



OPERATOR MANUAL

H24 HYDROSTAT

OPERATOR'S MANUAL

- **Solis S24 (6+2) & H24(1-106)**
- **Solis H24 Cabin(107-122)**

INTERNATIONAL TRACTORS LIMITED
HOSHIARPUR (INDIA)

Part Code: 300248302A
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English
Replaces Part Code: 10054310AA

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.

International Business (IB)
International Tractors Limited (ITL)
Vil.-Chaik Gujran,P.O. Piplanwala 146022
Jalandhar Road, Hoshiapur, Punjab, India.

This publication has been written in compliance with International Standard ISO 3600 'Guide for information, contents and presentation of operation and maintenance manuals supplied with tractors and machinery for agricultural and forestry use.

TABLE OF CONTENTS

| DESCRIPTION | PAGE NO. |
|--|----------|
| CHAPTER 1: INTRODUCTION & IDENTIFICATION | |
| Using Operator Manual..... | 7 |
| Chassis Serial Number..... | 8-9 |
| Engine Serial Number..... | 8-9 |
| Statutory Plate..... | 8-9 |
| ROPS Certificate Plate..... | 8-9 |
| Universal Symbols..... | 10 |
| CHAPTER 2: WARRANTY & SAFETY | |
| Warranty Guidelines..... | 11-14 |
| Guidelines about Safety Sign..... | 15 |
| Safety Labels..... | 15 |
| Safety Labels Location..... | 15 |
| Safety: Prepare For Safe Operation..... | 21 |
| Safety Notes..... | 22-36 |
| Safety While Operating Loader Attachments..... | 35 |
| Safety From Lightning Strike..... | 36 |
| Noise & Vibration Levels..... | 36 |
| CHAPTER 3: INSTRUMENTS & CONTROLS | |
| Tractor Controls- Manual Transmission..... | 37 |
| Tractor Controls- HST Variant..... | 38 |
| Instrument Panel..... | 39 |
| Parking Brake Indicator..... | 40 |
| Battery Charge Indicator..... | 40 |
| Air Cleaner Clogging Indicator..... | 40 |
| Left Turn Indicator..... | 40 |
| Right Turn Indicator..... | 41 |
| High Beam Indicator..... | 41 |
| Cold Start Indication..... | 41 |
| Engine Oil Pressure Indicator..... | 42 |
| Temperature Gauge..... | 42 |
| PTO Monitor Lamp..... | 43 |
| Trailer Turn Indicator..... | 43 |
| Engine RPM (Revolution Per Minute) Meter and Hour Meter..... | 43 |
| Plow (Work) Lamp Indicator..... | 44 |
| Fuel Gauge..... | 44 |
| Dashboard Controls..... | 45 |
| PTO On/Off Switch - HST Variant..... | 47 |
| Cruise Control Switch - HST Variant..... | 45 |
| Fuse Box..... | 47 |
| Tractor Lights- Manual Transmission..... | 48 |
| Tractor Lights- HST Variant..... | 49 |
| Operator's Seat..... | 50 |
| Tool Box..... | 50 |
| Battery..... | 51 |
| Seven Pin Socket..... | 51 |

TABLE OF CONTENTS

| DESCRIPTION | PAGE NO. |
|--|----------|
| CHAPTER 4: OPERATION | |
| Operator Presence Control (OPC)..... | 52 |
| Boarding the Tractor..... | 52 |
| Leaving the Tractor | 52 |
| Engine..... | 52 |
| Starting the Engine | 54 |
| Running in..... | 54 |
| Turning off the Engine..... | 54 |
| Under Hood Muffler..... | 55 |
| Opening and closing the Bonnet..... | 55 |
| Accelerator Pedal - Manual Transmission | 55 |
| Clutch Pedal - Manual Transmission | 55 |
| Cruise Control - HST Variant..... | 56 |
| Speed Control Pedal - HST Variant | 55 |
| 2WD / 4WD' Lever | 57 |
| Hand Throttle Lever | 58 |
| Gear Shifter Lever - Manual Transmission | 57 |
| Power Take off (PTO) - Manual Transmission | 59 |
| PTO - HST Variant | 60 |
| Hydraulic Coupling Devices | 63 |
| Power Steering..... | 63 |
| Transport Lock (Response Valve)..... | 64 |
| Hi-Low Lever..... | 64 |
| DCV Lever..... | 64 |
| Service Brakes Manual & HST | 65 |
| Parking Brake - Manual Transmission | 65 |
| Parking Brake - HST Variant..... | 66 |
| Gear Speed Chart..... | 67 |
| Wheels and Tires (Tire Inflation Pressure & Load Carrying Capacity)..... | 68 |
| Check Wheel Nut Bolt, Tread Settings..... | 69 |
| Three Point Linkage..... | 72 |
| Roll Over Protection Structure (ROPS) - Manual Transmission | 74 |
| Roll Over Protection Structure (ROPS) - HST Variant | 75 |
| CHAPTER 5: MAINTENANCE | |
| Maintenance Schedule | 76 |
| Fuel Tank Filling | 78 |
| Replacement of Fuel Filter..... | 79 |
| Air Bleeding of Fuel System..... | 79 |
| Radiator..... | 79 |
| Checking Coolant Level in Radiator..... | 79 |
| Radiator Draining & Flushing (When cold)..... | 79 |
| Checking Engine Oil Level..... | 80 |
| Replacement of Oil Filter & Engine Oil | 80 |
| Radiator Fins Cleaning..... | 81 |
| Radiator Cap..... | 81 |
| Inspection of Hoses..... | 81 |

TABLE OF CONTENTS

| DESCRIPTION | PAGE NO. |
|--|----------|
| Air Cleaner Maintenance | 82 |
| Clutch Pedal - Manual Transmission | 83 |
| Foot Brake Pedals - Manual & HST Variant..... | 83 |
| Steering Cylinder Knuckle Joints | 84 |
| Oil Changes in 4WD Front Axle | 84 |
| Transmission and Hydraulic Oil Change - Manual Transmission..... | 84 |
| Transmission Oil grades | 86 |
| Transmission and Hydraulic Oil Change - HST Variant | 86 |
| Hydraulic Suction and Delivery Filter - HST Variant..... | 86 |
| Cleaning of Suction Strainer | 87 |
| General Maintenance of Electrical System | 88 |
| Battery and its Maintenance | 88 |
| Fuses in Fuse Box | 89 |
| Long Storage Period | 89 |
| Starter Motor | 90 |
| Alternator..... | 90 |
| Checking V-belt..... | 90 |
| Adjusting V-belt tension | 90 |
| Greasing Points..... | 91 |
| Greasing Points - HST Variant | 92 |
| Jack Up the Tractor - Lifting Points | 93 |
| Oil and Lubrication Chart | 93 |
| CHAPTER 6: TECHNICAL SPECIFICATIONS | |
| Technical Specifications | 94 |
| Matching Implements..... | 97 |
| CHAPTER 7: DO'S AND DON'TS | |
| Do's & Don'ts | 99 |
| CHAPTER 8: TROUBLESHOOTING, SERVICE RECORD & ALPHABETICAL INDEX | |
| Troubleshooting | 102 |
| Service Record..... | 104 |
| Alphabetical Index..... | 105 |

INTRODUCTION & IDENTIFICATION

Using this Operator Manual

This manual is an important part of your tractor and it should be kept with the tractor even when you sell it.

Reading this manual will help you and others avoid personal injury or damage to the tractor. Information provided in this manual will help you to use the tractor in safest and effective way.

If you have an attachment, use the safety and operating information in the attachment operator's manual along with the tractor operator's manual to operate the attachment safely and correctly.

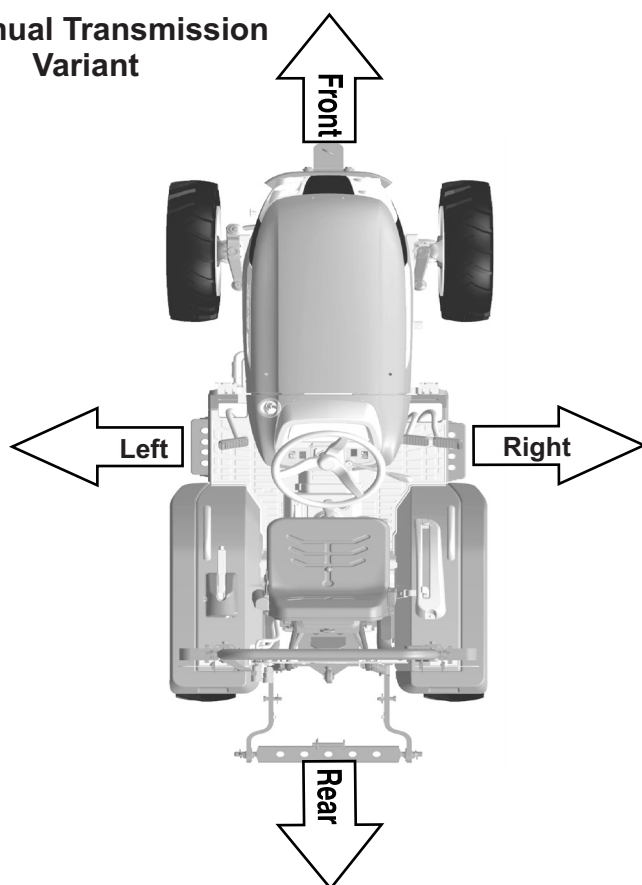
This manual and safety signs on your tractor may also be available in various languages (contact your dealer for more information).

The tractor shown in this manual may differ slightly from your tractor, but will be similar enough to help you understand our instructions.

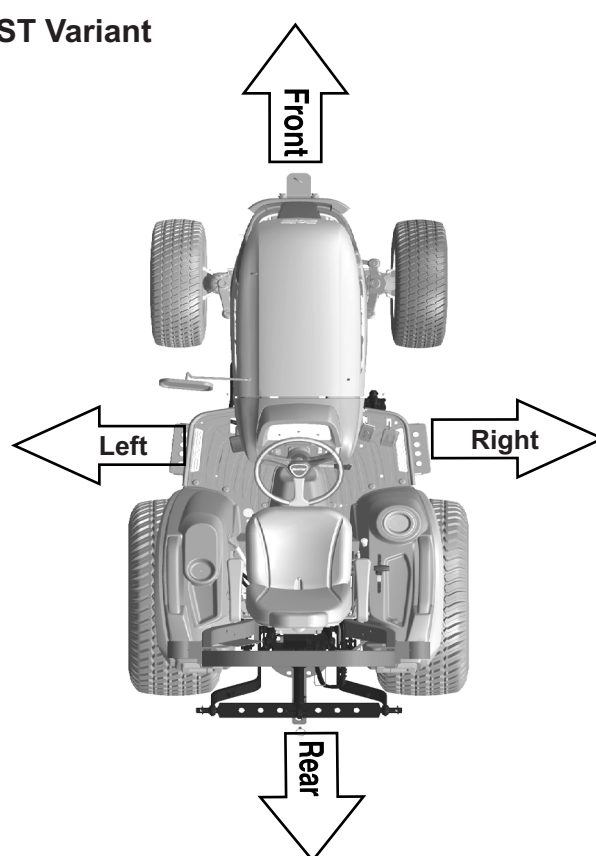
Throughout this manual, the use of terms Left Side, Right Side, Front Side and Rear Side must be understood, to avoid any confusion when following these instructions. The Left and Right means left and right sides of the Tractor when facing in the direction of forward travel, reference to the Front indicates the radiator end of the Tractor, while the Rear, indicates the draw bar end.

Always specify the tractor Chassis and Engine serial numbers when you need replacement parts. This will facilitate correct & faster delivery of required parts from the dealer. For easy reference, we suggest you to record these numbers in the space provided in the 'Ownership and Tractor details' page before this Chapter.

Manual Transmission Variant



HST Variant



INTRODUCTION & IDENTIFICATION

Manual Transmission Variant

Chassis Serial Number (A): Chassis number is punched on right side of front axle bracket of the tractor (See Fig. A). Should you find the number difficult to read, you will also find it on the Statutory plate.

Engine Serial Number (B): 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 reference, engine serial number is also mentioned on valve cover of the engine (see Fig. B).

Statutory Plate (C): Chassis number is also engraved on Statutory plate. Statutory plate is located on left hand side fender (see Fig. C).

ROPS Certificate Plate (D) - ROPS certificate plate is riveted on ROPS. Information about ROPS serial number and tractor model is engraved on ROPS plate (see Fig. D).

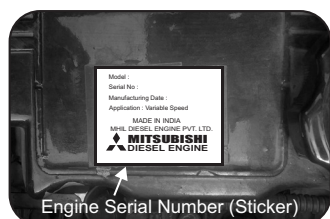


Fig. B. Engine Serial Number



Fig. A. Chassis Serial Number

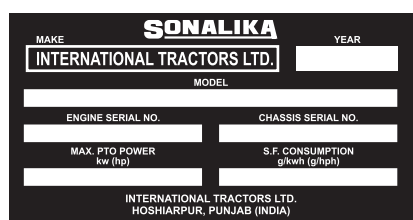


Fig. C. Statutory Plate

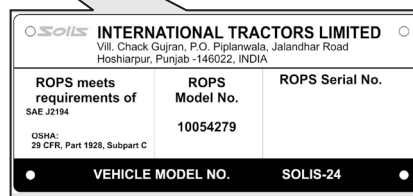
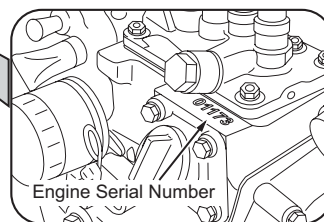


Fig. D. ROPS Certificate Plate

INTRODUCTION & IDENTIFICATION

HST Varinat

Chassis Serial Number (A): Chassis number is punched on right side of front axle bracket of the tractor (See Fig. A). Should you find the number difficult to read, you will also find it on the Statutory plate.

Engine Serial Number (B): 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 reference, engine serial number is also mentioned on valve cover of the engine (see Fig. B).

Statutory Plate (C): Chassis number is also engraved on Statutory plate. Statutory plate is located on left hand side fender (Fig. C).

ROPS Certificate Plate (D) - Optional: ROPS certificate plate is riveted on ROPS. Information about ROPS serial number and tractor model is engraved on ROPS plate. For countries under EEC, ROPS Certificate plate is used as shown in Fig. D.

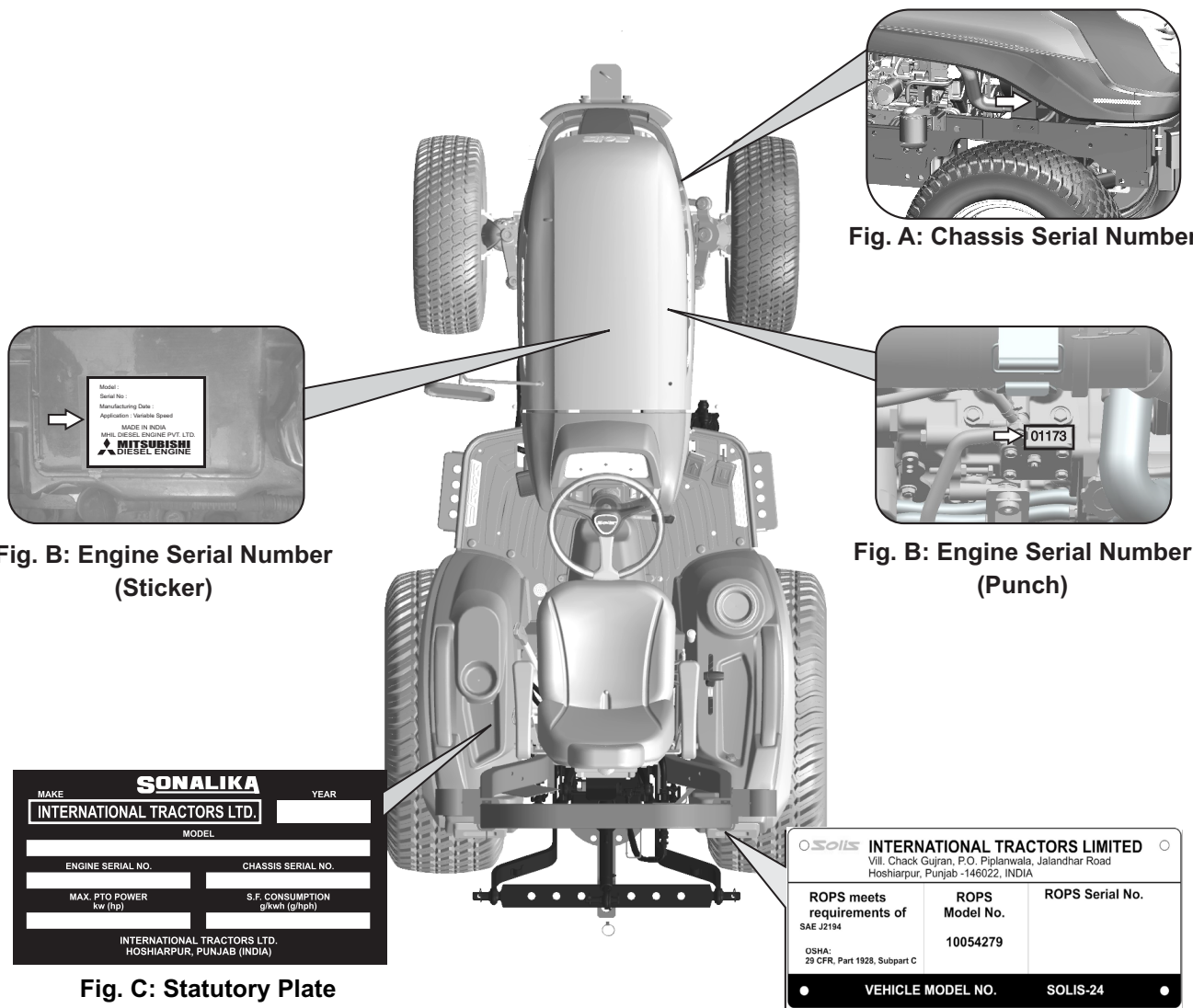


Fig. A: Chassis Serial Number

Fig. B: Engine Serial Number (Sticker)

Fig. B: Engine Serial Number (Punch)

Fig. C: Statutory Plate

Fig. D: ROPS Certificate Plate































| | |
|---|-----------------------------------|
| SONALIKA | |
| MAKE | YEAR |
| INTERNATIONAL TRACTORS LTD. | |
| MODEL | |
| ENGINE SERIAL NO. | CHASSIS SERIAL NO. |
| MAX. PTO POWER kw (hp) | S.F. CONSUMPTION g/kwh (g/hph) |
| INTERNATIONAL TRACTORS LTD. HOSHIARPUR, PUNJAB (INDIA) | |

| | | |
|---|----------------------------|-----------------|
| INTERNATIONAL TRACTORS LIMITED Vill. Chack Gujran, P.O. Piplanwala, Jalandhar Road Hoshiarpur, Punjab -146022, INDIA | | |
| ROPS meets requirements of SAE J2194 | ROPS Model No. 10054279 | ROPS Serial No. |
| OSHA: 29 CFR, Part 1928, Subpart C | | |
| VEHICLE MODEL NO. | | SOLIS-24 |

INTRODUCTION & IDENTIFICATION

Universal Symbols

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

| | | | |
|---|--|---|------------------------------------|
|  | Read Operator's Manual |  | Fast |
|  | Safety Alert Symbol |  | Slow |
|  | Fuel Level |  | Engine Coolant-Temperature |
|  | Engine Rotational Speed n/min |  | PTO 540 |
|  | Parking Brake |  | Differential Lock |
|  | Air Cleaner Clogging Sensor |  | Hydraulic Control-Lowered Position |
|  | Battery Charging Condition |  | Hydraulic Control-Raised Position |
|  | Engine Oil-Pressure |  | Engine Speed Control |
|  | Turn Signal |  | Remote Cylinder-Retract |
|  | Power Take-Off Clutch Control-Off Position |  | Remote Cylinder-Extend |
|  | Power Take-Off Clutch Control-On Position |  | Engine Stop |
|  | 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 | | |

WARRANTY

NOTE: WARRANTY WILL BE REIMBURSED AS PER THE WARRANTY POLICY, KINDLY CONTACT NEARBY DEALER/DISTRIBUTOR.



NOTE: E-marked indicated components are applicable for countries under European Economic Community (EEC) compliance.

Introduction

NOTE: This book is published for worldwide distribution, and availability of equipment shown either as basic or accessory may vary according to the territory in which the tractor is to be operated. Full details of equipment available in your area can be obtained from your Dealer.

The purpose of this book is to enable the owner and driver to operate the tractor in a safe manner. Providing that the instructions are followed carefully, the tractor will give years of service in our tradition.

The installation of the product by the Dealer gives the opportunity to ensure that the operating and maintenance instructions are understood. Always consult your Dealer if do not understand any part of this book. It is important that these instructions are understood and observed. Daily maintenance should become a routine, and a record of hours in service should be kept.

When new parts are required it is important that only genuine service parts are used. Our Authorized Dealers supply genuine parts and can give advice regarding their fitment and use. Extensive damage may occur as a result of the fitment of parts of inferior quality, Customers are advised to buy their service parts only from an authorized Dealer.

Owing to wide variations in operating conditions, it is impossible for the Company to make comprehensive or definitive statements in its publications regarding performance or methods of use of its machines, or to accept liability for any loss or damage which may result from these statements, or from any errors or omissions. If the tractor is to be used for abnormal conditions which may be detrimental (e.g. deep water or paddy fields) consult your Dealer for special instructions, or the warranty may be invalidated.

These tractors are designed solely for use in customary agricultural operations (intended use).

Use in any other way is considered as contrary to the intended use. The tractor manufacturer accepts no liability for any damage or injury resulting from misuse and these risks must be borne solely by the user. Compliance with, and strict adherence to, the conditions of operation, service and repair as specified by the manufacturer also constitute

essential elements for the intended use.

These tractors should be operated, serviced and repaired only by persons familiar with all their particular characteristics and who are acquainted with the relevant safety rules (accident prevention).

Customers are strongly advised to use an official authorized Dealer in connection with any service problems and adjustment that may occur.

Warranty, Pre-delivery & Installation

The Company, when selling new goods to their Dealers, gives a warranty which, subject to certain conditions, guarantees that the goods are free from defects in material and workmanship. Since this book is published for worldwide circulation, it is impossible to detail the exact terms and conditions of warranty that apply to a retail customer in any particular country. Purchasers of new equipment should request full details from their supplying Dealer.

In accordance with the Company policy of continuous improvement to its machines, alterations in the specifications of machines may be made at any time without notice. The Company accepts no responsibility for discrepancies which may occur between the specifications of its machines and the descriptions thereof contained in its publications. A dealer is required to carry out certain activities when supplying a new tractor. These consist of a full pre-delivery inspection to ensure that the tractor supplied is ready for immediate use, and full instruction in the basic principles of operation and maintenance of the tractor. These instructions will cover instruments and controls, routine maintenance and safety precautions. All persons who will be concerned with the operation and maintenance of the machine should be present for these instructions.

NOTE: The tractor manufacturer will not accept responsibility for any claim resulting from the fitment of non-approved parts or attachments, or unauthorized modification or alteration.

WARRANTY

Warranty Procedure

Correct installation, coupled with regular maintenance, will do much to prevent breakdowns. If, however, operating trouble is experienced during the warranty period, the following procedure must be adopted:-

Immediately notify the Dealer from whom you purchased the tractor, quoting the Model and Serial Number. It is most important that there should be no delay, and you should realize that, even where the original failure is covered by warranty .if the failure is not repaired immediately, warranty cover may not apply.

Provide your Dealer with as much background information as you can. It will help him to know how many hours service has been achieved, the type of work on which you are engaged and the symptoms of the trouble.

It should be noted that normal maintenance services such as brake/clutch adjustments, and the supply of materials used to service the tractor (oil, filters, fuel and antifreeze) are not covered by terms of the warranty.

Parts Warning

The fitment of non genuine parts may result in a part of substandard quality being used. The tractor manufacturer will not take the responsibility for any loss, damage or liability resulting from the fitment of such parts, and, if fitted during the normal warranty period the manufacturer's guarantee may be invalidated.

If You Move

Only the official dealer from whom you purchase the tractor is responsible for the protection afforded by your warranty and, where possible, you should always take the tractor to him for repair. If, however, you move to another area or if your tractor should be working temporarily at some distance from the Dealer from whom it was purchased, you are recommended to obtain from the original Dealer the name and address of the Dealer nearest to your new location and to ask for arrangements to be made for outstanding service warranty commitments to be transferred to the latter. If you have left the area in which the original Dealer operates and have not made arrangements with your new Dealer, the latter will readily provide assistance in emergency but you will be charged at normal rates for any work undertaken unless:

- a. You make it clear that the warranty has not expired and
- b. You give the repairing Dealer the opportunity to make suitable arrangements with the retailing Dealer.

Service After Warranty

During the warranty period, you should have all your repairs and maintenance performed by your dealer. This ensures that a detailed check is kept on the progress and performance of your new tractor.

In order to obtain the best results from your tractor it is important that regular maintenance and service checks continue after the warranty period has expired. Make use of your local Dealer for all major tractor services; a trained engineer will spot any problems between the service and the next.

The mechanics are regularly trained and updated on the product, servicing techniques and the use of modern service tools and diagnostic equipment. They receive regular Service Bulletins; have all Workshop Manuals and other such technical information to ensure that the repair or service is to the standard required.

WARRANTY

Emission System Warranty Statement

INTERNATIONAL TRACTORS LIMITED warrants to the ultimate purchaser and each subsequent purchaser that the new nonroad engine, including all parts of its emission-control system meets the following two conditions:

1- It is designed, built, and equipped so it conforms at the time of sale to the ultimate purchaser with the requirements of 40 CFR Part 1039.120

2 - It is free from defects in materials and workmanship that may keep it from meeting these requirements.

Warranty period

The emission warranty period is valid for 3000 hours or five years, whichever comes first. The emission warranty period begins when the engine is placed into service.

Components covered

The emission-related warranty covers all components whose failure would increase an engine's emissions of any regulated pollutant, including components listed below, and components from any other system you develop to control emissions. The emission-related warranty covers these components even if another company produces the component. Your emission-related warranty does not need to cover components whose failure would not increase an engine's emissions of any regulated pollutant.

I. For exhaust emissions, emission-related components include any engine parts related to the following systems:

1. Air-induction system.
2. Fuel system.
3. Ignition system.
4. Exhaust gas recirculation systems.

II. The following parts are also considered emission-related components for exhaust emissions:

1. Aftertreatment devices.
2. Crankcase ventilation valves.
3. Sensors.
4. Electronic control units.

III. The following parts are considered emission-related components for evaporative emissions:

1. Fuel Tank
2. Fuel Cap.
3. Fuel Line.
4. Fuel Line Fittings.
5. Clamps*.
6. Pressure Relief Valves*.
7. Control Valves*.
8. Control Solenoids*.
9. Electronic Controls*.
10. Vacuum Control Diaphragms*.
11. Control Cables*.
12. Control Linkages*.
13. Purge Valves.
14. Vapor Hoses.
15. Liquid/Vapor Separator.
16. Carbon Canister.
17. Canister Mounting Brackets.
18. Carburetor Purge Port Connector.

Note: * As related to the evaporative emission control system.

WARRANTY

Limited applicability

INTERNATIONAL TRACTORS LIMITED may deny warranty claims under this section if the operator caused the problem through improper maintenance or use, as described below.

(a) INTERNATIONAL TRACTORS LIMITED may deny warranty claims only for failures that have been caused by the owners or operator's improper maintenance or use, by accidents for which you have no responsibility, or by acts of God. ITL will not honor warranty claims for failures that have been directly caused by the operator's abuse of the engine/equipment or the operator's use of the engine/equipment in a manner for which it was not designed and are not attributable to ITL in any way.

(b) INTERNATIONAL TRACTORS LIMITED may not deny emission-related warranty claims based on any of the following:

(1) Maintenance or other service ITL or ITL's authorized facilities performed.

(2) Engine/equipment repair work that an operator performed to correct an unsafe, emergency condition attributable to ITL as long as the operator tries to restore the engine/equipment to its proper configuration as soon as possible.

(3) Any action or inaction by the operator unrelated to the warranty claim.

(4) Maintenance that was performed more frequently than ITL specify.

(5) Anything that is ITL's fault or responsibility.

(6) The use of any fuel that is commonly available where the equipment operates unless ITL's written maintenance instructions state that this fuel would harm the equipment's emission control system and operators can readily find the proper fuel.

Owner's manual

The emission-related warranty provisions from this section that apply to the engine are described in the owner's manual.

SAFETY NOTES

This safety alert symbol means **ATTENTION!**
BECOME ALERT! YOUR SAFETY IS INVOLVED!



The safety alert symbol identifies important safety messages on machines, safety signs, in manuals or elsewhere. When you see this symbol, be alert to the possibility of personal injury or death.

Why is **SAFETY** important to you? ***ACCIDENT** **DISABLE** and **KILL***

* **ACCIDENTS** are **COSTLY** * **ACCIDENTS** can be **AVOIDED***

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.



DANGER

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



WARNING

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**.



CAUTION

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

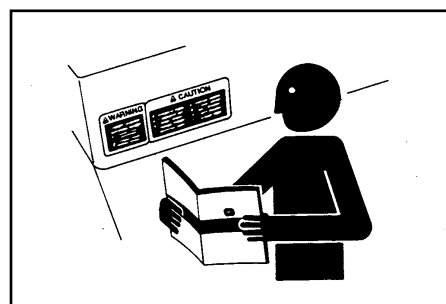
IMPORTANT : Indicates that equipment or property damage could result if instructions are not followed.

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

Safety Labels

Replace missing or damaged safety signs. Use this operator manual for correct safety sign placement.

There may be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator manual.



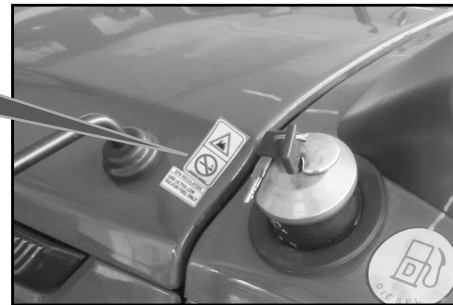
SAFETY NOTES

Safety Labels Location

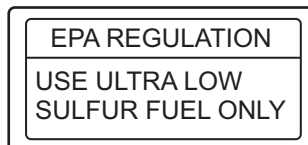
Safety label for warning against hazardous chemicals
Location: Placed on left-hand side fender



Safety label for warning against thermal hazards (fire or open flame)
Location: Placed on bonnet near fuel tank neck



Safety label for use of ultra low sulfur fuel as per EPA Regulation
Location: Placed on bonnet near fuel tank neck



SAFETY NOTES

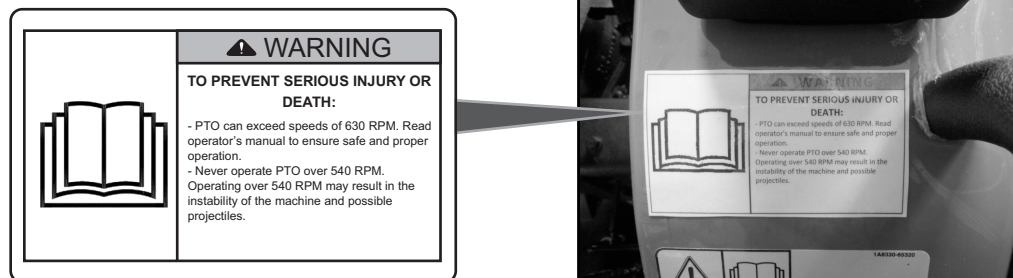
Safety label for warning against hot surface

Location: (1). Placed on left hand side of bonnet, (2). Placed on Front axle bracket near exhaust silencer



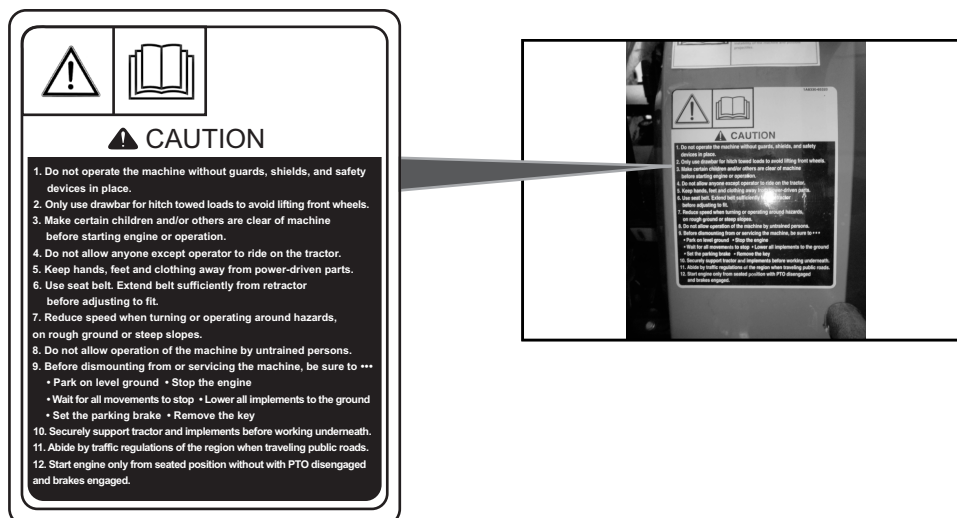
Safety label for warning against operating PTO below 540 RPM & reading operator's manual.

Location: Placed on left hand side fender.



Safety label for reading operator's manual & general safety warnings




Location: Placed on left hand side fender.



SAFETY NOTES

Safety labels for reading operator's manual for PTO adjustment procedure

Location: Placed on left hand side fender as shown in photo

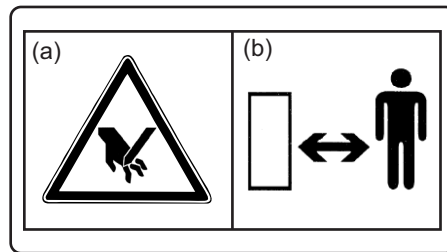
| PTO Adjustment Procedure | |
|---|---|
| 1. To change/engage PTO, tilt left. |  |
| 2. Move forward/Backward for desired position, as indicated on top. |  |
| 3. Move right to lock the lever in desired location. Ensure the clutch is disengaged while operating PTO lever. |  |
| <small>PART NO. 3000235168</small> | |



Safety label for warning against:




- (a) Cutting hazards (cutting of fingers or hand)
- (b) Keeping a safe distance from machine

Location: Placed on left hand fender (rear side).



Safety label for safety against Pinch/Crush Hazard

Location: Placed on rear side of the tractor

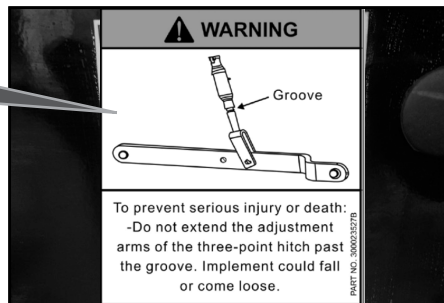
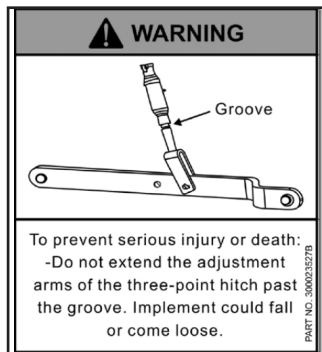
| WARNING | | |
|--|---|---|
|  |  |  |
| <p>Pinch/Crush Hazard To prevent serious injury or death:</p> <ul style="list-style-type: none"> -Operate controls only from the tractor seat. -Be careful when connecting equipment to tractor. Hands, fingers, feet or other body parts may be pinched if equipment weight shifts. -Do not stand between tractor and equipment when tractor is in gear or parking brake is not engaged. -Stand clear of equipment when raising/lower or while in use. | | |



SAFETY NOTES

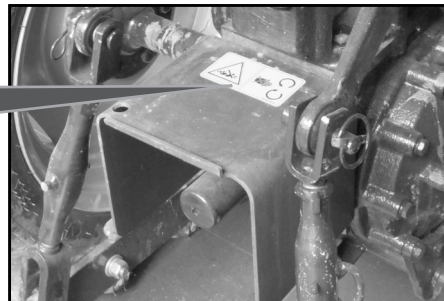
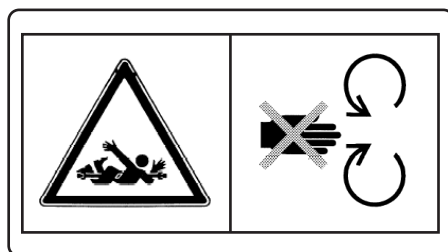
Safety label for warning against extension of arms of three point hitch past the groove

Location: Placed on rear side of the tractor near three point linkage



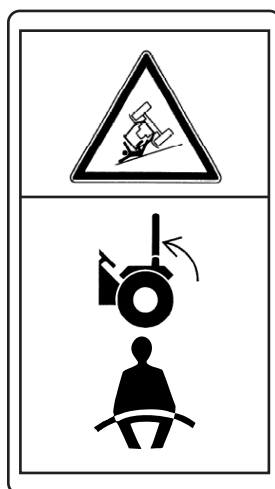
Safety label for not removing safety shields while engine is running

Location: Placed on PTO safety shield at rear side of tractor



Safety warning label for always locking ROPS in upright position & wearing seat belt unless it has to be folded down to allow operation underneath trees / bushes

Location: Placed on ROPS frame

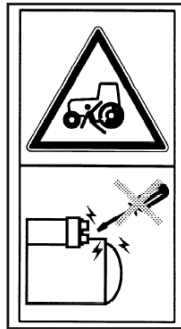


SAFETY NOTES

Safety warning label for following instructions:

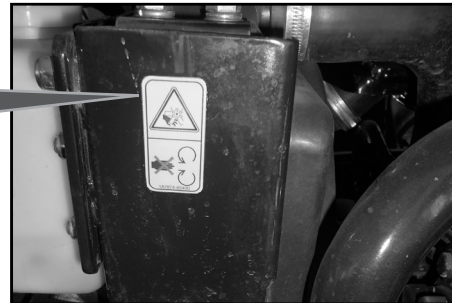
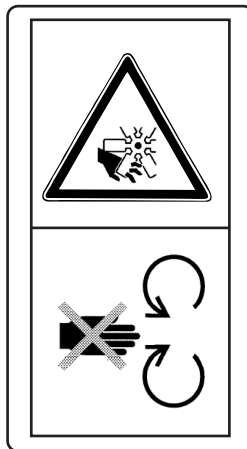
- Do not start engine by shorting across starter terminals or bypassing safety start switch
- Start engine only from seat with transmission and PTO OFF

Location: Placed on Starter motor at LHS of engine



Safety label to Stay clear of engine fan and fan belt.

Location: Placed on Radiator assembly



Safety label for warning against various hazard from battery (sticker may vary as per battery manufacturer)

Location: Placed on Battery



SAFETY NOTES

Safety warning label for use of starting aids
Location: not available on tractor



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)

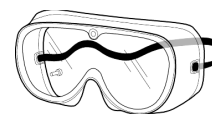
- (a) A hard hat.
- (b) Safety glasses, goggles or face shield.
- (c) Hearing protection.
- (d) Respirator or filter mask.
- (e) Inclement weather clothing.
- (f) Reflective clothing.
- (g) Heavy gloves (neoprene for chemical, leather for rough work).
- (h) Safety shoes.

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)

SAFETY NOTES



SAFE OPERATION

Careful operation is your best insurance against accident.

Read and understand this manual carefully before operating the tractor.

All operators 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.

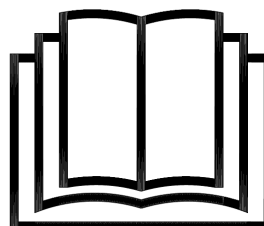
It is the owner's obligation to instruct all operators a safe operation.

BEFORE OPERATING THE TRACTOR

READ SAFETY INSTRUCTION

Carefully read all safety instructions given in this manual for your safety. Tampering 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 Tires 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 struck by foreign objects and being thrown off the Tractor.



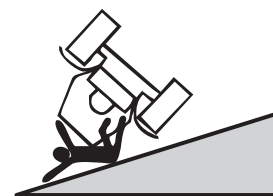
PRECAUTION TO AVOID TIPPING

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

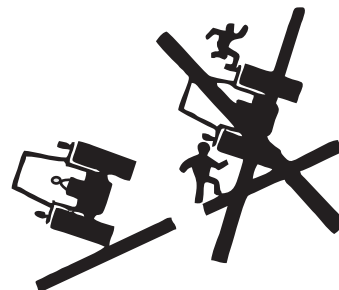
Risk of Overturning:

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 you 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 go up the slope. Shift into gear before you start downhill.
- Engage four-wheel drive (4WD), if fitted, will give you four wheel braking.

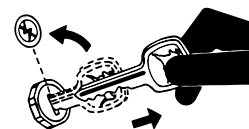


PARK TRACTOR SAFELY

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 in 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

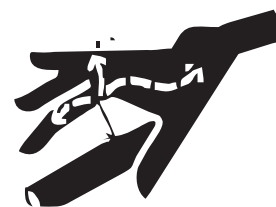
Servicing machine or attachment with engine running can result in serious personal injury. Avoid exposure.

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.



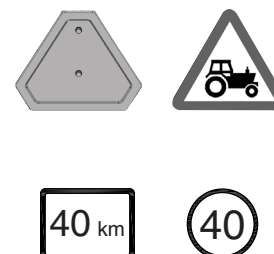
ALWAYS USE SAFETY LIGHTS

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

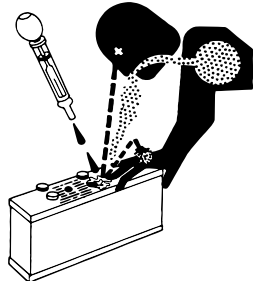



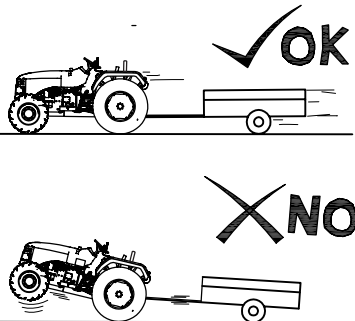


ROAD REGULATIONS

- 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

| | |
|---|---|
| <p style="text-align: center;">PREVENT ACID BURNS</p> <p>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:</p> <ol style="list-style-type: none"> 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. <p>If you spill acid on yourself, immediately flush your skin with water and flush your eyes for 10-15 minutes. Get medical attention immediately.</p> |  |
| <p style="text-align: center;">HANDLE FUEL SAFELY-AVOID FIRES</p> <p>Handle fuel with care; it is highly flammable. Do not refuel the Tractor while smoking or near open flame or sparks.</p> <p>Always stop engine before refueling.</p> <p>Always keep your tractor clean of accumulated grease and debris.</p> <p>Always clean up spilled fuel.</p> |  |
| <p style="text-align: center;">SERVICE TRACTOR SAFELY</p> <p>Do not wear a necktie, scarf or loose clothing when you work near moving parts. If these items get caught, severe injury could result.</p> <p>Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.</p> |  |
| <p style="text-align: center;">STAY CLEAR OF ROTATING SHAFTS</p> <p>Entanglement in rotating shaft can cause serious injury or death.</p> <p>Keep PTO shield in place at all times.</p> <p>Wear close fitting clothing. Stop the engine and to sure PTO drive is stopped before making adjustments, connections, or cleaning out PTO driven equipment.</p> |  |
| <p style="text-align: center;">GENERAL OPERATING HAZARDS</p> <ul style="list-style-type: none"> • 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 Tire 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 flammable material and well away from fuels and other flammable material.

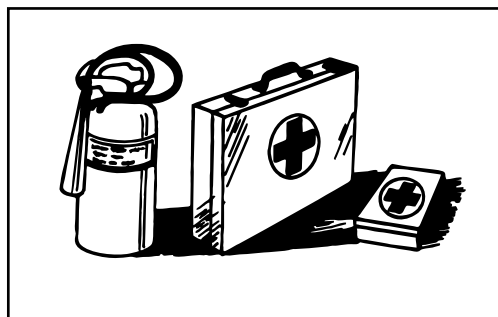
SAFETY NOTES

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher ready.

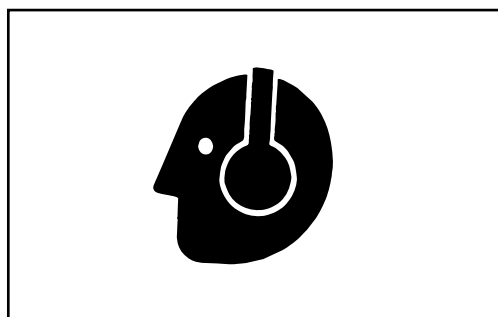
Keep emergency numbers for doctors, ambulance service, hospital, and fire department near telephone or mobile phone.



PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable protective device such as earmuffs or earplugs to protect against uncomfortable loud noises.



SAFE HANDLING OF STARTING FLUID

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. Keep starting fluid away from batteries and cables.

To prevent accidental discharge when storing the pressurized can, keep the cap on the container, and store in a cool, protected location.

Do not puncture a starting fluid container.

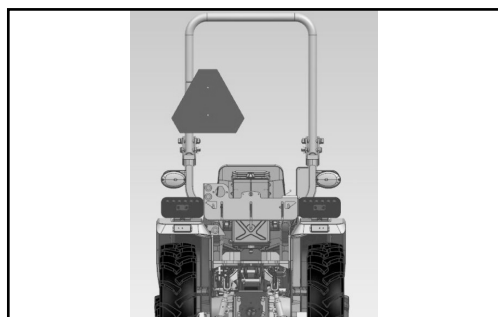


KEEP ROPS INSTALLED PROPERLY

Make sure that all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

The seat is part of the ROPS safety zone. Replace only with seat approved for your tractor. Any alteration of the ROPS must be approved by the manufacturer.



SAFETY NOTES

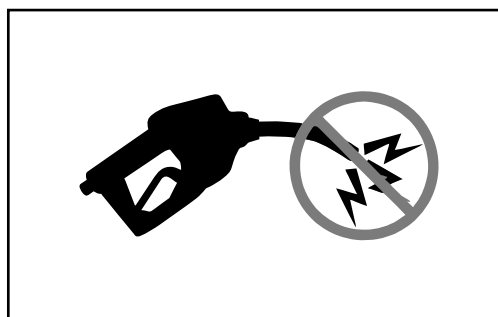
AVOID STATIC ELECTRICITY RISK WHEN REFUELING

The removal of sulfur and other compounds in Ultra-Low Sulfur Diesel (ULSD) fuel decreases its conductivity and increases its ability to store a static charge.

Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion.

Therefore, it is important to ensure that the entire system used to refuel your machine (fuel supply tank, transfer pump, transfer hose, nozzle, and others) is properly grounded and bonded. Consult with your fuel or fuel system supplier to ensure that the delivery system is in compliance with fueling standards for proper grounding and bonding practices.



PREVENTION OF FIRE

Tractor should be regularly inspected and cleaned to lower the risk of fire.

- During normal operation of tractor, crop material, hay or other debris can be accumulated. This is likely to happen when operating in dry conditions. Any such build up must be removed to ensure proper machine function and to reduce the risk of fire. The tractor must be inspected and cleaned periodically throughout the day.
- Birds and other animals may build nests or bring other flammable materials into the engine compartment or onto the exhaust system. The tractor should be inspected and cleaned prior to the first use each day.
- Regular and thorough cleaning of the tractor combined with other routine maintenance procedures listed in this Operator Manual reduce the risk of fire and the chance of costly downtime.
- Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.
- Check fuel lines, tank, cap, and fittings frequently for damage, cracks or leaks. Replace, if necessary.

Follow all operational and safety procedures mentioned on the tractor and the Operator Manual. Be careful of hot engine and exhaust components during inspection and cleaning. Before carrying out any inspection or cleaning, always shut OFF the engine, place the transmission in PARK or set parking brake, and remove the key. Removal of the key will prevent others from starting the tractor during inspection and cleaning.

SAFETY NOTES

IN CASE OF FIRE



CAUTION: Avoid personal injury.

Immediately stop the tractor at the first sign of fire. Fire may be identified by the smell of smoke or sight of flames. As fire grows and spreads rapidly, get off the tractor immediately and move safely away from the fire. Do not return to the tractor! The number one priority is safety.

Call the fire department. A portable fire extinguisher can put out a small fire or contain it until the fire department arrives; but portable extinguishers have limitations. Always put the safety of the operator and bystanders first. If attempting to extinguish a fire, keep your back to the wind with an unobstructed escape path so you can move away quickly if the fire cannot be extinguished.

Read the instructions on fire extinguisher and become familiar with their location, parts, and operation before a fire starts. Local fire departments or fire equipment distributors may offer fire extinguisher training and recommendations.

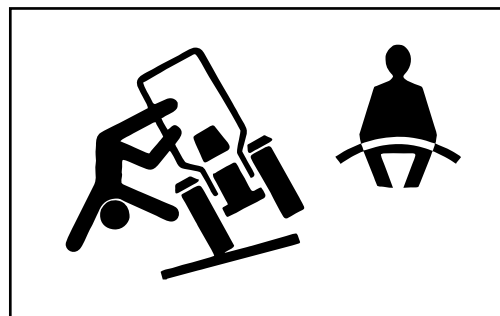
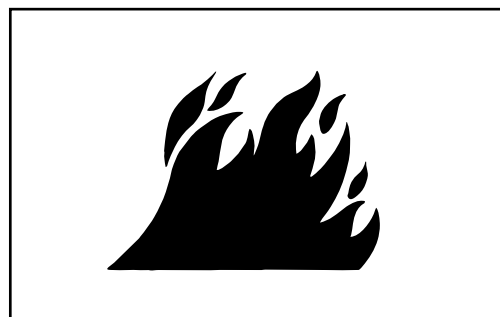
If your extinguisher does not have instructions, follow these general guidelines:

- Pull the pin. Hold the extinguisher with the nozzle pointing away from you, and release the locking mechanism.
- Aim low. Point the extinguisher at the base of the fire.
- Squeeze the lever slowly and evenly.
- Sweep the nozzle from side-to-side.
-

PROPER USE OF SEAT BELT & ROPS

- Avoid crushing injury or death during rollover.
- Keep the ROPS in the fully extended and locked position. USE a seat belt when you operate with a ROPS in the fully extended position.
- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.
- If this machine is operated with the ROPS folded (for example, to enter a low building), drive with extreme caution. DO NOT USE a seat belt with the ROPS folded.
- Return the ROPS to the raised, fully extended position as soon as the machine is operated under normal conditions.

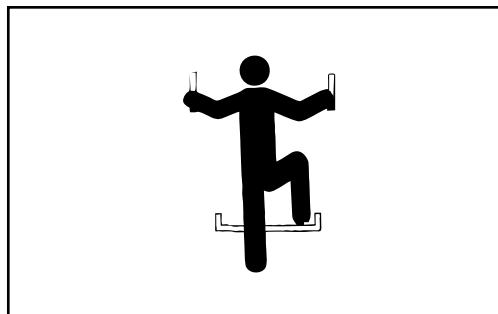
NOTE: 1). Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.
2). Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with genuine parts.



SAFETY NOTES

CORRECT USE OF HANDHOLDS AND STEPS

While getting On and Off the tractor, always face the tractor. Maintain 3 point contact with steps, handholds, handrails. Use extra care in slippery conditions due to mud, snow, or moisture. Keep steps clean and free of grease or oil. Never jump while de-boarding the tractor. Never mount or dismount a moving tractor.



LIMITED USE IN FORESTRY OPERATION

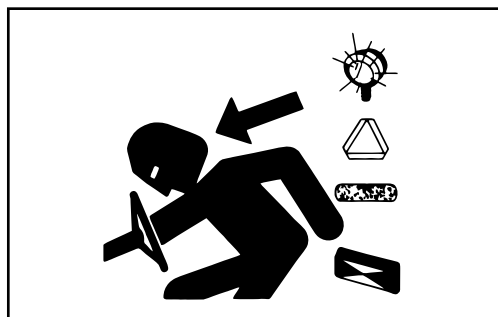
The intended use of tractors when used in forestry operations is limited to tractor-specific applications like transport, stationary work such as log splitting, propulsion, or operating implements with PTO, hydraulic, or electrical systems.

These are applications where normal operation does not present a risk of falling or penetrating objects. Any forestry applications beyond these applications, such as forwarding and loading, requires fitment of application-specific components including Falling Object Protective Structure (FOPS) and/or Operative Protective Structures (OPS).

USE SAFETY LIGHT AND DEVICES

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost.

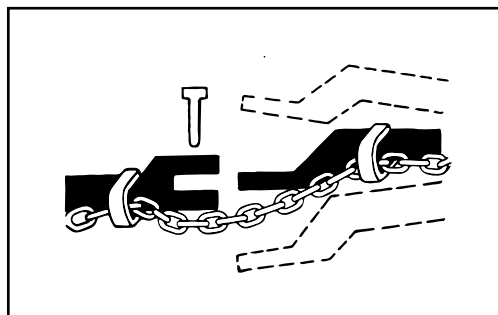


USE OF SAFETY CHAIN

A safety chain will help control drawn equipment should it accidentally separated from the drawbar. Use a chain with a strength rating equal to or greater than the gross weight of the towed machine.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

Do not use safety chain for towing.



SAFETY NOTES

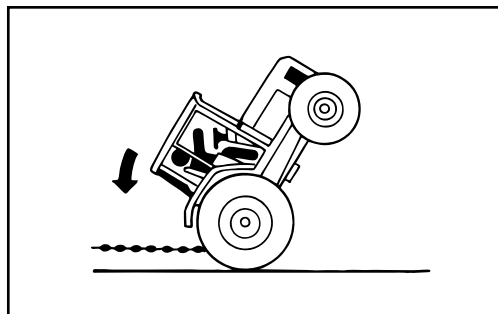
FREEING A MIRE D TRACTOR

Attempting to free a mired tractor can involve safety hazards such as the mired tractor tipping rearward, the towing tractor overturning, and the tow chain or tow bar (a cable is not recommended) failing and recoiling from its stretched condition.

Back your tractor out if it gets mired down in mud. Unhitch any towed implements. Dig mud from behind the rear wheels. Place boards behind the wheels to provide a solid base and try to back out slowly. If necessary, dig mud from the front of all wheels and drive slowly ahead.

If necessary to tow with another unit, use a tow bar or a long chain (a cable is not recommended). Inspect the chain for flaws. Make sure all parts of towing devices are of adequate size and strong enough to handle the load.

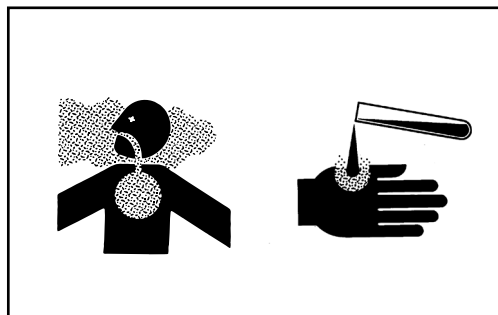
Always hitch to the drawbar of the towing unit. Before moving, clear the area of people. Apply power smoothly to take up the slack: a sudden pull could snap any towing device causing it to whip or recoil dangerously.



AVOID CONTACT WITH AGRICULTURAL CHEMICALS

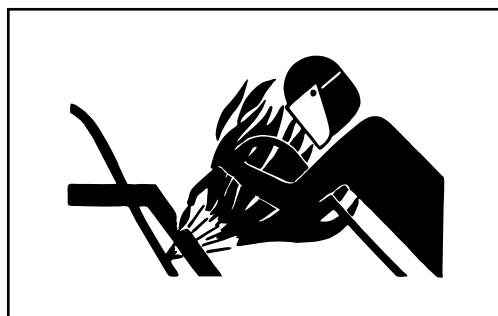
If pesticide use instructions require respiratory protection, wear an appropriate respirator.

Store the respirator in a closed box or some other type of sealable container, such as a plastic bag.



AVOID HEATING NEAR PRESSURIZED FLUID LINES

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.



SAFETY NOTES

HANDLE ELECTRONIC COMPONENTS AND BRACKETS SAFELY

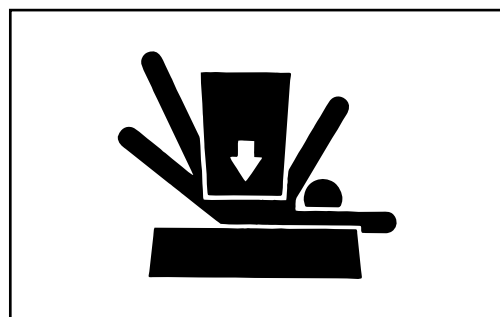
Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.



SUPPORT MACHINE PROPERLY

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the attachment be lifted, provide secure support for them. If left in a raised position, hydraulic supported devices can settle or leak down.

Do not work under the tractor which is supported solely by a jack.

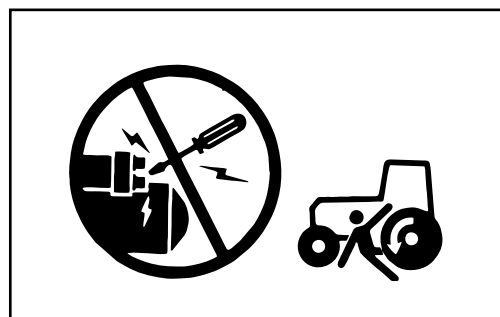


PREVENT TRACTOR RUNAWAY

Avoid possible injury or death from tractor runaway.

Do not start engine by shorting across starter terminals. Tractor will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral.

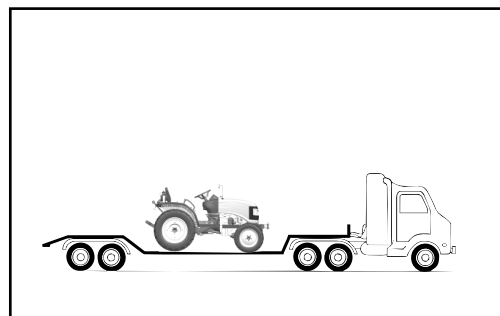


TRANSPORT TRACTOR SAFELY

A disabled tractor is best transported on a flatbed carrier. Use chains to secure the tractor to the carrier. The axles and tractor frame are suitable attachment points.

Before transporting the tractor on a low-loader truck or flatbed rail wagon, make sure that the bonnet is secured over the tractor engine.

Never tow a tractor at a speed greater than 10 km/h (6 mph). An operator must steer and brake the tractor under tow.



SAFETY NOTES

SERVICE TIRES SAFELY

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

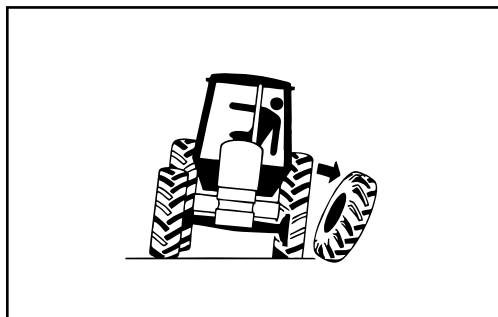
When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts.



TIGHTENING WHEEL RETAINING BOLTS/NUTS

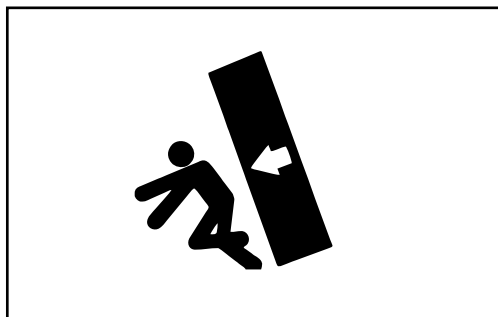
Torque wheel retaining bolts/nuts at the intervals specified in the Maintenance section.



STORE ATTACHMENTS SAFELY

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

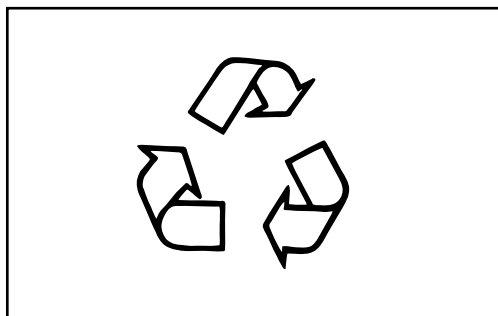
Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.



DISPOSE OF WASTE PROPERLY

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.

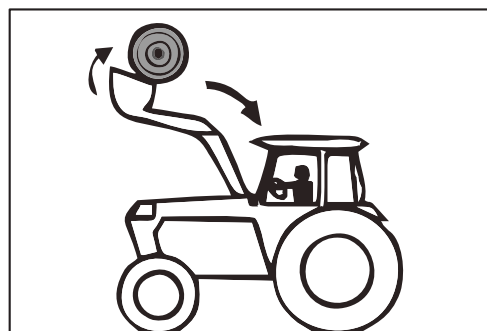
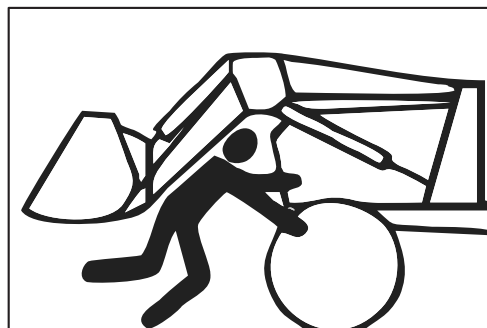
To get to know the correct methods to dispose of oils, filters, Tires etc. contact your Dealer or the local agency for waste recycling.




SAFETY NOTES

- Do not use the equipment to handle loads without using an appropriate attachment; for instance, do not use a bucket to lift a round bale. Be very careful to raised loads.

FOR INSTRUCTIONS AND SAFETY RULES FOR OPERATING LOADER, FOLLOW INSTRUCTIONS AVAILABLE ON LOADER'S OPERATOR MANUAL.



SAFETY FROM LIGHTNING STRIKE

 **DANGER** Lightning strikes injure and kill hundreds of people each year. Follow these precautions to help keep you safe when the weather turns bad:

As soon as you hear thunder, shut off and put away equipment and move indoors. When you are able to hear thunder, you can be struck by lightning. Lightning can strike even when it's not raining.

A sturdy building provides the best protection.

Listen to the radio for weather updates and storm warning.

NOISE & VIBRATION LEVELS

The value of the noise at the operator's ear, measured according to standard 167/2013 (EU) and/or as per 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 and/or 167/2013 (EU): Operator ear level:- Less than 86 dB. Noise at By standard level (when tractor is in motion & when tractor is stationary):- Less than 85 dB.

The value of the vibration level measured according to standard 167/2013 (EU) and/or according to Council Directive 78/764/EEC(3) is less than 1.25 m/s².

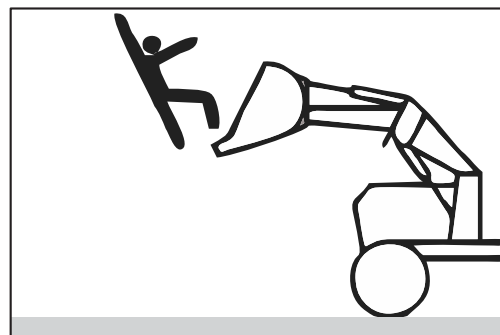
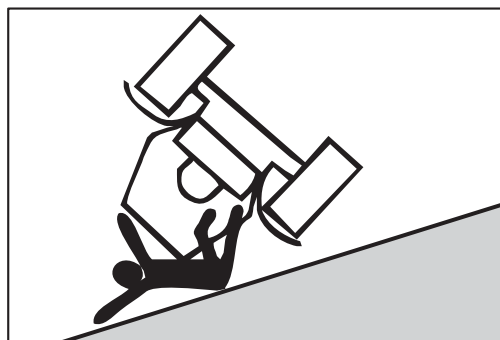
SAFETY NOTES

DISPOSAL OF THE TRACTOR:

The tractor is made up of parts subjected to rules and laws for their disposal. When the tractor is not used any more, it must be disposed of through proper agencies according to such rules. Do not pollute the environment with the tractor or its parts.

SAFETY WHILE OPERATING LOADER ATTACHMENTS

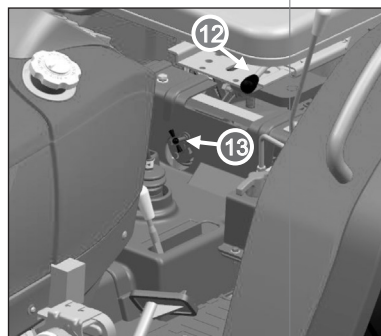
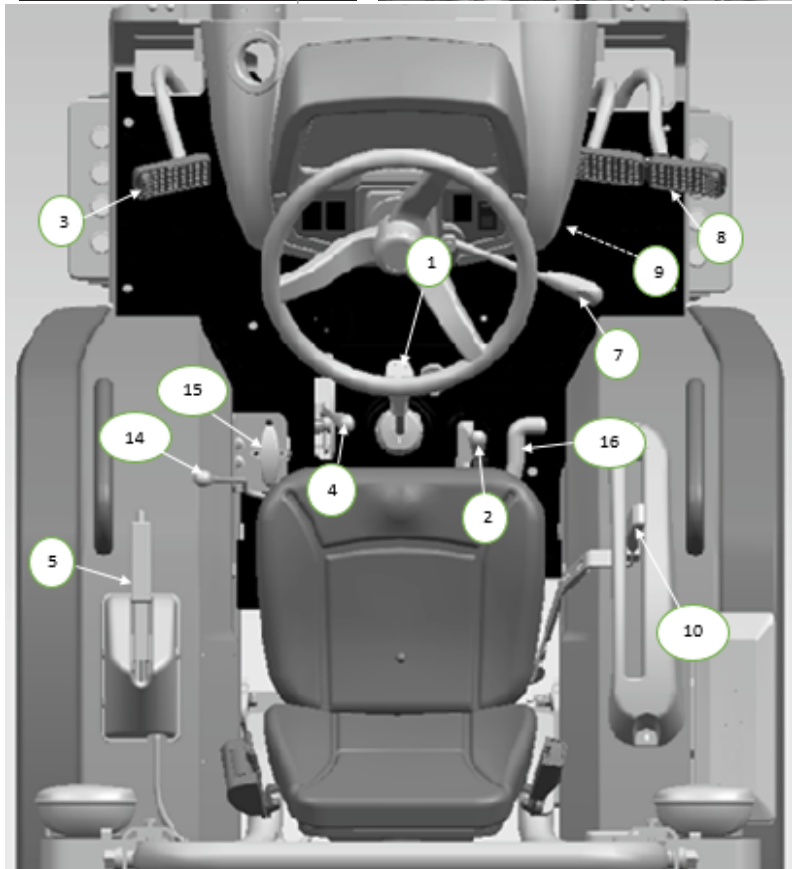
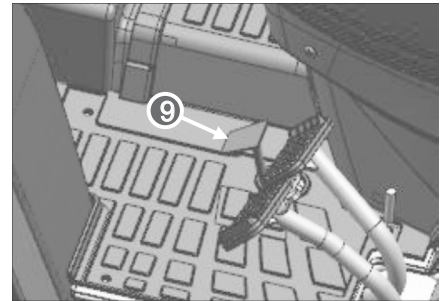
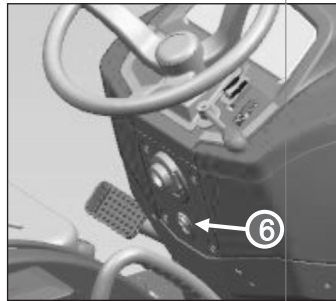
- The equipment must only be used by authorised and trained personnel who, beforehand, must read and understand these instructions and become familiar with the equipment controls and their operation.
- Before operation, check all functions of the equipment and attachment going to be used.
- The equipment must be used by people aged more than 18 years, having the qualities required by the national legislation.
- Before or during work, do not take alcoholic beverages, medicines or other substances that may alter your psycho-physical conditions and affect your working abilities.
- The equipment must only be used for the applications intended by the manufacturer. An improper use may cause serious damage and injury.
- Always check the weight and nature of the load to be handled and the stability of the tractor in relation to the ground conditions.
- Couple the equipment only to tractors fitted with adequate rollover protective structures.
- Do not use the equipment on steep slopes.
- Before pressuring the hydraulic circuit of the equipment, make sure that the hydraulic hoses are intact and properly connected.
- Do not use the equipment to lift or transport people.
- Do not use the equipment as a working platform.
- Never transit or halt under suspended loads or under parts of the equipment supported solely by hydraulic jacks or ropes.
- Do not use the equipment if problems or anomalous vibrations are noticed.



INSTRUMENTS & CONTROLS

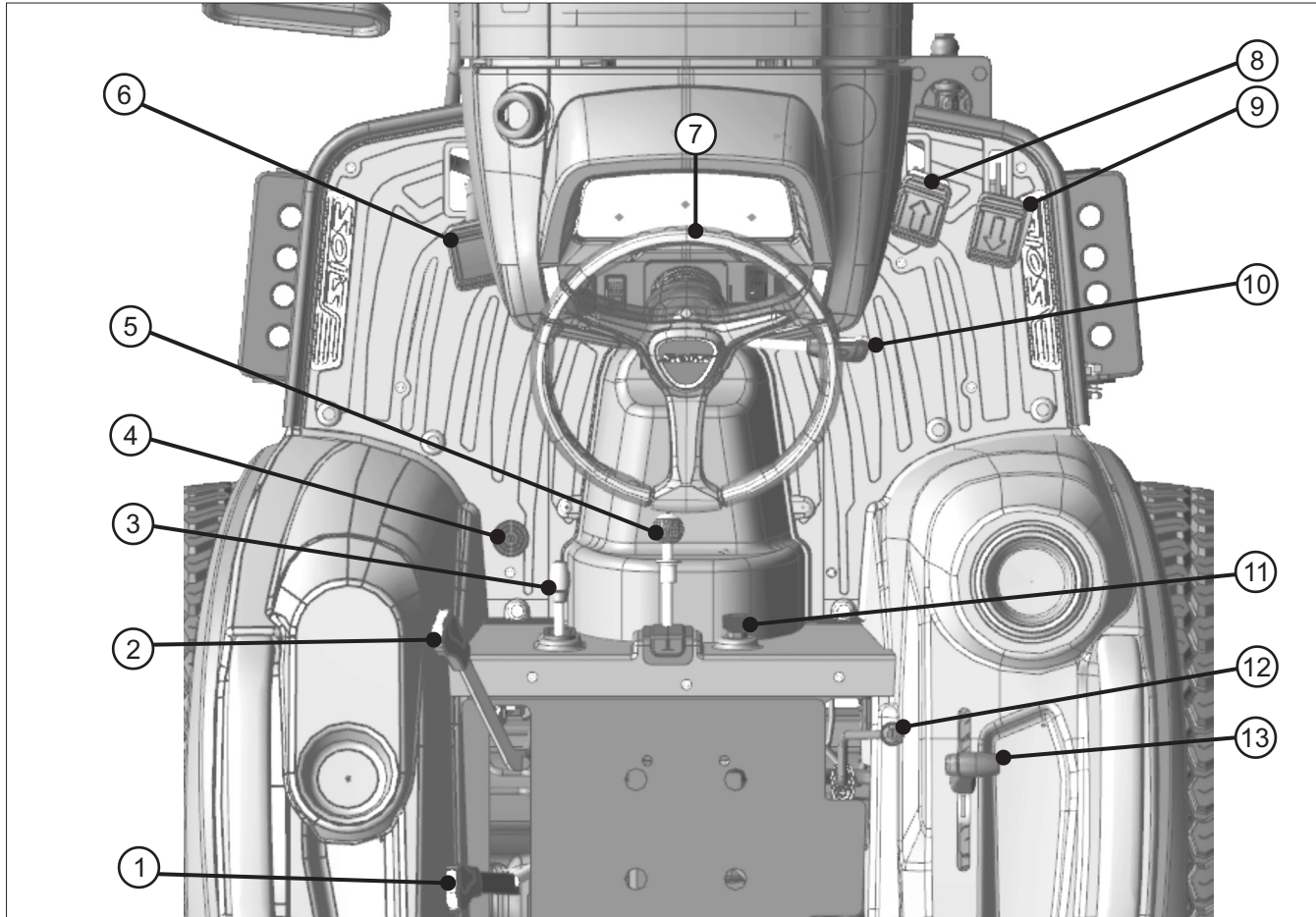
Tractor Controls- Manual Transmission

1. Gear Shift Lever
2. Hi-Low Lever
3. Clutch Pedal
4. PTO Lever
5. Parking Brake
6. Ignition Switch
7. Hand throttle lever
8. Brake Pedals
9. Accelerator pedal
10. Position Control Lever
11. Three Point Linkage
12. Driver seat Adjustment Lever
13. Transport Lock
14. Rear Remote
15. 2WD/4WD lever
16. Differential lock pedal



INSTRUMENTS & CONTROLS

Tractor Controls- HST Variant

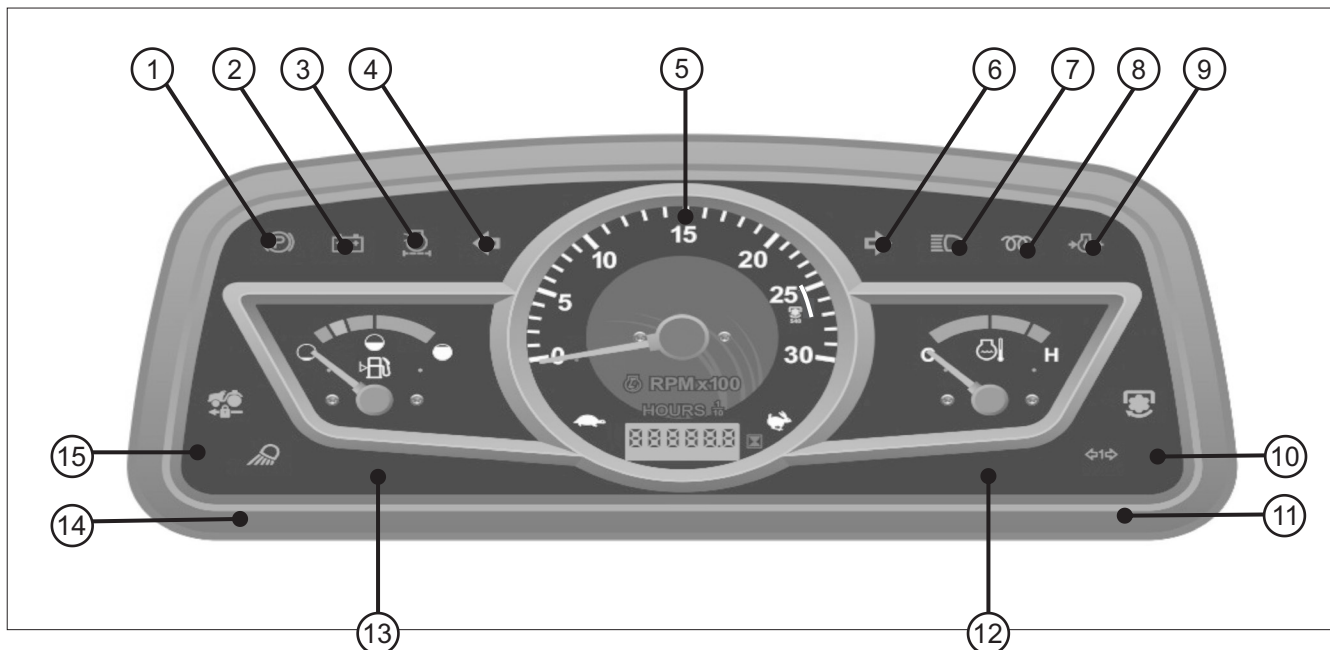


| | |
|---|---------------------|
| 1 | PTO Shifter Lever |
| 2 | Hi-Low Lever |
| 3 | 2WD/4WD Lever |
| 4 | Differential Lock |
| 5 | Parking Brake Lever |
| 6 | Brake Pedal |
| 7 | Steering Wheel |

| | |
|----|---------------------------------|
| 8 | Forward Speed Control Pedal |
| 9 | Reverse Speed Control Pedal |
| 10 | Hand Throttle Lever |
| 11 | Response Valve / Transport Lock |
| 12 | DCV Lever |
| 13 | Hydraulic Control Lever |

INSTRUMENTS & CONTROLS

Instrument Cluster

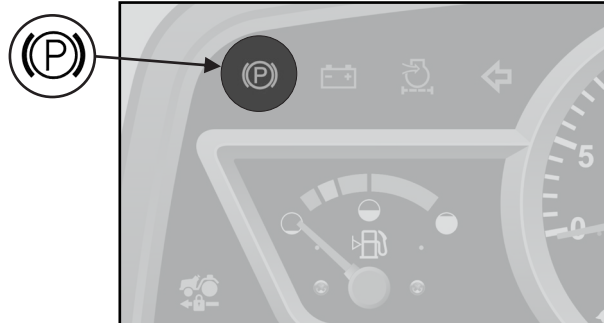


| | | |
|----|--|--|
| 1 | | Parking Brake Indicator |
| 2 | | Battery Charging Indicator |
| 3 | | Air Cleaner Clogging Indicator |
| 4 | | Left Turn Indicator |
| 5 | | RPM & Hour Meter |
| 6 | | Right Turn Indicator |
| 7 | | High Beam Indicator |
| 8 | | Glow Plug Indicator |
| 9 | | Oil Pressure Indicator |
| 10 | | PTO Monitor Lamp |
| 11 | | Turn Trailer Indicator |
| 12 | | Temperature Gauge |
| 13 | | Fuel Gauge |
| 14 | | Working Lamp Indicator |
| 15 | | Cruise On-Off Indicator (For HST Variant only) |

INSTRUMENTS & CONTROLS

Parking Brake Indicator

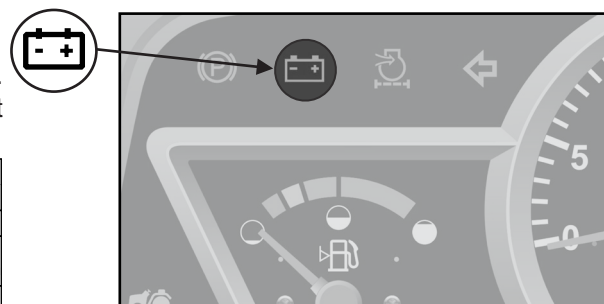
It glows when Parking brake Lever is in engaged condition



Battery Charge Indicator

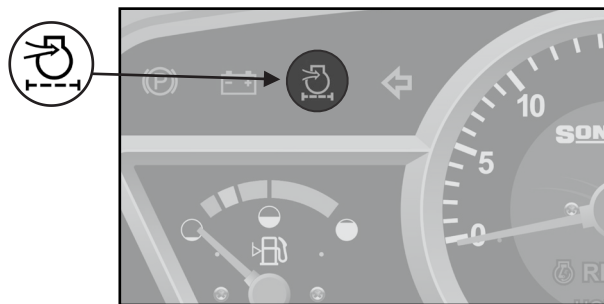
This indicator indicates that either battery is being charged or not. Refer the below given observations with respect to different

| 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. |



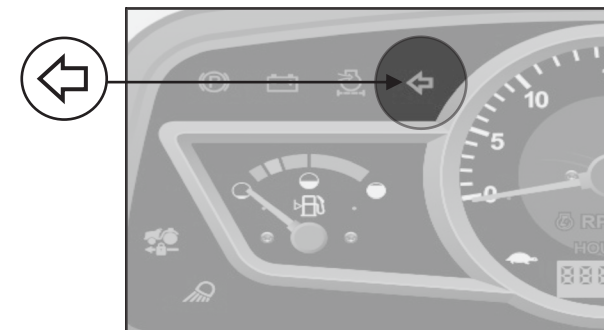
Air Filter Clogging Indicator

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



Left Turn Indicator

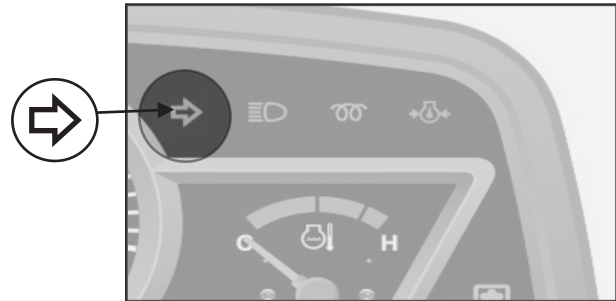
It glows when the left side indicator is switched ON.



INSTRUMENTS & CONTROLS

Right Turn Indicator

It glows when the right side indicator is ON.



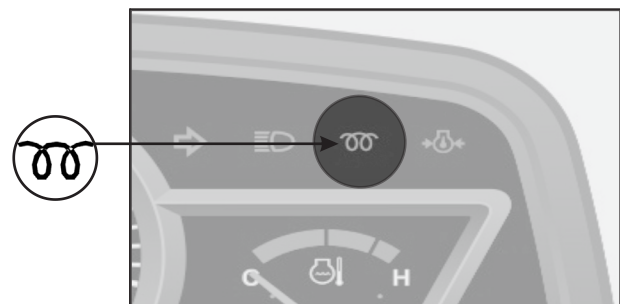
High Beam Indicator

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



Cold Start Indication

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

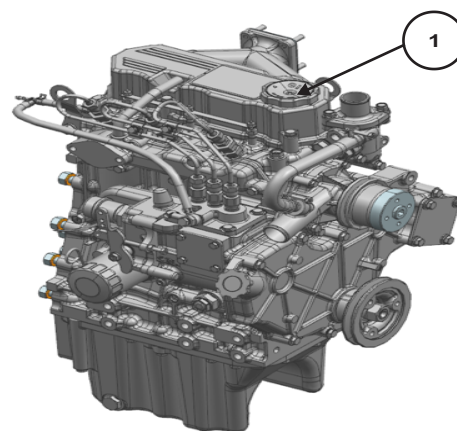
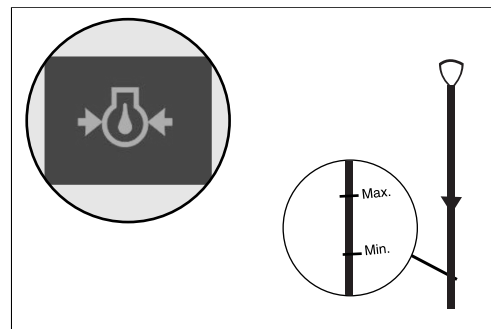


INSTRUMENTS & CONTROLS

Engine Oil Pressure Indicator

Oil Pressure indicator indicates oil pressure of lubricating oil in the engine. If this glows this means oil pressure is low and follow the below 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 (1) and add recommended oil up to the Max. level.
6. Install the oil filler cap after adding oil.
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 indicator glows again, then contact your nearest dealer.

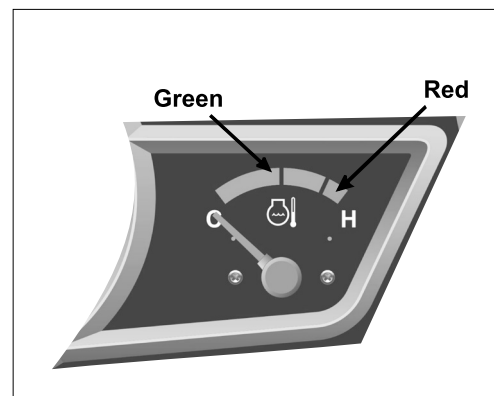


IMPORTANT: Do not operate the engine if there is no oil pressure. This may damage engine parts.

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 after running it in idle condition for a minute, shut off the engine.
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.

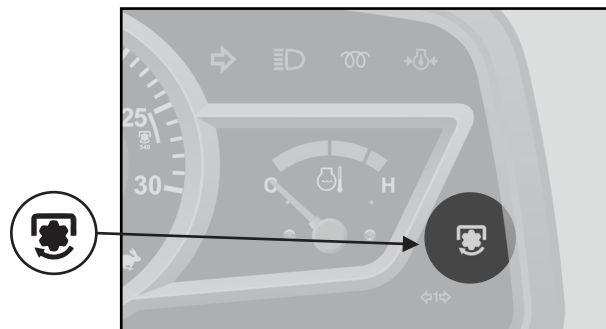


Do not remove the radiator cap when the engine and radiator are hot. Hot coolant and steam may blow out under pressure, which could cause serious injury. The cap should only be taken off when the coolant temperature has lowered.
Necessary precaution to be taken while opening the radiator cap.

INSTRUMENTS & CONTROLS

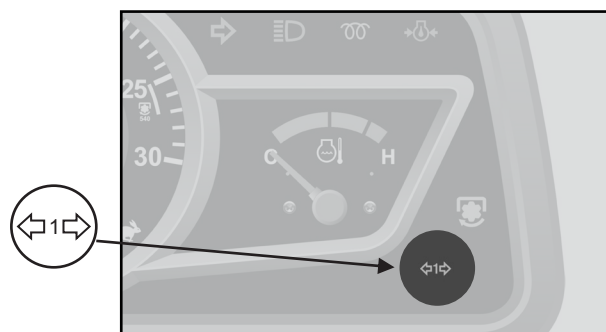
PTO Monitor Lamp

This Lamp will turn ON, When PTO clutch engaged.



Trailer Turn Indicator

This indication indicates the working of left and right side indicators lights of the trailer or trolley attachment. It glows all the time when hazard switch is ON. 7-Pin socket is used for connection of trailer lights.



Engine RPM and 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.

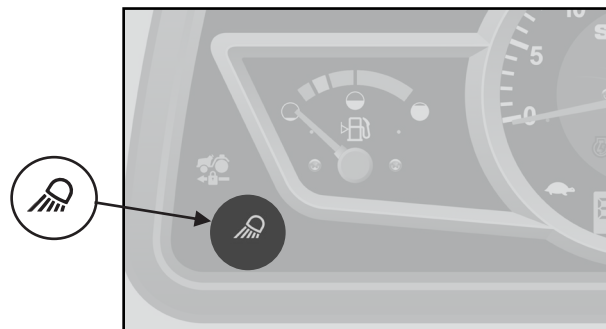
NOTE: Hour meter may be defer from actual hour (As per Clock) this purely depends on Engine RPM.



INSTRUMENTS & CONTROLS

Plow (Work) Lamp Indicator

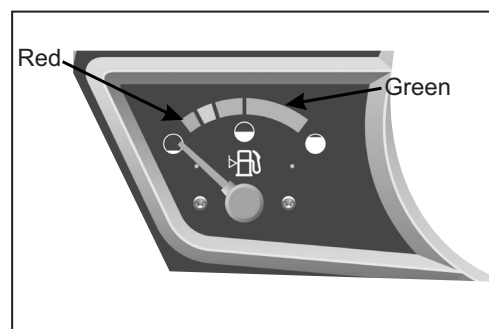
This glows when plow lamp is ON.



Fuel Gauge

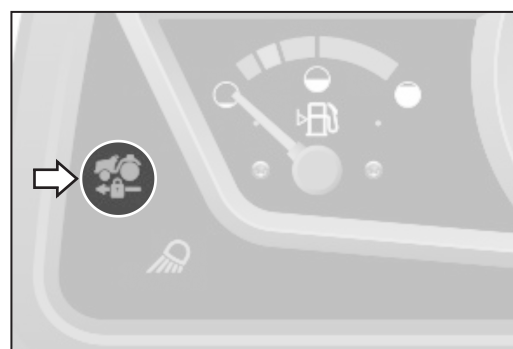
Fuel gauge gives an approximate indication of the quantity of fuel in fuel tank. If the needle enters in RED zone, refill the fuel tank.

Ensure Min. 6 Liter [1.6 U.S. Gallon] of Fuel in Fuel Tank to avoid air locking.



Cruise Control (HST Variant)

This light glows when cruise magnet is ON.
Cruise control switch is for tractor operating efficiency and operator comfort,
This option provide a constant forward operating speed by mechanically holding the cruise control lever at the selected position



INSTRUMENTS & CONTROLS

Dashboard Controls (Fig. 3.1):

- (1) Hazard Warning Light Switch
- (2) Cruise ON-OFF Switch HST Variant
- (3) Combination Switch
- (4) Ignition Switch
- (5) PTO ON-OFF Switch for HST Variat

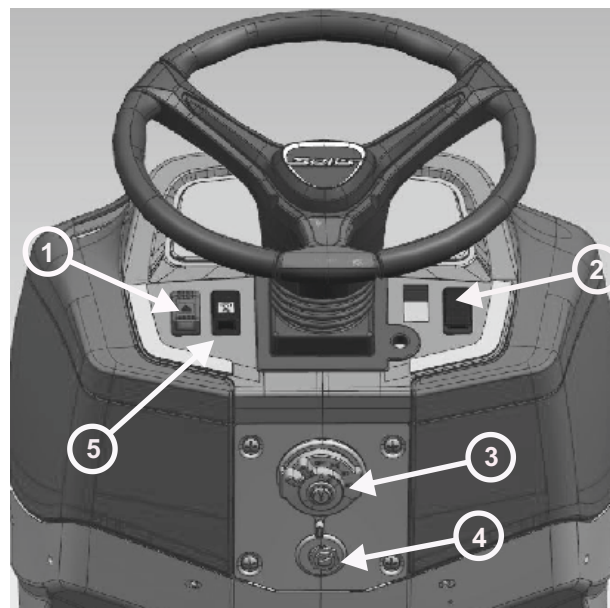


Fig. 3.1

Hazard Warning Light Switch (Fig. 3.2):

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.

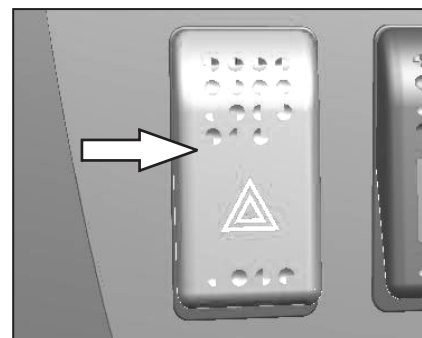


Fig. 3.2

Combination Switch (Fig. 3.3):

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.

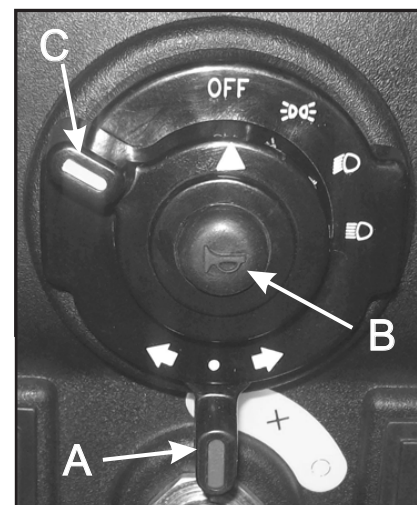
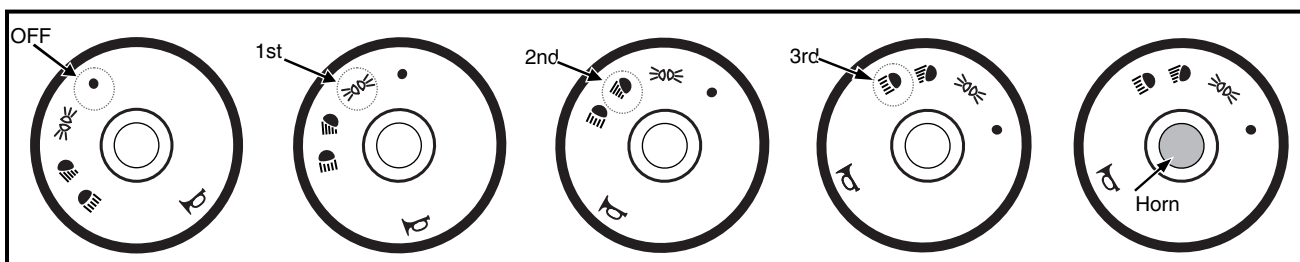


Fig. 3.3

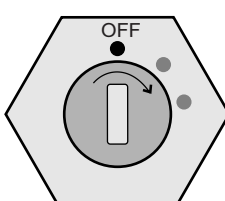
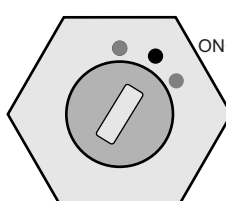
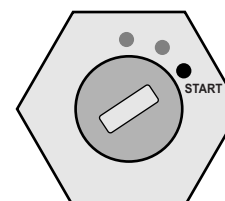
INSTRUMENTS & CONTROLS

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



3.3.3 Starting Key (Ignition) Switch:

Functioning of starting key switch is as below:

| | | |
|--|---|--|
| <p>1st Position (OFF) : All the electrical systems remain disconnected in this position.</p>  | <p>2nd Position (ON & HEATER) : 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.</p>  | <p>3rd Position (START): Immediate after the use of air heater turn the key further clockwise to Start position to start the engine.</p>  |
|--|---|--|

- 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.

INSTRUMENTS & CONTROLS

PTO ON-OFF Switch- HST Varinat, Fig. 3.4

This Switch is used to ON/OFF the PTO & provide Signal to PTO Solenoid valve through Safety Controller. When we press this switch for 3 Second then PTO Solenoid will be ON & We press Switch again it will Stop the PTO Solenoid immendiately.



Fig. 3.4

Cruise ON-OFF Switch- HST Variant, Fig. 3.5

This Switch on-off the cruise Magnet, When this switch type : press in upper side cruise magnet will be ON & when it press in lower side then magnet will be OFF.

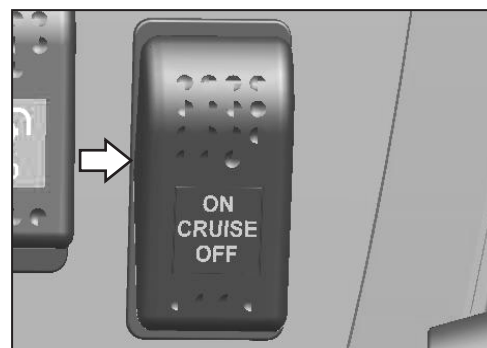


Fig. 3.5

Fuse Box, Fig. 3.6

Fuse Box is mounted on Radiator Bracket (See figure). If any electrical failure occurs, check and rectify the problem & replace the blown up fuse with genuine fuse of specified rating.



Never install a wire instead for proper fuse.



Fig. 3.6

INSTRUMENTS & CONTROLS

Tractor Lights - Manual Trnmission

- a. **Headlights:** Headlights of the tractor are shown in figure A.
- b. **Tail Lights:** Tail lights are shown in figure B
Tail Lights are having various indications i.e. light indication for brakes, side indicators and hazard warning light .
- c. **Plow Lamp:** Adjustable plow lamp is provided at rear side as shown in figure C.
- d. **Front Parking Light:** Front parking lights are shown in figure D.

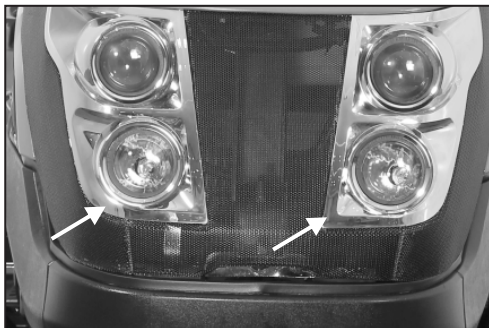


Fig. A

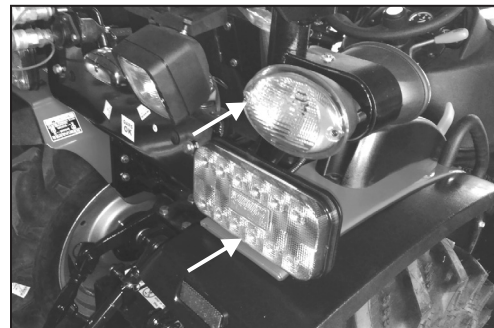


Fig. B

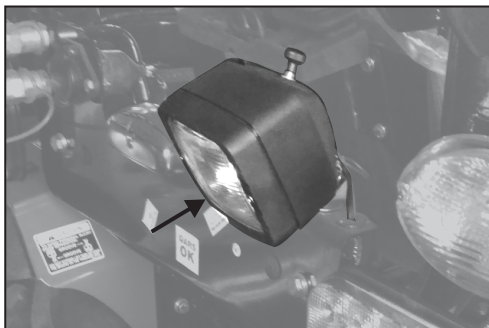


Fig. C

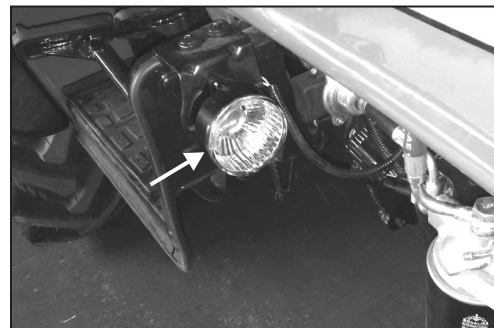


Fig. D

INSTRUMENTS & CONTROLS

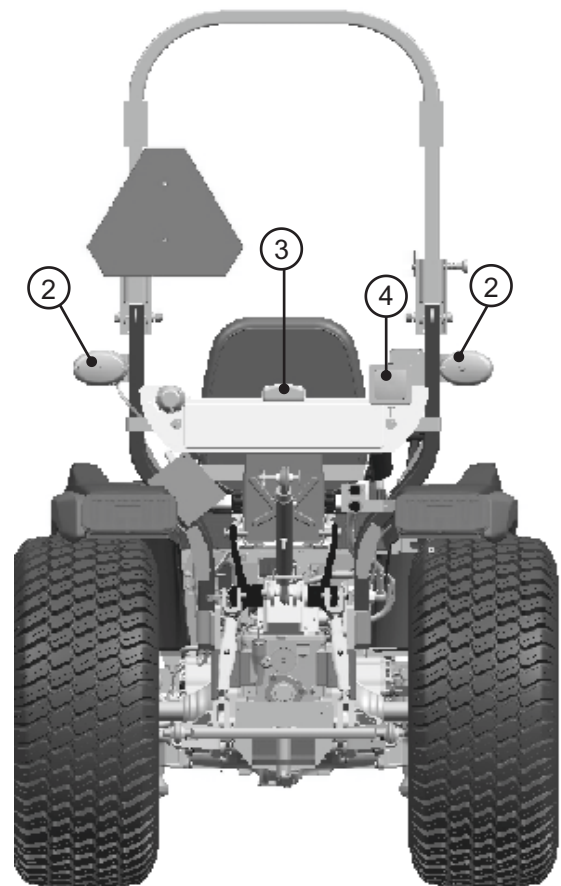
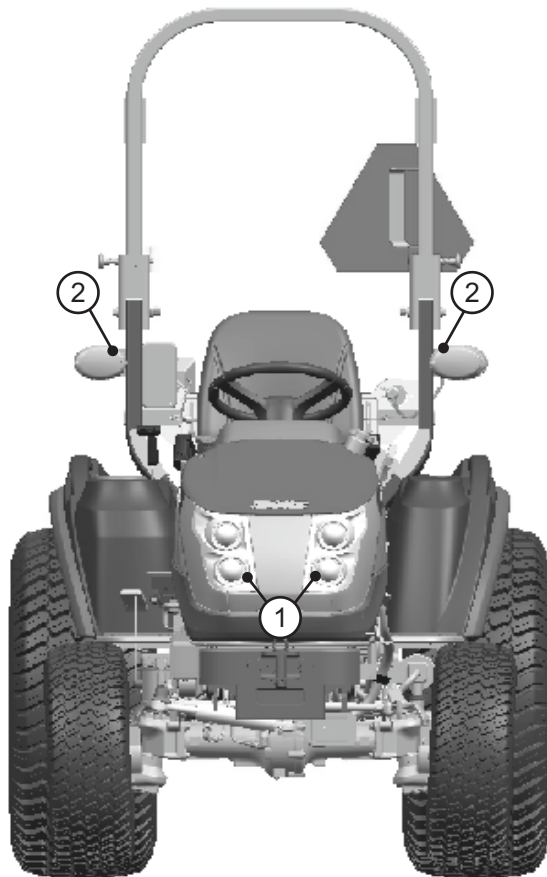
Tractor Lights - HST Variant

Head Lights (1): Projector lamps are provided for better focus & lighting and improved aesthetics.

Tail Lights (2): Tail Lights are having various indications i.e. light indication for brakes, side indicators and hazard warning light.

Registration Plate Light (3): Registration plate light is provided on registration plate at rear side as shown in figure removed based on requirements.

Plough Lamp (4): Adjustable plough lamp is provided at rear side as shown in figure.



INSTRUMENTS & CONTROLS

Operator's Seat

Adjust weight of the operator with an adjustment knob provided at back side of seat so as to be comfortable driving & to minimize 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 50-120 kgf [110.2 - 264.5 lbf]

Horizontal Adjustment (optional feature)

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

Vertical Adjustment

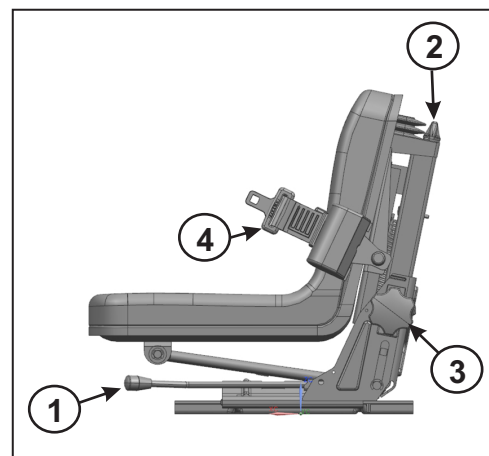
- Use knob (2) to adjust the suspension.
- Use knob (3) to adjust the height of the seat vertically.
- Seat belt (4) for safety.



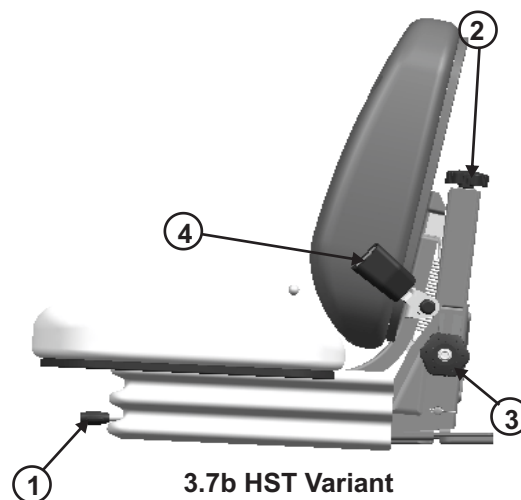
CAUTION

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.



3.7a Manual Transmission



3.7b HST Variant

Tool Box - Manual Transmission

Tool box is mounted on right side of fender (fig. 3.8).



Fig. 3.8

INSTRUMENTS & CONTROLS

Battery

Battery is located at front side of tractor on front axle bracket. Open the bonnet to access the battery (see fig. 3.9a).

Battery Cut-off Switch (Fig. 3.9b):- Manual Transmission

Battery cut-off switch is provided to connect or disconnect power supply from the battery. When the tractor is not in use for longer period, rotate the switch to anti-clockwise to switch off the power supply.

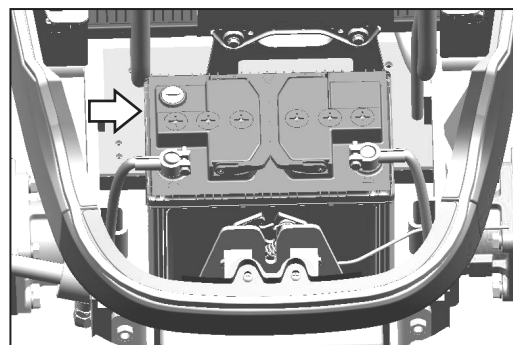


Fig. 3.9a

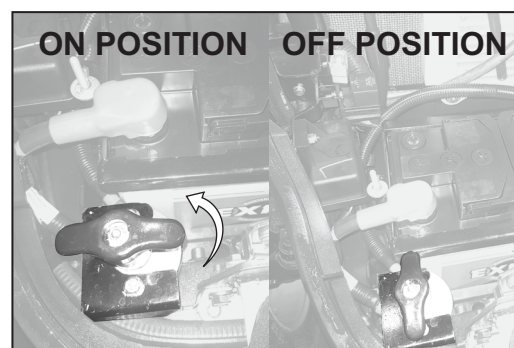


Fig. 3.9b Manual Transmission

Seven Pin Socket:

Seven pin socket mounted on licence plate to attach the trailer connections (see fig. 3.10).

Details of connectors is given under:

| Pin No | Used for | Wire Color |
|--------|--------------------------|------------|
| PIN 1 | Left Turn Single | Yellow |
| PIN 2 | Rear Fog light / Aux +ve | Blue |
| PIN 3 | Earth | White |
| PIN 4 | Right Turn Signal | Green |
| PIN 5 | Right Parking Light | Brown |
| PIN 6 | Brake Light | Red |
| PIN 7 | - | - |

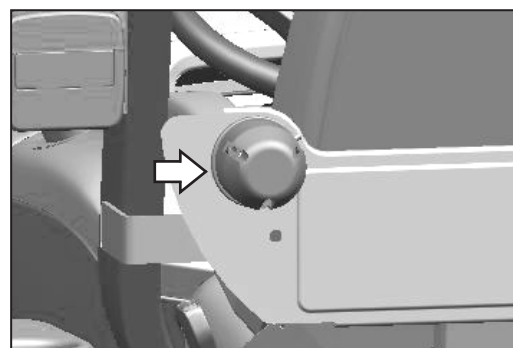


Fig. 3.10

OPERATION

Operator Presence Control (OPC)

This tractor is equipped with an audible and visible alarm that alerts the operator when he leaves the driving position with the park brake not applied. This audible and visible alarm shall be activated after operator has been detected out of the driving position and the parking brake is not applied. The time-out of alarm is 5-7 seconds. The alarm shall be deactivated when the operator is detected to be present again in the driving position within this time period or when the parking brake is applied within this time period.

| Tractor Condition | Gears Condition | Seat Condition | Parking Brake Condition | Buzzer | OPC Feedback |
|-------------------|-----------------|----------------------|-------------------------|--------------|---|
| ON | Neutral | Operator Leaves Seat | OFF | Will Blow | Buzzer will blow continuously, engine will stop within 1 second |
| ON | Neutral | Operator Leaves Seat | ON | Doesn't Blow | No buzzer, no engine shut-off |
| ON | Engaged | Operator Leaves Seat | OFF | Will Blow | Buzzer will blow continuously, engine stops within 1 second |
| ON | Engaged | Operator Leaves Seat | ON | Doesn't Blow | Buzzer will not blow, engine stops within 1 second |

Boarding the Tractor

Always board the tractor from left hand side where a footrest is provided while being careful not to contact any of the levers with other parts of body. This provides easy entry for the operator.

Leaving the Tractor

After stopping the tractor, leave the tractor from Left side of tractor.

Engine:

Starting the Engine:



Ignition switch is used to start the engine. Switch has following four positions. Refer below details to understand ignition switch positions in your tractor model:



- 1. OFF:** 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.
- 3. 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.
- 4. 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.

OPERATION

•Glow Plug

•The tractor is equipped with glow plugs. The Preheating time would be determined according to the ambient temp. For details, see the table below,

| •Ambient Temp (Deg C) | Ambient Temp (Deg F) | Pre-Glow time (In Seconds) | |
|--------------------------|-------------------------|----------------------------|-----|
| | | Min | Max |
| -20 | 4 | 21 | 27 |
| -10 | 14 | 13.5 | 18 |
| 0 | 32 | 9 | 12 |
| 10 | 50 | 6 | 9 |
| 25 | 77 | 4 | 6 |
| 30 | 86 | 3 | 5 |
| 40 | 104 | 2.5 | 4.5 |
| 50 | 122 | 2 | 4 |
| 60 | 140 | 2 | 4 |
| 70 | 158 | 1.5 | 3.5 |
| 80 | 176 | 1.5 | 3.5 |

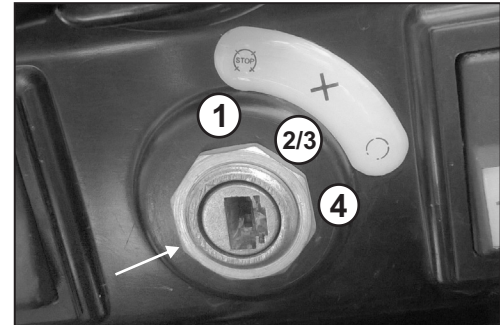
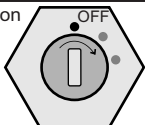
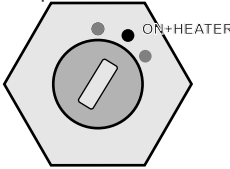
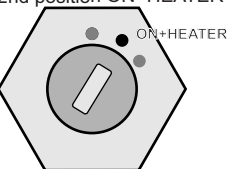
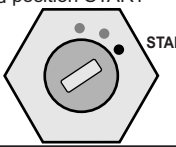


Fig. 4.1

- The glow plug indicator would stay on as per above temperature conditions and will go off after the maximum time (as per above table).
- The glow plug pre-heating and functions works as per below table

| Sr. No. | Starter Switch position | Glow Plug | Glow plug Lamp on cluster | Engine | Remarks |
|---------|---|-----------|---------------------------|--------|---|
| 1 | 1st position OFF  | OFF | OFF | OFF | |
| 2 | 2nd position ON+HEATER  | ON | ON | OFF | Pre Glow time: This is the time to heat up the cylinder chamber for easy crank the engine. Glow plugs working depends upon the ambient temperature condition. Refer below mentioned pre glow time |
| 3 | 2nd position ON+HEATER  | ON | OFF | OFF | Safety switch off time: If the engine is not cranked during the end of pre glow time, glow controller unit will allow glow plugs to on further for 12 sec to keep the combustion chamber in hot condition until the tractor is cranked. |
| 4 | 3rd position START  | OFF | OFF | ON | Glow plugs and cluster indicator will be turn off once engine will start |

OPERATION



When the engine is running, keep as a safe distance from the radiator fan.



To prevent accidents, never allow anyone to sit on the mudguards or on any other part of the tractor or implement.

For Starting (Normal Weather Conditions):-

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

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 a 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.

Battery:

The battery should always be sufficiently charged. If the temp goes below 14 Deg F (upto -10 deg C), it is recommended to use below mentioned battery specifications,

- 12V, More than 700 CCA (**Length- 258mm, Width- 172mm, Height-225 mm**)

Note:

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

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.

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.

OPERATION

Under Hood Muffler

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

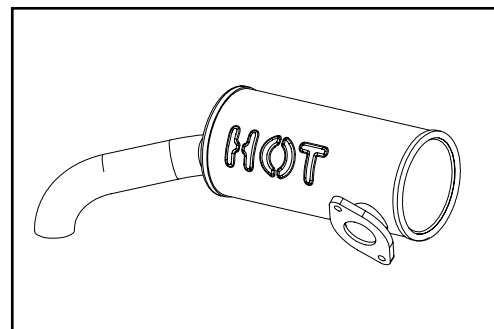


Fig. 4.2

Opening the Bonnet

Pull the knob (1) fig. 4.3) at front left side of the bonnet, till you hear a click sound, to open the bonnet.

Lift the bonnet slightly and it will automatically lift up to the preset height with the assistance of gas spring.

Closing of Bonnet

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

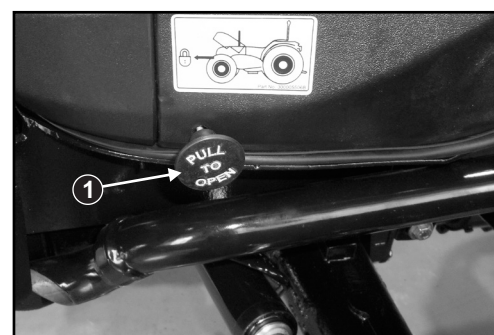


Fig. 4.3

Accelerator Pedal- Manual Transmission

The accelerator pedal (A) Fig. 4.4) 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.

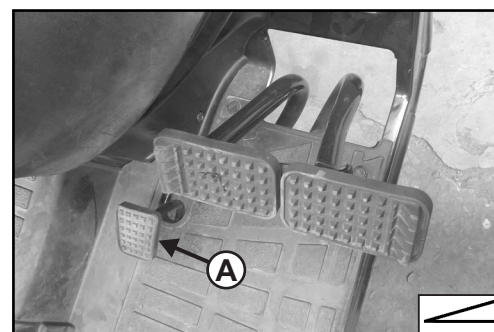


Fig. 4.4

Clutch Pedal - Manual Transmission

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.

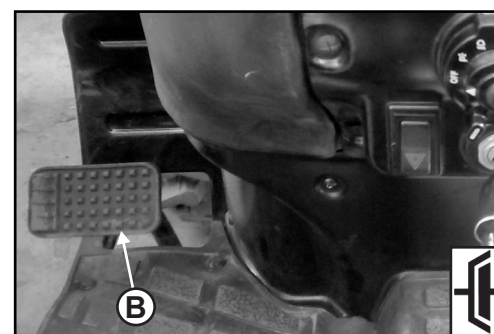


Fig. 4.5



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

OPERATION

Engaging & Dis-engaging Cruise Operation - HST

The cruise control function is provided for comfort of operator. When the cruise control is engaged, the cruise control indicator on instrument panel will turn on.

Engaging the cruise control:

- Press the forward speed control pedal till getting required speed is achieved.
- Push the cruise control switch to engage cruise control.
- Release the speed control pedal.

Disengaging the cruise control

There are two methods to disengage the cruise control :

- Push cruise control switch “OFF”
or
- Press the brake pedal.

IMPORTANT: To avoid damage of mechanism, do not press both of the speed control pedals when the cruise control is engaged.

IMPORTANT: Cruise operation should be disengaged while turning the tractor.

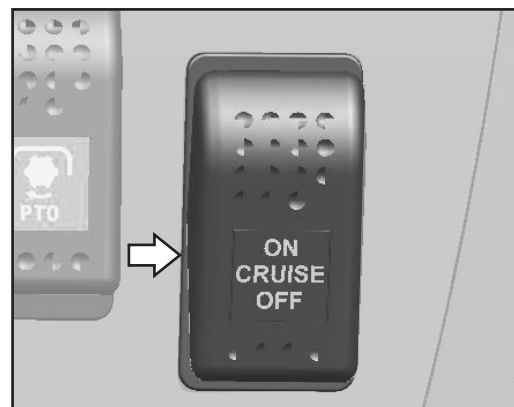


Fig. 4.6

Speed Control Pedals - HST

There are two speed control pedals provided to drive the tractor in forward and reverse direction.

Press pedal “A” to drive the tractor in forward direction.

Press pedal “B” to drive the tractor in reverse direction.



Do not shift from forward speed to backward speed or vice versa suddenly in high range. Sudden change may damage mechanism and cause risk of injury to operator.

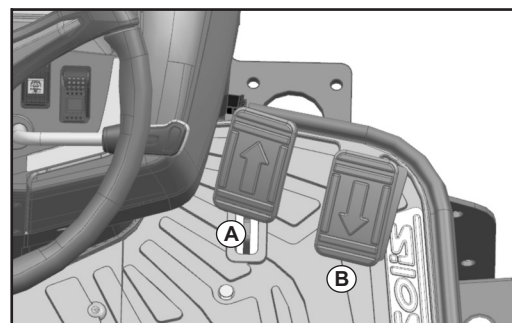


Fig. 4.7

OPERATION

'2WD / 4WD' Lever

You can drive the tractor in both 2WD or 4WD mode. Select the driving mode by Lever (C) as shown in figure 4.8 a and 4.8b.

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

4WD Mode: With the lever (C) in 4WD position the power is simultaneously transmitted to all 4 wheels (Front & Rear) of

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

* 2WD=Two Wheel Drive

*4WD=Four Wheel Drive

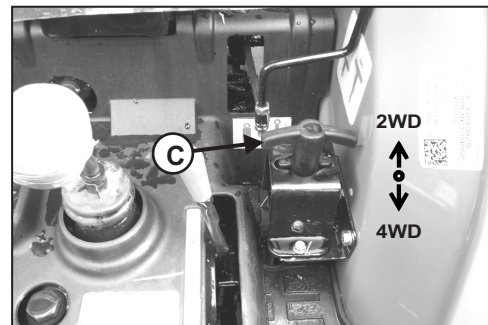


Fig. 4.8a Manual Transmission

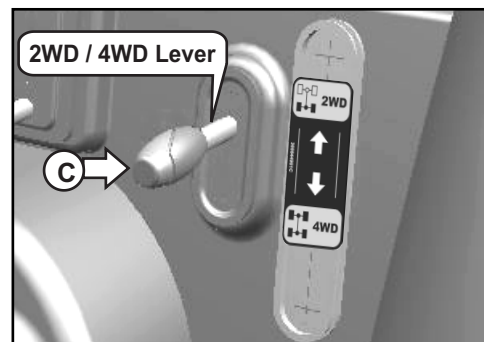


Fig. 4.8b HST

Gear Shifter Lever- Manual Transmission

Gear shifter lever (E, Fig. 4.9) 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.

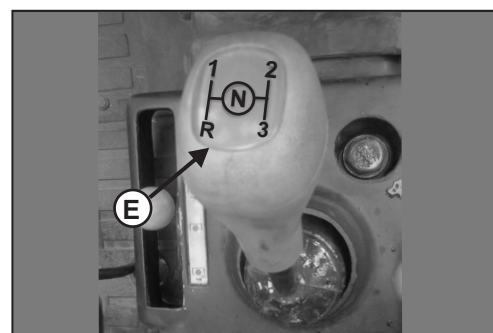


Fig. 4.9



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.

OPERATION

Hand Throttle Lever- Manual Transmssion

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

4.10a for Manual Transmission

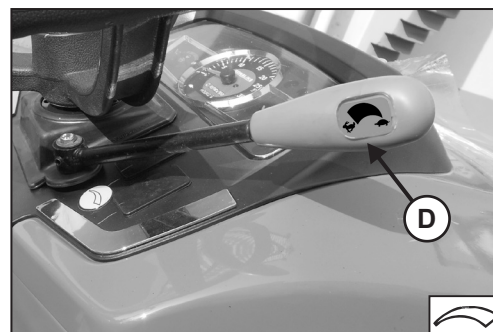


Fig. 4.10 a

4.10b for HST Variant

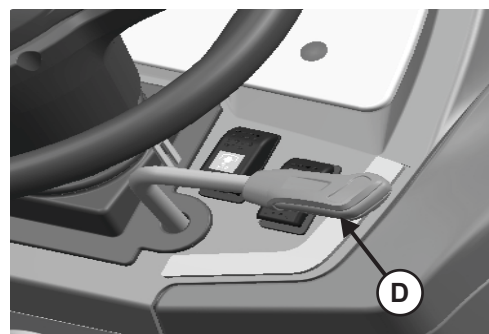


Fig. 4.10 b

Differential Lock

Press differential lock pedal (J) to rotate both the wheels at same speed.

IMPORTANT: Differential lock should only be used when traveling in a straight line. The differential lock should be disengage when turning the tractor to avoid damage to the differential assembly.



Do not apply differential lock while tractor speed is more than 6 kmph [3.73 mph] on turning.

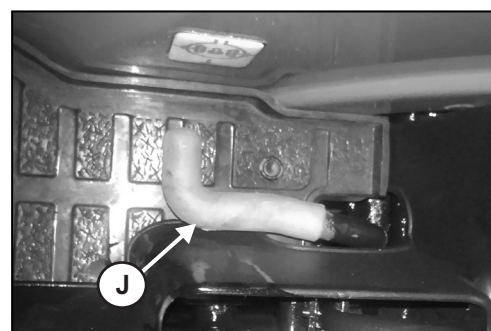


Fig. 4.11 a Manual Transmission

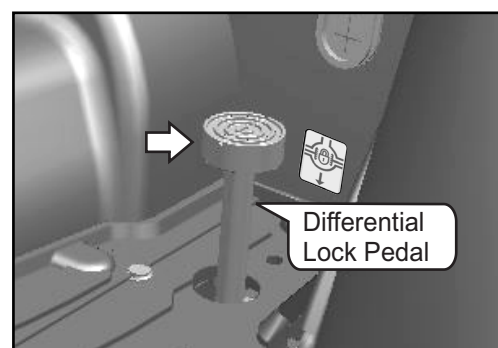


Fig. 4.11 b HST

OPERATION

Power Take off (PTO)- Manual Transmission

Power take off is mounted at rear side of tractor. This is used for supplying power directly to implement from engine.

PTO can be engaged or disengaged by PTO shifter lever (F). Standard 540 PTO speed is available.

Information Sticker is pasted on transmission housing cover for PTO operating instructions (see fig. 4.12 b).

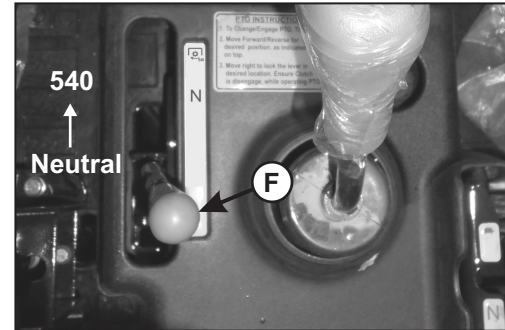


Fig. 4.12a

IMPORTANT : When PTO is not operational protect PTO splines with PTO Cap (A, fig. 4.12c). PTO Cap protects persons from injuries and the shaft splines from damage.



WARNING

Before connecting adjusting or working on implements operated by the PTO, disengage the PTO, stop the engine, remove the key from the dashboard and engage the parking brake. Do not work under raised implements.



WARNING

When using the PTO drive with a stationary tractor, ALWAYS make sure that the gears are in neutral and that the parking brake is applied.



WARNING




Check to make sure that all implements operated by the PTO are fitted with the correct protections, are in a good condition and comply with the provisions established by the law.



WARNING

Before driving an implement through the PTO, ALWAYS make sure that all bystanders are well away from the tractor.

PTO Adjustment Procedure

1. To change/engage PTO, tilt left. 
2. Move forward/Backward for desired position, as indicated on top. 
3. Move right to lock the lever in desired location. Ensure the clutch is disengaged while operating PTO lever. 

PART NO. 300023516B

Fig. 4.12b

A requirement to use only power take-off drive shafts with adequate guards



CAUTION

Remove PTO cap (A, fig. 4.12c) only when the PTO is to be used. As soon as PTO-driven implement is removed, re-install cap over PTO stub shaft again afterwards. There are various versions of PTO guard that are not shown here.



CAUTION

Never operate PTO unless the master shield (B, fig. 4.12c) is in the position shown. Switch off the PTO before raising the implement.

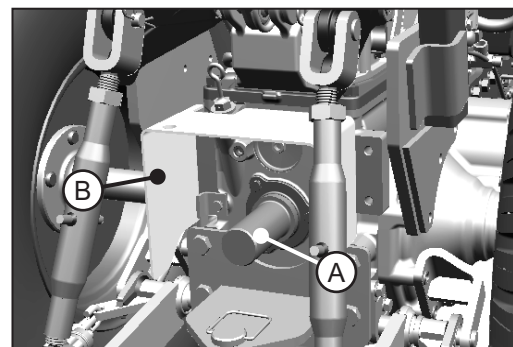
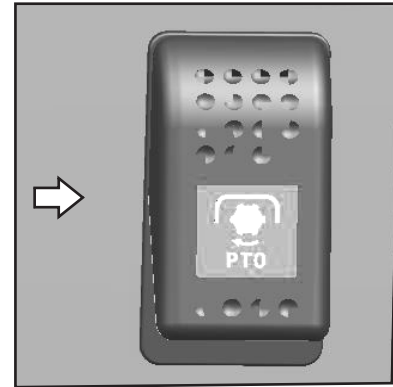


Fig. 4.12c

OPERATION

PTO ON-OFF Switch : HST Variant

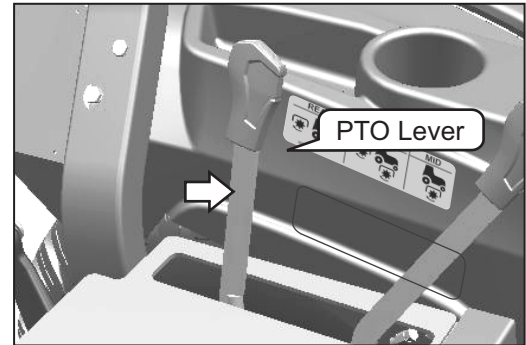
This Switch is used to ON/OFF the PTO operation. This switch gives signal to PTO solenoid valve through safety controller. When we press this switch for 3 second then PTO solenoid will be ON & then we press this switch again, it will stop the PTO solenoid immediately.



Power Take off (PTO) - HST Variat

Rear and Mid PTO are provided for variable utility. Both can be engaged simultaneously or separately. The engine will not start if PTO switch is in ON position. The engine will shut-off if the operator leaves the seat with parking brake released and PTO engaged. (See fig.4.10a)

| Position | Engine RPM | PTO Speed |
|----------|------------|-----------|
| Mid PTO | 2438 | 2100 |
| Rear PTO | 2451 | 540 |



Mid PTO: HST Variant

Mid- PTO speed is 2100 RPM. Engage the mid PTO as per following steps:

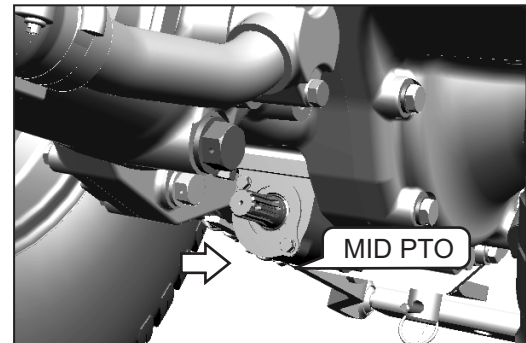
- Decrease engine speed at idle RPM
- Make sure that PTO switch is OFF
- Shift PTO lever to forward direction
- Turn on the PTO switch
- Increase engine speed as desired



Both PTO: HST Variant

Both Mid & Rear PTO will work simultaneously, Engage both the PTO as per following steps

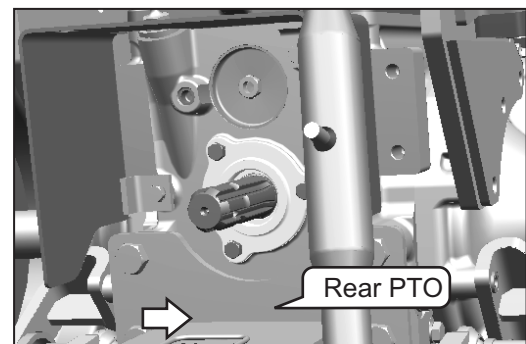
- Decrease engine speed at idle RPM
- Make sure that PTO switch is in OFF position
- Shift PTO lever to backward direction
- Turn on the PTO switch
- Increase engine speed as desired



Rear PTO: HST Variant

Rear PTO speed is 540 RPM. Engage the rear PTO as per following steps:

- Decrease engine speed at idle RPM.
- Make sure that PTO switch is in OFF position.
- Shift PTO lever to backward direction.
- Turn on the PTO switch .
- Increase engine speed as desired.



OPERATION



Before using the PTO, the maximum permissible angle of articulation on the telescoping driveline must be ascertained. During operation, there must be no contact between the PTO guard and the telescoping driveline. This is particularly important when turning corners.



Always put a guard (B, fig. 4.12c) on the telescoping driveline and take action to prevent it from turning with the shaft. Do not operate the telescoping driveline unless a guard is installed that covers the PTO shaft completely and does not turn with the shaft.



Stay clear from the area of the three-point linkage when controlling it. See fig. 4.12 (e)



The mounted machinery must be lowered on the ground before leaving the tractor.



Stay clear from the area between tractor and trailed vehicle.

Information about using implements with power take-off drive shafts



1. Shut off engine and disengage PTO before attaching PTO-driven equipment.



High-inertia implements do not come to a standstill the moment the PTO control lever is shifted to the disengaged position. Do NOT approach the implement while it is "coasting down". Do not work on the implement until it has stopped.



Before attempting to clean, adjust or lubricate a PTO-driven machine, three-point linkage, always make sure the PTO is switched off and stopped, the tractor engine is shut off and the ignition key is removed.

Turn key off to stop engine.

2. Attach implement to tractor before connecting PTO drive line. Lock three-point linkage in upward position if it is not to be used.
3. Rotate PTO shield upward for clearance. With engine off, turn shaft slightly by hand if necessary to line up splines. Connect drive line to PTO shaft. Pull out on shaft to be sure drive line is locked to PTO shaft. Place PTO shield in downward position.
4. Be sure all shields are in place and in good condition. Never operate PTO unless master shield is properly installed. WITH ENGINE STOPPED, check integral shields on drive line by making sure they rotate freely on shaft. Lubricate or repair as necessary.
5. Check carefully for any interference, make sure three-point linkage is locked in the upward position if it is not used.



Fig. 4.12d: Warning: Do not open or remove safety shield when engine is running.



Fig. 4.12e: Warning: Stay Clear of rotating machine parts.

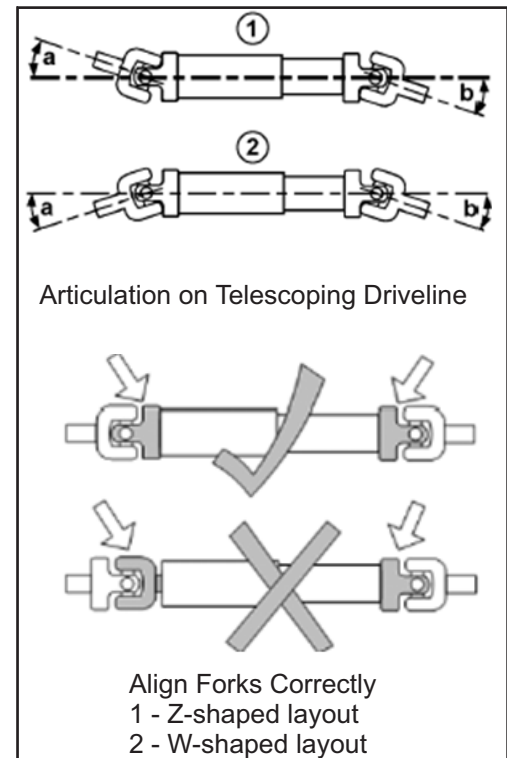


Fig. 4.12f

OPERATION

As far as possible, angles (a) and (b) at the universal joints should be the same at both ends of the Telescoping driveline.

In applications where this is not the case (e.g. sharp turns with PTO engaged), it is recommended to use a continuous-velocity drive shaft.

NOTE: The two schematic drawings do not show any guards on the telescoping driveline. A guard is mandatory when using telescoping drivelines.

IMPORTANT: Only operating conditions described in the Operator's Manuals of the various implements are permitted. This applies particularly to maximum permissible angle of articulation, to the use of freewheel clutches and overload clutches, and to the prescribed amount of overlap when

engaging pipes are pushed together.

IMPORTANT: Before using a PTO-driven implement, take action to ensure that the telescoping driveline is lubricated regularly. Comply with instructions in the Operator's Manual provided by the manufacturer.

IMPORTANT: On multi-component telescoping drivelines, the yokes at each end must be aligned as shown. The yokes at each end must NOT be at 90° to one another.

PTO drive shaft (Fig. 4.12g)

IMPORTANT: PTO transmission system has no one way clutch. With implements rotating in high speeds such as rotary mower & leaf blower, be sure to select and use a drive shaft with one way clutch.

Before attaching PTO drive shaft to tractor and implement, be sure to check and adjust the drive shaft length to avoid transmission damage.

Minimum overlap at fully extended: 100 mm (3.9 inch). See fig. 4.12h.

If the length of drive shaft is too short, it causes damage to the PTO shaft and transmission of tractor and/or implement by slipping out the drive shaft when lowering the implement.

Minimum clearance to the female shaft end at fully retracted position should be 25 mm (1 inch). See figure 4.12i

If the length of drive shaft is too long, it causes damage to the PTO shaft and transmission of tractor and/or implement when lifting the implement.

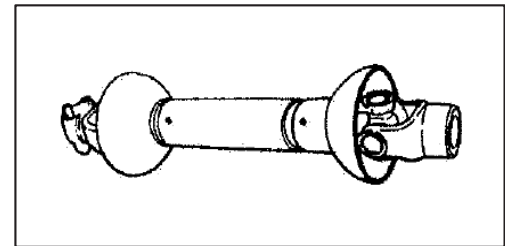


Fig. 4.12g

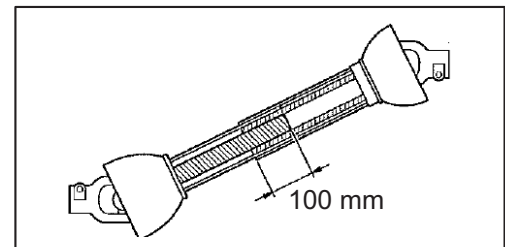


Fig. 4.12h

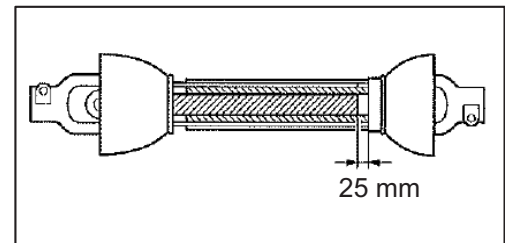


Fig. 4.12i

OPERATION

Hydraulic Coupling Devices

One Double acting (1DA) with float option detent type Direction control valve (DCV) is equipped as a standard fitment in your tractor. The DCV is used when attaching the implement operated by hydraulic cylinder.

The female Quick release couplers (QRC's) are located at rear side of tractor (see fig. 4.13a)

1. Make sure hose end and coupler receptacles (male & female) are in perfectly clean condition.
2. Remove dust plug from QRC's.
3. To connect male coupler, push it firmly into female coupler receptacle. Pull lightly to make sure positive connection was made.
4. Use DCV lever (Fig. 4.13b) for operating DCV.
5. Move the DCV lever forward or backward to control the implement.

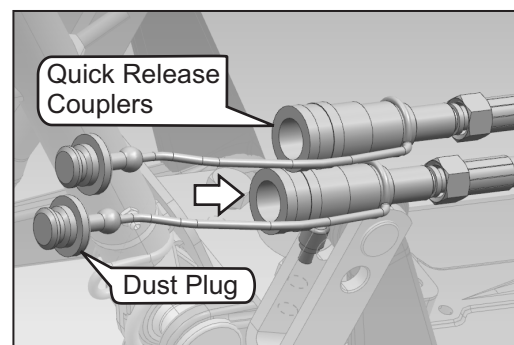


Fig. 4.13 a

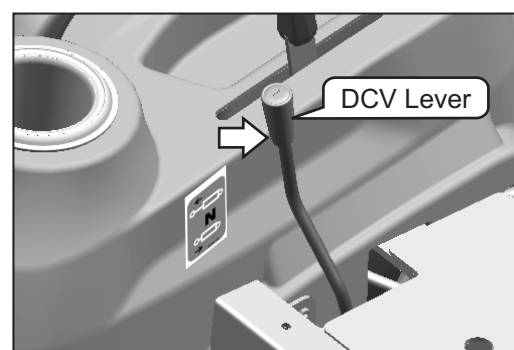
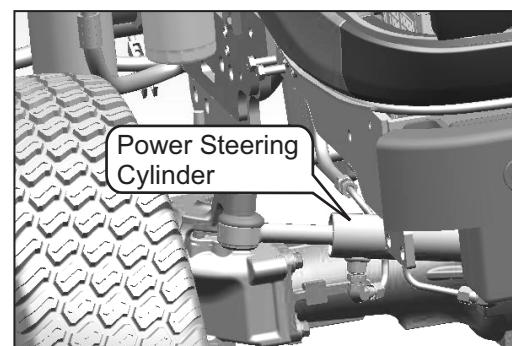


Fig. 4.13 b

Power Steering

The tractor is equipped with power steering with a pump of 6.7 CC & steering unit of 40 CC which enables the operator for ease in steering operation.

NOTE: The power steering function goes off when the engine is shut-off.



OPERATION

Transport Lock (Response Valve)

It acts as safety device during transportation of implements. It is located on front end side of Hydraulic rear cover below driver seat (H, fig. 4.14 a and 4.14 b).

Use: While implements transportation, lift the implement at desired height and then fully tighten the response valve to close it.



Response Valve should always be closed during implements transportation.

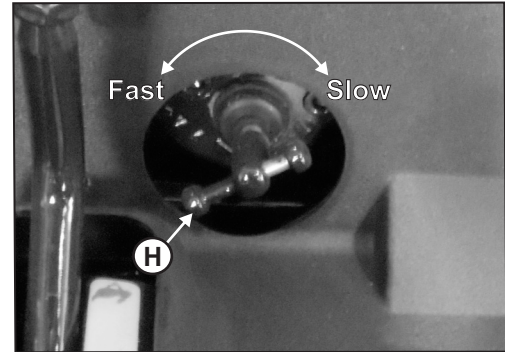


Fig. 4.14a Manual Transmission

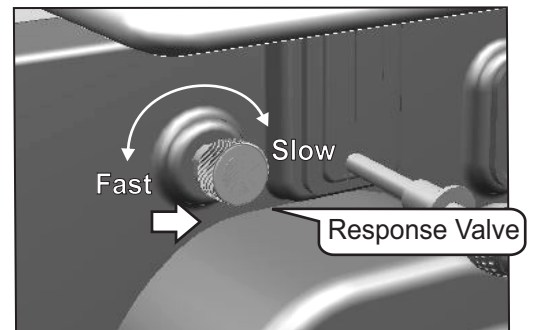


Fig. 4.14b HST

Hi-Low Lever

This lever (I, fig. 4.15 a and 4.15 b) is used to change the low speed into high speed or vice versa when tractor is moving. It is used in combination with the main shift lever to set the tractors travel speed.

Speed Selection:

1. Neutral Position: Lever in the middle notch.
2. High Speed: Move the lever out of the notch and shift the lever towards the back of the tractor.
3. Slow Speed: Move the lever out of notch and shift the lever towards the front of the tractor.

Note: Select the speed after starting tractor as required.

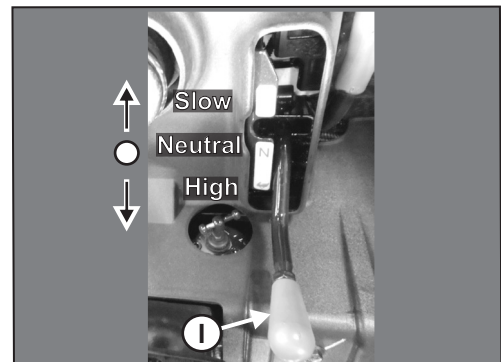


Fig. 4.15a Manual Transmission

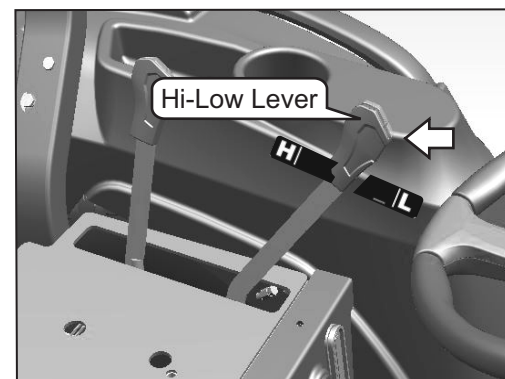


Fig. 4.15 b HST

OPERATION

Rear Remote - Manual Transmission

The tractor is equipped with optional single acting (1SA) or double acting (1DA) rear remote. The operation is with a lever (K, fig. 4.16) located beneath LHS of driver seat. Quick Release Coupler (QRC) is fitted at rear side of tractor.



Use cylinder implements only according to rear remote fitted in your tractor.

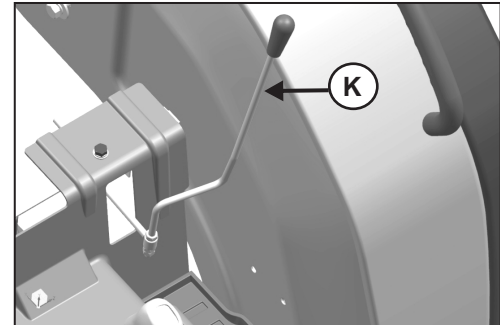


Fig. 4.16

Service Brakes- Manual Transmission

The main brakes are operated by means of two pedals (L, fig. 4.17a), one for each rear wheel. Braking on one side assists steering in tight maneuvers. By locking rear wheel on the inside of curve, you can virtually turn the tractor around on its own axis. For simultaneous braking during normal use and for on road use, simply lock the two pedals together with the special brake coupling lock.



Always keep the brake pedals coupled for on-road driving to ensure simultaneous braking on both rear wheels. Never use the brakes independently when driving on public roads.



If you ever notice the brakes becoming less effective, identify the cause immediately and repair. When working on slopes avoid using the brakes as much as possible and select a lower gear in order to use engine braking.

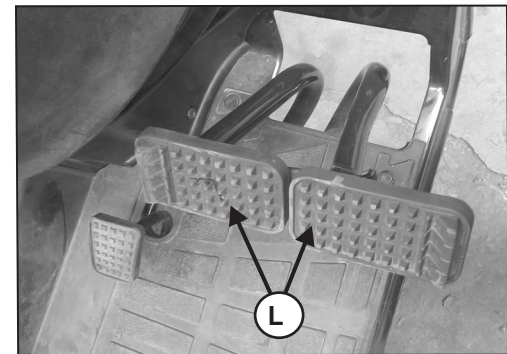


Fig. 4.17a Manual Transmission

Service Brake - HST (Fig. 4.17b)

The service brake pedal located to left hand side of the platform.

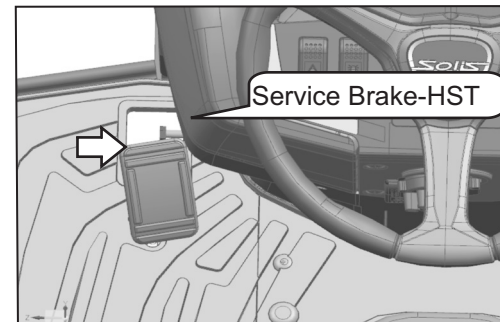


Fig. 4.17b HST

Parking Brake- Manual Transmission

The Parking brake is located above left side fender and engaged by the parking brake lever which acts on the brake discs by means of a mechanical control.

Parking brake engagement:

- Pull the parking brake lever upward to operate the parking Brake.

Parking brake release:

- Press the button, push the parking brake lever downward and release the button.

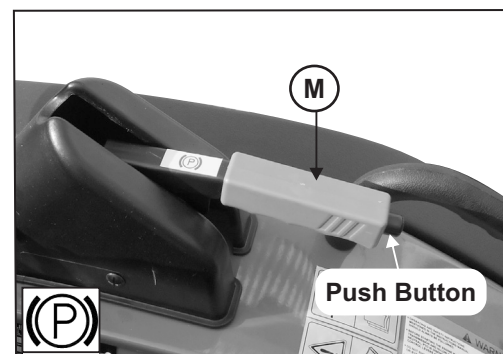


Fig. 4.18a

OPERATION

Parking Brake- HST

The Parking brake is located below operator's seat and engaged by the parking brake lever which acts on the brake discs by means of a mechanical control.

Parking brake engagement

- Pull the parking brake lever upward to operate the parking Brake (fig. 4.18 b).

Parking brake disengagement

- Press sleeve (A, fig. 4.18 b) in forward direction, push the parking brake lever downward and release the sleeve 'A'.

Always engage the parking brake when the tractor is used for work at a standstill, even if only for brief periods of time.

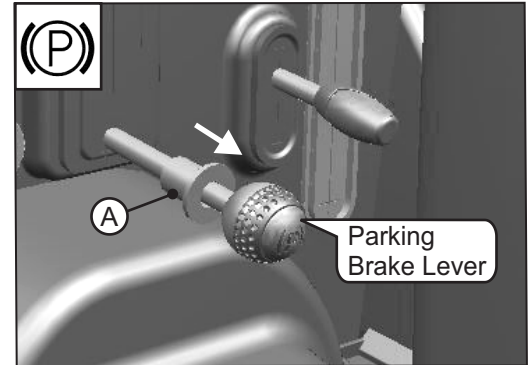


Fig. 4.18 b

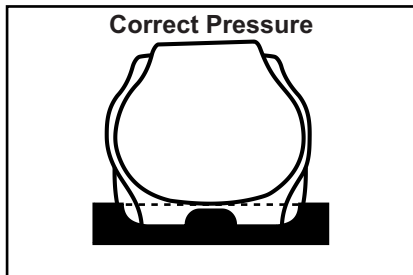


Always engage the hand brake when the tractor is used for work at a standstill, even if only for brief periods of time.

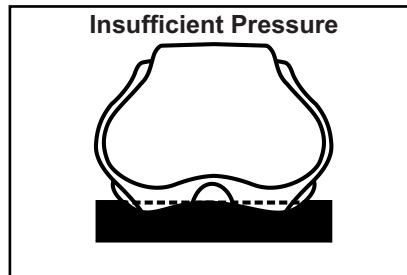
IMPORTANT : Driving the tractor with the parking brake partially engaged will cause damage to internal brake components.

Wheels and Tires

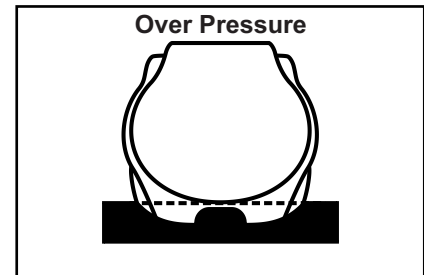
Recommended Tire Pressure : Front: 20~22 P.S.I / Rear: 14~16 P.S.I



- Good adherence by dirt grousers.
- Good cleaning of the tread



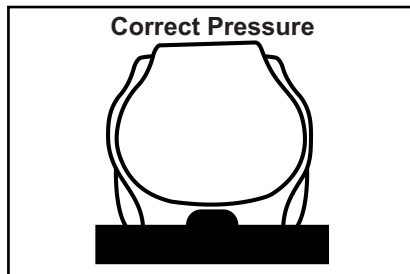
- Reduce adherence through lack of Tire grip.
- Deterioration of Tire casing by traction forces.



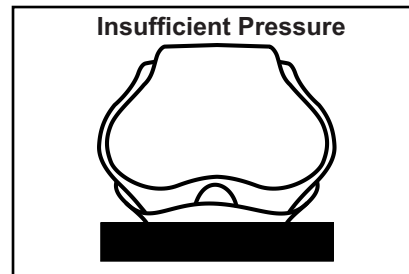
- Reduce grip due to lack of cleaning
- Deterioration due to compacted ground.

On Haulage Operations

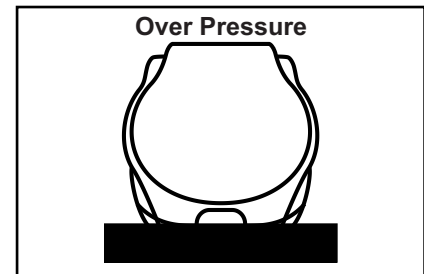
Recommended Tire Pressure: Front: - 22~24 P.S.I / Rear 16~18 P.S.I



- Resistance to Wear



- Reduce adherence through lack of Tire grip.
- Deterioration of Tire casing by traction forces.





- Reduce grip due to lack of cleaning
- Deterioration due to compacted ground.



OPERATION

Speed Chart- Manual Transmission

Following listed gear speeds (km/h) are with standard Tires at rated engine rpm:

| Range | Gear | Speed in Kph (mph) with Turf Tires 33x15.5-16.5 LG306 BKT | Speed in Kph (mph) with Agri Tires 8.30x20 TR 171 BKT | Speed in Kph (mph) with Industrial Tires 33x15.5-16.5 SPHD BKT |
|---|------|---|---|--|
|  SLOW | L1 | 1.38 | 1.54 | 1.43 |
| | L2 | 2.00 | 2.24 | 2.07 |
| | L3 | 2.84 | 3.18 | 2.94 |
| | LR | 1.76 | 1.97 | 1.82 |
|  FAST | H1 | 6.24 | 6.99 | 6.46 |
| | H2 | 9.08 | 10.17 | 9.40 |
| | H3 | 12.88 | 14.43 | 13.33 |
| | RH | 7.98 | 8.94 | 8.26 |

Speed Chart- HST

| Range | Direction | Rear Tire Size | | | | | | |
|--|-----------|-------------------------|--------------------------------|------------------------------------|--------------------------|---------------------------|-----------------------|---------------------------------|
| | | 8.3-20 6PR BKT TR171 TT | 33X15.5-16.5 10PR BKT LG306 TL | 33X15.5-16.5 12PR BKT SKID P HD TL | 8.3-24 FARM 2000 8PR BKT | TURF TYRE 13.6X16 (LG306) | 280/70 R16 Galaxy Pro | 280 70 R 18 A-370 114A8 111B TL |
|  SLOW | Forward | 8.11 | 7.24 | 7.49 | 8.79 | 8.10 | 6.91 | 7.38 |
| | Reverse | 8.11 | 7.24 | 7.49 | 8.79 | 8.10 | 6.91 | 7.38 |
|  FAST | Forward | 18.22 | 16.27 | 16.84 | 19.77 | 18.21 | 15.54 | 16.59 |
| | Reverse | 18.22 | 16.27 | 16.84 | 19.77 | 18.21 | 15.54 | 16.59 |

OPERATION



Wheels and Tires

Tires Play vital role in transportation and agriculture operations. It is the most important factor in the efficient performance of tractor it should be used only as per company recommendation. Here we will discuss only pneumatic Tires.

On any Tire there is some marking which represents its size & capacity e.g. Tire marking is 8.3x20, 4 ply rating i.e. 8.3 inch is the section width, 20 inch is the bead diameter. Ply rating doesn't show that the same No. of plies are inserted in Tire. It is only comparative measure of the load carrying capacity (L.C.C) of Tire. As more ply rating shows more L.C.C. at the same time as L.C.C. increase the shocks absorption capacity decreases.

In general, tractor is considered for two types of work:

- Work on soft soil where maximum adhesion is needed. In this case there will be use of lowest pressure compatible with the load carried.
- Work on hard ground and roads, towing etc. In this case there will be use of maximum pressure.

Load Carrying Capacity

| Tyre Combination | Axle | Tyre Dimensions including load capacity index and speed category symbol | Tyre Load rating per tyre [kg] | Maximum permissible mass per axle [kg] | Maximum permissible mass of the vehicle [kg] | Max. permissible vertical load on coupling point [kg] |
|------------------|-------|---|--------------------------------|--|--|---|
| 1 | Front | 6.00-12 & 76 A6 | 400 | 800 | 2220 | 248 |
| | Rear | 8.3-20 6PR & 96 A6 | 710 | 1420 | | |
| 2 | Front | 7-14 8 PR & 72 A6 | 685 | 1370 | 3240 | |
| | Rear | 8.3-24 & FARM 2000 8PR | 935 | 1870 | | |
| 3 | Front | 6.5/80-12 & 80 A6 | 650 | 1300 | 3660 | |
| | Rear | 280/70 R18 & 114 A8 | 1180 | 2360 | | |
| 4 | Front | 23x8.5-12 & LG 306 TL | 960 | 1920 | 5220 | |
| | Rear | 33x15.5-16.5 & LG 306 TL | 1650 | 3300 | | |
| 5 | Front | 25x8.50-14 (LG306) | 750 | 1500 | 3400 | |
| | Rear | 13.6x6 (LG306) | 950 | 1900 | | |
| 6 | Front | 220/55 R12 Galaxy Pro (82A8/82B) | 475 | 950 | 3190 | |
| | Rear | 280/70 R16 Galaxy Pro (112A8/112B) | 1120 | 2240 | | |
| 7 | Front | 23x8.5-12 12 PR SPHD | 840 | 1680 | 5580 | |
| | Rear | 33x15.5-16.5 12 PR SPHD | 1950 | 3900 | | |

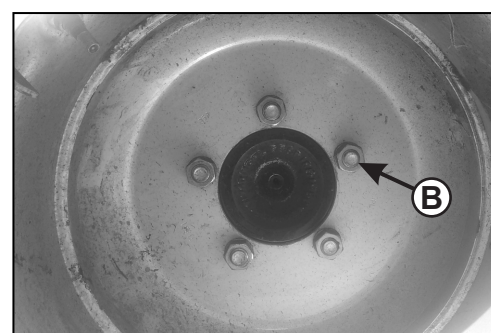
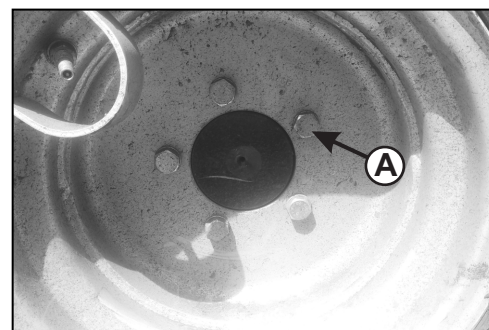
OPERATION

Check Wheel Nut Bolt

Check wheel nuts of the front (A) and rear wheels (B).
Torque it to following specification:

- (A) Front wheel flange bolts
- (B) Rear wheel flange bolts

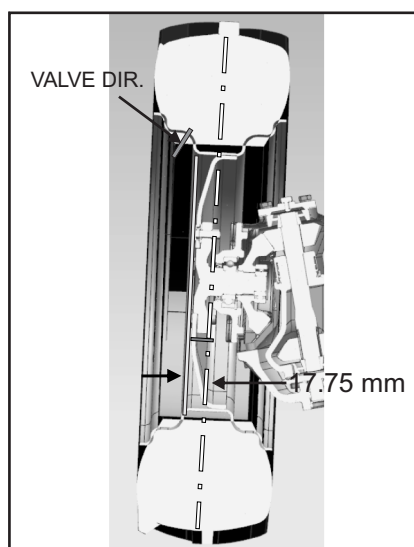
Recommended Torque for Rear wheel: 130 Nm [103 lbf-ft]
Recommended Torque for Front wheel: 72 Nm [53 lbf-ft]



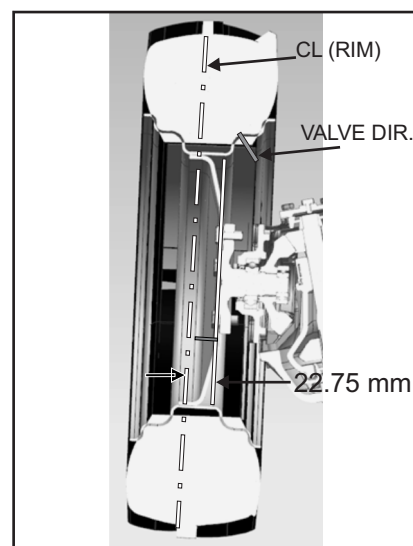
TREAD SETTING

SOLIS - 24

Front Tire Size-6.00x12, Rim Size-4x12 (Agri)



SETTING 1



SETTING 2

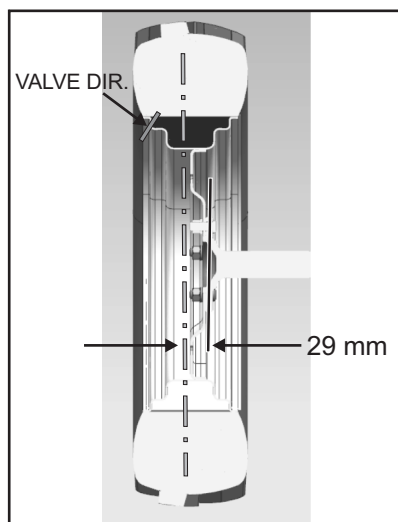
| SETTING | 1 | 2 |
|---------------------------|-------------------|-----------------|
| RIM OFFSET mm(Inches) | -17.75 (-0.69) | 22.75 (0.89) |
| TRACK WIDTH mm(Inches) | 894 (35.19) | 975 (38.38) |

NOTE : TRACK WIDTH MEASURED FROM CENTER TO CENTER OF RIM (FRONT & REAR)

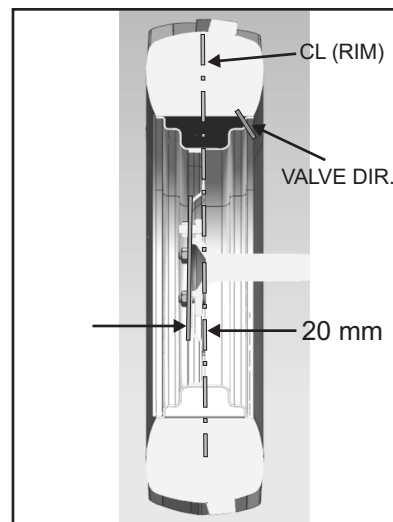
OPERATION

SOLIS - 24EPA

Rear Tire Size - 8.30x20, RIM SIZE - W 7X20 (Agri)



SETTING 1



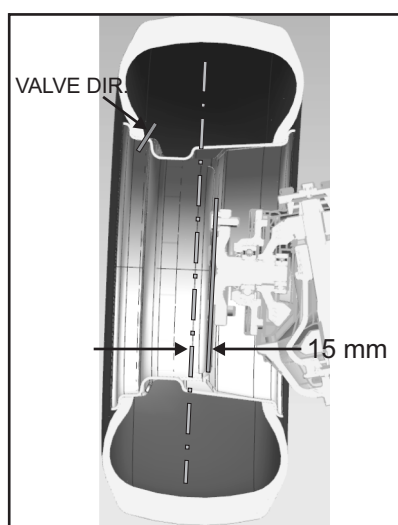
SETTING 2

| SETTING | 1 | 2 |
|---------------------------|----------------|----------------|
| RIM OFFSET mm(Inches) | 29 (1.14) | -20 (-0.78) |
| TRACK WIDTH mm(Inches) | 825 (32.48) | 727 (28.62) |

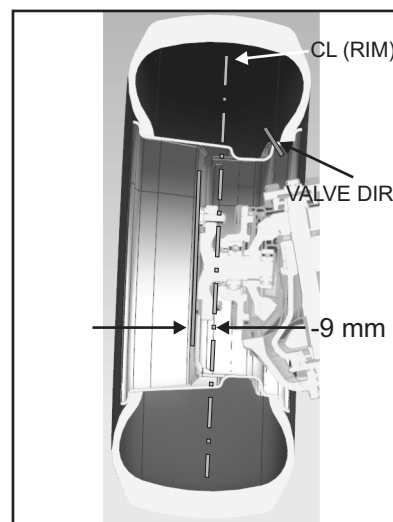
NOTE : TRACK WIDTH MEASURED FROM CENTER TO CENTER OF RIM (FRONT & REAR)

SOLIS - 24

Front Tire Size - 23x8.5-12, RIM SIZE - 7.0X12 (Turf/Industrial)



SETTING 1



SETTING 2

2nd setting Not feasible

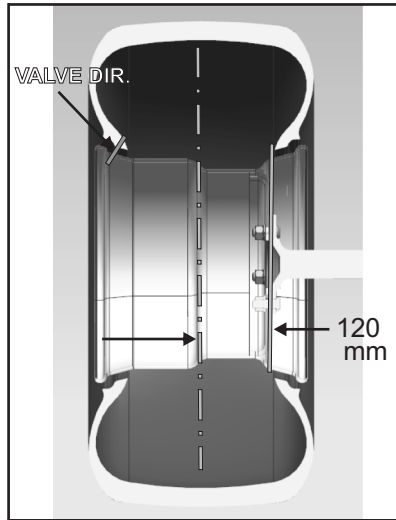
OPERATION

| SETTING | 1 | 2 |
|---------------------------|----------------|----------------|
| RIM OFFSET mm(Inches) | 15 (0.59) | -9 (-0.35) |
| TRACK WIDTH mm(Inches) | 950 (37.40) | 902 (35.51) |

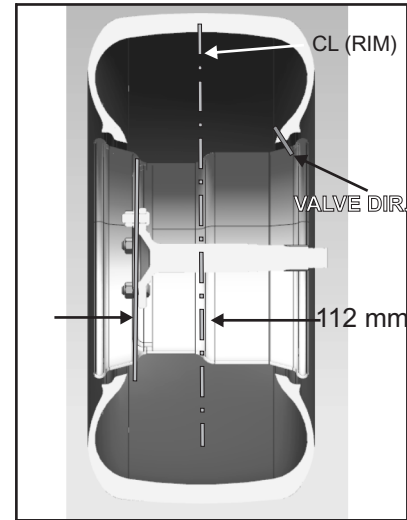
NOTE : TRACK WIDTH MEASURED FROM CENTER TO CENTER OF RIM (FRONT & REAR)

SOLIS - 24 EPA

Rear Tire Size - 33x15.5-16.5, RIM SIZE - 16.5x12.0 (Turf/Industrial)



SETTING 1



SETTING 2

2nd setting Not feasible

| SETTING | 1 | 2 |
|---------------------------|-----------------|-----------------|
| RIM OFFSET mm(Inches) | 120 (4.72) | -112 (-4.40) |
| TRACK WIDTH mm(Inches) | 1010 (39.76) | 547 (21.53) |

NOTE : TRACK WIDTH MEASURED FROM CENTER TO CENTER OF RIM (FRONT & REAR)

OPERATION

Three Point Linkage

Three-point linkage is used to mount the implement, which is fully mounted, or semi-mounted and used for different field operation. Three-point linkage is controlled by hydraulic lever. In this two lower link are available, of which one side of the lower link is attached with differential housing and other is used to hitch the lower pin of the implement. Lift rods are mounted on lift arm that is operated through rockshaft. Loose side of Top link is used for attaching upper hitch pin of implement. Top link is adjustable for proper setting of implement and for easy connection of implements.

Adjustable Lift Rods (Fig. 4.19b)

The lift rods can be adjusted mechanically or hydraulically, depending on the lifting, to make the lower links level and lined up with each other. This will depend on the type of implement being used and the work to be done.

Top Link (Fig. 4.19c)

For length adjustment of top link, fix the top link other end and turn the lever for increasing or decreasing the length. During field operation lock the tube to avoid unnecessary turning.

Lower Links (Fig. 4.19d)

Lower Links are provided for hitching the implement.

Attaching Implement to Three Point Linkage

Position the tractor to align corresponding linkage with the hitch points of implements. Keep the implement on hard & leveled surface and attach as per given below instructions :

- First attach with Left lower link and Right Lower Link
- Then at last attach with Top Link



Stay clear from the area of three point linkages while attachment and detachment of implements.

NOTE: Maximum lifting capacity of three point linkage at 24" from lower link ends, is 300 kgf.

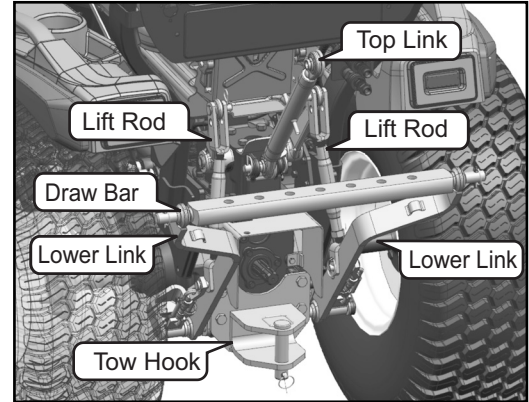


Fig. 4.19a

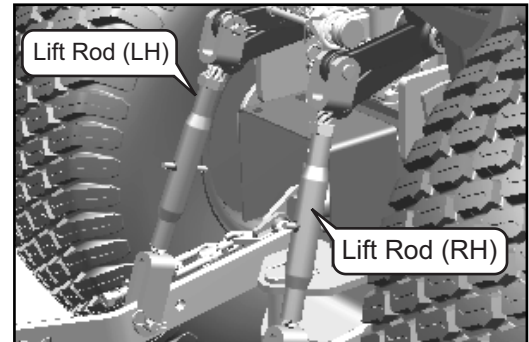


Fig. 4.19b

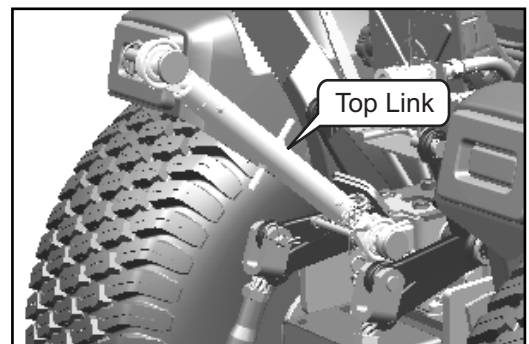


Fig. 4.19c

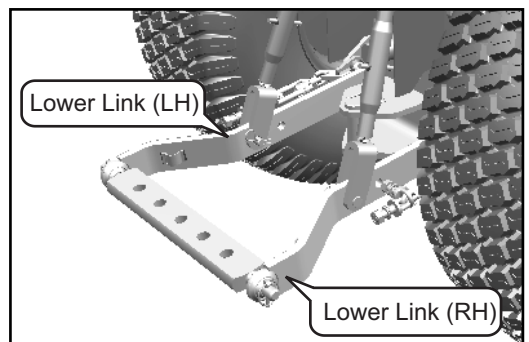


Fig. 4.19d

OPERATION

Ballasting of Tire

Proper ballasting is an important factor in tractor performance. For better performance of tractor, the weight of tractor can be decreased as per requirement. Maximum productivity can be achieved only if tractor weight is appropriate for the job. Ballast is required for traction and stability. The tractor is equipped with detachable front toe hook. Following factors determine amount of ballast.

- Soil surface loose or firm
- Type of implement
- Travel speed and tractor power output partial or full load.

By default, tractor is equipped with 2 Front Weights of 15 Kgs each i.e. 30 Kgs [66.14 pounds].

Hydraulic System

In your tractor, live hydraulic system is provided in which hydraulic pump is driven by engine and mounted at cover of engine. As the engine runs, the hydraulic pump also starts working and the oil is transferred from pump to lift via priority valve (located at LH side of Engine). Transmission lubrication oil is used as hydraulic oil.

Position Control Lever (1), fig. 4.21 a and 4.21b

This orange color lever is mounted on R.H.S. of driver seat which enables raising or lowering the implement/lift.

Priority Valve

Priority valve gets oil input from hydraulic system and serves as a unit to provide oil to:

1. Steering Mechanism
2. Hydraulic Lift
3. Rear remote unit

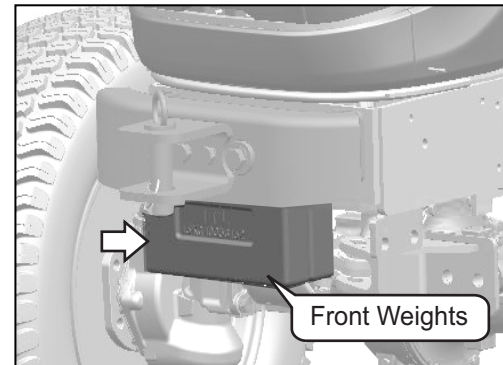


Fig. 4.20

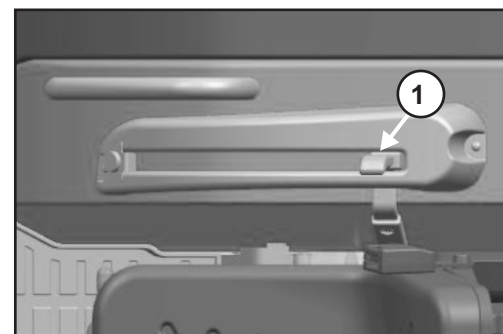


Fig. 4.21 a Manual Transmission

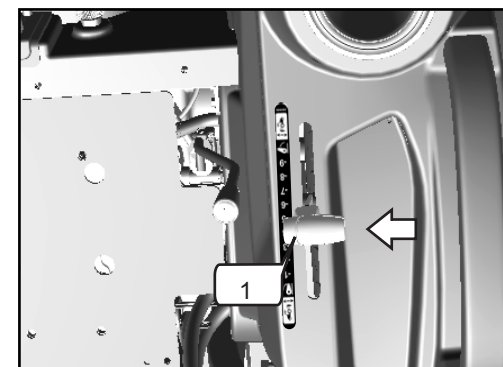


Fig. 4.21b HST

OPERATION

Safety Frame: Roll Over Protection Structure (ROPS)

A Safety frame and seat belt is fitted as standard equipment to the platform tractor at the time of factory assembly. If the safety frame was deleted by the original purchaser or has been removed, it is recommended that you equip your tractor with a Safety frame and a seat belt. Safety frames are effective in reducing injuries during overturn accidents.



WARNING: A tractor overturning without safety frame can result in serious injury or death.

Operation:

- Before using the tractor ensure that the safety frame is not damaged, that it is securely fastened to the tractor.
- If the safety frame has been removed from the tractor, it must be refitted or erected immediately using the proper hardware and applying the recommended torque value.
- DO NOT ATTACH chains, ropes or cables to the safety frame for pulling purposes; this will cause the tractor to tip backwards. Always pull from the tractor drawbar.
- Always wear your seat belt-adjusted snugly except when the safety frame has been removed.
- Check the seat belt for damage. A damaged seat belt must be replaced, Fig. 4.22b.

IMPORTANT: DO NOT WELD, DRILL, BEND OR STRAIGHTEN THE SAFETY FRAME.

Normal Operating Position - Manual Transmission

For normal operation, including transport, always use the ROPS in the upright position with a fastened seat belt for full rollover protection (fig. 4.22a).

Operating Foldable ROPS- Manual Transmission

- Loosen the two Hex screw (1), Fig. 4.22c
- Remove the two snap rings (2), Fig. 4.22d
- Remove the two Pin (3), 4.22d



CAUTION To avoid personal injury hold the ROPS tightly with both hands and fold the ROPS slowly and carefully.



CAUTION When raising or folding the ROPS, apply parking brake, stop the engine and remove the key. Always perform function from a stable position at the rear of tractor. Fold the ROPS down only when absolutely necessary and fold it up and lock it again as soon as possible.

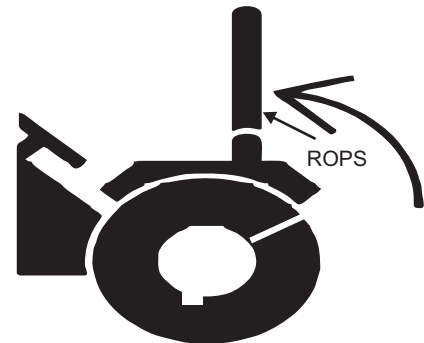


Fig. 4.22a



Fig. 4.22b



Fig. 4.22c Manual Transmission

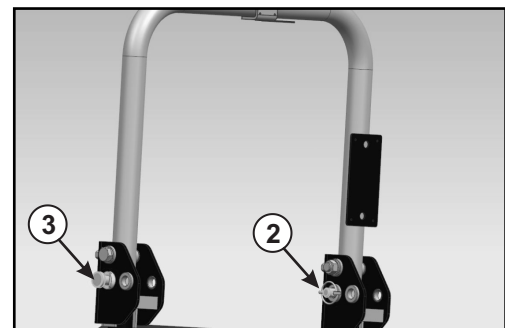


Fig. 4.22d Manual Transmission

OPERATION

Normal Operating Position-HST Variant

For normal operation, including transport, always use the ROPS in the upright position with a fastened seat belt for full rollover protection, refer Figure 4.23a

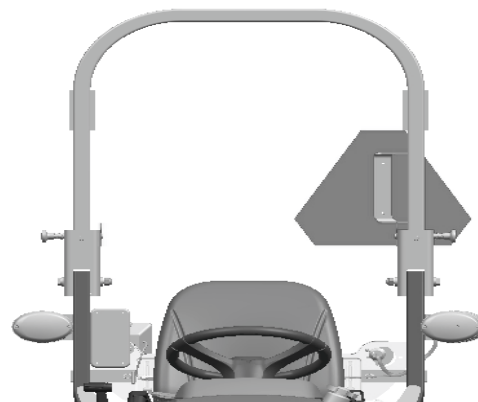


Fig. 4.23a HST Variant

Operating Foldable ROPS- HST Variant (Fig.4.23b)

Following procedure is folding the ROPS

Remove R-Pin (1) from pin and remove pin (2)

Turn the ROPS until rest on stopper

Install the pin with the R-Pin on down position.

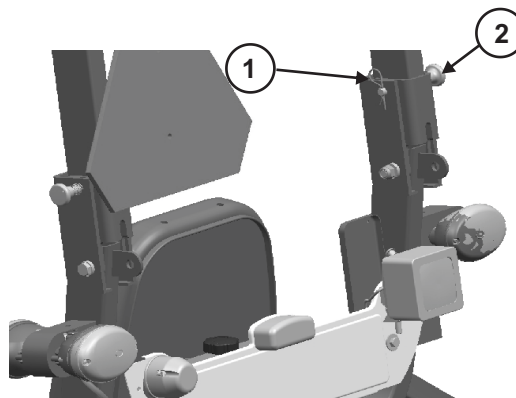


Fig. 4.23b HST Variant

MAINTENANCE



Maintenance Schedule

Observe the following maintenance schedule. This maintenance schedule is applied to tractors which are operated under normal conditions. When your tractor is frequently operated in muddy places, greasing must be carried out more frequently and when the tractor is often operated in dusty places, clean the air cleaner element and fuel filter more frequently. Extra servicing must be carried out according to particular situation.

| Parameters | 50 Hours | Every 250 Hours | Every 500 Hours | Every 750 Hours | Every 1000 Hours | Every 1250 Hours | Every 1500 Hours |
|----------------------------------|---|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| General | | | | | | | |
| Washing | W | W | W | W | W | W | W |
| Greasing | G | G | G | G | G | G | G |
| Re-tighten All Fasteners | CT | CT | CT | CT | CT | CT | CT |
| Rear View Mirror Holder | CT | CT | CT | CT | CT | CT | CT |
| Engine | | | | | | | |
| Engine Oil | R | R | R | R | R | R | R |
| Engine Oil Filter | R | R | R | R | R | R | R |
| Tappet Clearance | - | - | CA | - | CA | - | CA |
| Main Fuel Filter* | R | R | R | R | R | R | R |
| Fan Belt Tension | CT | CT | CT | CT | CT | CT | CT |
| Radiator Coolant Level | CP | CP | CP | CP | CP | CP | CP |
| Coolant Change/Radiator Flushing | At every 1000 hours or 2 Years, whichever is earlier | | | | | | |
| Air Cleaner Element* | CL | CL | CL | CL | R | CL | CL |
| Fuel Injector | Nozzle tip cleaning at every 1500 hours or whenever required Fuel injection nozzle at every 3000 hours or whenever required. | | | | | | |
| Glow Plugs | - | - | C | - | C | - | C |
| Fuel Tank Cleaning | At every 500 hours or 1 Year, whichever is earlier | | | | | | |
| Cylinder head Torque | At every 1000 hours | | | | | | |
| Fuel Pre-Filter* | R | R | R | R | R | R | R |
| EGR Valve* | Replace At every 3000 hours | | | | | | |
| Crankcase breather system* | Check At every 1500 hours | | | | | | |
| Turbocharger inspection* | Check At every 3000 hours | | | | | | |
| DOC & POC* | Check At every 3000 hours | | | | | | |
| Exhaust manifold* | Check At every 3000 hours | | | | | | |

MAINTENANCE

| Parameters | 50 Hours | Every 250 Hours | Every 500 Hours | Every 750 Hours | Every 1000 Hours | Every 1250 Hours | Every 1500 Hours |
|-------------------------------------|----------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| Clutch- Manual Transmission | | | | | | | |
| Clutch Pedal Free Play | CA | CA | CA | CA | CA | CA | CA |
| Transmission / Hydraulic | | | | | | | |
| Manual Transmission Oil | C | C | C | C | R | C | C |
| Transmission Breather Assy | CL | CL | CL | CL | CL | CL | CL |
| Hydraulic Oil Filter (Suction)-HST | R | R | R | R | R | R | R |
| Hydraulic Oil Filter (Delivery)-HST | R | R | R | R | R | R | R |
| Transmission Oil- HST | R | R | R | R | R | R | R |

Notes:

- 1) The Items which is * marked are registered as the Emission related critical parts by ITL and hence contact your authorized ITL dealer/Distributor only.
- 2) These procedures are considered normal maintenance schedule and are performed at the owner's expense.
- 3) Cylinder Head inlet/exhaust valve tappet adjustment and tightening to be performed at Dealer/Distributor End only.
- 4) Cyl. Head Torqueing to be performed at Dealer/Distributor End only after every 1000hrs.
- 5) All hoses replace after every 2000 hrs of running if required. 6) This service schedule will be followed till Engine/Vehicle useful life.

MAINTENANCE

| Parameters | 50 hrs | Every 250 hrs | Every 500 hrs | Every 750 hrs | Every 1000 hrs | Every 1250 hrs | Every 1500 hrs |
|-------------------------------------|--------|---------------|---------------|---------------|----------------|----------------|----------------|
| Operation of Hydraulic Lift | C | C | C | C | C | C | C |
| Hydraulic Oil Strainer | CL | CL | CL | R | CL | CL | R |
| Brakes | | | | | | | |
| Operation of Brakes | C | C | C | C | C | C | C |
| Brake Pedal Free Play | CA | CA | CA | CA | CA | CA | CA |
| Steering | | | | | | | |
| Steering Operation | C | C | C | C | C | C | C |
| Front Axle 4x4 | | | | | | | |
| Front Axle Differential Oil | R | C | R | C | R | C | R |
| Breather Assy | CL | CL | CL | CL | CL | CL | CL |
| Front Axle Pivot | C | C | CA | C | CA | C | CA |
| Wheels and Tires | | | | | | | |
| Front Wheel Bolts | CT | CT | CT | CT | CT | CT | CT |
| Rear Wheel Nuts | CT | CT | CT | CT | CT | CT | CT |
| Tire Inflation Pressure | CA | CA | CA | CA | CA | CA | CA |
| Battery | | | | | | | |
| Battery Electrolyte Level | C | C | C | C | C | C | C |
| Battery Terminals | CL | CL | CL | CL | CL | CL | CL |
| Electrical | | | | | | | |
| Functioning of All Gauges & Meters | C | C | C | C | C | C | C |
| Functioning of Alternator & Starter | C | C | C | C | C | C | C |



Safety Starter Switch is to be replaced after every 2000 hours or 4 years, whichever is earlier.

R-Replace, **CP**-Check & Fill, **CT**-Check & Tighten, **C**-Check, **CR**-Clean & Replace, **CA**-Check & Adjust, **CL**-Clean
Beyond 1500 hours, repeat the cycle every 250 hours.

IMPORTANT:

- Engine Oil Grade should be selected as per operating Temperature condition.
- Antifreeze should be used in subzero ambient temperature.
- Clean Air Cleaner system as and when required as per field operating conditions.
- Clutch pedal play should be adjusted as per field operating conditions.

MAINTENANCE

Fuel Tank Filling



Comply with the following instructions when working with the diesel fuel:

1. Do not smoke while filling the fuel tank because diesel is flammable liquid and catch fire easily.
2. Mixtures of diesel fuel and alcohol are not approved since the resulting lubrication of the fuel injection system is insufficient.
3. Clean the area around the filler neck where the fuel is poured.
4. Fill the tank at the end of the day to prevent the formation of overnight condensation.
5. Never remove the plug or fuel the tractor while the engine is running. Keep control of the pump nozzle whilst the tank is being filled.
6. The tank must not be completely filled. Allow space for an increase in volume. If the original fuel cap is lost, it must be replaced with an original spare which must be fully tightened.
7. Dry up any fuel spill immediately.

Fuel Requirements

It is important to use good quality fuel for the long life & good performance of the engine. The fuels must be clean, well refined and non-corrosive for the fuel system components. Make sure that you use fuel of a known quality and reliable origin.

Fueling

Before you fuel the tractor, clean the zone around the filler neck to prevent foreign bodies from entering the tank. After fuelling, tighten the plug properly.

Fuel Storage

Take all the necessary precautions to ensure that stored fuel does not become polluted with dirt, water or other substances.

Store fuel in cans. Do not store it in galvanized cans as the galvanization treatment would react with the fuel and form compounds that would spoil the injection pump and injectors.

- Store fuel cans away from direct sunlight and slightly tilted, so that any sediment inside is eliminated through the outlet tube.
- To make sludge and water condensation easier to remove; there should be a discharge plug (c), in the lowest point, on the opposite side to the drain tube.
- If the fuel is not filtered from the storage can, use a funnel with the fine gauge mesh over the fuel tank neck when fueling.
- Plan your fuel purchases so that summer fuels are not kept for too long and used in the winter.

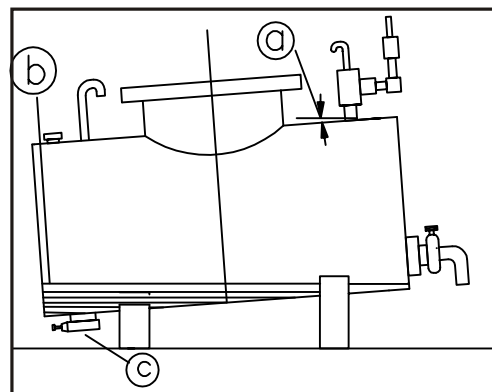


Fig. 5.2a

Setting up a tank for fuel storage and decanting.

- a. Slope 25%.
- b. Condensation water.
- c. Sludge drain plug.

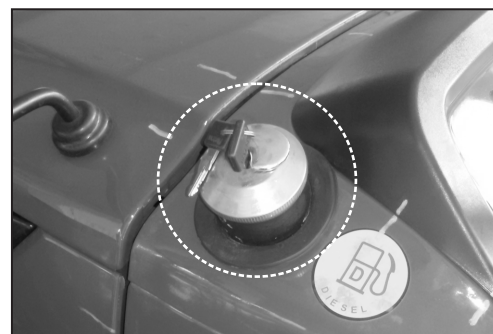


Fig. 5.2b: Fuel Tank Cap

MAINTENANCE

Replacement of Fuel Filter

1. Shut down petcock.
2. Remove the filter by rotating it in anti-clockwise direction by hand or special wrench.
3. Take new filter and check it for proper seating of gasket.
4. Apply clean engine oil to gasket on the new fuel filter.
5. Install fuel filter, when the filter gasket contacts the mounting surface of filter, tighten the filter and ensure that there is no leakage.

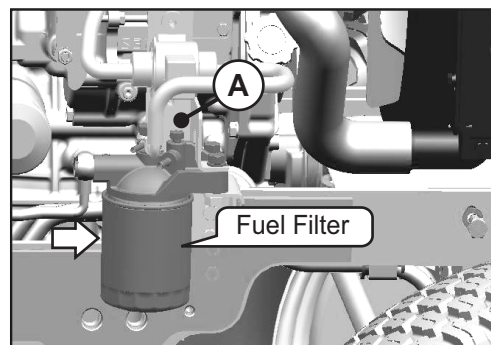


Fig. 5.3a

Air Bleeding of Fuel System

After changing the fuel filter, air must be removed from the system:

1. Switch ON the ignition key to start the electric pump until completion of air bleeding process.
2. Loosen the vent plug (A, fig. 5.3a) at top of fuel filter body.
3. Tighten the vent plug (A, fig. 5.3a) after bubble free fuel flows from the air vent plug hole.
4. Loosen the vent plug (B, fig. 5.3b) of FIP and allow the air to flow out from the system.
5. Tighten the vent plug (B, fig. 5.3b) after bubble free fuel flows from the return valve.

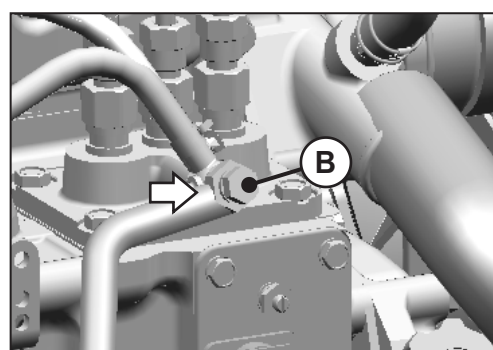


Fig. 5.3b

Radiator

Checking Coolant Level in Radiator

Slowly open the radiator cap (1, fig. 5.4a) up to the safety catch (about 1/3 turn). Wait to allow the steam to escape. Continue opening the cap, press it down firmly to release the safety catch. The level of coolant should just touch the tab located in the filling spout.

If the level has dropped, check the entire cooling system for leakage (radiator, hoses etc.) If there is no leakage, Top up the coolant.

Fill the reserve tank (2, fig. 5.4a) with coolant up to the FULL line mark for coolant Top up.

Coolant is a mixture of water and anti rusting / anti freezing agent in a recommended ratio.

In sub zero temperature climate conditions use Glysantin G40 antifreeze agent along with water in following ratio:

| Temperature Range °C [°F] | 0 to -3 [32 to 26.6] | -3 to -8 [26.6 to 17.6] | -8 to -16 [17.6 to 3.2] | -16 to -25 [3.2 to -13] | -25 to -37 [-13 to -34.6] | -37 to -55 [-34.6 to -67] |
|---------------------------|-------------------------|----------------------------|----------------------------|----------------------------|------------------------------|------------------------------|
| Antifreeze (%) | 10 | 20 | 30 | 40 | 50 | 60 |

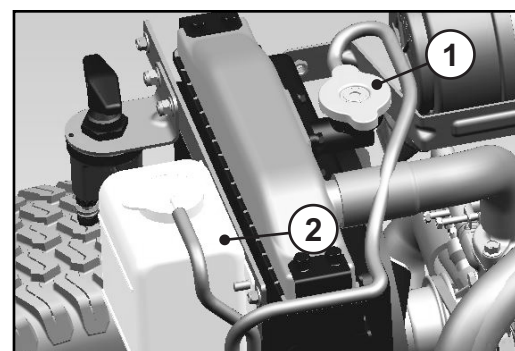


Fig. 5.4a

MAINTENANCE

Checking Engine Oil Level

Before checking the oil level be ensure that tractor is parked on leveled ground. Stop the engine and wait for some time, as all oil should return to oil sump.

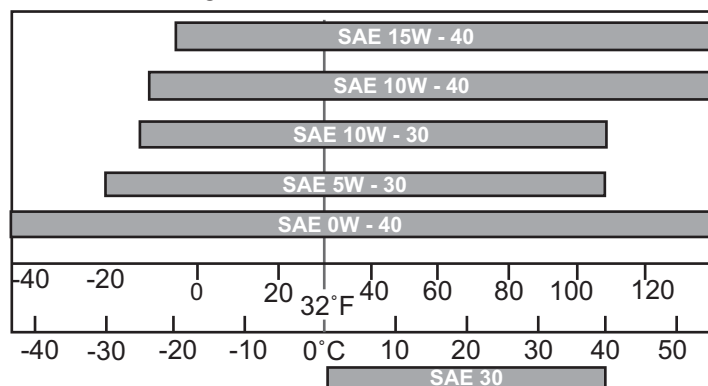
Check the oil level by unscrewing dipstick (located at RHS of the Engine). Top up the oil level if the level is below the minimum level mark. Do not over fill than maximum level mark. Oil level should be between maximum and minimum marks (see fig. 5.5a).

Recommended grade & oil capacity of engine oil is listed at the end of this chapter.

Replacement of Oil Filter & Engine Oil

Changing Oil Filter:

1. Stop your tractor to the side of road on leveled surface and drain the engine oil in an oil pan after removing the drain plug.
2. Remove the oil filter by rotating it in anti-clockwise direction by hand or with the filter wrench.
3. Take new oil filter and check it for proper seating of gasket.
4. Apply clean engine oil to gasket on the new oil filter.
5. Install oil filter. When the filter gasket contacts the mounting surface of filter, tighten the new oil filter.



Refilling Engine Oil :

1. Re-install the Drain plug and remove the oil filler cap (Fig. 5.5c).
2. Fill the engine oil with the specified engine oil to the specified level to sump capacity from oil filler cap.
3. Insert into the oil level gauge guide, then pull out the gauge again.
4. Ensure that oil level should be between the MAX. & MIN. marks on the dipstick. If less, then pour the oil to bring it to specified level.
5. Install the oil filler cap after a refill.
6. Check the oil pan and other parts for oil leakage.
7. Start the engine, allow it to run idle and don't race it immediately.

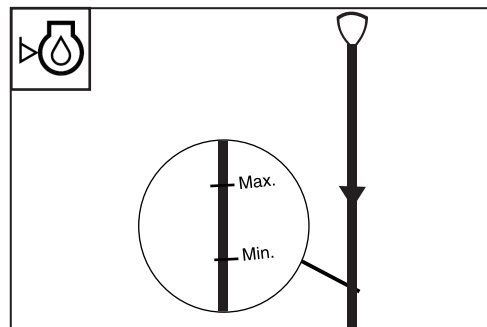


Fig. 5.5a: Dipstick marks

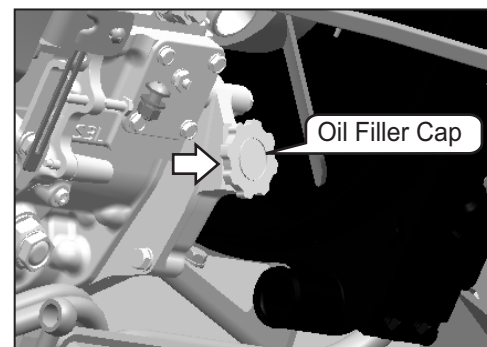
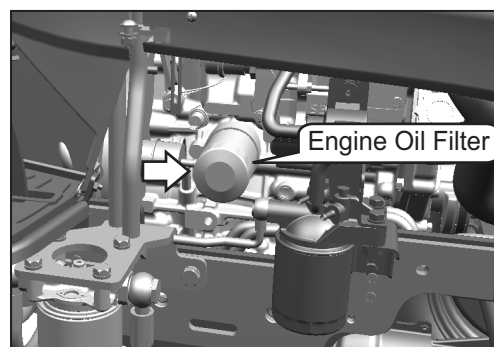


Fig. 5.5c

MAINTENANCE

Radiator Draining & Flushing (When cold)

1. Remove the radiator cap and drain plug (fig. 5.6a).
2. Let the coolant drain out. Close petcock and plugs. Flush the cooling system with water / Cleaning Solution for 15 minutes, then drain the cleaning solution.
3. Refit the drain plug and refill the coolant (Mixture of water, anti scaling agent, antifreeze).
4. Run the engine with radiator cap open and accelerate 2-3 times and Top up coolant if required.
5. Refit the radiator cap and ensure tightness all the connections for any leakage.

Note: Coolant can be maintained in the circuit for 2 years or 1000 hours of operation, whichever is earlier. After this period mixture must be changed.

Radiator Fins Cleaning (Fig. 5.6b)

1. Check Radiator Fins for holes or cracks for blockage.
2. To clean the radiator blow compressed air from engine side to outside.

Radiator Cap (Fig. 5.6c)

Cooling system is closed pressurized system so don't operate the tractor without radiator cap or cap with damaged rubber seals/defective release valve to avoid water loss and engine overheating.

Use genuine radiator cap only.

Inspection of Hoses

Check/Replace Hoses

- Check hoses regularly – on every service/before cranking tractor after long idle standing– for leaks, kinks, cuts, tears, rubbing, bulges, corrosion, exposed fabric and other signs of wear and damage.
- Replace worn or damaged hoses immediately.
- Replacement hoses are available from your dealer.



NOTE: Refer Maintenance Schedule for Inspection interval of Hoses.

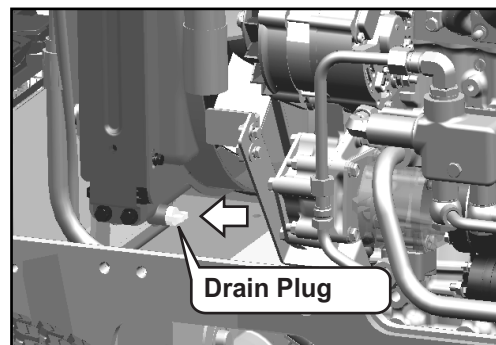


Fig. 5.6a

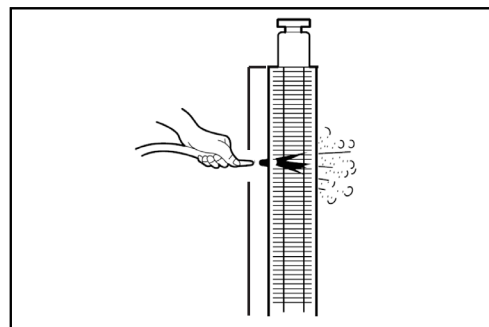


Fig. 5.6b

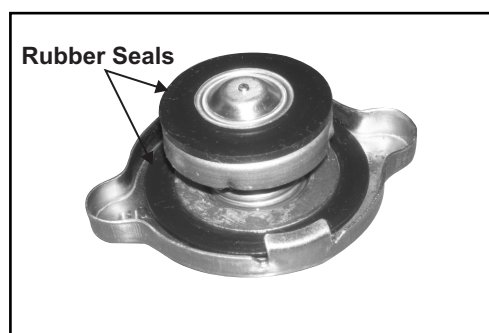


Fig. 5.6c

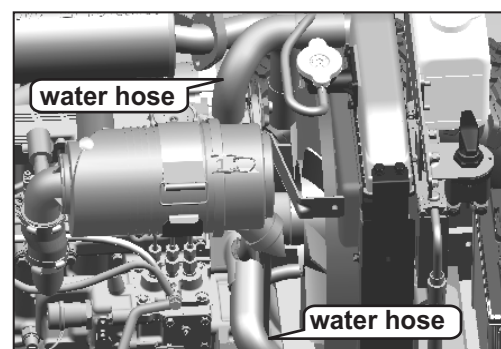


Fig. 5.7

MAINTENANCE

Air Cleaner Maintenance

Air Cleaner Components (Fig. 5.8a&b)

- (1) Air Filter Housing
- (2) Clamp
- (3) Cover
- (4) Rubber Valve
- (5) Air Cleaner Element
- (6) Clogging Sensor

Discharge the dust deposits and sediments daily by pressing the rubber valve (4) on the air filter housing (1).

Important Instructions :

- Clean the air cleaner element at first 50 hrs & then after every 250 hrs of operation or whenever the clogged filter indicator light on the dashboard is illuminated.
- Clean filter element by blowing air from inside. Maximum pressure should not exceed 1.6 bar (23 P.S.I).
- Use clean cloth to wipe sealing areas of element.
- After replacing new filter element ensure matching of (◀) mark on cover with the mark (▶) on air filter housing.
- Ensure proper seating of filter into housing before latching the cover. Do not use latches on the cover to force the filter into air cleaner that could cause damage to housing and will void the warranty.
- Ensure proper seating of all rubber rings. Replace the damaged ones.

Replace air cleaner element after three cleaning operations or at every 750 hours, whichever is earlier.

IMPORTANT: NEVER attempt to clean the filter element with exhaust gas from the engine. NEVER ever use oil on dry filter. NEVER ever use oil, diesel fuel, paraffin or solvents to clean the filter element.

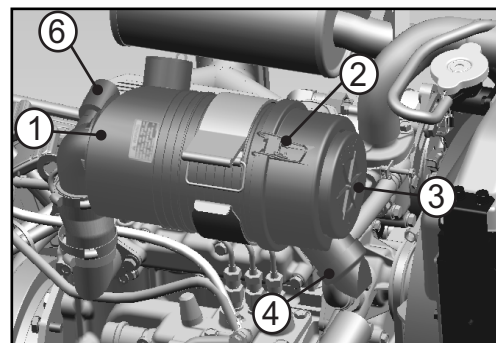


Fig. 5.8a

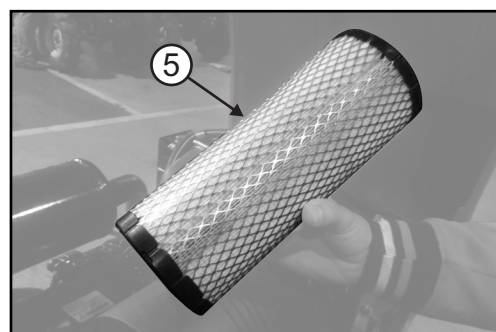


Fig. 5.8b

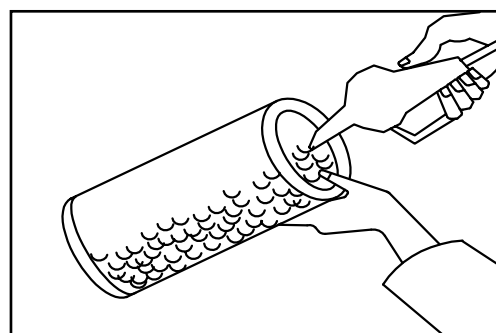


Fig. 5.8c

MAINTENANCE

Clutch Pedal - Manual Transmission

By pressing clutch pedal the motion and power of engine will be disengage from gearbox. Release the clutch pedal slowly to transfer the engine power to gear box.

Method to Check Clutch Pedal Free Play

Press down the clutch pedal and measure the free play of pedal as shown in the figure. The distance should be 25 to 30 mm [0.98 inch to 1.18 inch]. If the distance is less than 25 mm [0.98 inch] or higher than 30 mm [1.18 inch] then get it adjusted.

IMPORTANT: Do not keep foot on clutch pedal while tractor is in running condition. It may cause excessive wear of clutch and premature clutch failure before its life time.

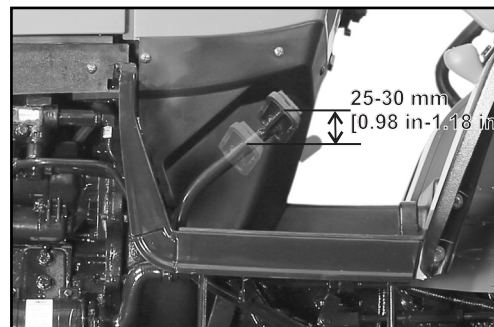


Fig. 5.9

Foot Brake Pedals - Manual Transmission

Use independent brake in the field operations. In field you will turn more sharply by pressing brake pedal for the side wheel on the turn. The pedals must be locked for road use.

Method To Check Brakes Pedal Free Play

Release the hand brake. Uncouple the two pedals. Press down the right hand pedal and measure the free play of pedal as shown in the figure 5.10a. The distance should be between 35-40 mm [1.4-1.6 inch]. If the free play is less than lower limit or higher than upper limit then adjust the both hex nut on actuator tie rod until free play comes between lower and upper limits. Now, press down the left hand pedal. If the values are not equal with the right hand pedal then repeat the same procedure until values come equal.

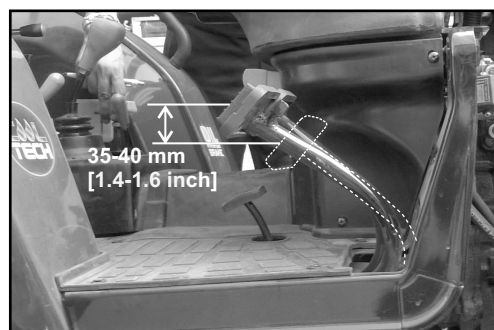


Fig. 5.10a



Difference in the free play will lead to unbalanced brakes, the tractor can swerve in the event of violent braking. The wheel on which the brakes are applied locks and the Tire wears out quickly.

During Road Operations both the brake

Brake Pedal - HST

Brake pedal is located at the left side of the platform (see fig. 5.10b). Tractor motion is controlled by gradually pressing the brake pedal as per requirement.

Brake Free Play Adjustment- HST

Press down the brake pedal until you feel the restriction and measure the free play of pedal as shown in the figure. The distance should be 25 to 30 mm [0.98 inch to 1.18 inch]. If the distance is less than 25 mm [0.98 inch] or higher than 30 mm [1.18 inch] then get it adjusted.

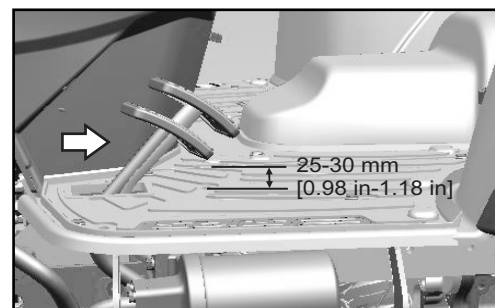


Fig. 5.10 b

MAINTENANCE

Steering Cylinder Knuckle Joints

Have the knuckle joint nuts checked by an authorized service center after the first 50 hours and then at every service.

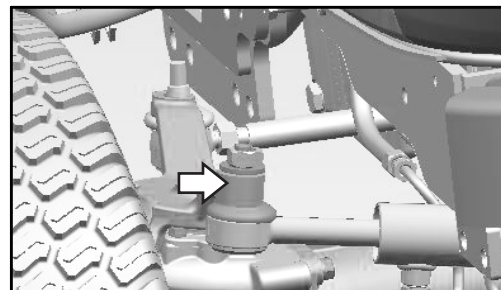


Fig. 5.11

4WD Front Axle Oil Change

Oil filling plug is provided on right hand side of the front axle (as shown in fig.). Open the plug and check the oil level. The lower point of the plug should be immersed in the oil.

Recommended front axle oil & quantity is listed at the end of this chapter.

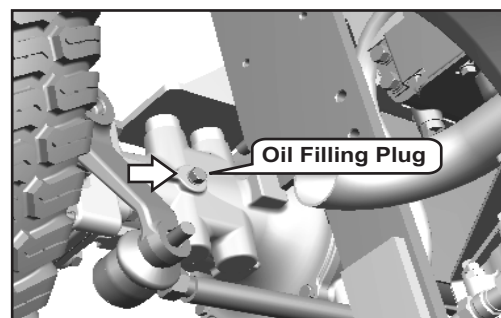


Fig. 5.12

Transmission and Hydraulic Oil Change

Manual Transmission

1. Lower the lift arms to the ground.
2. Remove the plug located at lower portion of brake housing to make oil draining easier (see fig. 5.13a).
3. Place vessel under all drain plugs of transmission housing to collect the oil as it drains out.
4. Remove the plugs and drain out the oil.
5. Clean the plugs and fit back on.



Fig. 5.13a



Beware of powerful oil jets. Follow all safety rules.

NOTE: *When draining out and filling oil and checking oil level, take care that the transmission is in horizontal position.*

MAINTENANCE

Transmission Oil Filling

For Manual Transmission, filling point located on above the gearbox, refer figure 5.13 b

For HST, filling point located on rear side of the transmission, refer Figure 5.13c

1. Fill transmission oil from dipstick plug (1) opening to the maximum level mark on the dipstick.
2. Put the gearshift lever in neutral and start the Engine. Let it run on idle until the oil reaches a temperature over 25 °C [77 °F].
3. Fully tighten the dipstick check that the transmission oil reaches the required level mark on the dipstick.
4. If required, fill up to the correct level.

NOTE : Let the oil stabilize before checking its level.

IMPORTANT: See the Lubricants and Fuel chart for the type of oil to be used according to the transmission type.

NOTE : If implement used requires more quantity of oil, make sure that the transmission contains enough oil for every work condition. Top off as required.

Recommended Oil grade - Manual Transmission

We recommend use of **TOTAL DYNATRANS MP / API: GL-4** oil grade (common for transmission, steering and oil brakes).

Recommended Oil Grade- HST

We recommend use of **ISO VG-32** oil grade for transmission.

Refer below table for appropriate oil viscosity according to the ambient temperature.

| Oil Grade | Ambient Temp. (°C) | Oil Temp.(°C) |
|-----------|--------------------|---------------|
| VG 32 | -10~27 | 3~70 |
| VG 56 | 0~36 | 10~80 |

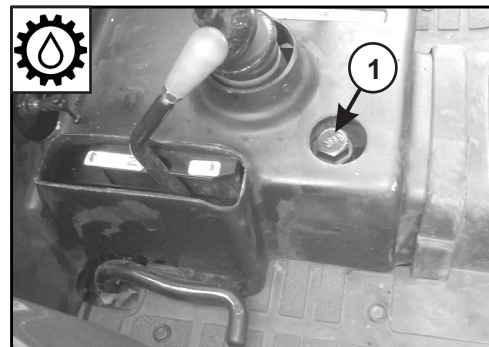


Fig. 5.13b Manual Transmission

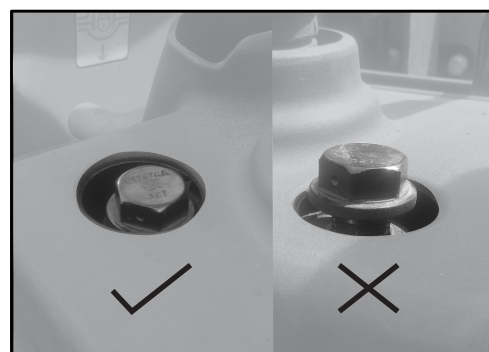


Figure: Correct way to check Oil level

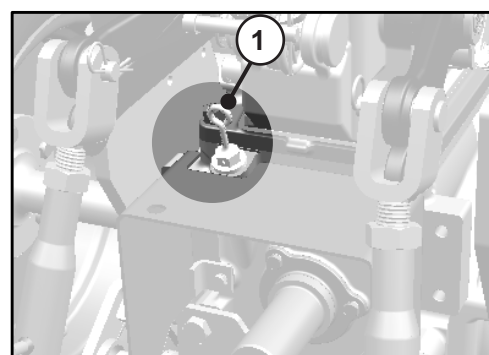
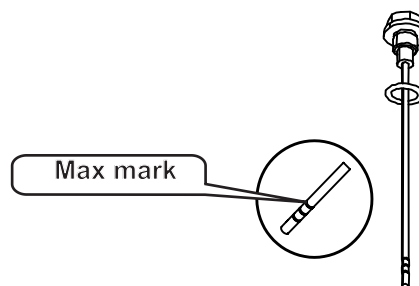


Fig. 5.13c HST



MAINTENANCE

Transmission and Hydraulic Oil Change - HST

Oil Drain

1. Lower the lift arms to the ground
2. Unscrew the all plugs located as shown in fig 5.13d to make oil draining easier
3. Place vessel under all drain plugs of transmission housing to collect the oil as it drains out
4. Remove the plugs and drain out the oil
5. Clean the plugs and fit back on.



Beware of powerful oil jets. Follow all safety rules.

NOTE: *When draining out and filling oil and checking oil level, take care that the transmission is in horizontal position.*

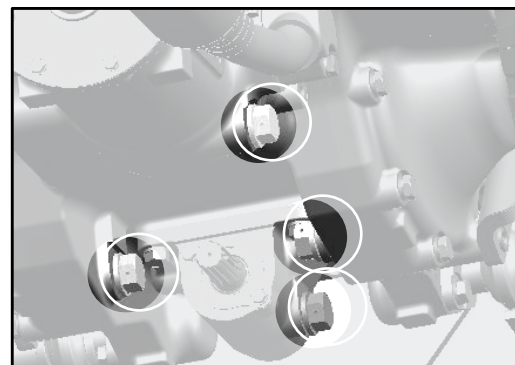
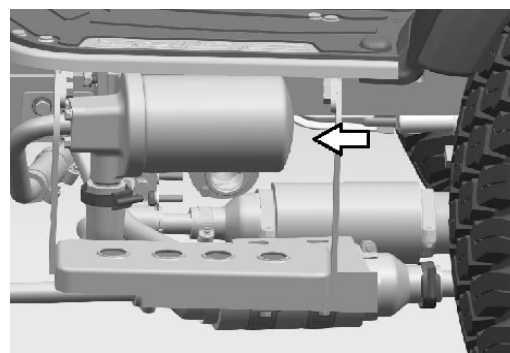


Fig. 5.13d

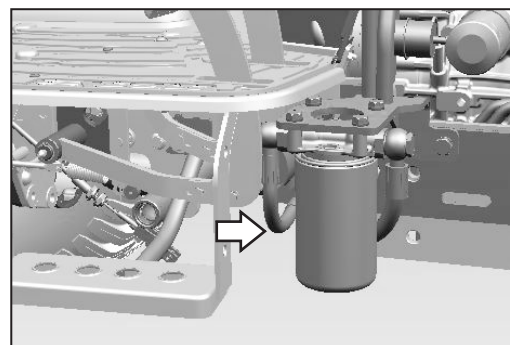
Hydraulic Filter Replacement- HST

Replace the hydraulic filters with genuine parts as per schedule to enhance the life and performance of hydraulic system.

Replacement: Replace the hydraulic filters (suction & delivery) at first 50 hours and afterwards at every 250 Hours.



LHS (Suction Filter)



RHS (Delivery Filter)

MAINTENANCE

Hydraulic Suction Strainer

For Manual Transmission, single hydraulic suction filter is located below on left-hand side below the platform, refer figure 5.14a

For HST Variant, double suction filters are used which are located left-hand side below the platform, refer figure 5.14b

At each service, thoroughly clean suction strainer/strainers by washing with light oil

Failure to observe this will result in extensive shortening life of hydraulic system.

Cleaning Procedure (fig. 5.14c,d,e):

- (1) Remove all hose clamps (1).
- (2) Separate the Hose pipes (2) from Strainer Assy.
- (3) Hold the strainer assembly in left hand & remove the wire clip (5) & magnetic strainer (4) from the housing (3) with the help of right hand fingers.
- (4) Unscrew the nut (6) & remove supporting cup (7). After dis-assembling supporting cup remove the sheath (8) having ferrous dust by sliding it with the help of plastic support (10).
- (5) Clean the sheath from ferrous dust with the help of soft cloth and refit the same.
- (6) Assemble the supporting cup & tighten the nut.
- (7) Assemble magnetic strainer in strainer housing and lock it with the wire clip.
- (8) Fix the hose pipes and tighten the hose clamps.

Replacement: Replace the magnetic strainer at every 750 Hours.

IMPORTANT: Do not dismantle the magnets (9) as these are assembled in polarity sequence and it should not be disturbed (fig. 5.14d).

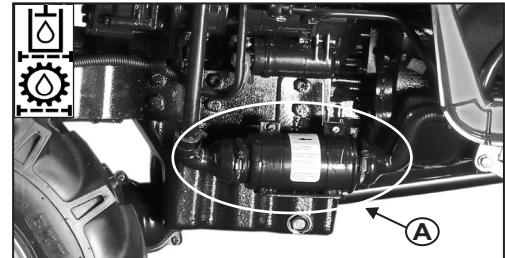


Fig. 5.14a

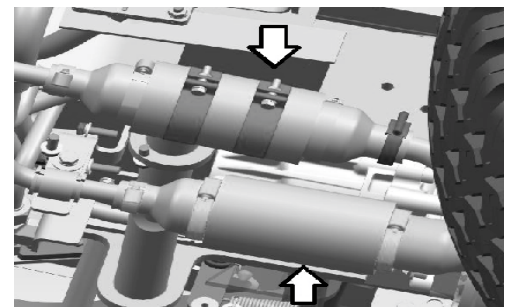


Fig. 5.14b

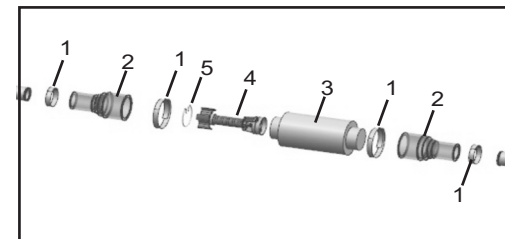


Fig. 5.14c

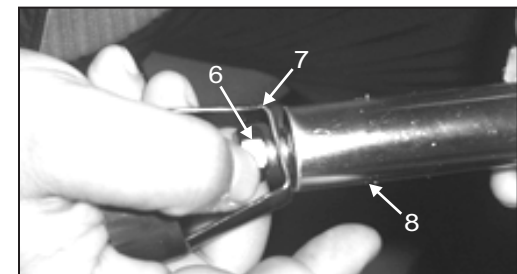


Fig. 5.14d

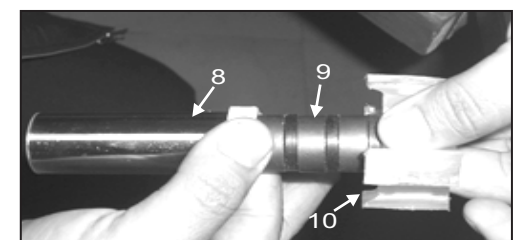


Fig. 5.14e

MAINTENANCE

General Maintenance of Electrical System

- Never Patch up the electrical circuits.
- Never replace a blown fuse by a higher capacity fuse. It could cause a fire.
- Never work on components such as the alternator or starter motor when the engine is running.
- Lastly when you are cleaning the tractor and using the pressure spray, take care not to damage the connections on the various electrical cable.

Battery and Maintenance

Battery Capacity: 12V, 65 Ah

Battery Removal Procedure

Battery is located at front of the tractor as shown in the figure, follow the below procedure to access the battery:

1. Open the bonnet.
2. Remove fly nut by rotating it anticlockwise.
3. Detach the negative (-) & positive(+) terminals respectively.
4. change battery having more than 700 CCA for cold weather operations beyond 14 deg F

Check Electrolyte Level

It must be as per the recommendation of battery manufacturer. If required, top up with distilled water just touching the 'Max' mark on the battery (fig. 5.15b). Electrolyte level should never be below 'Min' mark. Never add acid.

Check Carefully Battery Charging

Protect against freezing. Insure that terminals are clean and tight. Check specific gravity of battery using a battery hydrometer (fig. 5.15c). Specific gravity of a fully charged battery is 1.265 ± 0.005 at 27°C [80.6°F].



Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.



Remember to disconnect the cables before you recharge the battery. It is advisable to remove the battery from its location and to recharge it well away from the tractor. The place of battery recharge must be well ventilated.

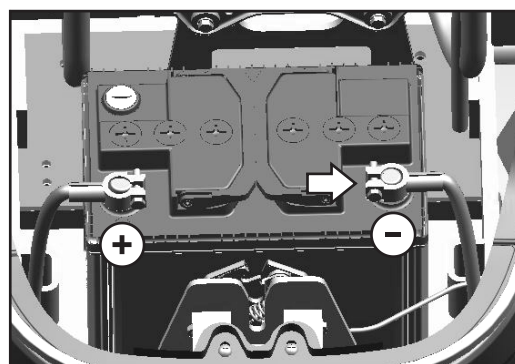


Fig. 5.15a

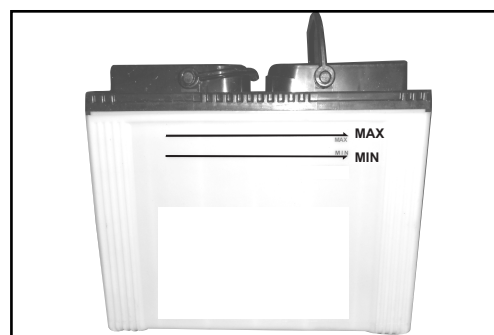


Fig. 5.15b

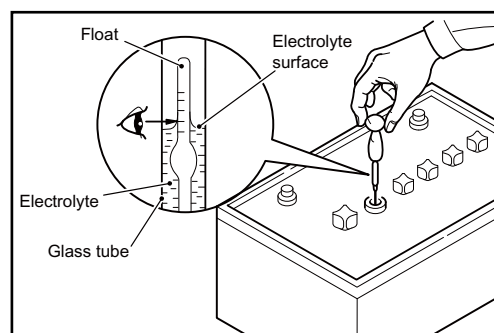


Fig. 5.15c

MAINTENANCE

Fuses in Fuse Box (Fig. 5.16a and 5.16 b)

Fuses against short circuits and excessive power draw protect the tractor's electrical system. The number of the fuses in the electrical system depends on the tractor model.

NOTE : Before replacing a blown fuse with a new, equivalent ohm, the cause that lead to the fault should be determined and removed.

Long Storage Period

Take the following precautionary measures when your tractor is not going to be used for a long period of time.

- Park the tractor in dry sheltered place.
- Drain the coolant from the radiator and engine.
- Grease all points provided with grease nipples.
- Remove the injectors and squirt a small quantity of engine oil into the cylinders. Turn the engine over by hand, and then fit the injectors back in place.
- Generally clean the tractor ,particularly the bodywork components. Protect the painted parts by applying silicon wax and the unpainted metal parts by applying protective lubricant. Park the tractor in a dry, sheltered and possibly ventilated place.
- Make sure that all the controls are in neutral (including the electric switches and parking brake controls).
- Remove the ignition key from ignition switch.
- Make sure that the cylinder stems (of the power steering, power lift system, etc) are positioned.
- Empty the fuel tank and fill with it with new diesel fuel until the maximum level is reached.
- Remove the battery, clean the cover and spread Vaseline on the terminal and terminal caps. Now connect the battery in the ventilated place where the temperature is not liable to drop below 10 and where it is not exposed to direct sunlight.
- Check the battery charge with a voltmeter as described in the battery part of this section Recharge if it is necessary.
- Place stands or other supports under the axles in order to take the weight off the wheels. When the tractor is raised in this way, it is advisable to deflate the tires. If this is not possible, the tire pressure must be periodically checked.
- Cover the tractor with a tarpaulin.

| | |
|--------------------------|------------------------|
| | High Beam - 15 Amp |
| | Low Beam - 15 Amp |
| Plough Lamp - 15 Amp | Parking Light - 10 Amp |
| Brakes - 10 Amp | Horn - 10 Amp |
| Flasher - 20 Amp | Aux.1 - 10 Amp |
| OPC - 5 Amp | Instrument Cluster - |
| Glow Control Unit- 5 Amp | ECG - 10 Amp |

Fig. 5.16a Manual Transmission

| | | | | | | | | | |
|------------------------|-------------|-------------|---------------|-----------------|------------------|-------------------|-----------------|-----------|-------------|
| 86 | 30 | 10A | 15A | 15A | 86 | 85 | 30 | 85 | |
| PTO SAFETY START RELAY | PARK LIGHT | LOW BEAM | HIGH BEAM | CRUISE-ON RELAY | CRUISE-OFF RELAY | ENGINE STOP RELAY | PARK STOP RELAY | OPC RELAY | |
| 87 | 87A | 10A | 15A | 15A | 30 | 87A | 87A | 87A | |
| 85 | ECG | BATTERY AUX | AUX.1 | 87 | 87A | 85 | 87 | 87A | |
| 86 | 30 | 30 | 86 | 30 | 86 | 30 | 86 | 85 | |
| 87 | 87A | 85 | 87 | 87A | 85 | 87 | 87A | 85 | |
| 15A | PLOUGH LAMP | 5A | CRUISE MAGNET | 20A | COMB. SW. | 15A | MOBILE CHARGER | 15A | BRAKE LIGHT |

Fig. 5.16b HST



At the end of the long storage period. When you start the engine again, pay particular attention to the instruction about starting engine in the operation chapter.

MAINTENANCE

Starter Motor

Starter motor is mounted on the left side of the engine. The starting motor rotates the engine crankshaft for starting.

Visually check the starter for damage. If starter is dusty, blow off dust using compressed air.

Note: If defects are found in the starter, contact your dealer.

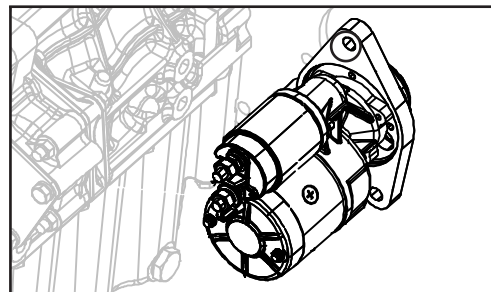


Fig. 5.17

Alternator

Alternator is fitted on Left side of engine and generates current which charges battery for healthy electrical back up.

Visually check the alternator for damage. If the alternator is dusty, blow off dust using compressed air.

Remove V-belt, and turn the pulley with hands to make sure it rotates smoothly.

Note: If defects are found in the alternator, contact your dealer.

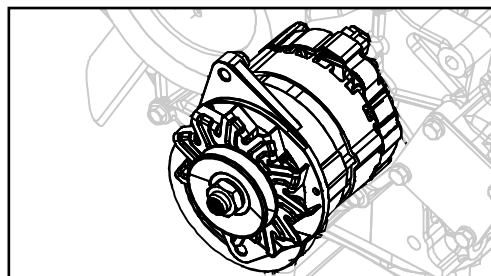


Fig. 5.18a

Checking V-belt:

1. Ensure that V-Belt is free from defects such as wear, cuts or surface separations, otherwise replace with genuine specified belt.
2. Inspect belt tension by pushing the belt downward with approx. 98N (10kgf) (22lbf) force midway between pulleys. If the deflection is 10 to 12mm [0.39 to 0.47 in], the tension is correct. If the tension out of the specified value, adjust belt tension.

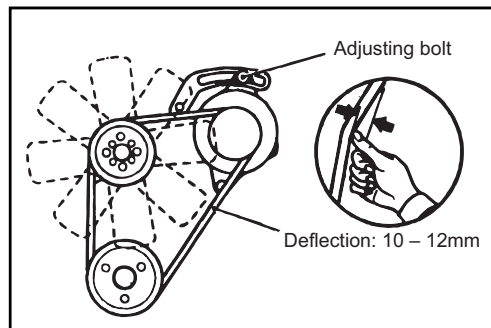


Fig. 5.18b

Adjusting V-belt tension:

1. Lose all retaining bolts of the alternator and adjusting plate.
2. Insert a bar between the alternator and cylinder block and use leverage to move that alternator to have proper v-belt tension.
3. While V-belt tension is appropriate, retighten all the retaining bolts of the alternator and adjusting plate.

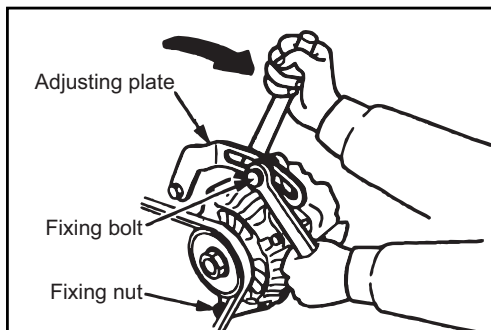
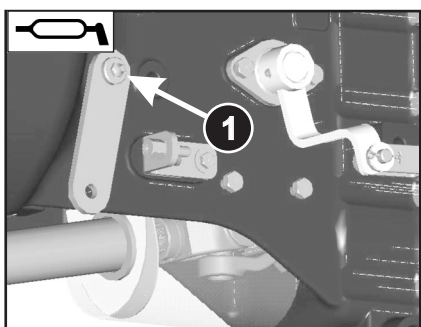


Fig. 5.18c

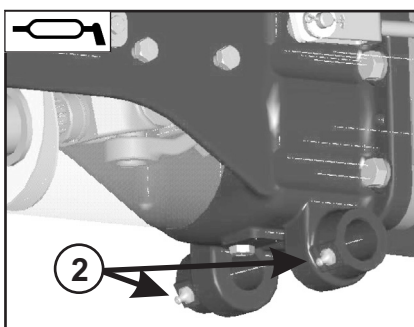
MAINTENANCE

Greasing Points- Manual Transmission

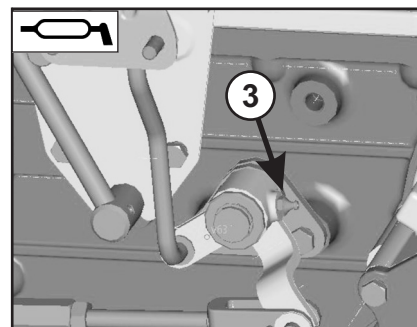
- | | |
|---|------------|
| 1. Clutch Actuator Shaft (LH and RH) | - 2 Points |
| 2. Brake pedal shaft (LH and RH) | - 2 Points |
| 3. 4WD Mechanism | - 1 Point |
| 4. Propeller shaft UG joints (Front and Rear) | - 2 Points |
| 5. Power Steering Cylinder Knuckle Joint (On steering arm double side) | - 1 Point |
| 6. Lift Rods (LH and RH) | - 2 Points |
| 7. Front Axle Pivot Pin | - 1 Point |
| 8. Power Steering Cylinder | - 1 Point |



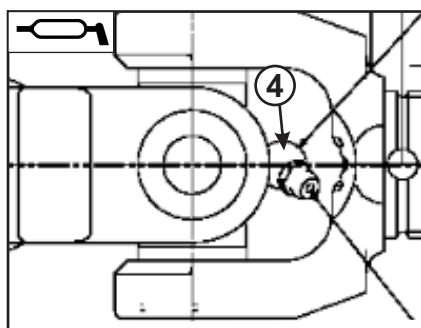
1. Clutch actuator shaft



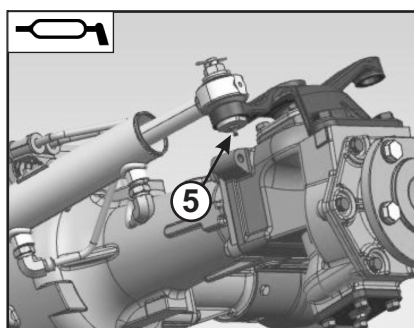
2. Brake pedal shaft



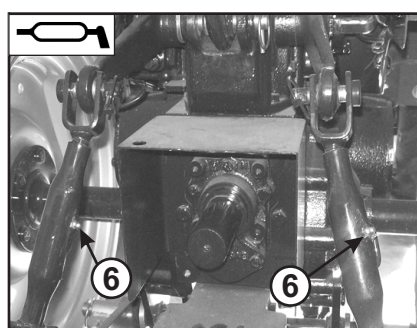
3. 4WD Mechanism



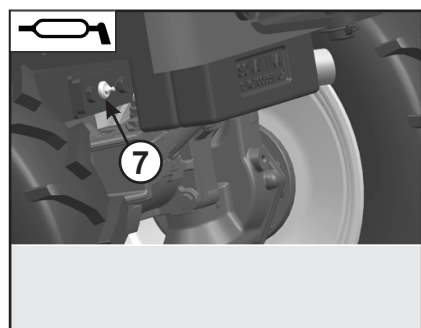
4. Propeller Shaft UG Joint



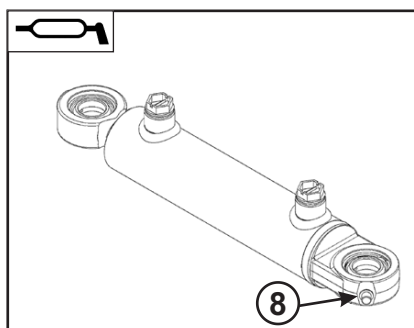
5. Power Steering Cylinder
(On steering arm double side)



6. Lift Rods



7. Front Axle Pivot Pin

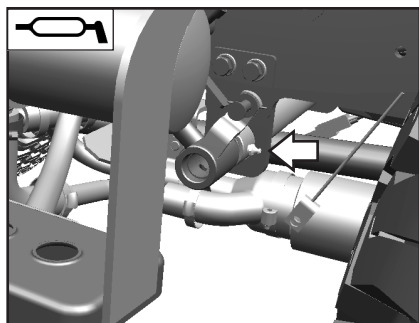


8. Power Steering Cylinder
(On mounting bracket)

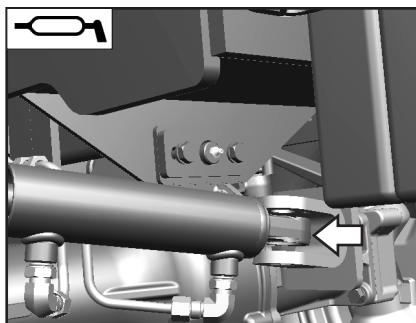
MAINTENANCE

Greasing Points- HST Variant

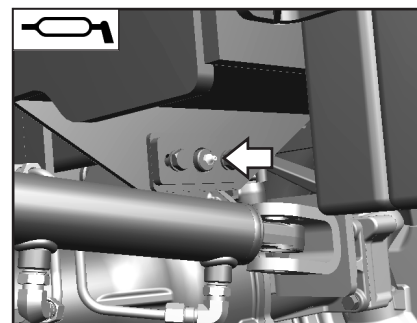
- | | |
|---|------------|
| 1. Brake pedal | - 1 Point |
| 2. Power Steering Cylinder Mounting Min | - 1 Point |
| 3. Front Axle Pivot Pin | - 1 Point |
| 4. Drag Link (LH and RH) | - 2 Points |
| 5. Top Link | - 2 Points |



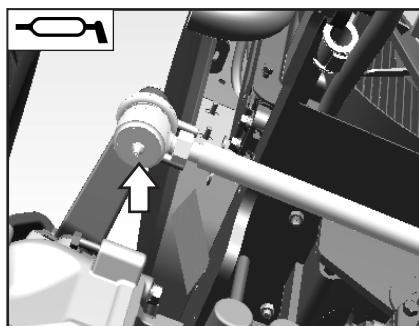
1. Brake Pedal



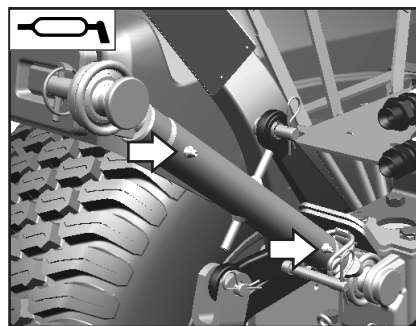
2. Power Steering Cylinder
Mounting Min



3. Front Axle Pivot Pin



4. Drag Link



5. Top Link

MAINTENANCE

Jack Up the Tractor - Lifting Points

The illustrations show the recommended lifting points for jacking up the tractor. Use a stable lifting jack with sufficient lifting force.

- A- Raise Right End of Axle, e.g. to Remove Right Front Wheel.
- B- Raise Center of Axle (Use Wooden Wedges to Prevent Axle from Tilting).
- C- Raise Left End of Axle, e.g. to Remove Left Front Wheel.
- D - Raise Rear of Tractor, e.g. to Remove Rear Wheel



- Use approved lifting equipment only.
- Jack up tractor on firm, level ground only.
- Before doing any further work on the tractor, first secure it using suitable support stands.

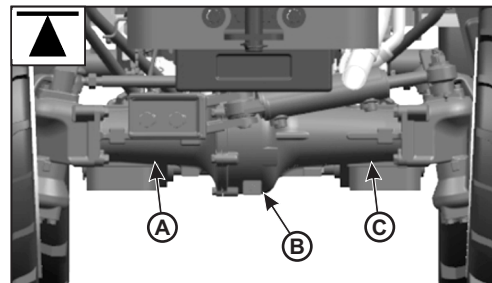


Fig. 5.19a - Raise front of tractor

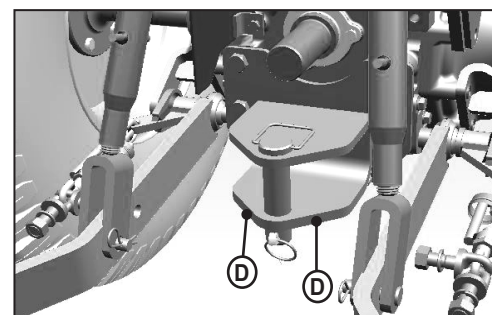


Fig. 5.19b - Raise rear of tractor

Oil and Lubrication Chart

| Aggregate | Capacity | Recommended Grade |
|--------------------------------|--|---|
| Engine Oil | 4.2 Liters [1.11 US Gallons] | 15W40, API: CJ-4, CI-4 Plus, CI-4, CH-4 TOTAL RUBIA TIR 7900 : : 0W40, CI-4 or higher for temp beyond 14 deg F to -4 deg F (-10 deg C to -20 Deg C) |
| Manual Transmission Oil | 18 Liters [4.75 US Gallons] | TOTAL DYNATRANS MP / API: GL-4 |
| HST Transmission | 25 Liters | ISO VG 32/ISO VG56 |
| Front Axle | 2.7 Liters [0.71 US Gallons] | TOTAL DYNATRANS MP / API: GL-4 |
| Fuel | 26 Liters | Diesel Fuel Ultra Low |
| Coolant | ~4.3L (~1.72 L Antifreeze & rest DM Water) Recommended ratio: 40% : 60% (Antifreeze : DM water) | |

TECHNICAL SPECIFICATIONS

| Model | | 24 EPA | 24 HST EPA |
|----------------------------------|---|---|--------------------------------|
| Engine | Make | Mitsubishi Heavy Industries, Ltd. | |
| | Engine Type | 3 Cylinder, Mitsubishi S3L2, Inline | |
| | Emission | EPA and CARB Tier IV | |
| | Power (Kw) | 18.4 kW at 2500 RPM | |
| | Maximum Torque | 76.3 Nm at 2000 RPM | |
| | Firing Order | 1-3-2 | |
| | Displacement | 1318 cc | |
| | Rated RPM | 2500 | |
| | High Idle RPM | 2500 ± 15 | |
| | Low Idle RPM | 985 ± 15 | |
| | Cold Start Aid/Limit | Yes/ -20 | |
| | Bore X Stroke | 78 mm X 92 mm | |
| | Rotation | Anti-clockwise as view from flywheel side | |
| | Lubrication | Forced lubrication by trochoid pump | |
| | Weight | 110 kg | |
| Valve Clearance Intake / Exhaust | 0.25 mm [0.0098 in.] / 0.25 mm [0.0098 in.] | | |
| Transmission | Transmission type | Manual Transmission | Hydrostatic Transmission (HST) |
| | Clutch | Single Clutch, Mechanical | Without Clutch |
| | PTO Clutch Type | Not Available | Wet Clutch Type |
| | Brake Pedal Location | Right Hand Side | Left Hand Side |
| | Brake type | Oil Immersed Brakes | |
| | Number of Speeds | 6 Forward 2 Reverse | HST with 2 range speeds |
| PTO | PTO Operation | Lever | Rear/Mid/Both - Lever |
| | Rear PTO RPM | 540 at 2491ERPM | 540 at 2565 ERPM |
| | Mid PTO | Not Available | 2100 at 2552 ERPM |
| Front Axle | Type | Four Wheel Drive (4WD) | |
| | Engagement | Mechanical | |
| Steering Type | | Power Steering | |
| Hydraulic | Hydraulic lift capacity | 600 kg | 600 kg |
| | Make | Mita | |
| | Type | Open Centre | |
| | Pump and flow | Single and 18 LPM (Hydraulic and Steering) | |
| | 2DA | Front end with mechanical operated joystick | |
| | 1DA | Rear End - Hand Operated Lever | |
| | Trailer Hitch | E Marked Standard | |
| | Three Point Linkage | Category-I | |
| | Stay Bars | Anchor Chain | |



TECHNICAL SPECIFICATIONS

Overall Dimensions- 24 EPA Model

Note: All dimensions & specifications are for guidance purpose only & are subjected to change without prior notice.








TECHNICAL SPECIFICATIONS

Overall Dimensions- 24 EPA HST Model

Note: All dimensions & specifications are for guidance purpose only & are subjected to change without prior notice.

TECHNICAL SPECIFICATIONS

MATCHING IMPLEMENTS FOR 24EPA and 24EPA HST




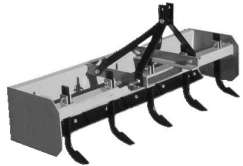

| Sr. No. | Implement | Parameter | Recommended Size/Weight |
|---------|--|--|--|
| 1. |  <p>Rotavator</p> | <p>Maximum no. of blades-Lblade,Jblade</p> <p>Maximum weight - kg (lbs.)</p> | <p>20,28</p> <p>150 (330)</p> |
| 2. |  <p>Cultivator (Spring loaded)</p> | <p>Maximum no. of tynes</p> <p>Maximum Width - cm(in)</p> | <p>7</p> <p>145 (57)</p> |
| 3. |  <p>Disc Harrow</p> | <p>Maximum no. of discs</p> <p>Disc diameter - cm (in)</p> <p>Maximum weight - kg (lbs.)</p> | <p>5x5</p> <p>46 (18)</p> <p>130 (286)</p> |
| 4. |  <p>Sprayer</p> | <p>Maximum tank capacity - Lts (U.S. gals)</p> | <p>600 (160)</p> |
| 5. |  <p>Trailer</p> | <p>Dimensions of trolley (LXBXH) - cm (in)</p> <p>Maximum gross weight - kg (lbs.)</p> | <p>180x90x50 (70.9x35.4x19.7)</p> <p>2000 (4400)</p> |

Note: Implement size may vary as per geographic conditions.

Table 6.2

TECHNICAL SPECIFICATIONS

MATCHING IMPLEMENTS FOR 24EPA and 24EPA HST

| Sr. No. | Implements | Parameter | Recommended Size/Capacity |
|---------|--|---|---------------------------|
| 6. | Rear Lawn Mower  | Maximum cutting width - cm (in) Maximum weight - kg (lbs.) | 122 (48) 130 (286) |
| 7. | Flail Mower  | Maximum cutting width - cm (in) | 110 (43.3) |
| 8. | Rotary Cutter  | Maximum cutting width - cm (in) Maximum weight - kg (lbs.) | 110 (43.3) 130 (286) |
| 9. | Box Blade  | Maximum cutting width - cm (in) Maximum weight - kg (lbs.) | 125 (49.2) 150 (330) |
| 10. | Bottom Plough  | Maximum Size - in | 14x1 |

Note: Implement size/ERPM (Engine RPM) may vary as per geographic conditions.

DO'S AND DON'TS

7. Do's and Don'ts

DO'S

ENGINE

a. General

1. Do release the starter key once the engine has started.
2. Do check the proper functioning of oil pressure gauge and battery charging indicator once the engine has started.
3. Do get the tightness of cylinder head and manifold nuts checked regularly.

b. Air inlet System

1. Do inspect the element pre-cleaner / oil bath. Clean if necessary.

c. Fuel System

1. Do drain sediments from the fuel tank periodically
2. Do clean fuel tank thoroughly once in every 500 hrs.
3. Do change filter regularly as recommended in service schedule.
4. Do fill diesel in the tank at the end of the day's work so as to avoid condensation.

d. Water cooling System

1. Do ensure that radiator is always filled with clean (soft) water & radiator cap is tight
2. Do clean the radiator front grill to ensure free flow of air when the engine is operating.
3. Do ensure proper tension of fan belt. Deflection should not be more than (10 mm) when pressure is applied between the fan pulley and the crankshaft pulley.

e. Lubrication System

1. Do replace engine oil after first 50hrs. of operation. Thereafter, engine oil should be replaced every 250 working hrs.
2. Do check oil level daily with tractor parked on a level ground.
3. Do replace lub. oil filter element every 250 working hrs. After 1st replacement at 50 hrs.

f. Exhaust System

1. Do ensure that the exhaust passage is not blocked.

CLUTCH

1. Do ensure correct clutch free pedal play
2. Do ensure that the clutch pedal is released slowly while moving the tractor.

DON'TS

ENGINE

a. General

1. Do not keep on continuously cranking the engine with starter key. It will shorten the life of battery.
2. Do not race the engine in neutral condition.

b. Air inlet System

1. Do not run the tractor if the air cleaner assembly is defective as this will lead to impure air being taken in and consequently excessive wear of liners and piston rings.

c. Fuel System

1. Do not keep the fuel tank without a proper sealing cap.
2. Do not use contaminated fuel as it may affect the operation of fuel injection pump and the injectors.
3. Do not allow leakage through fuel pipe joints.

d. Water Cooling System

1. Do not run the tractor with the radiator cap removed/non-acting radiator cap.
2. Do not run the tractor when the radiator hoses are leaking as it will lead to overt heating of the engine.
3. Do not remove thermostat as it will affect engine performance.
4. Do not run the belt tight as it will lead to premature failure of water pump and alternator bearing.
5. Do not run the belt loose as it will lead to inefficient cooling and improper charging of the battery.

e. Lubrication System

1. Do not use wrong grade of lubrication oil.
2. Do not mix different brands of engine oil.

CLUTCH

1. Do not rest the foot on the clutch pedal.
2. Do not work the tractor by slipping and re-engaging the clutch.
3. Do not coast down steep slopes with tractor in neutral/with clutch pedal pressed.

DO'S AND DON'TS

DO'S

TRANSMISSION

1. Do change the transmission oil after 1000 hrs. of operation.
2. Do check the condition of rubber protection bellows on the gear levers periodically as they prevent infiltration of water and dust into gear box.

HYDRAULIC SYSTEM & LINKAGE

1. Do ensure that hydraulic control lever is in down position while draining the transmission oil.
2. Do ensure that the hydraulic strainer is cleaned at every schedule.
3. Do adjust the top link for proper length.
4. Do ensure that the lift cover bolts are always tight.
5. Do keep the lower links in lifted position when the tractor is moving without an implement mounted on it.
6. Do keep the ball joints on top and lower links clean and dry. Do not lubricate them.
7. Do ensure that implements are raised and lowered using the control lever.

BRAKING SYSTEM

1. Do keep the brake pedals locked with interlocking latch when the tractor is not being used in field.
2. Do use parking brakes when the vehicle is stationary
3. Do check loose connections in linkage mechanism
4. Do grease brake pedal bushing, brake bracket connections.

FRONT AXLE & STEERING MECHANISM

1. Do lubricate the Bushings and steering drag links periodically.
2. Do get the toe-in adjusted by an authorised service center periodically. It should be maintained between (3-6 mm)
3. Do check the tightness of front and rear wheels to recommended torque
4. Do flush oil once a year or 1000 hrs which ever is earlier.

TIRES

1. Do operate the tractor with correct tire pressure. This will lead to better traction, longer tire life and better fuel consumption.

DONT'S

TRANSMISSION

1. Do not use top gears with low engine rpm.

HYDRAULIC SYSTEM & LINKAGE

1. Do not move the operational control range to fast response, while the tractor is on a hard surface like concrete, as the implement will crash down and get damaged.
2. Do not attempt to pull or tow anything from the top link connection. It is dangerous.
3. Do not use bolts in place of lynch pins.
4. Do not reverse the tractor with PTO driven implement attached and PTO lever in ground PTO position implement may get damaged in reverse.

BRAKING SYSTEM

1. Do not attempt to turn sharply using independent brakes when travelling at high speed. This may cause the tractor to overturn.
2. Do not rest foot on the brake pedal.

FRONT AXLE & STEERING MECHANISM

1. Do not use wrong grade of oil for lubrication of steering gear box.

TIRES

1. Do not allow oil, grease and some crop spray containing considerable amounts of acid and alkalies to contaminate the tires. These can cause considerable damage to the tyre if they penetrate into plies through small holes or splits.
2. Do not operate the tractor with excessive tire pressure.

DO'S AND DON'TS

DO'S

ELECTRICALS

1. Do ensure that the battery terminals are kept clean.
2. Do ensure terminal base is Lubricated with petroleum jelly.
3. Do earth the tractor by wrapping a chain around the front axle, dropping one end of the chain on the ground while working with stationary PTO driven implement. This saves the electric equipment from damage due to static electricity.
4. Do clean the switches periodically using a jet of air.

SAVE DIESEL

- Do switch off the engine when tractor is not in operation. Avoid unnecessary idling.
- Do operate at Optimum speed and correct gear.
- Do maintain the recommended tire pressure for fuel efficient operation and long life of tires. Check daily.
- Do use matching trailer for transportation. Ensure proper hitching. Never overload the trailer.
- Do maintain your tractor in good working condition.
- Do replace genuine parts from Authorized Dealers.

For Better performance

- Ensure that safety shields are in place and in good condition.
- Read all operating instructions before commencing to operate Tractor.
- Keep the air cleaner clean.
- Fit new sealing rings when the filter elements are changed.
- Watch the oil pressure gauge or warning light and investigate any abnormality immediately.
- Ensure that the transmission is in neutral before starting the engine.
- Keep all fuel in clean storage container and use a filter when filling the tank.
- Attend to minor adjustments and repairs as soon as there is a need.
- Allow the engine to cool before removing the radiator filler cap and adding water, remove the radiator cap slowly.
- Shift into low gear when driving down steep hills.
- Latch the brake pedals together when driving on a highway.

Ensure daily care of your tractor to avoid breakdowns.

DONT'S

ELECTRICALS

1. Do not change leads of the battery terminals as this will lead to failure of electrical components.
2. Do not leave the battery leads in the connected position if the tractor is not going to be used for a long period of time.
3. Do not overfill the battery with distilled water. The level should be just enough to submerge the battery plates.
4. Do not do any welding in the tractor without disconnecting Battery terminals.

EVERY DROP COUNTS

- Do not allow fuel or oil to leak. Ensure that the joints are adequately tight.
- Do not spill fuel or oil while filling or topping off. Use a funnel.
- Do not overfill engine oil as this can cause excessive oil consumption and oil leaks.
- Do not ride the clutch or brake pedal.
- Do not allow the rear wheel to slip. Use ballast, if necessary.
- Do not use worn-out tires.
- Do not use inferior quality lubricants, use only recommended grade.

For safe operation

- Do not Run the engine with the air cleaner disconnected.
- Do not Start the tractor in an enclosed building unless the doors and windows are open for proper ventilation.
- Do not Operate the tractor or engine while lubricating or cleaning.
- Do not Tamper with the fuel injection pump, (if the seal is broken) the warranty becomes void.
- Do not Allow the engine to idle for a long period of time.
- Do not Use the independent brakes for making turns on the highway or at high speeds.
- Do not refuel the tractor with the engine running.
- Do not Start the engine with the PTO engaged.

Carefully read and follow the other instructions given in the Do's and DON'Ts maintenance booklet, to ensure maximum saving of oil/fuel.

TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| ENGINE | | |
| Engine not starting | Wrong way of starting engine | Use proper way of starting |
| | No fuel | Check Fuel level |
| | Air trapped in fuel system | Bleed the fuel system |
| | Checking of fuel system | Contact your dealer |
| | Fuel injector faulty | Replace |
| | Pull to lever knob in pulling condition | Return it to its proper position |
| | Fuel filter restriction | Replace filters |
| Engine not running in proper way | Fuel filter restriction | Replace filters |
| | Low quality of fuel | Drain diesel from tank and fill with clean diesel |
| | Restriction of fuel system | Check fuel system |
| | Fuel injectors faulty | Replace fuel injector |
| More oil consumption | Oil level is more than maximum level | Remove some oil to lower the level |
| | Oil quality is not good | Use genuine oil |
| Engine not giving maximum power | Leakage of oil | Check and repair |
| | Heavy load on engine | Decrease load or shift in low gear |
| | Air cleaner dirty | Clean air cleaner |
| | Fuel filter restriction | Replace filter |
| | Engine overheating | Check cooling system |
| | Engine operating temperature is less | Check thermostat |
| | Valve clearance not proper | Adjust through authorized dealer. |
| | Throttle system not working properly | Check & repair through authorized dealer. |
| Engine abnormal noise | Oil level low | Top off |
| | Oil pressure low | Check through authorized dealer |
| | Engine is overheated | Check and find reason |
| | Improper tappet setting | Adjust through authorized dealer |
| Oil pressure Indicator shows warning | Oil level is low | Top off oil up to level |
| | Oil quality is not good | Use genuine engine oil |
| | Oil pump not working | Check and repair through authorized dealer |
| Engine Over Heating | Radiator cap faulty | Replace with new one |
| | Clogged radiator fins | Clean it |
| | Engine gets overload | Decrease load or shift to low gear |
| | Oil level is low | Top off oil upto level |
| | Coolant level is low | Check level and leakage of system and top off |
| | Slippage of fan belt | Check belt tension |
| | Thermostat faulty | Replace |
| | Choking of cooling system | Clean the cooling system |
| | Water temp. Gauge not working | Check through dealer and faulty replace |

TROUBLESHOOTING

| PROBLEM | POSSIBLE CAUSE | REMEDY |
|--|---|--|
| ENGINE | | |
| More Fuel Consumption | Air cleaner is dirty / clogged | Clean air cleaner |
| | Overloading of engine | Reduce load or shift to low gear |
| | Improper valve clearance | Check and adjust |
| | Implement setting improper | Contact dealer for how to adjust it correctly |
| | Low engine temp | Check injectors and service |
| | Fuel injection nozzle faulty | Check and service through dealer |
| HYDRAULIC | | |
| Excessive Heating of Oil | Incorrect hydraulic pressure | Adjust relief valve according to specification |
| | Oil level is high or less | Check and maintain proper level |
| | Hydraulic Strainer clogged | Clean/Replace |
| | Mechanical linkage might be faulty | Contact your authorized dealer |
| Linkage Goes Down Slowly | Bush tight | Contact your authorized dealer |
| | Response valve setting improper | Contact your authorized dealer |
| Linkage Not Lift Fully | Improper lift arm setting | Contact your authorized dealer |
| | Improper internal adjustment | Contact your authorized dealer |
| TPL* Not Respond To Lifting While Operating Hydraulic Lever | Linkage not connected properly | Contact your authorized dealer |
| | Heavy load on linkage | Contact your authorized dealer |
| Hydraulic System Not Working Properly | Response valve setting very low | Check valve by your dealer. |
| | Oil level low | Check and top off |
| | Hydraulic Strainer clogged | Clean/Replace |
| | Hydraulic system faulty | Check through authorized dealer |
| | Hydraulic pump not working | Contact your authorized dealer |
| BRAKES | | |
| Noise While Applying Brakes Tractor Goes in One Side | Wrong adjustment of brakes | Check |
| | Brakes only work when fully pressed | Adjust |
| Brakes only Works When Fully Pressed | Wrong adjustment of brake pedal | Check and Adjust. |
| ELECTRICAL | | |
| Electrical System Not Working | Battery terminal loose or rusting of terminal | Clean and tighten the terminals |
| | Less specific gravity | Replace or fill electrolyte up to level |
| Starter Motor Not Working. | Battery terminal loose / Battery discharged | Tighten / Recharge or replace battery |
| | Faulty starter motor | For repair contact your dealer |
| Battery Not Charging | Loose or rusted terminals | Clean and tighten terminal |
| | Belt loose | Check belt tension |
| | Faulty battery | Replace |

* TPL = Three Point Linkage

ALPHABETICAL INDEX

| | | | |
|--|-------|--|-------|
| Accelerator Pedal - Manual Transmission | 55 | Parking Brake | 65 |
| Air Cleaner Clogging Indicator | 40 | Parking Brake Indicator | 40 |
| Air Cleaner Maintenance | 82 | Plow (Work) Lamp Indicator | 44 |
| Alternator | 90 | Power Steering | 63 |
| Ballasting of Tire | 73 | Power Take off (PTO) | 59 |
| Battery and its Maintenance | 88 | PTO Monitor Lamp | 43 |
| Battery Charge Indicator | 40 | Radiator | 79 |
| Boarding the Tractor | 52 | Radiator Cap | 81 |
| Bonnet Closing | 55 | Radiator Draining & Flushing (When cold) | 79 |
| Bonnet Opening | 55 | Radiator Fins Cleaning | 81 |
| Brake Pedals Free Play Setting | 83 | Recommended Oil grades | 86 |
| Chassis Serial Number | 8-9 | Registration Plate | 8-9 |
| Clutch Pedal - Manual Transmission | 55 | Right Turn Indicator | 41 |
| Clutch Pedal Free Play Setting | 83 | ROPS Certificate Plate | 8-9 |
| Cold Start Indication | 39 | Safety Frame: Roll Over Protection Structure (ROPS) | 74-75 |
| Cold Weather Starting | 54 | Safety Labels | 15 |
| Coolant in Radiator - Checking Level | 79 | Safety Labels Location | 15 |
| Dashboard Controls | 45 | Safety Notes | 22-36 |
| DCV Lever | 64 | Safety Sign Guidelines | 15 |
| Differential Lock Pedal | 58 | Safety While Operating Loader Attachments | 35 |
| Do's & Don'ts | 99 | Safety: Prepare For Safe Operation | 21 |
| Operator's Seat | 50 | Service Brakes | 65 |
| Electrical System-General Maintenance | 88 | Service Record | 104 |
| Engine Oil Level Checking | 80 | Seven Pin Socket | 51 |
| Engine Oil Pressure Indicator | 42 | Starter Motor | 90 |
| Engine RPM (Revolution Per Minute) Meter and Hour Meter | 43 | Starting the Engine | 54 |
| Engine Running in | 54 | Statutory Plate | 8-9 |
| Engine Serial Number | 7-8 | Steering Cylinder Knuckle Joints | 84 |
| Fuel Filter Replacement | 79 | Technical Specifications | 94 |
| Fuel Gauge | 44 | Temperature Gauge | 42 |
| Fuel Storage | 78 | Three Point Linkage | 72 |
| Fuel System - Air Bleeding | 71 | Tool Box -Transmission | 50 |
| Fuel Tank Filling | 78 | Tractor Controls | 37-38 |
| Fueling | 78 | Tractor Lights | 48-49 |
| Fuse Box | 47 | Trailer Turn Indicator | 43 |
| Fuses in Fuse Box -Manual Transmission | 47 | Transport Lock (Response Valve) | 64 |
| Gear Shifter Lever | 57 | Tread Settings | 69 |
| Gear Speed Chart | 67 | Troubleshooting | 102 |
| Greasing Points | 91-92 | Two Wheel Drive / Four Wheel Drive (2WD / 4WD) Lever | 57 |
| Hand Throttle Lever | 58 | Under Hood Muffler | 55 |
| High Beam Indicator | 41 | Universal Symbols | 10 |
| Hi-Low Lever | 64 | Using Operator Manual | 7 |
| Hoses Inspection | 81 | V-belt Adjustment | 79 |
| Hydraulic Coupling Devices | 63 | Wheel Nut Bolt Checking | 69 |
| Instrument Cluster | 39 | Wheels and Tires (Tire Inflation Pressure & Load Carrying Capacity) | 68 |
| Jack Up the Tractor - Lifting Points | 93 | | |
| Leaving the Tractor | 52 | | |
| Left Turn Indicator | 40 | | |
| Long Storage Period | 89 | | |
| Maintenance Schedule | 76 | | |
| Noise & Vibration Levels | 36 | | |
| Oil and Lubrication Chart | 93 | | |
| Oil Changes for Transmission, Rear Final Drives and Power Lift Hydraulic Circuits | 84 | | |
| Oil Changes in 4WD Front Axle | 84 | | |
| Oil Filter & Engine Oil Replacement | 80 | | |
| Operator Presence Control (OPC) | 52 | | |

OPERATOR MANUAL

"H24 CABIN"



INTERNATIONAL TRACTORS LIMITED
HOSHIARPUR (INDIA)

Part Code : 300319394A

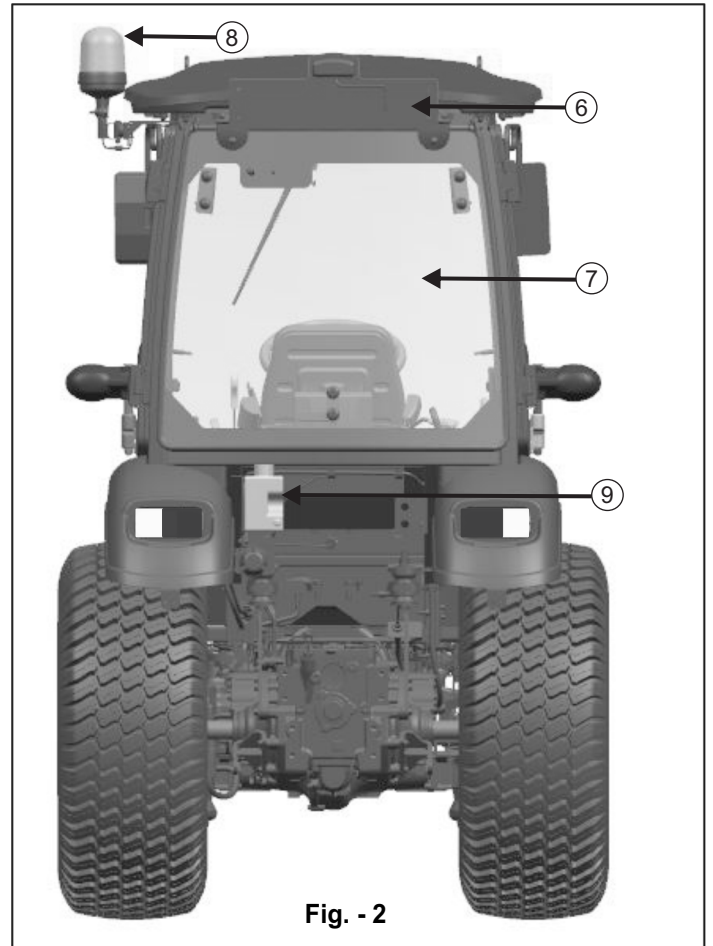
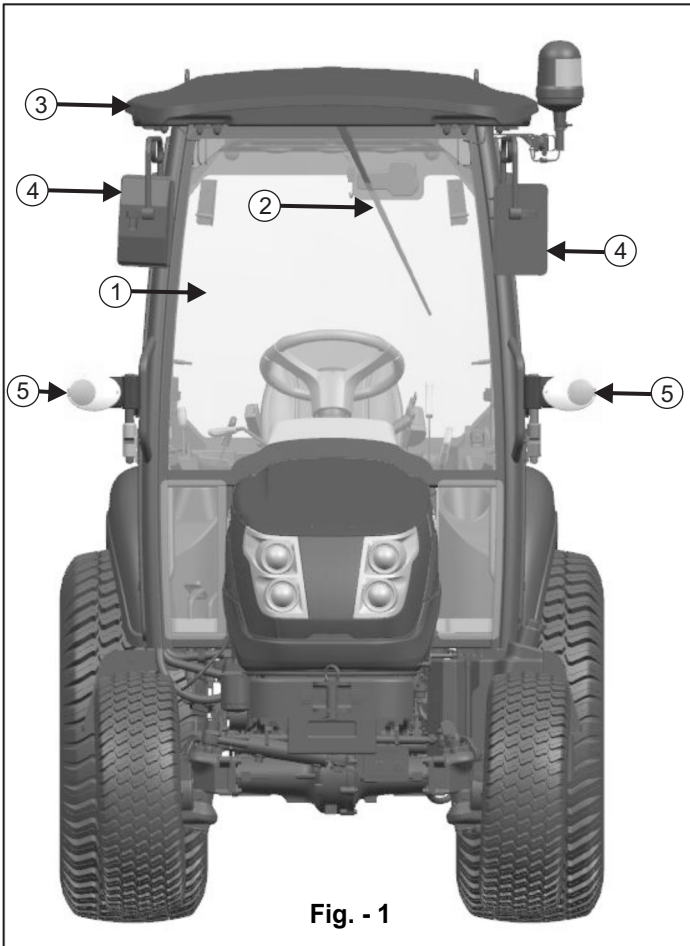
Publication No. : GDTC/AUG21/05
Rev. 01, Released on : AUG'23

OPERATOR MANUAL

HEATER CABIN

CAB COMPONENTS (EU) Fig. - 1 & 2

1. Front Windscreen
2. Front Wiper
3. Roof
4. Adjustable Rear View Mirrors
5. Front Indicators and Parking Lights
6. Registration Plate & Light
7. Openable Rear Windscreen
8. Revolving Light / Beacon Light
9. Washer Bottle (For Wiper)



HEATER CABIN

Tractor Control- HST Variant (Fig. - 3) :-

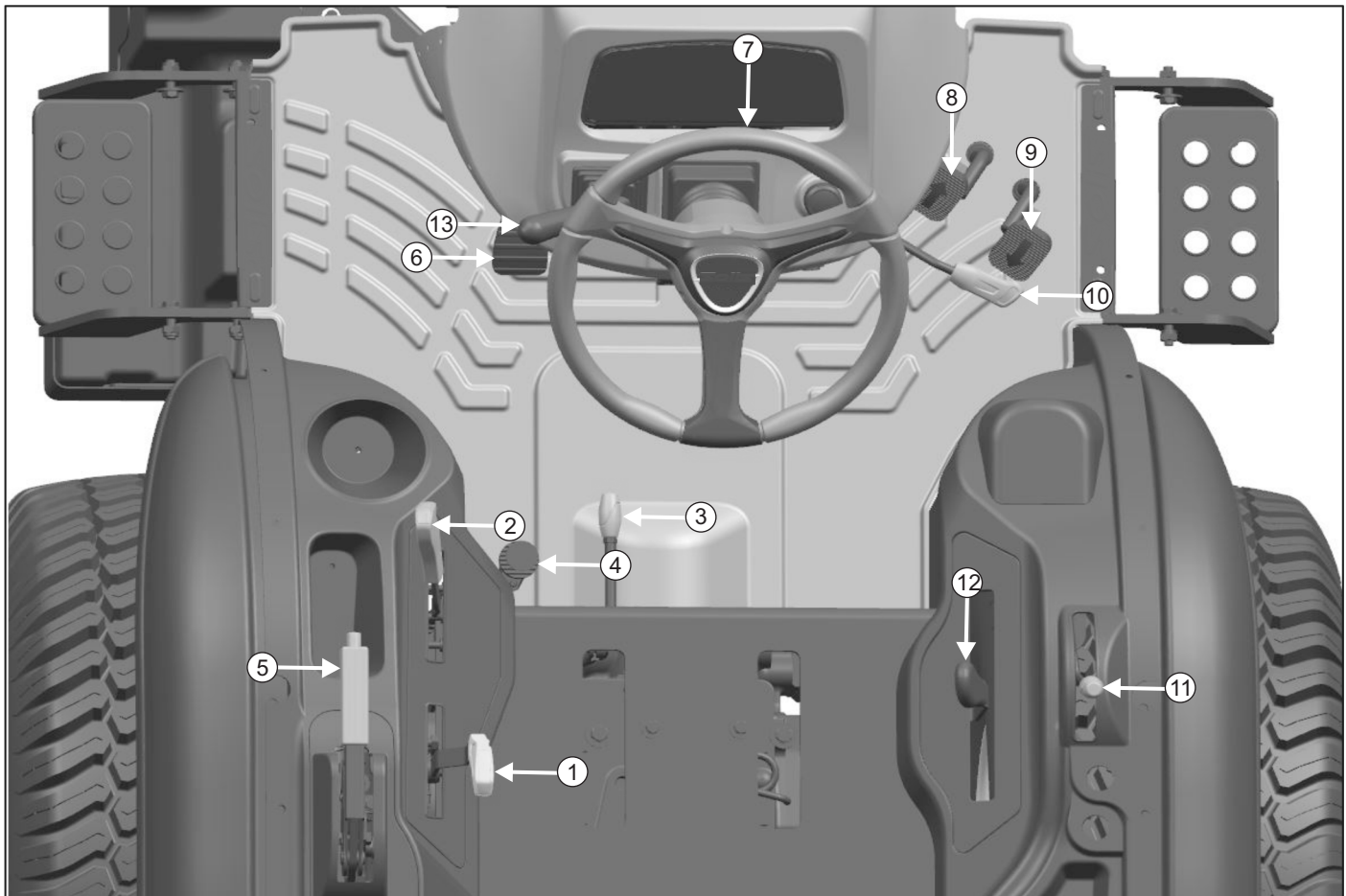


Fig. - 3

| | |
|---|---------------------|
| 1 | PTO Shifter Lever |
| 2 | Hi-Low Lever |
| 3 | 2WD/4WD Lever |
| 4 | Differential Lock |
| 5 | Parking Brake Lever |
| 6 | Brake Pedal |
| 7 | Steering Wheel |

| | |
|----|-----------------------------|
| 8 | Forward Speed Control Pedal |
| 9 | Reverse Speed Control Pedal |
| 10 | Hand Throttle Lever |
| 11 | DCV Lever |
| 12 | Position Lever |
| 13 | Combination Switch |

HEATER CABIN

Tractor Controls- 6+2 Transmission (Fig. - 4) :-

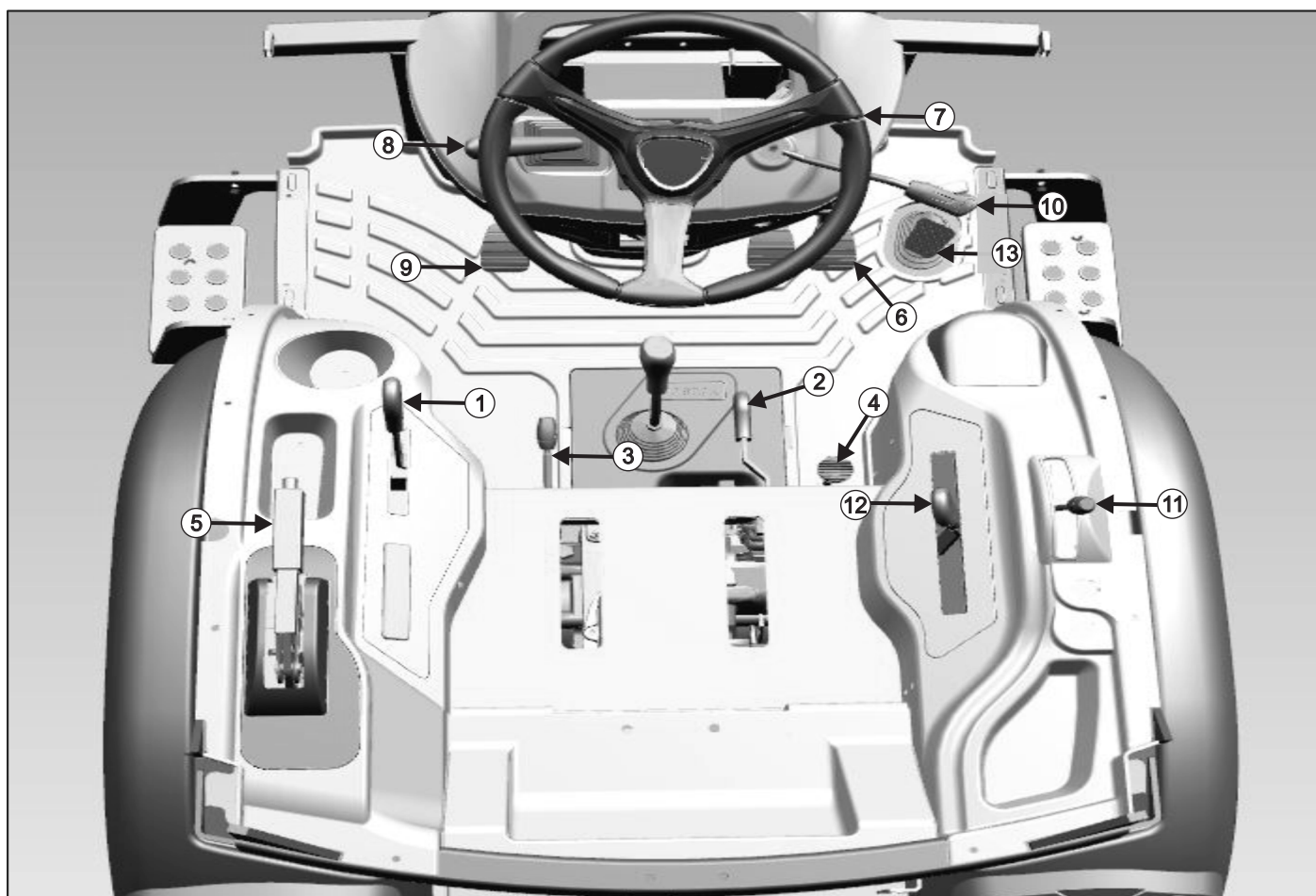


Fig. - 4

| | |
|---|---------------------|
| 1 | PTO Shifter Lever |
| 2 | Range Lever |
| 3 | 2WD/4WD Lever |
| 4 | Differential Lock |
| 5 | Parking Brake Lever |
| 6 | Brake Pedal |
| 7 | Steering Wheel |

| | |
|----|---------------------|
| 8 | Combination Switch |
| 9 | Clutch Pedal |
| 10 | Hand Throttle Lever |
| 11 | DCV Lever |
| 12 | Position Lever |
| 13 | Foot Accelerator |

HEATER CABIN

Tractor Controls- 9+9 Transmission (Fig. - 5) :-

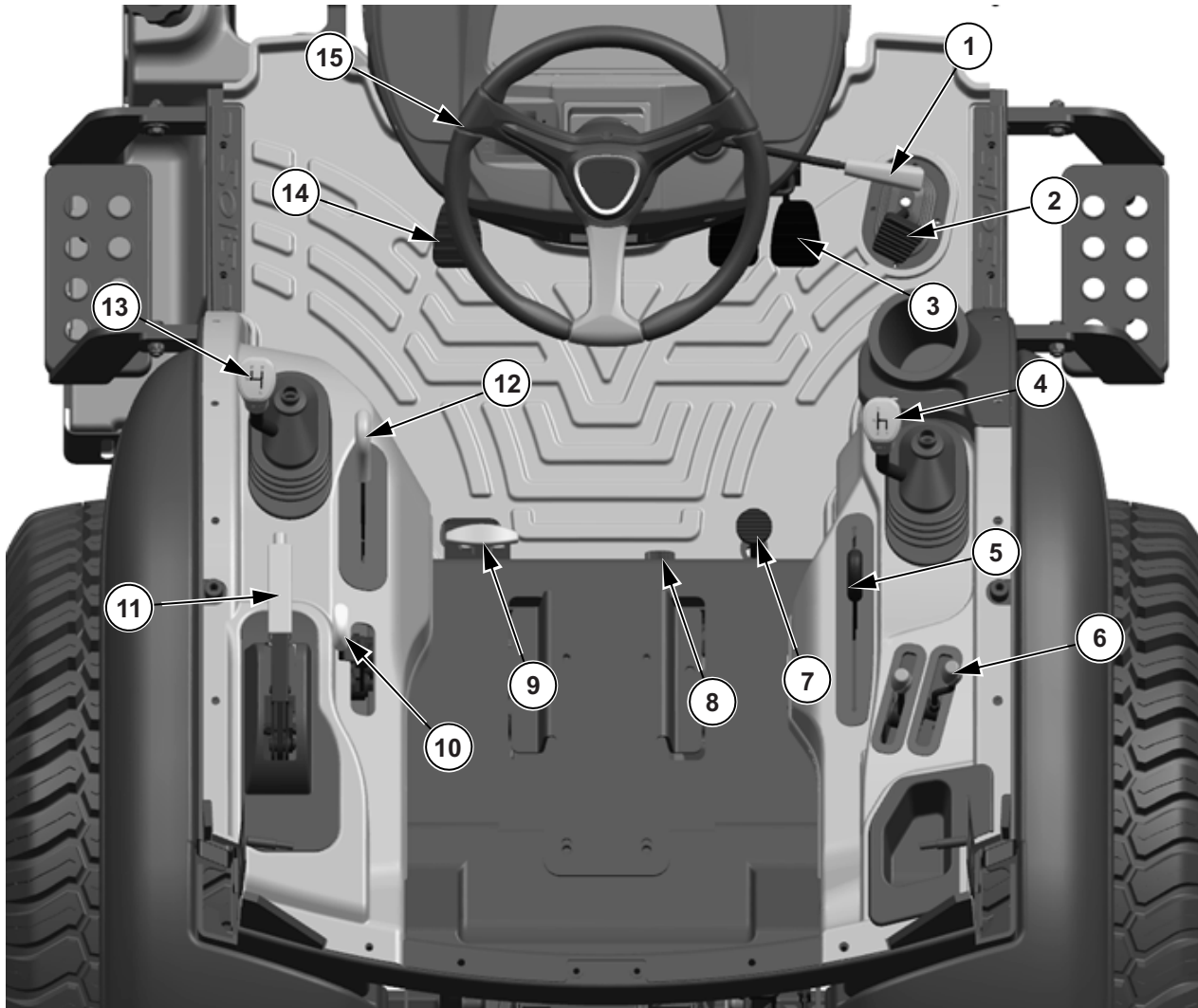


Fig. - 5

| | |
|---|---------------------|
| 1 | Hand Throttle |
| 2 | Foot Throttle |
| 3 | Brake (LH&RH) |
| 4 | Gear Lever |
| 5 | Position Lever |
| 6 | DCV Lever 1DA & 2DA |
| 7 | Differential Lock |
| 8 | Transport Lock |

| | |
|----|----------------|
| 9 | 4WD Lever |
| 10 | PTO Lever |
| 11 | Parking Brake |
| 12 | Shuttle Lever |
| 13 | Range Lever |
| 14 | Clutch Pedal |
| 15 | Steering Wheel |

HEATER CABIN

CABIN INTERIOR ROOF MOUNTED (Fig. - 6) -:

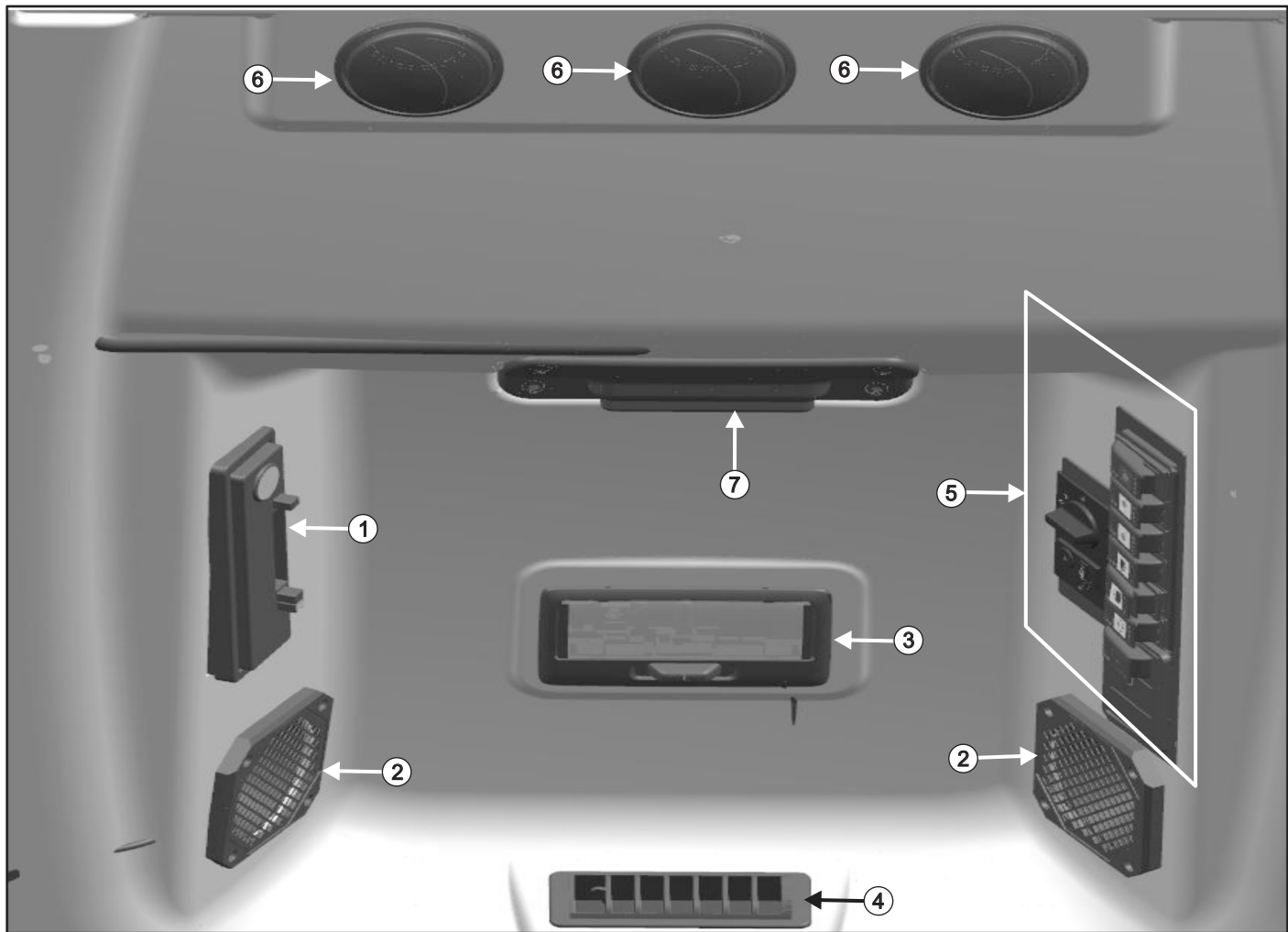


Fig. - 6

| | |
|---|----------------|
| 1 | Stereo System |
| 2 | Speaker |
| 3 | Roof Lamp |
| 4 | Fresh Air Vent |

| | |
|---|-------------|
| 5 | Switches |
| 6 | Blower Vent |
| 7 | Fuse Box |

HEATER CABIN

Dashboard Control Switches For EU HST Cabin (Fig. - 7) :-

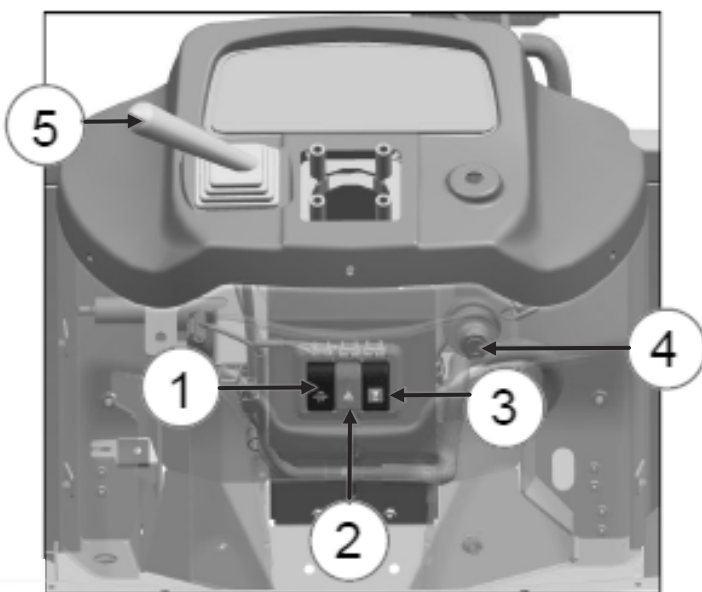


Fig. - 6

1. CRUISE ON-OFF SWITCH
2. HAZARD WARNING SWITCH
3. PTO ON-OFF SWITCH
4. STARTER SWITCH
5. COMBINATION SWITCH

Dashboard Control Switches For EU (6+2) CABIN (Fig. - 8) :-

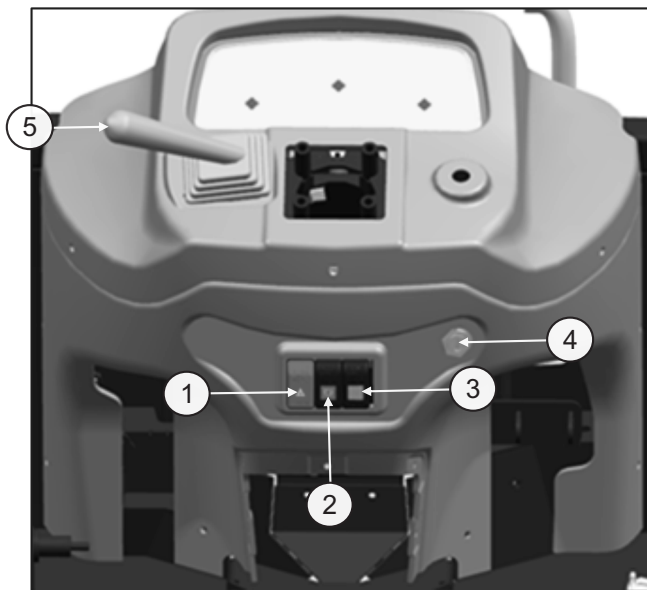
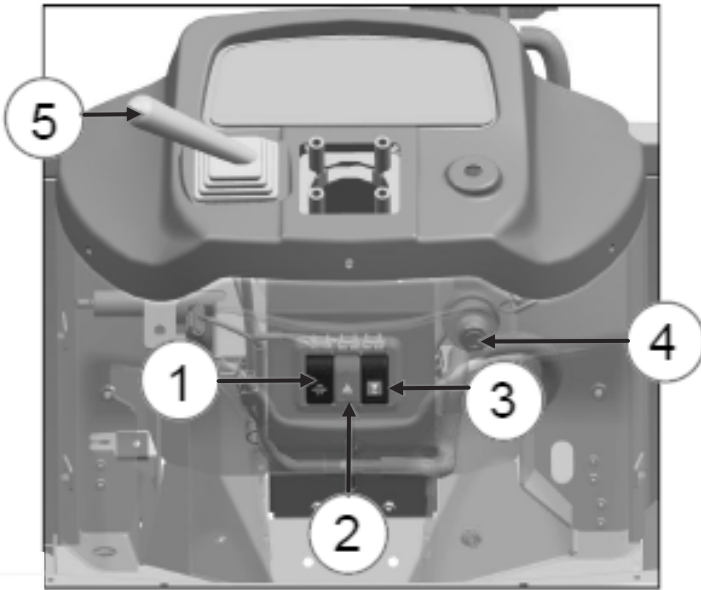


Fig. - 7

1. HAZARD WARNING SWITCH
2. REVOLVING LAMP SWITCH
3. PTO EXTERNAL CONTROL SWITCH
4. STARTER SWITCH
5. COMBINATION SWITCH

HEATER CABIN

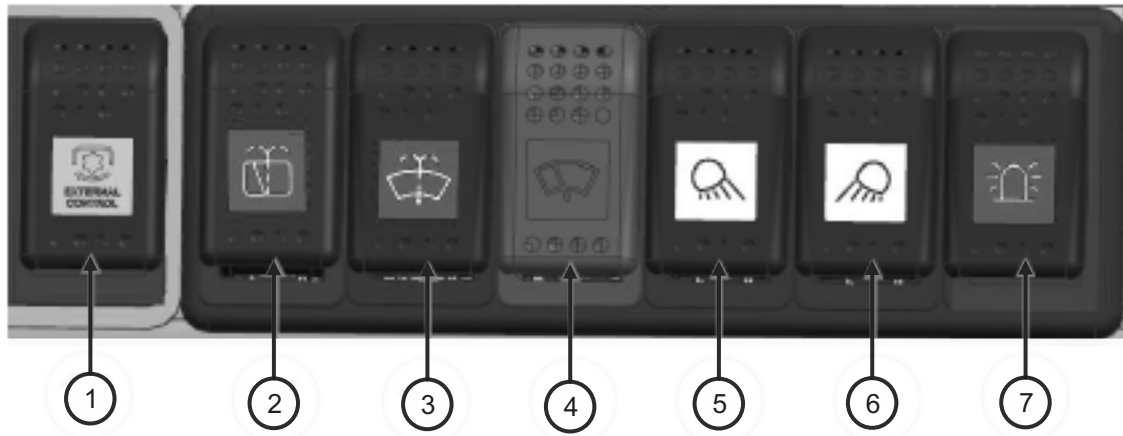
Dashboard Control Switches For 9+9 Cabin :-



1. PTO EXT CONTROL SWITCH
2. HAZARD WARNING SWITCH
3. REVOLVING LIGHT SWITCH
4. STARTER SWITCH
5. COMBINATION SWITCH

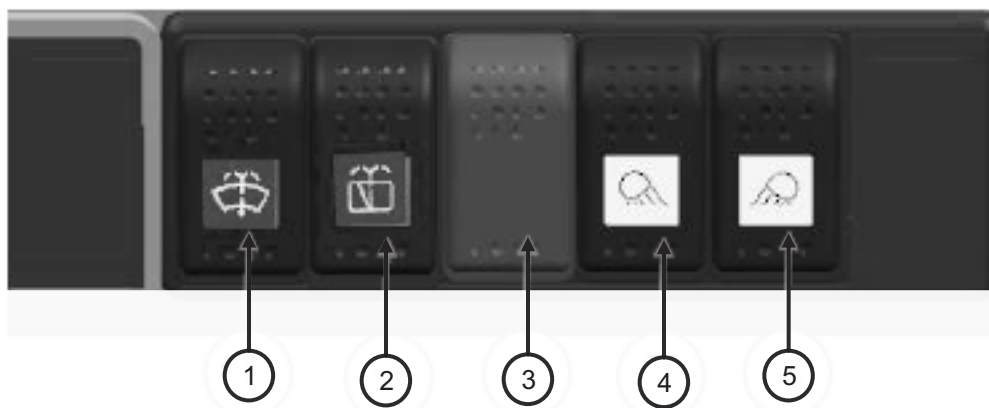
HEATER CABIN

Switches Control Inside Cabin For HST EU CABIN :-



| | | | |
|---|------------------------------|---|----------------------------------|
| 1 | PTO External Control Switch | 5 | Rear Work Lamp Switch |
| 2 | Rear Wiper Cum Washer Switch | 6 | Front Work Lamp Switch |
| 3 | Washer Switch | 7 | Revolving Lamp Switch (Optional) |
| 4 | Front Wiper 2-Speed Switch | | |

Switches Control Inside Cabin For (6+2) EU, (9+9) EU CABIN :-



| | | | |
|---|------------------------------|---|------------------------|
| 1 | Washer Switch | 5 | Front Work Lamp Switch |
| 2 | Rear Wiper Cum Washer Switch | | |
| 3 | Front Wiper 2-Speed Switch | | |
| 4 | Rear Work Lamp Switch | | |

HEATER CABIN



REAR WIPER CUM WASHER SWITCH (Fig. - 8)

Rear Wiper Cum Washer switch is located on roof mounted switch panel. Two position for this switch.

Position 1-: Press the Switch to Switch-ON the Rear Wiper

Position 2-: Press and hold washer switch for spray of water on Rear Wind Screen.

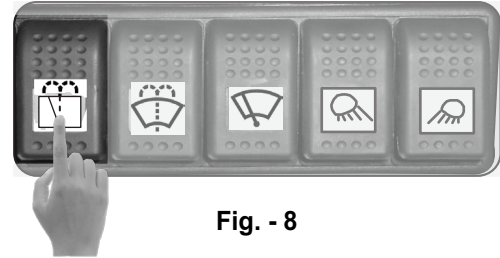


Fig. - 8



WASHER FRONT WINDSHIELD (Fig. - 9)

Press and hold the switch for spray of water on Windshield front, and Release the switch it will automatically turn OFF. .

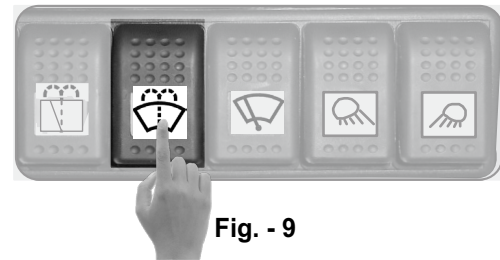


Fig. - 9



FRONT WINDSCREEN WIPER (Fig. - 10)

2 Speed switch is provided to operate front Wiper Blade

Position 1-: Slow Speed

Position 2-: High Speed

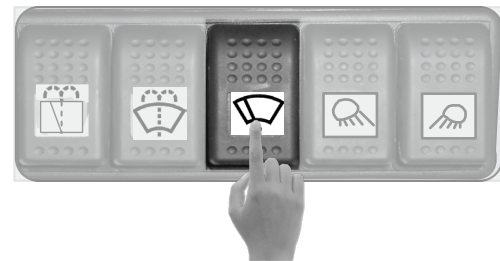


Fig. - 10



WORK LAMP FRONT (Fig. - 11)

Press the switch to Switch-ON the Front Work Lamps.

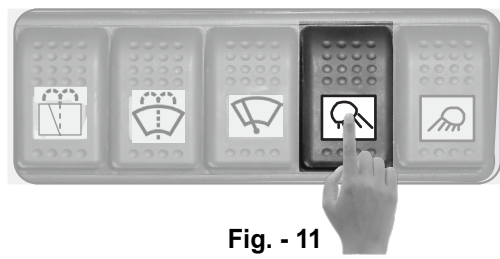


Fig. - 11



WORK LAMP REAR (Fig. - 12)

Press the switch to Switch-ON the Rear Work Lamps.

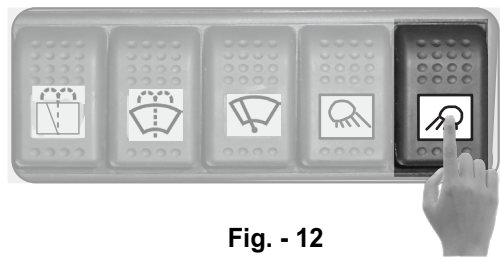


Fig. - 12

Note- All Switches will be “ON”, when ignition key is in “ON” position.

HEATER CABIN



BEACON LIGHT SWITCH (Fig. - 13)

This switch is used to ON/OFF the revolving Light mounted on top of the cabin.

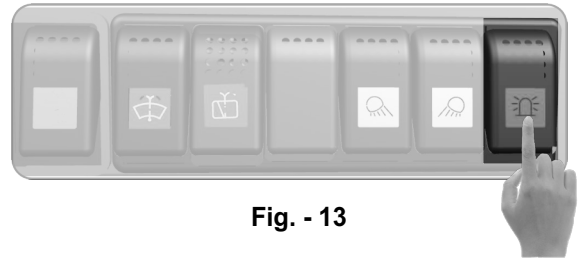


Fig. - 13



PTO EXTERNAL CONTROL SWITCH (Fig. - 14)

When this switch ON, Operator can get up the driver seat after park brake applied to use the stationary PTO application.

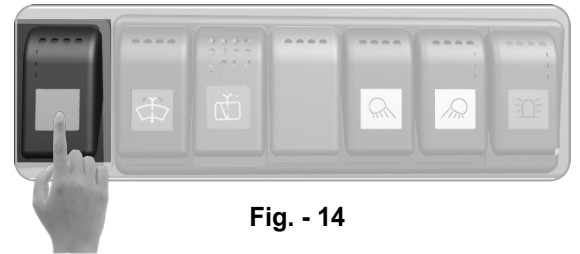


Fig. - 14

PTO ON-OFF Switch (Fig. -15)

This Switch is used to ON/OFF the PTO & provide Signal to PTO Solenoid valve through Safety Controller. When we press this switch for 3 Second then PTO Solenoid will be ON & We press Switch again it will Stop the PTO Solenoid immendiately.

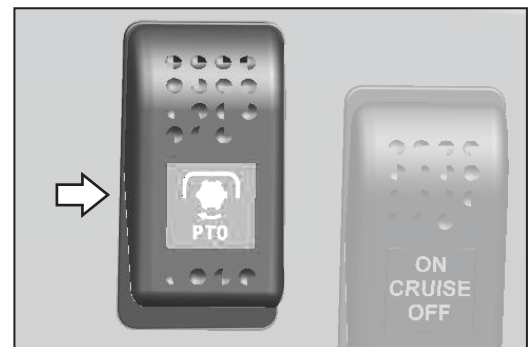


Fig. - 15

Cruise ON-OFF Switch (Fig. -16)

This Switch on-off the cruise Magnet, When this switch type : press in upper side cruise magnet will be ON & when it press in lower side then magnet will be OFF.

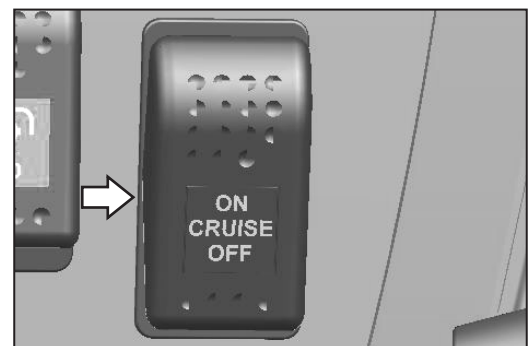


Fig. - 16

Note- All Switches will be "ON", when ignition key is in "ON" position.

HEATER CABIN



WASHER BOTTLE (Fig. - 17)

Washer Tank(1) is located outside the Cabin in rear LH side.

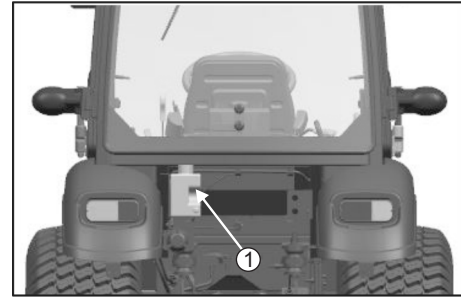


Fig. - 17

HEATER CONTROL PANEL (Fig. - 18)

Heater Control Panel is mounted in Roof on left hand side.

- ② Heaters Switch
- ③ Blower Knob-3 speed

To operate the Heater, press Heater Switch (2) and rotate Blower Knob (3) as per required flow of air.

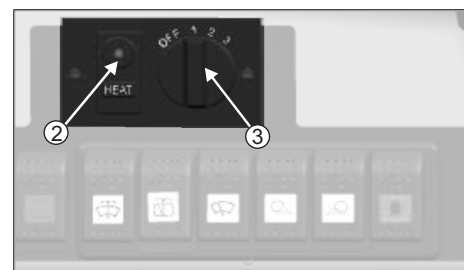


Fig. - 18

MUSIC SYSTEM (Fig. - 19)

Ceiling fitted detachable front panel Stereo (4) support with 02 speakers.

Refer operator manual of music system for detail.

SPEAKER (Fig. - 19)

Speaker mounted (5) on Roof left and right rear corner.

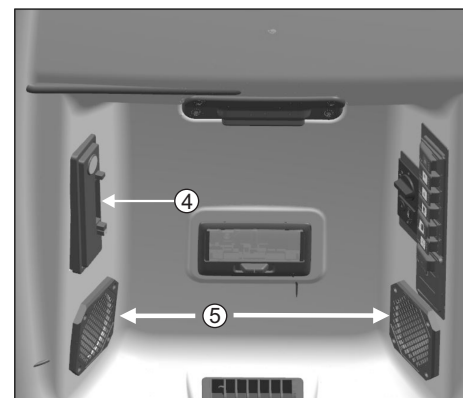


Fig. - 19

FRESH AIR Vent (Fig. - 20)

Fresh Air Vent (6) located on rear side of the Roof.

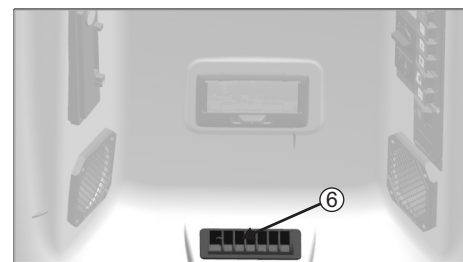


Fig. - 20

HEATER CABIN

OUTSIDE DOOR (Fig. - 25)

Lock : To lock Door insert the key fully and turn in anti clock wise direction.

Unlock : To Unlock door insert the key fully and turn in clock wise direction.

Open : To open the Door press Lock Button

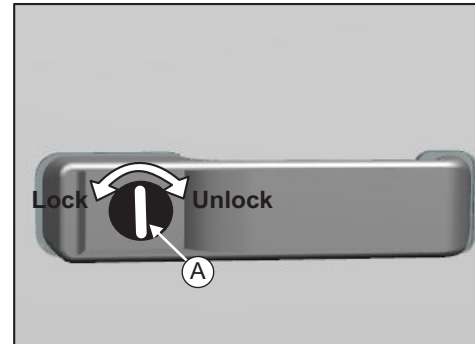


Fig. - 25

INSIDE DOOR (Fig. - 26)

Pull the Lever (B) and give soft push to Door.

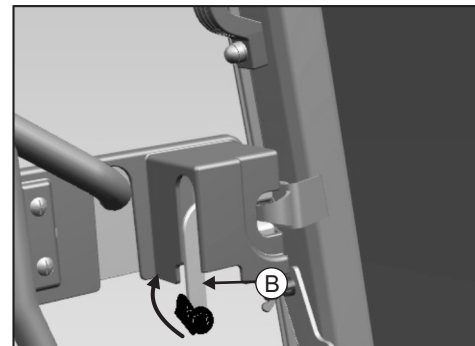


Fig. - 26

OPENABLE REAR WINDOW (Fig. - 27)

To unlock rotate the Lever (C) in anti-clock wise direction and give soft push to windscreen for self raising to full open position. To lock pull the rear Wind Screen from handle and rotate the lever in clock wise direction.

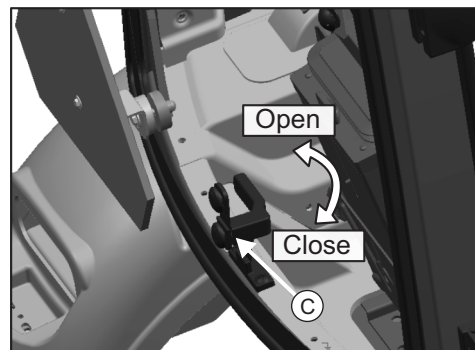


Fig. - 27

EMERGENCY EXIT (Fig. - 28)

Rear Windscreen acts as an Emergency Exit which is located at rear side of the Cabin for safety of operator in case of Cabin Doors are blocked in an emergency situation. Emergency window is without any key operated lock and opens with rotation of handle in anti-clockwise direction.

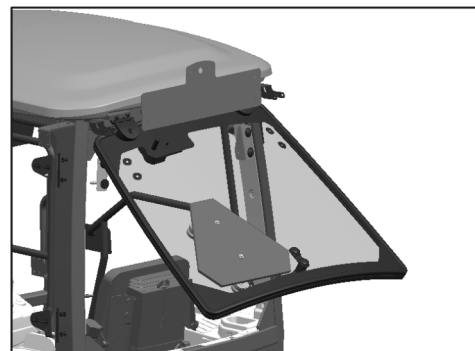


Fig. - 28

Note:- SMV is provided for EPA model only.

HEATER CABIN

CABIN AIR FILTER (Fig. - 21)

Air Filter (1) mounted on mid of the LHS and RHS on Canopy. Replace the Air Filter, when Filter is checked.

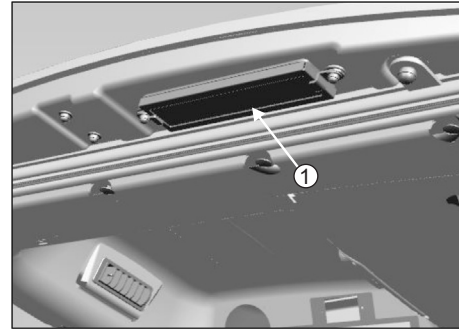


Fig. - 21

LOUVERS (Fig. - 22)

Louvers (2) mounted on front side of the Roof. The direction of air flow can set according to the Flap position of the Louvers.

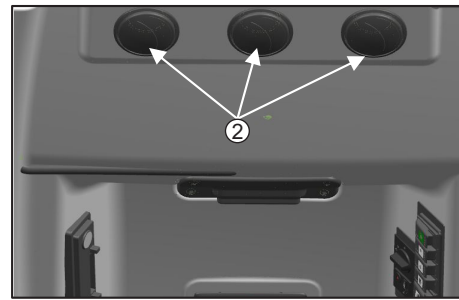


Fig. - 22

DOME LIGHT (Fig. - 23)

Dome Light (3) is fitted on roof panel. Slide the Knob (4) to required position.

OFF : Turns off the Dome light

DOOR : Light comes on when door is opened and off when door is closed.

ON : Turns on the Dome light either Doors are in closed or opened position.

NOTE : Before exiting cab turn the cabin light to OFF or DOOR position.

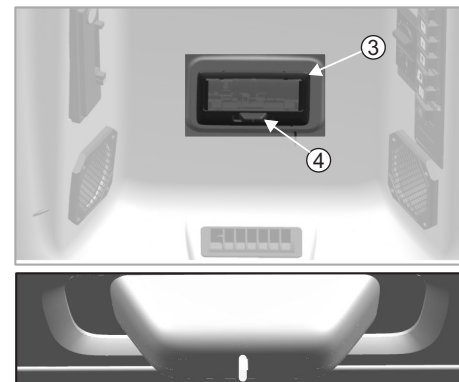


Fig. - 23

FOLDABLE SUN SHADE (Front Wind Screen) (Fig. - 24)

To open pull down Lever (5) and leave it in suitable opened position. To close press the button (6). It will automatically roll in.

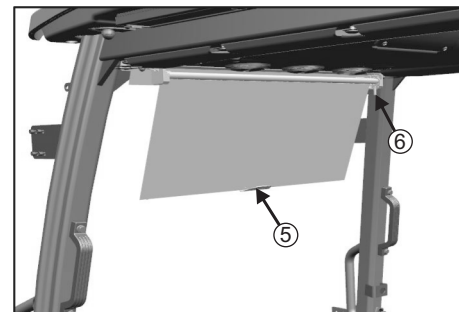


Fig. - 24

HEATER CABIN

OUTSIDE REAR VIEW MIRRORS (Fig. - 29)

Adjustable Rear view Mirrors (1) are fitted on left & right Front Pillar.

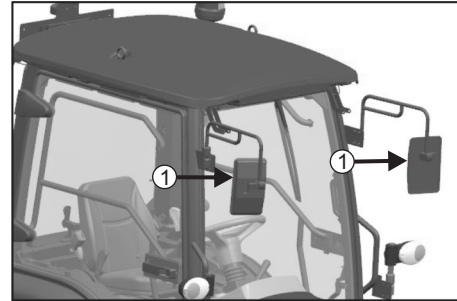


Fig. - 29

REGISTRATION PLATE & LICENCE LAMP (Fig. - 30)

Registration Plate (2) and Licence Lamp (3) is mounted on the Rear side of Roof.

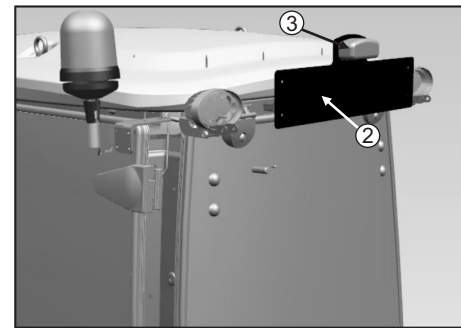


Fig. - 30

Fuse Box HST EU Cabin (Fig. - 31 & Fig. - 32)

There are two Fuse Boxes are provided on the tractor. One is for vehicle and other is for cabin electrical equipment mounted in front of Radiator Assembly and Roof respectively.

| | | | | | |
|------------------------|------------------|-----------------------|--------------------|-----------------|-----------------|
| 86 | 30 | 10A | 15A | 15A | 86 |
| PTO SAFETY START RELAY | PARK LIGHT | LOW BEAM | HIGH BEAM | CRUISE-ON RELAY | |
| 87 | 87A | 20A SAFETY CONTROLLER | 5A HORN | 15A AUX. 1 | 87 87A 85 |
| 86 | 30 | 86 | 30 | 86 | 30 |
| OPC RELAY | OPC SWITCH RELAY | ENGINE STOP RELAY | CRUISE-OFF RELAY | | |
| 87 | 87A | 85 | 87 | 87A | 85 |
| 15A PLOUGH LAMP | 5A CRUISE MAGNET | 20A COMB. SW. | 15A MOBILE CHARGER | 15A FLASHER | 15A BRAKE LIGHT |

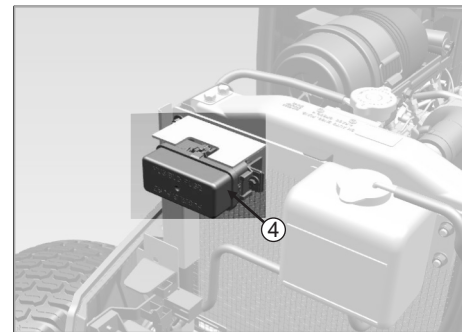


Fig. - 31

Vehicle (Fig. -31)

| | | | | | | |
|---------------------|---------------------|------------------|---------------------|---------------------|----|--------|
| | 10A STERIO & ROOF | 15A AUX. CABIN | 20A BLOWER | 7.5A FR. WORK LIGHT | 86 | 30 |
| | 10A WASHER | 10A REAR WIPER | 10A FRONT WIPER | 7.5A RR. WORK LIGHT | 87 | 87A 85 |
| 86 | 30 | 86 | 30 | 86 | 30 | 86 |
| BLOWER HIGH RELAY | BLOWER MEDIUM RELAY | BLOWER LOW RELAY | HEATING VALVE RELAY | | | |
| 87 | 87A | 85 | 87 | 87A | 85 | 87 |
| 10A REVOLVING LIGHT | | | | | | |

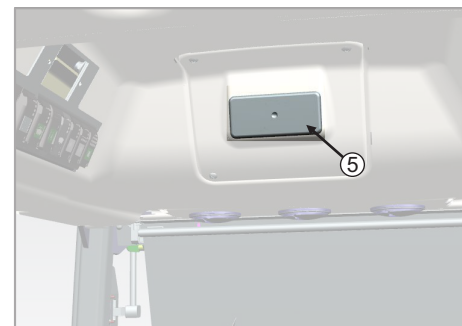


Fig. - 32

Cabin (Fig. -32)

HEATER CABIN

Fuse Box (6+2) EU Cabin (Fig. - 33 & Fig. - 34)

There are two Fuse Boxes are provided on the tractor. One is for vehicle and other is for cabin electrical equipment mounted in front of Radiator Assembly and Roof respectively.

| | | | | | | |
|------------------------|---------------------|-------------------|-----------------------|----------------|-----------------|-----------|
| 86 | 30 | 10A | 15A | 15A | 86 | 30 |
| PTO SAFETY START RELAY | PARK LIGHT | LOW BEAM | HIGH BEAM | LOW BEAM RELAY | | |
| 87 | 87A | 85 | 20A SAFETY CONTROLLER | 5A HORN | 15A AUX.1 | 87 87A 85 |
| 86 | 30 | 86 | 30 | 86 | 30 | 86 |
| OPC RELAY | OPC SWITCH RELAY | ENGINE STOP RELAY | HIGH BEAM RELAY | | | |
| 87 | 87A | 85 | 87 | 87A | 85 | 87 87A 85 |
| 15A FLOUGH LAMP | 15A REVOLVING LIGHT | 20A COMB. SW. | 15A MOBILE CHARGER | 15A FLASHER | 15A BRAKE LIGHT | |

Vehicle (Fig. -33)

| | | | | | | |
|-------------------|---------------------|------------------|---------------------|---------------------|-------------|-----------|
| | 10A STERIO & ROOF | 15A AUX. CABIN | 20A BLOWER | 7.5A FR. WORK LIGHT | 86 | 30 |
| | 10A WASHER | 10A REAR WIPER | 10A FRONT WIPER | 7.5A RR. WORK LIGHT | CABIN RELAY | |
| 86 | 30 | 86 | 30 | 86 | 30 | 86 |
| BLOWER HIGH RELAY | BLOWER MEDIUM RELAY | BLOWER LOW RELAY | HEATING VALVE RELAY | | | |
| 87 | 87A | 85 | 87 | 87A | 85 | 87 87A 85 |

Cabin (Fig. -34)

Fuse Box 9+9 (EU) Cabin (Fig. - 35 & Fig. - 36)

There are two Fuse Boxes are provided on the tractor. One is for vehicle and other is for cabin electrical equipment mounted in front of Radiator Assembly and Roof respectively.

| | | | | | | |
|------------------------|---------------------|-------------------|-----------------------|----------------|-----------------|-----------|
| 86 | 30 | 10A | 15A | 15A | 86 | 30 |
| PTO SAFETY START RELAY | PARK LIGHT | LOW BEAM | HIGH BEAM | LOW BEAM RELAY | | |
| 87 | 87A | 85 | 20A SAFETY CONTROLLER | 5A HORN | 15A AUX.1 | 87 87A 85 |
| 86 | 30 | 86 | 30 | 86 | 30 | 86 |
| OPC RELAY | OPC SWITCH RELAY | ENGINE STOP RELAY | HIGH BEAM RELAY | | | |
| 87 | 87A | 85 | 87 | 87A | 85 | 87 87A 85 |
| 15A FLOUGH LAMP | 15A REVOLVING LIGHT | 20A COMB. SW. | 15A MOBILE CHARGER | 15A FLASHER | 15A BRAKE LIGHT | |

Vehicle (Fig. -35)

| | | | | | | |
|------------------|---------------------|-------------------|---------------------|---------------------|-------------|-----------|
| | 10A STERIO & ROOF | 15A AUX. CABIN | 20A BLOWER | 7.5A FR. WORK LIGHT | 86 | 30 |
| | 10A WASHER | 10A REAR WIPER | 10A FRONT WIPER | 7.5A RR. WORK LIGHT | CABIN RELAY | |
| 86 | 30 | 86 | 30 | 86 | 30 | 86 |
| BLOWER LOW RELAY | BLOWER MEDIUM RELAY | BLOWER HIGH RELAY | HEATING VALVE RELAY | | | |
| 87 | 87A | 85 | 87 | 87A | 85 | 87 87A 85 |

Cabin (Fig. -36)

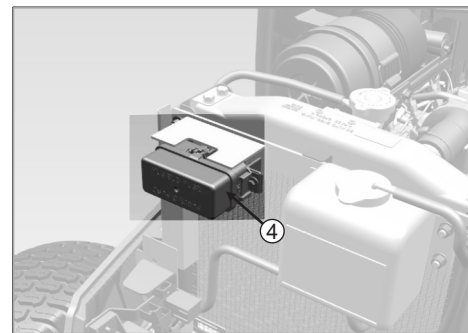


Fig. - 35

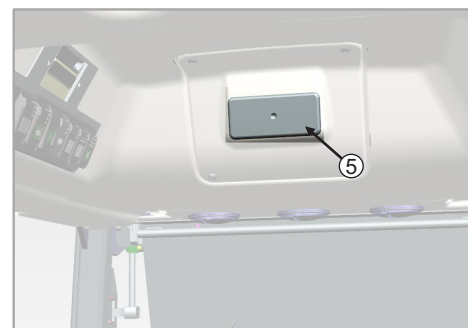


Fig. - 36

HEATER CABIN

Front Work Lamp (Fig. - 37)

Front Work Lamp (1) are fitted on left & right front pillar on front side cabin.

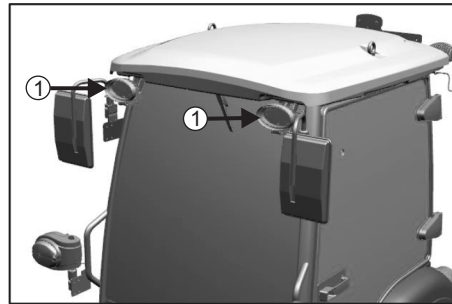


Fig. - 37

Rear Work Lamp (Fig. - 38)

Rear Work Lamp (2) are fitted on left & right rear pillar on rear side of Cabin.

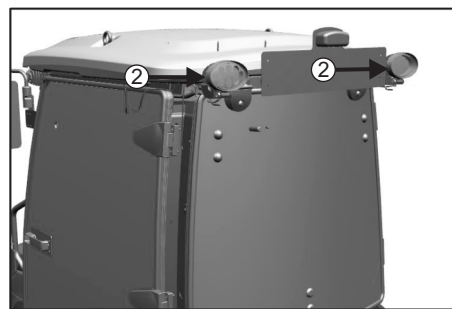


Fig. - 38



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