This Operator’s Manual for the Zetor tractors, which we are presenting to you will help you to become familiar with the operation and maintenance of your new tractor. Although many of you have rich experience with the operation of other tractors, please, read the information contained in this Operator’s Manual very carefully. In the Manual you will find a lot of new information and get a perfect overview of how to use the tractor with maximum efficiency during various kinds of work. If you observe the rules of tractor operation and maintenance and driving safety, your new tractor will become your reliable and long-term friend. The manufacturer of the tractor wishes you thousands of hours of satisfactory work.

ZETOR
Brno

The technical specifications and information about the design, equipment, material and appearance are valid at the time of print. The manufacturer reserves the right to implement changes.

The instructions for use are a part of the machine.
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LOCATION OF SERIAL NUMBERS

Location of serial numbers

The engine number is stamped on the left side of the engine (1). The chassis number (VIN) is stamped on the right side of the front axle console (2). The tractor identification plate is located on the right side of the front axle console (3).

Tractor identification plate
1 - Tractor VIN
2 - Table of weights and maximum permissible weights

Warranty of the product
The manufacturer warrants this product and full details of the warranty are provided on a separate warranty schedule.

Parts
To obtain spare parts please contact your nearest dealer and give him the details listed below.

Tractor model
Tractor serial number
Tractor engine number
Part number and description
Quantity required
ABOUT THIS MANUAL

This manual has been prepared to assist you in following / adopting the correct procedure for running-in operation and maintenance of your new ZETOR Tractor.
Your tractor has been designed and built to provide maximum performance, low fuel consumption and ease of use. To maintain the condition and ensure trouble-free performance, it is important that maintenance is performed at the recommended intervals as described in this manual.
Read this Manual carefully and keep it in a convenient place for future reference.
If at any time you require advice concerning your Tractor, do not hesitate to contact your Authorized ZETOR dealer / Distributor. He has trained personnel, genuine parts and necessary equipments to undertake all your service requirements.
All data given in this book is subject to production variations. Dimensions & weight are approximate only and the illustrations do not necessarily show Tractors in standard condition.
For exact information about any particular Tractor, please consult your ZETOR dealer / Distributor.
Tractor an introduction

The word 'tractor' is derived from 'traction', which means towing.

A tractor is necessary for drawing or towing equipment, implements or carts that are suitably connected to the tractor body.

The tractor can also be used as a driving machine, thanks to the Power Take-off or PTO shaft.

This manual provides instructions for the operation, maintenance and storage of all Zetor tractor models.

This material has been elaborated in detail to help you better understand maintenance and efficient operation.

If you need information not provided in this manual or the services of a trained mechanic, please contact Zetor Dealer/distributor at your location. Dealers and distributors are kept informed about the latest methods of servicing tractors.

They are supplied with original spare parts and are fully supported by the manufacturer.

Through this manual

The use of the terms LEFT, RIGHT, FRONT and REAR must be understood, to avoid any confusion when following the introductions. The LEFT and RIGHT means left and right sides of the Tractor when facing forward in the driver's seat, Reference to the FRONT indicates the radiator end of the Tractor, while the REAR, indicates the drawbar end (Fig. U18N002).

When spare parts are required, always specify the Tractor and engine serial number when ordering these parts. (See Fig. U18N001). This will facilitate faster delivery and help ensure that the correct parts for your particular Tractor is received. The tractor serial number is punched on a plate attached to the left hand side of the engine body (See Fig. U18N001). For easy reference, we suggest you to write the number in the space provided in the owner's personal data.
INTRODUCTION & DESCRIPTION

Description

General construction
The transmission case, clutch, clutch housing, engine and front axle support are bolted together to form a rigid unit.

Front Axle and wheels
The 4WD front axle is a center-pivot, reverse Eliot type. The front wheel drive mechanism is incorporated as a part of the axle.
The front wheel drive power is taken off the rear transmission and transmitted to the differential in the front axle where the power is divided into right and left and to the respective final cases.
In the final cases, the transmitted revolution is reduced by the level gears to drive the front wheel. The 4WD mechanism with level gears provides wider steering and greater durability.

Clutch and transmission
A single plate dry clutch (10.24' diameter) is used on these tractors. Tractor with PTO (Power Take Off) are fitted with hydraulic clutch assy the transmission gear box has 16 forward & 16 revers speeds of presently.
Zetor tractors are fitted with partial synchro mesh type gears.

Brakes
Tractors are equipped with independent disc brakes. The handbrake lever is adapted for parking.

Rear axle and wheels
This is mounted on ball bearings and is enclosed in removable housing which are bolted to the transmission case. The rim & Disc fitted with rear tires are bolted to the outer flange of rear axle.

Hydraulic system and links
Zetor tractors are equipped with a 'Live' independent hydraulic system (i.e.the system is operational even when the clutch is disengaged). The three-point hitch links are equipped with extendable ball-ends that can be used for Category I implement types.

Steering
It consists of hydrostatic power steering system, which has a hydraulic cylinder and tandem type hydraulic pump.

Electrical system
A 12 Volt lead acid propylene battery is used to activate the engine through the starter motor and the electrical system comprising horn, head lamp. Side indicator lamps, plough lamp, brake light, gauge lamp, hazard lamp. Generator or alternator, fuse box also from part of the electrical system.

⚠️ Warning: When operating the tractor at High speed, Do not attempt to make sharp turns by using the brakes. This may result in overturning of the Tractor causing serious injury or DEATH.
Roll over protective structures (ROPS)
ZETOR Tractors are equipped with a frame for the protection of operators.
In the case of cab tractors the frame is incorporated in the cab structure.
The objective of the frame or cab structure is to protect the operator in the event of a roll over and they are
designed to support the entire weight of the tractor in that event.
Each ZETOR ROPS frame or cab structure is designed and has been tested to meet industry and or
Government standards.
Included in these tests were all mounting bases and bolts or other fasteners.

DANGER
*For ROPS frames to be effective and protect the operator, the seat belt provided must be worn in
order to keep operators within the ROPS protected area in the event of a roll over. Failure to use the
seat belt can still cause serious injury or death.*

On some models the ROPS frame has a fold down feature, which can be used to enter low buildings etc.
Take care when lowering the upper section of the ROPS frame and take extreme care while driving the
tractor with the ROPS frame lowered.
Do not wear the seat belt with the ROPS lowered and please remember that the fold down facility is for
special circumstances only and must not be lowered for general use.

Use of the tractor with the ROPS lowered can cause fatal injuries
As the ROPS frame or cab together with the seat belt was designed to meet certain standards, they must be
maintained in good order and condition. To achieve this objective, both the structure and the seat belt should
be inspected on a regular basis (every time the tractor is serviced).
In the event that the seat belt is damaged or frayed, it should be replaced and in the event that the ROPS
frame or any part of the mounting structure is damaged or cracked, the faulty component must be replaced
with a new unit. Such a unit must meet all of the test criteria of the original unit. Fitment of an inferior item or
items affects the certification of the entire ROPS structure and the effectiveness of the structure in the event
of an accident. **Drilling or welding of the ROPS structure is forbidden.**

Damage of the ROPS
If the tractor has rolled over or the ROPS has damaged
(such as striking an overhead object during transport), it
must be replaced to provide the original protection. After
an accident, check for damages to the 1.ROPS 2.Seat
3.seat belt & seat mountings. Before you operate
a Tractor, replace all damaged parts.

⚠️ **Warning:** Do not weld, drill or straighten the ROPS.

⚠️ **Warning:** Never attach chains, ropes to the ROPS for pulling purposes; this will cause the
Tractor to tip backwards. Always pull from the Tractor drawbar. Be careful when driving through
door opening or under low overhead objects. Make sure there is sufficient overhead clearance for the
ROPS fatal injuries.

⚠️ **Warning:** If the ROPS is removed or replaced, make certain that the proper hardware is used to
replace the ROPS and the recommended torque values are applied to the attaching bolts.

⚠️ **Warning:** Always wear your seat belt if the tractor is equipped with ROPS.
Before operating a Tractor it is important to adjust the seat to the most comfortable position & check whether it is properly locked in its position. Figure 1 identifies the seat fitted to your Tractor.

**NOTE:** Do not use solvents to clean the seat. Use warm water with a little detergent added.

! **Caution:** Do not put a hand between the seat and the slides when adjusting the seat position. You can get injured unexpectedly.

To select seat position, move adjusting lever and slide seat closer to or away from dash panel and controls.

! **Danger:** Check whether the seat properly locked in its position before driving the tractor.

! **Danger:** Always use the seat belt when the ROPS is installed. Do not use the seat belt if a foldable ROPS is down or there is no ROPS. Check the seat belt regularly and replace if frayed or damaged.

**Seat back reclining**

1 - Seat belt  
2 - Seat back angle adjustment lever

To change the seatback angle, raise the lever on the left of the seat. Then, adjust the seatback angle with the lever pulled. Release the lever after adjustment. Make sure that the lever is returned and the seat is firmly fixed after adjustment.
Cushion strength adjustment
1 - Seat belt
2 - Knob for weight adjustment

The seat cushion can be adjusted according to the weight of the driver. Turning the cushion adjustment lever counterclockwise to the 50 kg position makes the cushion lighter, and turning the lever clockwise to the 130 kg position makes the cushion heavier.
SAFETY INSTRUCTIONS

Introduction to safety information

⚠️ This symbol means **ATTENTION! YOUR SAFETY IS INVOLVED.** The message that follows the symbol contains important information about safety. Carefully read the message.

Signal words

⚠️ Danger

⚠️ Warning

⚠️ Caution

A signal word - DANGER, WARNING OR CAUTION - is used with safety alert symbol. DANGER identifies the most serious hazards. Safety signs with signal Word - DANGER OR WARNING - are typically near specific hazards. General precautions are listed on CAUTION safety signs.

Introduction to safety instructions

Carefully read all safety instructions given in this manual for your safety. Tempering with any of the safety devices can cause serious injuries or death. Keep all safety signs in good condition.

Replace missing or damaged safety sings.

Keep your tractor in proper condition and do not allow any unauthorized modifications to be carried out on the tractor, which may impair the function/safety and affect tractor life.

Protection children

When using the tractor, prevent other persons from accessing the tractor.

Reverse travel

- Look around if someone is not behind the tractor.
- Do not allow anyone to ride on the tractor or implement.
Use of rops and seat belt
The Roll Over Protective Structure (ROPS) has been certified to industry and/or government standards. Any damage or alteration to the ROPS, mounting hard-ware, or seat belt voids the certification and will reduce or eliminate protection for the operator in the event of a roll-over. The ROPS, mounting hardware, and seat belt should be checked after the first 100 hours of tractor and every 500 hours thereafter for any evidence of damage, wear or cracks. In the event of damage or alteration, the ROPS must be replaced prior to further operation of the tractor.
The seat belt must be worn during machine operation when the machine is equipped with a certified ROPS. Failure to do so will reduce or eliminate protection for the operator in the event of a roll over.

Precaution to avoid tipping
Do not drive where the tractor could slip or tip.
Stay alert for holes and rocks in the terrain, and other hidden hazards.
Slow down before you make a sharp turn.
Driving forward out of a ditch or mired condition could cause tractor to tip over backward. Back out of these situations if possible.

Safe parking of the tractor
Before working on the tractor:
Lower all equipment to the ground.
Stop the engine and remove the key.

Keep riders off tractor
Do not allow other persons to ride on the tractor besides the operator.
Persons on the tractor are exposed to the risk of injury, e.g. due to the impact of a foreign object or falling from the tractor.
Handle fuel safely-avoid fires
Handle fuel with care; it is highly flammable. Do not refuel the tractor while smoking or near open flame or sparks. Always stop engine before refueling tractors. Always keep your tractor clean of accumulated grease, and debris. Always clean up spilled fuel.

Stay clear of rotating shafts
Entanglement in rotating shaft can cause serious injury or death. Keep PTO shield in place at all times. Wear close fitting clothing. Stop the engine and be sure PTO drive is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

Always use safety lights and devices
Use of hazard warning lights and turn signals are recommended when towing equipment on public roads unless prohibited by state or local regulations. Use slow moving vehicle (SMV) sign when driving on public road during both day & night time, unless prohibited by low.
Practice safe maintenance
Be thoroughly familiar with the service procedure before performing work.
Keep the tractor area clean and dry.
Do not attempt to service the tractor while it is in motion.
Be careful not to let your body or clothing get into the rotating shaft.
Always lower all attached equipment on the ground. Turn off the engine.
Remove the ignition key. Let the tractor cool down before any repairs.
All parts of the tractor that need to be lifted for service work must be securely supported.
Keep all parts in good conditions and properly installed.
Replace worn or damaged parts. Replace damaged/missing plates.
Remove any accumulated excess grease or oil from the tractor.
Disconnect the battery ground cable (-) before making adjustments to electrical systems or performing welding work on the tractor.

Avoid high-pressure fluids
Liquid escaping under pressure can penetrate the skin and cause serious injury. Be especially careful when handling the injection elements - there is a risk of injecting liquids under high pressure under the skin of your hands or other parts of your body. If ANY liquid penetrates the skin, contact your doctor immediately.

Prevent battery explosions
Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode. Never check battery charge by placing a metal object across the poles.
Prevent acid burns
Protect the top of the battery from sparks, flammable materials and open flames. Accumulated battery fumes can explode. Never check the battery charge by connecting the battery terminals with a metal object.

Sulfuric acid in the battery electrolyte is hazardous to health. It is strong enough to burn the skin, burn through the clothing and cause blindness when it gets into the eyes.

To ensure adequate safety, always:

1. Refill the batteries in a well-ventilated place.
2. Wear eye protection and acid-resistant gloves.
3. Do not inhale the released vapors after the electrolyte has been added.
4. Do not add water to the electrolyte, as it may cause expansion and subsequent severe burns.

If you get stained with acid:

1. Rinse skin with water.
2. Rinse eyes with water for 10 - 15 minutes. Seek medical advice immediately.

Battery disconnect
1. When working with your tractors electrical components you must first disconnect the battery cables.
2. To ensure that there are no accidents from sparks you must first disconnect the negative battery cable.
SAFETY INSTRUCTIONS

Service tractor safely
Do not wear a tie, scarf or any other loose clothing when working near moving parts. If any of these garments is caught, a serious injury may occur. Do not wear rings or other jewellery to avoid electrical short circuits and entanglement in moving parts.

Work in ventilated area
Do not start the tractor in an enclosed building unless the doors & windows are open for proper ventilation, as tractor fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area remove the exhaust fumes by connecting exhaust pipe extension.

Tractor runaway

1. The tractor may start when the gear is engaged, as a result of which the tractor may run uncontrolled and can cause serious injuries to people standing near the tractor.
2. When using the starter switch or other work on the tractor, the gearbox must be in the neutral position, the handbrake applied and the PTO lever disengaged.

Safety starter switch

1. Clutch operated safety switch is provided on all tractors which allow the starting system to become operational only when the clutch pedal is fully pressed.
2. Do not by-pass this safety starter switch or work on it. Only authorized dealers are recommended to work on safety starter switch.
3. On some models safety starter switch is provided on transmission high-low shifter lever and in PTO shifter lever. The tractor can be started only if High-low shifter lever is in neutral position.

⚠️ Caution: Safety starter switch is to be replaced after every 2 000 hours / 4 years, whichever is earlier.
SAFETY INSTRUCTIONS

Emergency exits
If exit from the cab side doors is blocked (following an accident or vehicle overturn) the alternative safety exits are indicated by decals.
The possible safety exits are:

- Rear window hatch (all tractors)
- Front window (for versions with openable front window).

Safety precautions when using the loader
Do not allow persons to enter the attached loader adapter or the loader boom operating area. Failure to do so may result in serious injuries or even death.

Do not stay under the lifted loader or do not approach it. Lower the loader boom to the ground before leaving the tractor. Failure to do so may result in serious injuries or even death.

When mounting or dismounting the loader, secure all parts that are attached to the adapter and the boom. The adaptor or the boom may unexpectedly drop, which can lead to injury or even death.
SAFETY INSTRUCTIONS

ROPS (roll-over protective structure), sun visor and cab are not FOPS protective structures (falling-object protective structure).
In no case does it serve to protect the operator from falling objects.
Avoid driving in dangerous areas, such as places where there is a danger of falling rocks, etc.

Do not allow the boom or attached adapter or equipment to come into contact with electrical lines or other electrical equipment. Electric current causes serious injuries or death.

For safe handling of loads, always use a suitable type of adapter for your work. While driving, keep the boom loaded with a load at a low position above the mat. Failure to do so may result in machine damage, serious injury or even death.

When mounting or dismounting the loader, secure all parts that are attached to the adapter and the boom. The adaptor or the boom may unexpectedly drop, which can lead to injury or even death.
Towing safely
For the maximum permissible load of the hitch, see 'Maximum hitch load' in the Specifications section.

- Maintain a suitable speed taking into account the weight of the load towed or carried by the tractor and the inclination of the surrounding terrain, remembering that the braking distances will be greater than that of an unloaded tractor. Attached trailers or semi-trailers with or without brakes that exceed the specified technically permissible maximum authorized weight may cause loss of control of the tractor unit.
- Always take into account the total weight of the attached machine and its load.
- When semitrailers are attached to the tractor, remember to switch all controls to neutral position, lock the parking brake, turn off the engine, engage first gear (for mechanical transmission), and remove the ignition key before leaving the operator's seat. ALWAYS secure the wheels of the tractor and the trailer with wedges. The safest and recommended way to transport a damaged tractor is to transport it on a low-load trailer. Always attach the tractor to the low-load trailer with chains. Before transporting the tractor on a low-load trailer or on a railway wagon, make sure that the engine cover, door, openable roof (if available) and windows are closed and securely locked. Never tow the tractor at a speed higher than 10 km/h. In this case, the operator must remain in the operator's seat to drive and brake the tractor.

Caution: When a trailer is hitched to the tractor, before you leave the driving seat remember to put all the controls in neutral, apply the handbrake, switch off the engine, engage first gear (if the tractor has a mechanical transmission) and remove the key from the starter switch. If the tractor is not parked on level ground, ALWAYS place chocks under the wheels of both the tractor and the trailer. For further information on safe working procedures, refer to the chapter 'Parking the tractor' in the safe section of this manual.

Falling Object Protective Structure (FOPS)
The term F.O.P.S refers to structure installed on the tractor intended to reduce the risk to the operator of injury from falling objects during normal use of the vehicle.

Important:
- This tractor is equipped with a FOPS.
- The energy level of drop test is 1 365J.

Operator Protective Structure (OPS)
The term OPS refers to a protective structure installed on a tractor in order to minimize risk of operator injury caused by objects penetrating into the operator position area.

Use of hazardous substances
European standard EN 15695-1 is applicable to the cabs of agricultural or forestry tractors and self-propelled sprayers. The purpose of the standard is to limit the exposure of the operator (driver) to hazardous substances when applying plant protection products and liquid fertilisers.

In accordance with the provisions of EN 15695-1 concerning cab classification, the measurement of the internal positive pressure difference shall be made in accordance with ISO 14269-5:

1. Engine operating at rated speed;
2. Maximum air flow brought to the cab (closed recirculation);
3. Fan set to maximum speed.

The following terms and definitions are applied:
- Hazardous substances: substances such as dust, vapours and aerosols, with the exception of fumigants which can be dispersed during the application of plant protection products and liquid fertilisers, which may have a harmful effect on the operator.
- Dust: general term identifying solid air-borne particles, finely divided and sedimented.
- Aerosol: suspension of solid, liquid or solid and liquid particulate in a gaseous medium with a negligible fall rate (generally less than 0.25 ms⁻¹). Vapour: gaseous phase of a substance whose liquid or solid state is stable at 20°C and 1 bar (absolute). This cab, even when closed, does not protect against the inhalation of hazardous substances. If the manufacturer's instructions for using these substances recommend personal protective equipment, wear the equipment even in the cab.
Cabs are classified as follows:

- Category 1: the cab does not provide protection against hazardous substances.
- Category 2: the cab provides protection exclusively from dust.
- Category 3: the cab provides protection from dust and aerosol.
- Category 4: the cab provides protection from dust, aerosol and chemical vapours.

⚠️ Danger: Use all the personal protective equipment suitable for the tasks in hand and relative substances, in compliance with the requirements of statutory legislation in your country.

Safe operation of your tractor
The category of the cab installed on this series of tractors, classified according to ISO 14269-5, is listed below:
- Engine operating at rated speed
- Maximum air flow brought to the cab (closed recirculation) - with fan set to maximum speed
The manufacturer of your tractor has made every effort to make it as safe as is humanly possible. Beyond this point it is the responsibility of the operator to avoid accidents and we ask that you read and implement our suggestions for your safety.
Ensure that this tractor is only used by trained and authorized operators. Ensure that the operators are fully familiar with the machine and understand all its controls and safety features. Operators should not operate a tractor or attached machines or equipment if they are not properly trained or if they are physically unfit to operate the machine. To avoid accidents, make sure that the operators wear clothes that might not get caught in the moving parts of the tractor or the machine and, on the contrary, protect them from these elements. When applying or using chemicals, ensure that clothes and protective equipment are used to prevent breathing problems or skin irritation.
For detailed information contact the manufacturer of chemicals.
To avoid prolonged exposure to noise, ensure that the protection of ears is used.
If modification of the tractor or machine is necessary, ensure that the tractor or machine is stopped beforehand.
When operating the tractor a certified roll-over protective structure (ROPS) must be used.
When operating the tractor a safety belt must be worn.
Under all circumstances, it is necessary to ensure the safety of the operator and others near the machine. Ensure that no one is between the tractor and the towed vehicle (trailer or implement).

<table>
<thead>
<tr>
<th>UTILIX CL45/45NC/55/55NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category of cab protection against hazardous substances</td>
</tr>
</tbody>
</table>
SAFETY INSTRUCTIONS

Safety tips during maintenance

1. Check all oil levels at least once a day. Check the amount of water in the radiator and the electrolyte level in the battery and perform service according to the service schedule of the machine.
2. Ensure that the tire pressure is even and corresponds with the work to be performed.
3. Check that all preventive and service operations are properly performed on the tractor.
4. Ensure that adequate service facilities are available for maintenance and minor repairs.
5. Ensure that all service work and repairs are performed on flat concrete surface or similar surface. Do not perform service work on the tractor until it is stopped, the parking brake is applied, and the wheels are secured with wedges. If the tractor is started in an enclosed area, ensure that the area is well ventilated as the exhaust fumes are very harmful and can cause intoxication or death.
6. It is forbidden to perform service work on the mounted equipment in the lifted position.
7. When changing wheels or tires, ensure that a suitable stand is placed under the axle before removing the wheel and that the remaining wheels are secured with wedges.
8. If it is necessary to remove guards or covers when servicing or repairing, ensure that the guards or covers are properly installed before starting the tractor.
9. Never fill the fuel near open flames or with an overheated engine. The engine must be stopped before filling the fuel.
10. The cooling system operates under pressure, so be careful not to scald yourself with steam or hot water when removing the hot engine radiator cap. Do not add water to the radiator when the engine is hot. Only add water to the radiator after the engine has cooled down completely.
11. To prevent fire, keep the tractor, including its engine, clean and free from combustible material, at a safe distance from fuel and other combustible material.
Mounting and demounting implements

1. Ensure that all assembly and disassembly of implements (attachments) is carried out on a secure, level surface. To prevent accidental injuries, ensure that no one is between the tractor and the implement or under the implement.

2. After mounting the implement, ensure that all hanging parts such as chains or hoses are properly secured and, where PTOs are used, properly fastened and secured.

3. Where heavy implements are used, ensure that the unit is well balanced, using suitable ballast to ensure this balance.

4. Before leaving the tractor, lower the implement onto the ground, deactivate the PTO, apply the parking brake and stop the engine.

5. When working with an implement that uses PTO, make sure that no other persons are near the moving parts and do not make any modifications to the implement while the machine is in operation.

6. A tractor equipped with a ROPS protective frame only performs its function in combination with a fastened seat belt.

7. If children are present in the immediate vicinity of the machine or unit, caution and anticipation of possible risks related to the movement and operation of the machine are necessary.

8. The tractor may only be used by trained operators who must ensure that no worker is injured. Extra caution is necessary in dusty environment with significantly reduced visibility.

9. Never start the tractor unless the transmission is in the neutral position, the operator is in the driver’s seat, and there is no other danger when the engine is started up.

10. Only the operator sitting in the driver’s seat can operate the tractor. Never turn or brake suddenly at high speed, as this may cause the tractor to roll over, resulting in serious injury or death.

11. When driving on public roads, observe all legal requirements of the country in which the tractor is operated, including the requirements for accompaniment. When driving with wide implements, use the warning devices specified by the applicable legislation in the country in which the machine is used.

12. When operating under adverse conditions, in hilly or bad terrain, adjust the speed of the tractor to the following conditions:
   - Never drive down the hill rashly or with the transmission in the neutral position.
   - Use engine braking capability together with service brakes.
   - Do not attempt to shift gears in a steep slope and engage a suitable gear before starting to drive the tractor.

13. When driving uphill with a heavy implement, be careful to prevent overloading and loss of front axle adhesion and consequent loss of control.

14. Never remove or modify the seat belt.

15. Never remove, modify or repair the ROPS protective frame.

PLEASE REMEMBER THAT A LITTLE BIT OF EXTRA CARE CAN PREVENT SERIOUS INJURY OR TEATH AND AVOID DAMAGE TO YOUR TRACTOR.
The following precautions are suggested to help prevent accidents

The best operator is the careful operator. Most accidents can be prevented by observing certain safety measures. Before using the tractor, read the following measures and observe them to avoid accidents. The tractor may only be operated by authorized persons who are properly trained for this operation.

Tractor

1. Read the operating and maintenance manual of the machine carefully before operating the tractor. Insufficient knowledge of machine operation can lead to accidents.
2. For safe operation, use an approved protective structure and seat belt. Roll-over of a tractor without a protective structure can result in serious injuries or even death.
3. Do not remove the roll-over protective structure (ROPS). Always use the seat belt.
4. The laminated roof of the tractor cab does not provide protection against the breakthrough of external objects with higher weight.
5. To avoid falling while entering and leaving the cab, keep the stairs and platform clean, free of mud and oil.
6. Do not allow anyone other than the operator to ride on the tractor. There is no safe seat or approved passenger seat on the tractor.
7. Replace any missing, illegible or damaged safety signs.
8. Keep safety signs clean, free of dirt and grease.

Tractor service

1. For your safety, keep the tractor in good operating conditions. An inadequately maintained tractor can be dangerous.
2. Stop the engine before servicing the tractor.
3. The cooling system operates under pressure. If the engine and its cooling system are hot, it is dangerous to remove the cap. Turn the cap slowly to the stop, then let the pressure escape before removing the cap.
4. Do not smoke while refueling the tractor. Never refuel the machine near an open flame.
5. The fuel in the injection system is under high pressure and can penetrate the skin. Unqualified persons must not disassemble or modify the fuel pump, injectors, nozzles or other parts of the fuel injection system. Failure to follow these instructions may result in serious injuries.
6. To prevent fire or explosion, keep the battery and the cold start devices away from open flames.
7. Do not change or modify anything on the tractor and do not allow anyone to change or modify anything on the tractor or any part of the tractor or its function.
SAFETY INSTRUCTIONS

Operating the tractor

1. Before starting the tractor, apply the parking brake, place the PTO lever in the 'OFF' position, the hydraulic control lever in the lower position, the remote controls lever in the neutral position (if fitted), and put the gear shift lever in neutral position.

2. Do not start the engine or controls while standing next to the tractor. Always sit in the tractor seat when starting the engine or controls. To prevent the tractor from starting accidentally, a safety switch is installed.

3. The starter system of the tractor is connected via this switch, which allows starting the tractor only when the clutch pedal is depressed. On some models, the reverse shift lever and the PTO button must also be in the neutral position to start the tractor. Do not bypass the starter safety switch. If the safety switch fails, consult it with the Zetor dealer / distributor.

4. Avoid accidental contact with the gear shift lever while the engine is running. This may cause the tractor to move unexpectedly.

5. Do not enter or leave the tractor while the tractor is moving.

6. Before leaving the tractor, stop the engine, remove the ignition key and engage the parking brake of the tractor.

7. Do not operate the tractor in a closed building without proper ventilation. Exhaust fumes can cause intoxication or death.

8. Do not park the tractor on a steep slope.

9. If the power steering or engine ceases to function, stop the tractor immediately and prevent it from being used by others.

10. Only use the swinging drawbar or the drawbar of the lower link in the lower position for towing. Use only the drawbar pin that is locked in that position. Towing by the tractor using the rear axle brackets or any point above the rear axle may cause the front of the tractor to lift.

11. If the front of the tractor tends to lift while a heavy implement is attached to the three-point hitch, install ballast on the front of the tractor or on the front wheels. Do not use a tractor with insufficiently weighted front part.

12. Always use the hydraulics position control levers when attaching equipment / implements and transporting equipment. Ensure that the hydraulic couplers are properly mounted and they disconnect safely if the implement is accidentally released.

13. Never leave the equipment / implement in the lifted position.

14. Unless prevented by national or local regulations, when driving on public roads, day and night, use the warning light / turn signal lights and warning triangles for slow-moving vehicles.

15. Low beam lights of the tractor used when passing oncoming vehicles at night. Check the adjustment of the lights to prevent the driver of oncoming vehicles to be dazzled.

16. Emergency stop instruction: If the tractor does not stop when brakes are applied, pull the fuel cut-off lever.

Tractor control

1. Watch where you drive, especially at the ends of the rows, the headlands, on the roads, around the trees and at obstacles hanging low to ground.

2. To prevent the tractor from rolling over, drive the tractor at a safe speed, especially when driving on uneven ground, when driving over ditches or slopes, and when turning in corners of areas and parcels.

3. When driving on the road, do not disconnect the two brake pedals of the tractor from each other to ensure better braking.

4. When driving downhill, shift the same gear in the tractor as uphill. Do not drive downhill with the engine stopped or idling.

5. For safety reasons, any towed vehicle and/or trailer, the weight of which exceeds the maximum towed weight, must be fitted with its own brakes.

6. If the tractor gets stuck or its tires are frozen to the ground, try to reverse to prevent the tractor from rolling over.

Always make sure you have enough space above you, especially when transporting the tractor.
SAFETY INSTRUCTIONS

Operating the PTO

1. When you operate the PTO-powered attachments, stop the engine and wait for the PTO to stop before you leave the tractor and disconnect the equipment.
2. Do not wear loose clothing when operating the PTO or near rotating parts of the connected implement.
3. When operating PTO-driven stationary equipment, always secure the tractor with the tractor parking brake and secure the rear wheels from the front and rear side with wedges.
4. To avoid injury, always cover the PTO outlet. Do not clean, modify or repair the PTO-driven equipment while the tractor engine is running.

Always make sure that the main PTO cover is installed and always install the PTO end piece cover whenever the PTO is not in use.

Diesel fuel

1. Keep the equipment clean and properly maintained.
2. Under no circumstances should gasoline, alcohol or blended fuels be added to diesel fire or explosive hazard. Such blends are more explosive than pure gasoline. In a closed container, such as a fuel tank. DO NOT USE THESE BLENDS.
3. Never remove the fuel cap or refuel the tractor with the engine running.
4. Do not smoke while refueling or when standing near fuel.
5. Maintain control of the fuel filler pipe when filling the tank.
6. Do not fill the fuel tank to capacity. Allow room for expansion.
7. Wipe up spilled fuel immediately.
8. Always tighten the fuel cap securely.
9. If the original fuel tank cap is lost, replace it with genuine cap. A none approved cap may not be safe.
10. Do not drive equipment near open fire.
11. Never use fuel for cleaning purpose.
12. Arrange fuel purchases so that winter grade fuel are not held over and used in the spring.

Note: It is suggested that after repairs if any of the safety decal/sign is peeled/defaced, the same may be replaced immediately in interest of your safety.
SAFETY INSTRUCTIONS

DO’S AND DON'T’S

DO’S-for better performance

YES Ensure that protective covers are returned immediately and they are in good conditions.

YES Read all operating instructions before operating the tractor

YES Perform all maintenance tasks completely and without error.

YES Keep the air filter clean.

YES Ensure that lubricating oils of the appropriate standard and quality are used and that they are refilled and changed at recommended intervals.

YES After replacing the filter elements, install new sealing rings.

YES Observe the warning light on the oil pressure gauge and if it lights up, check immediately for any abnormality.

YES Make sure the radiator is always filled with clean water and use antifreeze in cold weather. Drain the system only in case of emergency and refill before starting the engine.

YES Ensure the transmission is in the neutral position before starting the engine.

YES Store all fuel in clean environment and use a filter when filling the tank.

YES Perform minor adjustments and repairs as soon as necessary.

YES Allow engine to cool before removing radiator filler cap and adding water; remove the radiator cap slowly.

YES Engage a lower gear when going downhill steep slopes.

YES Connect the brake pedals together when driving on the road.

YES If the draft control lever is not in use, keep it in the lower limit position.
SAFETY INSTRUCTIONS

Don’ts - for safe operation

DO NOT USE the engine with the air filter disconnected.

DO NOT START the tractor in a closed building without proper ventilation

DO NOT OPERATE the tractor or engine during lubrication or cleaning

DO NOT LET the diesel fuel tank run out completely, otherwise the system will need to be bled.

DO NOT INTERFERE with the engine injection pump. The warranty is void if the seal is broken

DO NOT LET the engine idle for a long time.

DO NOT RUN the engine if all cylinders do not work.

DO NOT DRIVE with the clutch or brake pedal depressed. This leads to excessive wear of the brake lining, clutch-driven elements and clutch release bearing.

DO NOT USE independent brakes to turn while driving on the road or at high speed.

DO NOT REFILL the fuel in the tractor with the running engine.

DO NOT SET the hydraulic control levers beyond the upper stop limit.

DO NOT USE the draft control lever to lift implements.

DO NOT START the engine with the PTO engaged.

DO NOT USE the hand throttle control lever while driving on the road.

DO NOT MOVE the hydraulic levers backwards.
General safety information

IMPORTANT: This "General safety Information" should be kept with the machine at all times as reference data.

⚠️ This symbol means ATTENTION! YOUR SAFETY IS INVOLVED. The message that follows the symbol contains important information about safety. Follow recommended precautions and safe operation practice.

Decals mounting location

1 - Warning:
Always use the parking brake when parking.
Failure to do so may result in accidents and damage.

2 - Warning:

- Only start the engine from the operator's seat. If the safety start switch is disabled, the engine can start with a gear shifted.
- Do not connect the clamp to the starter solenoid.
- Connect the booster cables as shown on the battery plate and in the Operator’s manual.

Starting with gear engaged can cause the vehicle to move and may cause serious injury.

3 - Warning:
Do not adjust the steering wheel tilt when driving.

4 - Warning:
Do not use the hand throttle lever except for field work.

5 - Warning:
The brake pedals must always be locked together when driving on the road. This ensures even braking and maximum efficiency of stopping. Sharp turns must be performed only at moderate speeds.
1 - Warning: Do not remove the radiator cap if the engine is hot. There is a risk of injury by hot steam.
2 - Caution: Keep hands and clothing away from rotating fans and belts to avoid serious injuries.
3 - Caution: Do not touch the engine and cooling system when it is hot. This may cause serious burns.
4 - Warning: Do not refuel the machine while smoking or when near an open flame or sparks. Always stop the engine before refuelling.
5 - Warning: Do not use the auxiliary shift lever in the 'H' position when reversing
6 - Internal/external air ventilation:
   - When the grilles are opened at the rear and on both sides, the internal air is ventilated.
   - For efficient use, open them when operating the heater or air conditioning system and close them during fresh air ventilation.
7 - Danger: The tractor should only be driven by the operator.
1 - Operator's manual
2 - Warning:
Press the button to lock the neutral position of the joystick whenever these functions are not in operation.
3 - Warning:
Always lock the controller if

1. You drive on the road.
2. You perform maintenance / change working implements.
3. You set up the machine.
4. Sudden lowering of the implement can cause serious injuries or death.

4 - Warning:
Never use the differential lock at high speed or on the road, as it may cause damage to the machine, risk to road safety or cause accidents and injuries to persons.
5 - Warning:
Always drive with the seat belt fastened.
6 - Danger:
To avoid suffocation during heating or air conditioning, it is necessary to ventilate regularly. Sleeping in the cab is forbidden.
7 - Warning:
Work in ventilated areas
1 - Warning:
Only attach implements and trailers to the tractor using the prescribed drawbar or hitch.

2 - Danger:
Contact with the rotating shaft may cause injuries or death. Stay away!
When operating, keep all the covers of the shaft, tractor and connected implement mounted.

3 - Warning:
Keep away from lifted arms and other parts of the loaders and implements.
Some of the universal symbols have been shown below with an indication of their meaning.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Engine speed" /></td>
<td>Pressed-open slowly</td>
<td>Corrosive substance</td>
</tr>
<tr>
<td><img src="image" alt="Hours, recorded" /></td>
<td>Continuous variable</td>
<td>“Tortoise” Slow or minimum setting</td>
</tr>
<tr>
<td><img src="image" alt="Engine coolant temperature" /></td>
<td>Warning</td>
<td>“Hare” fast or maximum setting</td>
</tr>
<tr>
<td><img src="image" alt="Fuel level" /></td>
<td>Hazard warning</td>
<td>Transmission oil pressure</td>
</tr>
<tr>
<td><img src="image" alt="Engine stop control" /></td>
<td>Neutral</td>
<td>Turn signal</td>
</tr>
<tr>
<td><img src="image" alt="Lights" /></td>
<td>Fan</td>
<td>Transmission oil temperature</td>
</tr>
<tr>
<td><img src="image" alt="Horn" /></td>
<td>Power take off engaged</td>
<td>Parking brake</td>
</tr>
<tr>
<td><img src="image" alt="Engine oil pressure" /></td>
<td>Power take off disengaged</td>
<td>Work lamps</td>
</tr>
<tr>
<td><img src="image" alt="Air filter" /></td>
<td>Lift arm/raise</td>
<td>Differential lock</td>
</tr>
<tr>
<td><img src="image" alt="Battery charge" /></td>
<td>Lift arm/lower</td>
<td>See operator’s manual</td>
</tr>
</tbody>
</table>
Description of tractor controls
The following pages in this section detail the location and function of various instruments, switches and controls on your tractor. Even if you operate other tractors, you should read through this section of the manual and ensure that you are thoroughly familiar with the location and function of all the features of your new tractor.
Do not start the engine or attempt to drive or operate the tractor until you are fully accustomed to all the controls. It is too late to learn once the tractor is moving.
Particular attention should be paid to the recommendations for running-in to ensure that your tractor will give long life and dependable service for which it was intended.
If in doubt about any aspect of the operation of the tractor consult your ZETOR tractor dealer / distributor.
Battery disconnector

The battery disconnector is located on the front axle bracket under the right front corner of the hood (A). Turn the battery disconnector handle in the direction of the arrow (B) to disconnect the battery from the tractor's electrical installation. To connect the battery to the tractor's electrical installation, turn the battery disconnector handle counterclockwise. Battery connection is indicated by a visible green field (1).

(C) The position of the battery disconnector handle when the battery is connected.
(D) The position of the battery disconnector handle when the battery is disconnected.

⚠️ When the tractor is parked, disconnect the battery using the battery disconnector (1). If the tractor is parked for a long period of time, it is necessary to recharge the battery at least once a month due to self-discharge.

⚠️ When the engine is switched off, the engine control unit remains active for about 2 minutes because of storage of operation data. During this time the supply of current from the accumulator must not be interrupted. Do not disconnect the accumulator before this time expires.

⚠️ After connecting the battery using the battery disconnecting switch, wait at least 30 seconds before turning on the ignition key.
Instrument and switches

1 - Air Pressure Gauge, only for tractors equipped with trailer air brakes
2 - Left Turn Signal Light
3 - Tachometer
4 - Temporary Trailer Brake Deactivation Button, only for tractors equipped with trailer air brakes
5 - Warning Signal Switch
6 - Horn Switch
7 - Turn Signal Light Switch
8 - Headlight Switch
9 - Reverse Shift Lever
10 - Steering Wheel Tilt Lever
11 - Key Switch
12 - PTO Mode Switch
13 - Hand Throttle Lever
14 - PTO On/Off Button
15 - Thermometer
16 - Fuel Gauge
17 - Right Turn Signal Light
Main switch (key switch)

[OFF]- The key can be inserted or removed.
[ON]- The electric circuit is on.
[GLOW] - Glow plugs preheat the combustion chamber.
[START]- The starter motor is engaged.
When the key is released it will return to the ON position.

1 - Glow
2 - Off
3 - On
4 - Start

Headlights, Turn Signal Lights, Beacon and Horn Switch

Front Light Switch
High beam and low beam lights are controlled by the main switch
Position 3 - high beam light and beacon light
Position 4 - low beam light and beacon light

Turn Signal Light Switch
Pull down the turn signal light lever to activate the left turn signal light.
Push up the turn signal light lever to activate the right turn signal light.

Horn
Press the red button.
1 - Turn Signal Light Switch Lever
2 - Headlight and Beacon Light Switch
3 - High Beam Lights and Beacon Light
4 - Low Beam Lights and Beacon Light
5 - Horn
**Tachometer**
This meter shows the revolutions of the engine and the PTO shafts as well as the travel speed in top gear.

**Hour meter**
The hour meter consists of digits with the last digit indicating 1/10th of an hour.

**Fuel gauge and water temperature gauge**

**Fuel gauge**
Shows the amount of fuel in the tank when the ignition switch is ON.

**Water temperature gauge**
Shows the water temperature with the ignition switch ON.

- **C** is low to normal temperature.
- **H** is high temperature.

If the pointer is in the red H segment the engine is overheating.
Refer this book to rectify the problem.

**Hazard warning signal switch**
Push the hazard warning signal once to operate the hazard warning light. (Left and right turn indicators flash). Push the hazard warning light switch again to switch off the hazard warning lights.

1 - Hazard warning signal S/W
Warning lights

The high beam indicator light comes on on the instrument panel.

The low beam indicator light comes on on the instrument panel.

The parking brake lights up when the tractor is braked with the manual parking brake.

PTO monitor lamp Shows the revolution of PTO.

Fuel Level If it comes on while the engine is running, fill the tank with fuel.

The oil pressure indicator light turns off when the engine starts, in case the oil pressure is OK. If it comes on while the engine is running, stop the engine and contact a specialized service.

Charge lamp

This light will go off as soon as the engine starts to run to indicate that the alternator is changing. (Please note, as broken fan belt can cause the light to come on, please stop the engine as overheating can occur if not rectified immediately)

The glow indicator light indicates preheating when starting at low temperatures.
Independent PTO
1 - PTO On-Off S/W
2 - PTO Mode S/W

The rear PTO shift lever is located on the left side under the driver’s seat and can be moved to the upper position (540 rpm) or to the lower position (1,000 rpm) from the center, neutral position, according to the specification of the attached implement.
In no case shall the specified speeds be exceeded, as this may result in serious damage to the tractor / attached implement.
When the PTO is not in use, the gear shift lever must be placed in the neutral position to prevent accidental lowering.

The PTO indicator light on the instrument panel indicates the PTO status.

1. If the indicator light is on: PTO rotates.
2. If the indicator light is off: PTO is off.
3. If the indicator flashes: PTO is not currently in motion, but shall be activated when the clutch pedal is released or the implement is lowered.

PTO ON/OFF switch
Two switches control the independent PTO.

PTO ON/OFF switch: The PTO ON / OFF switch is located on the right side of the steering column and can be easily identified by the built-in red indicator. When the switch is pushed down to engage the PTO, the PTO indicator light comes on to indicate that the switch and PTO are in the 'on' position. If the switch is pushed down again, the indicator turns off to indicate that the PTO is turned off.
PTO Control switch
This switch is situated near the starting key location on the dash panel. There are three positions marked for this switch.
- OFF at the center
- MANUAL at the left
- AUTO AT THE RIGHT.

The PTO does shall not rotate when one of the two switches is in the OFF position
The following table explains how the PTO operates in two different positions (Manual & Auto) of the PTO control switch with the PTO ON / OFF switch in the ON position.
First select the specified speed for the PTO by using the PTO shifter on the LHS, below the driver seat.

<table>
<thead>
<tr>
<th>PTO ON/OFF Switch</th>
<th>PTO Control Switch</th>
<th>Clutch Pedal</th>
<th>Hydraulic Position Control Lever</th>
<th>PTO Indicator Light on the Instrument Panel</th>
<th>PTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>Manual mode</td>
<td>Depressed or released</td>
<td>Lifted or lowered</td>
<td>On</td>
<td>Rotates</td>
</tr>
<tr>
<td>ON</td>
<td>Auto mode</td>
<td>Depressed</td>
<td>Lifted or lowered</td>
<td>Flashes</td>
<td>Does not rotate</td>
</tr>
<tr>
<td>ON</td>
<td>Auto mode</td>
<td>Depressed or released</td>
<td>Lifted</td>
<td>Flashes</td>
<td>Does not rotate</td>
</tr>
<tr>
<td>ON</td>
<td>Auto mode</td>
<td>Released</td>
<td>Lowered</td>
<td>On</td>
<td>Rotates</td>
</tr>
</tbody>
</table>

- The table above shows the PTO safety features. When the indicator light on the dashboard flashes, it indicates to the operator that the PTO is in the 'ON' position, but does not temporarily rotate either because the clutch pedal is depressed or because the implement is lifted off the ground, or both. The PTO starts to rotate immediately when the clutch pedal is released and / or the implement is lowered to the working position.
- The operator must ensure that there are no persons in the operating area of the tractor due to possible bouncing of objects or particles from the rotating working parts of the implement and the intervention and injuries of persons near the working unit.
- Stopping the PTO, when lifting the implement from the ground together with a position check, prevents damage to the implement or PTO.

⚠️ Warning:

- If the PTO control switch is in the manual position, the PTO does not stop even when the clutch pedal is pressed. When working with a rotary implement on hard ground or on the road, the 'PTO ON / OFF' switch must be set to the 'off' position to stop the PTO. If it is not in the 'off' position, the rotating blades of the implement, leaning against the hard surface, will rotate the tractor so that an accident may occur, which can result in serious injuries or death.
- Special care should be taken to ensure that the surrounding area is free from unauthorized bystanders when using PTO implements. Rotating working parts of the implement can cause serious injuries. The warning, which is indicated by the flashing PTO indicator light, informs the operator that the PTO is engaged and will immediately start to rotate when the clutch pedal is released or the implement is lowered, or both.
- Under no circumstances should the specified rotational speeds specified by the implement manufacturer be exceeded, as this may result in serious damage to the tractor / equipment and serious injuries to bystanders.
Operation the controls

1 - Reverse Shift Lever
2 - Steering Wheel
3 - Clutch Pedal
4 - Reduced Gears Shift Lever
5 - 4WD Shift Lever
6 - Sectional Directional Control Valve Control Lever
7 - 3-Point Hitch Position Regulation Lever
8 - 3-Point Hitch Draft Control Lever
9 - Main Shift Lever
10 - Differential Lock Pedal
11 - Steering Wheel Adjustment Lever
12 - Joystick Lever
13 - Accelerator Pedal
14 - Brake Pedal
15 - Hand Throttle Lever
16 - Rear PTO Speed Shift Lever
17 - Handbrake Lever
Hand throttle (Throttle lever)
Pulling the hand throttle towards the driver reduces the speed. Pushing the hand throttle away from the driver increases the speed.

1 - Throttle Lever

Clutch pedal
When the clutch pedal is depressed on models with manual transmissions, the drive is disengaged and the gear range and forward or reverse direction can be selected. Slowly release the pedal to start driving the tractor.
Brake pedals control the rear wheel brakes.

1 - Clutch pedal

Clutch cut-off arm
For long term storage of the tractor it is possible to latch the clutch in the disengaged position. Push the clutch down and engage the latch to hold it there.

⚠️ Warning: Do not attempt to start engine when this arm is being used.

1 - Clutch pedal
2 - Clutch pedal
Foot brakes
When depressing both pedals connected by a latch, both rear wheels are braked.
When one brake pedal is depressed after the latch is released, only one rear wheel is braked, depending which brake pedal is depressed. The right brake pedal brakes the right rear wheel, the left brake pedal the left rear wheel.
Braking with one brake pedal is used to make the tractor's off-road turns easier. When turning is complete, the brake pedals must be again latched together.
A - Brake pedals connected by a latch
B - Brake pedal latch disconnected

⚠️ When driving on the road, both pedals must be connected by a latch. Disconnect the right or left wheel brakes only when working off-road and in the field.

Note: When driving down a steep slope with a trailer or semi-trailer equipped with brakes, the foot brake must be applied from the beginning of the descent!

⚠️ When braking with one brake pedal, the trailer brakes are not engaged!

⚠️ Caution: A connecting latch is provided to connect the right and left brake pedals for high speed or road use. In the interest of safety always use it on the road or at high speed as using one side only can cause rollovers. When servicing the tractor ensure that the adjustment on both sides in the same.
Parking brake lever
The handbrake lever (1) is located on the left side of the driver's seat.
Pull the lever upwards up to the stop, to brake the tractor.
The lever remains secured in the upper position with the latch.
To release the tractor, lift the handbrake lever slightly upwards, release the latch by pressing the button (2) at
the end of the lever, lower the lever to the lower position and release the button (2).

Important: Traveling with the parking brake on will damage the brakes.

To avoid personal unjury:
When you leave the tractor, be sure to apply the parking brake and stop the engine. In applying the brakes:

- The torque of wheel axle is extremely high while creep speed is being used. Be sure to step down on the clutch pedal completely before applying the brakes, or they will not work.
- When starting to operate the tractor, be sure to release the parking brakes. Misuse of the brakes may cause damage to the transmission and is therefore not acceptable to Zetor for coverage under the warranty.
Air brakes of trailers and semi-trailers
The control of the air brakes of trailers (semi-trailers) and the control of the tractor brakes is designed in such a way that the braking effect of both vehicles is synchronized.

Air pressure indication
The air pressure in the trailer or semi-trailer air brakes is indicated by an air pressure gauge located on the instrument panel.

If the air pressure gauge needle is in the red field, the air pressure in the trailer or semi-trailer air brake system is low.
If the air pressure gauge needle is in the green field, the value of the air pressure in the trailer or semi-trailer air brake system is correct.
If the air pressure gauge needle is in the yellow field, the air pressure in the trailer or semi-trailer air brake system is high, this is a malfunction, contact a service immediately.

When driving a tractor with a trailer or semi-trailer with air brakes, the air pressure gauge needle must be in the green field.

⚠️ If the pressure gauge needle of a tractor with attached trailer or semi-trailer with air brakes drops into the red field, the tractor with trailer or semi-trailer with air brakes must not continue to travel. It is necessary to stop the unit and wait until the air pressure increases and the pressure gauge needle is within the green field of the pressure gauge.

The button for temporary deactivation of brakes of the trailer or semi-trailer
The temporary trailer or semi-trailer brake deactivation button (1) is located on the dashboard panel.

The button for temporary deactivation of brakes of the trailer or semi-trailer can be used by the operator of the tractor with the connected trailer or semi-trailer to make sure that the effect of the parking braking system of the tractor with the connected trailer or semi-trailer when the tractor is braked with the hand brake is sufficient.
If there is a tractor with the connected trailer or semi-trailer which is braked with the hand brake and the key in the switch box is in the position (I), and we press the button for temporary deactivation of brakes of the trailer or semi-trailer, the trailer or semi-trailer is deactivated for the time when the button is pressed (the trailer or semi-trailer does not brake). When the button for temporary deactivation of brakes of the trailer or semi-trailer is released, the brakes of the trailer or semi-trailer are activated (the trailer or semi-trailer brakes).

⚠️ Prior to using the button for temporary deactivation of brakes of the trailer or semi-trailer, it is always necessary to provide sufficient space in front of the tractor and behind the connected trailer or semi-trailer where no obstacles or persons will be present for the case that the effect of the parking braking will not be sufficient and the combination of vehicles moves.

⚠️ Only the air brakes are deactivated by the button for temporary deactivation of brakes of the trailer or semi-trailer.
One-hose and two-hose brakes
1. clutch head of one-hose brakes
2. clutch heads of two-hose brakes

⚠️ Clutch heads after disconnection or without a connected trailer, articulated trailer must be closed by a valve.

One-hose brakes
The coupling head of a single-hose air brake has a flap marked black.
The coupling head marked black serves both for filling and controlling for the single-hose air brake system of the trailer or semi-trailer.

⚠️ The maximum permitted speed of the unit is given by the maximum permitted speed of the slower unit vehicle.

Two-hose brakes
The left-hand flap (1) is marked yellow (braking line), the right-hand flap (2) is red (filling line).

⚠️ The maximum permitted speed of the unit is given by the maximum permitted speed of the slower unit vehicle.
Sub gear lever (Linear shift lever)
1. Road Gear Shift Lever
   It is located on the right side of the driver’s seat.
   Shift gears with the clutch pedal depressed, both when the tractor is stationary and when it moves.

2. Reduced Gears Shift Lever
   The lever is located on the left side of the driver’s seat.
   Shift the gears when the clutch pedal is depressed only when the tractor is stationary.

Gear shifting scheme
1. Road Gear Shift Lever
2. Reduced Gears Shift Lever

Reversing lever
To change the direction of travel, use the reverse shift lever located under the steering wheel on the left side.

1 - Forward travel, move the reverse drive lever from position (2) to position (1)
2 - Neutral position
3 - Reverse travel, move the reverse drive lever from position (2) to position (3)

Important: Avoid damage! To prevent damage to the transmission:

1. Depress the clutch pedal and stop the machine completely before moving the reversing lever (changing direction of the forward and reverse travel).
2. When operating the machine, always depress the clutch pedal before changing travel modes.
3. Never rest your foot on the clutch pedal when the machine is in motion.
Diff-lock pedal
1 - Diff-lock pedal

In case of wheel slippage use the diff-lock by pushing down on the diff lock pedal. To release it remove the foot from the pedal.

Danger: Tractor will be difficult to turn if the diff-lock is engaged, ensure the lock is disengaged before turning the steering wheel.

Front Axle Drive Lever
1 - Front Axle Drive Lever

In the ON position the front axle drive is connected and in the OFF position the front axle drive is disconnected. Activate and deactivate the front axle drive when driving straight at low engine speeds.

Important: Do not use front wheel drive at high speed or on the road as premature wear of components will result.

Important: Always use the clutch when shifting the front axle drive.

Use of front wheel drive improves traction performance.

Driver’s seat
1 - Seat belt
2 - Forward / backward adjustment lever
3 - Knob for weight adjustment
4 - Seat back angle adjustment lever

To adjust the seat backwards and forwards lift the lever at the front of the seat and set it to the desired position.

Caution: Check whether the seat properly locked in its position before driving the tractor.
Tilt lever
1 - Tilt lever

To adjust the inclination of the steering wheel with a 3 stages and set it to the desired position.

⚠️ Danger: Ensure that the tilt pedal has locked before moving the tractor.

PTO gear
Your tractor is equipped with 1 Speed rear PTO to suit range of applications and conditions. Use the PTO switch to engage or disengage rear PTO.

<table>
<thead>
<tr>
<th>Model</th>
<th>Position</th>
<th>PTO (RPM)</th>
<th>Engine (RPM)</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTILIX CL45/55</td>
<td>1</td>
<td>540</td>
<td>2 608</td>
<td></td>
</tr>
<tr>
<td>CL45NC/55NC</td>
<td>2</td>
<td>1 000</td>
<td>2 500</td>
<td></td>
</tr>
</tbody>
</table>

⚠️ Important: Always use the clutch when engaging or disengaging the PTO or changing PTO speed. Let the PTO driven implement come to a complete stop before changing.
Operating the hydraulics
The hydraulics are powered with an engine driven hydraulic pump and controlled with a position control lever mounted beside the driver.
1 - Position control lever

⚠️ Danger: When working with the three-point hitch, it is necessary to stay away from the radius of lift arms and all connected equipment. This eliminates the risk of injury in case of improper handling.

Position control
1 - Position Regulation Lever

The implements can be raised and lowered using the position regulation lever and can be stopped at any position by stopping the lever shift.
To ensure a constant working depth, an adjustable stop can be used to ensure that the implement always returns to the same depth.

To raise the implements: Pull the lever backwards
To lower the implement: Push the lever forwards.

⚠️ Warning: After finishing the work, always lower the implement to the ground and switch off the engine, set the parking brake to avoid injuries and accidents.

External hydraulic circuit control lever
1 - Draft Control Lever
2 - Floating position
3 - Draft Control Range
4 - Lifting

For precise work, the soil tillage implement can be adjusted using draft control. When the lever is moved forward, the depth increases. When the lever is pulled back, the depth decreases.
Lowering speed control knob for the 3 point hitch
This knob controls the downward speed of the hydraulics three point linkage and positioned at the front of the driver’s seat.

To slow the downward speed - turn the knob clockwise. 
To increase the downward speed, turn the knob anticlockwise. 
To lock the knob clockwise. 
Do not over tighten the knob.

⚠️ Caution: *Always set the knob to lock when*

1. **Traveling on the road**
2. **Replacing tires or blades on an implement.**
3. **Making adjustments to an implement. Sudden dropping of an implement due to hydraulic problems can cause serious injury or death.**

**Outer hydraulic circuit**
It supplies pressure oil for hydraulic devices on outer drives of hydraulics ended with couplers. Coupler sockets with 12.5 mm bore are in accordance with the international recommendation of ISO.
Outer hydraulic circuit controls
The SCVs quick couplers are operated by levers (1) and (2) located on the panel on the right side of the driver's seat.

By moving the lever (1) forward, pressure oil is supplied to the quick coupler (1A).
By moving the lever (1) backwards, pressure oil is supplied to the quick coupler (1B).
By moving the lever (2) forward, pressure oil is supplied to the quick coupler (2A).
By moving the lever (2) backwards, pressure oil is supplied to the quick coupler (2B).

Important:
As soon as the implement operated by the pressure oil from the quick couplers reaches the end of the stroke, return the lever to the middle (neutral) position, when there is no oil pressure in the quick couplers; otherwise the oil will flow through the relief valve. When the oil is pushed through the relief valve for a longer period of time, oil becomes overheated. When using the tractor hydraulic system to drive the front loader, do not use the SCVs and the loader at the same time.

Remote hydraulic control valve coupler connecting and disconnecting

Connecting
1. Clean both couplers.
2. Remove dust plugs.
3. Insert the implement coupler to the tractor hydraulic coupler.
4. Pull the implement coupler slightly to make sure couplers are firmly connected.

Disconnecting
1. Lower the implement first to the ground to release hydraulic pressure in the hoses.
2. Clean the couplers.
3. Relieve pressure by moving hydraulic control levers with engine shut off. Pull the hose straight from the hydraulic coupler to release it.
4. Clean oil and dust from the coupler, then replace the dust plugs.
Joystick lever
To control the front loader and the front three-point hitch, the joystick lever is used.
It allows to control the lifting, lowering and unloading of the front loader with one lever.
To lift the front loader: Pull the lever backwards.
To lower the front loader: Push the lever forwards.
To roll back the adapter: Push the lever to the left.
To dump (unload) the adapter: Push the lever to the right.
To control the third loader function, the button located on the joystick head is used.

NOTE: The joystick can also be used for other applications if the front loader is not attached.
3rd function of the loader is controlled by the button on the joystick head.

Safety implement for joystick lever
- PTO on S/W
- PTO off S/W

Warning:
Hydraulic fluid escaping under pressure can have enough force to penetrate the skin.
Hydraulic fluid may also infect a minor cut or opening in the skin.
If injured by escaping fluid. See a doctor at once.
Serious infection or reaction can result if medical treatment is not given immediately. Make sure all connections are tight and that hoses and lines are in good condition before applying pressure to the system.
Release all pressure before disconnecting the lines or performing other work on the hydraulic system.
To find a leak under pressure use a small piece of cardboard or wood. Never use hands.
Rear three-point hitch

Adjustment of the stabilizer bars
The stabilizer bars are designed to limit or prevent lateral movement of the implement. No clearance is permitted when transporting implements and when working on slopes, with rollers, mowers, seeders, drills and similar implements (position 1). However, a slight clearance (position 2) is necessary when working with plows, harrows, excavators, cultivators, etc., especially when working with draft control. The length of the stabilizer bars is adjusted after removal of the pin by turning the tensioner through which the threaded plugs are connected.
Adjustment of the top link
1. Length Adjustment Handle of the Upper Link
2. Lock Nut
3. Upper Link Bracket
4. A
5. B

Lengthening or shortening the top link will change the angle of the implement. The locating hole of the top link varies with the type of implement used. The most common locations are the 1st and 2nd hole from the top.

- For general implement: Use the Pin to "A": point
- For Draft control: Use the Pin to "B" point

Adjustment of the vertical link (left, right)
1 - Vertical Link

Adjust the length of the link by screwing the adjustable handle in either direction. Adjust the length of the vertical link as necessary so that the implement is parallel to the ground in the working position.

Adjustment of the lower links of the three-point hitch
1 - Vertical link

Adjustment is made using the adjustment handle of the right vertical link. Turn the handle clockwise to retract and turn the handle counterclockwise to extend. After proper adjustment, secure the handle against spontaneous rotation.

Retraction of the lower link (if it is the extendable type)

Push the point area and pull the end of the lower link to adjust the length of lower link.

⚠️ Danger: Only use drawbar to tow and keep the 3 point linkage in raised position when toeing with the drawbar. Position can create unbalance causing the tractor to roll-over & result the death or serious injury.
Adjustment of the lift link on the lower link
1 - Lifting Arm
2 - Lower Link
3 - Holes for Stabilizer Bar
4 - Extendable Type of Lower Link
5 - Position Holes of the Vertical Link
6 - Vertical link

For various applications, the lifting height of the lower links can be adjusted by adjusting the pins in the holes of the vertical links.

Mounting implement

⚠️ Caution: Do not attach a PTO shaft while the engine is running and ensure all safety shields are in place.
1 - Length Control Handle of the Stabilizer Bar
2 - Connection Pin of the Stabilizer Bar and the Lower Link
3 - PTO

If the PTO is used, remove its safety cover. Adjust the appropriate length using the side links so that the setting is suitable for the implement being used and secure it with the lock nut. If the PTO is used, attach it to the tractor and make sure it is locked in its position. Use the reverse procedure to remove the implement.

1 - PTO shaft cover

⚠️ Caution: Do not attach a PTO shaft while the engine is running and ensure all safety shields are in place.

⚠️ Caution:

- Use the swinging drawbar while keeping the three-point hitch in the raised position when the implement is aggregated in the swinging drawbar.
- Incorrect position can cause imbalance, impaired stability of the unit, and loss of control of the tractor -implement unit, which can cause serious injuries or death.
*Front three-point hitch*
It is used for attachment of front mounted implements and tools with hitch points of category I. according to ISO.

**Controlling front three-point hitch**
The hitch is equipped with two hydraulic cylinders. Lifting and lowering is performed by the joystick lever located on the right side of the driver's seat.

1 - Lifting of Front Three-Point Hitch Arms
2 - Lowering of Front Three-Point Hitch Arms
3, 4 - Oil pressure release to the quick couplers of the SCV located on the front three-point hitch
5 - Joystick lever is locked
6 - Joystick lever is unlocked

The button on the joystick head is not functional in this case.

⚠️ After lowering or lifting the front three-point hitch arms to the required position, lock the joystick lever with the lock (5) to prevent it from moving when accidentally leaning against the joystick lever.
Hydraulic locking of the front three-point hitch is performed in any position of the hydraulic cylinders by two valves located on the right side of the tractor under the cab, in the area of the right footrest (A).

To close the valves (lock the movement of the arms), move the lever to the position shown in figure (B). To open the valves (unlock the movement of the arms), move the lever to the position shown in figure (C).

⚠️ **The locking or unlocking of the arm movement must always be performed on both valves. It is forbidden to have one valve open and the other closed during the operation of the tractor.**

⚠️ **If the front three-point hitch is not used, both valves must be closed.**

⚠️ **When transporting mounted implements, always lock the hitch in the raised position hydraulically, with valves located on the right side of the tractor under the cab.**

This hydraulic lock is recommended even if no equipment is connected to the three-point hitch.
CONTROLS, INSTRUMENTS & OPERATIONS

Working and transport position of the front three-point hitch

<table>
<thead>
<tr>
<th></th>
<th>Working position of the front three-point hitch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transport position of the front three-point hitch</td>
</tr>
</tbody>
</table>

Changing the position of the draw-bars of the front three-point hitch:
1. Release and remove the pin (1) from the opening.
2. Lift the arm from position (A) to position (B).
3. Lock the arm by inserting the pin (2) in the opening (2) and secure the pin.

⚠️ Only insert the pin in the openings, never check whether the opening is free with your fingers!

Driving with agricultural machines attached to the front three-point hitch

⚠️ The maximum permissible speed of the tractor with agricultural machines attached to the front three-point hitch is 15 km.h⁻¹. If no implement or weight is attached to the front three-point hitch, we recommend you to lift the lower lifting draw-bars to the transport position.

Towing equipment

Maximum permissible load of the hitch

<table>
<thead>
<tr>
<th>Hitch type</th>
<th>Maximum draft force (dynamic load)</th>
<th>Maximum permissible vertical load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower hitch</td>
<td>29.4 kN</td>
<td>500 kg</td>
</tr>
<tr>
<td>Multi-level hitch attachment tail piece</td>
<td>42.8 kN</td>
<td>1,200 kg</td>
</tr>
</tbody>
</table>

⚠️ Warning: All implements mounted on the tractor must be firmly attached and must be in accordance with the implement manufacturer’s instructions. Use only authorized devices.

⚠️ Warning: The front towing hitch should be used for emergency trailer towing or for towing the tractor in the yard or in an authorised service centre.

⚠️ Caution: Never transport partially attached implements, trailers or agricultural machines by attaching them to the upper link of the three-point hitch. This could cause the tractor to get stuck or turned over.

⚠️ Warning: When towing, always secure the hitch pin with a suitable safety pin with a safety clip to prevent the hitch pin from being pulled out spontaneously. The safety pin must always be attached to the hitch.

⚠️ Warning: The maximum permissible hitch load (horizontal and vertical), the maximum permissible hitch height for road. Use and the maximum trailed load are indicated in the tractor registration document.

⚠️ Caution: Do not allow another person to ride on the drawbars or the lower links when the tractor is in motion.
Lower hitch
1 - Lock pin
2 - Pin

Connection and disconnection of implements
To connect implements in the lower hitch, proceed as follows
- Remove the locking pin 1
- Remove the pin 2
- Slowly reverse the tractor up to the implement
- Insert pin 2
- Secure the locking pin 1
Multistage adjustable suspension
Serves for connecting double axle or lighter single-axle trailers. Guidance nozzle is vertically adjustable. When working with various agricultural machines it is necessary to adjust the suspension vertically or demount where necessary.

⚠️ All hitch pins must always be secured with the appropriate pin protections.
1. Multi-Level Hitch Console
2. Rear PTO Cover
3. Multi-Level Hitch Attachment Tail Piece
4. Lower Hitch

Disassembly of the rear PTO cover
Pull the locking device (1) towards yourself to remove it. Grasp the back of the cover and lift the cover in the direction of the arrow into the vertical position. Pull the cover upwards to remove it from the hooks (2). Follow the reverse procedure to reassemble the cover.

⚠️ When working with the rear PTO, the cover must always be installed.

Lower hitch disassembly
After releasing the locking devices, remove the two pins (1). Remove the lower hitch by pulling it backwards in the direction of the arrow.

Follow the reverse procedure to reassemble the lower hitch.
Height adjustment and disassembly of the multi-level hitch attachment tail piece

Remove the rear PTO cover and, if necessary, the lower hitch before handling the multi-level hitch attachment tail piece.

Grasp the multi-level hitch attachment tail piece firmly. Moving the lever (1) in the direction of the arrow (upwards) engages the locking pins (2) and the tail piece is freely movable in the grooves of the multi-level console.

Adjust the multi-level hitch attachment tail piece to a suitable height so that the locking pins (2) are aligned with the holes in the multi-level hitch console and release the lever (1); the locking pins (2) slide into the holes in the multi-level hitch console.

Check that the pins (2) slightly overlap the outer edge of the multi-level console.

Perform the disassembly of the multi-level hitch attachment tail piece after pulling the lever (1), by sliding the tail piece upwards out of the grooves of the multi-level console. Perform the assembly in the reverse order.

⚠️ Never insert your fingers into the holes in the multi-level hitch console as there is a risk of injury.
Starting the engine
Before starting the engine, perform pre-operation check as described in the chapter Safe Operation of Tractor

1. Sit into the driver's seat.
2. Depress the foot brake.
3. Lower the hydraulics lever.
4. Depress the clutch pedal to release the safety switch.
5. Move the main gear shift lever to the neutral position (N).
6. Insert the ignition key and turn it to the ON position.
7. Make sure the indication lights are working.
8. Turn the ignition key anticlockwise to the GLOW position to activate the combustion chamber heater. Preheating is indicated by the indicator light on the instrument panel. When the control indicator turns off, turn the key to the start position and start the engine.
9. Make sure all warning lights switch off after the engine starts.

Important:
Never turn the key to the start position while the engine is running as this can cause serious damage to the starter and engine flywheel.
Only engage the starter for a period of not more than 10 seconds.
If engine does not start, rest the starter for about 20 seconds and try again for a maximum of 10 seconds.
If the engine does not start after repeated attempts, refer to the fault tracing guide.

Important: Especially in cold weather, always allow the tractor to idle for a while to warm up & build up sufficient oil pressure to ensure normal operating temperature for longer engine life.

Stopping the engine
- After light work let the engine idle for a while and turn the key off.

Important: After long or heavy work allow the engine to idle for 5-10 minutes and turn the key off.
Driving the tractor

Warming up
When starting the engine allow it to warm up to operating temperature by allowing it to idle 5-10 minutes to ensure full lubrication and operating temperature. Failure to do so can shorten engine life substantially.

Warming up in cold weather
Cold weather will change the viscosity of the oil, resulting in a reduced oil pumping capacity, which can cause damage to the engine if it is not warmed up correctly. It also causes problems with the hydraulic system and the synchromesh in the transmission.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Time for warming up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 50°F</td>
<td>5~10 min.</td>
</tr>
<tr>
<td>50°F ~ 32°F</td>
<td>10~20 min.</td>
</tr>
<tr>
<td>32°F ~ 14°F</td>
<td>20~30 min.</td>
</tr>
<tr>
<td>14°F ~ -4°F</td>
<td>30~40 min.</td>
</tr>
<tr>
<td>Below - 4°F</td>
<td>Over 40 min.</td>
</tr>
</tbody>
</table>

Important:
- Ensure the handbrake (Foot brake) is on during the warming period.
- Failure to warm up correctly can result in problems.

When the engine is warm, depress the clutch and move both shift levers into the desired positions. Release the parking brake. Increase the engine speed and smoothly release the clutch. When driving, change gears only with the (main) gear shift lever and with the clutch pedal fully depressed.

Caution:
- Do not "ride" the clutch to control speed, use a lower gear.
- Do not travel with your foot on the clutch pedal.

Danger:
- Connect the brake pedals together when driving on the road.
- To tow attached devices and implements, use the swinging drawbar or multi-level hitch only.
- Do not tow a load that is too large for the tractor's braking efficiency, especially in hilly terrain.
- Extra caution is necessary when towing oversized units.
- Do not carry passengers.
- Always observe local regulations and traffic rules.
Sharp change of direction in the field
Disconnect the latch connecting left and right brake pedals to allow the use of individual pedals.
To make a tight turn use both the steering wheel and the brake pedal at the same time.
For a left turn use the left pedal and a right turn the right pedal.

Caution: Perform tight turns only at a slow safe speed. Doing so at a high speed can cause rollovers and very serious injury or death.

Normal service braking and parking
Allow the engine speed to return to idle, simultaneously depress the clutch and apply the brakes.
When the tractor stops, lower the attached implement and move the main transmission to the neutral position.
Apply the parking brake, stop the engine and remove the ignition key.

Caution: Always apply the park brake when parking. Failure to do so can cause accidents and damage. As an extra precaution when parking on a slope, chock the rear wheels.

Uphill starts on a steep slope
With the pedals connected, depress the brakes and depress the clutch.
Set all gear shift levers to low gears and throttle to medium engine speed.
Release the clutch and release the brake pedals when engaged.
Set the throttle to the required speed.
Driving downhill
Use the engine's ability to brake when traveling downhill.
Never rely on the brakes only and never travel downhill with the gears in neutral.

⚠️ Caution: When operating in hilly terrain the risk of the rollover is increased substantially, please drive with extra care. When towing trailers in hilly terrain ensure that they are equipped with brakes, use a lower gear to get maximum engine braking and do not change gears on a down hill run.

Operation of the diff lock
Although the differential lock is a very useful thing, caution is required when using it, as misuse can lead to hazardous situations. The differential lock should only be used in situations where one of the rear wheels loses traction.

⚠️ Warning: Use low engine revolutions when using the diff lock. If the diff lock does not release after removing the foot from the pedal use the left and right brake pedals in turn to release it. Do not try to engage or use the diff lock on tight turns as serious damage can result.

Check during driving
Constantly observe the warning lights on the instrument panel and if any of them comes on, stop the tractor to determine the cause.

Oil pressure light
If the oil pressure light comes on check the oil level first of all. If the oil level is OK ask a qualified dealer to check the reason for the light coming on.

Battery charging
If the alternator warning light comes on check all connections and ensure that the fan belt is not broken. If all connections and the fan belt are intact consult your dealer to determine the cause of the problem.
Fuel gauge
To prevent excessive condensation in the fuel tank, refill the fuel at the end of each day and ensure that the level during the day does not fall to a level when the fuel system needs to be bled after refueling.

Engine cooling water
If the indicator indicates that the engine is overheating, stop the tractor and check the radiator coolant level.

⚠️ Danger: Allow the engine to cool down before opening radiator cap as serious burns may result due to hot steam & boiling water.
Also check that the radiator fins are not clogged or that the tractor fan belt is not broken or slipping.

Trailer socket (seven terminal electrical socket type)
1 - Trailer socket

To operate the electrical systems of implements, trailer lighting, warning lamp etc.
Treads
Front and rear wheels can be set in two positions. This will change the tread.

<table>
<thead>
<tr>
<th>Tire size</th>
<th>A Standard tread (mm)</th>
<th>B tread (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front R1</td>
<td>240/70 R16</td>
<td>1,330</td>
</tr>
<tr>
<td>Rear R1</td>
<td>320/70 R24</td>
<td>1,264</td>
</tr>
<tr>
<td>Front R4</td>
<td>12-16,5</td>
<td>1,321</td>
</tr>
<tr>
<td>Rear R4</td>
<td>17,5L-24</td>
<td>1,370</td>
</tr>
</tbody>
</table>
Changing the front wheel tread

⚠ Secure the tractor against movement first, lift the axle with a jack and support it. Tighten the front wheel bolts and nuts to the torque of 157 Nm.

The tread is changed by turning the wheel around and mounting the rim offset inwards, while swapping the two front wheels to maintain the correct direction of the tire tread with the arrow forwards.
- Remove the front wheels.
- Swap the front wheels and mount with the rim offset inside.
- Tighten the front wheel bolts and nuts to 157 Nm.
- After driving 100 m with the unloaded tractor, retighten the front wheel bolts and nuts to the specified torque.
- After loading the tractor, tighten the front wheel bolts and nuts after 3 hours of operation to the specified torque.
- After 10 hours of operation, recheck the tightening of the front wheel bolts and nuts.

Changing the rear wheel tread

⚠ Secure the tractor against movement first, lift the axle with a jack and support it. Tighten the rear wheel bolts and nuts to the torque of 363 Nm. The tread is changed by turning the wheel around and mounting the rim offset inwards, while swapping the two back wheels to maintain the correct direction of the tire tread with the arrow forwards.
- Remove the rear wheels.
- Swap the rear wheels and mount with the rim offset inside.
- Tighten the rear wheel bolts and nuts to 363 Nm.
- After driving 100 m with the unloaded tractor, retighten the rear wheel bolts and nuts to the specified torque.
- After loading the tractor, tighten the rear wheel bolts and nuts after 3 hours of operation to the specified torque.
- After 10 hours of operation, recheck the tightening of the rear wheel bolts and nuts.
Front drive axle fenders

There are two versions of the front fenders:

A - Front fenders for 12-16.5 wheels
They are on adjustable brackets that can be adjusted vertically after loosening the screws and nuts (1) and laterally after loosening the screws and nuts (2) according to the values in figure (A).

B - Front fenders for 240/70 R16 wheels
They are on adjustable brackets that can be adjusted vertically after loosening the screws and nuts (1) according to the values in figure (B).

**If the front fender brackets settings are changed, check the wheel stop setting on the front-wheel drive axle.**

**Setting wheel stops with front drive axle**
Wheel stops with front drive axle must be set so that there would be a distance of at least 50 mm between front drive axle tires and tractor with full lock and full axle swing around central pin.

**Setting wheel stops with front drive axle check**
1. Set full lock to one side and check that the distance between a tire and the nearest solid point on the tractor is at least 50 mm. Check both front tires.
2. Turn the steering to full lock to the other side and check according to point 1.
3. Heave one side of the front axle to the maximum swing (front axle leans against the bracket) and check according to point 1 and 2.
4. Hoist the other side of front axle to the maximum swing (front axle leans against the bracket) and check according to point 1 and 2.

The setting of stops (A) changes after the release of a nut (2) and unscrewing or screwing in a screw (1).

**After the change in setting wheel stops with front drive axle, it is always necessary to check their setting according to points 1 to 4.**
Connecting and disconnecting implement

Connection
1) Do not forget to stop the engine before connecting the implement.
2) Move the lever of the double-acting valve forward and backward 4 to 5 times to release the pressure in the tractor’s hydraulic lines. Otherwise it may be difficult to attach the couplers and hydraulic fluid may splash out of the hoses and strike the eyes when coupling.
3) Remove any dirt around the couplers. If dirt enters the hydraulic parts, the system may fail.
4) Open the dustproof clutch cover on the tractor and connect the implement coupler. You should hear a click when the coupler is engaged.
5) Pull the hydraulic hose to check that the couplers are correctly connected.
6) Start the engine and check for operation and leaks.

Disconnection
1) Do not forget to stop the engine before disconnecting the implement.
2) Relieve the residual pressure in the hydraulic hoses of the machine and the tractor by moving the lever of the double-acting valve 4 to 5 times backwards and forwards.
3) Remove any dirt around the quick couplers.
4) Keep the implement unloaded by removing all load (e.g. by lowering or placing the implement on the mat). If the hose is disconnected when the implement is loaded, it will be difficult to reconnect it in the future.
5) Disconnect the quick couplers by pulling them backwards.
6) Close the dustproof cover of the quick couplers of the tractor. Cover the quick coupler of the disconnected implement so that no dirt can penetrate.

⚠️ Warning:
- Never connect or disconnect the implement hydraulic hose while the pressure in it is not released or the engine is running. It is hard to connect and disconnect the hose and hydraulic fluid can be sprayed from the hose, and get into your eyes or skin.
- Stop the engine and wear protective glasses and gloves before work.
Mounting implement
If the PTO is used, remove the safety cover from the PTO shaft. Connect the lower left link, then connect the lower right link using the adjusting handle, if necessary. Connect the upper link. Connect the PTO shaft to the tractor, if used, and make sure it is properly locked in place. Adjust the stabilizer bars so that it corresponds to the implement and tighten the retaining nuts. To disconnect the implement, proceed in the reverse order.

1 - PTO Protective Cover

Caution: Do not connect the PTO shaft while the engine is running and make sure all protective covers are in place.
Fixtion points of loader

⚠️ For detailed information on the assembly and operation of the front loader, refer to the documentation supplied with your specific front loader.

1 - Right (front)

2 - Left (front)

3 - Right (rear)

4 - Left (rear)
<table>
<thead>
<tr>
<th>SPEC</th>
<th>Strength</th>
<th>No.</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16 x 2.0</td>
<td>9T</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>M14 x 2.0</td>
<td>9T</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>M12 x 1.75</td>
<td>7T</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
Check and service
This section gives full details of the service procedures necessary to maintain your tractor at peak efficiency while the lubrication and maintenance chart provides a ready reference to these requirements.

Service inspections
Service inspections are performed as follows:
The first service inspection at the state of the engine hour counter of 50 EH maximum, but not later than 6 months after commissioning of the tractor. The second service inspection after covering another 200 EH (at the state of the engine hour counter of 250 EH maximum) but not later than 12 months after the first service inspection. Next service inspections always after covering another 250 EH but not later than 12 months after the previous service inspection. The service inspections are a part of tractor maintenance. The services authorized by Zetor will provide professional performance of service inspections according to the manufacturer’s instructions.

Pre-start checks
To avoid problems it is recommended that a range of checks be carried out daily before starting the tractor. For full details of the items and frequency please refer to the following tables - Periodical check and service tables.

Engine coolant
Remove the radiator cap and make sure that the coolant reaches up to the filler neck and that it is clean. Check that the correct antifreeze or anti-corrosion mixture is used.

1 - Radiator Cap
2 - Expansion Vessel

If corrosion of the cooling system is noticeable in the coolant color, completely drain the system and fill with the correct mixture of water and antifreeze or corrosion inhibitor.

1 - Drain Valve
MAINTENANCE INSTRUCTIONS

Engine oil
1 - Minimum Level Mark
2 - Maximum Level Mark
3 - Engine Oil Dipstick

Remove the dipstick, wipe it and immerse in the oil pan. Make sure the oil level is between the upper and lower mark, near the upper mark. If the oil level is too low, add more oil. Never exceed the replacement interval. Always check the oil before starting the engine or at least after 30 minutes after stopping the machine. Never check the oil level when the engine is running or immediately after it has been stopped.

1 - Engine oil filter
2 - Level gauge

Important: Do not overfill the crankcase with oil.
Transmission oil
Check the level using the dipstick at the top of the transaxle. If the level is low, add more oil through the filler.

![Transmission oil dipstick diagram](U18N061)

**Caution:** Always ensure that you use the correct oil for topping up or oil changes.

1 - Maximum Level
2 - Minimum Level

Fuel

1 - Fuel Tank

Look at the fuel gauge to check the fuel level and refill if it is too low. It is good to refill the tank after using the tractor to avoid condensation of water in the tank.

![Fuel tank diagram](U18N064)
Tyre pressure
The air pressure used in the tires has a direct bearing on the life of the tire and its performance in the field. Ensure that the tire pressures are correct and in accordance with the table in chapter Track adjustment. To make a visual judgment see the drawing on the right.

1 - Excessive
2 - Correct
3 - Insufficient

<table>
<thead>
<tr>
<th>Tire size</th>
<th>Rim size</th>
<th>Air pressure (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>240/70 R16</td>
<td>2.4</td>
</tr>
<tr>
<td>Rear</td>
<td>320/70 R24</td>
<td>1.6</td>
</tr>
<tr>
<td>Front</td>
<td>12-16,5</td>
<td>4.5</td>
</tr>
<tr>
<td>Rear</td>
<td>17,5L-24</td>
<td>2.7</td>
</tr>
</tbody>
</table>

The air pressure values in the table are indicative, the tire pressure values given by the tire manufacturer are preferred.

Important: It is strongly recommended that the tire pressure is checked with the correct gauge, as well as a visual check of the pressure before starting to drive.

Danger: Excessive tire pressure can cause excessive tire wear, poor manoeuvrability and accident!

Tire inflation
If the tractor is equipped with air brakes for trailers and semi-trailers, the tractor air pressure system can be used to inflate the tires.
Remove the cap (1) on the left compressed-air tank (accessible from the rear of the tractor) and screw the tire inflation hose onto the fitting (2).
Inflate the tires while the engine is running and the tractor is secured against movement by using the hand brake, if necessary by wedging the wheels.
When tire inflation is complete, remove the tire inflation hose and attach the cap (1) to the fitting (2).

Steering
Check the steering wheel for excessive play.
Brake
Check that both the left and right brakes are correctly adjusted and functioning at the same time. The correct play of the brake is 30 ~ 40 mm.
MAINTENANCE INSTRUCTIONS

Installation of the Front Loader
Follow the instructions supplied with the loader to connect and disconnect the loader.
1 - Loader and Front Three-Point Hitch Distributor
2 - Transmission Oil Filter
MAINTENANCE INSTRUCTIONS

Periodical check and service table

<table>
<thead>
<tr>
<th>Group</th>
<th>Item</th>
<th>Daily</th>
<th>Service interval (hour meter, mark)</th>
<th>Frequency</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 0 1 5 1 0 2 0 2 5 3 0 4 0 5 0 5 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine</td>
<td>Engine oil &amp; Cartridge</td>
<td>O</td>
<td>xx</td>
<td>x</td>
<td>Every 250 hours or 12 months after first 50 hours</td>
</tr>
<tr>
<td></td>
<td>Air cleaner</td>
<td>O</td>
<td>O O x O O</td>
<td>x</td>
<td>Clean every 100 hours</td>
</tr>
<tr>
<td></td>
<td>Radiator coolant</td>
<td>O</td>
<td></td>
<td></td>
<td>Check daily top up if required</td>
</tr>
<tr>
<td></td>
<td>Radiator</td>
<td>O</td>
<td></td>
<td></td>
<td>Check daily for damages leakage</td>
</tr>
<tr>
<td></td>
<td>Fuel</td>
<td>O</td>
<td></td>
<td></td>
<td>Fill tank</td>
</tr>
<tr>
<td></td>
<td>Fuel filter</td>
<td>O</td>
<td>xx O O O</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fan belt</td>
<td>O</td>
<td></td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td>Battery</td>
<td>O</td>
<td>O O O</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td>Loose nuts and bolts</td>
<td>O</td>
<td></td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td>Radiator hose clamp</td>
<td>O</td>
<td></td>
<td></td>
<td>Check daily</td>
</tr>
</tbody>
</table>

Caution: These intervals are for operation under normal conditions and need to be reviewed under severe conditions to a greater frequency.
# MAINTENANCE INSTRUCTIONS

<table>
<thead>
<tr>
<th>Group</th>
<th>Item</th>
<th>Daily</th>
<th>Service interval (hour meter, mark)</th>
<th>Frequency</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis</td>
<td>Transmission oil</td>
<td>O</td>
<td>x</td>
<td>Every 500 hours or 12 months after first 50 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Free play of brake pedal</td>
<td>O</td>
<td></td>
<td>Check daily</td>
<td>(20~30 mm)</td>
</tr>
<tr>
<td></td>
<td>State of both brake pedals</td>
<td>O</td>
<td></td>
<td>Check daily</td>
<td>Adjust so that both operate simultaneously and brake at the same time</td>
</tr>
<tr>
<td></td>
<td>Operation of each lever</td>
<td>O</td>
<td></td>
<td>Check daily</td>
<td>Smooth operation</td>
</tr>
<tr>
<td></td>
<td>Free play of steering wheel</td>
<td>O</td>
<td></td>
<td>Check daily</td>
<td>About 50mm (1.97 in) of wheel circumference</td>
</tr>
<tr>
<td></td>
<td>Toe-in</td>
<td>O</td>
<td></td>
<td>Check every 250 hours</td>
<td>(2~6 mm)</td>
</tr>
<tr>
<td></td>
<td>Grease in front wheel hub</td>
<td>O</td>
<td></td>
<td>Grease every 250 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check the steering wheel joint</td>
<td>O</td>
<td></td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>
## MAINTENANCE INSTRUCTIONS

<table>
<thead>
<tr>
<th>Group</th>
<th>Item</th>
<th>Daily</th>
<th>Service interval (hour meter, mark)</th>
<th>Frequency</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 1 1 2 2 3 3 4 4 5 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Chassis| Wheel nut fastening torque                | O     | Check daily                          | Tightly if loose  
Front: 157Nm  
Rear: 363Nm |
|        | Operation of the instrument               | O     | Check daily                          |           |                                          |
|        | Adjustment of the throttle pedal          | O     | Check every 250 hours                |           |                                          |
|        | Grease each nipple                        | O     | Replenish every 50 hours  
(everyday in dusty conditions) |           |                                          |
|        | Loose bolts and nuts                      | O     | Check daily                          | Tighten to proper torque. |
|        | Hydraulic oil filter                      | xx    | Change every 500 hours or 12 months after first 50 hours |       |                                          |
|        | HST oil Filter                            | xx    | Change every 500 hours or 12 months after first 50 hours |       |                                          |
|        | Oil of the 4WD front axle                 | xx    | Check every 100 hours.  
Change every 500 hours or 12 months after first 50 hours | Replace if leaking. |
|        | Check the electric wiring                 | O     | Check every year                     | Without loose or broken terminals, damaged or missing wiring. Correctly clamped. |
|        | Adjustment of the throttle pedal           | O     | Check every 250 hours                |           |                                          |
|        | Hydraulic hoses & pipes                   | O     | Check every 250 hours                |           |                                          |
MAINTENANCE INSTRUCTIONS

Tractor greasing plan

1 - Oil Filler
2 - Lubrication Point
3 - Drain Plug
4 - Sight Gauge
5 - Grease Nipple
6 - Engine Oil Filler Neck
7 - Front-Wheel Axle Oil Drain Plug
8 - Front Axle Lubrication Point
9 - Front-Wheel Axle Oil Filler
10 - Radiator
11 - Engine Oil Drain Plug
12 - Transmission Oil Drain Plug
13 - Transmission Oil Filler
Fuels, coolants and lubricants used - amounts

The manufacturer does not take responsibility for any damages caused by the usage of service fillings that do not comply with requirements stated in this service manual.

Recommended SAE viscosity grades for engine oil
A - Viscosity
B - Temperature

ZETOR service fillings
To maintain best operational characteristics of your tractor, original operational Zetor fillings are recommended to be used.

Motor oils
Engine oil Zetor 10W-40 L-SAPS

Oil in the gearbox and final drivehousing
Oil for gearing mechanisms of tractors ZETOR EXTRA 10W30 STOU

Oil for the front driving axle
Oil for the front axle ZETOR LS 80W

Other recommended service fillings tested on Zetor tractors

Oil to gear systems of tractors
1 - RPM Tractor Hydraulic Fluid or Textron TDH Premium (CALTEX)
2 - TDH Oil or TDH Oil special (TEXACO)
3 - Chevron 1 000THF (CHEVRON)

Fuel
Diesel oil complying with the regulation of EN 590
Procedure to open the front hood

Front bonnet opening
To open the hood:
Unlock the hood by pulling the handle (1) in the direction of the arrow (forward).
The handle is located under the right front corner of the hood.
Grasp the hood and lift it.
In the raised position, the hood is locked by the gas-liquid safety stops.

To close the hood:
Check that the handle (1) has returned to the rear position.
Pull the hood down and snap it down until the hood lock engages.

⚠️ When the front hood is slammed shut, the headlight bulbs located in the front hood may be damaged.

Opening the side cover
1 - Support Pin (1)

To open it, grasp the side panel of the hood and pull the front panel upward to separate it from the guiding support pin (1). Then pull the hood side panel forward.
Fuel system
Use clean diesel fuel only.

Important: As diesel fuel equipment is susceptible to contamination by dust or water, ensure that all dust and water is kept well away from the fuel tank.

Bleeding the fuel system

1. Fill the tank with fuel and turn the ignition key to on.
2. Loosen the fuel pipe nut of the Injection pump two or three turns.
3. When fuel free from air flows (bubbles) from the fuel pipe nut, tighten the fuel pipe nut.
4. The bleeding of the system is now finished.
Changing oil in tractor
Always use quality oils as engine or transmission oil (refer to the chapter: Recommended transmission oil) Refer to the tables 'Periodical check and service table' for the change frequency.

Changing engine oil
1 - Engine oil filter
2 - Level gauge

Park tractor on level surface, shutoff engine.
Remove sump plug & drain oil.
Replace and check the sump plug and refill the engine with oil to the correct level on the dipstick. (Approx. 1.85 US gal/ 7l)
The grade of oil to be used will depend on the ambient temperature.
The tractor is shipped from the factory with 15W/40.

- For summer use over 77°F (25°C) use SAE 30.
- For temperatures from 32°F~77°F (0°C~25°C) use SAE20 or 15W/40.
- For temperatures below 32°F (0°C) use SAE 10W.

Important:
When changing the oil, replace the filter at the same time.
Always use the same oil, as using different types of oils or oils with different specifications can cause damage.
Dispose of the old oil according to valid legal regulations.
Changing the transmission oil

1 - Drain plug

1 - Maximum Level
2 - Minimum Level

Remove the drain plug from the bottom of the transmission and drain the oil. Return the drain plug and check for tightening and leakage.

1 - Dipstick
2 - Filler

Fill the transmission with new oil not exceeding the maximum level marked on the dipstick.

- Capacity 35 l (9.24 US Gal)

Important: Always use the same type of oil. Using another type of oil or oil with different specifications may damage the transmission. Dispose of the old oil according to valid legal regulations.
Changing front axle oil
Remove the oil drain plug and drain the old oil. Then return the drain plug, tighten it properly and check leakage. Remove the front axle filler cap and fill with new oil that does not exceed the maximum level indicated by the mark.

- Capacity 10 l (2.65 US gal)

1 - Maximum Level
2 - Minimum Level

1 - Top plug (Vent plug)

1 - Level gauge & oil filler
2 - Front axle oil drain plug

Important:
After refilling the prescribed amount of new oil, the level measured by the dipstick may be higher than permitted - due to incomplete filling of the front-wheel axle drive mechanism - this discrepancy will disappear after being put back into operation. Unscrew the bleed plugs to accelerate the proper pumping of the oil by the front axle drive system.
Cleaning and replacing filters

**Engine oil filter**

1. Engine Oil Filter
2. Engine Oil Dipstick

Using the oil filter wrench, screw the filter anticlockwise to remove it. Lightly lubricate the rubber seal ring on the new filter with oil, rotate clockwise until the seal reaches the sealing surface, and then rotate another 2/3 turn to tighten it properly.

**Fuel filter**

Perkins does not usually supply a fuel filter / water separator (if installed). The following text describes a typical fuel filter / water separator.

For more information about the fuel filter / water separator, refer to the OEM information.

Turn the fuel shutoff valve (if fitted) to the OFF position before performing this maintenance operation. Place a container under the fuel filter to catch any spilled fuel. Discard spilled fuel immediately.

1. Close the fuel shutoff valve (if equipped).
2. Remove any contamination around the fuel system.

**Note:** If the fuel filter element is not equipped with a drain, remove cap. Remove the nylon insert in order to reduce the level of fuel in the fuel filter element. A reduction in the level of fuel in the fuel filter element will help prevent fuel from being spilled when the element is removed.

**Notice:** Do not use any tool to remove the fuel filter. If you attempt to remove the fuel filter with a filter wrench or a filter installation aid, the sealing ring may be damaged.

3. Grasp the fuel filter and turn the quick-clamping device anti-clockwise.

**Note:** If the element is equipped with a sediment bowl, remove the sediment bowl from the element. Thoroughly clean the sediment bowl. Inspect the O-ring seals. Install new O-ring seals, if necessary. Install the sediment bowl to the new element. Hand tighten the sediment bowl. Hand tightening is the only method that should be used.

**Notice:** Do not fill fuel filters with fuel before installing them. Contaminated fuel will cause accelerated wear to fuel system parts.

4. Make sure the bottom of the fuel filter is clean. Push the new filter element all the way into the bottom of the fuel filter.
5. Hold the fuel filter in its place. Attach the detent ring. Turn the detent ring clockwise to attach the fuel filter to the bottom part of the fuel filter.
6. Open the fuel shutoff valve (if equipped).

**Important:** Never use petrol thinner or any similar flammable material to clean the coarse fuel filter. Always bleed the system after replacing the filter.
Hydraulic oil filter and engine oil filter cartridge
1 - Transmission Oil Filter
2 - Supply Valve

Remove the filter with a special filter wrench.

1 - Engine Oil Filter
2 - Engine Oil Dipstick

To replace the engine oil filter, apply oil on the gasket, manually place it until the gasket touches the sealing surface, and then rotate it another 2/3 turn to tighten. Check the tightness.
Changing coolant

1 - Radiator Cap

1. Open the drain valve in front of the engine oil filter and drain the coolant.

2. Simultaneously open the radiator cap.
3. To clean the cooling system thoroughly, flush it with a gentle stream of water.
4. Close the drain valve and fill the cooling system with new coolant.
5. Start the engine and let it idle for about 5 minutes, then check the fluid level again and add more coolant if necessary.

Caution: Do not remove the radiator cap while the engine is hot. Allow the engine cool down and then turn the cap slowly to make sure that there is no excessive pressure in the radiator.

Caution: Serious burns, can result from the contents of pressurized, hot radiators. Allow the engine to cool down completely before opening radiator cap.

Anti freeze
If the coolant freezes, it may damage the engine.
Flush the radiator before replacing the antifreeze.
Prepare the antifreeze solution according to the specific antifreeze instructions and local climatic conditions.
Replace the solution in the radiator.
In case of loss of solution due to evaporation or overflow, add more solution of the original composition.
Cleaning the radiator
Insects, blades of grass and dust can all clog the radiator and reduce its efficiency.
Remove the radiator cover so that you can clean it together with the radiator.
Loosen the screw and pull to remove it.
Then clean the inside of the radiator between the ribs and the tube using clean water.

1 - Radiator Cap
2 - Expansion Vessel

Important: Water or air under high pressure can distort the cooling fins on the radiator and reduce its efficiency.
Greasing the tractor
Grease the tractor according to the service schedule (Tables: Periodical check and service table)
Ensure that grease nipples are cleaned well before any attempt is made to grease them.

Safety instructions for lubrication of the tractor
- The tractor maintenance may be performed only by the trained personnel thoroughly familiarized with operational and safety principles.
- During maintenance of the tractor wear appropriate (specified) personal protective equipment (occupational footwear, protective gloves, safety goggles, etc.).
- Prior to starting the work, secure the tractor against movement using manual brake.

⚠️ **Lubrication must be performed only when the engine is at standstill!**

1 - Lubrication Point

[Image of Lubrication Point 1]

1 - Lubrication Point

[Image of Lubrication Point 2]

1 - Lubrication Point

[Image of Lubrication Point 3]
1 - Lubrication Point

Setting the play of controls

Adjusting the brakes

1 - Play

As in the case of the clutch, the use of the brakes changes the free play of the pedal and the alignment between the right and left pedals. The correct pedal play is 1.18 ~ 1.57 inches (30 ~ 40mm).

Adjusting method

Loosen the double lock nut to adjust the brake. Rotate to increase or decrease play. Tighten the double lock nuts and secure the nuts. Check that the play is correct and the same on both pedals for even braking effect.

⚠️ Caution: Uneven adjustment of the left and right pedal will result in one sided braking when the pedals are connected and can cause serious accidents, especially at high speeds. Double check to ensure free play is the same on both pedals.
MAINTENANCE INSTRUCTIONS

Adjusting the throttle lever
If this lever is loose or difficult to move, please contact an authorized service to help you solve the problem.

Adjusting toe-in
If the convergence is set incorrectly, it can cause severe vibration of both the steering wheel and the tractor. The correct convergence is 0.08 ~ 0.24 in. (2 ~ 6 mm). We recommend that this setting is carried out by an authorized service.

Checking the battery
1 - Control indicator

A battery charge indicator is available for the battery.

GREEN: Good condition
BLACK: Charging Required
WHITE: Replace the battery

Caution:
The electrolyte contains acid which can cause severe burns. If acid comes into contact with the skin, rinse the affected area immediately with running water.

Battery maintenance
Low temperatures affect battery performance, so pay special attention to them in winter.
Remove the battery and store it in a cool, dry place before prolonged shutdown.
If the battery remains in the tractor, disconnect the negative terminal.
If the batteries are not used for a long period of time, they will self-discharge.
To keep the battery in good condition, charge it once a month in summer and once in two months in winter.
When replacing the original battery, make sure that the replacement battery has the same specifications.
Battery charging
Quick charging is for urgent cases only. We achieve a partial charge within a short period of time. When using a boost-charged battery, it is necessary to recharge the battery as early as possible. Failure to do this will shorten the battery's service life.

Caution: Always disconnect the negative terminal first when removing the battery and always connect the positive terminal first when fitting the battery. When connecting the battery leads make sure not to reverse the polarity. Quick charging will reduce battery life. Disconnect the terminals prior to charging the battery to avoid damage to the circuit and electrical instruments.

Alternator belt adjustment

1. Loosen the alternator pivot bolt (2) and the bolt (3).
2. Move the alternator in order to increase or decrease the belt tension. Tighten the alternator pivot bolt and the link bolt to 22 N.m (16 lb ft) (1).

1 - 7~9 mm
Alternator inspect
Perkins recommends a scheduled inspection of the alternator. Inspect the alternator for loose connections and proper battery charging. Inspect the ammeter (if equipped) during engine operation in order to ensure proper battery performance and/or proper performance of the electrical system. Make repairs, as required.

If the batteries are properly charged, the ammeter reading should be very near Zero. All batteries should be kept warm because temperature affects the cranking power. If the battery is too cold, the battery will not crank the engine. When the engine is not run for long periods of time or if the engine is run for short periods, the batteries may not fully charge. A battery with a low charge will freeze more easily than a battery with a full charge.

Fit the gauge(1) at the center of the longest free length and check the tension. The correct tension is 535 N (120 lb). If the tension of the belt is below 250 N (56 lb) adjust the belt to 535 N (120 lb).

If twin belts are installed, check and adjust the tension on the both belts.

1 - Burroughs gauge

Air conditioner compressor belt adjustment
1 - Tension Adjusting Bolt

Check the compressor belt tension regularly and adjust. If required. The correct tension is if the center of the belt is Pushed With a finger it moves in approx. 10 mm (0.39 in) as shown in the picture.
To adjust the belt, loosen the top bolt on the alternator, move the alternator to the desired position and tighten the bolt.
Also ensure that the bottom alternator bolts are tighten.
Air filter maintenance
1 - Air cleaner body
2 - Element
3 - Cover

To remove the dust from the evacuator valve squeeze it between thumb and fingers to let excess dust out and wipe around the valve to keep it clean from outside.
To clean the main element, remove the left side cover.
Remove the element by unloading the wing nut.
Remove dust by blowing it out of the element with compressed air. Check the element to ensure it is not damaged. Reassemble the element.

**Important:**
*When cleaning the element, never hit the filter with a solid object or never hit the filter against the floor.*
*Check all connections and hoses, especially on the clean side of the air filter, to ensure that air with dust does not enter the engine. Visually check the inside of the filter for visual defects of the element.*
*When reassembling, make sure all surfaces are properly sealed to prevent dust from entering.*

- Replace the element after cleaning it 5 times or it is damaged.

**Checking hoses and lines**
The fuel lines, radiator hoses, hydraulic and rubber hoses are consumables, which deteriorate by age and use.
Check them regularly and replace if faulty.

**Caution:**
*Damaged fuel lines leak and cause fires.*
*Damaged radiator hoses can cause hot water burns and in severe cases seize the engine.*

**Checking the wiring harness and fuses**
Loose wires worsen the connection, and damaged wires can cause short circuit, burns of the wires, or reduction of the efficiency of individual parts. Replace or repair damaged wires or wires with damaged insulation.
If the fuse still blows after replacement, do not replace it with a wire or a stronger fuse, but look for the cause and fix it or consult the electrician.
If the insulation is worn or chipped off, repair it with high-quality insulating tape. If the wire terminals are not in good conditions, replace them with the same part.

**Important:**
*Incorrect wires or fuses can cause a fire, both on and around the tractor, so have it checked by an authorized service every year. Similarly, over time, the fuel lines wear out and deteriorate.*
*Ask an authorized service to have them checked at least once in two years and replace if necessary.*
Replacing fuses
The circuit has 8 blade type fuses in its wiring circuit (See UTILIX 45 / UTILIX 55 Cabin wiring diagram)
When a fuse has blown replace it with one of the same value.
Using a large capacity fuse or wire burn out the wiring system.
Use fuse tongs to replace fuses.

1 - Normal
2 - Blown out

Main fuses
1 - Fuse case

The wiring harness is equipped with 3 main fuses who's function is to preserve the wiring. However when a main fuse blows the entire circuit is dead.
Always check the reason & rectify before replacing the fuse of the same value.

Important: Always check the reason for a blown fuse otherwise the new fuse is also likely to blow.
NEVER EVER USE WIRE in place of correct grade fuse.
Storage

Service prior to daily and short terms storage.
Wash the tractor and keep it clean.
Refill the fuel tank to prevent water condensation and corrosion.
Lower all implements on the mat before parking the tractor.
If you want to shut down the tractor for a long period of time, consult an authorized service.

For daily or short term storage
Clean the tractor and remove any dirt accumulated during work.
Refill the fuel tank to prevent water condensation and corrosion.
Lower all tractor implements onto the mat.
Park the tractor in a covered and dry place, if this is not possible, cover the machine with a solid waterproof material (tarpaulin).
Under very cold conditions, it is recommended to remove the battery and store it in a warm, dry place.
Thanks to this measure, the tractor can be started up smoothly if necessary.
If the outside temperature falls below 0 °C, completely change the antifreeze or drain the refrigerant to protect the engine from damage due to the freezing of the coolant.

Important: When washing the tractor ensure that the water does not get near electrical components or the oil filter points.
To prevent short circuits remove the ignition key.
Do not wash the tractor when the engine is running.

Long-term storage
If the tractor is not to be used for a longer period of time, clean it in the same way as for a short-term shutdown.
Drain the oil and replace it with new one. Allow the engine to run for approx. 5 min to ensure that all new oil is pumped through the entire engine.
Drain the refrigerant from the radiator and remove the ignition key.
Put a tag with the inscription ‘No refrigerant’ on both the key and the steering wheel. Add grease, i.e. oil, to all lubrication points on the tractor.
Check the pressure values and all of them increase slightly. Lower all implements onto the mat and park the tractor in a covered, dry place.
Using the clutch disconnection arm, disconnect the clutch. Support each tire with a piece of wood to protect it.
Disconnect the battery.

Important: After refilling the engine with the coolant run the engine for approx. 5-10 min. at 1 500-2 000 rpm every month as a corrosion prevention measure. Either removes the battery or the negative terminal as mouse damage to wiring can cause short circuits and fires. Remove the ignition key and store in a safe place.

Re-use after long term storage
Perform a complete check of all oil fillings and coolant. Reinstall the battery and idle the engine for 30 min. to ensure optimum engine service life.

Fuel saving tips
To save fuel and extend the life of the oil in the tractor, keep the following in mind:

Air cleaning system
- Clean the air filtration system on a regular basis to avoid dust accumulation.
- Every 50 hours and every day in sandy / dusty conditions.
- Clean the air filter element with compressed air from a sufficient distance to prevent its damage.
- If the rubber ring is torn or stretched, replace it. Install the new seal in the correct place and check for tightness.
- If air leaks through the hose couplers, check for leaks and repair them.

Note: If the air purification system is not properly maintained, premature wear of the piston rings and boots occurs, resulting in problems such as loss of engine power, excessive fuel or oil consumption.
MAINTENANCE INSTRUCTIONS

Engine
1. After starting the engine and warming up the cooling circuit (indicator needle in the green field), put it into a high load.
2. If excessive black smoke is visible, check the air filter paper element, fuel injection pump, and injector nozzles.
3. Do not run the engine for more than 2 minutes without load. It is better to stop the engine than to let it idle.

Fuel system
1. Always use only diesel as fuel in the fuel system.
2. After finishing work, it is advisable to fill the tank with fuel to prevent condensation of water in the tank.
   Replace the fuel filter if the engine misses or stalls. If these instructions are not followed, the service life of the injection pump and nozzles is shortened. There is also excessive smoke and excessive diesel consumption.

Oil system
1. Always use the recommended type of oil.
2. Every day before starting the engine, check the oil level using the dipstick and add fuel so that it is between the minimum and maximum levels.
3. Change the engine oil. If replacement is required, replace the filter and the O-ring together.

Cooling system
1. Check the fan belt tension regularly. Adjust if necessary.
2. Check the radiator coolant regularly.
3. If it is necessary to replace the radiator cap, use an original spare part.
4. Do not disconnect the thermostat, but replace it with a new one if necessary.
5. Do not change the water in the radiator too often.

Note:
1) Always resolve any fuel or oil leaks immediately.
2) Perform regular maintenance; failure to do so may increase fuel consumption by up to 25%.
3) Regularly check that the cylinder head bolts are tight to the correct torque and adjust the valve clearance. In case of any technical questions or malfunctions, contact an authorized service.
4) Check the tire pressure and adjust to the prescribed pressure if necessary.

Note:
1) Always purchase original spare parts from an authorized dealer/distributor.
2) Always service the tractor only at an authorized dealer / distributor.

* For any other information, contact your nearest authorized dealer / distributor.
How to use of jacks

Front axle

- If the tractor must be lifted for servicing, take it to a suitably equipped workshop.
- Carry out the following operations before any operation about the tractor. Engage the four-wheel drive, the first gear and the parking brake and put chocks to the wheels touching the ground.
- Before lifting the tractor, avoid its swinging by means of wooden wedges applied to the front axle.
- Use jack lifts of suitable capacity and apply them at the centre of the front and rear axles and paying due attention to weight distribution.
- No decals for the lifting point are applied on the tractor, as they would be, too difficult to apply in the available spaces and would be all too easily removed or effaced during normal operation of the tractor.

Note: Apply the jack lift to the lifting points according to the type of operation and following the safety procedures given before.
The cab fully complies with international standards in terms of safety and sound insulation. It is equipped with ventilation, heating and air conditioning systems.

⚠️ The cab is in full conformity with the international standards as to the cab’s soundproofing. Be very careful when operating in small spaces and always protect your ears whenever other working equipment is generating dangerous noise levels.

1 - Air Filter
2 - Work lights (rear)
3 - Air Filter
4 - Rear Wiper
5 - Door Handle

⚠️ Remember that steering, braking and operational performances are highly influenced by the implements mounted, the trailers transported and the ballasts applied to the tractor.

⚠️ When transporting heavy loads (exceeding the weight of the tractor) reduce the speed under 15 km/h.

⚠️ All the implements mounted onto the tractor must be safely secured.

⚠️ Be very careful during implement hitching and unhitching operations. When using implement supports, be sure they are suitable and sufficiently strong.
Instruments and related parts

Doors
The doors are provided with key locks.
To open from the outside, when unlocked, depress the push button.
To open from inside, push the lever downwards.

Rear window
The rear window is fitted with central handle for opening.
When opened it is held in place by two dampers.

Side window
The side window is fitted with central handle for opening.
When opened it is held in place by holder.

Work lights (front and rear)
The work lights are located on the cab roof (two at the front and two at the rear). They are switched on using special switches on the roof console.
1 - Work lights
Rearview mirrors
The cab is provided with rearview mirrors on both sides. They can be adjusted and folded, whenever necessary, to avoid interference with external obstacles. The mirror have a telescopic arm to allow positioning for maximum convenience by the user. Remember that mirrors must always be positioned in compliance with road traffic regulations when driving on a public highway.

Cab ceiling
The roof of the cab is lined with insulating material, the task of which is to retain thermal radiation in the cab and to maintain the cab temperature at a low temperature when working in hot sunny weather. The cab platform is covered with a heavy-duty material in the most commonly used parts. It is recommended to keep the floor clean, free of soil, mud, etc., so that the operator can enter and exit the tractor completely safely.
How to controls cabin

Interior devices
1 - Roof Hatch
2 - Recirculation Input
3 - Player
4 - Rotary Diffuser
5 - Dome Lights
6 - Air conditioning unit, heating control

Ventilation
The ventilation unit is housed in the cab ceiling.
To switch it on and adjust it, turn the electrical fan switch to the desired speed.
The cab becomes slightly pressurized when the ventilation system is in operation, so that the fresh air can enter only by way of the filter installed in the rear section of the cab roof.
The fan switch can be operated only after the ignition key is inserted.
The air flow can be regulated and directed by suitable positioning the air diffusers.
Air can be taken in from fresh from outside or recirculated from within the cab by way of the relative side inlets.

Re-circulation inlets fully closed
Air is taken in entirely from outside the cab through the rear grille and filtered through a paper element positioned behind the grille.
Note: It is very important that the air diffusers never be completely closed so as to allow for a steady air flow.
To obtain a greater pressurization inside the cab, it is necessary to take the air from the outside, therefore the inside air recirculation grille should be fully closed.

Working lamp switch
The front and rear working lights are ON when push the button. The work light indicator lamp on the instrument cluster will illuminate.

1 - Wiper switch
2 - Washer switch
3 - Working lamp switch
Wiper control switch

On switch

- Wind screen wiper operation.
- Continuous pushing button operates wiper and washer pump.

Off switch

- Wind screen wiper "Off" and operates washer pump.

Windscreen washer tank
Check the level of windscreen washer fluid in the plastic reservoir located on the rear side of tractor. During winter it is advisable to add a suitable antifreeze to the windscreen washer fluid.

1 - Washer tank
Interior lamp
Press the button to switch on.
To switch it off, press it again.

Blower control switch
Four-position rotary switch

Temperature control
Set temperature control as required fully clockwise.
For maximum cool and fully counterclockwise for heat.

Air conditioner switch
To operate the air conditioner the blower must be on the blower speed temperature control and all vents must be adjusted to obtain the best cooling for the ambient temperature and dust conditions.
Under normal operating conditions, and the windows and doors closed, temperatures in the cab of 6 °C to 15 °C (10 °F to 25 °F) less than the ambient temperature will occur. When operating the air conditioner system, the moisture level is decreased.

Note:
1) During cold weather, with ambient temperature above 0 °C (32 °F) operate the air conditioner at least once per month for a period of 10 to 15 minutes. This will lubricate the seals to prevent them becoming brittle and help prevent the loss of refrigerant from the system.
2) The system is equipped with an environmentally safe refrigerant, R134a. Never recharge the air conditioning system with refrigerant other than R134a as this will result in loss of cooling and permanent damage to all air conditioning components.
Circulation diffuser
1 - Circulation diffuser

With the circulation vent set in any position outside Air will still be pulled into the cab.

Heating system
The heater is switched on and adjusted by rotating the control knob at the roof console, then switching on the blower and setting the selector at the preferred speed.
To warn the cab up quickly, the knob should be rotated fully clockwise and the blower set to speed 3. The screen is demisted or defrosted by air directed through a slot vent. For defrost or fast demist, all other vents should be closed off.

Important:
Ventilation is provided by a single blower unit serving both the heating system and the air conditioning system.
After reaching the desired temperature adjust the system to suit your needs.

Note: For ideal system operation, the engine must run at 1 000 rpm.

Warning: Before starting the engine, make sure the system is off (by turning off the ventilation fan) so as not to overload the battery.
After the system at full power for a long period of time, never turn it off suddenly but let it first idle for about 20 seconds.

1 - Heating Fan
2 - Electric heating
3 - Air Filter
4 - Recirculation connections
5 - Rotary Air diffuser

Heating system configuration
The heating system consist of two units:

1. Electric heater and blower unit installed behind roof console.
2. Power supplying set, consisting of an auxiliary alternator located front of the engine and driven by a belt directly linked to the engine pulley.
   If the air does not come out from the diffusers right away as soon as the system is started, turn off immediately and identify the fault.

N.B: Never turn on the heating system when working in dusty environments.
**Air conditioning system**
The system is designed to provide optimum temperature inside the cab and provide the operator with maximum comfort and safety. However, if you want to make repairs or adjustments, it is recommended to consult our specialist workshops. Do not approach to the system with open flames, as lethal and explosive gas can be generated when the media leaks from the circuit.

1 - Alternator  
2 - Compressor  
3 - Fan  
4 - Electric heating  
5 - Evaporator  
6 - Air Filter  
7 - Condenser  
8, 9 - Air Diffusers  
10 - Recirculation Ports

**Roof hatch (if equipped)**
1 - Roof hatch  

Ventilation—push the latch towards the front of the tractor and then push the hatch up.  
Emergency Exit—Push firmly upwards to release the support struts from the lower retainer clips.

**Warning:** Cab air filters remove dust in the air, but are not capable of removing chemicals used in spraying crops or in weed control. Many chemicals used for these purposes are toxic when improperly used and can be hazardous to operators and others in the area. Follow the instructions of manufacturers of both the equipment and the chemicals regarding prohibition of dust or spray, personal hygiene practices, and other precautions noted by the manufacturers.
CABIN

Radio, CD player (if equipped)
For operation refer to the radio, CD player manufacturers instructions.

Ash tray
Located at right side of near side window in cabin.

Cup holder
Put the bottles and personal belongings.

Cigarette lighter
Push the button. Use that is return to original position.

1 - Cigarette lighter
2 - Ash tray
3 - Cup holder
1. Check of the air-conditioning system.
   1- High economy and gentle refrigerant: R134a 0,7~0,85 kg.

   The presence of air and water in the system can harm its efficiency.
   - Air is unnecessarily circulated by the compressor as it has practically no cooling effect.
   - Moisture tends to rise to obstacles and joints, which significantly reduces cooling efficiency.

2- Check the belt tension; press your finger on the middle point between the two rollers.
3 - The radiator fins must always be properly cleaned using water or compressed air.

2. Checking the air conditioning system charge
   (1) Check the refrigerant charge.

   - Run the engine at 1 500 rpm.
   - Set the air conditioning system in the coldest for 5 minutes.
   - Check the sight glass dear or cloud.

   ! Caution:

   - If the air-con. is operated with not charged.
   - The lubrication in the compressor can cause the damage.

   (2) Check the refrigerant with receive drier sight glass.
### Air conditioning system troubleshooting

<table>
<thead>
<tr>
<th></th>
<th>Bubbles or foam visible</th>
<th>Trouble shoot</th>
</tr>
</thead>
</table>
| 1 | Bubbles flow and refrigerant gas disappeared like a fog flows. | • Deficient of refrigerant replenish.  
• Nothing different temperature between H.L pipe.  
• High pressure of the pressure gauge needle indicates low pressure. | Abnormal |
| 2 | Same bubble appeared occasionally. (1~2 sec. gap) | • Replenish the refrigerant.  
• High pressure pipe is hot and low pressure pipe is a little cool.  
• H.L pressure of the pressure gauge needle indicates low pressure. | Abnormal |
| 3 | No bubble shown high-pressure pipe is hot abnormally. H-L pressure of the pressure gauge needle indicates high pressure abnormally. | • Too much of refrigerant deflate.  
• High pressure pipe is not abnormal.  
• H.L pressure of the pressure gauge needle indicates high abnormally. | Abnormal |
| 4 | Refrigerant in the sight is shown clearly.  
When engine RPM operates with high low some bubbles disappear slowly. | • Normal refrigerant gas situation.  
• High pressure pipe is hot Low pressure pipe is cool.  
• High low pressure is normal with below.  
• Low : 1.5~2.0 kg/m²  
• High : 14.5~15 kg/m² | Normal |

1 - Rearview Mirror  
2 - Work lights  
3 - Front Wiper  
4 - Roof Hatch
### 3. Diagnosing malfunctions

(1) Tracing faults

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<th>SYMPTOM</th>
<th>CAUSE</th>
<th>SOLUTION</th>
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<td></td>
<td><strong>Input sound</strong></td>
<td></td>
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<tr>
<td></td>
<td>Unusual sound</td>
<td>Lack of lubricant</td>
<td>Add</td>
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<td></td>
<td></td>
<td>Loose belt</td>
<td>Adjust</td>
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<td></td>
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<td>Tighten the screws</td>
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<td></td>
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<td>Clutch failure</td>
<td>Check</td>
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<tr>
<td></td>
<td><strong>Output sound</strong></td>
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<td></td>
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<td>Damaged parts</td>
<td>Check, replace</td>
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<tr>
<td></td>
<td></td>
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<td>Check, replace</td>
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<tr>
<td></td>
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<td>No lubricant</td>
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<tr>
<td></td>
<td><strong>Input cause</strong></td>
<td>Belt loosened</td>
<td>Adjust</td>
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<tr>
<td></td>
<td></td>
<td>Refrigerant or oil leakage</td>
<td>Sealing washer damaged</td>
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<tr>
<td></td>
<td></td>
<td>Loose screw on the head</td>
<td>Tighten</td>
</tr>
<tr>
<td></td>
<td></td>
<td>O-Ring damaged</td>
<td>Replace</td>
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<tr>
<td></td>
<td><strong>Output cause</strong></td>
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<tr>
<td></td>
<td></td>
<td>Low, high pressure</td>
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<tr>
<td></td>
<td>Excessive pressure</td>
<td>Lack of refrigerant</td>
<td>Adjust</td>
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<tr>
<td></td>
<td></td>
<td>Compressor</td>
<td>Replace</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>FAULT</th>
<th>SYMPTOM</th>
<th>CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low pressure or not working</td>
<td>Engine operation normal</td>
<td>Air supply clogged</td>
<td>Remove</td>
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<td></td>
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<td>Evaporator freezes</td>
<td>Adjust the minimum pressure</td>
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<td></td>
<td></td>
<td>Fan switch damaged</td>
<td>Replace the switch</td>
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<tr>
<td></td>
<td>Engine operation is not normal</td>
<td>Compressor</td>
<td>Replace</td>
</tr>
<tr>
<td></td>
<td>Engine operation is not normal</td>
<td>Engine failure</td>
<td>Replace</td>
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<tr>
<td></td>
<td>Broken wire</td>
<td>Replace</td>
<td></td>
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<tr>
<td></td>
<td>Air leak</td>
<td>Pipe leak</td>
<td>Check, tighten</td>
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<tr>
<td>Fan cannot be operated</td>
<td>Engine</td>
<td>Pneumatic control switch error</td>
<td>Check, tighten</td>
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<tr>
<td>Irregular engine operation</td>
<td>Engine failure</td>
<td>Replace</td>
<td></td>
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<tr>
<td>Noise</td>
<td>Regular noise</td>
<td>Collision with roller</td>
<td>Check the position of the compressor</td>
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<td>Irregular noise</td>
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<td>Disengagement</td>
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<td>Wire failure</td>
<td>Check the wire</td>
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<td>Press by hand</td>
<td>Low voltage</td>
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<tr>
<td></td>
<td>No wire defective</td>
<td>Malfunction</td>
<td>Replace</td>
</tr>
<tr>
<td>Slippage</td>
<td>Slippage during rotation</td>
<td>Low voltage</td>
<td>Check the battery</td>
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<td></td>
<td></td>
<td>Clutch contaminated by oil</td>
<td>Clean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Malfunction</td>
<td>Replace</td>
</tr>
</tbody>
</table>
(2) How to check the air conditioning system with the needle of high low gauge

To connect with manifold pressure gauge can find the cause of air conditioning system. Because manifold pressure gauge is various sensibly (Ambient Temp. is based on 30~35 °C) Caution: Operating E/G RPM 1 500~2 000 is must, and so to that you can check the correct cause and air conditioning. (In case below the figure of indicated pressure gauge has some clearance, confirm with approximate indicated needle data.)

Gauge pressure conversion

- lb/in²=PSI
- 1 kg/cm²=14.223 lb/in²
  (Ex) 200 PSI=14 kgf/cm²
### Major specifications

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<th>ITEM</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ENGINE Type</td>
<td>Four cycle, indirect injection, water cooling, diesel</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>404D-22 (C2.2)</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Four cycle diesel IDI</td>
<td></td>
</tr>
<tr>
<td>Bore and stroke</td>
<td>84 mm (3.3 inch.) x 100 mm (3.9 inch.)</td>
<td></td>
</tr>
<tr>
<td>Cylinders</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Displacement (cm³)</td>
<td>2,216</td>
<td></td>
</tr>
<tr>
<td>Compression ratio</td>
<td>22.4:1</td>
<td></td>
</tr>
<tr>
<td>Gross power PS (kW)</td>
<td>UTILIX CL 45/45NC - 42.7 PS (31.4 kW)</td>
<td>UTILIX CL 55/55NC - 48.7 PS (36.6 kW)</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>UTILIX CL 45/45NC - 130 Nm at 1,800 rpm</td>
<td>UTILIX CL 55/55NC - 140 Nm at 1,800 rpm</td>
</tr>
<tr>
<td>Rated speed (RPM)</td>
<td>UTILIX CL 45 / 45NC - 2,600 rpm</td>
<td>UTILIX CL 55 / 55NC - 2,800 rpm</td>
</tr>
<tr>
<td>Oil L (US gal.)</td>
<td>8.2 (2.16)</td>
<td></td>
</tr>
<tr>
<td>Cooling system</td>
<td>Liquid and radiator</td>
<td></td>
</tr>
<tr>
<td>Air filter</td>
<td>Dry two-element</td>
<td></td>
</tr>
<tr>
<td>Fuel injection pump</td>
<td>BOSCH</td>
<td></td>
</tr>
<tr>
<td>Fuel tank L (US gal.)</td>
<td>60 (15.9)</td>
<td></td>
</tr>
</tbody>
</table>
# MAIN TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2. ELECTRICAL SYSTEM</strong></td>
<td>Voltage</td>
<td>DC 12V</td>
</tr>
<tr>
<td></td>
<td>Battery capacity</td>
<td>12V 80AH</td>
</tr>
<tr>
<td></td>
<td>Alternator</td>
<td>12V 65A</td>
</tr>
<tr>
<td></td>
<td>Engine starter kW</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Lights</td>
<td>Main headlights, Position lights, Rear parking, Rear brake and Position lights, Turn signal indicators, Fuel quality indicator, Indicators on the instrument panel for battery charging, Travel direction signal, PTO signal, Engine oil pressure, Glow indication.</td>
</tr>
<tr>
<td><strong>3. TRANSMISSION</strong></td>
<td>Type</td>
<td>Synchronized</td>
</tr>
<tr>
<td></td>
<td>Number of speeds</td>
<td>16 forward x 16 reverse</td>
</tr>
<tr>
<td></td>
<td>Max. speed in km/h (mph)</td>
<td>UTILIX CL45 / 45NC - 28.5 (17.7) UTILIX CL55 / 55NC - 29.7 (18.5)</td>
</tr>
<tr>
<td>4WD (MFWD)</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Differential lock</td>
<td>Dry single-disc, standard, foot operated</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>Hydrostatic</td>
<td></td>
</tr>
<tr>
<td>Brakes</td>
<td>Wet disc, foot operated</td>
<td></td>
</tr>
<tr>
<td>Clutch</td>
<td>Multi-disc wet</td>
<td></td>
</tr>
<tr>
<td><strong>4. LEVER</strong></td>
<td>Rear PTO Type</td>
<td>Independent electro-hydraulic</td>
</tr>
<tr>
<td></td>
<td>Splines</td>
<td>6 splines, 1 3/8 in. (35mm)</td>
</tr>
<tr>
<td></td>
<td>Speed</td>
<td>540 / 1,000 rpm</td>
</tr>
</tbody>
</table>
### MAIN TECHNICAL PARAMETERS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5. Hydraulic system</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Open system</td>
<td></td>
</tr>
<tr>
<td><strong>Pump</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump capacity (main) L / min</td>
<td>33.5</td>
<td></td>
</tr>
<tr>
<td>Working pressure (kPa)</td>
<td>17,500</td>
<td></td>
</tr>
<tr>
<td>Steering pump capacity L / min</td>
<td>17.5</td>
<td></td>
</tr>
<tr>
<td>Working pressure (kPa)</td>
<td>14,000</td>
<td></td>
</tr>
<tr>
<td><strong>Rear three-point hitch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Three-point hitch control</td>
<td>Position / Draft</td>
<td></td>
</tr>
<tr>
<td>Lift capacity (kg)</td>
<td>1,503</td>
<td></td>
</tr>
<tr>
<td>Lift capacity 24 inches behind lifting point (kg)</td>
<td>1,336</td>
<td></td>
</tr>
<tr>
<td><strong>Front three-point hitch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Lift capacity (kg)</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td><strong>Control - SCV Joystick</strong></td>
<td>Mechanical</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6. DIMENSIONS (with standard tires)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total length, mm (in.) with 3P</td>
<td>3,929 (154)</td>
<td></td>
</tr>
<tr>
<td>Total maximum permissible width according to the used rear tires mm (in.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>320-70 R24</td>
<td>1,620 (64)</td>
<td></td>
</tr>
<tr>
<td>17.5L-24</td>
<td>1,870 (74)</td>
<td></td>
</tr>
<tr>
<td>Wheelbase mm (in.)</td>
<td>1,935 (76)</td>
<td></td>
</tr>
<tr>
<td>Tread</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front mm (in.)</td>
<td>1,330 (52)</td>
<td></td>
</tr>
<tr>
<td>Rear mm (in.)</td>
<td>1,422 (55)</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROPS mm (in.)</td>
<td>2,569 (101)</td>
<td></td>
</tr>
<tr>
<td>Cab (without beacon light) mm (in.)</td>
<td>2,475 (97)</td>
<td></td>
</tr>
<tr>
<td>Cab (with beacon light) mm (in.)</td>
<td>2,517 (99)</td>
<td></td>
</tr>
<tr>
<td>Ground clearance mm (in.)</td>
<td>350 (13.8)</td>
<td></td>
</tr>
<tr>
<td>Turning radius with brake mm (in.)</td>
<td>3,352 (131)</td>
<td></td>
</tr>
<tr>
<td>Turning radius without brakes mm (in.)</td>
<td>3,820 (150)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROPS</td>
<td>1,750 (68)</td>
<td></td>
</tr>
<tr>
<td>Cab</td>
<td>1,850 (72)</td>
<td></td>
</tr>
</tbody>
</table>
**MAIN TECHNICAL PARAMETERS**

**Maximum permissible weight of the unit (tractor with trailer or semi-trailer)**

<table>
<thead>
<tr>
<th>Brake type of trailer or semi-trailer</th>
<th>Tractor with cab (kg)</th>
<th>Tractor without cab (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unbraked</td>
<td>4,425</td>
<td>4,250</td>
</tr>
<tr>
<td>With overrun brake</td>
<td>9,325</td>
<td>9,150</td>
</tr>
<tr>
<td>With air brakes</td>
<td>9,325</td>
<td>9,150</td>
</tr>
</tbody>
</table>

**Maximum permissible tractor axle load**

<table>
<thead>
<tr>
<th></th>
<th>Maximum permissible axle load (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front axle</td>
<td>1,400</td>
</tr>
<tr>
<td>Rear axle</td>
<td>1,925</td>
</tr>
</tbody>
</table>

⚠️ **The maximum permissible load on individual axles must not be exceeded, even if the maximum load capacity of the tires allows it.**

**Permitted maximum weight of set ‘tractor + mounted machine’ (kg)**

| Maximum permissible weight of the unit (kg) | 3,325 |

**Manoeuvrability condition**

| Tractor front axle load from total weight - tractor + integral machine | Minimum 20% |

**Permissible wheel combination for tractors and load capacity of tires**

<table>
<thead>
<tr>
<th>Tire size</th>
<th>Tire load capacity for one piece of tire (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td></td>
</tr>
<tr>
<td>Front</td>
<td>240/70 R16 900</td>
</tr>
<tr>
<td>Rear</td>
<td>320/70 R24 1,250</td>
</tr>
<tr>
<td>R4</td>
<td></td>
</tr>
<tr>
<td>Front</td>
<td>12-16,5 2,900</td>
</tr>
<tr>
<td>Rear</td>
<td>17,5L-24 3,150</td>
</tr>
</tbody>
</table>

⚠️ **The load capacity values in the table are indicative, the tire load capacity values provided by the tire manufacturer are preferred.**
Traveling speed

<table>
<thead>
<tr>
<th>MODEL</th>
<th>UTILIX CL45/45NC/55/55NC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Range shift</td>
</tr>
<tr>
<td>LL</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>L</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>M</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>H</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

*The specifications are subject to change for improvement without notice.
**Noise levels**
The tractor is approved in accordance with the applicable EC Directives.

**To avoid increased noise levels, proceed as follows:**
- After maintenance work or repairs, reassemble all the soundproof panels and materials correctly.
- Do not make any changes to the tractor which may increase the noise emission.
- Beware of any abnormal noise or vibration; if you notice unusual noise or vibration, park the tractor safely.
Inform the authorized service about the situation. Avoid prolonged operation.

**To avoid increased noise levels proceed as follows:**
- After maintenance operations or repairs refit all the sound-deadening panels and materials correctly.
- Do not make changes to the tractor that may lead to an increase in noise emissions.
- Beware of any anomalous noise or vibration if you notice anomalous noise or vibration, park the tractor in a safe position and perform the stopping procedure. Inform maintenance personnel of the situation. Avoid prolonged operation.

**Reference standards for the measurement of noise levels:**

- The maximum driver-perceived noise level, with the engine at normal operating temperature and measured in accordance with the test method described in the European Directive 2009/76EC
- The maximum noise level measured with the tractor in motion and the tractor stationary, measured in accordance with the method described in European directive 2009/63/EC.

<table>
<thead>
<tr>
<th>Model</th>
<th>NOISE LEVELS</th>
<th>NOISE LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum noise level in CAB with doors open (Roop hatch and front and rear windows open), db(A)</td>
<td>Maximum noise level in CAB with doors closed, db(A)</td>
</tr>
<tr>
<td>UTILIX CL 45NC</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UTILIX CL 55NC</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UTILIX CL 45</td>
<td>81.5</td>
<td>82</td>
</tr>
<tr>
<td>UTILIX CL 55</td>
<td>81</td>
<td>81</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>NOISE LEVELS</th>
<th>NOISE LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum external noise level with tractor moving, db(A)</td>
<td>Maximum external noise level with tractor stationary, db(A)</td>
</tr>
<tr>
<td>UTILIX CL 45NC</td>
<td>83.5</td>
<td>76.5</td>
</tr>
<tr>
<td>UTILIX CL 55NC</td>
<td>81.6</td>
<td>83.2</td>
</tr>
<tr>
<td>UTILIX CL 45</td>
<td>81</td>
<td>76.5</td>
</tr>
<tr>
<td>UTILIX CL 55</td>
<td>77.5</td>
<td>75</td>
</tr>
</tbody>
</table>
Vibration referred to the operator position

The value is referred to the amount of mechanical vibration transmitted by the tractor to WHOLE-BODY as defined by UNI ISO2631-1:2008. Said value must be utilised for assessment of the vibration exposure risk, but it cannot cover all the possible conditions of use of the tractor since it may vary in accordance with parameters that are not always related to the tractor (terrain, implements, etc.). If the risk assessment cannot be considered to be exhaustive or if the risk may exceed the values defined in 2002/44/EC, the use of a vibration monitor is prescribed.

In order to minimise the vibration transmitted to the whole-body the following best practice rules should be observed:

- Use the most suitable implement for the tractor and the task in hand
- Adjust the seat to suit your weight and stature
- Periodically check the condition of the cab suspensions and renew them if damaged
- Check tyre inflation pressure
- Use front axle suspensions, if fitted
- During transfers, adjust tractor speed in order to minimise the vibration level.

The seat vibration values, as obtained from the seat approval in compliance with 78/764/EEC (amended by 1999/57/EC) are shown in the following table.

<table>
<thead>
<tr>
<th>Seat type</th>
<th>Seat load</th>
<th>Corrected vibration level on seat</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOCHANG W09SSS</td>
<td>59 kg</td>
<td>1.24 m/s²</td>
</tr>
<tr>
<td></td>
<td>98 kg</td>
<td>1.12 m/s²</td>
</tr>
<tr>
<td>SYMPTOM</td>
<td>CAUSE</td>
<td>CORRECTIVE MEASURE</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------------------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>Starter does not start when switched on</td>
<td>No clutch depressed</td>
<td>Depress the Clutch</td>
</tr>
<tr>
<td></td>
<td>Battery is discharged</td>
<td>Recharge or replace the battery</td>
</tr>
<tr>
<td></td>
<td>Defective switch</td>
<td>Contact repair service</td>
</tr>
<tr>
<td>Starter is working but not enough to start</td>
<td>Low battery capacity</td>
<td>Recharge the battery</td>
</tr>
<tr>
<td>the engine</td>
<td>Poor grounding</td>
<td>Clean the ground wire and tighten</td>
</tr>
<tr>
<td></td>
<td>Oil too dense</td>
<td>Drain and change oil</td>
</tr>
<tr>
<td>The starter is working properly, but the</td>
<td>Air in the fuel system</td>
<td>Bleed the system</td>
</tr>
<tr>
<td>engine does not start</td>
<td>Fuel filter plugged</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No fuel supply</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Glow plug disconnected or not working</td>
<td></td>
</tr>
<tr>
<td>Engine speed is irregular</td>
<td>Air in the fuel system</td>
<td>Bleed the system</td>
</tr>
<tr>
<td></td>
<td>Incorrectly set injection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leak in the fuel lines</td>
<td></td>
</tr>
<tr>
<td>Engine stalls at low rpm</td>
<td>Poor fuel injection</td>
<td>Contact an authorized service</td>
</tr>
<tr>
<td></td>
<td>Defective injection pump</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faulty valve clearance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Incorrect idle setting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Incorrectly set injection</td>
<td></td>
</tr>
<tr>
<td>Engine suddenly stops</td>
<td>Lack of fuel</td>
<td>Fill the tank and bleed the fuel system</td>
</tr>
<tr>
<td></td>
<td>Incorrectly set injection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Choked engine due to lack of oil,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>incorrect oil or lack of coolant</td>
<td></td>
</tr>
<tr>
<td>SYMPTOM</td>
<td>CAUSE</td>
<td>CORRECTIVE MEASURE</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>-------------------</td>
</tr>
</tbody>
</table>
| Engine is overheating | Lack of coolant  
Broken or incorrectly set fan belt  
Air filter plugged  
Clogged radiator  
Low oil level | Refill coolant  
Set or replace  
Clean or replace air filter  
Clean the radiator fins  
Refill the oil to the right level |
| Reduced engine power | Injectors are clogged, carbonated and sticky  
Low compression  
Leaking valve  
Incorrect valve clearance adjustment  
Incorrect timing  
Lack of fuel  
Air filter plugged | Contact an authorized service  
Contact an authorized service  
Contact an authorized service  
Contact an authorized service  
Refill tank and check fuel quality  
Clean |
| The oil indicator light comes on when the engine is running | Low oil level  
Unsuitable oil  
Indicator light or switch error  
Oil filter plugged | Refill to correct level  
Replace with correct oil  
Replace defective part  
Contact an authorized service |
| The alternator indicator light comes on when the engine is running | Faulty wiring  
Defective alternator  
Low electrolyte level or defective battery  
Broken or loose fan belt | Contact an authorized service  
Contact an authorized service  
Add or replace  
Replace or adjust |
<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>CAUSE</th>
<th>CORRECTIVE MEASURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch</td>
<td>Clutch slips</td>
<td>Incorrect setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adjust the play</td>
</tr>
<tr>
<td></td>
<td>Worn or burned lining</td>
<td>Contact an authorized service</td>
</tr>
<tr>
<td>The clutch does not disengage</td>
<td>Incorrect setting, Rusted lining</td>
<td>Adjust the play, Contact an authorized service</td>
</tr>
<tr>
<td>Braking system</td>
<td>Brakes do not work</td>
<td>Incorrect play, worn or burnt lining, left and right play are different</td>
</tr>
<tr>
<td></td>
<td>Adjust the play, Contact an authorized service</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brake pedal does not return</td>
<td>Defective return spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of lubricant in pivots</td>
</tr>
<tr>
<td></td>
<td>Replace the spring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remove corrosion and lubricate</td>
<td></td>
</tr>
<tr>
<td>Hydraulic system</td>
<td>Hydraulics does not lift</td>
<td>Engine speed too low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of transmission oil</td>
</tr>
<tr>
<td></td>
<td>Air leaking from the lines</td>
<td>Repair or replace the lines or replace the O-ring on the joint and tighten</td>
</tr>
<tr>
<td></td>
<td>Suction filter plugged</td>
<td>Clean and change oil</td>
</tr>
<tr>
<td></td>
<td>Defective pump</td>
<td>Contact an authorized service</td>
</tr>
<tr>
<td></td>
<td>Defective hydraulic valve</td>
<td>Contact an authorized service</td>
</tr>
<tr>
<td></td>
<td>Defective cylinder</td>
<td>Contact an authorized service</td>
</tr>
<tr>
<td></td>
<td>Increase the engine speed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refill the oil to the correct level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repair or replace the lines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or replace the O-ring on the joint</td>
<td></td>
</tr>
<tr>
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* For other hydraulic problems, contact an authorized service that has the correct equipment to perform diagnostics and repair the system.
## FAULT TRACING

### Steering wheel and electric instruments troubleshooting

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The tractor may only be towed at a short distance, for example from the building outside, etc. A damaged tractor should be towed to the minimum necessary distance to remove it from a potentially hazardous situation or area. Comply with all legal provisions specified in the Road Traffic Act.

⚠️ Caution: *We recommend transporting the tractor on a low loader in the case of longer transport distances. Comply with the maximum width and height regulations for road transport. Check that the loader is suitable for the weight of the tractor to be transported.*

⚠️ Caution: *An operator must always be at the tractor’s controls when the tractor is being towed.*

⚠️ Caution: *NEVER permit other persons to access the tractor operator position during towing.*
TOWING THE TRACTOR

**Towing with the engine running**
Towing with the engine running can be performed if forced gearbox lubrication is ensured:

- Engine speed between 1 200 - 1 300 rpm.
- Maximum towing speed 8 km/h
- Maximum towing distance 1 km

To tow the tractor, use only the standard draw bar attached to the front towing device, approved by the manufacturer.
Make sure that you use the correct towing pin and that it is secured with the locking pin.
Clean all front and rear lights for road use and make sure they are functional.

Before starting towing check the following conditions:

- Unhitch any implement from the tractor;
- Lock the two brake pedals together with the connecting latch;
- Disengage the power take-off and differential locks;
- Set the shuttle control lever and gear lever to neutral;
- Move the range lever to the “fast” position;
- Move the creeper lever to neutral;
- Display the SMV (Slow Moving Vehicle) sign and turn on the rotating beacon and hazard lights

⚠️ **Warning:** *Turn on the warning lights and the beacon light. Attach a suitable warning that the tractor is towed. Observe the relevant national regulations. Observe the local safety regulations.*

During road transfers observe the following instructions:

- Wait until traffic thins before joining the road. Exert caution in the proximity of unregulated intersections.
  Slow down until you have a clear view in both directions.
- Keep in your lane and drive as close as possible to the kerb. If a tailback builds up behind you pull into a lay-by as soon as possible to allow the traffic to pass
- When stopping the tractor (in any circumstances) apply the parking brake.
- Travel speed must ALWAYS be such as to allow complete control and stability of the tractor in all conditions.

⚠️ **Danger:** *Never attempt to tow the tractor with ropes (including steel ropes) because rope breakage can cause serious injury.*

**Towing with the engine off**

⚠️ **Important:** *With engine stopped and with forced gearbox lubrication system inoperative the tractor can be transferred to a service centre only when loaded onto a transporter.*

With engine stopped and with forced gearbox lubrication system inoperative the tractor should not be towed except when safety is at risk.
Wiring diagram 1

U18N126

1 - Harness (engine)
2 - Harness (rear)
3 - Accel sensing S/W
4 - Load sensing S/W
5 - Cruise S/W
6 - Parking pedal S/W
7 - Combinatin S/W
8 - Hazard lamp S/W
9 - Metapanel (B)
10 - Ext power relay
11 - Flasherunit
12 - Monitor controller
13 - Brake S/W
14 - Fuse box
15 - Controller (A)
16 - Controller (B)
17 - Cruise speed control S/W
18 - PTO mode S/W
19 - Meta panel (A)
20 - RPM motor
21 - RPM volume sensor
22 - Key S/W
23 - PTO S/W
24 - PTO S/W
25 - Cruise speed
1 - Nozzle (front)
2 - Battery (-)
3 - Washer tank (front)
4 - Nozzle (rear)
5 - Washer tank (rear)
6 - Start relay
7 - Glow relay
8 - Horn
9 - Glow fuse
10 - Cabin fuse
11 - Main fuse
12 - Battery charging fuse
13 - Battery (+)
14 - Fuel pump
15 - 10
16 - Oil pressure S/W
17 - Compressor
18 - Injection pump
19 - Glow plug
20 - Lighter
21 - Nozzle (rear)
22 - Nozzle (front)
23 - Main connector
24 - Interrupt connector
25 - Start motor
26 - Alternator
27 - Water temp sensor
28 - Engine
1 - Trailer Coupling
2 - Hydraulic Lever (Switch)
3 - Control Lever (Upper)
4 - PTO Valve
5 - Combined Lights (Right)
6 - Harness (Main)
7 - Combined Lights (Left)
8 - Fuel Gauge
9 - Reverse alarm
10 - Level Control (Lower)
11 - External Power Supply
12 - Registration plate light
13 - Lights harness (Left)
14 - Rotation Indicator (Right)
15 - With Light / Brake Light (Left)
16 - External Switch
17 - Rotation Indicator (Right)
18 - With Light / Brake Light (Right)
1 - Work Light (Front Right)
2 - Combined Light
3 - Wiring harness (main)
4 - Combined Light
5 - PTO Valve
6 - Level Control (Lower)
7 - Front Wipers
8 - Work Light (Front Right)
9 - EVA Assembly
10 - Audio and Air Conditioning Switch
11 - Interior Lights
12 - Rotation Indicator (Right)
13 - Speaker (Right)
14 - Work Light (Right)
15 - Speaker (Left)
16 - External Switch
17 - Tail Light (Right)
18 - Level Control (Upper)
19 - Trailer coupling
20 - Hydraulic Lever (Switch)
21 - Reverse alarm
22 - External Power Supply
23 - Front Lights
24 - Rotation Indicator (Left)
25 - Brake Lights (Left)
26 - Rear Wiper
27 - Work Light (Front Right)
Cabin wiring diagram 2

1 - Switch Assembly
2 - Relay Assembly
3 - Wiper Motor (Front)
4 - Front Work Light (Left)
5 - Front Work Light (Right)
6 - Rear Work Light (Right)
7 - Rear Work Light (Left)
8 - Rear Wiper
9 - Interior Light
10 - Speaker (Left)
11 - Speaker (Right)
12 - Cigarette Lighter
13 - Air Conditioning Switch
14 - Fan Switch
15 - Evaporator
1 - Front Work Light (Right)
2 - E/V unit
3 - Front Wiper
4 - Front Work Light (Left)
5 - Audio
6 - Antenna
7 - Speaker (Left)
8 - Rear Work Light (Left)
9 - Rear Wiper
10 - Rear Work Light (Right)
11 - Speaker (Right)
12 - Dome Lights
13 - H/T Switch
14 - A/C Switch
15 - Fan Switch
16 - Relay Panel
1 - Panel, Speed Range Sensor
2 - Front Lights, Horn
3 - Work light
4 - Brake Light, Reverse Light
5 - Turn Indicator
6 - Control
1 - Head lamp, 12 V 55 W
2 - Slow blow fuse
3 - Units for direction signal relay for the power
4 - Pto monitor
5 - Fuse box
6 - Direction signal lamp, 12 V 21 W; Stop lamp, tail lamp, 12 V 21 W / 5 W
7 - Coupler for the power max rated ampere
8 - Number plate lamp, 12 V 5 W
9 - Coupler for the trailer
10 - Working lamp, 12 V 35 W
11 - Instrument panel lamp, 12 V 3.4 W
12 - Turn signal lamp (front), 12 V 21 W; Front position lamp, 21 V 5 W
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