

OPERATOR'S MANUAL

- **50 with ROPS**
- **50 with CABIN**

Models with 8+2 Speed Transmission)

**INTERNATIONAL TRACTORS LIMITED
HOSHIARPUR (INDIA)**

Part Code: Draft
Revision 1, December 2020
English

OWNERSHIP AND TRACTOR DETAILS

OWNER'S NAME & ADDRESS	_____ _____ TEL.NO. _____
---------------------------	---------------------------------

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

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

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

Received a new defect free tractor Chassis No.

Engine No. & fully satisfied with the transaction.

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

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

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	_____ TEL.NO. _____

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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 TRACTOR LIMITED

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

Jalandhar Road, Hoshiarpur, Punjab, India.

Phone: +91-1882-522-525/526

E-mail: exports.itl@sonalika.com

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.

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INTRODUCTION

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.

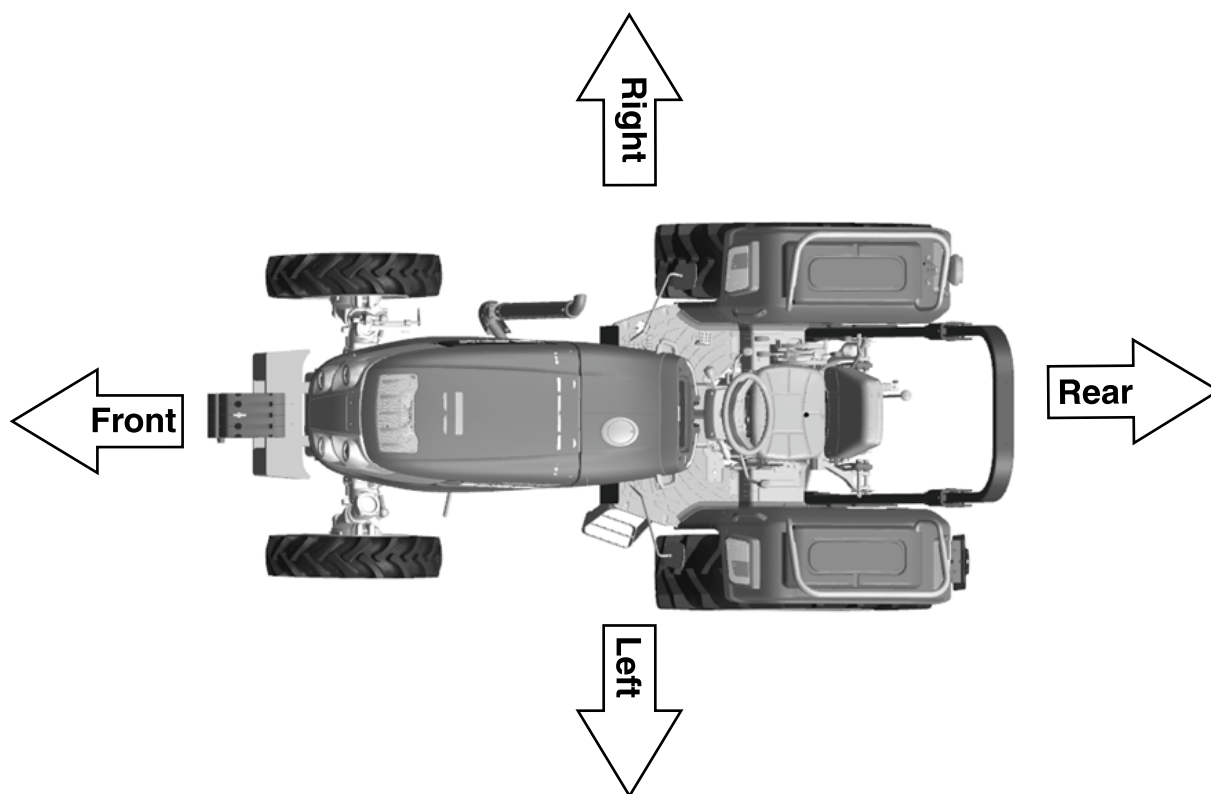
If you have an attachment, use the safety and operating information in the attachment operator's manual along with the tractor operator's manual to operate the attachment safely and correctly.

This manual and safety signs on your tractor may also be available in other 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 ordering spare parts. This will facilitate correct & faster delivery of required parts. For easy reference, we suggest you to record these numbers in the space provided in the 'Ownership and Tractor details' page before this Chapter.



TRACTOR IDENTIFICATION

A. Chassis Serial Number

Chassis serial number is punched on right side of the front axle bracket (see figure). Chassis and/or engine serial numbers are used to register the vehicles. They are also used to assist your dealer when ordering spare parts or referring to special service information. Whenever you have occasion to consult your dealer, remember to identify your vehicle with this number.

B. Engine Serial Number

Engine serial number is engraved on the cylinder block of the Engine, as shown in figure.

C. Statutory Plate / Data Plate

Chassis number is also engraved on Statutory /Data plate, which is located on left hand side fender.

D. ROPS Certificate Plate (Optional)

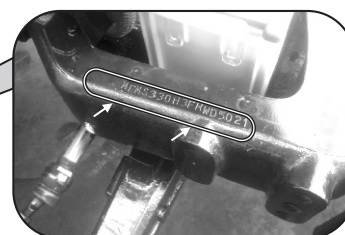
ROPS certificate plate is riveted on ROPS as shown in figure. Information about ROPS serial number and tractor model is engraved on ROPS plate.

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)	

C. Statutory Plate (Regular)

SONALIKA	
INTERNATIONAL TRACTORS LTD.	
Type:	
EEC number:	
Identification number:	
Total permissible mass (*):	to kg
Permissible front axle load (*):	to kg
Permissible rear axle load (*):	to kg
(*) depending on the tyres.	
Permissible towable mass:	
Unbraked towable mass:	kg
Independently-braked towable mass:	kg
Inertia-braked towable mass:	kg
Towable mass fitted with an assisted braking system : (hydraulic or pneumatic)	kg
INTERNATIONAL TRACTORS LIMITED HOSHIARPUR, PUNJAB (INDIA)	

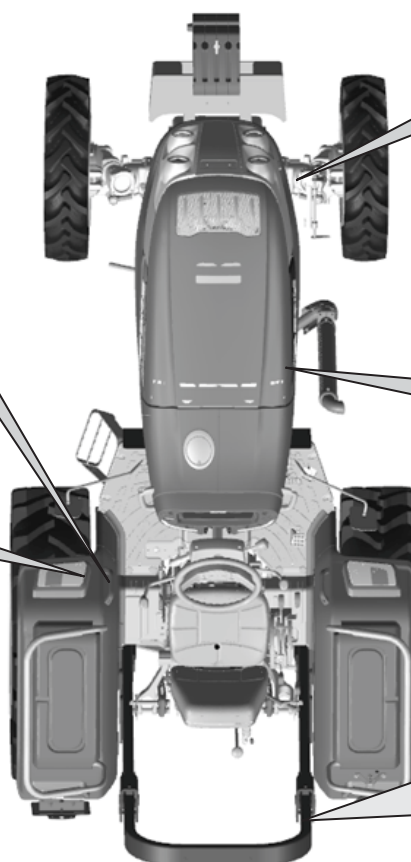
C. Statutory Plate (EEC)



A. Chassis Serial Number



B. Engine Serial Number



S	INTERNATIONAL TRACTORS LIMITED
e 4	TRACTOR TYPE T 1
0080	ROPS Serial No. _____
Tractor Model	_____

D. ROPS Certificate Plate

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.

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.



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



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



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

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

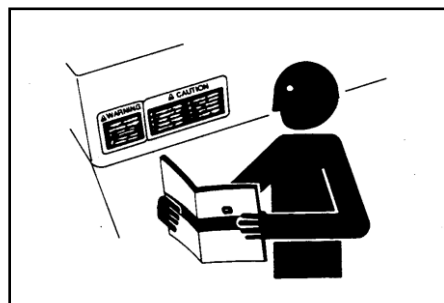
NOTE : Indicates important information or information which is useful for tractor operation.

SAFETY NOTES

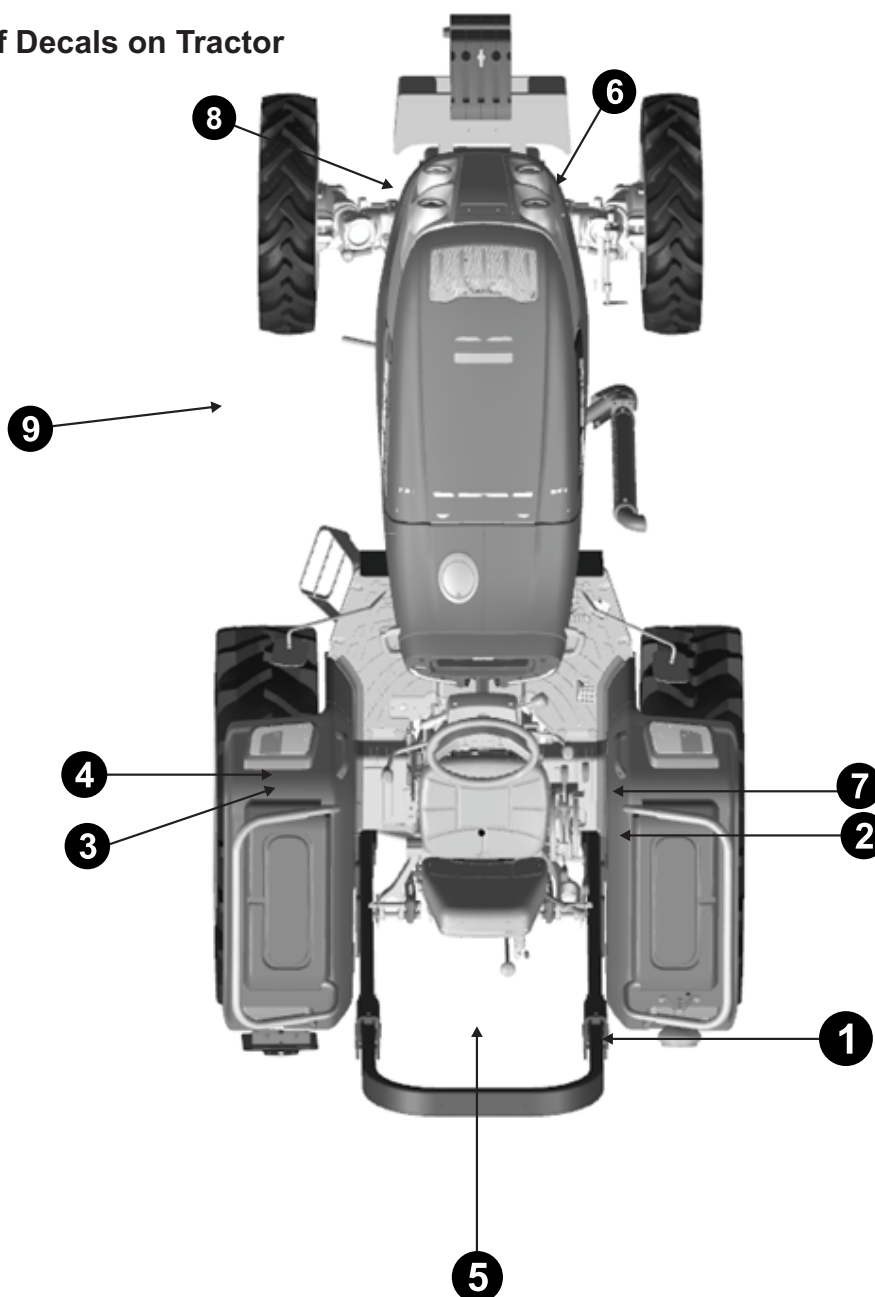
Safety Labels

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.



Position of Decals on Tractor



SAFETY NOTES

 <p>INTERNATIONAL TRACTORS LTD.</p> <p>CORRECT METHOD OF USING LIFT:</p> <ul style="list-style-type: none"> Bring both levers (Red draft and black position) towards down position. Take red lever (Up Position) till lift starts raising. Then bring it to slightly down position. Run the tractor in correct ploughing gear and speed. While tractor is ploughing, bring red lever down very slowly, until you get the right depth (without overload) and then lock the lever with the knob. As required use black lever for using lift up and down. 	<p>लिफ्ट को सही तरीके से उपयोग करने की विधि :</p> <ul style="list-style-type: none"> दोनों लीवर (लाल वाला ड्राफ्ट लीवर व काले वाला पोजीशन लीवर) को डाऊन पोजीशन की तरफ करें। लाल लीवर को पीछे (अप पोजीशन) की तरफ उस जगह पर ले कर जाएं जहां से लिफ्ट ऊपर उठना शुरू कर देती है। इसके बाद लीवर को थोड़ा आगे (डाउन पोजीशन) की ओर करें। ट्रैक्टर को सही जुताई वाले गियर में और सही जुताई वाली स्पीड में डालकर आगे की ओर बढ़ें। ट्रैक्टर के चलते समय लाल लीवर को वहां तक धीरे धीरे आगे (डाउन) तक ले कर जाएं जहां तक आपको सही गहराई (ट्रैक्टर बिना ओवर लोड) मिलती है, और नॉब के साथ लीवर को लॉक कर दें। इसके बाद जरूरत अनुसार लिफ्ट को उठाने व नीचे करने का काम काले लीवर से ही लें। 	<p>लिफ्ट की सही उतरीके ढाल वरतते करन की विधि:</p> <ul style="list-style-type: none"> देवे लीवर (लाल वाला ड्राफ्ट लीवर अउ काले वाला पोजीशन लीवर) नुं डाऊन पोजीशन वॉल करे। लाल लीवर नुं पीछे (अप पोजीशन) वॉल उंचे उंचे ले के जाँचें जिनसे लिफ्ट ऊपर उठना शुरू कर देवे। लीवर नुं उस उंचे जगह जाँचें (डाऊन पोजीशन) वॉल करे। ट्रैक्टर नुं सही जुताई वाले गियर वरतते अउ सही जुताई वाली स्पीड वरतते अउ वरतते वॉल चले। ट्रैक्टर के चलते सभे लाल लीवर नुं हेली हेली अउ (डाऊन) वॉल उंचे उंचे ले के जाँचें जिनसे उंचा नुं सही गहराई (ट्रैक्टर बिना ओवर लोड) मिलती है अउ नोब नाल लीवर नुं लॉक कर दिऐ। उस उंचे जगह जरूरत अनुसार लिफ्ट नुं उठाऊँ अउ वॉल करन दा काम काले लीवर उंचे ही लऐ।
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PART NO. 10071424AA

1. ■■■■

WARNING

चेतावनी

- OPERATING AND SAFETY INSTRUCTIONS MENTIONED IN THE INSTRUCTIONS MANUAL SHOULD ALWAYS BE FOLLOWED
- BEFORE STARTING THE ENGINE, MAKE SURE THAT TRANSMISSION AND H-LOW GEARS ARE IN NEUTRAL. PTO IS DISENGAGED AND HYDRAULIC CONTROL LEVERS ARE IN LOWER POSITION.
- DO NOT SHORT TERMINALS ON STARTER SOLENOID OR BYPASS SAFETY NEUTRAL SWITCH.
- AVOID SHARP TURNS AT HIGH SPEED. ELSE IT MAY RESULT IN OVERTURNING.
- USE LOW GEAR WHILE DRIVING DOWN STEEP SLOPES. NEVER RUN IN NEUTRAL GEAR.
- LATCH THE BRAKE PEDALS TOGETHER WHILE DRIVING ON ROADS.
- TYRE PRESSURE

	FRONT	REAR (12.4-28/OTHER)
ON ROAD	280 KPa	100 KPa / 150 KPa
ON FIELD	250 KPa	80 KPa / 110 KPa

- हमेशा चालक मंडल पुस्तिका में दिए हुए चालन एवं सुरक्षा नियमों का पालन करें।
- इंजन स्टार्ट करने से पहले ब्रेक को दृक्मोडन और हाई-लो गियर न्यूट्रल हों, पी. टी. ओ. कण्ट हो और हाइड्रॉलिक कंट्रोल लीवर नीचे की स्थिति में हों।
- स्टार्टर मोटर के टर्मिनल्स को शॉर्ट करने या सेफ्टी न्यूट्रल स्विच को बायपास करने इंजन स्टार्ट न करें।
- मोड़ पर तेज बगिचा घुंटेन करें। ऐसा न करने से ट्रैक्टर फल्ट सकता है।
- अधिक ढलान से उतारते समय लो गियर का उपयोग करें। कभी भी न्यूट्रल में न चलें।
- मोड़ पर चक्के समय दोनों ब्रेक पैडलों को साथ ड्रग जोड़ दें।
- पट्टियों में हवा का दबाव

	आगा	पिछला (12.4-28/अन्य)
ब्रेक पर	250 KPa	100 KPa / 150 KPa
पैरलल में	250 KPa	80 KPa / 110 KPa

PART NO. 10070428AC

2. ■■■■

3. ■■■■

WARNING

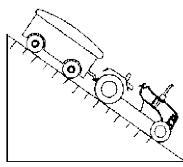
DISENGAGE PTO LEVER BEFORE STARTING ENGINE.

PART NO. 20002586

4. ■■■■

5. ■■■■

WARNING



- WHILE GOING DOWN THE STEEP SLOPE WITH LOADED TRAILER, KEEP ENGINE SPEED LOWEST & USE ONLY L1 OR L2 GEAR.

भरे हुए ट्रेलर को ढलान पर नीचे उतारते समय इंजन की गति धीमी-से-धीमी रखें और L1 या L2 गियर का ही प्रयोग करें।

PART NO. 10070427AB

WARNING

- PULL ONLY FROM DRAWBAR. PULLING FROM ANY OTHER POINT CAN CAUSE REAR OVERTURN.
- DO NOT OPERATE THE PTO WITHOUT GUARD.
- USE SAFETY CHAIN WHEN TOWING EQUIPMENT.

FAILURE TO FOLLOW ANY OF THE ABOVE INSTRUCTIONS, CAN RESULT IN SERIOUS INJURY TO OPERATOR OR OTHER PERSON.

PART NO. 20002587

SAFETY NOTES

<div> <div> <div>ਦੇਖਮਾਲ</div> <div>SONALIKA INTERNATIONAL</div> </div> <div>SERVICE</div> <div>ਦੇਖਭਾਲ</div> </div>	
<div> <div>INTERNATIONAL TRACTORS LTD.</div> <p>FOR FIRST 10 HOURS OPERATE THE TRACTOR WITHOUT LOAD AND AFTER 10 HOURS ON NORMAL LOAD, AFTER 100 HOURS AT ANY LOAD.</p> <p>ਟ੍ਰੈਕਟਰ ਦੇ ਸ਼ੁਰੂ ਕੇ 10 ਘੰਟੇ ਬਿਨਾਂ ਕਿਸੀ ਲੋਡ ਦੇ ਚਲਾਏਂ ਤਥਾ ਚਲਾਏਂ ਪਰਚਾਓ 100 ਘੰਟੇ ਪੂਰੇ ਹੋਏ ਤਕ ਟ੍ਰੈਕਟਰ ਕੋ ਸਾਮਾਨੀ ਲੋਡ ਪਰ ਚਲਾਏਂ। 100 ਘੰਟੇ ਪਰਚਾਓ ਟ੍ਰੈਕਟਰ ਕੋ ਕੋਥੇ ਭੀ ਲੋਡ ਪਰ ਚਲਾ ਸਕਦੇ ਹੋ। ਟ੍ਰੈਕਟਰ ਨੂੰ ਸ਼ੁਰੂ ਦੇ 10 ਘੰਟੇ ਬਿਨਾਂ ਲੋਡ ਚਲਾਏਂ ਅਤੇ ਇਸ ਦੇ ਬਾਦ 100 ਘੰਟੇ ਪੂਰੇ ਹੋਣ ਤਕ ਟ੍ਰੈਕਟਰ ਨੂੰ ਸਮਾਨ ਲੋਡ ਤੋਂ ਚਲਾਏਂ। 100 ਘੰਟੇ ਬਾਦ ਟ੍ਰੈਕਟਰ ਨੂੰ ਕਿਸੀ ਵੀ ਲੋਡ ਤੋਂ ਚਲਾਏਂ।</p> <p>FIRST SERVICE AFTER 40 HOURS OF RUNNING IN.</p> <p>ਪਹਿਲੀ ਸਰਵਿਸ 40 ਘੰਟੇ ਚਲਨੇ ਪਰ ਕਰਵਾਏਂ।</p> <p>ਪਹਿਲੀ ਸਰਵਿਸ 40 ਘੰਟੇ ਚਲਣ ਤੋਂ ਕਰਵਾਏਂ।</p> </div>	
1	<div> <p>Change engine oil after every 200 hrs.</p> <p>ਭੰਜਨ ਕਾ ਤੇਲ ਹਰ 200 ਘੰਟੇ ਬਾਦ ਬਦਲੀਏ।</p> <p>ਇੰਜਨ ਦਾ ਤੇਲ ਹਰ 200 ਘੰਟੇ ਤੋਂ ਬਦਲੋ।</p> </div>
2	<div> <p>Clean the primary element after every 250 hrs of operation or whenever choke indicator glows on dashboard. Replace primary element after 3 cleaning or 750 hrs (whichever earlier). Clean primary filter element by blowing air (max. pressure 1.3 BAR/20 PSI) from inside. Secondary element to be replaced after 3 replacements of primary element.</p> <p>ਪ੍ਰਾਇਮਰੀ ਐਲੀਮੈਂਟ ਕੋ ਸਰਵਿਸ 250 ਘੰਟੇ ਕੇ ਬਾਦ ਸਾਫ਼ ਕਰੋ, ਯਾ ਜਬ ਚੋਕ ਇੰਡੀਕੇਟਰ ਡੈਸ਼ਬੋਰਡ ਪਰ ਪ੍ਰਕਾਸ਼ਿਤ ਹੋਏ ਲਗੇ। 3 ਵਾਰ ਸਾਫ਼ ਕਰਨੇ ਕੇ ਬਾਦ ਯਾ 750 ਘੰਟੇ ਅਪ੍ਰੈਸ਼ਨ ਕੇ ਬਾਦ (ਜੋ ਪਹਿਲੇ ਹੋਵੇ) ਪ੍ਰਾਇਮਰੀ ਐਲੀਮੈਂਟ ਕੋ ਬਦਲੋ। ਪ੍ਰਾਇਮਰੀ ਫਿਲਟਰ ਐਲੀਮੈਂਟ ਕੋ ਤੇਜ਼ ਹਵਾ (1.3 ਬਾਰ/20 ਪੀ ਐਸ ਆਈ) ਕੇ ਅੰਦਰ ਸੇ ਗਾੜ੍ਹਾ ਕੀ ਜ਼ਰਫ਼ ਪ੍ਰਵਾਹ ਸੇ ਸਾਫ਼ ਕਰੋ। 3 ਵਾਰ ਪ੍ਰਾਇਮਰੀ ਫਿਲਟਰ ਐਲੀਮੈਂਟ ਬਦਲਨੇ ਕੇ ਬਾਦ ਸੈਕੰਡਰੀ ਫਿਲਟਰ ਬਦਲੀਏ।</p> <p>ਪ੍ਰਾਇਮਰੀ ਐਲੀਮੈਂਟ ਨੂੰ ਹਰੇਕ 250 ਘੰਟੇ ਬਾਦ ਸਾਫ਼ ਕਰੋ ਜਾਂ ਜਦੋਂ ਚੋਕ ਇੰਡੀਕੇਟਰ ਡੈਸ਼ਬੋਰਡ ਤੇ ਪ੍ਰਕਾਸ਼ਿਤ ਹੋਣ ਲਗੇ। 3 ਵਾਰ ਸਾਫ਼ ਕਰਨ ਤੋਂ ਬਾਅਦ 750 ਘੰਟੇ ਐਪ੍ਰੇਸ਼ਨ ਤੋਂ ਬਾਅਦ (ਜਿਹੜਾ ਪਹਿਲਾ ਹੋਵੇ) ਪ੍ਰਾਇਮਰੀ ਐਲੀਮੈਂਟ ਨੂੰ ਬਦਲੋ। ਪ੍ਰਾਇਮਰੀ ਫਿਲਟਰ ਐਲੀਮੈਂਟ ਨੂੰ ਅੰਦਰ ਤੋਂ ਬਾਹਰ ਵਲ ਤੇਜ਼ ਹਵਾ (1.3 ਬਾਰ/20 ਪੀ ਐਸ ਆਈ) ਦੇ ਨਾਲ ਸਾਫ਼ ਕਰੋ। 3 ਵਾਰ ਪ੍ਰਾਇਮਰੀ ਫਿਲਟਰ ਐਲੀਮੈਂਟ ਬਦਲਣ ਤੋਂ ਬਾਅਦ ਸੈਕੰਡਰੀ ਐਲੀਮੈਂਟ ਨੂੰ ਬਦਲੋ।</p> </div>
3	<div> <p>Change diesel pre-filter after every 500 hours and micro-filter every 750 hrs.</p> <p>ਡੀਜ਼ਲ ਕਾ ਪ੍ਰੀ. ਫਿਲਟਰ ਹਰ 500 ਘੰਟੇ ਮੇਂ ਆਂਰ ਮਾਈਕ੍ਰੋ ਫਿਲਟਰ ਹਰ 750 ਘੰਟੇ ਮੇਂ ਬਦਲੀਏ।</p> <p>ਡੀਜ਼ਲ ਦਾ ਪ੍ਰੀ. ਫਿਲਟਰ ਹਰ 500 ਘੰਟੇ ਵਿਚ ਅਤੇ ਮਾਈਕ੍ਰੋ ਫਿਲਟਰ ਹਰ 750 ਘੰਟੇ ਵਿਚ ਬਦਲੋ।</p> </div>
4	<div> <p>Do not clean diesel filter elements.</p> <p>ਡੀਜ਼ਲ ਫਿਲਟਰ ਐਲੀਮੈਂਟ ਸਾਫ਼ ਸਰ ਕੀਜੀਏ।</p> <p>ਡੀਜ਼ਲ ਫਿਲਟਰ ਐਲੀਮੈਂਟ ਸਾਫ਼ ਨਾ ਕਰੋ।</p> </div>
5	<div> <p>Keep 26-28 P.S.I. Pressure in front tyres & 14-16 P.S.I. in rear tyres.</p> <p>ਅਗਲੇ ਟਾਏਰੀ ਮੇਂ 26-28 ਪੀ.ਐਸ.ਆਈ. ਆਂਰ ਪਿਛਲੇ ਟਾਏਰੀ ਮੇਂ 14-16 ਪੀ.ਐਸ.ਆਈ. ਹਵਾ ਕਾ ਦਬਾਓ ਰੱਖੀਏ।</p> <p>ਅਗਲੇ ਟਾਏਰੀ ਵਿਚ 26-28 ਪੀ ਐਸ ਆਈ ਅਤੇ ਪਿਛਲੇ ਟਾਏਰੀ ਵਿਚ 14-16 ਪੀ ਐਸ ਆਈ ਹਵਾ ਦਾ ਦਬਾਵ ਰੱਖੋ।</p> </div>
6	<div> <p>Grease daily, specially pivot pin and rear axle.</p> <p>ਪ੍ਰਤਿਦਿਨ ਗ੍ਰੀਸ ਕੀਜੀਏ, ਵਿਸ਼ੇਸ਼ਕਰ ਪਿਵਟ ਪਿਨ ਆਂਰ ਪਿਛਲੇ ਐਕਸਲ ਮੇਂ।</p> <p>ਹਰਦਿਨ ਗ੍ਰੀਸ ਕਰੋ, ਖਾਸਕਰ ਪਿਵਟ ਪਿਨ ਅਤੇ ਪਿਛਲੇ ਐਕਸਲ ਵਿਚ।</p> </div>
7	<div> <p>Top up battery with distilled water if required.</p> <p>ਅਵਸਰਥਕਤਾ ਹੋਏ ਪਰ ਬੈਟਰੀ ਮੇਂ ਡਿਸਟਿਲਡ ਪਾਨੀ ਭਾਲੀਏ।</p> <p>ਜ਼ਰੂਰਤ ਹੋਣ ਤੇ ਬੈਟਰੀ ਵਿਚ ਡਿਸਟਿਲਡ ਪਾਨੀ ਪਾਓ।</p> </div>

DANGER

- KEEP FLAMES AWAY FROM BATTERY.
- DISCONNECT -ve CABLE OF BATTERY BEFORE ANY WELDING OPERATION.
- PROTECT YOURSELF FROM BATTERY, FLAME BURNS CAN RESULT FROM BATTERY ACID.
- IN CASE OF CONTACT WITH ACID, FLUSH WITH PLENTY OF WATER IMMEDIATELY.
- DO NOT JUMP START THE TRACTOR BY SHORTING ACROSS STARTER TERMINALS, TRACTOR WILL MOVE IF IN GEAR.

PART NO. 20002583

6.

WARNING

KEEP CLOTHING AND HANDS AWAY FROM BELTS AND FAN TO AVOID SERIOUS INJURY.

PART NO. 20002589

8.

WARNING

- COOLING SYSTEM REMAINS UNDER PRESSURE.
- DO NOT REMOVE RADIATOR CAP WHEN SYSTEM IS HOT.
- ALWAYS TURN THE CAP SLOWLY AND ALLOW PRESSURE TO ESCAPE BEFORE REMOVING THE CAP COMPLETELY.
- WHEN OPERATING BELOW 32°F, USE SUITABLE ANTIFREEZE WITH WATER.

PART NO. 20002590

9.

7.

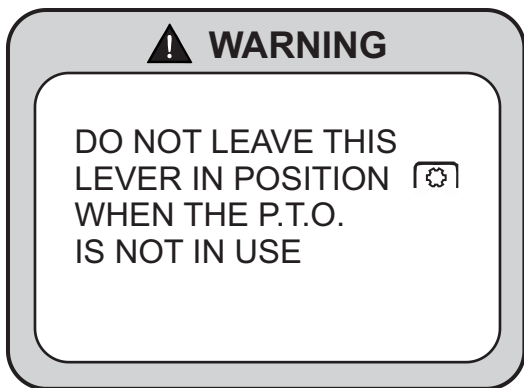
NOTE: Safety labels & its location may vary according to model. Kindly contact your dealer for more information on safety decals.

SAFETY NOTES

A. Safety Label on LHS Fender as per following details:



Warning Label for PTO Lever Position when not in use



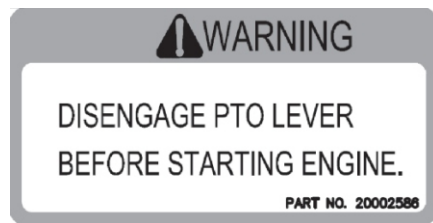
Danger Warning Label for No rider



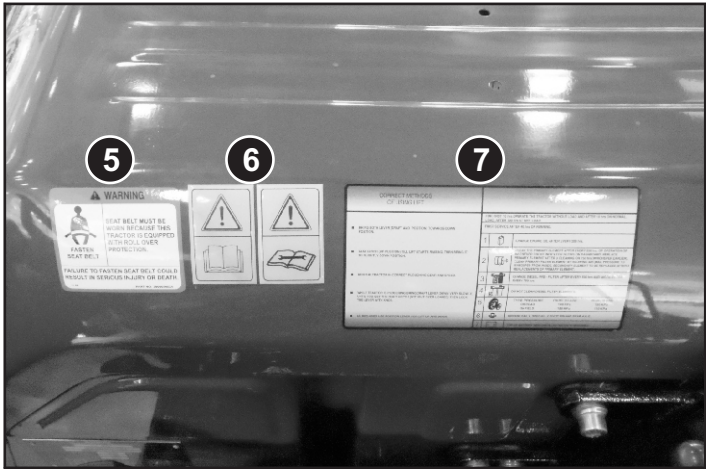
Warning Label to Read & Understand Operator's Manual Instructions




Warning Label for PTO Lever disengagement before starting engine



SAFETY NOTES



WARNING

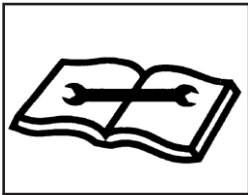


FASTEN SEAT BELT

SEAT BELT MUST BE WORN BECAUSE THIS TRACTOR IS EQUIPPED WITH ROLL OVER PROTECTION.

FAILURE TO FASTEN SEAT BELT COULD RESULT IN SERIOUS INJURY OR DEATH.

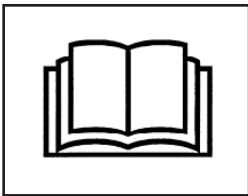
PART NO. 300005483A



Consult technical manual for proper service procedures

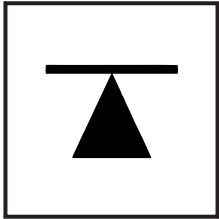
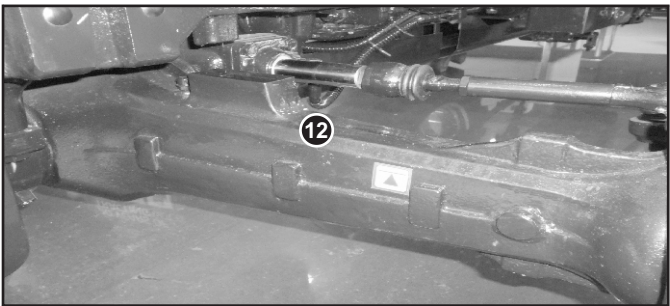


Observe instructions & safety rules when operating.










Carefully read operator's manual before handling the tractor.

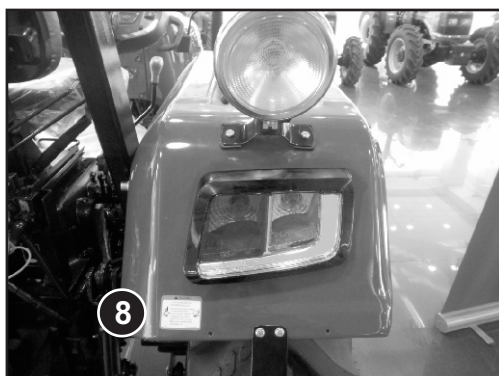
Information Sticker for Jack or Support Point Location




SAFETY NOTES


CORRECT METHODS OF USING LIFT	SERVICE												
<ul style="list-style-type: none">■ BRING BOTH LEVER (DRAFT AND POSITION) TOWARDS DOWN POSITION.■ TAKE LEVER (UP POSITION) TILL LIFT STARTS RAISING, THEN BRING IT TO SLIGHTLY DOWN POSITION.■ RUN THE TRACTOR IN CORRECT PLOUGHING GEAR AND SPEED.■ WHILE TRACTOR IS PLOUGHING BRING DRAFT LEVER DOWN VERY SLOWLY, UNTIL YOU GET THE RIGHT DEPTH (WITHOUT OVER LOADED) THEN LOCK THE LEVER WITH KNOB,■ AS REQUIRED USE POSITION LEVER FOR LIFT UP AND DOWN.	FOR FIRST 10 hrs.OPERATE THE TRACTOR WITHOUT LOAD AND AFTER 10 hrs ON NORMAL LOAD, AFTER 100 hrs AT ANY LOAD.												
	FIRST SERVICE AFTER 40 hrs OF RUNNING.												
	1		CHANGE ENGINE OIL AFTER EVERY 200 hrs.										
	2		CLEAN THE PRIMARY ELEMENT AFTER EVERY 250 hrs. OF OPERATION OR WHENEVER CHOKE INDICATOR GLOWS ON DASHBOARD. REPLACE PRIMARY ELEMENT AFTER 3 CLEANING OR 750 hrs (WHICHEVER EARLIER). CLEAN PRIMARY FILTER ELEMENT BY BLOWING AIR (MAX PRESSURE 1.3 BAR/20PSI) FROM INSIDE. SECONDARY ELEMENT TO BE REPLACED AFTER 3 REPLACEMENTS OF PRIMARY ELEMENT.										
	3		CHANGE DIESEL PRE - FILTER AFTER EVERY 500 hrs AND MICRO FILTER EVERY 750 hrs.										
	4		DO NOT CLEAN DIESEL FILTER ELEMENTS.										
	5		<table><tr><td>TYRE PRESSURE</td><td>FRONT (12.4-24)</td><td>REAR (18.4-30)</td></tr><tr><td>ON ROAD</td><td>180 KPa</td><td>150 KPa</td></tr><tr><td>ON FIELD</td><td>180 KPa</td><td>110 KPa</td></tr></table>		TYRE PRESSURE	FRONT (12.4-24)	REAR (18.4-30)	ON ROAD	180 KPa	150 KPa	ON FIELD	180 KPa	110 KPa
	TYRE PRESSURE	FRONT (12.4-24)	REAR (18.4-30)										
	ON ROAD	180 KPa	150 KPa										
ON FIELD	180 KPa	110 KPa											
6		GREASE DAILY, SPECIALLY PIVOT PIN AND REAR AXLE.											
7		TOP UP BATTERY WITH DISTILLED WATER IF REQUIRED.											

C. Safety Label on RHS Fender (Rear side) for safety against rotating blades





WARNING

ROTATING BLADES CUT OFF ARMS AND LEGS



- Do not move when children or others are around
- Do not move in reverse
- Look down and behind while reversing
- Never carry children even with blades off

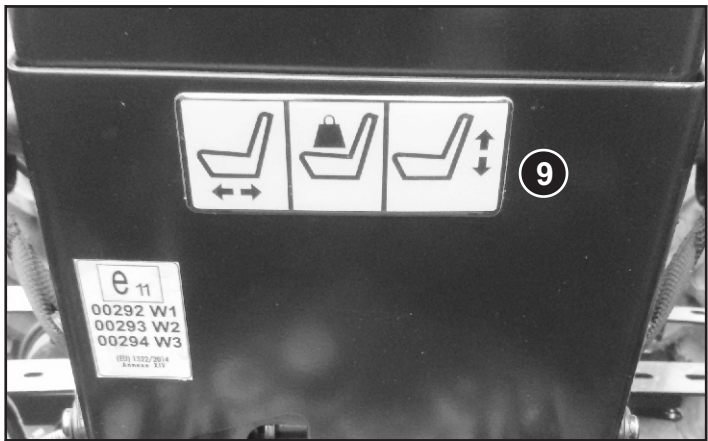


Part No. 300005508C

8. ||||

SAFETY NOTES

D). Safety Signs for Seat Adjustment



Seat - Longitudinal adjustment (Fore/aft)

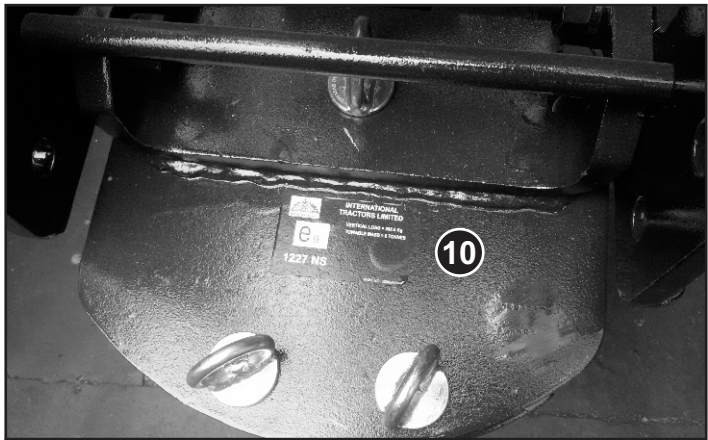


Seat - Weight adjustment

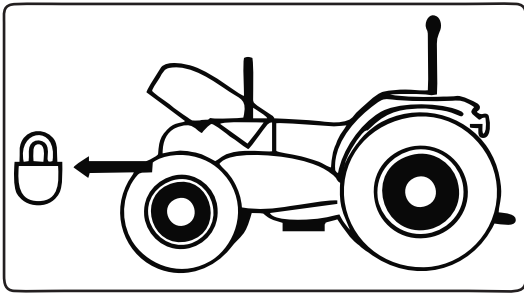
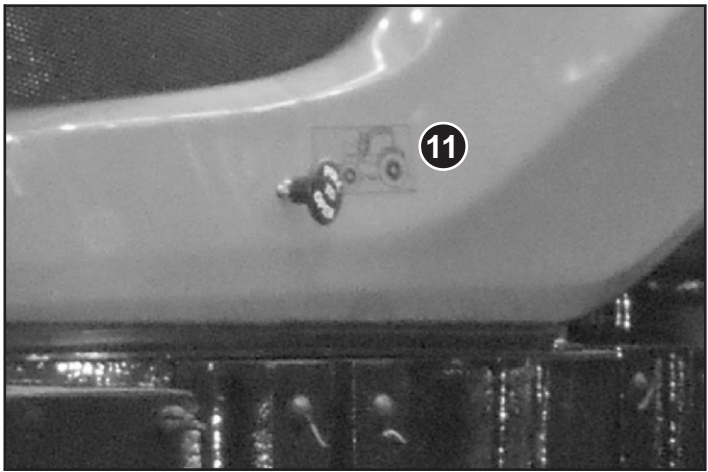


Seat - Height adjustment (Up/down)

E). Information Sticker for Vertical Load & Towable Mass



F). Sticker on Bonnet showing location of Bonnet Lock



11.

SAFETY NOTES

SAFETY: PREPARE FOR SAFE OPERATION

Protect yourself:

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

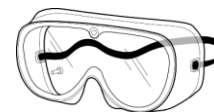
- (a) A hard hat.
- (b) Safety glasses, goggles or face shield.
- (c) Hearing protection.
- (d) Respirator or filter mask.
- (e) Inclement weather clothing.
- (f) Reflective clothing.
- (g) Heavy gloves (neoprene for chemical, leather for rough work).
- (h) Safety shoes.

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. Tempering with any of the safety devices can cause serious injuries or death. Keep all safety signs in good condition. Replace missing or damaged safety signs.

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



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

DRIVING THE TRACTOR

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

SAFETY NOTES

STARTING THE TRACTOR

Warn bystanders before starting:

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

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

Mount and dismount properly:

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

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

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

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

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



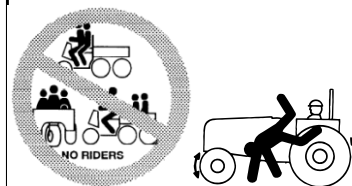
Before starting the engine, make sure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.



KEEP RIDERS OFF TRACTOR

Do not allow riders on the Tractor.

Riders on Tractor are subject to injury such as being stuck by foreign objects and being thrown off the Tractor.



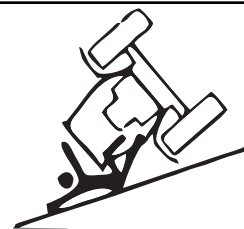
PRECAUTION TO AVOID TIPPING

Do not drive where the Tractor could slip or tip.

Stay alert for holes and rocks in the terrain, and other hidden hazards.

Slow down before you make a sharp turn.

Driving forward out of a ditch or mired condition could cause Tractor to tip over backward. Back out these situations if possible.



SAFETY NOTES

PROHIBITED USE OF TRACTOR DURING OVERTURNING

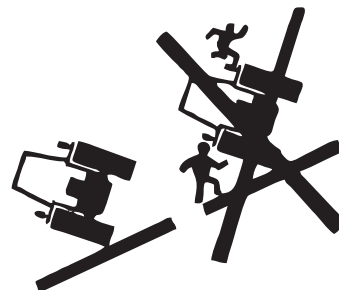
Risk of Overturning:

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

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

To avoid side overturns:

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

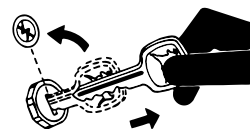


PARK TRACTOR SAFELY

Before working on the Tractor:

Lower all equipments to the ground.

Stop the engine and remove the ignition key.



SAFETY STARTER SWITCH

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

TRACTOR RUNAWAY

1. The tractor can start even if the transmission is engaged position causing Tractor to runaway and serious injury to the people standing nearby the tractor.
2. Keep Transmission in neutral position. Foot brake engaged and PTO lever in disengaged position while attending to Safety Starter Switch or any other work on the Tractor.

SAFETY NOTES

AVOID HOT EXHAUST

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

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



AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Keep hands and body away from pinholes and nozzles, which eject fluids under high pressure. If any fluid is injected into the skin, consult your doctor immediately.



PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery.

Battery gas can explode.

Never check battery charge by placing a metal object across the poles.



ALWAYS USE SAFETY LIGHTS

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



ROAD REGULATIONS

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



During road application, do not operate the tractor in 4WD mode in high speed gears.

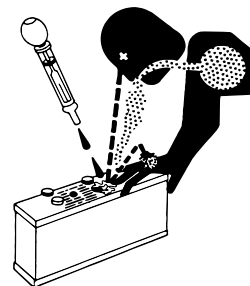


SAFETY NOTES

PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, cause holes in clothing and cause blindness. For adequate safety always:

1. Fill batteries in a well-ventilated area.
 2. Wear eye protection and acid proof hand gloves.
 3. Avoid breathing direct fumes when electrolyte is added.
 4. Do not add water to electrolyte as it may splash off causing severe burns.
- If you spill acid on yourself, immediately flush your skin with water and flush your eyes for 10-15 minutes. Get medical attention immediately.



HANDLE FUEL SAFELY-AVOID FIRES

Handle fuel with care; it is highly flammable. Do not refuel the Tractor while smoking or near open flame or sparks.

Always stop engine before refueling.

Always keep your tractor clean of accumulated grease and debris.

Always clean up spilled fuel.



SERVICE TRACTOR SAFELY

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

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



STAY CLEAR OF ROTATING SHAFTS

Entanglement in rotating shaft can cause serious injury or death.

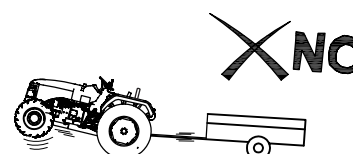
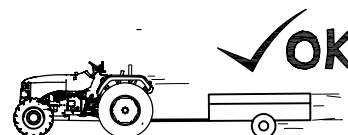
Keep PTO shield in place at all times.

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



GENERAL OPERATING HAZARDS

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



SAFETY NOTES

PRACTICE SAFE MAINTENANCE

- Understand service procedure before doing work.
- Keep the surrounding area of the Tractor clean and dry.
- Do not attempt to service Tractor when it is motion.
- Keep body and clothing away from rotating shafts.
- Always lower equipment to the ground. Stop the engine.
- Remove the key equipment to the ground. Stop the engine.
- Securely support any Tractor elements that must be raised for service work.
- Keep all parts in good condition and properly installed.
- Replace worn or broken parts. Replace damage/missing decals.
- Remove any buildup of grease or oil form the Tractor.
- Disconnect battery ground cable (–) before making adjustments on electrical system or welding on Tractor.



SAFETY TIPS DURING MAINTENANCE

1. At least on a daily check all oil levels. Water level in the radiator and electrolyte level in the battery and perform services according to the service schedule.
2. Ensure tyre pressure are even and the correct pressure for the job being done is maintained.
3. Check to ensure that the all controls and preventive mechanisms of the Tractor and implement work correctly and effectively.
4. Ensure that an adequate set of the correct tools is available for maintenance and minor repairs.
5. Ensure that all service work and repairs are carried out on a flat area with a concrete or similar floor.
Do not carry out service work on tractor until it is switched off, and the parking brake applied and wheels choked. Where a tractor is staired 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 choked.
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 the engine is hot. Add water to the radiator only after the engine cools down completely.
11. To prevent fire keep the tractor including the engine clean and free from inflammable material and well away from fuels and other inflammable material.

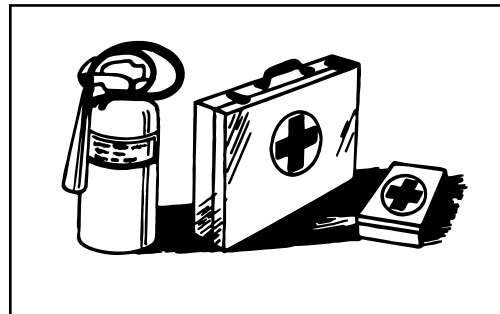
SAFETY NOTES

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher ready.

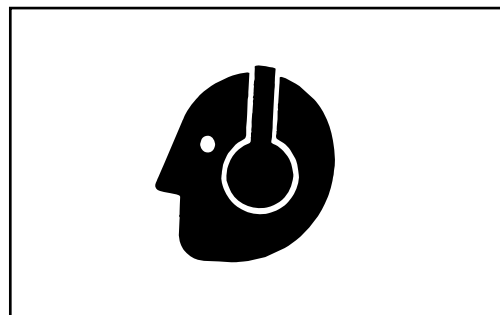
Keep emergency numbers for doctors, ambulance service, hospital, and fire department near telephone or mobile phone.



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.

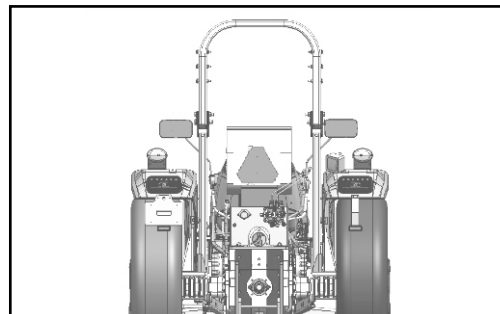


KEEP ROPS INSTALLED PROPERLY

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

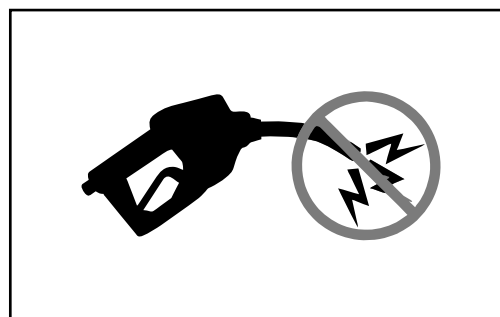
AVOID STATIC ELECTRICITY RISK WHEN REFUELING

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.

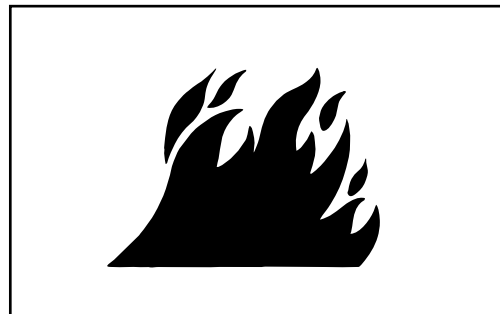
Immediately stop the tractor at the first sign of fire. Fire may be identified by the smell of smoke or sight of flames. As fire grows and spreads rapidly, get off the tractor immediately and move safely away from the fire. Do not return to the tractor! The number one priority is safety.

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.

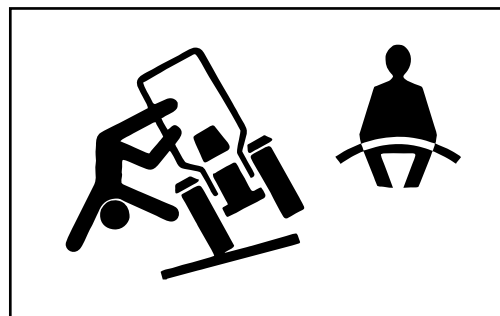
If your extinguisher does not have instructions, follow these general guidelines:

- 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.

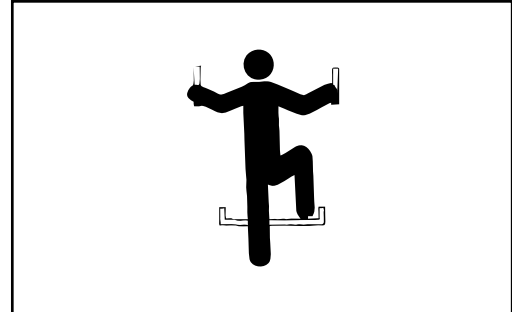


NOTE: 1). Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.
2). Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace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

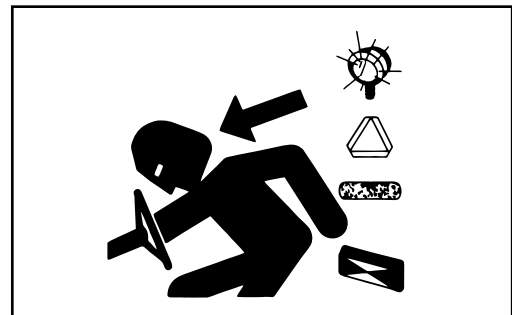
The intended use of Worldtrac tractors when used in forestry operations is limited to tractor-specific applications like transport, stationary work such as log splitting, propulsion, or operating implements with PTO, hydraulic, or electrical systems.

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.

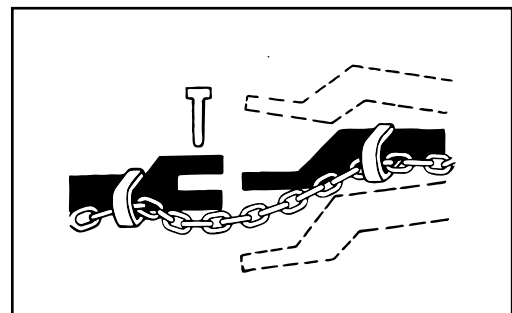


USE OF SAFETY CHAIN

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

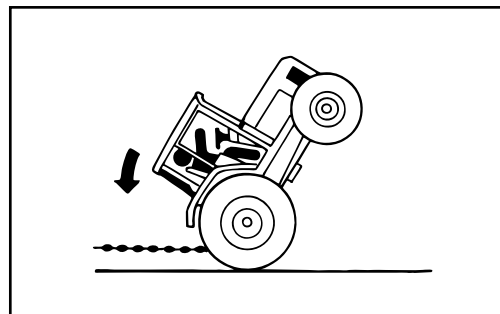
FREEING A MIRED TRACTOR

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.

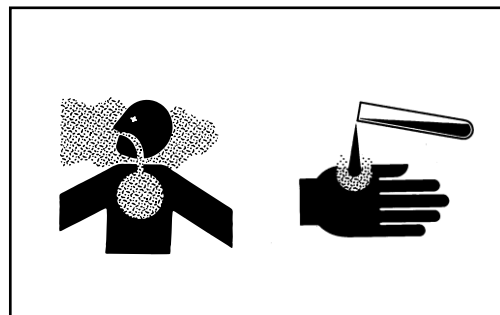
Always hitch to the drawbar of the towing unit. Before moving, clear the area of people. Apply power smoothly to take up the slack: a sudden pull could snap any towing device causing it to whip or recoil dangerously.



AVOID CONTACT WITH AGRICULTURAL CHEMICALS

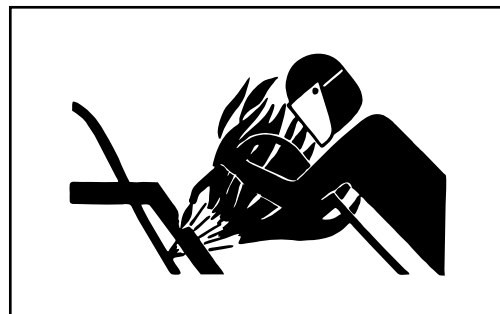
If pesticide use instructions require respiratory protection, wear an appropriate respirator.

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

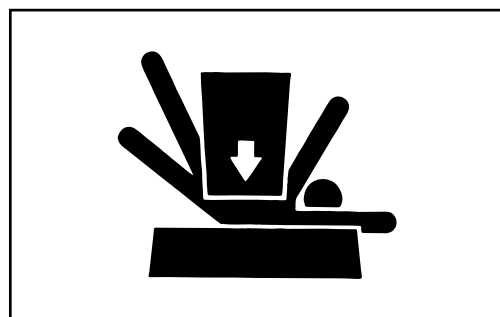
Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.



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.

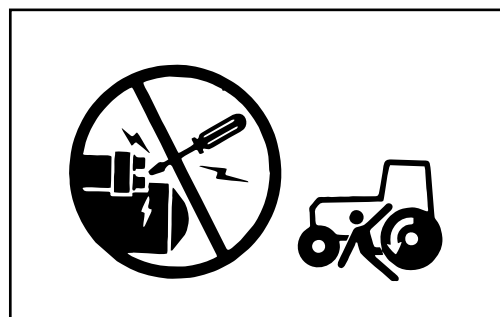


PREVENT TRACTOR RUNAWAY

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.

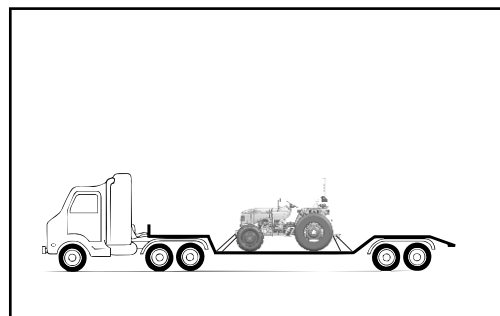


TRANSPORT TRACTOR SAFELY

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.

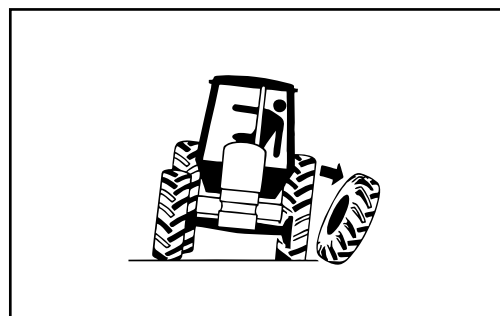
When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

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



TIGHTENING WHEEL RETAINING BOLTS/NUTS

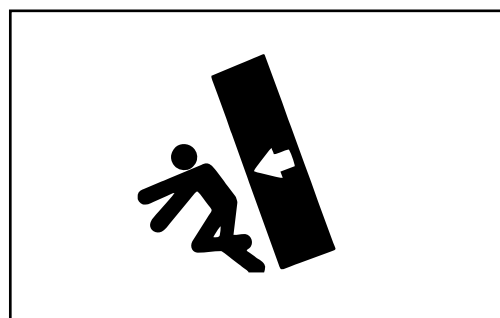
Torque wheel retaining bolts/nuts at the intervals specified in the Maintenance section.



STORE ATTACHMENTS SAFELY

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

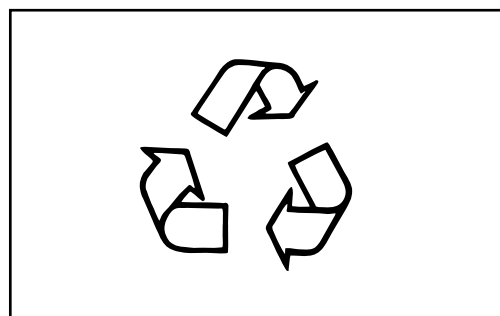
Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.



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, tyres etc. contact your Dealer or the local agency for waste recycling.



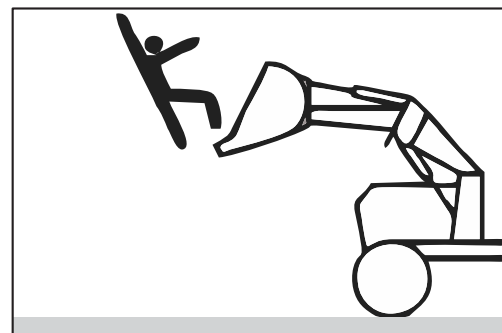
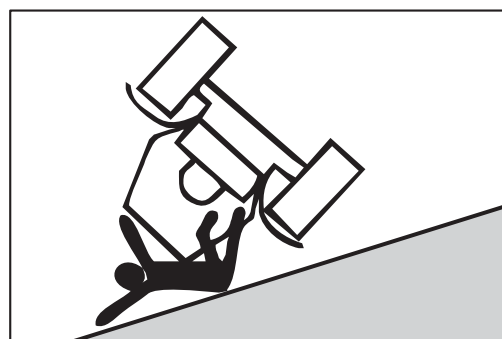
SAFETY NOTES

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

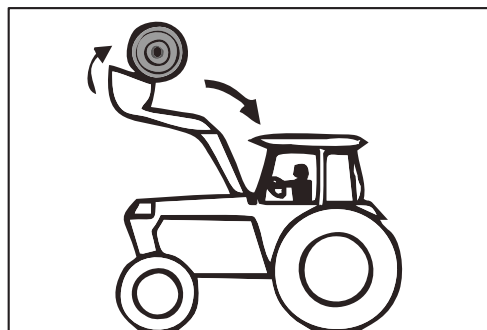
- The equipment must only be used by authorised and trained personnel who, beforehand, must read and understand these instructions and become familiar with the equipment controls and their operation.
- Before operation, check all functions of the equipment and attachment going to be used.
- The equipment 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.



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 89 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/s .

INSTRUMENTS & CONTROLS

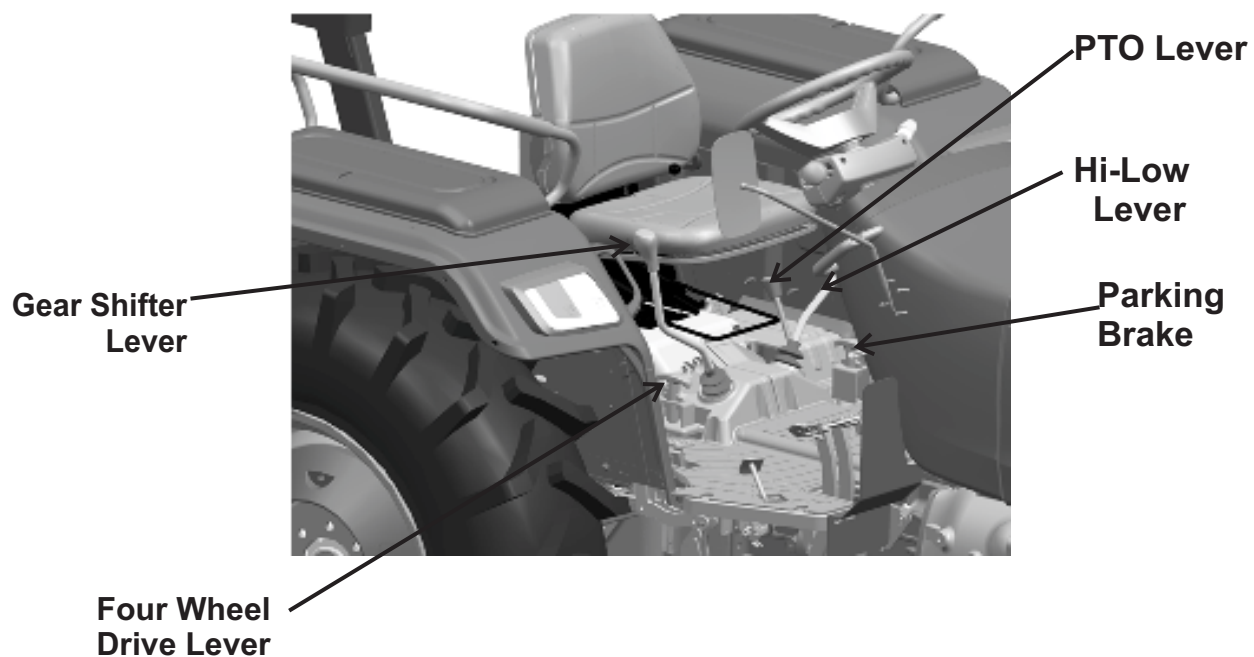
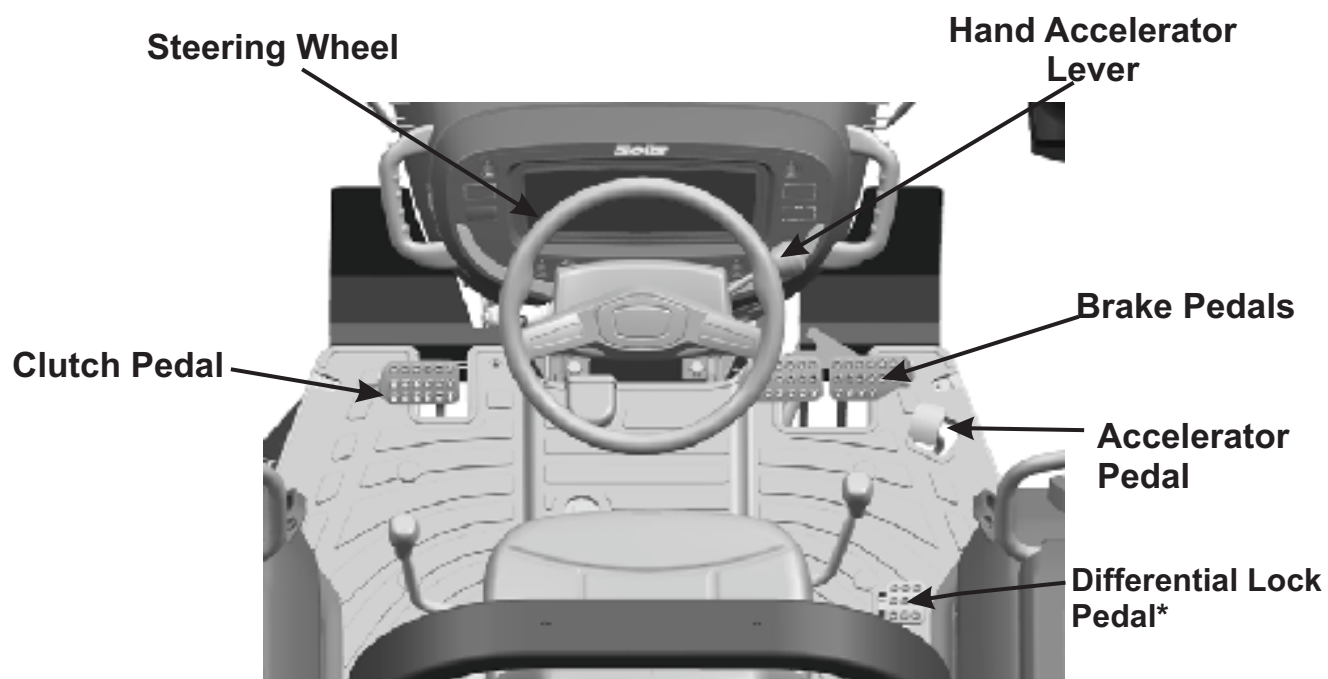
Universal Symbols

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

	Read Operator's Manual		Fast
	Safety Alert Symbol		Slow
	Fuel Level		Engine Coolant-Temperature
	Engine Rotational Speed		PTO 540
	Parking Brake		PTO 540 Economy
	Air Cleaner Clogging Sensor		Differential Lock
	Battery Charging Condition		Hydraulic Control-Lowered Position
	Engine Oil-Pressure		Hydraulic Control-Raised Position
	Turn Signal		Engine Speed Control
	Power Take-Off Clutch Control-Off Position		
	Power Take-Off Clutch Control-On Position		
	Hazard Warning Lights		
	Master Lighting Switch		
	Parking Brake Indication		
	Headlight-Low Beam		
	Headlight-High Beam		
	Audible Warning Device		
	Four-Wheel Drive-On		
	Four-Wheel Drive-Off		

INSTRUMENTS & CONTROLS

Tractor Controls



INSTRUMENTS & CONTROLS

Instrument Panel

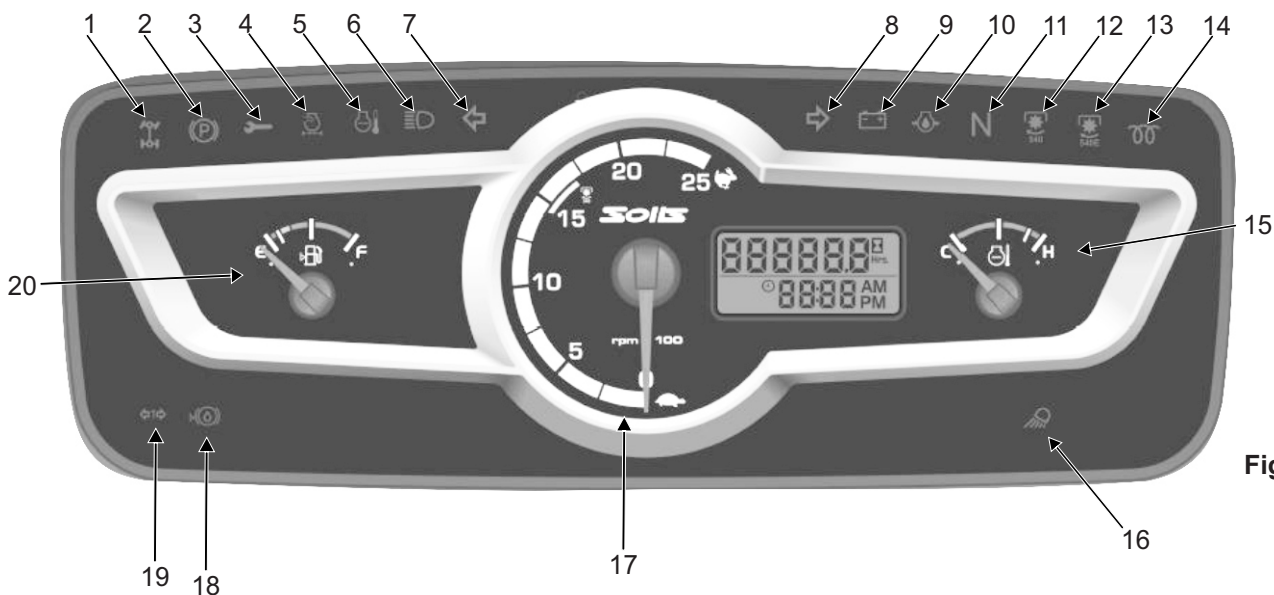


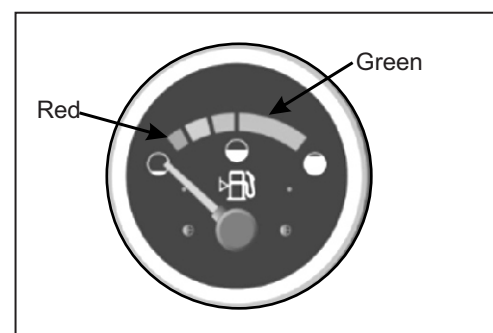
Fig. 9.6

Sl. No.	Description	Sl. No.	Description
1	Four Wheel Drive Indicator	11	Neutral Indicator
2	Parking Brake Indicator	12	540 PTO Indication (optional)
3	Service Reminder	13	540E PTO Indication (optional)
4	Air Cleaner Clogging Indicator	14	Cold Start Indicator (Glow Plug)
5	High Coolant Temperature Indicator	15	Temperature Gauge
6	High/Low Beam Indicator	16	Plough Lamp Indicator
7	Left Turn Indicator	17	Engine RPM cum Hour Meter
8	Right Turn Indicator	18	Low Brake Oil Indicator (optional)
9	Battery Charging Indicator	19	Turn Trailer -1 Indication
10	Engine Oil Pressure Indicator	20	Fuel Level Gauge

Fuel Level Gauge

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

Ensure Min. 5 Litre [1.32 U.S. Gallon] of Fuel in Fuel Tank to avoid air locking.

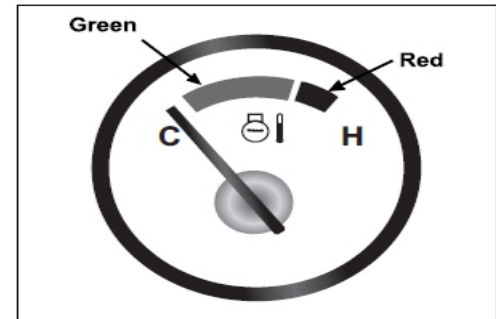


INSTRUMENTS & CONTROLS

Temperature Gauge:

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

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



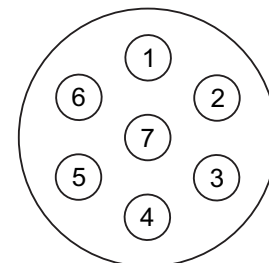
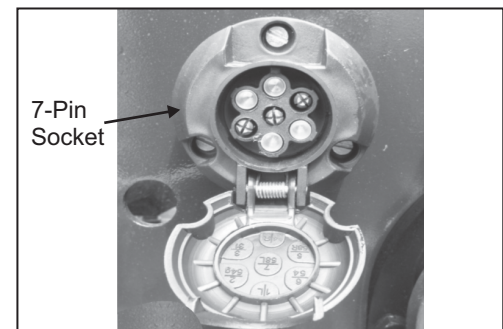
Do not remove the radiator cap when the engine and radiator are hot. Hot coolant and steam may blow out under pressure, which could cause serious injury. The cap should only be taken off when the coolant temperature has lowered.

Necessary precaution to be taken while opening the radiator cap.

7-Pin Rear Socket for Trailer

7-Pin socket is mounted on licence plate to attach the trailer connections. Details of connectors is given under:

Pin No.	Function	Wire Color
1	Left-hand side direction indicator	Yellow
2	Rear fog light	Blue
3	Ground	White
4	Right-hand direction indicator	Green
5	Right-hand rear position light	Brown
6	Stop lights	Red
7	Left-hand rear position light	Black



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

INSTRUMENTS & CONTROLS

Four wheel drive (4WD) Indicator

This indicates engagement of Four Wheel Drive mode.



540 PTO Indicator

This indicator glows when 540 PTO mode is selected.



Air Cleaner Clogging Indicator

This indication will come up when the air filter gets choked. Clean the air cleaner element immediately with air pressure if this light is glowing.



High Beam Indicator

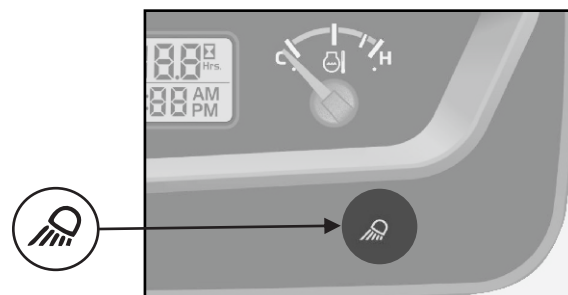
This light glows when Head Lights are in high beam mode.



INSTRUMENTS & CONTROLS

9.6.4 Plough (Work) Lamp Indicator

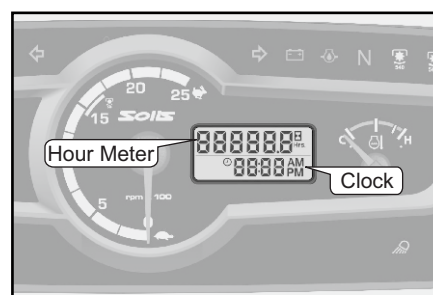
This indicator glows when Plough lamp is in ON condition.



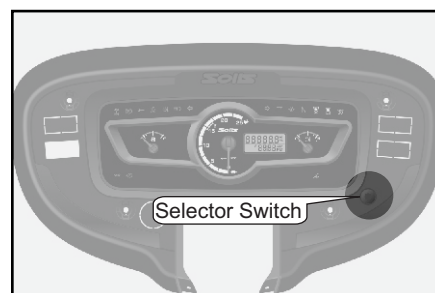
9.6.5 Hour Meter & Clock

Hour meter indicates the number of hours worked by the engine.

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



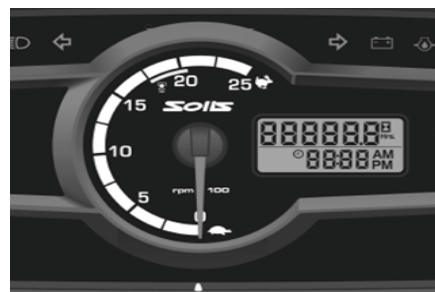
Clock: Selector switch is used for time setting of the clock. Refer following flowchart for time setting procedure:



Engine RPM cum Hour Meter

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

Green Zone is safe for operation.



INSTRUMENTS & CONTROLS

Right Turn Indicator

It glows when the right side indicator is switched ON.



Left Turn Indicator

It glows when the left side indicator is switched ON.



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.



Parking Brake Indicator

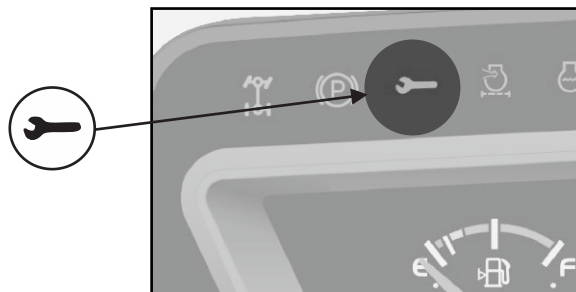
Parking Brake indicator indicates working of Parking brake lights.



INSTRUMENTS & CONTROLS

Service Reminder Indicator with buzzer

This indicator will glow when preventive maintenance service is due on your tractor. This will glow at 50 hours, 250 hours, 500 hours and at every 250 hours thereon.



Procedure to reset the service reminder indicator & buzzer

Note: Do not start the engine during reset procedure.

1. Turn off the ignition
2. Remove the service reminder reset fuse (see figure)
3. Turn on the ignition
4. Insert the fuse after 5 seconds.
5. Turn off the ignition
6. Remove the service reminder reset fuse
7. Turn on the ignition
8. Insert the fuse after 5 seconds
9. Turn off the ignition
10. Now when the ignition is turned on, service reminder will be reset.

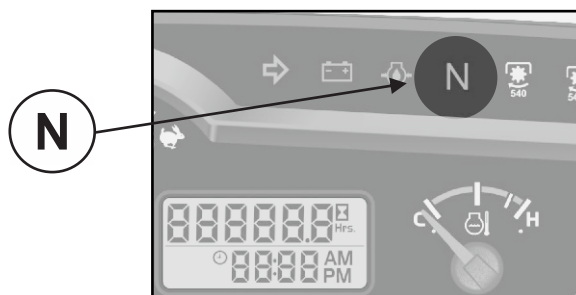
5A SAFETY CONTROLLER	15A HIGH BEAM
15A FLASHER	15A LOW BEAM
10A SOLENOID	5A CLUSTER
15A WORK LAMP	10A POSITION LAMP
15A WORK LAMP	10A HORN
15A AUX	5A CLUSTER RESET
15A MOBILE CHARGER SOCKET	10A REVOLVING LIGHT
20A THERMOSTAT	15A BRAKE LIGHTS

Reset fuse (5 Amp)

Fuse Box

Neutral Gear Indicator

This indicator will glow when gears are in neutral condition and clutch is pressed.



Engine Preheat Indicator

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



INSTRUMENTS & CONTROLS

Operator's Seat

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

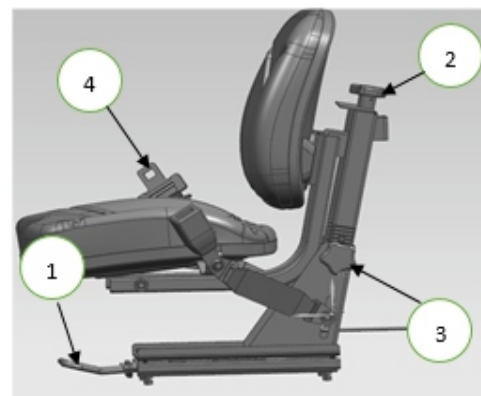
With the fore & aft adjusting knob, slide the seat so as to have a comfortable approach towards all levers. The range of effort that can be adjusted while sitting on seat is 50-130 kg [110 - 287 lbs]

Horizontal Adjustment

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

Vertical Adjustment

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



***Optional feature.**

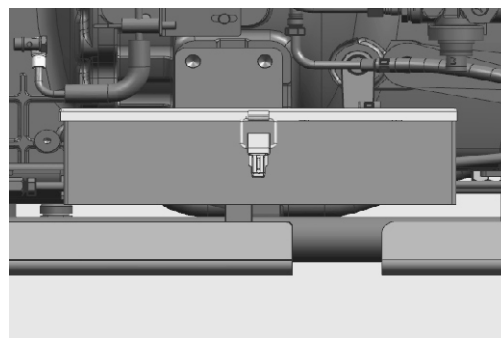


To avoid personal injury

- 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.

Tool Box

Tool box is mounted on left side of the tractor as shown in figure.



INSTRUMENTS & CONTROLS

Combination Switch (Lighting, Turn Signals, Horn Control Lever)

This control lever is located on the left hand side of dashboard. Operate the lever as described below.

Lighting Operation : To turn the lights 'ON' or 'OFF' twist the middle portion of lever in clock wise direction.

There are three position:

- In '**OFF**' position all lights are OFF (Fig. a).
- In '**MIDDLE**' position, (Fig. b) with ignition switch ON the position lights, licence lamp, LCS illumination and instrument light are 'ON' But headlights are 'OFF'
- In **THIRD** position, (Fig. c) with ignition switch ON, Headlights (Low Beam) comes on in addition to other lights. Push this Lever downward for High Beam. The High Beam Indicator Illuminates in blue color in Instrumental panel.

Passing Light, (Fig. d): To flash the headlights momentarily, pull the lever all the way up and hold it there. It will return back to the **OFF** position when released.

NOTE : *Passing light will glow either Head light is turned ON or OFF as well as in ignition ON or OFF condition.*

Turn Signals (Fig. e)

Push the lever forward for Left hand Indicator pull the lever toward you for Right hand Indicator.

Horn Switch (Fig. f)

Press the push button at the end of this lever to blow horn.



INSTRUMENTS & CONTROLS

Battery

Battery is located on front side of the tractor on Front Axle Bracket as shown in figure. I

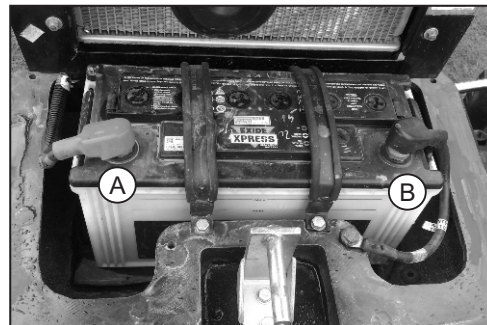
Battery Specifications: 12V, 88Ah

A: + ve Cable

B: – ve Cable

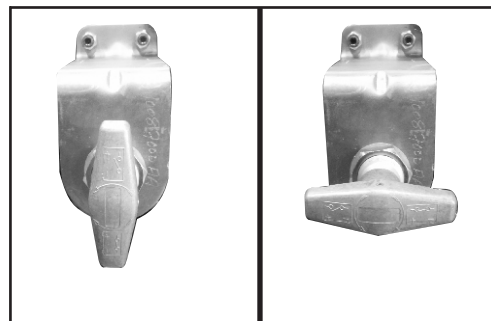


To avoid the sparks, always disconnect the negative (ground) cable first and connect it last.



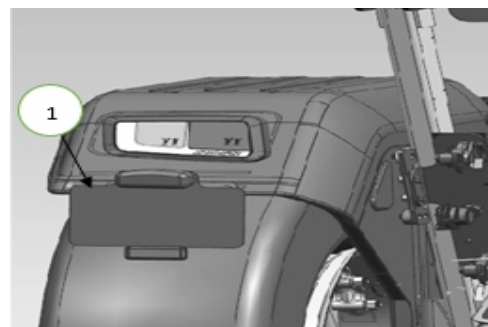
Battery Cut-off Switch

Battery Cut-off Switch is provided to connect or disconnect power supply from the battery. When the tractor is not used for longer period of time, rotate the switch clockwise to switch OFF the power supply.



Registration Plate (1)

A vehicle registration plate or number plate is mounted on left hand rear side of the tractor as shown in Figure.



INSTRUMENTS & CONTROLS

Dashboard Controls

1. Hazard switch
2. Revolving light switch
3. PTO control switch



4. Mobile charging socket
5. Ignition key switch

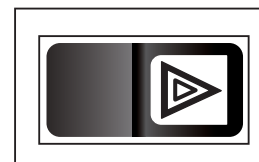


Hazard Warning Switch

Purpose of the hazard switch is as follows :

- All the four lights blinking indicates that driver has no control on tractor.
- Mechanical defects in the tractor.

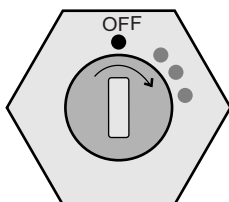
Push this switch to blink all indicators in HAZARD situation to alert others.



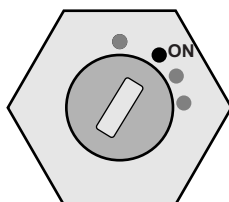
Starting Key (Ignition) Switch

Starting Key (Ignition) Switch has following functions:

1st Position (OFF) : All the electrical systems remain disconnected in this position.

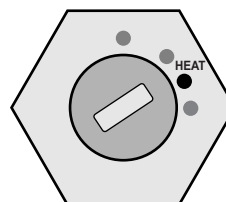


2nd Position (ON) : The warning lights (Battery, Oil Pressure indicator) will be functional in this position. This is normal running position after the engine is started.



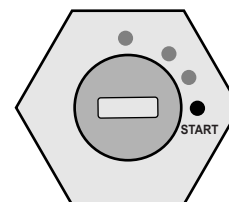
3rd Position (HEAT):

This position is for heating the engine in cold weather condition. Keep the key about 10 seconds for heating.



4th Position (START):

Immediate after the use of air heater turn the key further clockwise to Start position to start the engine.



NOTE : • Do not keep the starter engaged more than 5-8 seconds. If engine stalls/fails to start then wait for 5-10 seconds before re-engaging the starter, otherwise you may damage it.
• Keep the switch in OFF condition when engine is also in OFF condition.

INSTRUMENTS & CONTROLS

Operator Presence Control (OPC)

9.1.1. Parking Brake 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 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.

9.1.2 Power take-off OPC: When the operator leaves the driving position with PTO engaged and the vehicle is not in motion, the engine will shut off automatically which will shut off the drive of the power take-off shaft within 7 seconds. The automatic PTO shut off action shall not have negative effects on safety related functions (e.g. braking). A restart of the Power take-off shall only be possible by an intentional actuation of the operator. To start the tractor again, operator has to put all levers (Shuttle lever, PTO Lever) in neutral position and press clutch pedal.

Tractor Condition	PTO Condition	Gears Condition	Seat Condition	Parking Brake Condition	Buzzer	OPC Feedback
ON	OFF	Neutral	Operator Leaves Seat	OFF	Will Blow	Buzzer will continuously blow until operator sits on the seat
ON	ON	Neutral	Operator Leaves Seat	OFF	Will Blow	Buzzer will blow continuously till engine stops with in 5-7 seconds
ON	ON	Neutral	Operator Leaves Seat	ON	Doesn't Blow	Engine stops with in 5-7 seconds
ON	ON	Engaged	Operator Leaves Seat	OFF	Will Blow	Buzzer will blow continuously till engine stops with in 5-7 seconds
ON	ON	Engaged	Operator Leaves Seat	ON	Doesn't Blow	Engine stops with in 5-7 seconds
ON	OFF	Engaged	Operator Leaves Seat	OFF	Will Blow	Buzzer will blow continuously until operator sits on the seat
ON	OFF	Engaged	Operator Leaves Seat	ON	Doesn't Blow	No buzzer, no engine shut-off

INSTRUMENTS & CONTROLS

Integrated Fuse Box:

Fuse box is mounted under the bonnet. If an electrical failure occurs, check and rectify the problem and then replace the blown up fuse with genuine fuse of specified rating.



Never install a wire instead of proper fuse.

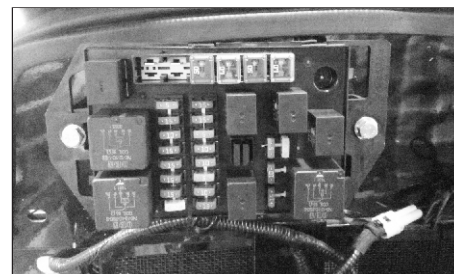
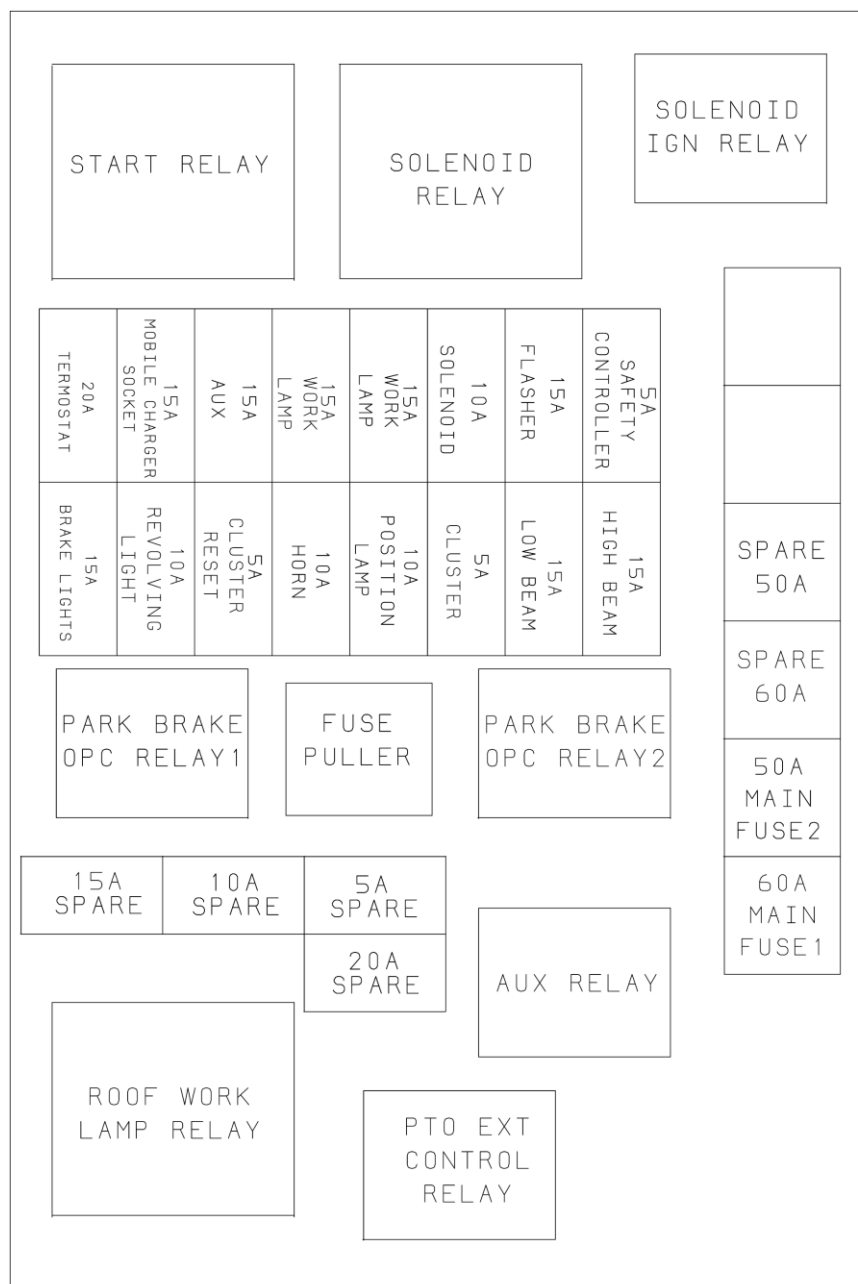


Fig. 9.10

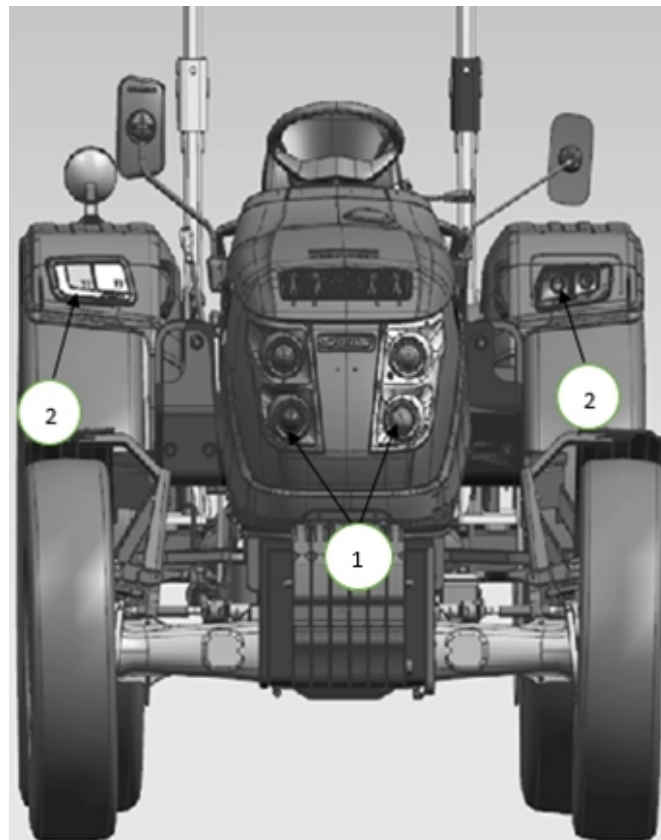


Integrated Fuse Box

INSTRUMENTS & CONTROLS

Tractor Lights

1. Head Lights
2. Front Parking Lights

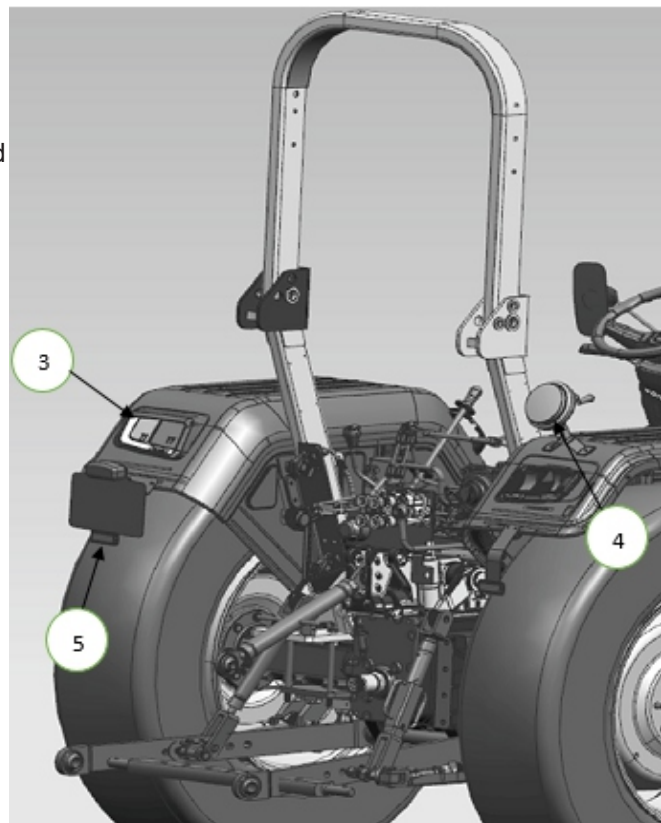


3. Tail lamp

4. Work Lamp

Adjustable work lamp with both vertical and horizontal adjustments.

5. Registration Plate Light



OPERATION

Boarding the Tractor

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

Leaving the Tractor

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

Engine:

Starting the Engine:

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

1. OFF POSITION

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

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

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.

For Starting:-

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

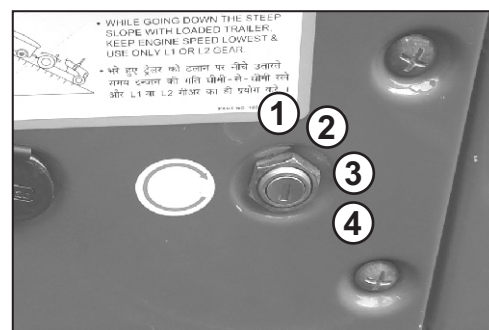
Cold Weather Starting (Temperature below 0 °C or 32° F):

Proceed as Follows:

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

Note:

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



OPERATION

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

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 first 50 hours of running in period:

- 1 It is recommended by manufacturer, to run the tractor for first 50 hours at part/marginal load condition for better working life and good productivity. Tractor with Green engine, new drive-line & axle assembly endorse initial wear and tear during this period.
- 2 Engage low gears and prefer moderate load.
- 3 When running-in, check regularly that all screws, nuts and bolts are tight.
- 4 To ensure prolonged clutch life, operate clutch smoothly and carefully.

Turning off the engine:

Option1:

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

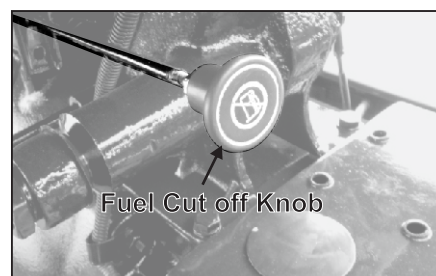
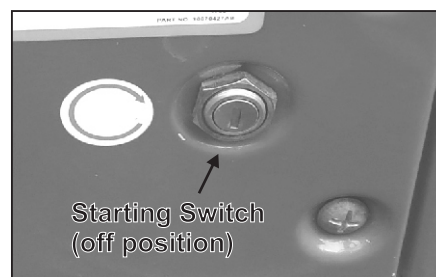
Option2:

- Turn the engine accelerator to idle position.
- Pull the 'fuel cut off' knob till engine stops. After stopping the engine push it back to its original position.

For Turbo Engines: Take care when stopping the engine after a period of operation at full load. It is advisable to allow it to idle for 3-4 minutes before stopping it. This allows the overheated compressor to cool down to an acceptable temperature.

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

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



OPERATION

Opening The Bonnet

(1) - Insert the key into the key hole provided at the front of bonnet and rotate it clockwise till gentle click is heard.

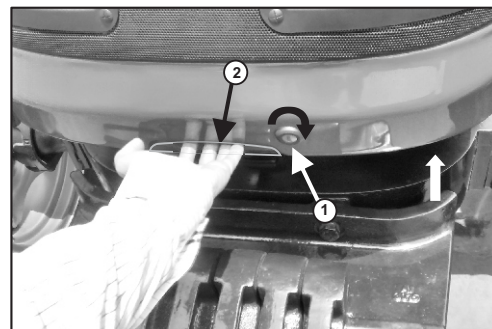
(2) - Slot for lifting the bonnet up.

The bonnet will automatically lift up to the preset height with the assistance of gas spring.

Closing of Bonnet

To close the bonnet gently lower the bonnet down then press it until lock is engaged.

The tractor is provided with a set of two keys. If lost contact the authorized dealer to get the lock replaced.



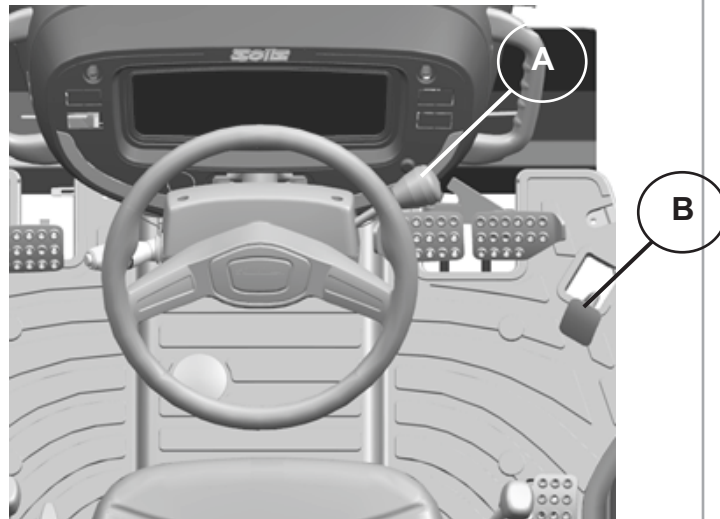
Acceleration Control

Hand Throttle Lever (A)

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

Foot Accelerator Pedal (B)

While using foot accelerator, keep the hand throttle in idle position moreover while using hand throttle the foot accelerator can be used to accelerate above the speed set by hand throttle.



OPERATION

Clutch Pedal (C)

Pedal released = Drive engaged.

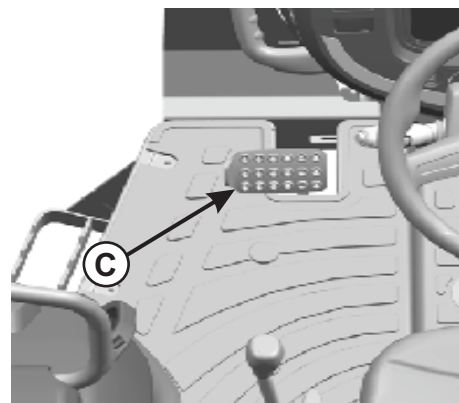
Pedal Pressed = Drive disengaged.

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

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



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



Gear Shifter Lever (D)

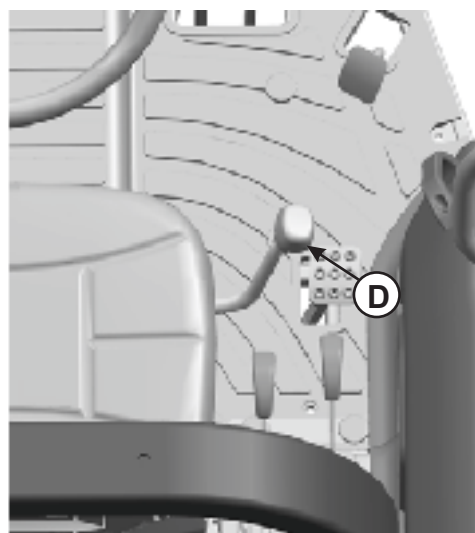
Gear shifter lever enables to get the required speed (8 Forward and 2 Reverse) by selecting the particular gear with combination of hi-low gear lever.

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.



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.

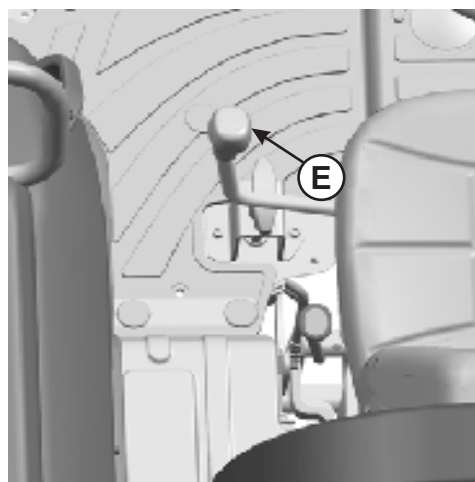
Hi-Low Lever (E)

This lever is used to change the low speed into high speed or vice versa when tractor is moving. According to requirement you can use it with combination with main gear lever.

Speed Selection:

1. **Neutral Position:** Lever in the middle position.
2. **High Speed:** Shift the lever towards rear end.
3. **Slow Speed:** Shift the lever towards front end.

Select the speed before tractor movement.



OPERATION

Service Brakes (F)

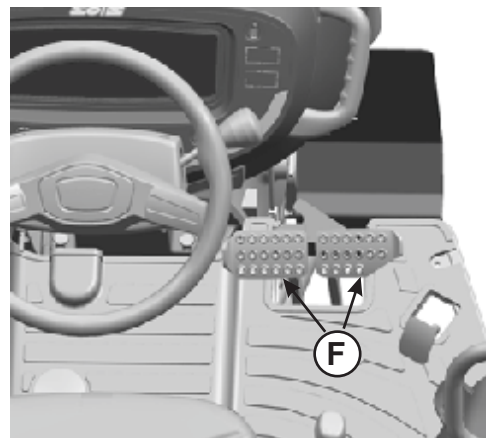
The main brakes are operated by means of two pedals, one for each rear wheel. Braking on one side assists steering in tight maneuvers. By locking rear wheel on the inside of curve, you can virtually turn the tractor around on its own axis. For simultaneous braking during normal use and for on road use, 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.



Parking Brake (G)

The Parking brake is engaged by lever which acts on the brake discs by means of a mechanical control.

Parking brake engagement:

- Pull the lever upwards to operate the parking Brake.

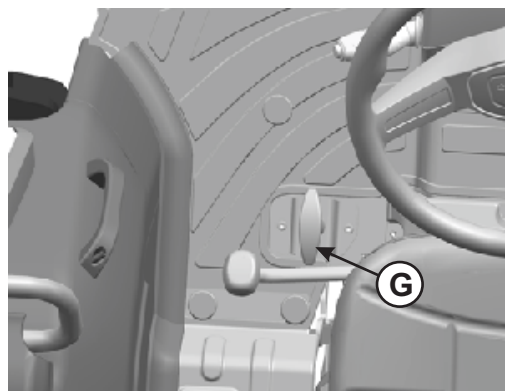
Parking brake release:

- Press the button (see fig), push the parking brake lever downwards and release the button.



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 transmission components.*



OPERATION

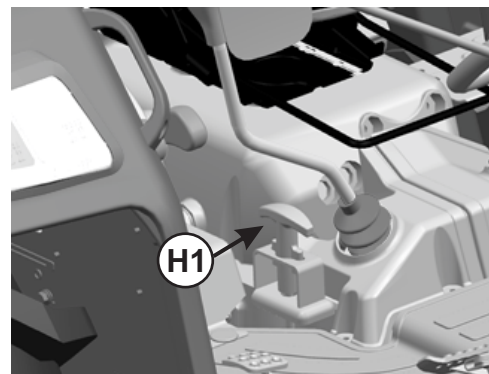
2WD / 4WD Lever (H1) - Optional Feature (type 1)

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

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

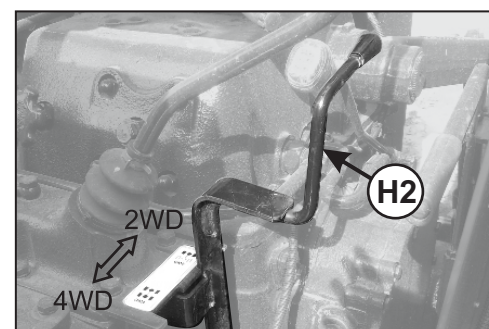
4WD MODE: With the lever in 4WD position the power is simultaneously transmitted to all 4 wheels (Front & Rear) of tractor. Push the lever downward to select 4WD mode.

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



2WD / 4WD Lever (H2) - Optional Feature (type 2)

To engage 4WD mode, pull lever towards front cut and disengage by vice versa movement.



Differential Lock Pedal (I) - Optional Feature

When you press the differential lock pedal, both the wheels will rotate at same speed.

IMPORTANT: Differential lock operation should be in straight position only and should be disengaged at turnings to avoid any damage of differential assembly.



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



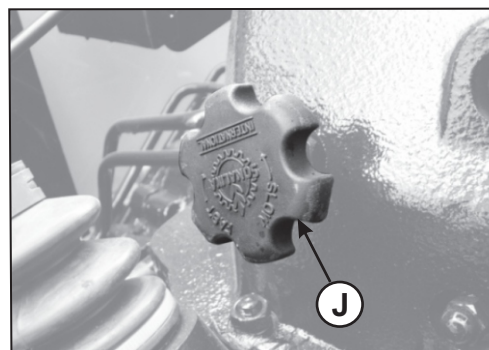
Transport Lock (J)

It acts as safety device during transportation of implements. It is located on front side of Hydraulic Rear Cover below driver seat.

Use: For safety lock fully tighten the response valve by rotating it in clockwise direction.



Response Valve should always be closed during implements transportation.



OPERATION

Direction Control Valve (DCV) Operation (Optional Feature)

Single acting (SA) and/or double acting (DA) control valves are provided as a optional fitment in your tractor. These control valves control the external rams and are coupled to the hydraulic lift system of the tractor and use the same oil of hydraulic system.

External Control Levers (K1 & K2)

These levers are used to control the oil flow into the auxiliary hydraulic circuit, either single acting or double acting.



CAUTION

Use cylinder implements only according to DCV fitted in your tractor.



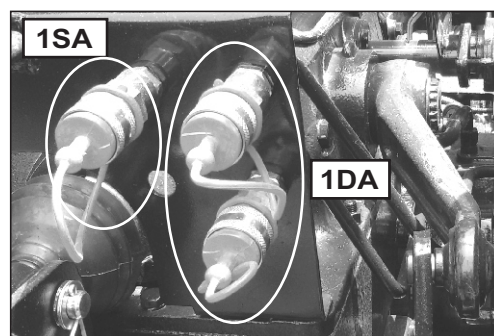
WARNING

Always check the oil level while the auxiliary hydraulic units are connected to ensure the correct oil level in the system. Top up if necessary, so as to compensate the oil in auxiliary cylinders.

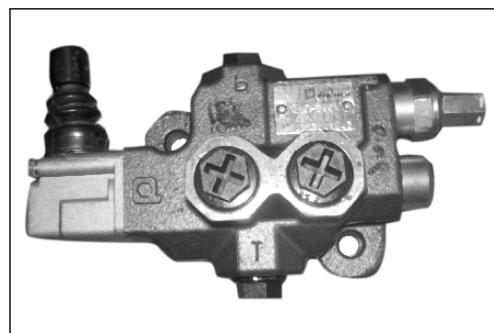


WARNING

Make sure that the hydraulic cylinders of the connected implements contain the same type of oil as the transmission unit of the tractor to prevent this from being polluted and leading to faulty operation.



Quick Release Coupler (QRC)



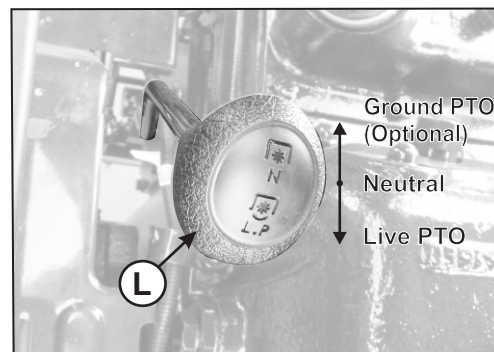
Directional Control Valve (DCV)

OPERATION

Power take-off (PTO) Lever (L)

- PTO lever has three positions viz. ground PTO (forward), neutral position (middle) and live PTO (backward) position.
- In ground PTO option, speed of PTO shaft changes according to gear speed & in Live PTO, speed of PTO is directly dependent on engine speed.
- To change from one speed range to another, press the clutch pedal, and bring the tractor to a complete standstill before moving the speed range lever to its new position.

NOTE: Ground PTO with Reverse PTO option is available in Dual clutch models only.



Operation with PTO

Tractor is equipped with standard 540 RPM PTO. PTO output shaft is installed at the rear of transmission housing.

To mount PTO driven implements following steps are to be followed:

- Ensure that implement RPM matches with the PTO RPM i.e. 540 RPM implement with 540 RPM PTO and 1000 RPM implement with 1000 RPM PTO.
- Be sure that both gear shifter levers are in neutral position and PTO lever also in neutral position.
- Stop the engine, hitch or mount the implement with three point linkage.
- Remove PTO shaft cap and keep it in toolbox. Join the implement with PTO shaft directly or with the help of cordon shaft as per the provision in the implement.
- Follow the instructions of implement manufacturer.



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



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.

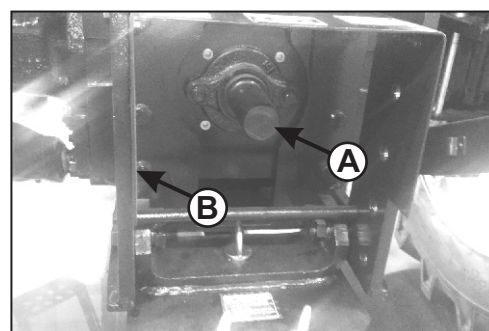


When using the PTO drive with a stationary tractor, ALWAYS make sure that the gears are in neutral and that the parking brake is applied.

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

IMPORTANT : When PTO is not operational protect PTO splines with PTO Cap (A).

PTO Cap protects persons from injuries and the shaft splines from damage.



OPERATION



Remove PTO cap (A) 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.



Never operate PTO unless the master shield is in the position shown. Switch off the PTO before raising the implement.



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) 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.



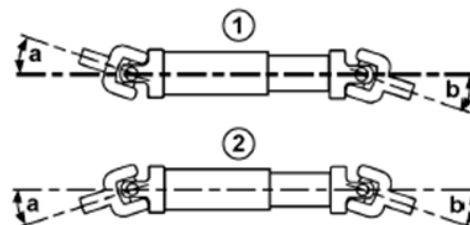
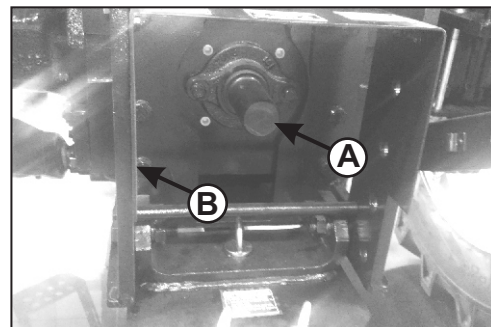
The mounted machinery must be lowered on the ground before leaving the tractor.



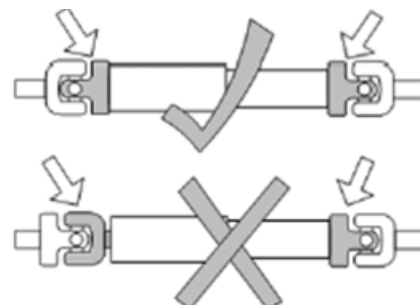
Stay clear from the area between tractor and trailed vehicle.



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.



Articulation on Telescoping Driveline



Align Forks Correctly
1 - Z-shaped layout
2 - W-shaped layout

Information about using implements with power take-off drive shafts

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

CAUTION: 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.

OPERATION

CAUTION: Before attempting to clean, adjust or lubricate a PTO-driven machine, the TPL, 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 TPL 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 TPL is locked in the upward position if it is not used.

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 shaped 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.

OPERATION

Wheels and Tyres

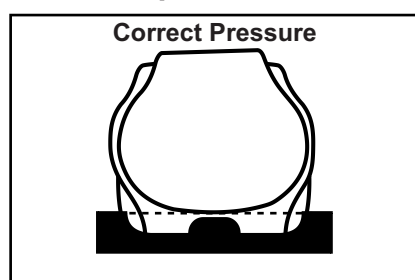
Tyres Play vital role in transportation and agriculture operations. It is the most important factor in the efficient performance of tractor it should be used only as per company recommendation.

On any tyre there is some marking which represents its size & capacity e.g. Tyre marking is 16.9x28, 12 ply rating i.e. 16.9 inch is the section width, 28 inch is the bead diameter. Ply rating doesn't show that the same No. of plies are inserted in tyre. It is only comparative measure of the load carrying capacity (L.C.C) of tyre. As more ply rating shows more L.C.C. at the same time as L.C.C. increase the shocks absorption capacity decreases.

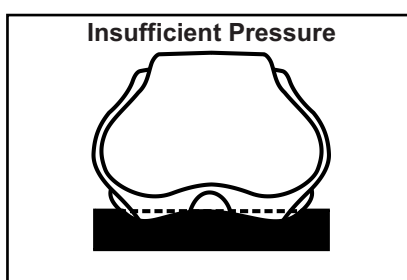
In general, tractor is considered for two types of work:

- 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 higher recommended pressure.

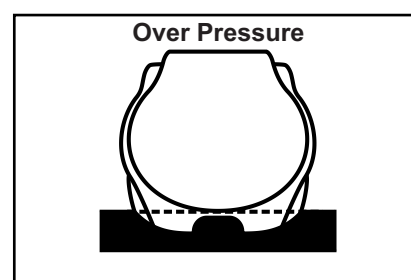
In Field Operations



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

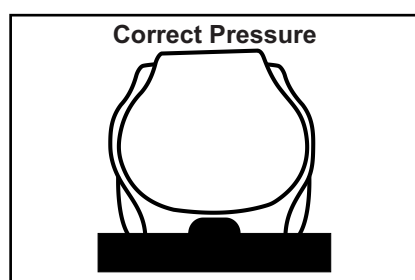


- Reduce adherence through lack of tyre grip.
- Deterioration of tyre casing by traction forces.

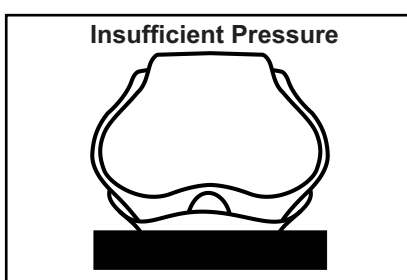


- Reduce group due to lack of cleaning
- Deterioration due to compacted ground.

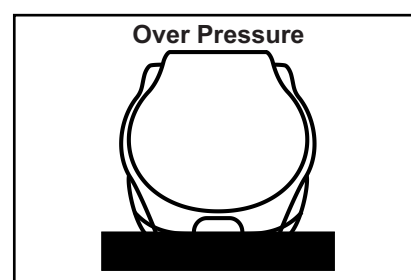
On Haulage Operations



- Resistance to Wear



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



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

TYRE SIZE & RECOMMENDED AIR PRESSURE AS PER APPLICATION		
Tyre	For Field	For Road
Front	24-26	26-28
Rear	14-16	16-18

NOTE : Tyre pressure in field may vary according to Load on rear axle.

OPERATION



Tyre pressure should never be maximum pressure as recommended, the tyre could burst. Change / Repair any worn or faulty tyre (cuts, cracks etc.) immediately to prevent the problem become more severe.

Check Wheel Nut Bolts

Check wheel nut of the front and rear wheel. Torque it to following specification:

Rear wheel : 250 Nm [184 lbf-ft], Front wheel : 150 Nm [110 lbf-ft]

Ballasting of Tractor

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. Following factors determine amount of ballast.

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

Front End Ballasting - Optional

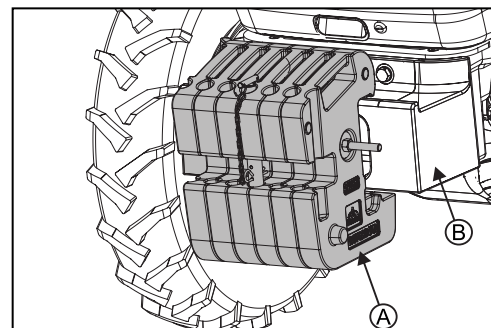
Front end ballasting is done by adding weights (A) at front end if needed for stability. Heavy pulling and heavy rear mounted implements tend to lift front wheels. Add enough ballast to maintain steering control.

Rear End Ballasting - Optional

Add weight to rear wheels if needed to improve the traction or for stability. The amount of rear ballast should be matched to job and the ballast should be removed when it is not needed. The weight should be added to tractor in the form of liquid ballast, rear wheel weights or a combination of both.

Liquid Ballast in Rear tyres

Water and Calcium chloride solution provide safe economical ballast. Used properly, it will not damage tyres, tubes or rims. The addition of calcium chloride is recommended to prevent the water from freezing. Use of this method of weighing the wheels has the full approval of tyre manufacturers. Contact your dealer for this service.

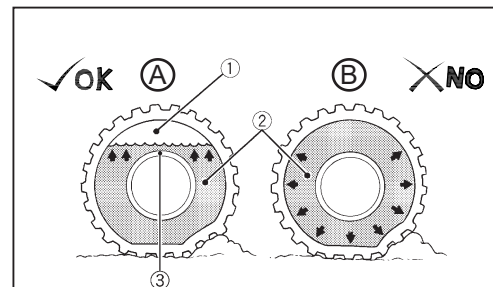


A= Cast Iron Weights - Each of 31 Kg (Optional), B= Cast Iron Block - 53.6 Kg

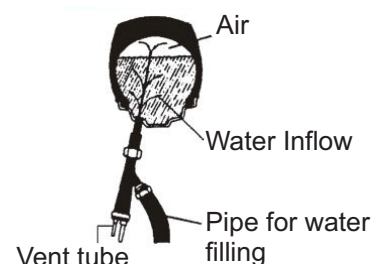
OPERATION

How to ballast (Liquid)

- Jack up the rear wheels.
- Rotate the wheel assy valve on top and remove the valve and let the air move out of the tyre.
- Start filling water with the help of special adopter.
- Filling tube nozzle should be at 12 O' Clock position.
- Remove the water hose/special adopter when tube is filled in with water.
- Rotate the tyre to bring tube nozzle position to 11 O' Clock & remove the valve. Let the excess water drain out till it stops flowing. Bring tyre to 12 O' clock position.
- Put the air valve on the tube nozzle.
- Fill in the air up to normal inflation pressure. Thumb rule 75% water at 11 O' Clock position, 25% Air.



(1) Air (A) Correct - 75 % compresses like a cushion
(2) Water (B) Incorrect - 100 % Full Water can not be compressed
(3) Valve stem



Ballasting with C.I. Weights for Rear Wheels (Optional)

Additional cost iron weight can be fitted on rear tyre before adding ballast confirm with dealer if it is required or not



During fitting / removing C.I. weights take care of (1) Bolt thread damage (2) Hand / Safety of persons nearby.



CAUTION : Ballast should be limited either by tyre capacity or tractor capacity. Each tyre has a recommended load carrying capacity, which should not be exceeded. If a greater amount of weight is needed for traction then a larger tyre should be considered.



C= Cast Iron Weights - Each of 34 Kg [75 pounds]
(Optional feature)

Water ballasting capacity per tyre:

Tyre size	Water in Litres
12.4*28	160
13.6*28	180
14.9*28	190
16.9*28	200
16.9*30	210

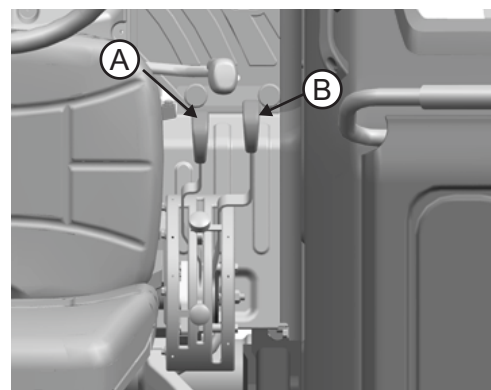
OPERATION

Hydraulic System

In this tractor live hydraulic system is provided in which hydraulic pump is driven by engine and mounted at cover of engine. As the engine run, the hydraulic pump also starts working and the oil is transferred from pump to lift . Transmission lubrication oil is used as hydraulic oil.

Position Control Lever (A)

This black colour lever is mounted on R.H.S. of driver seat which enables raising or lowering the implement/lift. It is used when implement operation demands stable/fixed position e.g. carrying goods in a bucket attached on three point linkage.



Draft Control Lever (B)

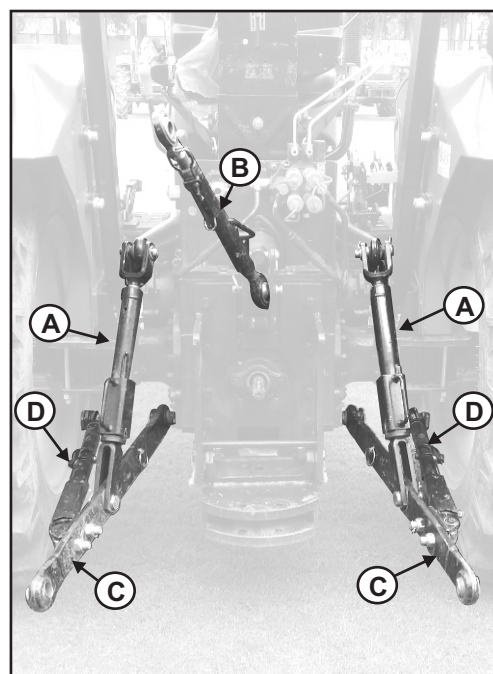
This orange colour lever is located towards right fender side which is used to control the draft of soil on implement. By controlling the draft, the implement and the tractor can be prevented from overloading.

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 ease at the timing of joining.

Adjustable Lift Rods (A)

For adjustment of length unlock the lever of adjustment box and turn it clockwise for decreasing the length or turn it to anticlockwise for increasing the length.



OPERATION

Top Link (B)

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 (C)

Lower Links are provided for hitching the implement.

Stay Bars (D)

Stay bars control the swing of implement during transport and field operations. Stay bars are provided between side of lower link and differential housing.

Swinging Draw Bar (E)

Swinging drawbar fitted on rear side of differential housing is used for trailer towing in haulage operation.



Attaching Implement to 3 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 then 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.

OPERATION

Roll Over Protection Structure - ROPS (Optional)

The objective of the ROPS frame is to protect the operator in the event of roll over and it is designed to support the entire weight of the tractor in that event.

ROPS frame is designed and tested to meet industry and government standards including EEC norms.

ROPS has a fold down feature so that tractor can enter in low height buildings etc.



Always use a great caution while lowering down the upper section of ROPS frame and take extreme care while driving the tractor with ROPS frame lowered.

Each ROPS has separate serial number punched on the ROPS certificate plate (see figure) which is affixed on the ROPS frame as per EEC norms.



Pneumatic Trailer Brakes (Optional Feature)

The tractor is equipped with single line pneumatic brake system: i.e. when braking is done via tractor service end is connected to trailer end.

Pneumatic trailer brake components :

Compressor : - The compressor is mounted on engine and is reciprocating type. Shut down the compressor when you are not using the trailer in order to increase the efficiency of engine.



Unloader valve : Unloader valve regulates the pressure in the system and maintains it at 8 bar.



OPERATION

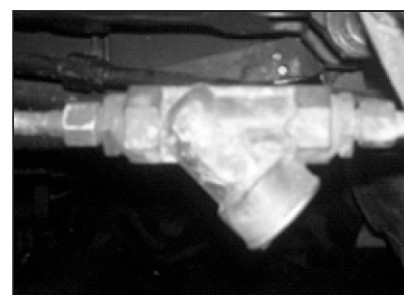


Caution : Donot temper with unloader valve, get the pressure setting adjust through authorized service center or dealer only if there is any non-working of the valve.

Tank : - Before draining the water content, park the tractor on level ground then drain the water contents by opening the drain plug provided at bottom of tank.



Line filter : - Clean the filter depending on operating conditions - normally every 3 to 4 months. This requires taking the filter cartridge out and blowing it out with compressor air. Don't over tight the filter replaced the damaged filter cartridge.



HYDRAULIC TRAILER BRAKE (If Equipped)

This is mounted on RH side of tractor in front of brake pedal. This is provided to operate the Hydraulic brake of trailer. It is actuated by the pedals of the tractors.

The adjuster nut can be adjusted for sensitivity of the trailer valve.



HYDRAULIC TRAILER BRAKE FREE PLAY ADJUSTMENT

Adjust the Actuator in such a way "that actuator adjustor pin remain at lower side in slot of brake pedal and spherical pushing pin should remain in touch with spool of brake valve and finally fit split pin and plain washer after adjustment .

Note : During adjustment brake pedal should be in unoperating condition as well as there should not be any pressure on spool of brake valve.



OPERATION

HYDRAULIC TRAILER BRAKE COUPLER

The Coupler is provided at the rear end of the tractor. The trailer Couple should be attached at left side below seven pin socket with the female tractor coupler while the trailer is being towed on the road.



Always de couple the hydraulic trailer brake coupler before unhitching the trailer.

Gate valve :- Turn of the gate valve when you are not using the trailer



Palm coupling :- Make sure that the washer is clean and undamaged when connection is made. After that check the connection for proposal seal.



Check point :- Check out the air leakage at specific joints, if present contact your authorized service station.

Air leakage in bring circuit will lead to unbalanced brake and tyres wear out quickly.

Note :- Make sure that before operating the trailer brake runs the engine idle for the least 15 minutes. unloaded valve is used to set the required pressure do not temper with it, on finding some disturbance contact your authorized service station.

MAINTENANCE

Routine Maintenance Table

LEGENDS:

A	ADJUST	G	GREASE	T	TIGHTEN	C / P	CHECK / TOP UP
C	CHECK	K	CLEAN	W	WASHING	C / T	CHECK / TIGHT
D	DRAIN	R	REPLACE	C / A	CHECK / ADJUST		

MAINTENANCE INTERVAL (HOURS)	EVERY 10	50	250	500	750	1000	1250	1500	1750	2000
SERVICE ITEM										
GENERAL										
COMPLETE WASHING	-	W	W	W	W	W	W	W	W	W
NIPPLE GREASING	-	G	G	G	G	G	G	G	G	G
COOLANT LEVEL	C	C	C	C	C	C	C	C	C	C
AIR CLEANER										
AIR CLEANER ELEMENT PRIMARY (DRY)	-	K	K	K	R	K	K	R	K	K
AIR CLEANER ELEMENT SECONDARY (DRY)	REPLACE ONCE A YEAR OR AFTER 3 REPLACEMENT OF PRIMARY ELEMENT									
AIR INTAKE HOSE CLAMPS	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T
ENGINE										
ENGINE VALVE CLEARANCE	-	C / A	C / A	C / A	C / A	C / A	C / A	C / A	C / A	C / A
ENGINE OIL & OIL FILTER	-	R	R	R	R	R	R	R	R	R
ENGINE IDLE SPEED	-	C / A	C / A	C / A	C / A	C / A	C / A	C / A	C / A	C / A
TURBO-CHARGER INTAKE HOSE CLAMP.	-	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T
BELL HOUSING MOUNTING NUT & BOLTS	-	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T
COOLING SYSTEM										
FAN BELT TENSION	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T	C / T
COOLANT REPLACEMENT/FLUSHING	ONCE A YEAR OR AFTER 1000 HOURS OPERATION									
FUEL SYSTEM										
PRIMARY FUEL FILTER	-	-	R	-	R	-	R	-	R	-
SECONDARY FUEL FILTER	-	-	-	R	-	R	-	R	-	R
WATER SEPARATOR	D	D	D	D	D	D	D	D	D	D
FIP FEED PUMP BOWL	-	K	K	K	K	K	K	K	K	K
INJECTOR PRESSURE & SPRAY	-	-	-	C/A	-	-	-	C/A	-	-
CLUTCH										
CLUTCH OPERATION & PEDAL FREE PLAY	C / A	C / A	C / A	C / A	C / A	C / A	C / A	C / A	C / A	C / A
TRANSMISSION/HYDRAULICS										
OPERATION OF GEARS	-	C	C	C	C	C	C	C	C	C
TRANSMISSION / HYDRAULIC OIL	-	C/P	C/P	C/P	C/P	R	C/P	C/P	C/P	R
TRANSMISSION / HYDRAULIC OIL FILTER	-	R	R	R	R	R	R	R	R	R
MAGNETIC STRAINER	-	K	K	K	R	K	K	R	K	K
TRANSMISSION BREATHER ASSY	K	K	K	K	K	K	K	K	K	K

MAINTENANCE

MAINTENANCE INTERVAL (HOURS)	EVERY 10	50	250	500	750	1000	1250	1500	1750	2000
OPERATION OF HYDRAULICS	-	C	C	C	C	C	C	C	C	C
HYDRAULIC HOSES AND CLAMPS FOR TIGHTNESS	-	C	C	C	C	C	C	C	C	C
BRAKES										
BRAKE OPERATION	-	C	C	C	C	C	C	C	C	C
BRAKE PEDAL FREE PLAY	-	C/A	C/A	C/A	C/A	C/A	C/A	C/A	C/A	C/A
STEERING										
STEERING OPERATION	-	C	C	C	C	C	C	C	C	C
STEERING OIL LEVEL	-	C/P	C/P	C/P	C/P	C/P	C/P	C/P	C/P	C/P
STEERING OIL CHANGE	-	R	-	-	R	-	-	R	-	-
STEERING OIL STRAINER FILTER (POWER STG.)	-	R	K	K	R	K	K	R	K	K
KING PIN	-	G	G	G	G	G	G	G	G	G
TOE IN (FRONT TYRE)	-	C/A	C/A	C/A	C/A	C/A	C/A	C/A	C/A	C/A
FRONT AND REAR AXLE										
STUB AXLE GREASE	-	G	G	G	G	G	G	G	G	G
WHEEL BEARING GREASE	-	-	G	-	G	-	G	-	G	-
FRONT AXLE (FOR 4WD MODELS)										
FRONT HUB OIL (4X4)	-	C	R	C	C	C	C	R	C	C
DIFFERENTIAL OIL (4X4)	-	C	R	C	C	C	C	R	C	C
BREATHING ASSY. (4X4)	-	K	K	K	K	K	K	K	K	K
WHEELS AND TYRES										
WHEEL NUTS AND BOLTS	-	C/T	C/T	C/T	C/T	C/T	C/T	C/T	C/T	C/T
TYRE AIR PRESSURE	-	C/A	C/A	C/A	C/A	C/A	C/A	C/A	C/A	C/A
BATTERY										
BATTERY ELECTROLYTE LEVEL	-	C	C	C	C	C	C	C	C	C
BATTERY TERMINALS	-	K	K	K	K	K	K	K	K	K
METER /GAUGES										
FUNCTIONING OF OIL GAUGE	C	C	C	C	C	C	C	C	C	C
FUNCTIONING OF TEMP. GAUGE	C	C	C	C	C	C	C	C	C	C
FUNCTIONING OF ALL WARNING LIGHTS	C	C	C	C	C	C	C	C	C	C

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

IMPORTANT:

- * Engine Oil grade should be selected as per operating temperature condition.
- * Anti freeze should be used in sub zero ambient temperature..
- * Clean Air Cleaner element as and when required as per field operating conditions.
- * Clean Strainer filter of Power Steering Tank when any rework of pressure line.
- * 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 tank plug is lost, it must be replaced with an original spare which must be fully tightened.
7. Dry up any fuel spill immediately.

Fuel Requisites

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

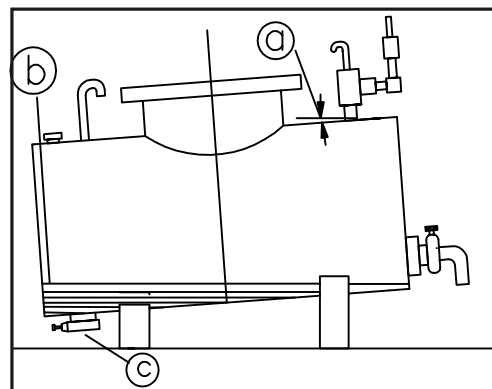
Before you fuel the tractor, clean the zone around the filler neck to prevent foreign bodies from entering the tank. After fuelling, tighten the plug properly.

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 black iron 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 fill plug inlet when fueling.
- Plan your fuel purchases so that summer fuels are not kept for too long and used in the winter.



Setting up a tank for fuel storage and decanting.

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



MAINTENANCE

Maintenance of Air Cleaner (Dry Type)

Air Cleaner Components

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

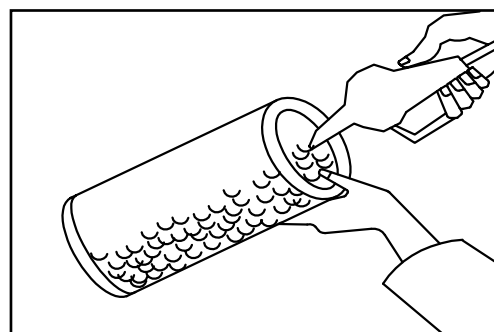
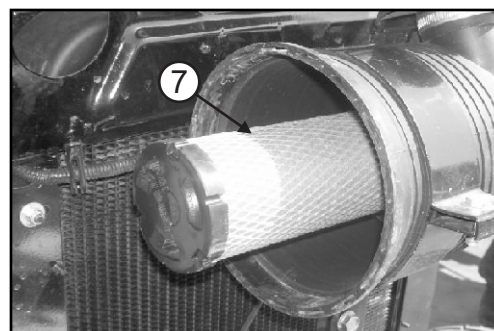
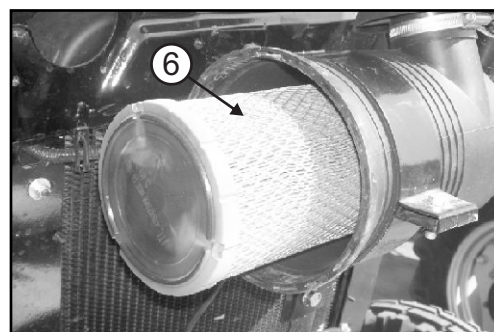
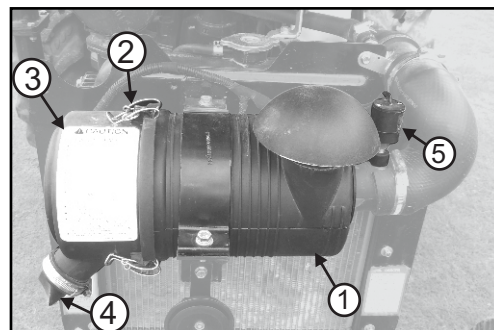
Important Instructions :

- Clean the primary air cleaner element at first 50 hrs & then after every 250 hrs of operation or whenever choke indicator glows on dashboard. Replace primary element at every 750 hours of operation.
- Gently pull primary element back and forth to take it out from housing.
- Clean primary filter element by blowing compressed air (max. pressure not more than 1.6 bar (20 PSI) from inner side only. Do not direct air outside of element.
- Use clean cloth to wipe sealing areas of element.
- 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.
- When installing the air cleaner cover, ensure that the rubber valve (4) should face down.
- Ensure proper seating of all rubber rings. Replace the damaged ones.
- Discharge the dust deposits and sediments daily by pressing the rubber valve (4) on the air filter housing (1).
-

Replace secondary element once a year or after three replacement of primary element, 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.

IMPORTANT: Remove secondary element only if it is to be replaced. Do not attempt to clean secondary element.



MAINTENANCE

Checking Engine Oil Level

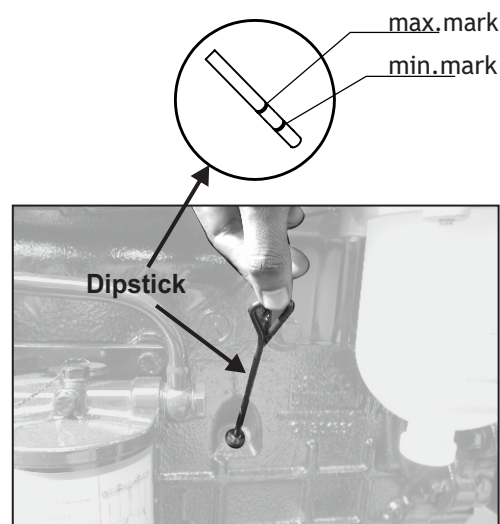
Leave the tractor parked on a leveled surface for at least five minutes before checking the level, to allow the oil to settle in the sump.

Take out the DIPSTICK, wipe it with a rag and then dip it into sump again, then remove the dipstick again and ensure that the oil level is within the upper/lower mark reaches and does not exceed the upper mark.

If necessary, add recommended engine oil through the oil filler until the required level has been reached.



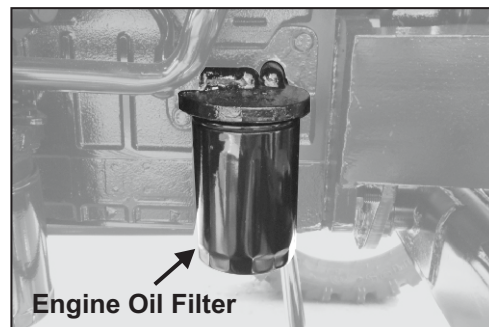
Never ever use the engine with the oil level below the Minimum Mark.



Replacement of Engine Oil & Engine Oil Filter

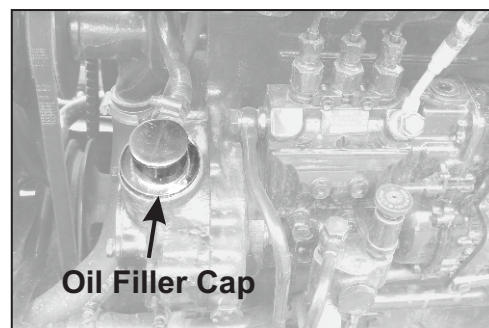
Changing Oil Filter:

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 :

- During the running in period, the engine oil must be changed after first 50 hours. Following this, change Engine oil at every service.
- Drain the oil when engine is hot.
- Remove drain plug after parking the tractor on leveled surface.
- Allow the tractor to cool down.
- Fit the drain plug and tighten to 3.5 Nm torque.
- Fill up oil through oil filler until it reaches to the MAX mark on the dipstick.
- Check the oil pan and other parts for oil leakage.



*Only use genuine filter cartridges.
Use of non-genuine cartridges could damage the engine and shorten its working life.*

MAINTENANCE

Radiator Draining & Flushing (when Cold)

1. Remove the radiator cap and drain plug (A).
2. Let the coolant drain out. Close drain cock 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 1 year or 1000 hours of operation, whichever is earlier. After this period mixture must be changed.

Radiator Fins Cleaning

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

Radiator Cap

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 Water 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.

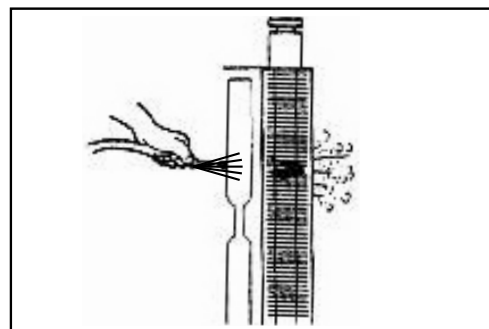
Replacement hoses are available from your dealer.



WARNING : NEVER remove the cap from the radiator while the engine is still hot. Always unscrew the cap slowly by one position and allow the pressure to drop before you loosen it completely.



WARNING : These operations must be carried out when the engine is cold. When hot, the grills and radiator will burn the hands and fingers.

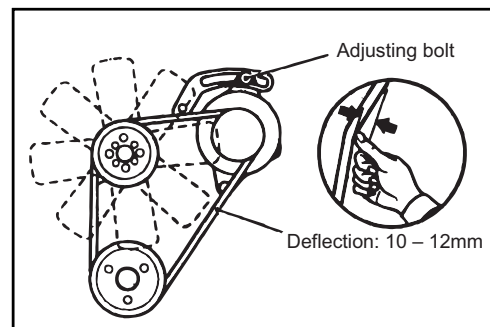


MAINTENANCE

Maintenance of Cooling System

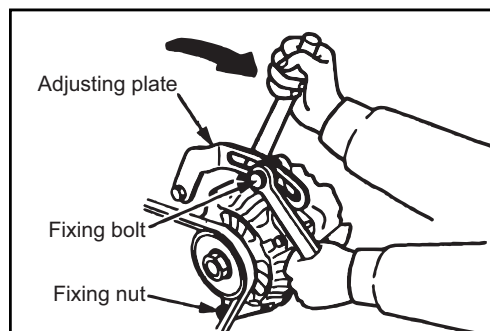
Checking Fan Belt Tension

1. Ensure that Fan 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.



Adjusting belt tension:

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



Radiator

Coolant Level in Radiator (Hot)

Slowly open the radiator cap up to the safety catch (about 1/4 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.

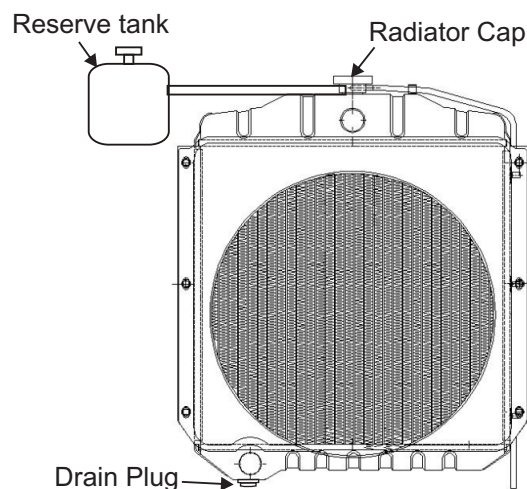
If the level has dropped, check the entire cooling system for leakage (radiator, hoses etc.) If there is no leakage, Top up the coolant.

Fill the reserve tank with coolant up to the FULL line mark for coolant Top up.

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

In sub zero temperature climate conditions use Ethylene Glycol 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



MAINTENANCE

Replacement of Fuel Filters

1. Shut down fuel cock.
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.

Air Bleeding after Fuel Filter Replacement

1. Unscrew the vent screw at top of the primary fuel filter (A1).
2. Unscrew hand primer lever (B) of the feed pump and operate until all the air is released.
3. Screw the vent screw (A1) and unscrew the vent screw (A2) at the top of secondary fuel filter, activate the hand primer (B) until all air is released.
4. Screw the vent screw (A2). Pressurize the fuel system further using hand priming pump till it becomes heavy.

Air Bleeding After Complete Draining of Fuel System

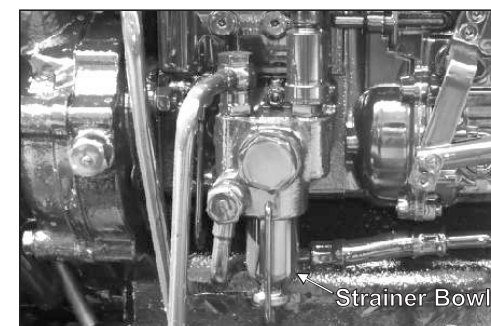
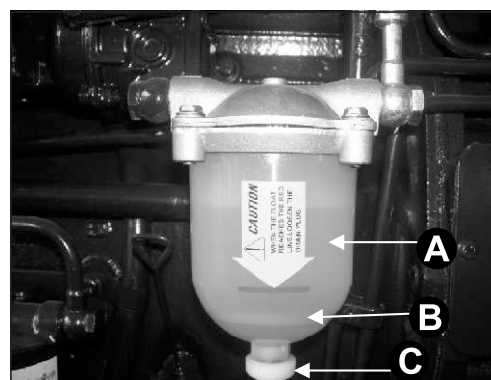
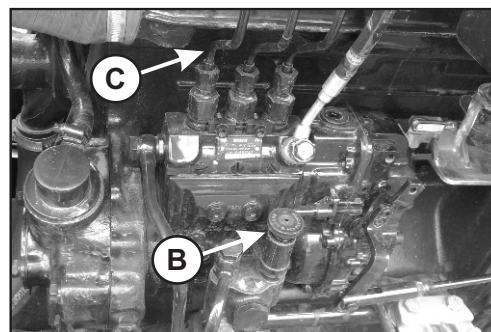
1. Follow above procedure from Sr. No. 1 to 4 of Air bleeding.
2. While turning the starter, loosen all connections of high pressure line to injector (C) until fuel comes out of the connection is free from air bubbles. Re-tighten the connections.

Water Separator

1. The water separator (A) is used to obtain the better functioning of fuel system.
2. Drain water and contaminants from clear water separator sediment bowl by opening drain screw (C).
3. Drain water separator when the indicator ring (B) (red) comes to marked level.

Cleaning of FIP Feed Pump Strainer

Shut off fuel cock for cleaning the strainer. Remove it from bowl by loosening the screw provided at bottom. Clean the element of strainer and fit it again. Be sure that part of strainer bowl is fitted properly. Any minor leakage in this may cause air trapping in the fuel system.



MAINTENANCE

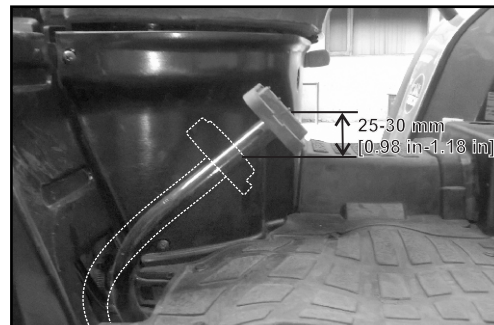
Clutch Pedal

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

Method to Check Clutch Pedal Free Play

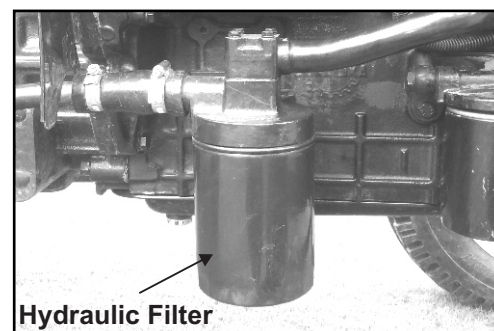
Press down the clutch pedal and measure the free play of pedal as shown in the figure. The distance should be 25 to 30 mm [0.98 inch to 1.18 inch]. If the distance is less than 25 mm [0.98 inch] or higher than 30 mm [1.18 inch] then get it adjusted.

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



Transmission / Hydraulic Oil Filter

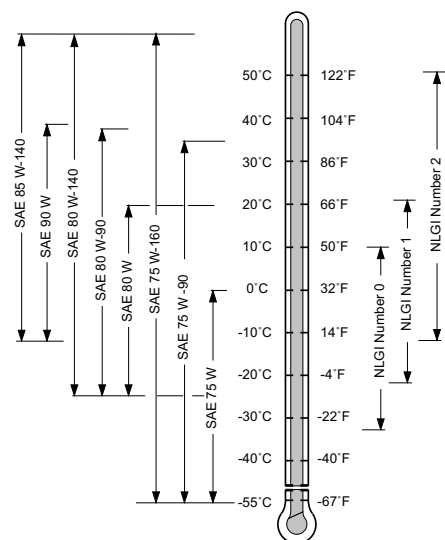
- Carefully unscrew oil filter from its adapter, Use of Filter wrench may be necessary.
- Clean the filter adapter and lubricate rubber seal on replacement filter with clean hydraulic oil. Install new filter duly filled with clean oil and tighten by hand.
- Do not use filter wrench to tighten the filter.



Recommended Oil grades & application range

We recommend use of ELF-2412 / SAE-80W oil grade for transmission and oil brakes.

Refer the chart for appropriate oil viscosity according to the ambient temperature.



Recommended oil viscosity according to air temperature

MAINTENANCE

Cleaning of Magnetic Suction Strainer (A)

At each oil change, thoroughly clean suction strainer by washing with light oil or kerosene.

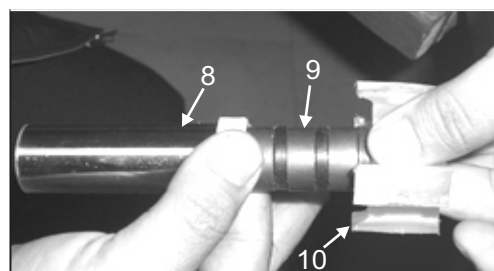
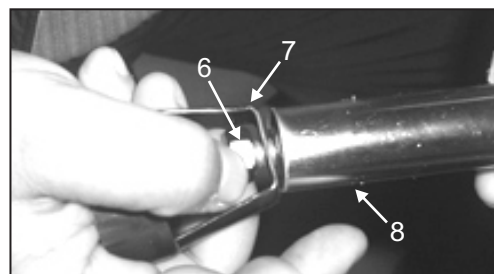
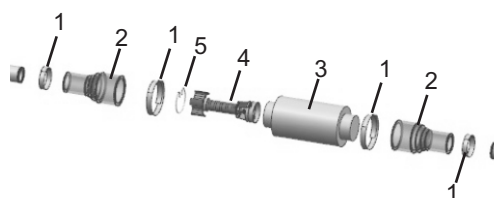
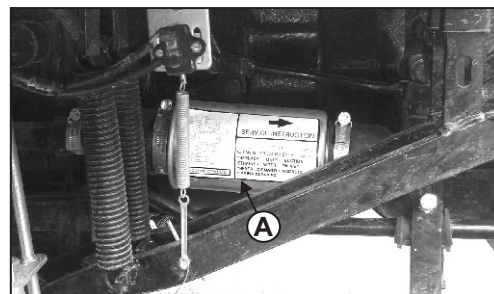
Failure to observe this will result in extensive shortening life of hydraulic system.

Cleaning Procedure of Suction Strainer:

- (1) Remove all hose warm clips (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 warm clips.

Replacement: Replace the magnetic strainer at every 750 Hours.

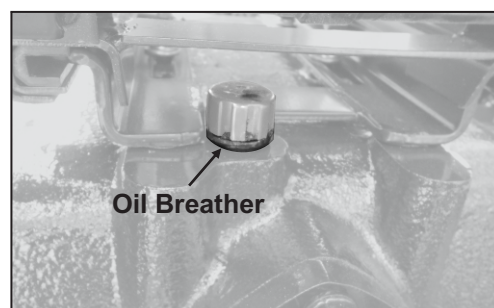
IMPORTANT: Do not dismantle the magnets (9) as these are assembled in polarity sequence and it should not be disturbed.



Check Transmission Oil Breather

The breather is located on top of rear cover, beneath the driver seat.

Remove the breather by unscrewing it. Clean it with diesel and check it for proper working and fit it again.



MAINTENANCE

Oil Changes for Transmission, Rear Final Drives and Power Lift Hydraulic Circuits

NOTE: It is advisable to change the oil at every 1000 hours of service.

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

Oil draining

1. Lower the lift arms to the ground.
2. Remove the plugs located at lower portion of brake housing to drain the transmission oil.
3. Place vessel under drain plugs of transmission housing to collect the oil as it drains out.



Beware of powerful oil jets. Follow all safety rules.

4. Clean the plugs and fit back on.

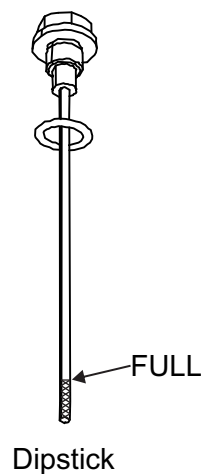
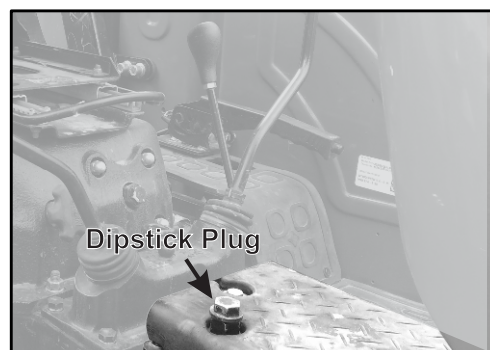
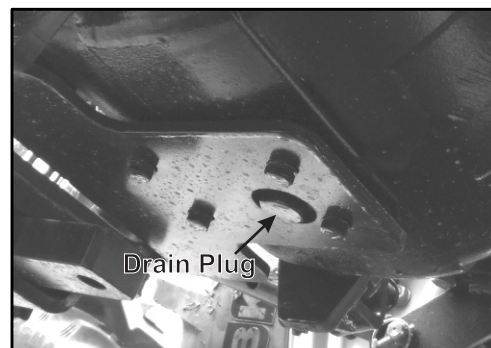
Filling up the transmission

1. Fill up the transmission oil from dipstick plug 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. 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 require more quantity of oil, make sure that the transmission contains enough oil for every work condition. Top up as required.



MAINTENANCE

Inspection of Hoses

Check hose clamps of the following systems for tightness:

- Air Cleaner to engine intake or turbocharger
- Cooling system
- Hydraulic system
- Fuel system

Check all hoses for cracks which could cause leaks or possible failure. Replace as necessary.

Check/Replace Hydraulic Hoses:

- Check hydraulic hoses regularly (On every service / before cranking/ after long idle) 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 at your dealer.

Foot Brake Pedals Free Play

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

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. The distance should be between 55-60 mm [2.16 inch to 2.36 inch].

If the free play is less than 55 mm [2.16 inch] or higher than 60 mm [2.36 inch] then adjust the both hex nut on actuator tie rod until free play comes to 55 to 60 mm [2.16 inch to 2.36 inch]. 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.

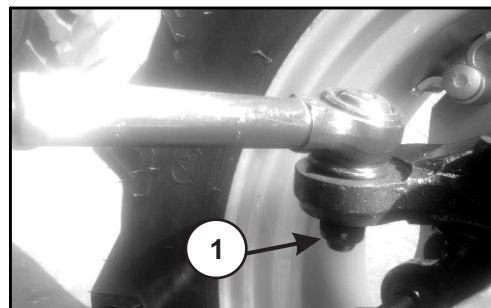


Difference in the free play will lead to unbalanced brakes, the tractor can slew in the event of violent braking. The wheel on which the brakes are applied locks and the tyre wears out quickly.

During Road Operations both the brake Pedals should be locked.

Steering Cylinder Knuckle Joints

Have the knuckle joint nuts (1) checked by an authorized service center after the first 50 hours and then at every service.



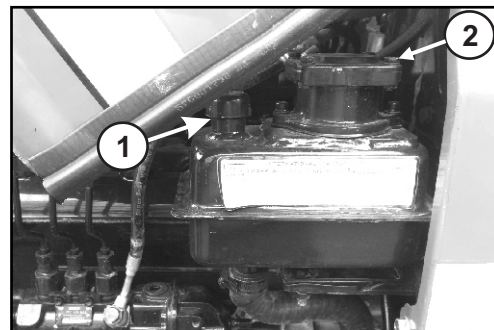
MAINTENANCE

Power Steering Reservoir Oil Level

Take out dipstick cum breather (1) and wipe it with clean cloth and observe the oil level in the tank. If necessary pour additional oil through the dipstick hole.

(The oil filter for power steering circuit is located on the power steering reservoir.)

Unscrew the four bolts (2) of filter strainer housing cover plate then remove and Clean the filter strainer with air pressure as per scheduled maintenance. Tighten the four bolts.



Cleaning Procedure:

- (1) Remove the steering tank cap.
- (2) Take out the oil strainer.
- (3) Clean it with air pressure.
- (4) Reinstall.

Recommended Oil Grade: Dexron II-D.

Oil Capacity: 2.5 Liters.

Power steering tank oil level should be in "FULL" as Indicated in the dipstick.

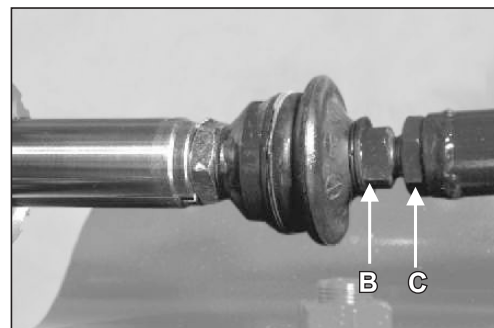
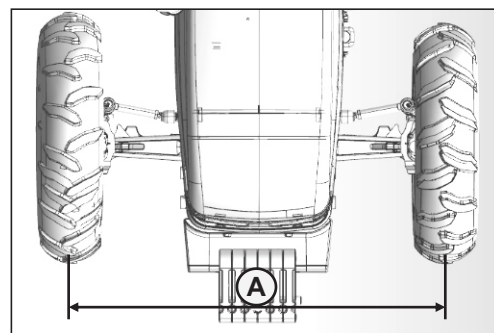


Checking & Adjusting Toe-in (Front Tyres)

Firstly park the tractor on level surface. Turn the steering wheel so that front wheels are in the straight ahead position. Measure distance (A) between the tyres at hub level in front of axle. Record measurement and mark the points on tyres. Move tractor back about 1 meter, so that the mark on the tyre is at hub level behind the axle.

Again measure the distance between tyres at same point on tyre. Record the measurement. Determine the difference between front and rear measurement. If the front measurement is smaller, toe is 'in' and if the rear is smaller, toe is 'out'. Distance "A" at the front of tyres should be 2-6 mm less than the distance measured at rear tyres.

Adjust toe -in if necessary. For adjusting toe-in, loosen the lock nuts (B) on both sides. Turn the tie rod (C) and adjust the toe-in. After adjustment torque the lock nut (B) to 100 Nm.



MAINTENANCE

Oil Changes in 4WD Front Axle (If equipped)

Axle housing

- Place a vessel under the drain plug (see fig. a).
- Remove the drain plug, drain out all the oil.
- Fit the plug back when no more oil is coming out.
- Fill up with fresh oil through filler plug (fig. b) up to the level of filler hole.
- Wait for the oil to stabilize before checking the level.
- Top up is necessary.
- Fit the plug back.

Side final drives

- Position the final drive plugs downward.
- Place a vessel under each final drive plug (one for each final drive).
- Remove the plugs and drain out all oil.
- Position the plugs on the wheel center line.
- Fill up with oil of the specified type to the level of the holes.
- Wait for the oil to stabilize before checking the level.
- Top up if necessary.
- Fit the plug back.

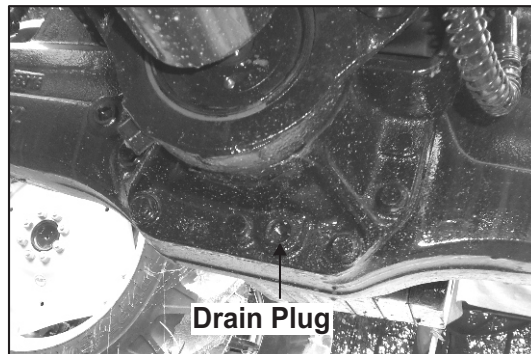


Fig. (a)



Fig. (b)

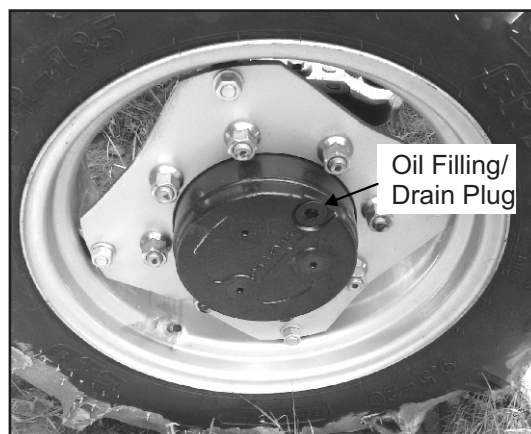


Fig. (c)

MAINTENANCE

General Maintenance of Electrical System

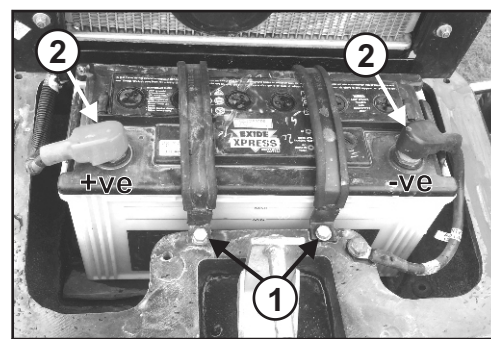
- Never Patch up the electrical circuits.
- Never replace a blown fuse by a higher capacity fuse. It could cause a fire.
- Never work on components such as the alternator or starter motor when the engine is running.
- Lastly when you are cleaning the tractor and using the pressure spray, take care not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

Battery and its Maintenance

Battery Removal Procedure

Battery is located either at front of the tractor or at right side of the tractor. Follow the below procedure to remove the battery:

1. Open the bonnet or battery cover.
2. Remove the hex bolts (1) by rotating it anticlockwise (for batteries mounted at front side).
3. Detach the (-)ve and (+)ve terminals (2) respectively.



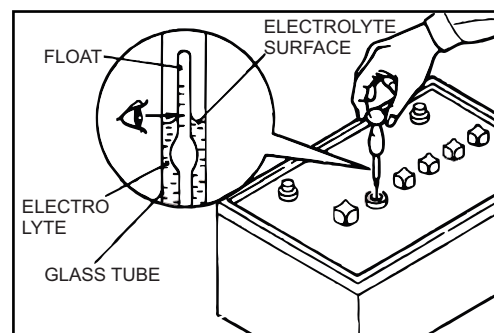
Check Electrolyte Level

It must be as per the recommendation of battery manufacturer. If required top up with distilled water. 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.

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.

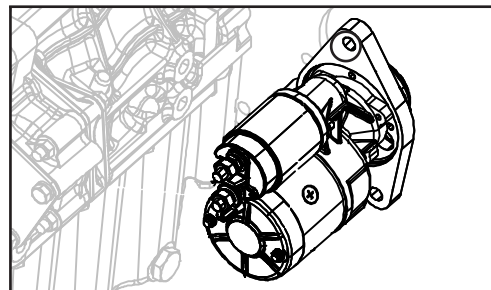
MAINTENANCE

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.



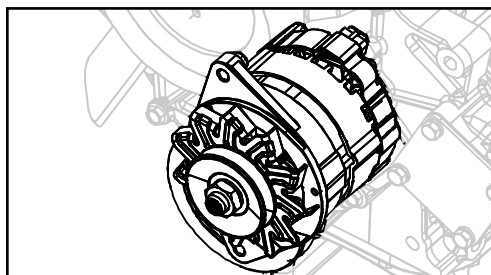
Alternator

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.



Fuses in Fuse Box

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 ascertained and removed.

15 A FRONT LIGHT	15A HI BEAM
15 A REAR LIGHT	15A LO BEAM
20A PLOUGH LAMP	10A PARK
10A BRAKE	10A HORN
15A FLASHER	20A THERMOSTAT
10 A REVOLVING LIGHT	10A MOBILE
	10A SOLENOID

Fuse Box for 50,60 models
(with Solenoid/Revolving Light)

15 A FRONT LIGHT	15A HI BEAM
15 A REAR LIGHT	15A LO BEAM
20A PLOUGH LAMP	10A PARK
10A BRAKE	10A HORN
15A FLASHER	20A THERMOSTAT
10 A STEREO	10A MOBILE
10 A WIPER	

Fuse Box for 45,50,60,75 models

MAINTENANCE

Long Idle 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 tyres. If this is not possible, the tire pressure must be periodically checked.
- Cover the tractor with a tarpaulin (not plastic or waterproof).

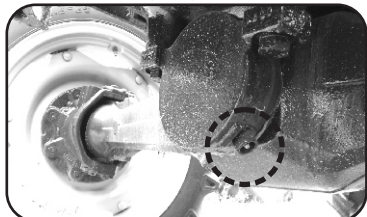


At the end of the idle period. When you start the engine again, pay particular attention to the instruction about starting engine in the operation chapter.

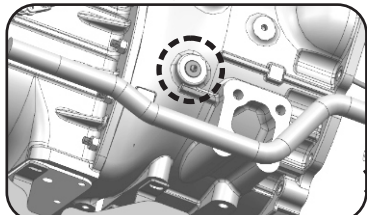
MAINTENANCE

Greasing Points

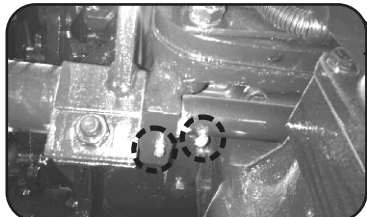
Centre Pin (4x4) - 1 Point



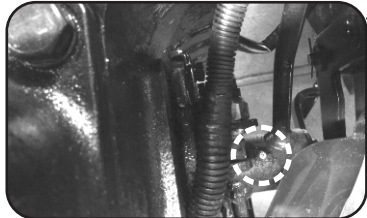
Clutch Actuating Shaft LH- 1 Point



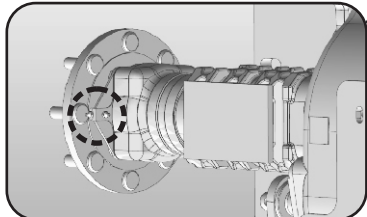
Clutch Pedal Shaft - 2 Points



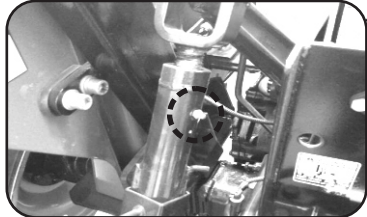
2WD/4WD Lever - 1 Point



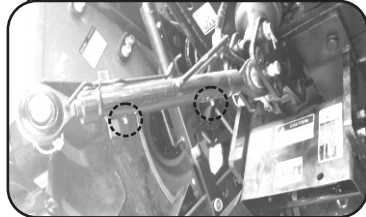
Trumpet Housing (LH) - 1 Point



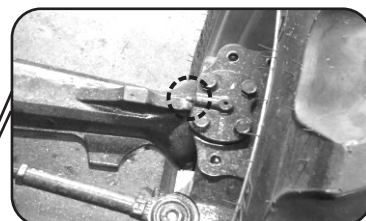
Lift Rods (LH&RH) - 2 Points



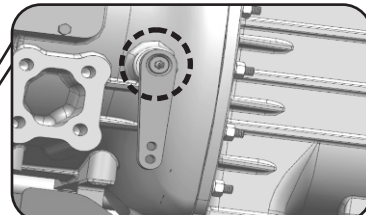
Top Link Assy - 2 Points



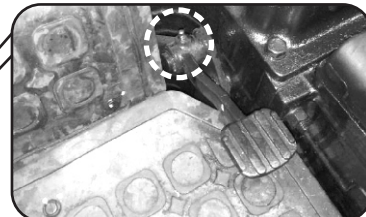
Stub Axle LH & RH - 4 Points



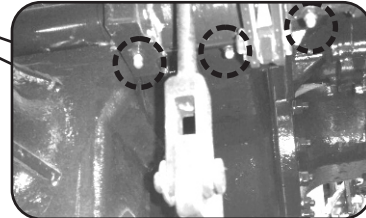
Clutch Actuating Shaft RH- 1 Point



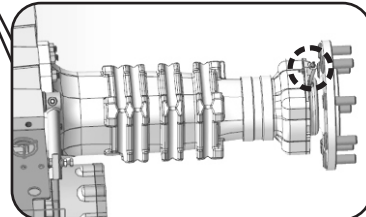
Diff. Lock Pedal - 1 Point



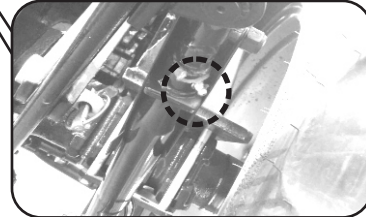
Brake Pedal Shaft - 3 Points



Trumpet Housing (RH) - 1 Point



Stay Bars (LH&RH) - 2 Points



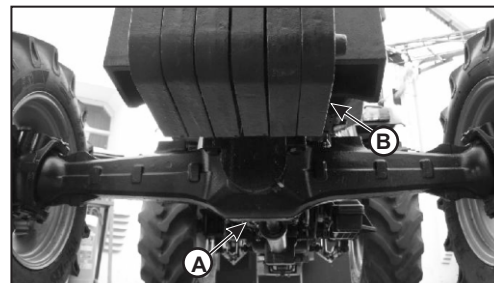
MAINTENANCE

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.

Raise front of the tractor

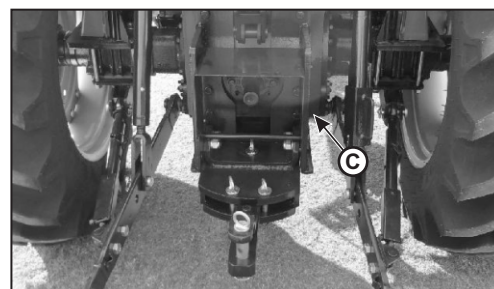
- A- Raise Center of Axle (Use wooden wedges between front axle support and front axle beam to prevent axle from tilting).
- B- Raise Front End of the tractor under basic weight.



Raise front of tractor

Raise rear of the Tractor

- C- Raise rear of the tractor by placing jack below transmission housing.



Raise rear of tractor



CAUTION

- 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.

MAINTENANCE

Oil and Lubrication Chart

Aggregate	Capacity	Recommended Grade
Engine Oil	8.2 Litres [2.17 US Gallons]	SAE-10W40 (cold weather countries) SAE-20W40 (hot weather countries)
Gearbox and Rear Axle	55 Litres [14.5 US Gallons]	ELF-2412 (SAE-80W)
Front Axle	(4WD models): 5.5 Litres	API GL4
Power Steering	2.5 Litres [0.66 US Gallons]	Dextron II-D
Fuel	55 Litres [14.5 US Gallons]	Diesel Fuel Only

TECHNICAL SPECIFICATIONS

Technical Specifications

ENGINE	Model	50
	Make	International Tractors Ltd
	Engine Type	3 Cyl, Water Cooled, Direct Injection, Diesel Engine
	Model and Identification	3102IL
	Bore x Stroke	102x118mm (4.01x4.65 in.)
	Firing order	1-3-2
	Displacement (CC)	2893
	Compression ratio	18.2:1 (±0.2)
	Injection timing	12° +2° BTDC
	Engine Rated RPM	2100
	Low Idling	750±50
	Valve Clearance Intake / Exhaust	0.3/0.4 mm
LUBRICATION	Total Engine Lub. Oil capacity	8.2 Litres (2.17 US Gallon)
TRANSMISSION	Clutch Type	Dry, Dual Clutch
	Gearbox Type	Constant Mesh (8F+2R)
BRAKES	Type	Oil Immersed Brakes
STEERING SYSTEM	Mechanical / Power	Power Steering
P.T.O.	PTO Speeds	540 RPM @1680ERPM
TYRES	Front Tyre Size	6x16 (2WD), 9.5x20 (4WD)
	Rear Tyre Size	340-85 R28, 12.4x28 / 13.6x28 / 14.9x28 (option)
OVERALL DIMENSIONS	Wheel base	1980mm (78in.) (2WD), 2200mm (86.6in.) (4WD)
	Front Wheel Track	1310~1420mm (2WD) 1295~1650mm (4WD)
	Rear Wheel Track	1420mm~1880mm
	Length	3820mm (150.4 in.)
	Width	1880mm (74 in.)
	Height (with downdraft Silencer)	-
	Height (with updraft Silencer)	2470mm (97.24 in.)
	Min. Ground Clearance	314 mm (12.36 in.)
	Gross Weight (Unladen)	2445 Kgs (5390 lb.) (2WD) 2740 Kgs (6041 lb.) (4WD)

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

“ITL H-TYPE CABIN”



HVAC CABIN

CAB COMPONENTS (Fig. - 1 & 2)

1. Front windscreen
2. Front Wiper
3. Front Work lights
4. Roof
5. Adjustable rear view mirrors
6. Front Indicators and parking lights

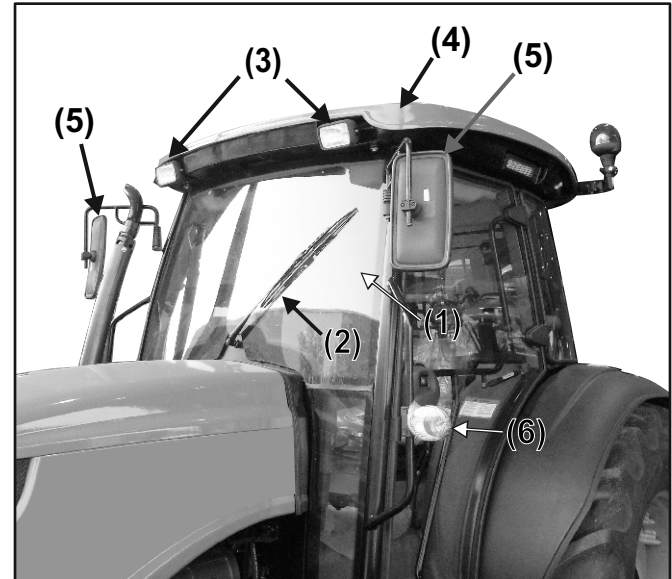


Fig. - 1

7. Registration Plate & Light
8. Openable Rear windscreen
9. Revolving Light / Beacon Light
10. Rear Work lights
11. Right-hand side Window
12. Washer Bottle (For Wiper)
13. Rear Wiper

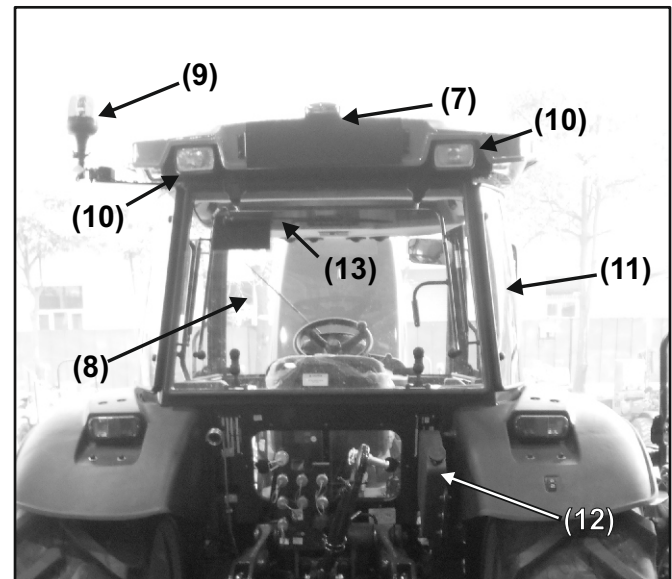


Fig. - 2

FRONT (3, Fig.1) AND REAR (11, Fig.2)

WORKING LIGHTS

The lights operate when the ignition key has been turned to the contact position.

The field lights are adjustable. You can therefore direct the light beam in the most suitable direction, depending on the job in hand.

HVAC CABIN



FRONT WINDSCREEN WIPER/WASHER (Fig. - 3, 4)

WIPER :

Operates when the ignition key has been turn to on position.

Wiper & Washer switch (1& 3, Fig. 4) is located in roof mounted switch panel.

WASHER FRONT WINDSHIELD (Fig. - 3)

Press and hold the switch (A, Fig.-4) for spray of water on windshield front, and Release the switch it will automatically turn OFF.

WIPER FRONT WINDSHIELD (Fig. - 3)

Press the switch (B, Fig.-4) to operate wiper blade on front windshield.



Fig. 3

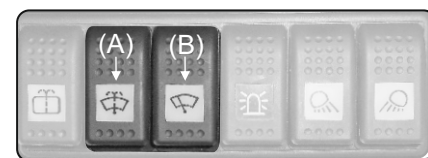


Fig. 4



REAR WIPER & WASHER

Wiper Switch (Fig. - 5)



Rear wiper switch (C, Fig.-5) is located near the wiper motor fitted at rear wind screen left corner. Press Red color switch (C, Fig.-5) to operate wiper blade.

REAR WIPER MOTOR (D)

Rear Wiper Motor located on Left side corner of rear Windscreen.

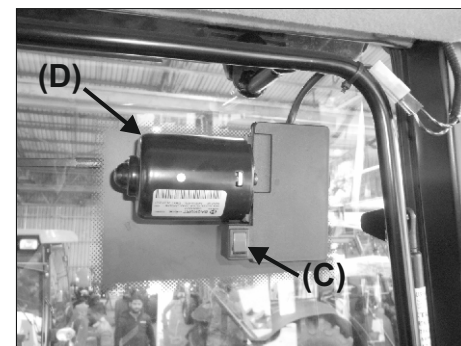


Fig. 5



WASHER SWITCH (Fig. - 6)

Washer switch (E, Fig.-6) is located on roof mounted switch panel.

Press and hold washer switch (E, Fig.-6) for spray of water on rear wind screen.



Fig. 4



WASHER BOTTLE (Fig. - 7)

Washer tank is located outside the cabin on rear fender.

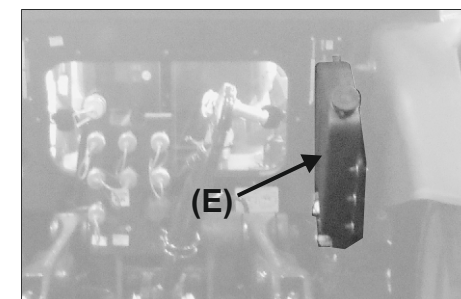


Fig. 7

HVAC CABIN

DOOR LOCKS (Fig. - 12)

Locking : 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.



Fig. 12

DOOR OPENING (Fig. - 12 & 13)

OUTSIDE : Press the lock button and pull the door from handle.

INSIDE : Pull the lock release handle and give soft push to door.



Fig. 13

GAS SPRING ASSISTED DOORS

Doors can be opened from the outside by pressing the lock button and pulling open from the door handle. From the inside of the cabin, engage the lock release and gently push the door outward. Additionally, the doors may be locked by fully inserting the key and turning counter-clockwise. (See Fig. 14).

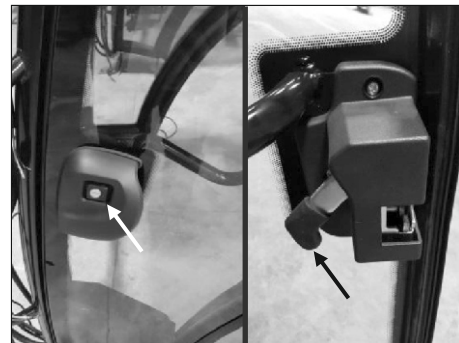


Fig. 14

SIDE GLASS WINDOWS (LEFT & RIGHT)

The side glass windows may be opened by releasing the lock handle and pushing outward. When closing the side glass windows, pull the window inwards and secure the locking handle. (See Fig. 15).



Fig. 15

HVAC CABIN

OPENABLE REAR WINDSCREEN (Fig. - 8)

To unlock rotate the levers (two numbers) 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.

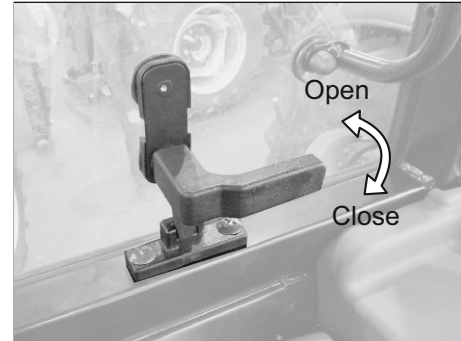


Fig. 8

EMERGENCY EXIT (See Fig.9)

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 (see fig. 9) in anti-clockwise direction (see fig. 8).



Fig. 9

OUTSIDE REAR VIEW MIRRORS (Fig. - 10)

Adjustable rear view mirrors are fitted on left & Right front pillar.



Fig. 10

FOOTSTEP (Fig. - 11)

Two stage footstep provided on both sides of cabin for easy entry in cabin.



Fig. 11

HVAC CABIN



BEACON LIGHT (Fig. - 16)

Beacon light is provided in the tractor for safety,
Mounted at Left Hand Side Rear Cabin Pillar.



Fig. 16

REGISTRATION PLATE 1 & LICENCE LAMP 2

Registration plate (1) and licence lamp (2) is mounted
on the rear side of roof (see fig. 17).

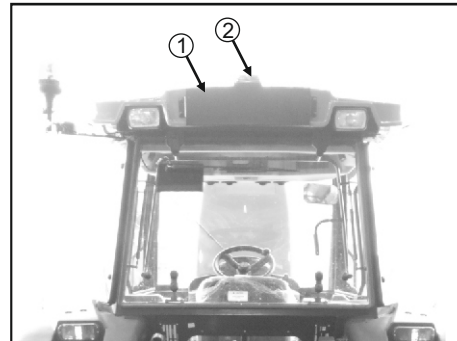


Fig. 17

AC AIR FILTER (Fig. - 18)

AC Air Filter located on Left and Right side cabin roof.

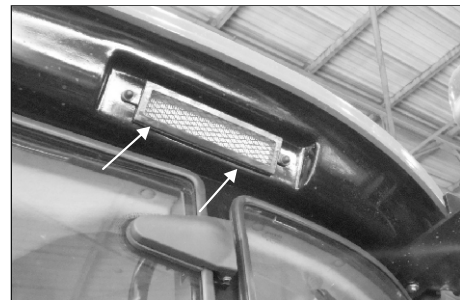
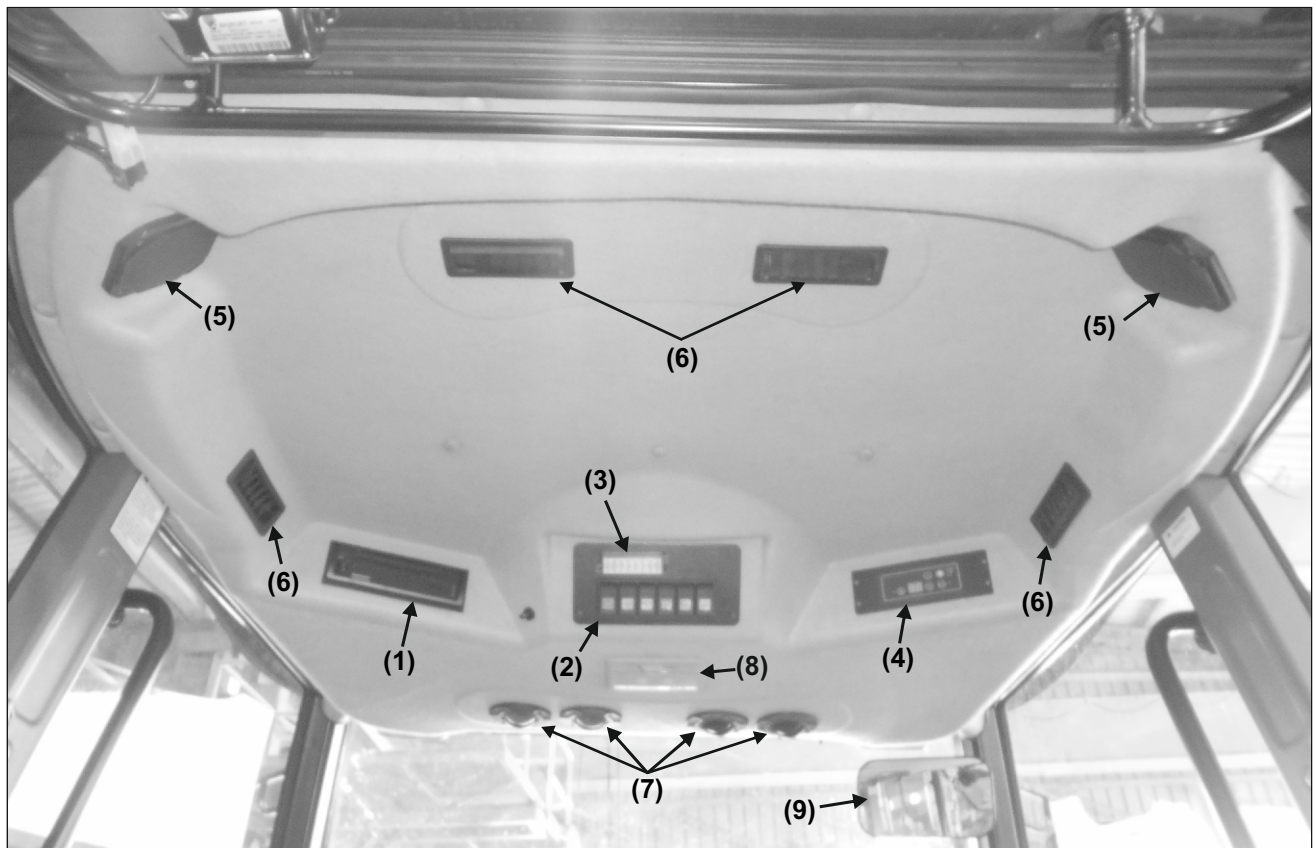


Fig. 18

HVAC CABIN

CABIN INTERIOR ROOF MOUNTED (Fig. 19)

1. Music System
2. Field Lights, Wiper and Washer Switch Panel
3. Fuse Box
4. Digital AC Switch Panel
5. Speaker
6. AC Suction Grill
7. AC Discharge Louvers
8. Dome Lights / Door Light
9. Cabin Rear View Mirror



(Fig. 19)

HVAC CABIN

AC CONTROL PANEL (Fig. - 20)

AC control panel is mounted in seeling on left hand side.



- Fan - 3 speed ☆, ☆☆, ☆☆☆,

- A/C - Air Conditioning Switch

- Temperature Control Up

- Temperature Control Down

- Heaters Switch

- Digital Temperature Display



Fig. 20

FIELD LIGHT SWITCHES (Fig. - 21) (With Ignition switch ON)

- Field light switches (1 & 2 Fig. -21) are fitted in roof mounted panel.

- To illuminates front field lights press switch (1 Fig. -23).

- To illuminates Rear field lights press switch (2 Fig. -23).

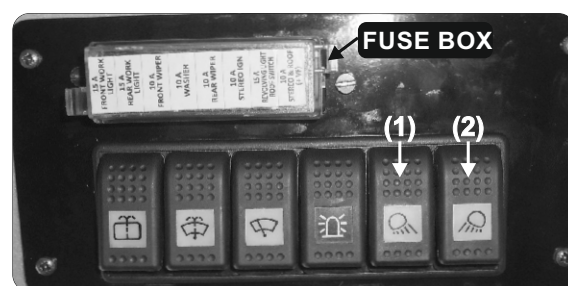


Fig. 21

MUSIC SYSTEM (Fig. - 22)

Celing fitted detachable front panel stereo support with 02 speakers.

Refer operator manual of music system for detail.

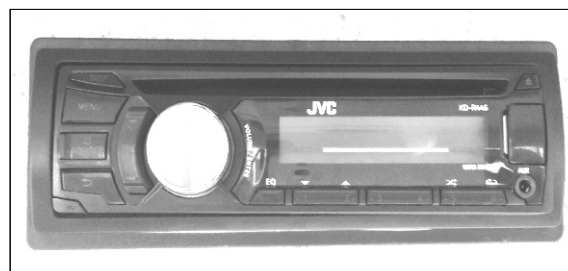


Fig. 22

SPEAKER (Fig. - 23)

Speaker mounted (5, Fig.-25) on roof left and right rear corner.



Fig. 23

AC SUCTION GRILL (Fig. - 24)

AC Suction Grill (6, Fig.-24) located on roof.

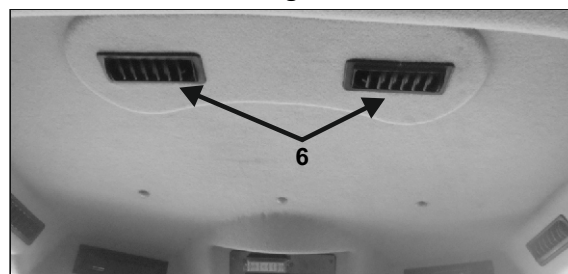


Fig. 24

HVAC CABIN

AC DISCHARGE LOUVERS (Fig. - 25)

AC Discharge Louvers mounted on roof (Front and Rear).

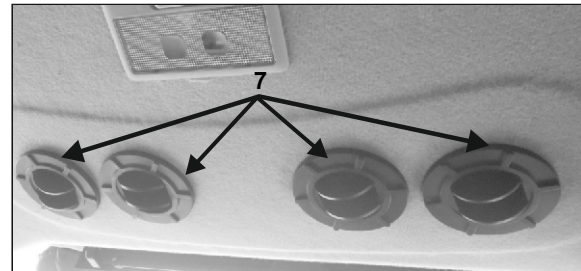


Fig. 25

DOME LIGHT (Fig. - 26)

Dome light is fitted on front roof panel.

ON : Turns on the Dome light

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

OFF : Turns off the Dome light

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



Fig. 26

CABIN REAR VIEW MIRROR (Fig. - 27)

One mirror is located inside cabin on right hand front pillar. Adjust the view mirror, so as to obtain the best possible rear view.

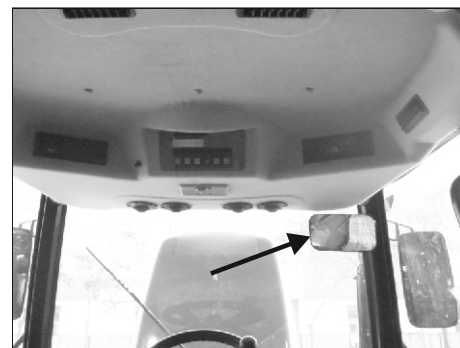


Fig. 27

FOLDABLE SUN SHADE (Front wind screen) (Fig. - 28)

To open pull down lever (1, Fig.-28) and leave it in suitable opened position. To close press the button (2, Fig.-28). It will automatically roll in.



Fig. 28

HVAC CABIN

HAZARD LIGHTS FRONT AND REAR

Hazard light (1, Fig. - 29)

HAZARD LIGHT SWITCH

Hazard light switch (1, Fig. - 29) is mounted on right hand side of dashboard panel. All the Indicator will blink when the switch is pressed down.

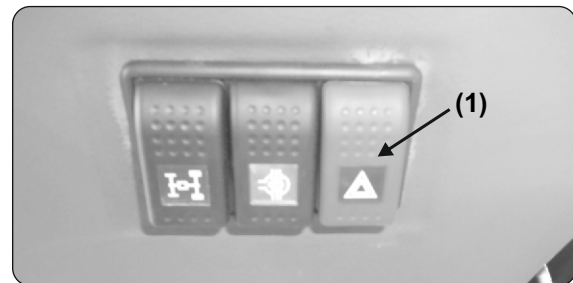


Fig. 29

ASH TRAY (Fig. - 30)

Removable Ash tray is located on right hand sided. Take out from cavity for cleaning.

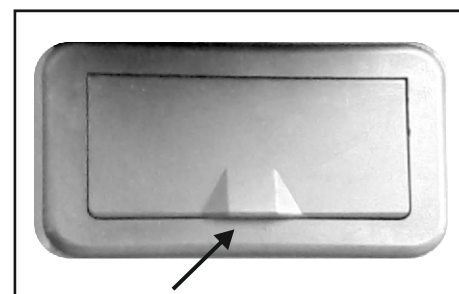


Fig. 30

CUP HOLDER (Fig. - 31)

Provided on left hand fender.

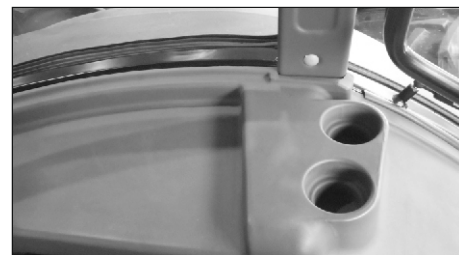


Fig. 31

AC COMPRESSOR (Fig. - 32)

* Refrigerant name - R134a (already imprinted on AC compressor housing).

* Refrigerant Quantity 950gm.

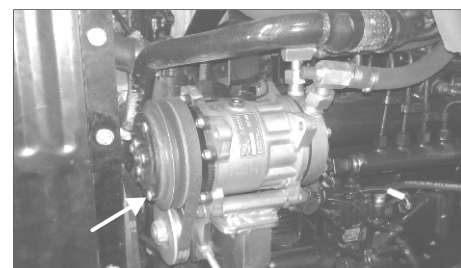


Fig. 32

CONDENSER (Fig. - 33)

Condenser is located at front side under bonnet.

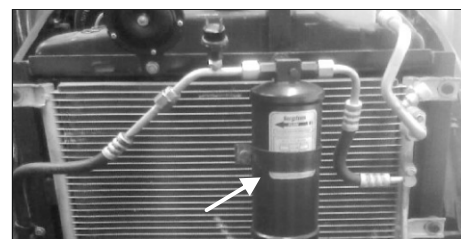


Fig. 33

HVAC CABIN



CAUTIONS

1. Do not open the Front, Rear or side windows, nor any doors, during work. The Noise inside the cabin would increase to such an extent as to require the operator to wear ear muffs or other individual protection gear against noise.
2. The air conditioner will not operate when the engine is at stand still as the compressor is operated by the engine itself.
3. Make sure that the air conditioner control is in the Off Position before Starting the Engine.
4. Always turn on the electric fan before operating the Air conditioner.
5. The Conditioner cannot operate when the electric fan is off.
6. If the Tractor is to remain unused for a long period of time, or if the system is not used, remember to allow the air conditioner to operate for about 15 minutes each week. This precautionary measure prevents gas from leaking from the compressor.
7. Take the filters off before washing the Cabin. If the Cabin is washed and the special filter has not been de-mounted, take care to prevent the jet of water from splashing on the protective grill, otherwise your cabin special filter will be irreparably damaged.
8. The Belt must be replaced if it is cracked or needs adjusting too frequently.
9. The Filters must be replaced every time the air conditioning system is serviced. In such an occasion, check the oil level in the compressor.
10. Never leave the Tractor with the engine running. The Tractor could move suddenly, particularly if a gear is selected and cause accidents and serious injuries.
11. In proper use of the Astray and cigarette lighter could cause fires, burns and other serious injuries.
12. Never place paper or any other items in the Astray that could start a fire.

HVAC CABIN

SAFETY FEATURES

- Tempered safety glass in case of breakage
- Beacon light on the roof as a caution light for road transport
- Neutral safety switch, PTO safety switch
- Skid resistant platform with easy access to all foot controls

GENERAL SAFETY PRECAUTIONS

Air conditioner unit's compressor is driven by vehicle engine pulley by belt. Thus, air conditioner unit can only be turned on when engine is started and alternator is on.

CAUTION!

Please do not hesitate to contact authorized services if interior temperature of your vehicle does not change. Do not turn air conditioner unit on at high navigation speed and rpm!

1. The installation of transport air conditioner units should be performed by authorized services.
2. The air conditioner system shall be out of warranty if installation is performed by unauthorized services.
3. Maintenance and services of refrigeration unit should be performed by authorized services.
4. Do not spray water or liquid substances onto electric components such as control panel, electric board etc.
5. Do not allow non-qualified workers to dismount or repair the unit.
6. Always carry fire extinguishers in your vehicle against fire risk.

To Switch on the A/C

1. Turn ON the key to ignite the engine of tractor. Interior temperature of cabinet appears on screen.
2. Before pressing the A/C button, adjust required interior temperature.
3. Press the A/C button. LED light next to A/C button will turn on. The preset value is seen on the display.
4. If the last set value is needed to be changed, it is performed by the help of the increase and decrease buttons.
5. Fan buttons shown three stage fan blowing speed.

To Switch on the Heating

1. Turn ON the key to ignite the engine of tractor. Interior temperature of cabinet appears on screen.
2. Before pressing the Heating button, adjust required interior temperature
3. Press the Heating button .LED light next to Heating button will turn ON ,the preset value is seen on the display.
4. If the last set value is needed to be changed, it is performed by the help of the increase and decrease buttons.
5. Fan buttons shown three stage fan blowing speed.

HVAC CABIN

AIR CONDITIONER USAGE PURPOSE AND DESCRIPTION

- The purpose of transport temperature control systems is to provide comfort conditions in hot and humid weather.
- The hot air is pulled by evaporator fans and then passes through evaporator coils where it is cooled.
- The cooled air is blown to interior of the vehicle from air grilles through air ducts.
- All doors, windows and roof hatches should be tightly closed in order to maintain desired comfort conditions.
- The air conditioner unit should be turned on at low rpms to prevent compressor malfunctioning if a/c unit has not been operated for a long period.
- The interior of the vehicle should be heated up to 24°C - 26°C by vehicle heating system when the ambient temperature is low in winter.
- Afterwards, the air conditioner unit should be operated once for 10 minutes in every 15 days for control issues.
- Have your air conditioner units checked by authorized services before season where air conditioner usage is required. Make sure that air conditioner is running in good condition.
- Ensure to remedy in case of refrigerant leakages and any other failures occur. Do not allow non-qualified and unauthorized services to repair air conditioner units.
- The air conditioner control panel installed on vehicle cabin controls air conditioner.

MAINTENANCE AND SERVICE DAILY-WEEKLY MAINTENANCE

Daily

- Turn air conditioner unit on and check if cooling is proper or not.
- Always carry a/c unit warranty certificate with sufficient or not. If any failure, please contact with authorized services.
- Components in warranty are specified in to mandatory replaced parts warranty certificates.

Weekly

- Clean return air filters with high pressure air. The condenser unit container accumulate substances such as leaf, dust and mud etc. clean it with compressed air.

Service

- Unit service should only be performed by authorized services dealers. The air conditioner system shall be out of warranty if maintenance is performed by unauthorized services.
- Make sure that air conditioner is running in good condition. Ensure to remedy in case of refrigerant leakages and any other failures occur.

Electric Circuit Diagram Control Panel

- Electric circuit diagram of the air conditioner unit is given. Control panel user manual recommends that electrical maintenance be given as attachment performed by authorized services.

HVAC CABIN

REFRIGERANT CHARGING

R134A Refrigerant Charging

- Compressor should definitely not run without refrigerant in the system.
- Since R134a is made up of one type of material, it can either be charged as in liquid or gas.
- Since R134a is a low pressure refrigerant, the gas cylinder pressure is also low. Though it is difficult to charge R134a from the compressor side especially in cold weather.
- If refrigerant charge quantity is known it can be charged as in liquid phase from discharge side with electronic scale.
- If refrigerant charge quantity is not known, the gas charging could be done by utilizing from steady superheat value from evaporator outlet, system working pressure and flow condition at the sight glass of system. (This interpretation requires experience).

R134a charge service procedure (clean and vacuumed system)

- 1) Connect service manifold to the system and bleed
- 2) If gas charging is done from the compressor side, turn the compressor upside on the electronic scale.
- 3) Open high pressure valve and charge the refrigerant in liquid to the system until gas cylinder gets cold. Let the refrigerant in liquid phase charged to the system as much as it can.
- 4) When the system pressure and gas cylinder pressure is equalized. If required amount of refrigerant has not been charged to the system. Turn cylinder back to its original position.
- 5) Turn the unit on (run the compressor) and charge the refrigerant in gas phase to the system by Opening the low-pressure valve and by checking the charge quantity from electronic scale.

NOTE: When refrigerant charging is done from high pressure side, the liquid refrigerant accumulated on the discharge valve can damage compressor in sudden start-up is recommended to be done intermediately (from pressure switches or magnetic clutch socket)

Charging R134a refrigerant in liquid phase from compressor suction side is dangerous and Forbidden.

FOR ES42S UNIT; 940GR GAS CHARGING ENOUGH COOLING

R134 A Refrigerant Control Steps

- Connect service manifold to the system and bleed the hose.
- Set bodywork temperature to the desired ser temperature.
- If condenser pressure is below 150 psi, cover condenser to obtain this value.
- If there is sufficient refrigerant in the system, values below will be obtained
- 150 psi discharge pressure
- Suction pressure value obtained according bodywork temperature from pressure temperature
- Scale Clear and bubble less flow at sight glass

Adding R 134a refrigerant to the system

- If values above are not obtained, Turn the unit on (run the compressor) and charge the refrigerant in gas phase to the system by opening the low pressure valve.
- Topping up refrigerant is continued until no bubbles are observed at the sightglass. Consequently, gas charging is completed

HVAC CABIN

TROUBLE-SHOOTING

Failure/Diagnose	Possible Cause	Remedy
Discharge pressure below normal	There is insufficient refrigerant in the system	Top up(add) refrigerant to the system
	There is no refrigerant in the system	Find the leakage location, and rectify the problem, evacuate the system and charge it with right amount
	If air flowing through condenser coil is very cold (ambient temperature	If unit is designed for that ambient temperature, it is a normal situation
	Compressor discharge valve plate is leaking	Remove cylinder head, replace valve plate or valve washer
	Compressor valve plate suction and discharge valve plate and washer is broken	Remove cylinder head, replace valve plate or valve washer
	Expansion valve is not working properly	Replace expansion valve
	Expansion valve superheat screw adjustment is changed	Replace expansion valve
	Insufficient compressor speed	The vehicle should be driven at proper RPM, Search for the reason in diesel engines (malfunctioning in magnetic clutch, loose compressor belt)
Suction Pressure above normal	There is excessive refrigerant in the system	Discharge refrigerant with control
	Air flowing through condenser coil is very hot (ambient temperature)	If unit is designed for that ambient temperature, it is a normal situation
	Insufficient air flowing through condenser	Check fan motors rpm and blades and check if there is any blockage in front of condenser coil.
	Condenser fins and coils are very dirty	Clean condenser coils with pressurized water
	There is air in the refrigerant of the cooling system	Discharge the refrigerant, evacuate the system and charge with new refrigerant
	Condenser fans are broken or not rotating at proper RPM	Replace condenser fans
	Compressor discharge valve plate is leaking	Remove cylinder head, replace valve plate or valve washer
	Compressor suction valve plate is leaking	Remove cylinder head, replace valve plate or valve washer
	Compressor valve plate suction and discharge valve plate and washer is broken	Remove cylinder head, replace valve plate or valve washer

HVAC CABIN

Failure/Diagnose	Possible Cause	Remedy
Unit is running on vacuum	There is insufficient refrigerant in the system	Find the leakage location, and rectify the problem, evacuate the system and charge it with right amount
	There is no refrigerant in the system	Find the leakage location, and rectify the problem, evacuate the system and charge it with right amount
	Insufficient air flowing evaporator coil	Check fan motors blades and check if there is any Blockage in evaporator coil
	Evaporator fan motors are not working or have low rpm	Repair or replace evaporator fans
	Evaporator fins are clogged or frosted.	If system has defrost feature, apply manual defrost, if the unit does not have defrost feature, pour warm water on evaporator fins
	Expansion valve is not working properly	Replace expansion valve
	Expansion valve is internally frosted or its strainer is clogged	There is refrigerant in the system. Put cloth on expansion valve and pour warm water on it. Clean exp. valve strainer and then replace drier-filter. Change Compressor oil if necessary
	Expansion valve capillary tube is broken or missing refrigerant	Replace expansion valve
	There is cloggage in the low pressure line	Check expansion valve strainer or drier-filter. Check if there is moisture in the system. Change compressor oil if necessary
There is frost on the suction line	Drier-filter is partially or totally clogged	Replace drier-filter
	There is no refrigerant in the system	Find the leakage location, and rectify the problem, evacuate the system and charge it with right amount
	There is insufficient refrigerant in the system	Find the leakage location, and rectify the problem, evacuate the system and charge it with right amount
	Air flowing through condenser coil is either very cold or very hot	If unit is designed for that ambient temperature, it is a normal situation
	Insufficient air flowing through condenser	Check fan motors rpm and blades and check if there is any blockage in front of condenser

HVAC CABIN

Failure/Diagnose	Possible Cause	Remedy
There is frost on the suction line	Condenser fins and coils are very dirty	Clean condenser coils with pressurized water
	There is air in the refrigerant of the cooling system	Discharge the refrigerant, evacuate the system and charge with new refrigerant
	Condenser fans are broken or not rotating at proper RPM	Replace condenser fans
	Expansion valve is not working properly	Replace expansion valve
	Expansion valve bulb is wrongly mounted on the suction line	Mount Expansion valve bulb with correct position and angle on the tube(pipe). Follow manufacturer's Instructions
	Insufficient air flowing evaporator coil	Check fan motors rpm and blades and check if there is any blockage in front of evaporator coil
	Evaporator fan motors are not working or have low RPM	Repair or replace evaporator fans.
	Evaporator fins are clogged or frosted	If system has defrost feature, apply manual defrost, if the unit does not have defrost feature, pour warm water on evaporator fins
	Compressor discharge valve plate is leaking	Remove cylinder head , replace valve plate or valve washer
	Liquid refrigerant return to the compressor	Check if evaporator fans are working or not, if yes, replace expansion valve
	Expansion valve is not working properly	Replace expansion valve
	Expansion valve bulb is not contacting suction line.	Clean bulb and make sure that it is contacting and insulated properly
	Expansion valve superheat screw adjustment is changed	Replace expansion valve
	Unit is running with inaccurately loaded product over its capacity	It is an abnormal situation, it is not unit's fault.
	There is no refrigerant in the system	Find the leakage location, and rectify the problem
Compressor can not be vacuumed (The compressors which have service valves)	There is no gas in system	Find leakage point, repair it.
	Compressor suction valve plate is leaking	Repair or replace suction valve plate
	Compressor valve plate suction or discharge valve plate washer is broken	Repair or replace compressor valve plates

HVAC CABIN

Failure/Diagnose	Possible Cause	Remedy
Compressor body is very hot	There is no refrigerant in the system	Find the leakage location, and rectify the problem, evacuate the system and charge it with right amount
	Compressor suction valve plate is leaking	Repair or replace suction valve plate
	Expansion valve is not working properly	Replace expansion valve
	There is insufficient refrigerant in the system	Find the leakage location, and rectify the problem, evacuate the system and charge it with right amount
	Air flowing through condenser coil is very hot(ambient temperature	If unit is designed for that ambient temperature, it is a normal situation
	Insufficient air flowing through condenser	Check fan motors rpm and blades and check if there is any blockage in front of condenser coil
	Condenser fins and coils are very dirty	Clean condenser coils with pressurized water
	Condenser fans are broken or not rotating at proper RPM	Replace condenser fans
	Expansion valve is not working properly	Replace expansion valve
	Expansion valve bulb is not contacting suction line	Clean bulb and make sure that it is contacting and insulated properly.
	Expansion valve superheat screw adjustment is changed	Replace expansion valve
	Unit is running with inaccurately loaded product over its capacity	It is an abnormal situation ,it is not unit's fault
	Insufficient air flowing evaporator coil	Check fan motors rpm and blades and check if there is any blockage in front of evaporator coil
	Evaporator fan motors are not working or have low RPM	Repair or replace evaporator fans.
	Evaporator fins are clogged or frosted.	If system has defrost feature, apply manual defrost, if the unit does not have defrost feature, pour warm water on evaporator fins

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 air element clean if necessary.
2. Do check inlet Hose and clamps regularly.

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 per recommended service schedule.
4. Do fill in 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 (0.39 inch) when pressure is applied between the fan pulley and the crankshaft pulley.

e. Lubrication System

1. Do replace engine oil after first 50 hrs of operation, thereafter, engine oil should be replaced every 250 working hrs.
2. 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.
4. Do remove fly wheel housing bottom plug and check for oil traces.

DONT'S

ENGINE

a. General

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

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 effect the operation of fuel injection pump and the injections.
3. Do not use bad quality spurious filters as replacement.
4. 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 or heating of the engine.
3. Do not remove thermostat as it will effect 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.

f. Exhaust System

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

Do's AND Don'ts

DO'S

CLUTCH

1. Do ensure that clutch free pedal play is between 25 to 35 mm.
2. Do ensure that the clutch pedal is released slowly while moving the tractor.

TRANSMISSION

1. Do change the transmission oil after every 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 both hydraulic control levers are 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 lower using the position control lever only and not the draft 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 bush, brake bracket connections.

FRONT AXLE & STEERING MECHANISM

1. Do lubricate the Bushes and steering drag links periodically.
2. Do get the toe-in adjusted by an authorised service centre periodically.
3. Do check the tightness of front and rear wheels recommended torque.
4. Do flush oil once a year or 1000 hrs which ever is earlier. If tractor is not in operation.

TYRES

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

DONT'S

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 depressed.

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 place of linch 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 traveling 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.

TYRES

1. Do not allow oil, grease and some crop spray containing considerable amounts of acid and alkalies to contaminate the tyre. 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 tyre pressure.

DO'S AND DON'TS

DO'S

ELECTRICAL

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.

SAVE DIESEL

Let's Join Hands

- 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 tyre pressure for fuel efficient operation and long life of tyres. 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 Authorised 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 and use a filter when filling the tank.
- Attend to minor adjustments and repairs as soon as the necessity is apparent.
- 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.
- Keep draft control lever fully down when not in use.

Ensure daily care of your tractor to avoid breakdowns.

DONT'S

ELECTRICAL

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

To Save Oil

- 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 up. Use 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 tyres.
- 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 Temper 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.
- 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 Use the draft control lever for lifting of implements.
- Do not Start the engine with the PTO engaged.

Carefully and follow the other instructions given in the DOs and DOs and DON'Ts maintenance booklet, to ensure maximum saving of oil.

TROUBLESHOOTING

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 choke	Replace filters
Engine not running in proper way	Fuel filter choke	Replace filters
	Low quality of oil	Drain diesel from tank and fill clean diesel
	Choking of fuel system	Check fuel system
	Fuel injectors faulty	Replace fuel injector
More oil consumption	Oil level is more than maximum level	Keep oil level up to mark
	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 choke	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 less	Top up
	Oil pressure less	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 less	Top up 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
	Choked radiator fins	Clean it
	Engine gets overload	Decrease load or shift to low gear
	Oil level is less	Top up to level
	Coolant level is less	Check level and leakage of system and top up
	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 / choked	Clean air cleaner
	Overloading of engine	Reduce load or shift to low gear
	Improper valve clearance	Check and adjust
	Implement setting improper	Adjust it and take instrument from dealer for right
	Less engine temp	Check injectors and service
	Fuel injection nozzle faulty	Check and service through dealer
HYDRAULIC		
Excessive Heating of Oil	Improper inflation pressure	Check and adjust according to specified
	Oil level is high or less	Check and maintain proper level
	Hydraulic Strainer choked	Clean/Replace
	Mechanical linkage may 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 connection not joint 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 up
	Hydraulic Strainer choked	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
	Both brakes are not set properly	Adjust
Brakes 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 tight the terminals
	Less specific gravity	Replace or fill electrolyte up to level
Starter Motor Not Working.	Battery terminal loose / Battery discharged	Tightened / Recharge or replace battery
	Faulty starter motor	For repair contact your dealer
Battery Not Charging	Loose or rusted terminals	Clean and tight terminal
	Belt loose	Check belt tension
	Faulty battery	Replace

SERVICE RECORD

CH. NO. _____ ENGINE NO. _____

S. NO.	DATE/ HOURS	DEALER CODE	BRIEF JOB DESCRIPTION	ACTION TAKEN	DEALER SIGN

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