item number and designation of the replacement part
- Address with telephone number (in the event of questions)
- Customer number (if available)
- Name of the orderer
- Shipping method (see below)

We reserve the right to change the replacement parts list.

If you are a new customer, please provide a correct ad- dress so that we can properly process future orders, etc. The first delivery is C.O.D.

Do not forget to indicate the desired shipping method in your order.

- Overnight shipping
- Parcel service
- Forwarding agent

PLEASE NOTE

Enter the most important data for your loader on this page. In this way, you can quickly access the vehicle ID no. and other important data when ordering re- placement parts.

Loader type: Service garage (name;address):

Vehicle ID no.:

Engine type:

Engine no.:

Delivery date:

Importer (name; address):

13.2 Inspection verification

PLEASE NOTE

Enter the inspections as they are carried out.

1st Inspection	**2nd Inspection**
Carried out on:	Carried out on:
Operating hours:	Operating hours:
3rd Inspection	**4th Inspection**
Carried out on:	Carried out on:
Operating hours:	Operating hours:
5th Inspection	**6th Inspection**
Carried out on:	Carried out on:
Operating hours:	Operating hours:
7th Inspection	**8th Inspection**
Carried out on:	Carried out on:
Operating hours:	Operating hours:
9th Inspection	**10th Inspection**
Carried out on:	Carried out on:
Operating hours:	Operating hours:

11th Inspection

Carried out on:

Operating hours:

Stamp / signature of the garage

13.3 First inspection

First inspection Follow the operating manual for the engine.

Check off the tasks that have been carried out

Items:	Results
Check the transmission, engine and hydraulic system for leaks	
Check the hydraulic, water and engine oil coolers for dirt	
Check the coolant level and antifreeze	
Check the tension and condition of the V-belt	
Make sure all hoses and pipes fit tightly	
Check the routing of the hoses and pipes	
Check the piston rods for the hydraulic cylinders	
Check the routing of the bowden cables and electrical wiring	
Re-tighten all the screws. Observe in particular the engine suspension, axle mounting and propeller shaft	
Check: Instruments + audible warning devices	
Check the electrical system	
Check the foot brake and parking brake, adjust if necessary	
Check the hydraulic steering	
Check the lighting system (if present)	
Check the idle speed	
Check the valve clearance, adjust if necessary (only Perkins 1004-4)	
Check the functioning of the door and engine hood mechanisms	
Check ROPS / cab	
Check the condition of the tires	
Change the engine oil and filter	
Clean the air filter, replace if necessary	
Change the hydro return filter	
Have all the grease nipples been lubricated? Lubricate if necessary	
Lubricate the propeller shafts (universal joint)	
Lubricate all the levers, cables and hinges with oil	
Check all oil levels, also the transmission and axles.	

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