Tractor is Zetor. Since 1946.
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
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The engine number is stamped on the left hand side of the engine block. 
The chassis number is shown on the left hand side of the tractor as shown in the drawing.

1 - Stamped position of the Engine type or Number
2 - Stamped position of the chassis number

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, The tractor was carefully inspected, both at the factory and by your ZETOR Dealer / Distributor, to ensure give maximum performance, with good fuel economy and ease of operation under a wide variety of operating conditions. Prior to delivery that it reaches you in optimum conditions. To maintain this condition and ensure trouble free performance. It is important that the routine services, as specified in this manual, are carried out at the recommended intervals.

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

1 - Left turn (counter clock wise)
2 - Right
3 - Front
4 - Left
5 - Rear
6 - Right turn (clock wise)

The word, 'Tractor' has been derived from 'Traction' which means pulling. A Tractor is required to pull or haul an equipment, implement or trolley which are coupled to the Tractor body through suitable linkage.

A Tractor can also be used as a prime mover as it has a power outlet source which is also called Power Take or PTO shaft.

In this book the operating, maintenance and storage instructions for all models of ZETOR Diesel Tractors has been complied.

This material has been prepared in detail to help you in the better understanding of maintenance and efficient operation of the machine.

If you need any information not given in this manual, or require the services of a trained mechanic, please get in touch with the ZETOR Dealer/Distributor in your locality. Dealer / Distributors are kept informed of the latest methods of servicing Tractors.

They stock genuine spare parts and are backed by the Company's full support.

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.
Description

General construction
The transmission case, Engine and Front Axle Support are bolted together to form a rigid unit.

Front Axle & 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.

Engine
The tractors are fitted with fuel efficient engine with 4 cylinders manufactured by Perkins.

Hydrostatic Transmission
The Tractor is fitted with servo controlled HST with three ranges and can be selected range by lever. The tractor has two pedals for speed and forward/reverse control. Tractor with Independent Power Take Off is fitted with electro - hydraulic clutch Assy.

Brakes
ZETOR tractors are provided with independent disc brakes operated by two road travel. A foot brake lever is fitted for parking.

Rear axle & 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 & Linkages
ZETOR Tractors are fitted with Live independent, very touch of hydraulic System. Three point Linkages can be used for Category 1 type of implements.

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.
ROPS (ROLL OVER PROTECTION STRUCTURES)

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

Cabin type
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.

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.
How to adjust the Seat
1 - Seat Belt
2 - Forward / Backward adjustment lever
3 - Knob for weight adjustment

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

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.

For sliding seat
To select Seat position, move Adjusting lever and slide Seat closer to or away from Dash panel and controls.

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

Seat suspension adjustment knob
To adjust the seat correctly, turn Weight adjustment knob clockwise or counterclockwise, while seated in the driving position.

⚠️ 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.

Cushion Strength 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.
Recognize 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.

**Read safety instruction**

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 signs.

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**

Keep children and others away from the Tractor while operating

**Before you reverse**

- Look behind Tractor for children.
- Do not let children to ride on Tractor or any 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 hardware, 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.

Park tractor safely
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 riders on the Tractor. Riders on Tractor are subject to injury such as being stuck by foreign objects and being thrown off of 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
Understand service procedure before doing work. Keep the surrounding area of the Tractor clean and dry. Do not attempt to service Tractor when it is in motion. Keep body and clothing away from rotating shafts. Always lower equipment to the ground. Stop the engine. Remove the key. Allow Tractor to cool before any work repair is caused on it. Securely support any Tractor elements that must be raised for service work. Keep all parts in good condition and properly installed. Replace worn or broken parts. Replace damage/missing decals. Remove any buildup of grease or oil from the Tractor. Disconnect battery ground cable (-) before making adjustments on electrical systems or welding on Tractor.
Avoid high-pressure fluids
Escaping fluid under pressure can penetrate the skin causing serious injury. Keep hands and body away from pinholes and nozzles, which eject fluids under high pressure. If ANY fluid is injected into the skin. Consult 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
Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, cause holes in clothing and cause blindness if found entry into eyes.

For adequate safety always;

1. Fill batteries in a well-ventilated area.
2. Wear eye protection and acid proof hand gloves.
3. Avoid breathing direct fumes when electrolyte is added.
4. Do not add water to electrolyte as it may splash off causing severe burns.

If you spill acid on yourself;

1. Flush your skin with water.
2. Flush your eyes with water for 10-15 minutes. Get medical attention immediately.
Service tractor safely
Do not wear a necktie, scarf or loose clothing when you work near moving parts. If these items were to get caught, severe injury could result.
Remove rings and other jeweler to prevent electrical shorts 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 can start even if the transmission is engaged position causing Tractor to runaway and serious injury to the people standing nearby the tractor.
2. For additional safety keep the pull to stop knob (fuel shut off control) in fully pulled out position.
   Transmission in neutral position, Foot brake engaged and PTO lever in disengaged position while attending to Safety Starter Switch or any other work on Tractor.

Safety starter switch
1. Brake operated safety switch is provided on all Tractors which allow the starting system to become operational only when the Brake 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 2000 hours / 4 years, whichever is earlier.
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
Never let anyone get in the loader and use the loader as a workbench. Otherwise, it may lead to a fatal injury or even death.

Do not stand under the lifted loader or get close to it. Also, lower the loader arm onto the ground before leaving the tractor. Otherwise, it may lead to a fatal injury or even death.

When attaching or detaching the loader, fix all parts which are Connected to the bucket and boom. The bucket or boom can be accidentally dropped down, leading to an injury or even death.
Do not allow loader arms or attachment to contact electrical power lines. Electrocution will cause serious injury or death.

Never carry a big object with the loader unless a proper implement is attached. Keep a carried object low during driving. Otherwise, it may lead to an injury or even death.

When attaching or detaching the loader, fix all parts which are connected to the bucket and boom. The bucket or boom can be accidentally dropped down, leading to an injury or even death.
Towing Safely
For the maximum towable loads, refer to the paragraph "Maximum towable loads in the Technical Data Section.
- Maintain a suitable speed taking into account the weight of the trailed load and the gradient, remembering that braking distances will be greater than with just the tractor. Trailed loads with or without brakes that are too heavy for the tractor or that towed at too high speed may cause the operator to lose control of the tractor.
- Always take into consideration the total weight of the implements and their loads.
- When trailers are hitched to the tractor, before you leave the operator seat remember to put all the controls in neutral, apply the handbrake, switch off the engine, engage first gear (with mechanical transmissions) and remove the ignition key. ALWAYS chock both the tractor and the trailer wheels. The best way to transport a tractor that has broken down is to transport it on a low loader. Always secure the tractor to the loader bed with chains. Before transporting the tractor on a low loader or on a railway wagon, make sure that the engine hood, doors, openable roof (if present) and windows are all closed and securely fastened. Never tow the tractor at speeds in excess of 10 kph. An operator must stay in the operator position to steer 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.

ROPS (Roll Over Protective Structure), sun canopy or cabin are not a FOPS (Falling Object Protective Structure).
It never can protect the riders against falling objects.
Avoid driving the vehicle into a dangerous area such as falling rocks zone.

Operator Protective Structure (OPS)
The term F.O.P.S refers to a structure installed on a tractor in order to reduce the risk 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 1365J.

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 stipulations of EN 15695-1 regarding cab classification, measurement of the internal positive pressure differential must be carried out in conformance with ISO 14269-5:

1. The engine operating at nominal speed;
2. The maximum quantity of air drawn from outside the cab (recirculation closed);
3. Fan set to maximum speed. 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.

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 agaseous medium with a negligible fall rate (gener-ally less than 0.25 ms-1) Vapour: gaseous phase of a substance whose liquid or solid state is stable at 20° Cand 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.

\[\text{Danger: Use all the personal protective equipment suitable for the tasks in hand and relative substances, in compliance with the requirements of statutory legislation in your country.}\]
Use of Hazardous Substances

The classification category, as stipulated by ISO 14269-5, of the cab installed on this range of tractors is given below:
- the engine operating at nominal speed
- the maximum quantity of air drawn from outside the cab (recirculation closed)
- with fan at 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 only trained and competent operators use this tractor and ensure that they are fully conversant with the machine and aware of all it's control and safety features. Operators should not operate the tractor or associated machinery while tired or untrained. To avoid accidents please ensure that the operator wears clothing which will not get entangled in the moving parts of the tractor or machine and protect him or her from the elements. When spraying or using chemicals, please ensure that clothing and protective equipment is worn which prevents respiratory or skin problems.

For full details consult the manufacturer of the chemicals.
To avoid lengthy exposure to noise ensure that ear protection is worn.
If adjustment to the tractor or machinery need to be made ensure the tractor or machine are turned off beforehand.
Use of certified Roll Over Protection Structure (ROPS) is a must while operating a tractor.
Use of seat belt is a must while operating a tractor.
In summary, ensure at all times that the safety of the operator and any other worker is paramount. Ensure no one is between the tractor and a towed vehicle (trailer or implement).

<table>
<thead>
<tr>
<th>Technical data</th>
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</thead>
<tbody>
<tr>
<td>CAB/ ROPS</td>
</tr>
<tr>
<td>Hazardous substances protection category CAB</td>
</tr>
</tbody>
</table>
**SAFE OPERATION OF YOUR TRACTOR**

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In summary, ensure at all times that the safety of the operator and any other worker is paramount.

**SAFETY TIPS DURING MAINTENANCE**

1. At least on a daily basis check all oil levels. Water level in the radiator and electrolyte level in the battery and perform services according to the service schedule.
2. Ensure tire pressure are even and the correct pressure for the job being done is maintained.
3. Check to ensure that the all controls and preventative mechanisms of the Tractor and implement work correctly and effectively.
4. Ensure that an adequate set of the correct tools is available for maintenance and minor repairs.
5. Ensure that all service work and repairs are carried out on a flat area with a concrete or similar floor. Do not carry out service work on a tractor until it is switched off, and the parking brake applied and wheels choked. Where a tractor is started in a confined area, ensure that the area is well ventilated as exhaust gases are very harmful, and can cause death.
6. Do not work under raised implements.
7. When changing wheels or tires ensure that a suitable wheel stand is placed under the axle prior to removing the wheel and the wheels are chocked.
8. Where guards or shields need to be removed to perform a service or repair, ensure that the guard or shield is correctly reinstalled before starting the Tractor.
9. Never refuel near an open flame or with an overheated engine. Ensure to turn off Engine before refueling.
10. The cooling system operates under pressure, take care when removing the Radiator cap on a hot engine to prevent being scalded by steam or hot water. Do not add water in the radiator when the engine is hot. Add water to the radiator only after the engine cools down completely.
11. To prevent fires keep the tractor including the engine clean and free from inflammable material and well away from fuels and other inflammable material.
Mounting and demounting implements

1. Ensure that all mounting and removal of implements is done on safe flat ground. Ensure no one is between the Tractor and implement and do not get under the implement to avoid accidental injuries.

2. After mounting the implement, ensure that all sway chains are correctly adjusted and, where PTO shafts are used that the shaft is fitted and secured correctly.

3. Where heavy implements are used, ensure that the combination is well balanced or use proper ballast to achieve balance.

4. Before leaving the tractor at any time, lower the implement, stop the PTO shaft where applicable, set the parking brake and switch off the engine.

5. While operating the implements with the PTO keep all bystanders away from any moving parts and do not attempt to make adjustments while the machine is running.

6. Only the driver should ride on the Tractor with the ROPS frame fitted and with the seat belt properly fastened.

7. Where young children are present, particular care should be taken and the tractor should not be moved until the whereabouts of all children is known.

8. Only trained operators should operate the Tractor and so taking care to ensure that other workers are not injured. In particular they should take care during dusty operations, which will reduce visibility substantially.

9. Never start the tractor unless the transmission is out of gear, the operator is in the seat and all round safety has been checked.

10. Only operate the tractor seated in the drivers seat and never turn or brake suddenly at high speed as this can cause a roll-over and serious injury or death.

11. When traveling on a public road ensure that the tractor and driver both meet all laws relating to safety and licensing. When traveling with wide implements use red flags on the extremities and observe all legal including escort requirements.

12. When operating under adverse conditions, hilly terrain or on bad ground adjust the speed of the tractor to suit the conditions, safety comes first. Never drive down hill at high speed or with the transmission in neutral. Use of the braking capacity of the engine as well as the service brakes. Do not try to change gear going up or down a steep slope, select the correct gear before starting.

13. Take care when traveling uphill with a heavy implement to ensure that it does not overbalance and tip up the front end.

14. Never remove or modify the seat belt.

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

**PLEASE REMEMBER THAT A LITTLE BIT OF EXTRA CARE CAN PREVENT SERIOUS INJURY OR DEATH AND AVOID DAMAGE TO YOUR TRACTOR.**

The following precautions are suggested to help prevent accidents

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. Read and take the following precautions before operating the Tractor to prevent accidents. Tractor should be operated only by those who are responsible and properly trained to do so.
SAFETY INSTRUCTIONS, DO'S & DON'TS

The Tractor

1. Read the operator's manual carefully before using the tractor. Lack of operating knowledge can lead to accidents.
2. Use an approved rollover bar and seat belt for safe operation. Overturning of a tractor without a rollover bar can result in death or injury.
3. **Do not remove ROPS (Roll Over Protective Structure).** Always use the seat belt.
4. Fiberglass canopy does not give any protection.
5. To prevent falls, keep steps and platform clear of mud and oil.
6. Do not permit anyone but the operator to ride on the Tractor. There is no safety place for extra riders.
7. Replace all missing, illegible or damaged safety signs.
8. **Keep safety signs clean of dirt and grease.**

Servicing the Tractor

1. Keep the tractor in good operating condition for your safety. An improperly maintained Tractor can be hazardous.
2. Stop the engine before performing any service on the tractor.
3. The cooling system operates under pressure, which is controlled by the radiator cap. **It is dangerous to remove the cap while the system is hot.** First turn the cap slowly to stop and allow the pressure to escape before removing the cap entirely.
4. **Do not smoke while the refueling the tractor. Keep away any type of open flame.**
5. The fuel in the injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust a pump, injector, nozzle or any part of the fuel injection system. Failure to follow these instructions can result in serious injury.
6. **Keep open flame away from battery or cold weather starting aids to prevent fire or explosions.**
7. **Do not modify or alter or permit anyone else to modify or alter this tractor or any of its components or any tractor functions.**
Operating the tractor

1. Before starting the tractor apply the parking brake, place the PTO (Power Take Off) lever in the "OFF" position, the hydraulic control levers in the downward position, the remote control valve levers in the neutral position (if fitted) and the transmission in neutral.
2. Do not start the engine or controls while standing besides the tractor. Always sit on the tractor seat when the engine or operating controls.
   In order to prevent the accidental starting of the tractor, a safety switch has been provided. The starting system of the tractor is connected through this switch, which becomes operative only when the brake pedal is depressed. All models HST pedal and PTO button should also be in neutral position for completing the starting circuit. Do not bypass the safety starter switch. Consult your ZETOR Tractor Dealer/Distributor if safety-starting switch malfunctions.
4. Avoid accidental contact with the gear shifter lever while the engine is running. Unexpected Tractor movement can result from such contact.
5. Do not get off or climb the tractor while it is in motion.
6. Shut off the engine, remove the key and apply the parking brake before getting off the tractor.
7. Do not operate the tractor in an enclosed building without adequate ventilation. Exhaust fumes can cause death.
8. Do not park the tractor on a steep slope.
9. If power steering or Engine seizure to operate, stop the tractor immediately.
10. Pull only from the swinging drawbar or the lower link drawbar in the down position. Use only a drawbar pin that locks in place. Pulling from the tractor rear axle carriers or any point above the rear axle may cause the Tractor’s front end to lift.
11. If the front end of the tractor tends to rise when heavy implements are attached to the three-point linkage, install front end or front wheel weights. Do not operate the tractor with a light front end.
12. Always use hydraulic position control lever when attaching equipments/implement and when transporting equipment. Be sure that the hydraulic couplers are properly mounted and will disconnect safely in case of accidental detachment of implement.
13. Do not leave equipment/implement in the raised position.
14. Use the flasher/Turn signal lights and Slow Moving Vehicle (SMV) signs when driving on public roads during both day and night time, unless prohibited by law.
15. Dim tractor lights when meeting a vehicle at night. Be sure the lights are adjusted to prevent the blinding on the eyes of coming vehicle operator.
16. Emergency stopping instruction; If tractor fails to stop even after application of brakes, Pull the knob of fuel shut off control rod.

Driving the tractor

1. Watch where you are going especially at row ends, on roads, around trees and low hanging obstacles.
2. To avoid upsets, drive the tractor with care and at speeds compatible with safety, especially when operating over rough ground, crossing ditches or slopes, and when turning at corners.
3. Lock the tractor brake pedals together when transporting on roads to provide proper wheel braking.
4. Keep the tractor in the same gear when going downhill as used when going uphill. Do not coast or free wheel down hills.
5. Any towed vehicle and/or trailer whose total weight exceeds that of the towing Tractor, must be equipped with its own brakes for safe operation.
6. When the tractor is stuck or tires are frozen to the ground, back out to prevent upset.
7. Always check overhead clearance, especially when transporting the tractor.
SAFETY INSTRUCTIONS, DO'S & DON'TS

Operating the PTO (Power Take Off)

1. When operating PTO driven equipment, shut off the engine and wait until the PTO stops before getting off the tractor and disconnecting the equipment.
2. Do not wear loose clothing when operating the power take-off or near rotating equipment.
3. When operating stationery PTO driven equipment, always apply the tractor parking brake and block the rear wheels from front and rear side.
4. To avoid injury, always move down flip part of PTO. Do not clean, adjust or service PTO driven equipment when the tractor engine is running.
5. Make sure the PTO master shield is installed at all times and always replace the PTO shield cap when 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.

N.B: 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.
DO'S AND DON'T'S

DO'S-For Better performance

DO-Ensure that safety shields are in place and in good condition.

DO-Read all operating instructions before commencing to operate Tractor.

DO-Carry out all maintenance tasks without fail.

DO-Keep the air cleaner clean.

DO-Ensure that the correct grade of lubricating oils is used and that they are replenished and changed at the recommended intervals.

DO-Fit new sealing rings when the filter elements are changed.

DO-Watch the oil pressure gauge or warning light and investigate any abnormality immediately.

DO-Keep the radiator filled with clean water and in cold weather use anti-freeze mixture. Drain the system only in an emergency and fill before starting the engine.

DO-Ensure that the transmission is in neutral before starting the engine.

DO-Keep all fuel in clean storage and use a filter when filling the tank.

DO-Attend to minor adjustments and repairs as soon as necessity is apparent.

DO-Allow the engine to cool before removing the radiator filler cap and adding water, remove the radiator cap slowly.

DO-Shift into low gear when driving down steepe hills.

DO-Latch the brake pedals together when driving on a highway.

DO-Keep draft control lever fully down when not in use.
SAFETY INSTRUCTIONS, DO'S & DON'TS

Don’ts-For safe operation

DON’T-Run the engine with the air cleaner disconnected.

DON’T-Start the tractor in an enclosed building unless the doors and windows are open for proper ventilation.

DON’T-Operate the tractor or engine while lubricating or cleaning.

DON’T-Allow the tractor to run out of diesel fuel otherwise it will be necessary to vent the system.

DON’T-Temper the fuel injection pump, If seal is broken the warranty becomes void.

DON’T-Allow the engine to run idle for a long period.

DON’T-Run the engine if it is not firing on all cylinders.

DON’T-Use the independent brakes for making turns on the highway or at high speeds.

DON’T-Refuel the tractor with the engine running.

DON’T-Mount or dismount from the right side of the tractor.

DON’T-Temper the hydraulic control levers’ upper limit stops.

DON’T-Use draft control lever for lifting of implements.

DON’T-Start the engine with the PTO engaged.

DON’T-Use the governor Control Lever (Hand throttle) while driving on roads.

DON’T-Move the hydraulic levers rearward.
General safety information
(Replace all missing, damaged or illegible signs)

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 on the dash cover

1 - Warning:
- Start engine only from operator's seat. If safety start switch is by passed engine can start with transmission in gear.
- Do not connect or short across terminal on starter solenoid.
- Attach booster cables as shown on battery decal and operators manual.
Starting in gear causing runaway can result in serious injury.

2 - Warning:
Brake pedals must always be locked together when travelling on the highway. This will ensure uniform braking and provide maximum stopping ability sharp turns must only be made at slow speeds.

3 - Warning:
Do not adjust the tilt handle when traveling.

4 - Warning:
Do not use the accelerator lever except working on the field.

5 - Warning:
Always apply the park brake when parking.
Failure to do so can cause accidents and damages.
Decals on the chassis

1 - Operator's manual
2 - Warning:
Push the button to lock position with joystick lever is neutral whenever the implement is not operation.
3 - Warning:
Never use the diff-lock at high speed or on the road as this can cause rollover and injury.
4 - Warning:
Always set the knob to lock when
   1. Travelling on the road.
   2. Replacing blades on an implement.
   3. Making adjustment to an implement. Sudden dropping of an implement can cause serious injury or death.
5 - Warning:
Always fasten your seat belt.
6 - Danger:
Periodic ventilation should be made to avoid suffocation while heating an air conditioning is used. Sleeping in the cab is prohibited.
7 - Warning:
Work in ventilated Area.
1 - **Warning:**
Do not remove radiator cap while engine is hot. Hot steam will injure you.

2 - **Caution:**
Do not touch while the system is hot. It cause serious burns.

3 - **Warning:**
Do not refuel the tractor while smoking or near naked flame or sparks. Always stop engine before refueling tractors.

4 - **Danger:**
Do not ride except operator.

5 - **Warning:**
Do not use the sub shift lever at "H" position when driving backward.

6 - **Inner / Outer air Ventilation:**
- When grills of rear and both sides are opened, inner air will ventilate in.
- For effective use, open it when operate heater or air conditioner and close when ventilate fresh air.

7 - **Caution:**
Keeps hands and clothing away from rotating fan and belts to prevent serious injury.
1 - Warning:
Attach implements and trailers to the tractor only using the prescribed drawbar or hitch.

2 - Danger:
Rotating driveline contact can cause death.
KEEP AWAY!
Keep all drive line. Tractor and equipment shields in place during operation.

3 - Warning:
Stay clear of raised Boom and bucket.
### UNIVERSAL SYMBOLS

Some of the universal symbols have been shown below with an indication of their meaning.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Engine speed" /></td>
<td>rev/min × 100</td>
</tr>
<tr>
<td><img src="image" alt="Pressured-open slowly" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Corrosive substance" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Hours, recorded" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Continuous variable" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="&quot;Tortoise&quot; Slow or minimum Setting" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Engine coolant temperature" /></td>
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<tr>
<td><img src="image" alt="Warning" /></td>
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</tr>
<tr>
<td><img src="image" alt="&quot;Hare&quot; fast or maximum setting" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Fuel level" /></td>
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<tr>
<td><img src="image" alt="Hazard warning" /></td>
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<tr>
<td><img src="image" alt="Transmission oil pressure" /></td>
<td></td>
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<tr>
<td><img src="image" alt="Engine Stop control" /></td>
<td></td>
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<tr>
<td><img src="image" alt="Neutral" /></td>
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<tr>
<td><img src="image" alt="Turn signal" /></td>
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<tr>
<td><img src="image" alt="Lights" /></td>
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<tr>
<td><img src="image" alt="Fan" /></td>
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<tr>
<td><img src="image" alt="Transmission oil temperature" /></td>
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<tr>
<td><img src="image" alt="Horn" /></td>
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<tr>
<td><img src="image" alt="Power take off engaged" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Parking brake" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Engine oil pressure" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Power take off disengaged" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Work lamps" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Air filter" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Lift arm/raise" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Differential lock" /></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Battery charge" /></td>
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</tr>
<tr>
<td><img src="image" alt="Lift arm/lower" /></td>
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<tr>
<td><img src="image" alt="See operator's manual" /></td>
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</tbody>
</table>
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.

If in doubt about any aspect of the operation of the tractor consult your ZETOR Tractor Dealer / Distributor.

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.

Description of tractor controls

Instrument and switches

1 - Left turn signal lamp
2 - Tachometer
3 - Load sensing button
4 - Hazard warning signal S/W
5 - Cruise control button
6 - Horn S/W
7 - Turn signal S/W
8 - Head lamp S/W
9 - Mode (Sensitivity S/W)
10 - Tilt lever
11 - Cruise speed control S/W
12 - Parking brake lever
13 - PTO Mode S/W
14 - Key S/W
15 - PTO ON / OFF S/W
16 - Throttle lever
17 - Temp gauge
18 - Fuel gauge
19 - Right turn signal lamp
Main switch (key switch)
[OFF]- The key can be inserted or removed.
[ON]- The electric circuit is on & preheat function.
[START]- The starter motor is engaged.
When the key is released it will return to the ON position.
[GLOW] - Glow plugs preheat the combustion chamber.

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

Head lamp, turn signal switch and horn

Head lamp switch
High and low beam are operated on the main switch
Position 4 - Low beam
Position 3 - High beam.

Turn signal switch
Pull the turn signal lever down to signal a left turn.
Push the turn signal lever up to signal a right turn.

Horn
Push the Red button.

1 - Turn Signal Switch
2 - Head Lamp Switch
3 - High beam
4 - Low beam
5 - Horn
Hour meter
The hour meter consists of digits with the last digit indicating 1/10th of an hour. It shows hours the tractor has been used. The lamp at bottom of hour meter should twinkle during Operation.

Tachometer
This meter shows the revolutions of the engine and the PTO shafts as well as the travel speed in top gear.

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

- **High beam lamp** is operated on the combination switch.
- **Low beam lamp** is operated on the combination switch.
- **Parking brake lamp** is operated on when the ignition key is turned onto "ON" with the hand brake engaged. These lamp will blink. If you do not operate the parking brake if the seat away from the lamp blinks with buzzer sound.
- **PTO monitor Lamp** This comes on while the PTO shaft is rotating.
- **Fuel Level indicator lamp.** If it comes on while the engine is running, fill the tank with fuel.
- **Engine oil pressure lamp** will go out as soon as the engine starts if the oil pressure is correct. If it comes on while the engine is running, stop the engine and get expert advice.
- **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)
- **Glow signal Lamp** is operated on when the ignition key is turned onto "GLOW" or "ON" for preheating.
- **Cruise Control Lamp**
  Will turn on when cruise control is engaged.
- **Forward indicator lamp** is operated when F/R Lever indicated forward, **Reverse indicator lamp** is operated when F/R Lever indicated reverse.
- **Check Lamp**
  Will turn on when the key switch is set to ON position and safety start conditions are not satisfied. Safety start conditions: 1 Brake pedal is depressed 2 PTO ON/OFF switch is OFF.
  If it comes on when safety start conditions are satisfied, some electric part is in trouble.
THE PTO MONITOR LAMP on the dash panel indicates the state of the PTO shaft.

1. If the monitor glows: The PTO is rotating.
2. If the monitor is off: The PTO is off.
3. If the monitor blinks: The PTO is currently stopped.

If the driver is standing on the seat or out of the driver's seat when the PTO is in operation, the PTO lamp flashes with a beep and stops operating.

Two switches operate the independent PTO.

1. PTO ON/OFF SWITCH: PTO ON/OFF switch is located on the LHS. On the steering column and can be identified easily with its built in red colored indicator. When the switch is pushed down to start the PTO indicator glows to indicate that the switch and the PTO are in ON position, if the switch is pushed down again the indicator goes off signaling that the PTO is OFF.

2. PTO CONTROL SWITCH: This switch is located 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.

1 - PTO On-Off S/W
2 - PTO Mode S/W
The PTO shaft will not rotate if either of the two switches is in OFF position.

The following table explains how the PTO operates at the two different (Manual & Auto) positions of the PTO control switch with the PTO ON/OFF switch in the on position.

<table>
<thead>
<tr>
<th>PTO ON/OFF Switch</th>
<th>PTO Control Switch</th>
<th>Hydraulic Position Control Lever</th>
<th>PTO Monitor Lamp on the dash panel</th>
<th>PTO SHAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Manual Mode</td>
<td>Either raised or lowered</td>
<td>Glows</td>
<td>Rotates</td>
<td></td>
</tr>
<tr>
<td>On Auto Mode</td>
<td>Either raised or lowered</td>
<td>Blinks</td>
<td>Stationary</td>
<td></td>
</tr>
<tr>
<td>On Auto Mode</td>
<td>Raised</td>
<td>Blinks</td>
<td>Stationary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lowered</td>
<td>Glows</td>
<td>Rotates</td>
<td></td>
</tr>
</tbody>
</table>

- From the table above we learn about the safety features of the PTO.
  If the monitor on the dash panel is blinking, the PTO will notify the driver that the PTO will not rotate temporarily because the driver is off the seat, even if it is in the ON position. When the operator is seated again in the driver’s seat or the implement is lowered to the ground with the PTO lamp flashing, the PTO can start to rotate momentarily.
  - The operator must use this blinking signal to clear the area around the tractor off bystanders/onlookers as the rotating blades of certain implements can accidentally cause injuries to the persons standing near the tractor.
  - The stopping of the PTO when the implement is lifted off the ground with the position control prevents the damage to the implement or the PTO shaft.

**Warning:**

1. **Working on hard soils, pavements with a rotary implement the PTO ON/OFF switch must be put to the OFF position to stop the PTO from rotating**, If this is not done the rotating blades of the implement will push on the hard ground below and in turn push the tractor toward causing accident which can lead to serious injuries or death.

2. **Extra precaution must be taken to clear the area of bystanders/onlookers when using PTO driven implements. The rotating blades of the implements can cause serious injuries on contact. The PTO monitor flashes or the warning lamp sounds as follows.** If the driver is seated on the seat again or the implement is lowered, PTO will start to rotate immediately.

3. **On no case the specified rotating speeds indicated by the implement manufacturer be crossed as the same can lead to serious damage to the tractor/equipment and can lead to serious injuries to persons around.**
Cruise control button

- **Engaging Cruise Control**
  - Depress the forward speed control pedal until the required speed is achieved.
  - Press the cruise control button to engage cruise control.
  - Release the forward speed control pedal.
  - The cruise control is only operational when the machine is traveling forward.

- **Disengaging Cruise Control**
  
  To disengage the cruise control you can either press the cruise control button or depress the brake pedal.

**Cruise speed control switch**

Cruise speed can be increased or decreased while cruise control is engaged.

- Press and release top of cruise speed control switch (+) to increase cruise speed by increment ratio. Press and release again to increase cruise speed more by increment ratio.
- Press and release bottom of cruise speed control switch (-) to increase by increment ratio. Press and release again to decrease cruise speed more by increment ratio.

Adjusted setting is erased when cruise control is disengaged.

**Load sensing button**

Load sensing function is used to prevent engine from stalling during heavy load application.

- Press load sensing button to activate load sensing function.
- If the engine speed drops more than the set range, the controller reduce HST speed to help the engine to recover. The heavier load on the engine, the tractor speed is more and more reduced.
- Press again the switch off the load sensing function.
Mode (sensitivity) switch
The tractor allows the user to choose a response sensitivity among three different modes.

- **Mode 1**
  Fully depress top of mode switch to activate mode 1. This mode gives the higher response sensitivity to drive pedal movement. It will provide more quick changes in speed or direction. The tractor would be more jerky.

- **Mode 2**
  Depress top or bottom of mode switch to activate mode 2. This mode gives the medium response sensitivity to drive pedal movement which is typical to most normal operating conditions.

- **Mode 3**
  Fully depress bottom of mode switch to activate mode 3. This mode gives the slow response sensitivity to drive pedal movement.

1 - Mode 1
2 - Mode 2
3 - Mode 3
Tractor controls

1 - Brake Pedal
2 - PTO Shift Lever
3 - Sub Shift Lever
4 - 4WD Shift Lever
5 - Throttle Lever
6 - Parking Brake Lever
7 - Tilt lever
8 - Forward / Reverse speed control pedal
9 - Diff-Lock Pedal
10 - Joy Stick Lever
11 - Draft Control Lever
12 - Position Lever
13 - Auxiliary Valve Lever
Throttle Lever (Hand Throttle)
Pulling the hand throttle towards the driver increase engine speed.
Pushing it away from the driver decreases engine speed.

Speed control pedal
The Speed Control Pedal is located in RHS of the Operator floor.
Depress the forward speed control pedal to move forward.
Depress the reverse speed control pedal to move backward.
The speed control pedal will return in neutral position and the tractor will stop when the speed control pedal is released.

Brake pedal
Right and left brake pedals are provided to assist in turning the tractor in the field.

⚠️ 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
1 - Parking brake lever
Connect the brake pedals, push them down while pulling the park brake lever up to engage.
Push the Brake pedal to release.

⚠️ 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 brake 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.

Sub gear lever (range shift lever)

- The driving direction can be selected between forward direction and reverse direction using the shuttle shift lever and range shift lever.
- Use the throttle lever to increase / decrease the tractor speed.

1 - Sub gear lever

![Diagram of sub gear lever](U18N029)

---

**Important:**

*Avoid damage! To prevent transmission damage:*

1. **Depress brake pedal and stop machine motion completely before shifting the main shift & reverse lever (changing direction forward and reverse).**
2. **While operating machine, always depress brake pedal and stop machine motion before changing travel gears.**
3. **Never rest a foot on the brake pedal while 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.*

**Important:** *Do not use high engine RPM when engaging Diff lock. If the diff lock does not release after removing the foot from the diff lock pedal alternatively brake with the left and right brake until it gets released.*

**Caution:** *Never use the diff lock at high speed or on the road as this can cause roll over and injury.*

**Front wheel drive lever (4WD)**

1 - 4WD Lever

In the ON position the front wheels are engaged and in the OFF position they are disengaged. Engage & disengage the front wheel drive with the front wheels in the straight position and at low Engine RPM.

---

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

Use of front wheel drive improves traction performance.

**Driver’s Seat**

1 - Seat Belt
2 - Forward / Backward adjustment lever
3 - Knob for weight adjustment

To adjust the seat backwards and forwards push left side the lever at the front of the seat and set it to the desired position.
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 lever has locked before moving the tractor.

PTO Gear
Your tractor is equipped with 2 Speed rear PTO to suit range of applications and conditions. Use the PTO switch to engage or disengage rear PTO.

1. Decrease engine speed to near idle.
2. Make sure that PTO switch is OFF.
3. Pull upward the PTO lever to engage mid PTO.
4. Turn on the PTO switch.
   - Rear PTO and mid PTO are engaged simultaneously.
5. Increase engine speed to desired speed.

⚠️ Important: Let the PTO driven implement come to a complete stop before changing.

⚠️ Caution: Do not operate any implement at a high speed than is specified for it. When making adjustments to the implement stop the engine to avoid serious injury. When leaving the tractor stop the engine, and remove the key. Set the parking brake.

### CONTROLS, INSTRUMENTS & OPERATIONS

#### PTO Shift Lever

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SPEED (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTILIX HT45 / HT55</td>
<td>540 / 1000</td>
</tr>
</tbody>
</table>
Operating the hydraulics
The hydraulics are powered with an engine driven hydraulic pump and controlled with a position control lever mounted beside the driver.

Caution: When working with the 3-point linkage, keep well clear of the operating radius of the lift arms and any attached implement. This is to avoid the risk of injury in the case of incorrect maneuvers.

Position control
1 - Position control Lever

Implement can be raised and lowered with the hydraulic position control lever and can be stopped at any position by stopping the lever.
To ensure a consistent working depth the adjustable stop can be set to ensure that the implement returns to the same depth every time.

To raise the implement: Pull the lever back
To lower the implement: Push the lever forward.

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.

Draft control lever
1 - Draft control Lever
2 - Free Floating
3 - Scope of Draft control
4 - Ascent

Soil engaging implements can be set for precision work by using draft control. By mounting the lever forward, the depth increase. By moving the lever backward, the depth decreases.
CONTROLS, INSTRUMENTS & OPERATIONS

Lowering speed control knob for the 3 point hitch

1 - Adjusting Knob of Hydraulic decent Speed

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.

Remote hydraulic valve lever

Move the lever up or down and hold. This will raise or lower the implement (rotavator or hydraulic plow). Remote control valve is detent type (double-acting with Detent).

Important:

Do not hold the lever in the "pull" or "Push" position once the remote cylinder has reached the end of the stroke. As this will cause oil to flow through the relief valve. Forcing oil through the relief valve for extended periods will overheat the oil. When using the tractor hydraulic system to power front loader, do not operate the boom and bucket cylinders simultaneously.
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.

Joy stick lever
This simple joystick lever can control the use of a front-end loader. And lift-retract, dump-rollback smoothly and act as one handle lever.

To raise the front end loader: pull the lever to lift position.
To lower the front end loader: push the lever to retract position.
To rollback the bucket: pull the stick to rollback position.
To dump the bucket: push the stick to dump position.

1 - To float the Boom.
2 - To lower the Boom Front end loader.
3 - To rollback the bucket.
4 - To dump the bucket.
5 - To quick dump the bucket.
6 - To raise the Boom of Front end loader.

NOTE: The Joystick control and valve can also be used for other applications if a front end loader is not fitted.
Safety implement for joystick lever
1 - Lock
2 - Unlock

This simple Safety locking system can lock the joystick by pushing the Button and unlocked by pulling.

⚠️ 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.
Operating the 3 point linkage (TPL)

1 - Top Link
2 - Link Bracket
3 - Check Link
4 - Extendable Type
5 - Swing Draw Bar
6 - Lower Link
7 - Adjusting Handle
8 - Lift Rod

Check chain (telescopic stabilizers) adjustment
The stabilizers are intended for limiting or preventing implement side movement. There should be no clearance (Position 1) during implement transport and when working with grades, rollers, mowers, seeders, drills and similar implements. However, a slight play is necessary (Position 2) when working with ploughs, harrows, ditchers, cultivators, and the like: That is when working with "draft control". The length of stabilizers is adjusted by removing the pin and rotating the turn buckle barrel by which the threaded ends are interconnected.
 Adjustment of the top link
1 - Top link
2 - Lock nut

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.

1 - Position of Top Link

1) For general implement: Use the Pin to Position 3 point.
2) For Draft control: Use the Pin to Position 2 point.

Adjustment of lower link
1 - Lift Rod

The adjustment is done with the adjusting handle on the Right hand Lift rod.
To shorten it wind the handle clockwise and to lengthen it wind it counterclockwise.
When adjusted correctly hold the turn buckle with the stopper provided.

Lower (if equipped 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 - Lift Arm
2 - Lower Link
3 - For Stabilizer
4 - Extendable type
5 - Position A
6 - Lift Link

For different applications change the position of the lift rod on the lower links as shown and insert the pin in the direction of the arrow.

Mounting implement

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

1 - Position A
2 - Position B
3 - PTO shaft

If the PTO is used, remove the safety cover off the PTO shaft.
Adjust the yoke rod on the lower links to suit the implement in use.
Attach the left lower link, then attach the right lower link using the adjusting handle on the leveling box if required.
Attach the top link.
Attach the PTO shaft to the tractor if used, making sure that it is locked in place.
Adjust the check chains to suit the implement and tighten the locknuts.
To remove an implement reverses the procedure.

1 - PTO shaft cover

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

⚠️ Danger: Only use trailer hitch to tow and keep the 3 point linkage in raised position when towing with the drawbar. Position can create unbalance causing the Tractor to roll-over & Result the death or serious injury.

⚠️ Warning: All the implements mounted on the tractor must be secured firmly and in accordance with the manufacturer’s instructions; see attachment holes diagram. Use permitted devices only.

⚠️ 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 tow semi-mounted implements, trailers or agricultural machines by attaching them to the top link of the three-point linkage. This could cause the tractor to rear up or overturn backwards.

⚠️ Warning: When towing, always secure the hitch pin with a suitable lock pin with safety clip to prevent the hitch pin coming out the hitch. The lock pin must always be secured 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 anyone to ride on the drawbar or the lower links when the tractor is in motion.

1 - Lock pin
2 - Pin
Implement hitching and unhitching
To hitch an implement to the drawbar, proceed as follows
- Remove lock pin 1
- Remove pin 2
- Reverse the tractor slowly up to the implement
- Insert pin 2
- Insert lock pin 1

<table>
<thead>
<tr>
<th>Drawbar Type</th>
<th>Maximum Horizontal load</th>
<th>Maximum Vertical load</th>
<th>Rear Tyre</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-CD1</td>
<td>6000kg</td>
<td>500daN</td>
<td>13.6-26, 8PR(R1) 17.5L-24, 8PR(R3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17.5L-24, 8PR(R4)</td>
</tr>
</tbody>
</table>

Technically permissible towable masses
Unbraked towable mass 1,600 kg
Independently braked towable mass 3,000 kg
Inertia-braked towable mass 6,000 kg
Towable mass when fitted with hydraulic or pneumatic braking N/A

Tractor identification plate
The tractor serial number is stamped on aluminum plate locates on the LH side of the axle frame.
Driving the tractor

Starting the engine
Before starting the engine carry out the pre-operative checks as set out in chapter ‘Safe operation of your tractor’.

(1) Sit on the driver seat.
(2) Apply the footbrake.
(3) Put the hydraulic lever in the down position.
(4) Put the main gear lever in neutral.
(5) Insert the ignition key and turn it on.
(6) Ensure that the warning lights are working.
(7) Operator need to turn key to the "ON" position. The glow circuit automatically activates.
Operator need to wait for glow light to turn off. As the lamp goes off turn the key to the start position to start the engine.
(8) Ensure that all the warning lights are off with the engine running.

**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.

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.

Correct times for warming up are:

<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>
Running-in Period
Make sure to keep the following instructions for the initial 50-hour use.

(1) Avoid abrupt starting and abrupt stopping.
(2) Do not use excessive speed or load.
(3) Drive the tractor only when the engine is sufficiently warm.
(4) Do not idle the engine at the maximum speed.
(5) Check each part and change oil and fluid after 50-hour use.
(6) Refer to the section Maintenance for adding and changing engine oil.

Tight turns 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 turns 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 braking and parking
Let the engine come back to idle and at the same time push in the brake and brake simultaneously.
When the tractor has come to a halt, lower any implement to the ground, and put the main gear in neutral. Apply the park brake, stop the engine, and remove the 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.
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 downhill run.

Operation of the diff lock
While the diff lock is a very useful feature, care should be taken in its use as misuse can lead to dangerous situations.
The diff lock would only be used in situations where traction is lost on one of the rear wheels.

⚠️ 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.

Fuel gauge
Check during driving
Constantly monitor the warning lights on the dash and if any comes on stop the tractor to determine the cause. 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.
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.
To avoid excessive condensation in the fuel tank refill at the end of each day’s work and ensure during the day that it does not drop to a low level where the fuel system will require bleeding to expel air in the system after refilling the tank.

Engine cooling water
If the gauge indicates that the engine is running hot, stop the tractor and check the coolant in the radiator.

⚠️ Danger: Allow the engine to cool down before opening radiator cap as serious burns may result due to hot steam & boiling water.

Also check to ensure that the fins in the radiator core are not clogged or that the tractor has a broken or stretched fan belt.

Trailer socket (Seven Terminal Electrical Socket type)
1 - Trailer socket

To operate the Electrical systems of implements, trailer lighting, warning lamp etc.
Track adjustment
As UTILIX HT45/ HT55 models of ZETOR are front wheel assist the front track can be set in 2 positions. The rear track can be set in 4 positions as illustrated.

(*) Marking is STANDARD

<table>
<thead>
<tr>
<th>MODEL</th>
<th>UTILIX HT45/ HT55</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIVISION</td>
<td>FRONT</td>
</tr>
<tr>
<td></td>
<td>REAR</td>
</tr>
<tr>
<td>TYRE</td>
<td>9.5-16-4PR</td>
</tr>
<tr>
<td></td>
<td>13.6-26-6PR</td>
</tr>
<tr>
<td>AIR</td>
<td>2.2</td>
</tr>
<tr>
<td>PRESSURE</td>
<td></td>
</tr>
<tr>
<td>(kgf/cm²)</td>
<td>2.0</td>
</tr>
<tr>
<td>TRACK</td>
<td>1,270 mm</td>
</tr>
<tr>
<td>ADJUSTMENT</td>
<td>1,246 mm</td>
</tr>
</tbody>
</table>

Unit: mm (in)
Connecting and Disconnecting Implement

Connection
1) Make sure to stop the engine before connecting it.
2) Move the double acting valve lever forward and backward for 4 to 5 times to release the pressure in the hydraulic line of the tractor. Otherwise, it is hard to connect the couplers, and hydraulic fluid can be sprayed from the line and get into your eyes while connecting them.
3) Remove any foreign material around the male and female couplers. If foreign material enters the hydraulic components, it can lead to malfunction of the system.
4) Open the dust-proof cover of the female coupler of the tractor and insert the male coupler of the implement. A clicking sound is heard when the couplers are engaged.
5) Pull the hydraulic hose of the implement to check that the couplers are properly connected.
6) Start the engine and check the operating status and leakage.

Disconnection
1) Make sure to stop the engine before disconnecting it.
2) Release any residual pressure in the hydraulic hoses of the implement and tractor by operating the double acting valve lever 4 to 5 times.
3) Remove any foreign material around the couplers.
4) Keep the implement balanced by removing any load applied (lowering it onto the ground, for example). If disconnecting the hose while outer load is applied to the implement, it is hard to connect the implement in the future.
5) Remove the male coupler by pushing the female coupler boss of the tractor backward.
6) Close the dust-proof cover of the female coupler of the tractor. Wrap the male coupler of the implement with a plastic bag to prevent contamination.

⚠️ 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 off the PTO shaft.
Adjust the yoke rod on the lower links to suit the implement in use.
Attach the left lower link, then attach the right lower link using the adjusting handle on the leveling box if required.
Attach the top link.
Attach the PTO shaft to the tractor if used, making sure that it is locked in place.
Adjust the check chains to suit the implement and tighten the locknuts.
To remove an implement reverses the procedure.

1 - PTO shield cover

⚠️ Caution:
When traveling on public or farm roads connect both brake pedals and allow for the weight of any mounted implement to ensure that the unit is not unbalanced.
Also allow for the width when passing other road users. Where fitted use the hazard lights provided.
Strictly follow the local traffic regulations.

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

⚠️ Caution: When operating near others with an implement attached take particular care to allow for the width of the implement and avoid accidents.
Fixtion Points of Loader
1 - Screw size: M14xP2.0, Number:4(both sided), Strength: 9T
2 - Screw size: M16xP2.0, Number:8(both sided), Strength: 9T

* For more information, please refer to the manual loader.
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
1 - Drain Cock

Remove the radiator cap and ensure that the coolant is up to the filler neck and that it is clean with the correct anti-freeze or anti-corrosion inhibitor in it.

If the coolant is a rusty color, drain the system completely and refill with the correct mixture of water and anti-freeze or corrosion inhibitor.

1 - Radiator Cap
2 - Reservoir Tank
LUBRICATION & MAINTENANCE

**Engine oil**
1 - Lower level
2 - Upper level

Pull out the stick, wipe it and dip in the oil sump. Ensure that oil level is between the upper and lower mark near the upper mark. If too low add oil, but never exceed 100hrs of service interval.

1 - Engine Oil Filter
2 - Level Gauge

1 - Engine oil drain plug

**Important:** Do not overfill the crankcase with oil.
Transmission oil
Check the level with the dipstick on top of the transmission in rear of the seat. If the level is low add oil through the filler hole.

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

1 - Upper level
2 - Lower level

1 - Oil Level Gauge
2 - Oil Port

1 - Transmission oil drain plug

Fuel
1 - Fuel Tank Cab The fuel Filler is located on the left side of transmission.

Use the fuel gauge to check the fuel level and top up if too low.
It is a good practice to refill the tank immediately after use to avoid condensation.
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 - Excess
2 - Standard
3 - Lack

Important: It is strongly recommended that tire pressures are checked with a proper gauge only & visual inspections are relied upon.

Danger: Excess tire pressure can cause accidents!

Steering
Ensure that the steering wheel does not have excessive free play.

Brake
Ensure that the left and right brakes are adjusted correctly so they operate simultaneously. The correct free play on the brake is 1.18-1.57 in (30~40 mm).

Caution: Incorrect brake adjustment can cause excessive wear and reduced tractor performance.

Electrical
Check the operation of all gauge, switches, horn, lights and indicators.
LUBRICATION & MAINTENANCE

Installing loader

1. Connect P port of loader control valve to the line on the tractor marked P (from the PTO valve).
2. Connect the T port on the loader control valve to the line on the tractor marked T.
3. Connect the remaining line from the control valve to the line on the tractor marked P1 (to the transmission housing).

Detaching the loader (loader connecting port)

1. Detach the hydraulic hoses of loader.
2. Assemble the cap (PF3/8) with pipe comp (PF3/8).

1 - Loader Valve
2 - Transmission oil Filter
**LUBRICATION & MAINTENANCE**

**Maintenance and adjustment Schedule**

**Periodical check and service table**

- **O** Check, Top-up or Adjust,
- **X** Replace,
- **XX** First Replacement

<table>
<thead>
<tr>
<th>Division</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 1 1 2 2 3 3 4 4 5 5 0 0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine</td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engine oil &amp; Cartridge</td>
<td>O</td>
<td>xx</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>Air cleaner</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</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>xx</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Fuel filter</td>
<td>O</td>
<td>xx</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division</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 1 1 2 2 3 3 4 4 5 5 0 0 0 0 0 0 0 0 0 0 0</td>
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<tr>
<td></td>
<td>Fan belt</td>
<td>O</td>
<td></td>
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<tr>
<td></td>
<td>Battery</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Loose nuts and bolts</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radiator hose clamp</td>
<td>O</td>
<td></td>
<td></td>
<td></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.
<table>
<thead>
<tr>
<th>Division</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 1 1 2 2 3 3 4 4 5</td>
<td></td>
<td>Every 500 hours or 12 months after first 50 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chassis</td>
<td>Transmission oil</td>
<td>O</td>
<td>xx</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Free play of brake pedal</td>
<td>O</td>
<td></td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td>State of both brake pedals</td>
<td>O</td>
<td></td>
<td></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></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td>Free play of steering wheel</td>
<td>O</td>
<td></td>
<td></td>
<td>Smooth operation</td>
</tr>
<tr>
<td></td>
<td>Toe-in</td>
<td>O</td>
<td></td>
<td></td>
<td>Check every 250 hours</td>
</tr>
<tr>
<td></td>
<td>Grease in front wheel hub</td>
<td>O</td>
<td></td>
<td></td>
<td>Grease every 250 hours</td>
</tr>
<tr>
<td></td>
<td>Check the steering wheel joint</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division</td>
<td>Item</td>
<td>Daily</td>
<td>Service interval(hour meter,mark)</td>
<td>Frequency</td>
<td>Comment</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------</td>
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<td>----------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 1 2 2 3 3 4 4 4 5</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>0 5 0 5 0 5 0 5 0 5</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Replenish every 50 hours (everyday in dusty conditions)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Check every 250 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 0 0 0 0 0 0 0 0 0</td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td>Chassis</td>
<td>Wheel nut fastening torque</td>
<td>O</td>
<td></td>
<td></td>
<td>Tighten if loose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Front:35-59 (m-kg)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rear:82-128 (m-kg)</td>
</tr>
<tr>
<td></td>
<td>Operation of the instrument</td>
<td>O</td>
<td></td>
<td></td>
<td>Check daily</td>
</tr>
<tr>
<td></td>
<td>Grease each nipple</td>
<td>O</td>
<td></td>
<td></td>
<td>Replenish every 50 hours (everyday in dusty conditions)</td>
</tr>
<tr>
<td></td>
<td>Loose bolts and nuts</td>
<td>O</td>
<td></td>
<td></td>
<td>Tighten to proper torque.</td>
</tr>
<tr>
<td></td>
<td>Hydraulic oil filter</td>
<td>xx</td>
<td></td>
<td></td>
<td>Change every 500 hours or 12months after first 50 hours</td>
</tr>
<tr>
<td></td>
<td>HST oil Filter</td>
<td>xx</td>
<td></td>
<td></td>
<td>Change every 500 hours or 12months after first 50 hours</td>
</tr>
<tr>
<td></td>
<td>Oil of the 4WD front axle</td>
<td>xx</td>
<td></td>
<td></td>
<td>Check every 100 hours. Replace if leaking.</td>
</tr>
<tr>
<td></td>
<td>Check the electric wiring</td>
<td>O</td>
<td></td>
<td></td>
<td>Without loose or broken terminals, damaged or missing wiring. Correctly clamped.</td>
</tr>
<tr>
<td></td>
<td>Adjustment of the throttle pedal</td>
<td>O</td>
<td></td>
<td></td>
<td>Check every 250 hours</td>
</tr>
<tr>
<td></td>
<td>Hydraulic hoses &amp; pipes</td>
<td>O</td>
<td></td>
<td></td>
<td>Check every 250 hours</td>
</tr>
</tbody>
</table>
1 - Oil filler hole
2 - Greasing point
3 - Drains
4 - Window
5 - Grease fitting
6 - Engine filler
7 - Front axle drain
8 - Front Axle Greasing Point
9 - Front axle oil filler
10 - Radiator
11 - Engine Drain
12 - Transmission Drain
13 - Transmission filler
### LUBRICATION & MAINTENANCE

<table>
<thead>
<tr>
<th>No.</th>
<th>Filling point</th>
<th>Fillings</th>
<th>Quantity Liter (gal.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RADIATOR</td>
<td>50/50 : Ethylene Glycol/Water (L.L.C) ASTM D4985 / D6210</td>
<td>8.5 l (2.24 US gal)</td>
</tr>
<tr>
<td>2</td>
<td>ENGINE</td>
<td>API : CH4 grades&lt;br&gt;Recomomended SAE viscosity grades&lt;br&gt;A: Viscosity&lt;br&gt;B: Temperature</td>
<td>8.2 l (2.16 gal)</td>
</tr>
<tr>
<td>3</td>
<td>TRANSMISSION CASE</td>
<td>(API GL-4 Grades)Gear oil #80 or #90</td>
<td>35 l (9.24 US gal)</td>
</tr>
<tr>
<td>4</td>
<td>FRONT AXLE</td>
<td>(API GL-4 Grades)Gear oil #80 or #90</td>
<td>10 l (2.64 US gal)</td>
</tr>
<tr>
<td>5</td>
<td>FINAL DRIVE CASE(B)</td>
<td>(API GL-4 Grades) Gear oil #80 or #90</td>
<td>As required</td>
</tr>
<tr>
<td>6</td>
<td>BALL JOINT</td>
<td>Grease</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>FUEL TANK</td>
<td>Diesel fuel</td>
<td>60 l (15.85 US gal)</td>
</tr>
</tbody>
</table>

A - Viscosity  
B - Temperature

#### Recommended transmission oil
1 - RPM Tractor Hydraulic Fluid or Textron TDH Premium (CALTEX)  
2 - TDH Oil or TDH Oil special (TEXACO)  
3 - Chevron 1000THF (CHEVRON)
Opening method of each cover

Opening method of Hood

1 - Bonnet Open

With the hood up the Hook release lever can be removed by pulling rearwards, having first detached the hood lamp wiring harness. Hood can be open by itself.

Opening the Side cover

1 - Support pin (1)

To open, grasp the side cover, Pull the forward panel upward to separate from guide support pin (1). And pull the side panel forward again,
Fuel
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 air breather screw of the fuel filter two or three turns.
3) When fuel free from air flows (bubbles) from the Air breather screw, tighten the Air breath screw.
4) The bleeding of the system is now finished.

1 - Fuel Filter
2 - Fuel Supply Pump
Changing the oils in the 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

Park tractor on level surface, shut-off 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 gal).
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 use SAE 30.
For temperatures from 32 °F - 77 °F use SAE20 or 15W/40.
For temperatures below 32 °F use SAE 10W.

Important:
When changing the oil always change the filter.
Always use the same oil, as using different oils or specifications can cause damage.
Dispose off the old oil as per local regulations.
Changing the transmission oil

1 - Upper level
2 - Lower level

Remove the drain plug from bottom of the transmission and drain the oil. Replace and check the drain plug.

1 - Transmission oil drain Plug

1 - Oil Level Gauge
2 - Oil Port

Refill the transmission to the correct level on the dipstick with new oil: Qty 35 l (9.24 US gal).

Important: Always use the same grade and specified oil as Replacements. Dispose off the old oil as per local regulations.
Changing oil in the front axle

1. Drain the oil from the center diff plug and the drain plug in each drive.
2. Replace and tighten all drain plugs.
3. Remove the top plug (Vent plug) from each final drive to vent air from final drives.
4. Remove the dip stick from the filter hole and fill with 2.64 US gal (10 liters) and allow time for the oil to drain into the final drives.
5. Check the oil level with the dipstick and replace the vent plugs on both final drives and tighten.

Important: Some operators have found that when they fill with the correct amount of oil and dip it, the oil level on the dipstick is too high due to the fact that it takes a while for the oil to run into the final drives. Opening the Vent plugs helps to speed this up.
Cleaning and changing filters

**Engine oil filter**
1 - Engine Oil filter

Using a filter wrench turn the filter anti clockwise to remove it. Lightly smear the rubber seal on the new filter with oil to ensure, turn it clockwise until the seal contacts the base and then turn it another 2/3 turn to tighten it.

**Fuel filter**
The fuel filter/water separator (if equipped) is not usually supplied by Perkins.
The following test describes a typical fuel filter/water separator.
Refer to the OEM information for further information in the fuel filter/water separator.
Turn the fuel supply valve (if equipped) to the OFF position before performing this maintenance. Place a tray under the fuel filter in order to catch any fuel that might spill.
Clean up any spilled fuel immediately.

1 - Fuel Filter
2 - Fuel Supply Pump

1. Close the fuel supply valve (if equipped).
2. Clean the outside of the fuel filter assembly.

**Note:** If the fuel filter element is mot equipped with a drain, remove cap. Remove the nylon insert in order to reduce the lever 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 a tool in order to remove the fuel filter. Attempting to remove the fuel filter with a filter wrench or a filter strap could damage the locking ring.

3. Hold fuel filter and rotate quick release collar counterclockwise. Removed and discarded.

**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. Ensure that the fuel filter base is clean. Push a new fuel filter fully into the fuel filler base.
5. Hold the fuel filter in place. Fit locking ring into position. Rotate the locking ring clockwise in order to fasten the fuel filter to the fuel filter base.
6. Open the fuel supply valve (If equipped).

Important: *Never use petrol (gasoline) thinner or similar inflammable material to wash the primary fuel filter. After replacing the filter always bleed the system.*

Hydraulic oil filter and engine oil filter cartridge

1 - Transmission oil Filter

Remove the filter with a filter wrench. To replace, apply oil or grease on the seal, fit by hand until seal contacts bare, then turn it 2/3rd turn further to tighten it check for leaks.

1 - Engine Oil filter
Changing the coolant
(1) Open the tap in front of the gear pump to drain the coolant.
(2) Open the radiator cap at the same time.
(3) To give a thorough clean run a hose into the radiator and flush it out.
(4) Close the tap and refill the radiator with a coolant mixture of water and corrosion inhibitor or anti freeze.
(5) Start the engine and allow it to run for approx 5 minutes, check the water level again and top up if required.

1 - Radiator cap

1 - Drain Cock

Caution:
Do not remove the radiator cap on a hot engine.
Allow the engine to cool down and then turn the cap slowly to ensure, 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
Frozen cooling water can damage the engine.
Before replacing the anti freeze solution flush the radiator.
Mix the anti freeze solution in accordance with the instructions applicable to the brand of anti freeze and the locals climate.
Replace the solution in the radiator.
In case of loss of solution due to evaporation or overflow, replace with the original mixture ratio.
Cleaning the radiator
Insects, grass straw and dust can all block the radiator, condenser and reduce its efficiency.
Remove the radiator cover to clean it and the radiator.
Release the bolt and pull to remove the cover.
Then clean the radiator between the fins and tube by using clean water.

1 - Radiator Cap
2 - Reservoir Tank

Important: Water or air under high pressure can distort the cooling fins on the radiator and reduce its efficiency.
**LUBRICATION & MAINTENANCE**

**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.

**Brake area / Clutch area - Grease Nipple**

**Pivot metal - Grease Nipple**

**Lift Rod - Grease Nipple**

**Front axle - Grease Nipple**
LUBRICATION & MAINTENANCE

Gap adjustment

Adjusting the brake

1 - Free play

Using the brake over a period of time will increase the free play.
The correct free play of the pedal is 0.78~1.18 in. To adjust, loosen the locknut on the turnbuckle and adjust.
Check the adjustment and tighten the locknut if the free play is correct.

Adjusting method

Loosen the locknuts to adjust the brake.
Turning counterclockwise to increase the free play, or turning clockwise to decrease.
Tighten the locknut and confirm to fix the Nuts.
Check that the free play is correct and the same on both pedals to ensure even braking.

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.

Adjusting the throttle lever

If this lever is loose or difficult to move please consult your dealer for rectification of the problem.

Adjusting toe-in

If the toe-in adjustment is incorrect it can cause severe shaking of both the steering wheel and the entire tractor.
The correct toe in is 0.08~0.24in. We recommend that this adjustment is made by the dealer.
Checking the battery
1 - Indicator condition

Check the Indicator condition
Green color - Good condition
Black color - Charging necessary
White color - Replace battery

Important: Low electrolyte levels can cause premature battery failure and corrosion.

Caution: Electrolyte contains acid and can cause serious burns.
Any spillage on skin should be washed off by running water immediately.

Battery maintenance
Low temperatures will affect the performance of batteries so take particular care of it in winter.
For long-term storage of the tractor remove the battery and keep it in a cool dry room.
If it is on the tractor while stored, disconnect the negative terminal.
Batteries will self discharge if left for a period of without use time.
To keep them in good condition charge them once a month in summer and every second month in winter.
When replacing the original battery, ensure that the replacement battery is the same size.
Failure to do so can cause problems with the electrical circuit.

1 - (-) Terminal
2 - (+) Terminal
Battery charging
- A boost charge is only for emergencies. It will partially charge the battery at a high rate and in a short 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.

Battery Disconnect
The function of the battery disconnect switch is to disconnect the power supply to the electrical system by interrupting the connection to the battery. This has benefits for tractor safety and operation, in particular:

1. Protects the electrical system against short circuit;
2. Reduced battery self-discharge when the tractor left idle for prolonged periods;
3. Allows maintenance and repairs to be carried out in conditions of safety.

1 - Disconnect knob

Turn the knob to "OFF" to disconnect the battery and back to "ON" to resume normal operation. The battery disconnect knob 1 is located on a bracket to the right of the battery. Putting the battery disconnect in safety condition The battery disconnect knob may be removed for safety purposes in the manner described below.
Removal of the knob

1. Turn the knob to the "off" position; the knob cannot be removed in this position.
2. Press the knob in and continue to turn it counter-clockwise as far as it will go.
3. Remove the knob.

Refitting the knob

1. Refit the knob
2. Press and turn the knob clockwise, positioning it at 45°

Fan belt adjustment

1. Loosen the alternator pivot bolt.
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.

Check the alternator and the battery charger for proper operation. 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 colt, 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.
Alternator and Fan Belts Inspect/Adjust/Replace
For applications that require multiple drive belts, Replace the belts in matched sets. Replacing only one belt of a matched set will cause the new belt to carry more load because the older belt is stretched. The additional load on the new belt could cause the new belt to break. If the belts are too loose, Vibration causes unnecessary wear on the belts and pulleys. Loose belt may slip enough to cause overheating. To accurately check the belt tension, a suitable gauge should be used.

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 - 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.
Servicing the air cleaner
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 right fan cover.
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:
Never beat the element on a stone or concrete floor/wall to clean it.
Check all connections and hoses especially on the clean side of the air cleaner to ensure no dusty air can enter the engine. Check the element for flaws by putting a light inside the element.
When reassembling make sure all surfaces seal correctly to keep dust out.
When working in dusty conditions increase the service frequency.

- 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 make inferior connections and damaged wires can cause short circuits, fires burnt wiring or reduce efficiency of components. Replace or repair any faulty wiring or insulation.
If a fuse burns out again after it has been replaced, do not replace it with wire or a high capacity fuse, find the cause and rectify it or get an auto electrician to do so.
Where insulation is chafed or peeled off, recover the area with a good quality insulation tape. Where wiring comes out of it's fitting replace it correctly with the standard fitting.

Important:
Incorrect wiring or fuses can cause fires to both the tractor and surrounding area so get the dealer to check it annually. Likewise fuel pipes and wiring age with use.
Ask your dealer to check it at least once every 2 years and replace as required.
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.
To indicate that the fuse is blown it will be discolored.

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.
Service prior to daily and short terms storage.
Wash the tractor and keep it clean.
Fill the tank to avoid condensation and rust.
Lower any attached implement to the ground before parking the tractor.
For long-term storage consult your dealer.

Re-use after long term storage
Carry out a full check of all oils and coolant.
Refit the battery and run the engine at idle for 30 min. to ensure optimum engine life.

Maintenance
LUBRICATION & MAINTENANCE

For daily or short term storage
Clean the tractor and remove all dirt from field work.
Fill the fuel tank to avoid condensation and rust.
Lower the implement to the ground.
Keep it in a machinery shed or, if not available cover the unit if left outside.
In very cold conditions it is advisable to remove the battery and keep it inside in a warm environment.
This will ensure effective starting when the tractor is required.
When the outside temperature is below 32 °F, replace the Antifreeze completely or drain the coolant to protect the engine from damage from frozen 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
When the tractor will not be used for a long time carry out the cleaning as for short term storage.
Drain the oil and replace with new oil. Run the engine for approx. 5 min. to ensure that it has new oil throughout the engine.
Drain the coolant from the radiator and remove the ignition key.
Attach a tag both the key and the steering wheel saying "No coolant". Lubricate all grease and oil points on the tractor.
Check the pressures and add a small amount of extra pressure. Lower any implement to the ground or store in a shady dry place.
Place a piece of wood under each tire to preserve the tire.

Important: After refilling the engine with the coolant run the engine for approx. 5-10 min. at 1500-2000 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.

Fuel Saving Tips
To save fuel & oil in your tractor, following things should always be kept in mind.

Air Cleaning System

1. Clean the air cleaner regularly so that dust does not settle down.
2. For every 50 hours & everyday in sandy/dusty conditions.
   - Clean the air cleaner filter element with compressed air.
   - If the rubber ring is cut or expanded then change it with an appropriate one. Fix the rubber at the proper location & check for leakages if any.
   - If air is leaking through the hose connection, check & rectify other leakages, too.

Note: If air cleaning system is not properly maintained, it will lead to early wear of piston rings & sleeves. This will lead to problems like loss of engine power, excessive oil consumption fuel consumption.

Engine

1. Put the engine oil on load after the engine is heated & the water temperature gauge indicates the needle to be in the green zone.
2. If excessive black smoke is visible, then the paper element of air cleaner, Fuel injection pump or nozzles should be checked.
3. Do not run the engine without load for more than 2 minutes. It is better to stop the engine rather than run it idle. This will help in saving of fuel.
LUBRICATION & MAINTENANCE

Fuel System

1. Always use filtered diesel for the fuel system.
2. At the end of the day's working, it is preferable to fill the diesel tank so that it may prevent condensation.
3. Change the filter, if the system gets choked. Do not change both the filters at the same time. If the above directives are not adhered to, the fuel injection pump & injection nozzle will lose its life early. Also, it will lead to excessive black smoke & excessive diesel consumption.

Oil System

1. Always use recommended grade of oil.
2. Everyday before starting the engine, check the oil level with a dipstick & refill between the minimum & maximum level.
3. Charge the engine oil. Replace filter & "O" ring, as & when required.

Cooling System

1. Check the fan belt tension regularly. Adjust, if required.
2. Check the coolant level in the radiator fins always clean.
3. Replace the radiator cap with a genuine cap only, if required.
4. Do not remove the thermostat but replace with a new one, if required.
5. Do not change the radiator water often.

Note:
1) Always stop any fuel or oil leakages.
2) Carry out the regular maintenance failure to do so might increase the fuel consumption by 25%.
3) Carry out the torque of cylinder head bolt & adjustment of valve clearance regularly. Consult your dealer for this.
4) Check the tire pressure & inflate, as recommended.

Note:
1) Always buy genuine spares from the authorized Dealer / Distributor.
2) Always carry out the service of the tractor by your authorized Dealer / Distributor.
* For any other information, contact your nearest Authorized Dealer / Distributor.
How to use of jacks

Front Axle

Rear 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 conforms to the international standard as far as safety and soundproofing are concerned. It can be provided with ventilation, heating and air-conditioning system. It is available in the following version:

- Cab with ventilation and heating systems
- Cab 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 - Working Lamp (Rear)
3 - Air Filter
4 - 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.
Instrument 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.
Working lamps (front and rear)
The working lamps are located on the cab roof (two in the front and two in the rear). They are switched on by means of the special switches on the roof console.
1 - Working Lamp

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 ceiling is padded with insulation material to block heat radiation into the cab and keep the temperature down when working in very sunny areas.
The cab platform is covered with a “firm grip” carpet in the most commonly used areas.
It is recommended to keep this carpet clear of earth, mud, etc. so that the operator may get on and off the tractor in full safety.

How to Controls Cabin
1 - Sun Roof
2 - Recirculation inlet
3 - Radio & CD player
4 - Pivotable diffuser
5 - Interior Lamp
6 - Air conditioner Heater 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 cap 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 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. N.B. 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
- Switch ON

The Wiper switch is ON when Push the Top button.
The Washer switch is ON when Push the Mid-button.

- Switch OFF

Once again push the buttons.

Windscreen Washer tank
Check the level of windscreen washer fluid in the plastic reservoir located at the front of the radiator. During winter, it is advisable to add a suitable antifreeze or methyl alcohol to the windscreen washer fluid.

1 - Washer Tank
**Interior Lamp**
Push the button to light on.
And push it again to light off.

**1 - Interior Lamp**

---

**Blower control switch**
Three position rocker switch.

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

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**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.
Cabin

Circulation diffuser
1 - Circulation diffuser

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

Heating System
General description
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 warm 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 1000 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 - Speed heating fan
2 - Electric resistances
3 - Air filter
4 - Recirculation inlets
5 - Pivotal air diffuser

System configuration
The heating system consist of two units:

1. 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.
Compressor belt adjustment
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 or tighten the nut as shown in the picture.

1 - Tension Adjusting Bolt

Air conditioning system
The system is designed to ensure optimum temperature inside the cab and maximum comfort and safety for the operator.
However, it is advisable to consult our specialized workshops whenever repairs or adjustments need to be performed.
Do not approach the system with open flames, as any escape from the circuit may produce a lethal gas.

1 - Alternator
2 - Compressor
3 - Speed fan
4 - Electric resistance
5 - Evaporator
6 - Air filter
7 - Recirculation inlets
8 - Pivotal air diffusers

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

Cab Air intake filter
The filter is not suitable for the treatment of pesticides and so must be replaced by an active carbon filter available optionally. Once the pesticide treatment is finished, it is necessary to once again replace the "ACTIVE CARBON" filter with the paper filter, since this is the only type suited for filtering foreign particles from the air.
Optional ACTIVE CARBON FILTER is informed to parts Catalogue
1 - Air intake filter

⚠️ 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.
Radio, CD player (If equipped) (optional)
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 retune to original position.

1 - Cigarette Lighter
2 - Ash tray
3 - Cup Holder
1. Checking the air conditioning system.

1 - Economic friendly refrigerant: R134a 0.7~0.85 kg.

The presence of air and water in the system could jeopardize its efficiency.
- The air is uselessly compressed by the compressor and no cooling effect is produced.
- The moisture has a tendency rise to obstructions which prevent the cooling efficiency.

2 - Check belt tension; when finger pressure is applied to the mid-point between both pulleys.
3 - Condenser fins must always be duly clean using water or an air set.

2. Checking the air conditioning system charge

(1) Check the refrigerant charge.

A. Run the engine at 1500 rpm.
B. Set the air conditioning system in the coldest for 5 minutes.
C. Check sight glass for clear sight or cloudy.

⚠️ Caution: If the air conditioning system is operated without being charged, the lubrication in the compressor can cause damage.

3. Diagnosing malfunctions

(1) Tracing faults

<table>
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<tr>
<th>SYMPTOM</th>
<th>CONDITION</th>
<th>CAUSE</th>
<th>REMEDY</th>
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<tbody>
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<td>Inlet sound</td>
<td>Insufficient Lub.</td>
<td>Replenish</td>
</tr>
<tr>
<td></td>
<td>Outlet sound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abnormal revolution</td>
<td>Inlet cause</td>
<td>Damaged parts</td>
<td>Check, replace</td>
</tr>
<tr>
<td></td>
<td>Outlet cause</td>
<td>Slip the clutch</td>
<td>Check, replace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not Lub.</td>
<td>Replenish</td>
</tr>
<tr>
<td>Refrigerant or oil leakage</td>
<td>Refrigerant or oil leakage</td>
<td>Sealing washer damaged</td>
<td>Replace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Head bolt released</td>
<td>Tighten the bolts</td>
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<tr>
<td></td>
<td></td>
<td>D-ring damaged</td>
<td>Replace</td>
</tr>
<tr>
<td>Excessive pressure</td>
<td>Low, High pressure</td>
<td>Insufficient refrigerator</td>
<td>Adjust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compressor</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 1500~2000 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

- \( \text{lb/in}^2 = \text{PSI} \)
- \( 1 \text{ kg/cm}^2 = 14,223 \text{ lb/in}^2 \)
  (Ex) 200 PSI = 14 kgf/cm²

<table>
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<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Motor</td>
<td>Weak from pressure or Don’t work</td>
<td>Motor is normal</td>
<td>Air inlet clogged</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaporator freezing</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Ventilator switch damage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Compressor</td>
</tr>
<tr>
<td></td>
<td>Motor is abnormal</td>
<td>Motor failure</td>
<td>Replace</td>
</tr>
<tr>
<td></td>
<td>Wire cut</td>
<td>Replace</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air leakage</td>
<td>Duct leakage</td>
<td>Check, tighten</td>
</tr>
<tr>
<td>Unable to control the fan</td>
<td>Motor</td>
<td>Air volume control switch failure</td>
<td>Check, tighten</td>
</tr>
<tr>
<td></td>
<td>Motor is abnormal</td>
<td>Motor failure</td>
<td>Replace</td>
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### SPECIFICATIONS

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<tr>
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<th>UTILIX HT45</th>
<th>UTILIX HT55</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engine</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Perkins</td>
<td>Perkins</td>
</tr>
<tr>
<td>Model</td>
<td>404D-22</td>
<td>404D-22</td>
</tr>
<tr>
<td>Type</td>
<td>Indirect injection, vertical, water-cooled, 4-cycle diesel</td>
<td>Indirect injection, vertical, water-cooled, 4-cycle diesel</td>
</tr>
<tr>
<td>Number of Cylinders</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total Displacement cm³</td>
<td>2,216</td>
<td>2,216</td>
</tr>
<tr>
<td>Gross Power kW (PS)</td>
<td>31.4(42.7) @ 2,600rpm</td>
<td>36.3(49.4) @ 2,800rpm</td>
</tr>
<tr>
<td>Rated Speed rpm</td>
<td>2,600</td>
<td>2,800</td>
</tr>
<tr>
<td>Maximum Torque N-m@rpm</td>
<td>130@ 1,800rpm</td>
<td>140@ 1,800rpm</td>
</tr>
<tr>
<td><strong>Electrical System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>12V 80AH</td>
<td>12V 80AH</td>
</tr>
<tr>
<td>Alternator</td>
<td>12V 65A</td>
<td>12V 65A</td>
</tr>
<tr>
<td><strong>Drive Train</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission Type</td>
<td>HST</td>
<td>HST</td>
</tr>
<tr>
<td>Number of Speeds</td>
<td>Infinite / 3 Ranges</td>
<td>Infinite / 3 Ranges</td>
</tr>
<tr>
<td>Brakes</td>
<td>Wet Disc</td>
<td>Wet Disc</td>
</tr>
<tr>
<td>Steering</td>
<td>Hydrostatic</td>
<td>Hydrostatic</td>
</tr>
<tr>
<td>Clutch</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Hydraulic system</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Capacity (Main) L/min</td>
<td>33.5</td>
<td>36.5</td>
</tr>
<tr>
<td>Pump Capacity (Power Steering) L/min</td>
<td>17.5</td>
<td>19.2</td>
</tr>
<tr>
<td>Number of standard remote valves (Additonal Option)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>3 Point Hitch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Category1</td>
<td>Category1</td>
</tr>
<tr>
<td>Lift Capacity Lift Points kg</td>
<td>1,503</td>
<td>1,503</td>
</tr>
<tr>
<td>25-in. Behind Lift Points lb kg</td>
<td>1,336</td>
<td>1,336</td>
</tr>
<tr>
<td>Lift Control Type</td>
<td>Mechanical - position/Draft</td>
<td>Mechanical - position/Draft</td>
</tr>
</tbody>
</table>
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Fluid Capacities</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Tank Liter</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Cooling System Liter</td>
<td>8.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Crankcase (with filter) Liter</td>
<td>6.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Trans. &amp; Hydr. System Liter</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Front Axle Liter</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Overall length with 3-Point Hitch mm</td>
<td>3,590</td>
<td>3,590</td>
</tr>
<tr>
<td>Overall width mm</td>
<td>1,620</td>
<td>1,620</td>
</tr>
<tr>
<td>Overall Height mm</td>
<td>2,530</td>
<td>2,530</td>
</tr>
<tr>
<td>Wheelbase mm</td>
<td>1,935</td>
<td>1,935</td>
</tr>
<tr>
<td>Min. Ground Clearance mm</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Min. Turning Radius without brakes mm</td>
<td>3,820</td>
<td>3,820</td>
</tr>
<tr>
<td>Weight with ROPS or Cab</td>
<td>1,900</td>
<td>1,900</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tire</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front R1 / R2 / R3 / R4</td>
<td>9.5-16/ - / - /-12-16.5</td>
<td>9.5-16/ - / - /-12-16.5</td>
</tr>
<tr>
<td>Rear R1 / R2 / R3 / R4</td>
<td>13.6-26 / - / - / 17.5L-24</td>
<td>13.6-26 / - / - / 17.5L-24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mass and Tyre</th>
<th>Axle No.1</th>
<th>Load Capacity (x2)</th>
<th>Tyres (dimensions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>950 1440 1800 3754 2902 5080</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>Permissible mass on rear axle</td>
<td>8-16 4PR 9.5-16 6PR 9.5-18 8PR 10-16.5 R3 8PR 12-16.5 R3 10PR 12-16.5 R4 10PR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permissible maximum mass on front axle</td>
<td>950 1440 1800 1800 1800 1800</td>
<td></td>
</tr>
<tr>
<td>Axle No. 2</td>
<td>Load Capacity (x2)</td>
<td>Tyres (dimensions)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2680</td>
<td>13.6-24 6PR 2680 3630</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3160</td>
<td>13.6-26 8PR 2660 4100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2860</td>
<td>13.6-28 6PR 2860 4100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4862</td>
<td>17.5L-24 R3 8PR 2860 4100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4862</td>
<td>17.5L-24 R4 8PR 2860 4100</td>
<td></td>
</tr>
</tbody>
</table>
SPECIFICATIONS

Traveling Speed

UTILIX HT45
Traveling Speed @ 2600 rpm : km/h (mph)

<table>
<thead>
<tr>
<th>Range Shift</th>
<th>Forward</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>6.19(3.85)</td>
<td>6.19(3.85)</td>
</tr>
<tr>
<td>M</td>
<td>11.7(7.27)</td>
<td>11.7(7.27)</td>
</tr>
<tr>
<td>H</td>
<td>29.41(18.27)</td>
<td>29.41(18.27)</td>
</tr>
</tbody>
</table>

*The specifications are subject to change for improvement without notice.

UTILIX HT55
Traveling Speed @ 2800 rpm : km/h (mph)

<table>
<thead>
<tr>
<th>Range Shift</th>
<th>Forward</th>
<th>Reverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>6.67(4.14)</td>
<td>6.67(4.14)</td>
</tr>
<tr>
<td>M</td>
<td>12.6(7.83)</td>
<td>12.6(7.83)</td>
</tr>
<tr>
<td>H</td>
<td>31.67(19.68)</td>
<td>31.67(19.68)</td>
</tr>
</tbody>
</table>

Noise Levels
The tractor is approved in accordance with the applicable EC Directives.

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.
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 mat 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.

**Technical data**

<table>
<thead>
<tr>
<th>Seat type</th>
<th>Corrected vibration level on seat</th>
</tr>
</thead>
<tbody>
<tr>
<td>W09SSS</td>
<td></td>
</tr>
<tr>
<td>Light driver 59 kg</td>
<td>1.24 m/sec²</td>
</tr>
<tr>
<td>Heavy driver 98 kg</td>
<td>1.12 m/sec²</td>
</tr>
<tr>
<td>SYMPTOM</td>
<td>CAUSE</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Engine</td>
<td><strong>Turning the main switch will not operate the starter</strong></td>
</tr>
<tr>
<td></td>
<td>PTO ON/OFF switch set in ON position.</td>
</tr>
<tr>
<td></td>
<td>Defective safety switch</td>
</tr>
<tr>
<td></td>
<td>Battery discharged</td>
</tr>
<tr>
<td></td>
<td>Loose terminal</td>
</tr>
<tr>
<td></td>
<td>Faulty switch</td>
</tr>
<tr>
<td></td>
<td>Defective start motor</td>
</tr>
<tr>
<td></td>
<td><strong>Starter operates but not enough to turn the engine</strong></td>
</tr>
<tr>
<td></td>
<td>Low battery</td>
</tr>
<tr>
<td></td>
<td>Bad earth</td>
</tr>
<tr>
<td></td>
<td>Thick oil</td>
</tr>
<tr>
<td></td>
<td><strong>Starter operates OK but does not start the engine</strong></td>
</tr>
<tr>
<td></td>
<td>Air in fuel system</td>
</tr>
<tr>
<td></td>
<td>Clogged fuel filter</td>
</tr>
<tr>
<td></td>
<td>No fuel being supplied</td>
</tr>
<tr>
<td></td>
<td>Glow plug disconnected or not working</td>
</tr>
<tr>
<td></td>
<td><strong>Engine revolutions are irregular</strong></td>
</tr>
<tr>
<td></td>
<td>Air in the fuel system</td>
</tr>
<tr>
<td></td>
<td>Faulty injector</td>
</tr>
<tr>
<td></td>
<td>Fuel pipe leak</td>
</tr>
<tr>
<td></td>
<td><strong>The engine stops at low revolution</strong></td>
</tr>
<tr>
<td></td>
<td>Poor fuel injection, Faulty injection pump</td>
</tr>
<tr>
<td></td>
<td>Wrong valve clearance</td>
</tr>
<tr>
<td></td>
<td>Wrong idle setting</td>
</tr>
<tr>
<td></td>
<td>Faulty injector</td>
</tr>
<tr>
<td></td>
<td><strong>The engine stops suddenly</strong></td>
</tr>
<tr>
<td></td>
<td>Lack of fuel</td>
</tr>
<tr>
<td></td>
<td>Faulty injectors</td>
</tr>
<tr>
<td></td>
<td>Seized engine due to lack of oil, the wrong oil or lack of coolant</td>
</tr>
<tr>
<td>SYMPTOM</td>
<td>CAUSE</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>The engine overheats</td>
<td>Lack of coolant</td>
</tr>
<tr>
<td></td>
<td>Broken or misadjusted fan belt</td>
</tr>
<tr>
<td></td>
<td>Clogged air filter element</td>
</tr>
<tr>
<td></td>
<td>Clogged radiator</td>
</tr>
<tr>
<td></td>
<td>Low oil</td>
</tr>
<tr>
<td>White smoking from the exhaust</td>
<td>Oil level too high</td>
</tr>
<tr>
<td></td>
<td>Shortage of or faulty fuel</td>
</tr>
<tr>
<td>Reduced performance of the engine</td>
<td>The injectors are clogged, carbon coated</td>
</tr>
<tr>
<td></td>
<td>and sticking</td>
</tr>
<tr>
<td></td>
<td>Low compression</td>
</tr>
<tr>
<td></td>
<td>Leaking valve seat</td>
</tr>
<tr>
<td></td>
<td>Incorrect valve gap</td>
</tr>
<tr>
<td></td>
<td>Faulty timing</td>
</tr>
<tr>
<td></td>
<td>Fuel shortage</td>
</tr>
<tr>
<td></td>
<td>Clogged air cleaner</td>
</tr>
<tr>
<td>Oil warning light comes on with the</td>
<td>Low oil level</td>
</tr>
<tr>
<td>engine running</td>
<td>Wrong oil</td>
</tr>
<tr>
<td></td>
<td>Faulty light or switch</td>
</tr>
<tr>
<td></td>
<td>Clogged oil filter</td>
</tr>
<tr>
<td>Alternator light comes on with the</td>
<td>Wiring fault</td>
</tr>
<tr>
<td>engine running</td>
<td>Faulty alternator</td>
</tr>
<tr>
<td></td>
<td>Low water level or faulty battery</td>
</tr>
<tr>
<td></td>
<td>Broken or loose fan belt</td>
</tr>
</tbody>
</table>

**Note:** The table provides a summary of symptoms, causes, and remedies for various engine issues. The remedies include actions such as refilling coolant, adjusting or replacing parts, cleaning or replacing filters, or contacting a dealer for repair.
## FAULT TRACING

<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake not working</td>
<td>Incorrect free play Worm or burnt lining Left and right gap different</td>
<td>Adjust to correct free play Contact dealer for repair Equalize</td>
</tr>
<tr>
<td>Brake pedal not returning</td>
<td>Faulty return spring Lack of grease on the joints</td>
<td>Replace spring Remove rust and lubricate with grease</td>
</tr>
<tr>
<td>Hydraulic system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulics are not lifting</td>
<td>Engine revs. too low Lack of transmission Oil Air leaking in from a pipe</td>
<td>Increase engine revs. Top up the oil to the correct level Repair or replace pipe or replace O ring on joint and tighten Clean and change oil Contact dealer for repair</td>
</tr>
<tr>
<td></td>
<td>Clogged suction filter Faulty pump Faulty hydraulic valve Faulty cylinder</td>
<td></td>
</tr>
<tr>
<td>Oil leak from pipe</td>
<td>Loose pipe joint Cracked pipe</td>
<td>Tighten joint Replace or repair pipe</td>
</tr>
<tr>
<td>When lifting the relief valve whistles</td>
<td>The stopper has slipped down</td>
<td>Adjust the stopper</td>
</tr>
</tbody>
</table>

For any other hydraulic problems please consult your dealer who has the correct equipment to diagnose and repair the system.
<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering wheel shaking</td>
<td>Wrong toe-in</td>
<td>Adjust toe-in</td>
</tr>
<tr>
<td></td>
<td>Unequal tire pressure</td>
<td>Inflrate both to correct pressure</td>
</tr>
<tr>
<td></td>
<td>Loose component</td>
<td>Tighten or replace if worn</td>
</tr>
<tr>
<td>Excessive play in the steering</td>
<td>Worn steering shaft</td>
<td>Contact dealer for repair</td>
</tr>
<tr>
<td></td>
<td>Worn components</td>
<td>Contact dealer for repair</td>
</tr>
<tr>
<td>Flat battery</td>
<td>Faulty wiring</td>
<td>Repair, reconnect or tighten as needed</td>
</tr>
<tr>
<td></td>
<td>Faulty alternator</td>
<td>Contact dealer for repair</td>
</tr>
<tr>
<td></td>
<td>Faulty regulator</td>
<td>Contact dealer for repair</td>
</tr>
<tr>
<td></td>
<td>Broken or loose fan belt</td>
<td>Replace or adjust</td>
</tr>
<tr>
<td>Electric instruments</td>
<td>Low battery</td>
<td>Charge or replace</td>
</tr>
<tr>
<td>Dim head lights</td>
<td>Faulty wiring</td>
<td>Repair or replace as needed</td>
</tr>
<tr>
<td>Headlights not working</td>
<td>Blown bulb</td>
<td>Replace bulb</td>
</tr>
<tr>
<td></td>
<td>Blown fuse</td>
<td>Replace fuse</td>
</tr>
<tr>
<td></td>
<td>Faulty contact</td>
<td>Repair or replace and check the earth</td>
</tr>
<tr>
<td>Horn not working</td>
<td>Faulty horn button</td>
<td>Replace button</td>
</tr>
<tr>
<td></td>
<td>Faulty wiring</td>
<td>Repair or replace</td>
</tr>
<tr>
<td></td>
<td>Faulty horn</td>
<td>Replace</td>
</tr>
<tr>
<td>Indicator not working</td>
<td>Blown bulb</td>
<td>Replace bulb</td>
</tr>
<tr>
<td></td>
<td>Faulty flasher unit</td>
<td>Replace unit</td>
</tr>
<tr>
<td></td>
<td>Faulty wiring</td>
<td>Repair or replace</td>
</tr>
</tbody>
</table>

Before anything else, check the electrolyte level of the battery and the connections. Top up if required and clean and retighten the terminal.
The tractor can be towed only for short distances, such as, for example, from inside to outside a building. A broken down tractor should be towed for the minimum indispensable distance to remove it from potentially dangerous conditions. Observe all legal provisions as envisaged in the highway code relative to national legislation regarding towing manoeuvres.

⚠️ 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.*
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
WIRING DIAGRAM

23 - PTO S/W
24 - PTO S/W
25 - Cruise Speed

UTILIX 45 / UTILIX 55 Electric system diagram (2)

1 - Nozzle (Front)
2 - Battery (-)
3 - Washer Tank (Front)
4 - Nozzle (Rear)
5 - Washer Tank (Rear)
6 - Start Realy
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
WIRING DIAGRAM

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

UTILIX 45 / UTILIX 55 Cabin wiring diagram (1)

1 - Working Lamp (Front.RH)
2 - Combination Lamp (RH)
3 - Harness (Main)
4 - Combination Lamp (LH)
5 - PTO Valve
6 - Level Control (Lower)
7 - Front Wiper
8 - Working Lamp (Front.LH)
9 - Eva Assy
10 - Audio A/C S/W
11 - Interior Lamp
12 - Turn Indicator Lamp (RH)
13 - Speaker (RH)
14 - Working Lamp (Rear.L)
15 - Speaker (LH)
16 - Ext. S/W
17 - Stop Lamp (RH)
18 - Level Control (Upper)
19 - Trailer Coupler
20 - Hydraulic Lever (S/W)
21 - Reverse Horn
22 - Ext. Power
23 - No. Lamp
24 - Turn Indicator Lamp (LH)
25 - Stop Lamp (LH)
1 - Switch Set
2 - Relay Set
3 - Wiper Motor (Front)
4 - Front working Lamp (LH)
5 - Front working Lamp (RH)
6 - Rear Working Lamp (RH)
7 - Rear Working Lamp (LH)
8 - Rear Wiper (Optional)
9 - Room Lamp
10 - Speaker (LH)
11 - Speaker (RH)
12 - Cigar Light
13 - A/C Switch
14 - Blower Switch
15 - Evaporator
1 - Front Working Lamp (RH)
2 - E/V Unit
3 - Front Wiper
4 - Front Working Lamp (LH)
5 - Audio
6 - Antenna
7 - Speaker (LH)
8 - Rear Working Lamp (LH)
9 - Rear Wiper
10 - Rear Working Lamp (RH)
11 - Speaker (RH)
12 - Interior Light
13 - H/T S/W
14 - A/C S/W
15 - Blower S/W
16 - Relay Box
1 - Panel, range RPM sensor
2 - Head lamp, horn
3 - Working lamp
4 - Stop lamp, reversing lamp
5 - Turn signal
6 - PTO
7 - Fuel pump engine stop
8 - Not used
9 - Coupler
10 - Controller
11 - E-hydro

1 - Head lamp - 12V55W
2 - Slow blow fuse
3 - Units for direction signal relay for the power
4 - PTO monitor
5 - Fuse box
6 - Turn signal lamp (rear) - 12V21W; Stop lamp, Tail lamp - 21/5W
7 - Coupler for the power max rated ampere
8 - Reversing lamp - 12V20W
9 - Coupler for the trailer
10 - Working lamp - 12V35W
11 - Instrument panel lamp - 12V3.4W
12 - Turn signal lamp (front) - 12V21W; Front position lamp - 21V5W
1 - Rear - Tyres, 13.6 - 26 8 PR, 17.5L - 24 R4 8PR

2 - Engine, 2800RPM / HT55, 2600RPM / HT45

3 - Front - Tyres, 9.5 - 16 6PR, 12L - 16.5 R4 10PR
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