

OPERATOR MANUAL

Solis 26



**INTERNATIONAL TRACTORS LIMITED
HOSHIARPUR
INDIA**

Part No. 10013156AA

OWNERSHIP AND TRACTORS DETAILS

OWNER'S NAME & ADDRESS	_____
	_____TEL.NO. _____

Model :	Delivery Date :
Chassis No. :	Bill No. / Date :
Engine No. :	Alternator Make / Sr. No. :
Battery Make / Sr. No. :	Starter Motor Make / Sr. No. :
FIP Sr. No. :	Hydraulic Pump Make / Sr. No. :

Tyre	Make	Size	Sr. No.
Front (Left)			
Front (Right)			
Rear (Left)			
Rear (Right)			

I have understood all the terms & conditions of the maintenance of the tractor, terms of warranty, systems, Scheduled services & understood operation of tractor in the field and other operations.

Received a new defect free tractor Chassis No.

Engine No. & fully satisfied with the transaction.

OWNER'S SIGNATURE	DEALER STAMP & SIGNATURE
	PH. NO. DATE:

*** IMPORTANT INFORMATION TO CUSTOMER:** For any assistance with regard to our product, please contact our authorized dealer or authorized service center.

--

DEALER COPY

OWNERSHIP AND TRACTORS DETAILS

OWNER'S NAME & ADDRESS	<div style="border-bottom: 1px dashed black; height: 20px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px dashed black; height: 20px; margin-bottom: 5px;"></div> <div style="text-align: right; padding-bottom: 5px;">TEL.NO. _____</div>
---------------------------------------	--

Model :	Delivery Date :
Chassis No. :	Bill No. / Date :
Engine No. :	Alternator Make / Sr. No. :
Battery Make / Sr. No. :	Starter Motor Make / Sr. No. :
FIP Sr. No. :	Hydraulic Pump Make / Sr. No. :

Tyre	Make	Size	Sr. No.
Front (Left)			
Front (Right)			
Rear (Left)			
Rear (Right)			

I have understood all the terms & conditions of the maintenance of the tractor, terms of warranty, systems, Scheduled services & understood operation of tractor in the field and other operations.

Received a new defect free tractor Chassis No.

Engine No. & fully satisfied with the transaction.

OWNER'S SIGNATURE	DEALER STAMP & SIGNATURE
	PH. NO. DATE:

*** IMPORTANT INFORMATION TO CUSTOMER:** For any assistance with regard to our product, please contact our authorized dealer or authorized service center.

CUSTOMER COPY



PREFACE

Dear Customer,

We welcome you with great pleasure for joining ITL family and thanks for faith and trust you have placed in the careful selection of your tractor.

We are sure that our dealer must have taken good care while delivering tractor upto your satisfaction.

Before using tractor, it is recommended to read this manual thoroughly. Any person who uses the tractor should be also advised to read these instructions.

Daily and routine maintenance operations can be easily performed with the use of this manual. To get best and trouble free performance from you tractor. Please ensure for periodic maintenance as per recommended schedule in the owner's manual at authorized dealership.

Use only genuine ITL spare parts from dealer/stockist for reliable and durable performance.

Information provided in this operator manual is accurate at the time of printing. Improvements and modifications are a continuous process at **International Tractors Limited (ITL)**, therefore ITL reserves the right for modification at any time without prior notice.

For any help/support feel free to call our dealership with the tractor details like Engine number and Chassis number.

We wish you prosperity and growth.

Export Department

INTERNATIONAL TRACTORS LIMITED

Vill.-Chak Gujran, P.O. Piplanwala 146022

Jalandhar Road, Hoshiarpur, Punjab, India.

Phone: +91-1882-302-525/526

E-mail: exports@sonalika.com

YOUR RIGHTS

While taking delivery of new “**SOLIS 26**” Tractor, kindly ask the dealer to give following items*:

1. Tool kit which includes

- | | |
|--------------------------|------|
| • Grease Gun | 1 pc |
| • D-spanner 10X11 | 1 pc |
| • D-spanner 12X13 | 1 pc |
| • D-spanner 14X17 | 1 pc |
| • D-spanner 18X19 | 1 pc |
| • D-spanner 20X22 | 1 pc |
| • D-spanner 30X32 | 1 pc |
| • Ring spanner 24X27 | 1 pc |
| • Ring spanner 16X17 | 1 pc |
| • Battery Guarantee Card | 1 pc |

2. Farmer kit which includes

- | | |
|-------------------------|------|
| • Fuel Filter Cartridge | 3 pc |
| • Linch Pin | 3 pc |
| • Tyre Pressure Gauge | 1 pc |
| • Fuse Set | 1 pc |
| • Fuel Tank Cap | 1 pc |
| • Radiator Cap | 1 pc |
| • Fan Belt | 1 pc |
| • Air Cleaner Hose | 1 pc |

3. To avail the services.

4. To call dealers any time for any breakdown.

5. Additional Accessories as Standard fitment

- Plough Lamp
- Rear View Mirror

* Charges applicable as per Invoice.

CONTENTS

DESCRIPTION	PAGE NO.
CHAPTER 1: TRACTOR IDENTIFICATION	
Chassis Serial Number	15
Engine Serial Number	15
Statutory Plate.....	15
ROPS Certificate Plate.....	15
CHAPTER 2: INTRODUCTION, WARRANTY & SAFETY NOTES	
Introduction	19
Warranty Policy	20
Safety Notes.....	22
CHAPTER 3: INSTRUMENTS & CONTROLS	
Universal Symbols	33
Controls.....	34
Instrument Panel.....	35
Fuel Gauge	36
Engine Oil Pressure Gauge	36
Left Turn Indicator	36
Right Turn Indicator.....	37
Gear Lever Position Indicator	37
Temperature Gauge	37
Cold Start Indication.....	38
Battery Charge Indication	38
Engine RPM cum Hour Meter	38
Air Cleaner Clogging Indicator	38
High Beam Indicator.....	38
Dashboard Controls	39
Hazard Warning Light Switch.....	39
Combination Switch	39
Starting Key (Ignition) Switch.....	40
Beacon Light Switch.....	40
Fuse Box	41
Lights.....	41
Plough Lamp	41
Beacon Light	42
Driver's Seat	42
Registration Plate.....	43
Seven Pin Socket.....	43
Tool Box	43
CHAPTER 4: OPERATION	
Boarding & Leaving the Tractor	47
Engine: Starting the Engine	47
Engine: Cold Weather Starting.....	47
Engine: Running In	48

CONTENTS

DESCRIPTION	PAGE NO.
Engine: Turning off the Engine.....	48
Under Hood Muffler.....	49
Opening the Bonnet.....	49
Accelerator Pedal.....	49
Clutch Pedal.....	49
'2WD/4WD' Lever.....	50
Hand Throttle Lever.....	50
Gear Shifter Lever.....	50
Power Take Off (PTO).....	51
Using Implements with PTO Drive Shafts.....	52
Hydraulic Coupling Devices.....	53
Power Steering.....	53
Transport Lock.....	54
Hi-Low Lever.....	54
Differential Lock Pedal.....	54
DCV Lever.....	54
Service Brakes.....	55
Parking Brake.....	55
Ground Speed Chart.....	56
Wheels and Tyres.....	57
Ballasting of Tyres.....	58
Hydraulic.....	58
Three Point Linkage.....	59
 CHAPTER 5: MAINTENANCE	
Maintenance Schedule.....	63
Fuel Tank Filling.....	65
Fuel Requisites.....	65
Fueling.....	65
Fuel Storage.....	65
Checking Engine Oil Level.....	66
Replacement of Oil Filter and Engine Oil.....	66
Replacement of Fuel Filter.....	67
Coolant Level in Radiator.....	67
Radiator Draining and Flushing.....	68
Radiator Fins Cleaning.....	68
Radiator Cap.....	68
Inspection of Hoses.....	68
Air Cleaner (Dry Type).....	69
Clutch Pedal: Free Play Adjustment.....	70
Foot Brake Pedals: Free Play Adjustment.....	70
Steering Cylinder Knuckle Joints.....	70
Oil Changes in 4WD Front Axle.....	71
Oil Changes in Transmission, Rear Final Drives and Power Lift.....	71
Recommended Oil Grade & application Range.....	72
Cleaning of Suction Strainer.....	72

CONTENTS

DESCRIPTION	PAGE NO.
General Maintenance of Electrical System	73
Battery and its Maintenance	73
Starter Motor	75
Alternator.....	75
V-belt Checking and Adjustment	75
Fuses in Fuse Box	76
Long Idle Period	76
Greasing Points.....	77
Jack Up the Tractor - Lifting Points	78
Oil and Lubrication Chart	79
Electrical Wiring Circuit Diagram.....	81
 CHAPTER 6: TECHNICAL SPECIFICATIONS	
Technical Specifications	85
Implement Specifications	86
 CHAPTER 7: DO'S AND DON'TS	
Do's and Don'ts	91
 CHAPTER 8: TROUBLESHOOTING	
Troubleshooting	97
 CHAPTER 9: INSTALLATION CERTIFICATE & SERVICE RECORD	
Installation Certificate	101
Service Record.....	103

CHAPTER - 1

TRACTOR IDENTIFICATION

TRACTOR IDENTIFICATION

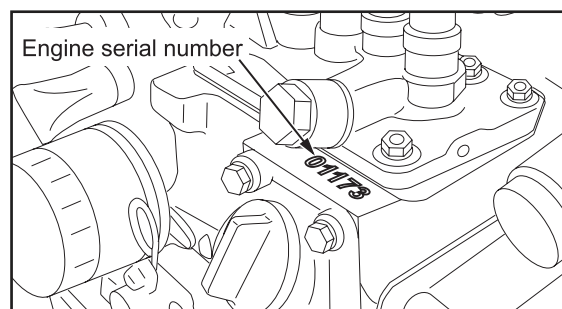
Chassis Serial Number

The chassis and/or engine serial numbers are used to register the vehicles. They are also used to assist your dealer when ordering or referring to special service information. Whenever you have occasion to consult your dealer, remember to identify your vehicle with this number. Chassis number is punched on right hand side of the front axle bracket. Should you find the number difficult to read, you will also find it on the Statutory plate.



Engine Serial Number

The engine serial number is stamped on the upper side of the fuel injection pump installation part located in the right side of cylinder block.

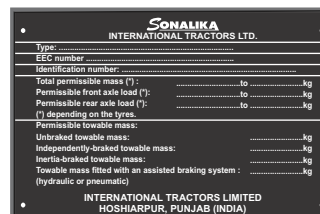


For easy and quick reference, engine serial number is also mentioned on the information sticker which is pasted on valve cover of the engine as shown in Fig.



Statutory Plate

Chassis number is also engraved on Statutory plate which is located inside of the bonnet.



ROPS Certificate Plate

ROPS certificate plate is riveted on ROPS as shown in Fig. Information about ROPS serial number and tractor model is engraved on ROPS plate.



CHAPTER - 2

INTRODUCTION, WARRANTY & SAFETY

INTRODUCTION

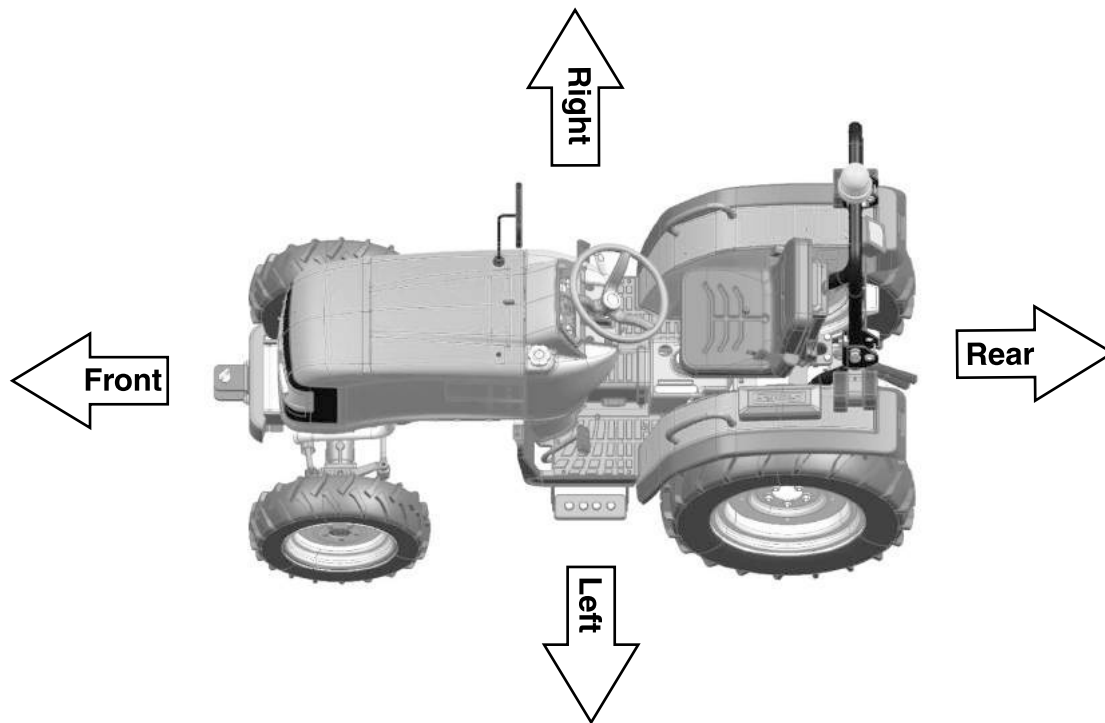
Tractor an Introduction

The word, 'Tractor' has been derived from 'Traction' which means pulling.

A Tractor is required to pull or haul an equipment or implement which are coupled to the Tractor body through suitable linkage. A Tractor can also be used as a prime mover as it has power outlet source which is also called Power Take off or PTO shaft.

In this manual the operating, maintenance and storage instructions for Solis-26 Tractor has been compiled. 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 mechanics, please get in touch with the ITL Dealer/Distributor in your country, Dealer/Distributors are kept informed of the latest methods of servicing Tractors. They keep stock of genuine spare parts which is supplied by the company.



(Front, Rear, Left, Right Portion)

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.

Always specify the tractor chassis and engine serial number when ordering spare parts. This will facilitate correct & faster delivery of require parts. For easy reference, we suggest you to write the number in the space provided in the owner's personal data.

WARRANTY

Warranty Policy

M/s International Tractors Limited, India warrant, subject as hereinafter provided that all new goods supplied by it are free from defects in material and workmanship. Its liability under such warranty being limited to 24 Months from date of Bill of landing or 18 Months from date of delivery to first original retail purchaser or 1500 Hours whichever ever is earlier. Warranty for proprietary items will be up to 12 months or 1000 working hours whichever appears earlier from the date of delivery to the first original retail purchaser. Claims will be settled against manufacturing defects by ITL as per their published warranty policy.

(A) - Terms and Condition:

- ☞ During warranty period the Authorized Distributor will repair the Tractor by replacing the failed parts from their stock which are supplied by ITL against their order and lodge the claim within 60 days from the date of repair of Tractor.
- ☞ The claim will be settled as per ITL warranty policy.
- ☞ If any work is outsourced like welding, machining operation, transportation, labor charges etc will not be covered under warranty.

(B) Exceptions To Warranty:

- ☞ Electrical fitment like Bulbs and Glasses do not come under warranty. At the time of delivery the customer should ensure that these things are in proper order because after that, customer himself is responsible.
- ☞ Policy does not include replacement of Oil and Fuel filters, Oil and Lubricants, Nuts & Bolts, Plastic Material.
- ☞ Warranty for propriety articles like Fuel Injection Equipments, Self starter, Alternator, Batteries, Tyres & Tube will be up to 12 months or 1000 working hours whichever appears earlier from date of sale to the original retail customer & shall be settled as per terms & conditions of the concerned manufacturer provided the repairable items have not been repaired from any other sources.
- ☞ Distributor will deliver the tractor with complete oil level as per standard onwards. In case of any seal leakage, customer will have to bear the cost of oil.
- ☞ Normal wear and tear of the components is not covered under warranty; however ITL will decide discuss premature or epidemic on case to case basis.
- ☞ Parts lost in field are not covered under warranty.

Warranty is not applicable

- ☞ If tractor is being used overloaded or over heated, driver negligence, unauthorized modification, untimely servicing, poor maintenance or tractor met with an accident.
- ☞ Tractor has crossed the warranty period.
- ☞ In case of late submission of warranty claim. (The claim must be submitted within 60 days from the date of repair).
- ☞ If defective parts not available for inspection. ITL can request parts within 90 days from date of submission of warranty claims.
- ☞ Once a Tractor is purchased / delivered, it will not be returned or replaced. It will be repaired only as per ITL warranty policy.
- ☞ Warranty applicable only to first retail purchaser.
- ☞ This policy ceases if the components shows mishandling, modification, neglect of slight defect, overloading, overheating, poor maintenance or use of incorrect grade of oil.

WARRANTY

- ☞ The warranty becomes void if the tractor is repaired/ dismantled in an unauthorized workshop and use of replacement parts, not supplied/approved by ITL.
- ☞ ITL's responsibility is limited to the terms of the warranty and it shall not be answerable for personal injuries or consequential or resulting liability, damage or loss arising from any defects.

(C) - Warranty Claims Submission: -

Authorized Dealer will submit the warranty claim form by filling all column duly signed & seal by dealer with customer signature, along with following documents:

1. Photograph of failed component with Chassis/Engine number written with paint
2. Copy of Job card duly signed by dealer and customer.
3. Copy of Tractor Installation certificate//Delivery Certificate.

- ☞ Claims will not be entertained under warranty if received with incomplete information and without supporting documents.
- ☞ All warranty claims along with supporting documents must reach warranty department under intimation to Exports Department within 60 days from date of repair of Tractor thru courier/ e-mail.
- ☞ Distributor must provide the Installation certificate copy with in 30 days from the date the tractor is delivered to customer, for reference of ITL during warranty settlement. The claim of tractor for which installation certificate is not submitted, warranty claim shall not be settled.

(D) - Storage of Defective Parts: -

- ☞ All failed parts pertaining to warranty replacement are property of ITL & must be retained with distributor at least for 90 days from date of submission of warranty claims with proper tagging & packing for further Inspection/investigation by ITL Engineer. These can be called back to ITL works if necessary for investigation at ITL expense.

(E) - Settlement of Warranty Claim: -

- ☞ Claim will be settled with in 30 days from date of submission of warranty claim as per ITL warranty policy by our warranty division and reimbursement of parts value as per latest prices (applicable import price at the time of repair of tractor) + 35 % as freight component will be credited in Distributor account within 45 days of submission of warranty claim.

Address for submission of warranty claims: -

To,

Exports Department

INTERNATIONAL TRACTORS LTD,

Village - Chak Gujran,

P.O.- Piplanwala-146022.

Jalandhar Road,

HOSHIARPUR (Punjab), INDIA.

Tel No: +91-1882-302521

Fax No: +91-1882302523

E- Mail: exports@sonalika.com

SAFETY NOTES

Guidelines About Safety Sign

Recognize Safety Information:

Any of the following symbols on your machine or in this manual, alert you to the potential for personal injury. Follow recommended precautions and safe operating practices.



The symbol and the word DANGER indicate an immediate hazardous situation, which if not avoided, will result in DEATH OR VERY SERIOUS INJURY.



The symbol and the word WARNING indicate a potentially hazardous situation. If the instructions or procedures are not correctly followed it could result in DEATH OR VERY SERIOUS INJURY.



The symbol and the word CAUTION indicate a potentially hazardous situation, which if not avoided, may result in MINOR INJURY.

IMPORTANT : Indicates that equipment or property damage could result if instructions are not followed.

NOTE : Indicates important information or information which is useful for tractor operation.

SAFETY NOTES



SAFE OPERATION

Careful operation is your best insurance against accident.

Read and understand this manual carefully before operating the tractor.

All operator's no matter how much experience they may have, should read this and other related manuals before operating the tractor or any implement attached to it.

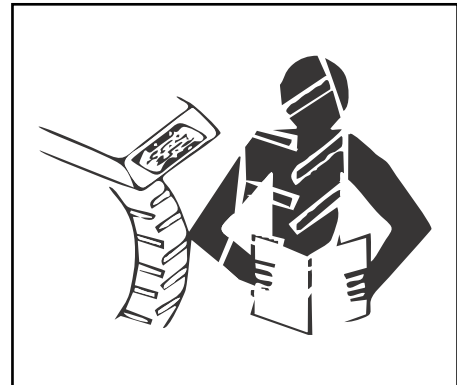
It is the owner's obligation to instruct all operators a safe operation.

BEFORE OPERATING THE TRACTOR

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.



Strictly follow the instructions outlined in the operator's manual of the mounted or trailed machinery or trailer, and not to operate the combination tractor — machine or tractor — trailer unless all instructions have been followed.

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 tyres are frozen to the ground, back out to prevent upset.
7. Always check overhead clearance, especially when transporting the tractor.

SAFETY NOTES

STARTING THE TRACTOR

Warn bystanders before starting:

Before starting, Walk all around the tractor and any attached equipment. Make sure that no one is under it, on it, or close to it. Let other workers and bystanders know you are starting up and don't start until everyone is clear of the tractor, implements and towed equipment.

Ensure that all bystanders, particularly children are in a safe position before starting the engine.

Mount and dismount properly:

Always use 'three point contact' with the machine, and face the machine when you mount it. Three point contact means both hands and one foot or one hand and both feet are in contact with the machine at all times during mounting and dismounting.

Clean the soles of your shoes and wipe your hands before climbing on. Use handrails, grip handrails, ladders or steps (as provided) when mounting or dismounting.

NEVER use control levers as a hand hold and NEVER step on foot controls when mounting or dismounting.

NEVER attempt to mount or dismount from a moving tractor. NEVER jump off a tractor in any circumstances.

Adjust the seat, fasten the seat belt (where applicable as outlined in this manual), apply the parking brake and put all controls in neutral before starting up.



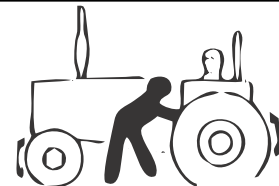
Before starting the engine, make sure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.



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 the Tractor.



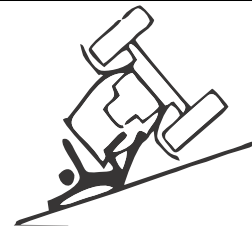
PRECAUTION TO AVOID TIPPING

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 these situations if possible.



SAFETY NOTES

PROHIBITED USE OF TRACTOR DURING OVERTURNING

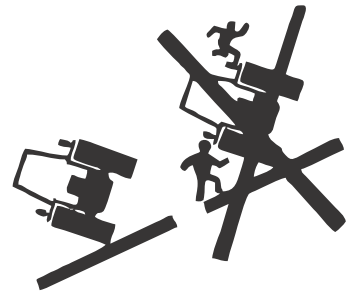
Risk of Overturning:

For your safety, tractor is fitted with safety frame and seat belts.

In the event of overturning with a tractor fitted with a safety frame, hold the steering wheel firmly and DO NOT attempt to leave the seat until the tractor has come to rest.

To avoid side overturns:

- Set the wheel track at the widest setting suitable for the job being done.
- Lock the brake pedals together before driving at transport speeds.
- Reduce speed to match operating conditions. If the tractor is equipped with a front end loader, carry the bucket and load as low as possible.
- Make wide slow turns on reduced speed. DON'T let your tractor bounce. You may lose steering control.
- DON'T pull a load too heavy for your tractor. It could run away on the down slope the tractor could jack knife around a towed load.
- DON'T brake suddenly. Apply brakes smoothly and gradually.
- When going down a slope use the throttle to slow the tractor engine and use the same gear you would use to up the slope. Shift into gear before you start downhill.
- Engine four-wheel drive (4WD), if fitted, will give you four wheel braking.

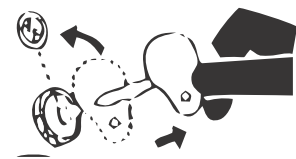


PARK TRACTOR SAFELY

Before working on the Tractor:

Lower all equipments to the ground.

Stop the engine and remove the ignition key.



SAFETY STARTER SWITCH

1. Clutch operated Safety switch is provided which allows the starting system to become operational only when the Clutch pedal is fully pressed.
2. Do not By-pass this Safety switch or work on it. Only Authorized Dealers are recommended to work on Safety starter switch.

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. Keep Transmission in neutral position. Foot brake engaged and PTO lever in disengaged position while attending to Safety Starter Switch or any other work on the Tractor.

SAFETY NOTES

AVOID HOT EXHAUST

Servicing machine or attachment with engine running can result in serious personal injury. Avoid exposure.

Exhaust parts and streams become very hot during operation. Exhaust gases and components reach temperatures hot enough to burn people, ignite, or melt common materials.



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.



ALWAYS USE SAFETY LIGHTS

Use of hazard warning lights and turn signals are recommended when towing equipment on public roads unless prohibited by state or local regulations.



ROAD REGULATIONS

- When operating your tractor on a public road a number of precautions must be taken.
- Know the route you are going to travel.
- Use caution when towing a load at transport speeds especially if the towed equipment is NOT equipped with brakes.
- Observe all local or national regulations regarding the road speed of your tractor.
- Use extreme caution when transporting on snow-covered or slippery roads.
- Wait for traffic to clear before entering a public road. Beware of blind intersections. Slow down until you have a clear view.



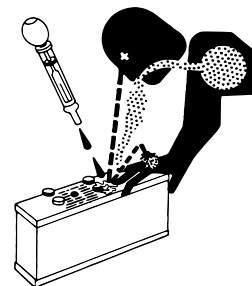
SAFETY NOTES

PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, cause holes in clothing and cause blindness. 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, immediately flush your skin with water and flush your eyes for 10-15 minutes. Get medical attention immediately.



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.

Always keep your tractor clean of accumulated grease and debris.

Always clean up spilled fuel.



SERVICE TRACTOR SAFELY

Do not wear a necktie, scarf or loose clothing when you work near moving parts. If these items get caught, severe injury could result.

Remove rings and other jewellery to prevent electrical shorts and entanglement in moving parts.



STAY CLEAR OF ROTATING SHAFTS

Entanglement in rotating shaft can cause serious injury or death.

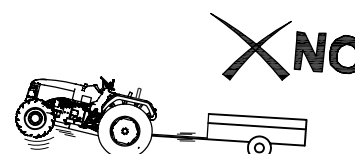
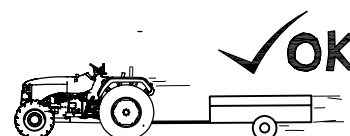
Keep PTO shield in place at all times.

Wear close fitting clothing. Stop the engine and to sure PTO drive is stopped before making adjustments, connections, or cleaning out PTO driven equipment.



GENERAL OPERATING HAZARDS

- Three point hitch and side mounted implements make a much larger arc when turning that towed equipment. Make certain to maintain sufficient clearance for safe turning.
- When using attachments or implements with the tractor, be sure to thoroughly read the Operator Instruction Book for that attachment or implement and follow its safety instructions.
- Pull only from the approved drawbar. Towing or attaching to other locations may cause the tractor to overturn.
- Improper use of the drawbar, even if correctly positioned, may cause the tractor to overturn to the back.
- DO NOT overload an attachment or towed equipment. Use proper counterweights to maintain tractor stability. Hitch loads to the drawbar only.



SAFETY NOTES

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 motion.
- Keep body and clothing away from rotating shafts.
- Always lower equipment to the ground. Stop the engine.
- Remove the key equipment to the ground. Stop the engine.
- 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 form the Tractor.
- Disconnect battery ground cable (–) before making adjustments on electrical system or welding on Tractor.



SAFETY TIPS DURING MAINTENANCE

1. At least on a daily 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 tyre pressure are even and the correct pressure for the job being done is maintained.
3. Check to ensure that the all controls and preventive 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 tractor until it is switched off, and the parking brake applied and wheels chocked. Where a tractor is stored 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 lifted implements/Implements under operation.
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 a naked 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 a hot engine to prevent being scalded by steam or hot water. Do not add water in the radiator when then engine is hot. Add water to the radiator only after the engine cools down completely.
11. To prevent fire keep the tractor including the engine clean and free from inflammable material and well away from fuels and other inflammable material.

SAFETY NOTES

Safety: Prepare For Safe Operation

Protect yourself:

Wear all the protective clothing and personal safety devices issued to you or called for by job conditions. Don't take risk hence you may carry/wear the following (Fig. 2.1)

- (a) A hard hat.
- (b) Safety glasses, goggles or face shield.
- (c) Hearing protection.
- (d) Respirator or filter mask.
- (e) Inclement weather clothing.
- (f) Reflective clothing.
- (g) Heavy gloves (neoprene for chemical, leather for rough work).
- (h) Safety shoes.

DO NOT wear loose clothing, jewellery or other items and tie up long hair which could catch on controls or other parts of the tractor.

Learn where fire extinguishers and first aid or emergency equipment is kept and where to get help in a hurry. Make sure you know how to use this equipment.



(a)



(b)



(c)



(d)



(e)



(f)



(g)



(h)

Protect The Environment :

It is illegal to pollute drains, water courses or soil. Use authorized waste disposal facilities, including civic amenity sites and garages providing facilities for disposal of used oil. If in doubt, contact your local authority for advice.

To get to know the correct methods to dispose of oils, filters, tyres etc. contact your Dealer or the local agency for waste recycling.




CHAPTER - 3

INSTRUMENTS & CONTROLS

INSTRUMENTS & CONTROLS

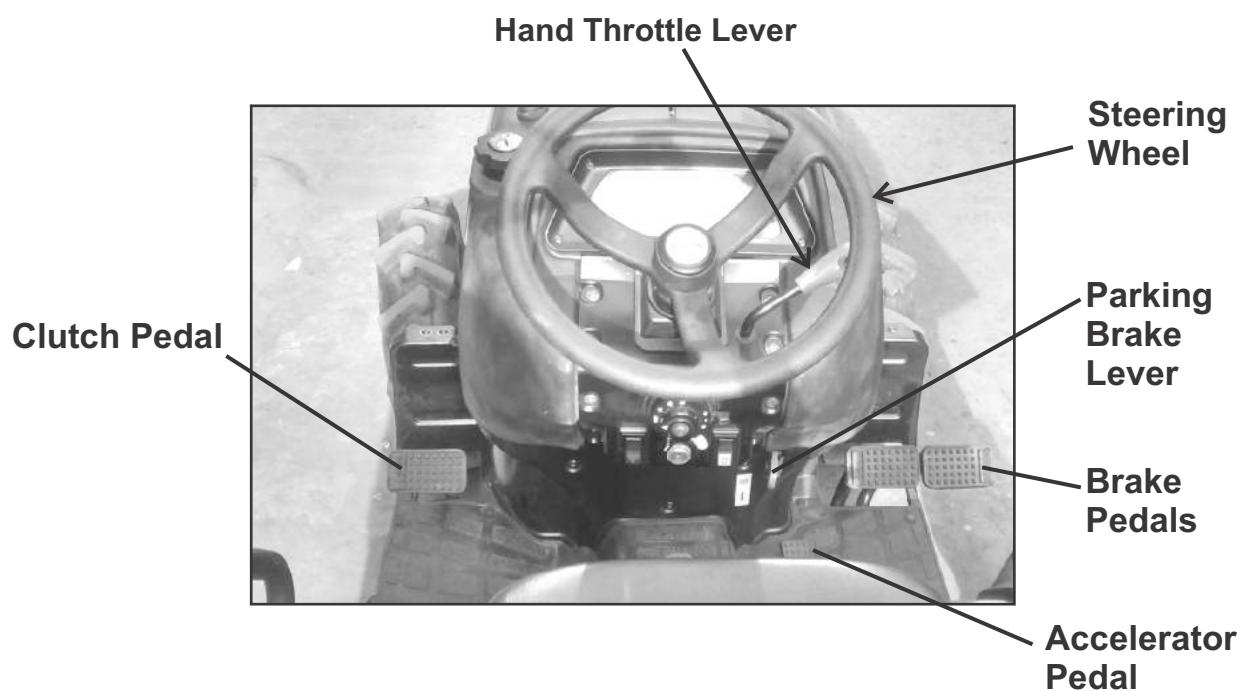
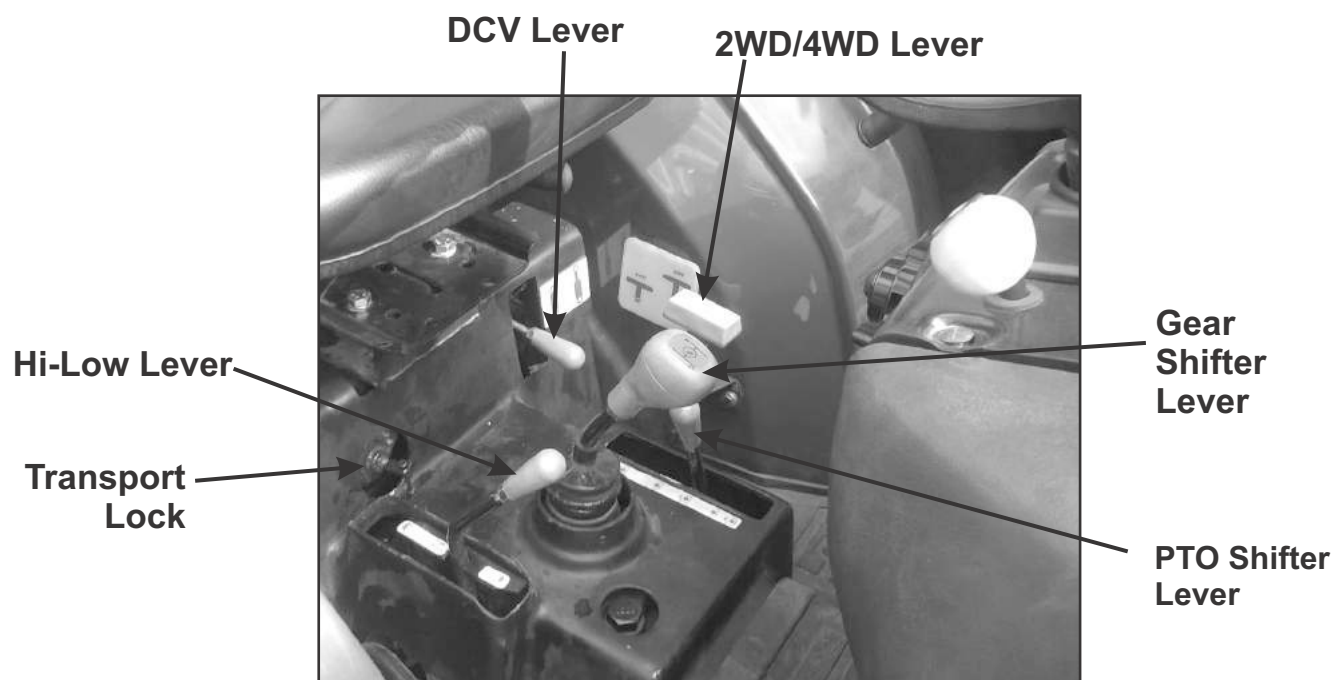
Universal Symbols

As a guide to the operation of your tractor, various universal symbols have been utilized on the instruments and controls and at other locations of the tractor. The symbols are shown below with an indication of their meaning.

	Safety Alert Symbol		Fast
	Fuel Level		Slow
	Engine Rotational Speed		Engine Coolant-Temperature
	Parking Brake		
	Air Cleaner Clogging Sensor		
	Battery Charging Condition		
	Engine Oil-Pressure		
	Turn Signal		
	Power Take-Off Clutch Control-Off Position		
	Power Take-Off Clutch Control-On Position		
	Differential Lock		
	Hazard Warning Lights		
	Master Lighting Switch		
	Parking Brake Indication		
	Headlight-Low Beam		
	Headlight-High Beam		
	Audible Warning Device		
	Four-Wheel Drive-On		
	Four-Wheel Drive-Off		

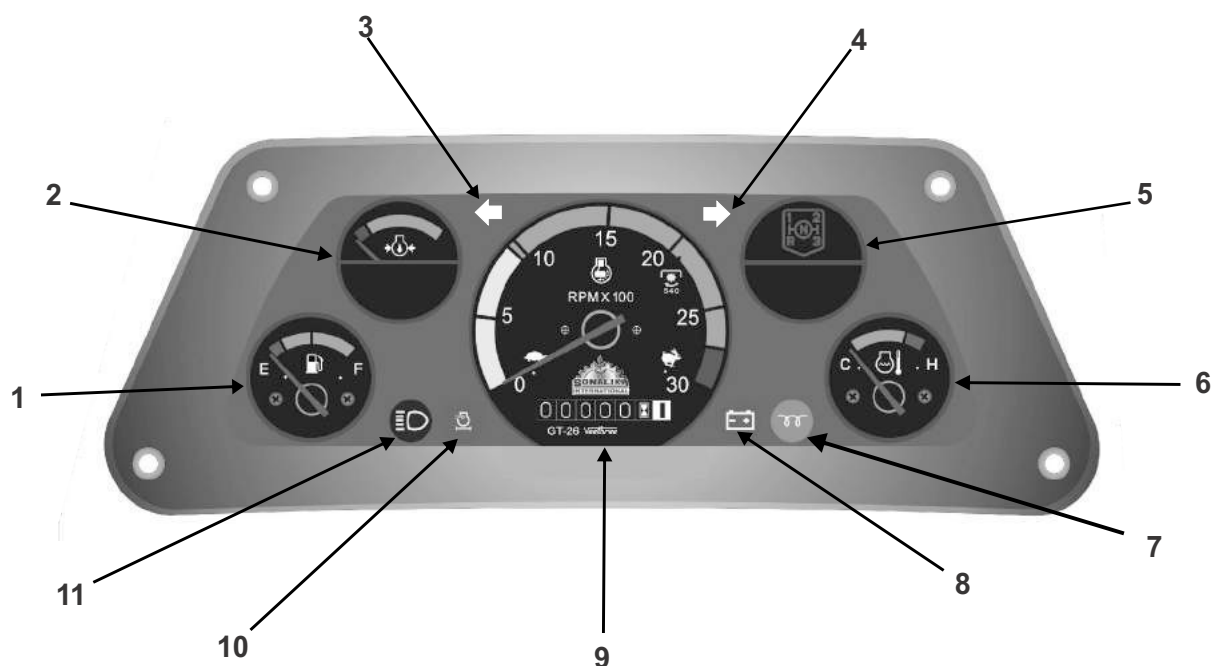
INSTRUMENTS & CONTROLS

Tractor Controls



INSTRUMENTS & CONTROLS

3.1 Instrument Panel



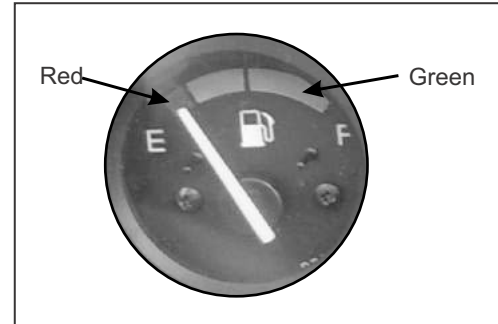
- 1 Fuel Gauge
- 2 Engine Oil Pressure Gauge
- 3 Left Turn Indicator
- 4 Right Turn Indicator
- 5 Gear Lever Position Indicator
- 6 Temperature Gauge
- 7 Cold Start Indicator
- 8 Battery Charging Indicator
- 9 Engine RPM cum Hour Meter
- 10 Air Cleaner Clogging Indicator
- 11 High/Low Beam Indicator

INSTRUMENTS & CONTROLS

Fuel Gauge

Fuel gauge gives an approximate indication of the quantity of fuel in fuel tank. If the needle enters in RED zone, refill the fuel tank.

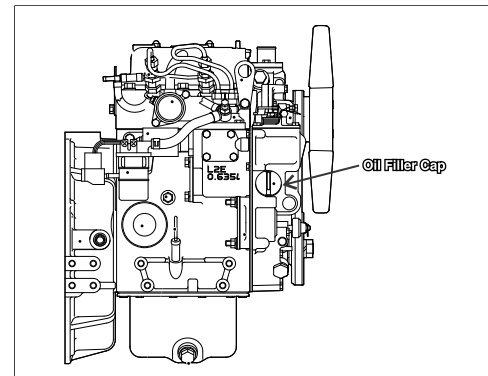
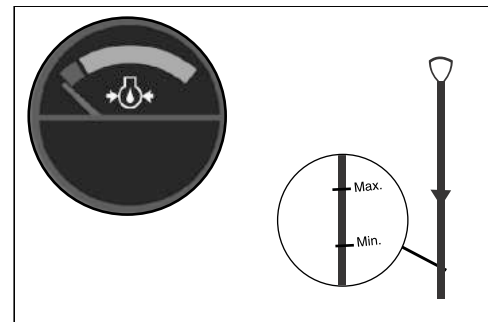
Ensure Min. 5 Ltr. of Fuel in Fuel Tank to avoid air locking.



Engine Oil Pressure Gauge

Oil Pressure Gauge indicates pressure of lubricating oil in the engine. If the needle goes in red zone, stop the engine and follow the procedure :

1. Stop your tractor to the side of road on leveled surface.
2. Wait for sufficient time after stopping the engine to get down the oil from gallery to oil sump.
3. Pull out the dipstick, wipe off oil with a clean cloth.
4. Insert the dipstick, fully into the oil level gauge guide, then pull out the gauge again. The correct oil level is between the Max. & Min. marks on the dipstick.
5. If the oil level is low, remove the oil filler cap and add recommended oil up to the Max. level.
6. Install the oil filler cap after top up.
7. Check the oil pan and other parts for oil leakage.
8. Start the engine, allow it to run idle and don't accelerate engine immediately if again, the needle goes into red zone, then contact your nearest dealer.



IMPORTANT: Do not operate the engine if there is no oil pressure indication. This may damage engine parts.

Left Turn Indicator

It glows when the left side indicator is switched ON.



INSTRUMENTS & CONTROLS

Right Turn Indicator

It glows when the right side indicator is switched ON.



Gear Lever Position Indicator

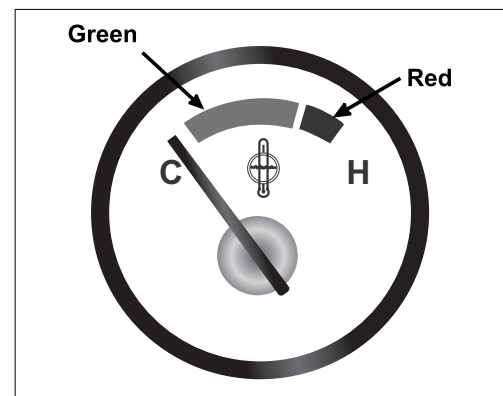
This is only for awareness about Positions of Gear Lever to select the desired gear.



Temperature Gauge:

This gauge indicates temperature of engine coolant, GREEN zone indicates normal temperature and RED zone indicates engine overheating. If the needle moves beyond normal range, towards RED zone, follow the procedure:

1. Drive safely to the side of road and stop your tractor.
2. Allow the engine to run idle.
3. If the temperature does not go down, shut it off and allow sufficient time for it to cool.
4. Visually inspect the fan belt for looseness, breakage and all water hose connections for leak.
5. If the fan belt is OK and no coolant leak is noticed check the coolant level.
6. Add coolant if required otherwise contact your nearest dealer.



WARNING

Do not remove the radiator cap when the engine and radiator are hot. Hot coolant and steam may blow out under pressure, which could cause serious injury. The cap should only be taken off when the coolant temperature has lowered.
Necessary precaution to be taken while opening the radiator cap.

INSTRUMENTS & CONTROLS

Cold Start Indication

It glows when ignition heater is ON at second position of the starting key.



Battery Charge Indicator

This indicator indicates that either battery is being charged or not. Refer the below given observations with respect to different

CONDITIONS			Battery Charging System Functioning
IGNITION SWITCH	ENGINE	INDICATOR	
ON	OFF	GLOW	OK
ON	OFF	OFF	Charging System/Battery is defective, Get both thing checked from electrician
ON	Start/Running	OFF	Battery being Charged
ON	Start/Running	GLOW	Charging System is defective/Battery is draining out, get the charging system checked from electrician.

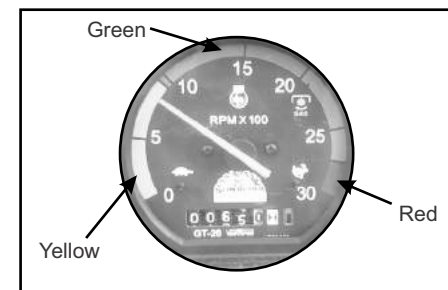


Engine RPM cum Hour Meter

Needle of this meter indicates speed of engine in revolution per minute and the hour meter indicates the number of hours worked by the engine.

Green Zones is safe for operation.

NOTE: Hour meter may be defer from actual hour (As per Clock) this is purely depend on Engine RPM.



Air Cleaner Clogging Indicator

This light will glow when the air filter get choked. Clean the air cleaner element immediately with air pressure if this light is glowing.



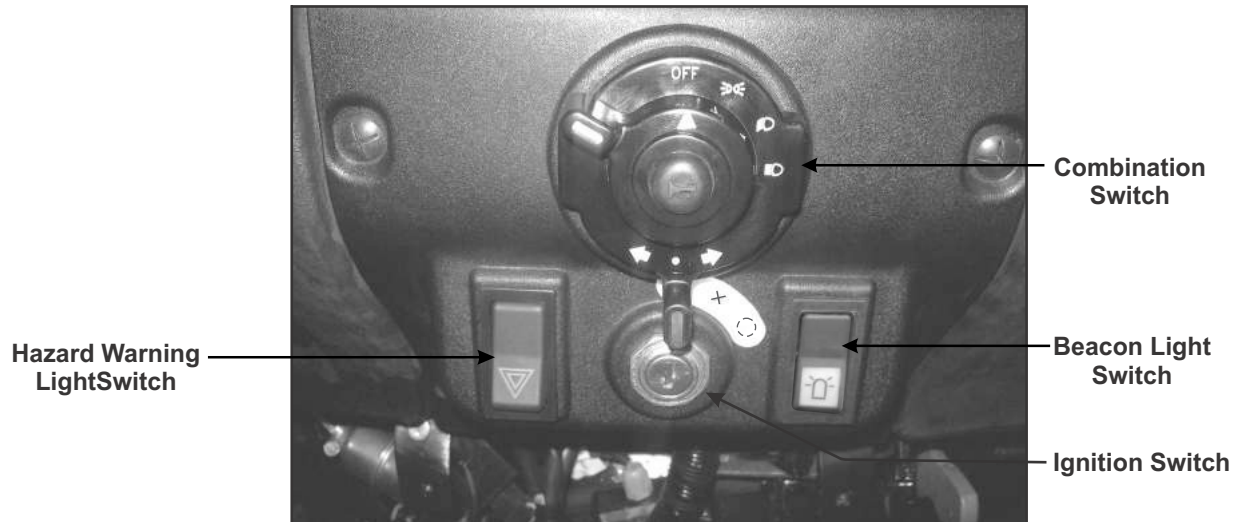
High Beam Indicator

This light glows when Head Lights are in high beam mode.



INSTRUMENTS & CONTROLS

3.2 Dashboard Controls



Hazard Warning Light Switch:

Purpose of the hazard switch is as follows.

1. All the four lights blinking, indicates that driver has no control on tractor.
 2. Mechanical defects in the tractor.
- Push this switch to blink all indicators in HAZARD situation to alert others.



COMBINATION SWITCH:

Side Indicator Switch (A):

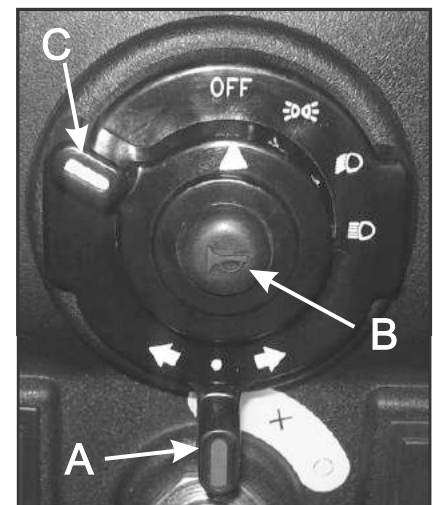
This switch is used for indicating the vehicle turn. Move turn signal lever left to indicate left (L) hand turn or right (R) for right hand turn. Indicator lights will flash according.

Horn Switch (B):

Press this switch to blow the Horn.

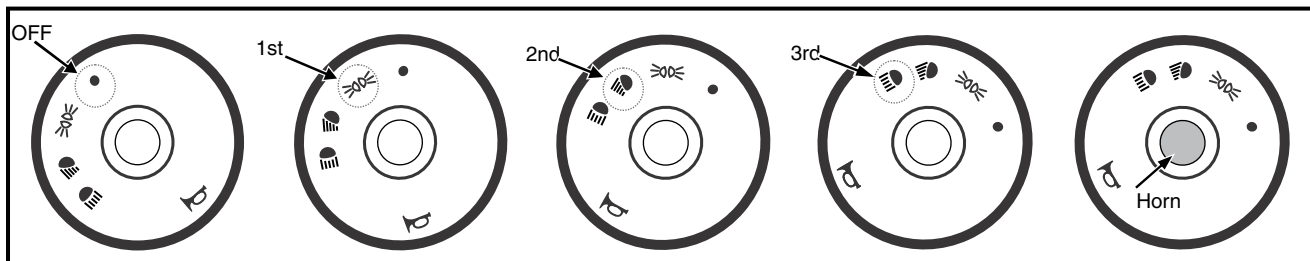
Head Light and Parking Light Switch (C):

This switch illuminates all lights (Parking Light, Head Light, High Beam, Low Beam) with the clockwise rotation.



INSTRUMENTS & CONTROLS

OFF Position All lights are off.	1st Position (Clockwise) With 1st click Stop parking lights, Instrument panel lights and tail lights will glow.	2nd Position (Clockwise) : With 2nd click Stop Head lights (Low beam), Instrument panel lights, Parking lights and tail light will glow.	3rd Position (Clockwise) : With 3rd click Stop Head lights (High beam) Instrument panel lights, Parking lights and tail light will glow.	Horn : Press the combination switch to blow the Horn.
--	---	--	--	---



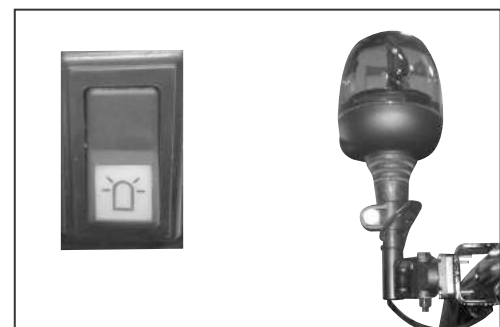
Starting Key (Ignition) Switch:

Functioning of starting key switch is as below:

1st Position (OFF) : All the electrical systems remain disconnected in this position.	2nd Position (ON & COLD START) : The warning lights (Battery, Oil Pressure indicator) will be functional in this position. This is normal running position after the engine is started. Glow plug indication in instrument cluster will glow at this position.	3rd Position (START): Immediate after the use of air heater turn the key further clockwise to Start position to start the engine.
NOTE : • Do not keep the starter engaged more than 5-8 seconds. If engine stalls/fails to start then wait for 5-10 seconds before re-engaging the starter, otherwise you may damage it. • Keep the switch in OFF condition when engine is also in OFF condition.		

Beacon Light Switch

This switch is used to ON/OFF the Beacon Light (Revolving Light) mounted on ROPS.



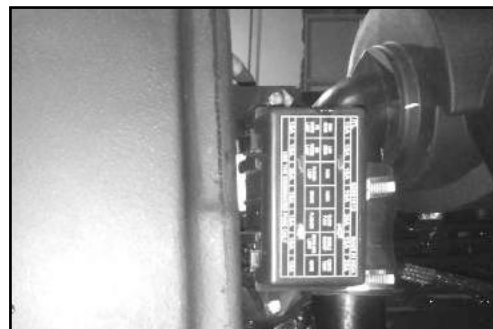
INSTRUMENTS & CONTROLS

Fuse Box:

Fuse box is mounted ahead right side of Fuel Tank. If an electrical failure occurs, check and rectify the problem and then replace the blown up fuse with genuine fuse of specified rating.



Never install a wire instead for proper fuse.



Lights

Tractor is equipped with E marked head and tail lights.



Headlights



Tail Lights

Plough Lamp

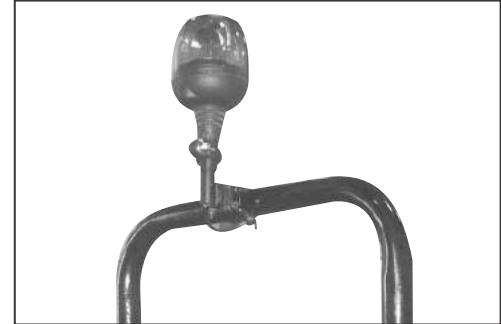
Adjustable plough lamp (A) is provided at rear right side and it is mounted on Registration plate.



INSTRUMENTS & CONTROLS

Beacon Light

To be used according to your country's regulation. This light is detachable type and can be removed based on requirements.



Driver's Seat

While seating, adjust the wt of operator with wt adjustment knob provided at back side of seat so as to be comfortable driving & to minimise vibrations.

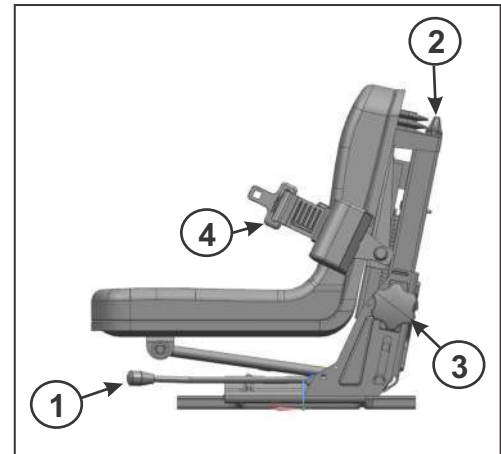
With the fore & aft adjusting knob, slide the seat so as to have a comfortable approach towards all levers. The range of effort that can be adjusted while sitting on seat is 50-140 kgf.

Horizontal Adjustment

- Lift the lever (1) to move the seat forward and backward.

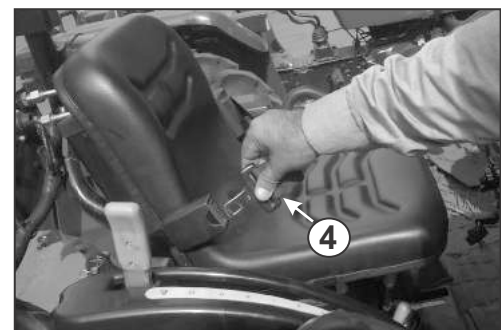
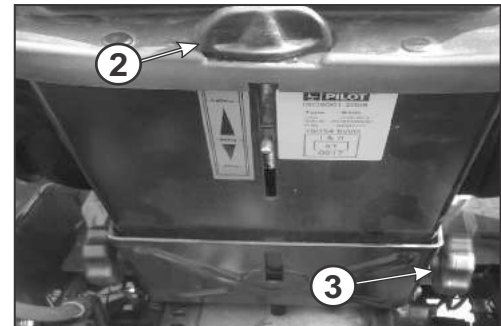
Vertical Adjustment

- Use knob (2) to adjust the suspension.
- Use knob (3) to adjust the height of the seat vertically.
- Seat belt (4) for safety.



To avoid personal injury

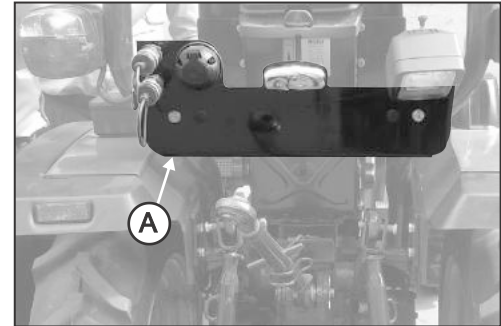
- Make adjustments to the seat only while the tractor is stopped.
- Make sure that the seat is completely secured after each adjustment.
- Do not allow any person other than the operator to ride on the tractor.
- Always use the seat belt when the ROPS is installed.
- Do not use the seat belt if the tractor is not equipped with ROPS.



INSTRUMENTS & CONTROLS

Registration Plate

A vehicle registration plate (A) or number plate is mounted at rear end of the tractor as shown in Figure.

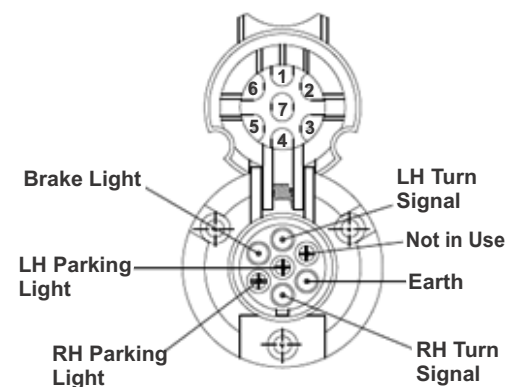
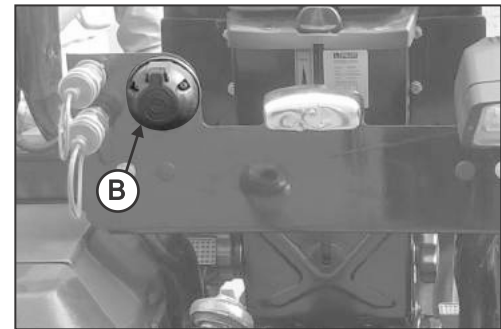


Seven Pin Socket

7 Pin socket (B) is mounted on licence plate to attach the trailer connections:

Details of connectors is given under:

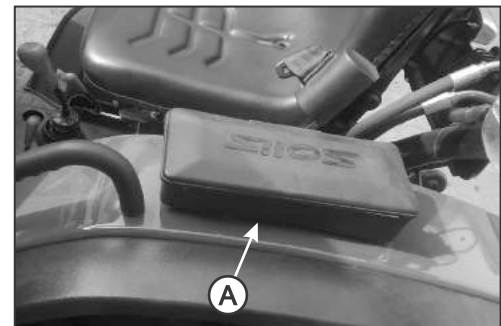
PIN No	Used for	Wire Colour Code
PIN1	Left Turn Signal	Green/Blue (G/L)
PIN2	Not in Use	–
PIN3	Earth	Black (B) or White (W)
PIN4	Right Turn Signal	Green/Red (G/R)
PIN5	Right Parking Light	Red (R)
PIN6	Brake Light	Green/Black (G/B)
PIN7	Left Parking Light	Red/Green (R/G)



7 Pin Socket (A)

Tool Box

Tool box (A) is mounted on left side fender.



CHAPTER - 4

OPERATION

OPERATION

Boarding the Tractor

Always board the tractor from left hand side where a footrest is provided while taking care the other part of body must not foul with levers. This will provide ease to operator.

Leaving the Tractor

After stopping the tractor, leave the tractor from LH or RH side of tractor.

Engine:

Starting the Engine (Having 3 Positions Switch):

Starting Key Switch: Starting Key switch is used to start the engine

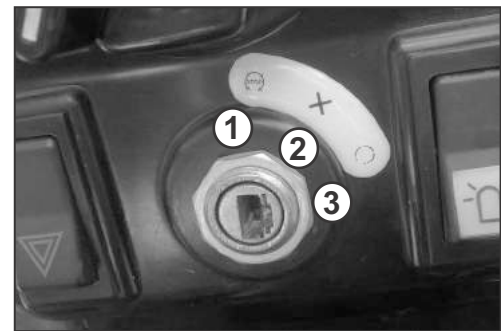
1. OFF POSITION

When the key is turned to this position, power supply to the electric circuits is cut off, and the key can be removed or inserted in this position.

2. ON: When the key is turned in to this position, power is supplied to the electric circuits. After the engine starts, the key is held in this position.

& HEAT: This is an intermediate position between the 'ON' and 'Start' position. When the key is turned to this position, the glow plugs would become hot and allow easy startup of a cold engine.

3. START: When the key is turned to this final position, the starter cranks the engine and the engine starts. When the key is released, it automatically returns to the 'ON' position.



For Starting:-

- A Check that the gear shifter lever is in neutral.
- B Move the low/ high speed selector lever to neutral position.
- C Tractor is equipped with clutch safety switch, always press the clutch pedal fully before starting the engine.
- D Check that PTO lever is in neutral.
- E Release the hand brake (if engaged).

Cold Weather Starting (Temperature below 0 °C or 32° F):

Proceed as Follows:

- 1 Perform operations A to E as instructed above.
- 2 Turn the Starter Key to 'Heat' position and keep it there for few seconds and then turn the key to start position.
- 3 If the engine fails to start repeat Step 2, wait for further 5 to 10 seconds and then turn the key to start position again.

Note:

- 1 If the engine fails to start after two or three attempts and smoke can be seen coming out of the exhaust, repeat

OPERATION

- the starting procedure with less time glow plug heater.
- 2 Do not keep the key turned to start position for more than 5-8 seconds at a time.
 - 3 Wait at least one minute after every two failed attempts of starting the tractor.

Instructions:

1. The value of the noise at the operator's ear, measured according to Directive 2009/76/EC (1) of the European Parliament and of the Council and the noise of the tractor in motion measured according to Annex VI to Directive 2009/63/EC (2) of the European Parliament and of the Council: Operator ear level: 85.5dB Noise when tractor in motion, at By standard level: 82dB.
2. The value of the vibration level measured according to Council Directive 78/764/EEC (3) is less than 1.25 m/s².

If the engine does not start regularly and easily, do not continue as for you may run down the battery. Bleed any air that may have accumulated in the fuel system and, if the problem persists check that:

- 1 Fuel filters are not blocked
- 2 The battery and Heater plugs are working efficiently.

Note-: Before starting a cold engine in cold weather first cover the radiator with a radiator cover. Remove the cover as soon as a normal working temperature is achieved.

Running in

It is essential to take the following precautions during the running in period:

- 1 During this period, do not subject the tractor to loads greater than those it will have to deal with during the rest of its working life.
- 2 Engage low gears when towing heavy loads.
- 3 When running in, check regularly that all screws, nuts and bolts are tight.
- 4 To ensure prolonged clutch life, run in the clutch discs correctly.

Turning off the engine:

- 1 Turn the engine accelerator to idle position.
- 2 Stop the engine by turning the starting Key to 'Off' position.

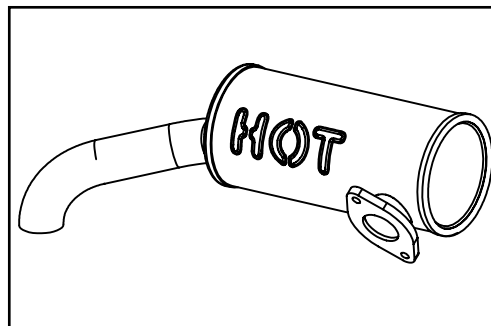
IMPORTANT: When outdoor temperature drops to around or below 0°C (32°F), check the cooling system and if necessary add the recommended antifreeze.

IMPORTANT: Do not inject fluids (ether) to make the engine easier to start in cold weather. The tractor is equipped with a cold start device.

OPERATION

Under Hood Muffler

Under hood muffler fitted inside the bonnet for better aesthetics, vision and better sound muffing capabilities.



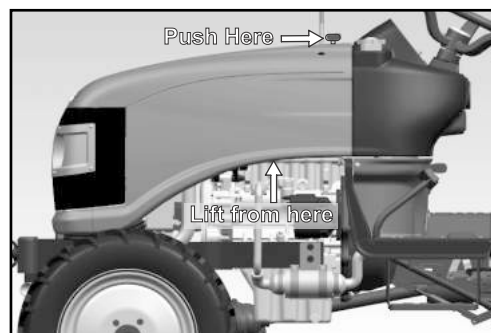
Opening the Bonnet

Press the knob at center of bonnet towards steering wheel side with one hand (as shown) & with another hand, lift the bonnet from lower side (as shown).

Closing of Bonnet

Gently lower the bonnet down, then press until lock is engaged.

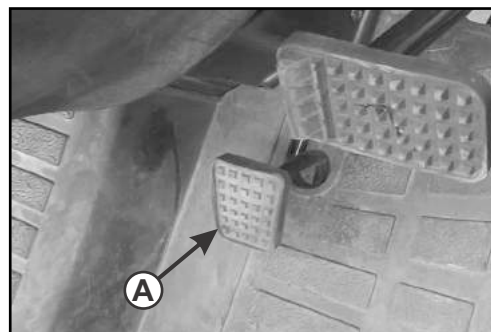
Note: Do not use RVM holder as a support to open or close the bonnet, it may damage the mounting of RVM on bonnet.



Accelerator Pedal (A)

The accelerator pedal can override the setting of hand throttle lever to accelerate the engine.

However, when you release the pedal, the engine returns to the speed set by the hand lever. When using the accelerator pedal, always set the hand throttle lever to idling position.



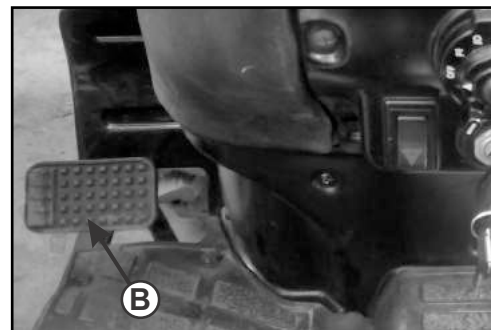
Clutch Pedal (B)

Pedal released = Drive engaged.

Pedal Pressed = Drive disengaged.

Select lower gear as per load condition and don't over ride the clutch for acceleration.

IMPORTANT: Never keep your foot resting on clutch pedal when driving.



Never coast down slopes with the gear lever in neutral / clutch pressed when in gear.

OPERATION

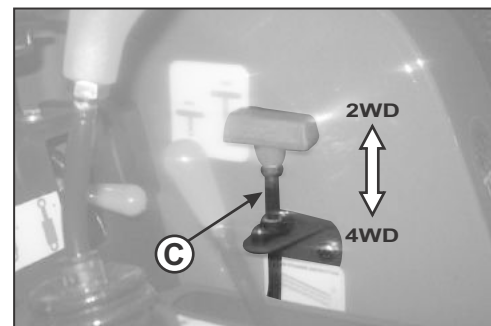
2WD / 4WD Lever (C)

You can drive the tractor in both 2WD or 4WD mode. Select the driving mode by Lever (A) as shown in figure.

2WD MODE: By engaging the lever in 2WD position the power is transmitted to rear wheels only. Pull the lever upward to select 2WD mode.

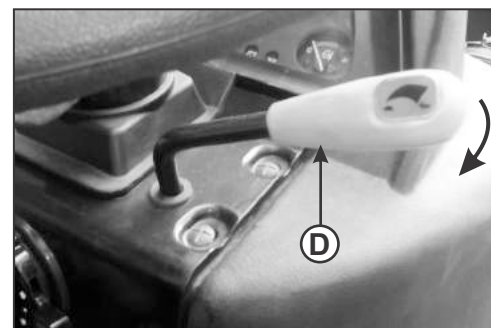
4WD MODE: With the lever in 4WD position the power is simultaneously transmitted to all 4 wheels (Front & Rear) of tractor. Push the lever downward to select 4WD mode.

NOTE: 4WD Mode is for field operation and 2WD mode is for road operation.



Hand Throttle Lever (D)

Hand throttle lever mounted on front panel is used in field application. To increase the speed of engine, pull down the lever and to decrease, pull up the lever.

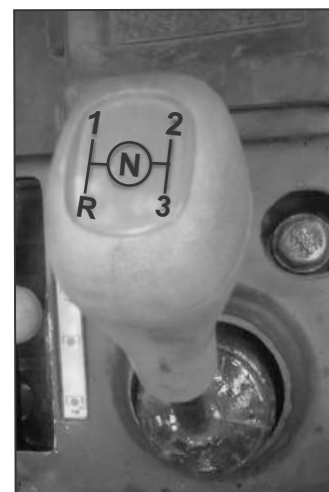


Gear Shifter Lever

Gear shifter lever enables to get the required speed (6 Forward and 2 Reverse) by selecting the particular gear with combination of hi-low gear lever.

Before changing the tractor movement from forward to reverse or reserve to forward direction wait for the tractor to stop.

Release accelerator pedal and press the clutch pedal. Select required gear, release the clutch gradually and accelerate the engine.



CAUTION

When traveling downhill always remain in gear. Never press clutch pedal. The gear selected should be same as used to climb up.

IMPORTANT: For engaging/disengaging gear always use the clutch.