Mahindra
TRACTORS

OPERATOR'S MANUAL
'35' Series 4WD
3535 / 4035 / 4535 / 5035
HST

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The Mahindra Group ▪ Mahindra USA, Inc. ▪ 5203 Aeropark Drive ▪ Houston, Texas 77032 ▪ 1-877-449-7771 ▪ www.mahindrausa.com

OPERATOR'S MANUAL

'35' Series - HST

Model - 3535, 4035, 4535 & 5035

CALIFORNIA
Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

If this product contains a gasoline engine:

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The state of California requires the above two warnings.

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Product Warranty

Product warranty is provided as part of Mahindra & Mahindra Limited support program for customers who operate and maintain their equipment as described in this manual.

Engine related warranties stated in this manual refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately as the Limited Warranty for New Mahindra & Mahindra Limited Commercial & Consumer Equipment.

Mahindra & Mahindra Limited And California Emission Control System Warranty (heavy duty off-road Compression ignition engines)

Your Warranty Rights and Obligations

The California Air Resources Board (CARB) and Mahindra & Mahindra Limited are pleased to explain the emission control system warranty on your 2010 heavy duty off-road compression ignition engine. In California, new heavy-duty off road compression ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Mahindra & Mahindra Limited must warrant the emission control system on your heavy duty off-road compression ignition engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel-injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, Mahindra & Mahindra Limited will repair your heavy duty off-road compression ignition engine at no cost to you including diagnosis, parts and labor.

Mahindra & Mahindra Limited Emission Control System Warranty Coverage

In California, 2010 heavy duty off-road compression ignition engine emissions control-related parts are warranted by Mahindra & Mahindra Limited for five years or 3000 hours of operation, whichever occurs first. If any emission related part on your engine is defective, the part will be repaired or replaced by Mahindra & Mahindra Limited.

Owner's Warranty Responsibilities

As the heavy duty off-road compression ignition engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Mahindra & Mahindra Limited recommends that you retain all receipts covering maintenance on your heavy duty off-road engine, but Mahindra & Mahindra Limited cannot deny warranty solely for lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the heavy duty off-road engine owner, you should however be aware that Mahindra & Mahindra Limited may deny you warranty coverage if your heavy duty off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on Diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.

You are responsible for initiating the warranty process. The CARB suggests that you present your heavy duty off-road engine to an authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Dealer / Retailer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

"If you have any question regarding your warranty rights and responsibilities, you should contact Mahindra, USA Inc at 1-877-449-7771.

Length of Warranty Coverage

Mahindra & Mahindra Limited warrants to the initial owner and each subsequent purchaser that the heavy duty off-road compression ignition engine is:

- Designed, built and equipped so as to conform with all applicable regulations adopted by the California Air Resources Board (CARB) for 2010 pursuant to its authority in Chapters 1 and 2, Part, Division 26 of the Health and Safety Code; and
- Free from defects in materials and workmanship which can cause the failure of a warranted part to be identical in all material respects to the part as described in the application of Mahindra & Mahindra Limited for certification for a period of five years or 3000 hours of operation, whichever occurs first, after the engine is delivered to the initial retail purchaser. Mahindra & Mahindra Limited is liable for damages to other engine components caused by the failure of a warranted part during the warranty period. If any emission related part on your engine is defective, the part will be repaired or replaced by Mahindra & Mahindra Limited.

Warranted Parts

Coverage under this warranty extends only to the parts listed below (the emission control system parts) to the extent these parts were present on the engine purchased.

Fuel Metering System:

- Fuel injection system

Air Induction System:

- Air Cleaner
- Intake manifold
- Turbocharger system
- Charge Air Cooling Systems

Exhaust Gas Recirculation (EGR) System:

- EGR valve
- EGR rate feedback and control system

Positive Crankcase Ventilation (PCV) System:

- Oil Filler Cap

Miscellaneous Items Used in Above Systems:

- Vacuum sensitive EGR valve.
- Electronic Control Unit (ECU for EGR control)
- Hoses, connectors, assemblies, clamps, fittings, tubing, sealing gaskets and mounting hardware

Since emission related parts may vary slightly from model to model, certain models may not contain all of these parts and certain models may contain functionally equivalent parts.

Warranty Service and Charges

Warranty service shall be provided during customary business hours at any authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer. Repair or replacement of any warranted part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer. Any parts replaced under this warranty shall become the property of Mahindra & Mahindra Limited.

Maintenance Warranty Coverage

a) Any warranted part which is not scheduled for replacement as required maintenance shall be warranted for the warranty period defined in subsection "Length of Warranty Coverage." If any such part fails during the period of warranty coverage, it shall be repaired or replaced by Mahindra & Mahindra Limited. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

b) Any warranted part which is scheduled only for regular inspection shall be warranted for the warranty period defined in subsection "Length of Warranty Coverage" to the effect of "repair or replace as necessary" shall not reduce the period of warranty coverage. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

c) Any warranted part which is scheduled for replacement as required maintenance shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by Mahindra & Mahindra Limited. Any such part repaired or replaced under the warranty shall be warranted for the remainder of the period prior to the first scheduled replacement point for that part.

d) Repair or replacement of any warranted part under the warranty provision of this statement shall be performed at no charge to the owner at an authorized Mahindra & Mahindra Limited warranty station.

e) Notwithstanding the provisions of subsection "d" above, warranty services or repairs shall be provided at all authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer and distribution centers that are franchised to service the subject engines.

f) The owner shall not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at an authorized Mahindra & Mahindra Limited warranty station.

g) Mahindra & Mahindra Limited shall be liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

h) Throughout the engine's warranty period defined in subsection "Length of Warranty Coverage", Mahindra & Mahindra Limited shall maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

i) Any replacement part may be used in the performance of any maintenance or repairs and must be provided without charge to the owner. It is not necessary for replacement parts to be the same brand or by the same manufacturer as the original part sold with the engine. Such use shall not reduce the warranty obligations of Mahindra & Mahindra Limited.

j) Add-on or modified parts may not be used. Such use shall be grounds for disallowing a warranty

claim made in accordance with this warranty statement shall not be liable under this article to warrant failures of warranted parts caused by the use of such an add-on or modified part.

k) The Executive Officer may request and in such case, Mahindra & Mahindra Limited shall provide, any documents which describe warranty procedures or policies of Mahindra & Mahindra Limited.

Consequential Warranty Coverage

Warranty coverage shall extend to the failure of any engine components caused by the failure of any warranted part still under warranty.

Limitations

This Emission Control System Warranty shall NOT cover any of the following:

a) Repair or replacement required as a result of (i) misuse or neglect, (ii) improper maintenance or unapproved modifications, (iii) repairs improperly performed or replacements improperly installed, (iv) use of replacement parts or accessories not conforming to Mahindra & Mahindra Limited specifications which adversely affect performance and/or durability, (v) alterations or modifications not recommended or approved in writing by Mahindra & Mahindra Limited.

b) Replacement parts, other services and adjustments necessary for normal maintenance.

c) Transportation to and from the Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer, or service calls made by the Retailer.

Limited Liability

a) The liability of Mahindra & Mahindra Limited under this Emission Control System Warranty is limited solely to the remedying of defects in materials or workmanship. This warranty does not cover inconvenience or loss of use of the heavy duty off-road compression ignition engine or transportation of the engine to or from the Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer. Mahindra & Mahindra Limited SHALL NOT BE LIABLE FOR ANY OTHER EXPENSE, LOSS, OR DAMAGE, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL (EXCEPT AS LISTED ABOVE UNDER "COVERAGE") OR EXEMPLARY ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE THE HEAVY DUTY OFF-ROAD COMPRESSION IGNITION ENGINE FOR ANY OTHER PURPOSE.

b) NO EXPRESS EMISSION CONTROL SYSTEM WARRANTY IS GIVEN BY Mahindra & Mahindra Limited WITH RESPECT TO THE ENGINE EXCEPT AS SPECIFICALLY SET FORTH IN THIS DOCUMENT. ANY EMISSION CONTROL SYSTEM WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE EMISSION CONTROL SYSTEM WARRANTY TERMS SET FORTH IN THIS DOCUMENT.

c) No dealer is authorized to modify this California and Mahindra & Mahindra Limited Emission Control System Warranty.

Product Warranty

Product warranty is provided as part of Mahindra & Mahindra Limited support program for customers who operate and maintain their equipment as described in this manual.

Engine related warranties stated in this manual refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately as the Limited Warranty for New Mahindra & Mahindra Limited Commercial & Consumer Equipment.

Mahindra & Mahindra Limited, Federal Emission Control System Warranty (Non-Road Diesel)

Your Warranty Rights and Obligations

The United States Environmental Protection Agency (EPA) and Mahindra & Mahindra Limited are pleased to explain the emission control system warranty on your non-road diesel equipment engines must be designed, built and equipped to meet the U.S. EPA regulations for non-road diesel engines. Mahindra & Mahindra Limited must warrant the emission control system on your non-road diesel equipment engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your non-road diesel equipment engine.

Your emission control system may include parts such as the fuel-injection system and the air induction system. Also included may be connectors and other emission related assemblies.

Where a warrantable condition exists, Mahindra & Mahindra Limited will repair your non-road diesel equipment engine at no cost to you including diagnosis, parts and labor.

Mahindra & Mahindra Limited Emission Control System Warranty Coverage

Your non-road diesel equipment engine emissions control-related parts are warranted by Mahindra & Mahindra Limited for five years or 3000 hours of operation, whichever occurs first. If any emission related part on your engine is defective, the part will be repaired or replaced by Mahindra & Mahindra Limited.

Owner's Warranty Responsibilities

As the non-road diesel equipment engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Mahindra & Mahindra Limited recommends that you retain all receipts covering maintenance on your non-road diesel equipment engine, but Mahindra & Mahindra Limited cannot deny warranty solely for lack of receipts or for your failure to ensure all scheduled maintenance is performed.

As the non-road diesel equipment engine owner, you should however be aware that Mahindra & Mahindra Limited may deny you warranty coverage if your non-road diesel equipment engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your non-road diesel equipment engine to an authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

"If you have any question regarding your warranty rights and responsibilities, you should contact (Mahindra, USA Inc) at 1-877-449-7771.

Length of Warranty Coverage

Mahindra & Mahindra Limited warrants to the initial owner and each subsequent purchaser that the non-road diesel equipment engine is:

- Designed, built and equipped so as to conform with all applicable regulations of the United States Environmental Protection Agency (EPA) for non-road diesel equipment engines;
- Free from defects in materials and workmanship which can cause the failure of an emission warranted part for a period of five years or 3000 hours of operation, whichever occurs first, after the engine is delivered to the initial retail purchaser. Mahindra & Mahindra Limited is liable for damages to other engine components caused by the failure of a warranted part during the warranty period. If any emission related part on your engine is defective, the part will be repaired or replaced by Mahindra & Mahindra Limited.

Warranted Parts

Coverage under this warranty extends only to the parts listed below (the emission control system parts) to the extent these parts were present on the engine purchased.

Fuel Metering System:

- Fuel injection system

Air Induction System:

- Air Cleaner
- Intake manifold
- Turbocharger system
- Charge Air Cooling Systems

Exhaust Gas Recirculation (EGR) System:

- EGR valve
- EGR rate feedback and control system

Positive Crankcase Ventilation (PCV) System:

- Oil Filler Cap

Miscellaneous Items Used in Above Systems:

- Vacuum sensitive EGR valve.
- Electronic Control Unit (ECU for EGR control)
- Hoses, connectors, assemblies, clamps, fittings, tubing, sealing gaskets and mounting hardware

Since emission related parts may vary slightly from model to model, certain models may not contain all of these parts and certain models may contain functionally equivalent parts.

Warranty Service and Charges

Warranty service shall be provided during customary business hours at any authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer. Repair or replacement of any warranted part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer. Any parts replaced under this warranty shall become the property of Mahindra & Mahindra Limited.

Maintenance Warranty Coverage

a) Any warranted part which is not scheduled for replacement as required maintenance shall be warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

b) Any warranted part which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

c) Any warranted part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any such part repaired or replaced under the warranty shall be warranted for the remainder of the period prior to the first scheduled replacement point for that part.

d) Normal maintenance, replacement or repair of emission control devices and systems, which are being done at the customer's expense, may be performed by any repair establishment or individual; however, warranty repairs must be performed by an authorized Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer.

e) Any replacement part that is equivalent in performance and durability may be used in the performance of any non-warranty maintenance or repairs, and shall not reduce the warranty obligations of Mahindra & Mahindra Limited.

f) The owner shall not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at an authorized Mahindra & Mahindra Limited warranty station.

g) Mahindra & Mahindra Limited shall be liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

h) Throughout the engine's warranty period defined in subsection "Length of Warranty Coverage", Mahindra & Mahindra Limited shall maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

Consequential Warranty Coverage

Warranty coverage shall extend to the failure of any engine components caused by the failure of any warranted part still under warranty.

Limitations

This Emission Control System Warranty shall NOT cover any of the following:

a) Repair or replacement required as a result of (i) misuse or neglect, (ii) improper maintenance or unapproved modifications, (iii) repairs improperly performed or replacements improperly installed, (iv) use of replacement parts or accessories not conforming to Mahindra & Mahindra Limited specifications which adversely affect performance and/or durability, (v) alterations or modifications not recommended or approved in writing by Mahindra & Mahindra Limited.

b) Replacement parts, other services and adjustments necessary for normal maintenance.

c) Transportation to and from the Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer, or service calls made by the Retailer.

Limited Liability

a) The liability of Mahindra & Mahindra Limited under this Emission Control System Warranty is limited solely to the remedying of defects in materials or workmanship. This warranty does not cover inconvenience or loss of use of the non-road diesel equipment engine or transportation of the engine to or from the Mahindra & Mahindra Limited Commercial and Consumer Equipment Retailer. Mahindra & Mahindra Limited SHALL NOT BE LIABLE FOR ANY OTHER EXPENSE, LOSS, OR DAMAGE, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL (EXCEPT AS LISTED ABOVE UNDER "COVERAGE") OR EXEMPLARY ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE THE NON-ROAD DIESEL ENGINE FOR ANY OTHER PURPOSE.

b) NO EXPRESS EMISSION CONTROL SYSTEM WARRANTY IS GIVEN BY Mahindra & Mahindra Limited WITH RESPECT TO THE ENGINE EXCEPT AS SPECIFICALLY SET FORTH IN THIS DOCUMENT. ANY EMISSION CONTROL SYSTEM WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE EMISSION CONTROL SYSTEM WARRANTY TERMS SET FORTH IN THIS DOCUMENT.

c) No dealer is authorized to modify this Federal and Mahindra & Mahindra Limited Emission Control System Warranty.

This Manual has been prepared to assist you in following the correct procedure for break-in, operation and maintenance of your new Mahindra tractor.

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

We have enclosed a page on new tractor inspection sheets. The first sheet is the dealer's copy and should be removed by the dealer after the inspection has been carried out. The second sheet is your copy of the service performed. Ensure that you & the dealer sign both copies.

Read this manual carefully and keep it in a convenient place for future reference. If at any time you require advice concerning your tractor, do not hesitate to contact your authorised Mahindra dealer. He has trained personnel, genuine Mahindra parts and necessary equipments to undertake all your service requirements.

Mahindra USA Inc's. policy is one of continuous improvement, and the right to change prices, specifications or equipments at any time without notice is reserved.

All data given in this book is subject to production variations. Dimensions & weight are approximate only and the illustrations do not necessarily show tractors in standard condition. For exact information about any particular tractor, please consult your Mahindra dealer.

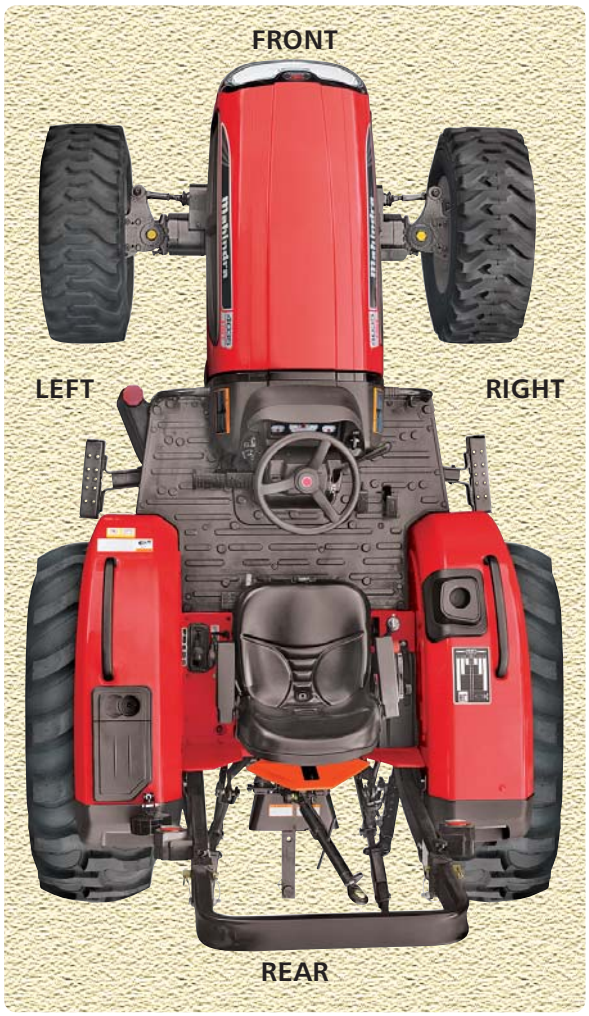
Tractor

The word, 'Tractor' has been derived from 'traction' which means pulling. A tractor is required to pull or haul an equipment, implement or trolley, which are coupled to the tractor chassis through suitable linkage. A tractor can also be used as a prime mover as it has a power outlet source which is also called Power Take Off or PTO shaft.

In this book the operation and maintenance instructions for 35 Series HST models of Mahindra diesel tractors have been compiled. This material has been prepared in detail to help you in better understanding of maintenance and efficient operation of the machine.

If you need any information not given in this manual, or require the services of a trained mechanic, please get in touch with the Mahindra dealer in your locality. Dealers are kept informed of the latest methods of servicing tractors. They stock genuine repair parts and are backed by the company's full support.

Throughout this manual, the use of the terms LEFT, RIGHT, FRONT and REAR must be understood, to avoid any confusion when following the instructions. The LEFT and RIGHT means left and right sides of the tractor when facing forward in the driver's seat. Reference to the FRONT indicates the radiator end of the tractor, while the REAR, indicates the drawbar end.



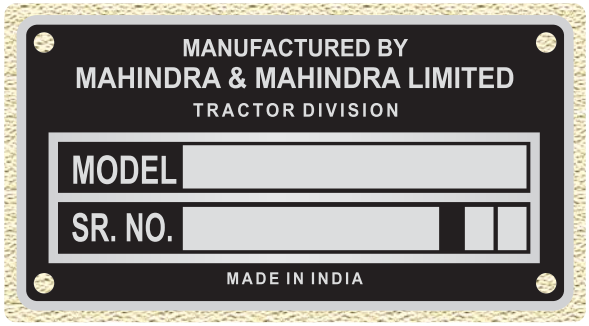
Tractor Serial Number

The Tractor Serial Number can be identified from below mentioned locations :

1. A plate rivetted below the Operator's seat.
2. Number punched on the RH side of semi chassis.

For easy reference, we suggest you to write this number in the space provided in the owner's personal data.

When spare parts are required, always specify the tractor model and tractor serial number. This will facilitate faster delivery and help ensure that the correct part for your particular tractor is received.



General Construction

The Engine, Front housing, Transmission housing and semi chassis are bolted together to form a rigid unit.

Engine

The 35 Series Tractors are fitted with fuel efficient US EPA (Comply with US Tier-IV emission norms) certified Mahindra CE series Engines. These are 3/4 cylinder, Naturally aspirated, Water cooled, Direct Injection type, comprising rotary fuel injection pump.

Front Axle & Wheels

Front Axle is offset type live front axle with bevel gear reduction. The front wheels are directly mounted on wheel hub of front axle. Front track is adjustable with adjustment provided on rims. Turning angles are all preset.

Power Steering

The Power Steering system consists of a Hydrostatic Steering unit (HSU), Hydraulic cylinder. A separate pump is mounted on the engine front which supplies oil to this system. Oil for Steering system is common with Transmission-Hydraulic oil.

Transmission

The transmission is a combination of a hydrostatic unit (HST) and mechanical gear box. Forward-Reverse and speed selection is provided by the HST unit and high-low-medium selection provided by range section.

Rear Axle & Wheels

The rear axle is mounted on bearings and is enclosed in a removable housing which is bolted to the transmission case. The rear wheels are bolted to the outer flange of the rear axle. The rear track adjustment is provided on the rear wheel rim.

Oil immersed Disc Brakes

The tractor is fitted with Oil immersed disc brakes with 4 discs on each side of the tractor.

Hydraulic System

The tractor is fitted with fully “live” Hydraulic System using a pump driven directly from the Engine. It is able to operate the three-point linkage or auxiliary valve and also operating the power take-off. The Oil reservoir is common with that of transmission.

Three Point Linkage

Three Point Linkage is suitable for category - I implements. For ease of implement attachment, a slip end is provided which can be extended while implement hitching. For implement with Cat - I configuration having Cat - II size pin, top link has both Cat - I & Cat - II holes. For Cat - II on lower link, slip ends with Cat - II balls are available as spares.

Electrical System

A 12 Volt lead acid battery is used to crank the engine with the starter motor. The electrical system comprises of head lamps, plow lamp, brake lights, parking lamps, instrument cluster, alternator, fuse box, relays and wiring harness.

Safety

Neutral switch is provided on the Forward / Reverse pedal linkage system.

Sheet Metal

Hood, side panels, front grille & panel, fenders, platform and bracketaries are constructed from sheet metal. Steering top covers, Scuttle bottom and scuttle top cover are made from plastic.

We at Mahindra USA Inc. and your Mahindra Dealer want you to be completely satisfied with your investment. Normally any problems with your equipment will be handled by your Dealer's service department. Sometimes, however, misunderstanding can occur. If you feel that your problem has not been handled to your satisfaction, we suggest the following:

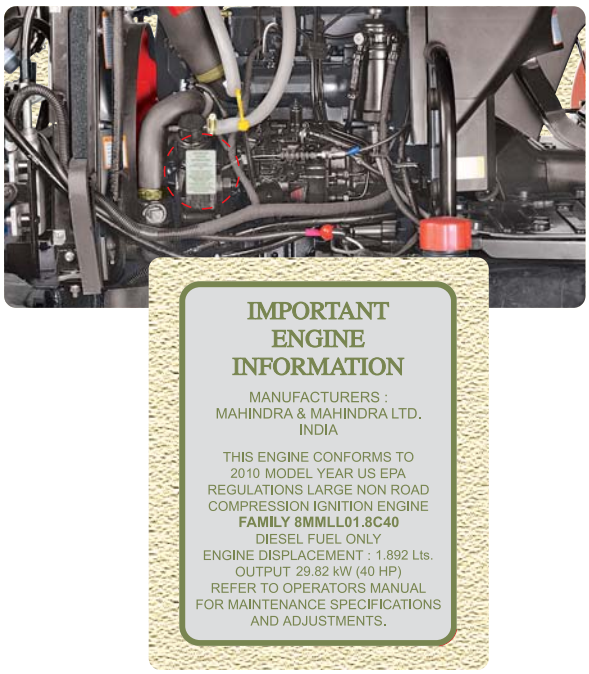
Contact the Owner or General Manager of the dealership, explain the problem, and request assistance. Your Dealer has direct access to the Mahindra office. If you cannot obtain satisfaction through your Dealer, contact the Mahindra USA Inc. office (1-877-449-7771) and provide the following:

- Your Name, Address and Telephone number
- Model and Tractor Serial number
- Dealer Name and Address
- Tractor Purchase Date and Hours used
- Nature of Problem

Before contacting Mahindra USA Inc. office, be aware that your problem is likely to be resolved at your retail Mahindra dealership by Dealer personnel. So it is important that your initial contact be with your retail Mahindra Dealer.

Owner's Personal Data

A metal plate having important Engine information is fitted on LH Side of Engine.



Name :

Address :

Tractor Details

Model :

Tractor serial number :

Date of purchase :

Expiration of warranty :

Nearest authorised Dealer

Name :

Address :

Telephone No. :

Fax No. :

Keep this operators manual safely for regular reference. Ensure that all operators have access to it and that they understand its contents.

Roll Over Protective Structure (ROPS)

Mahindra USA Inc. tractors are fitted with a frame for the protection of tractor operator to minimize serious operator injury resulting from accidental roll over. These frames, known as ROPS, form a safety zone within which the operator is offered some protection in the event that the tractor turns over. It is necessary that the tractor operator fasten the seat belt around him/her to be protected by the ROPS.

The mounting structure and fasteners forming the mounting connection with the tractor are part of the ROPS.

⚠ WARNING

When improperly operated, a tractor can roll over. For low clearance storage only, the roll bar may be folded. No protection is provided when the tractor is operated with the roll bar in the folded position. Always raise the roll bar immediately after low clearance storage. Always use the seat belt when the roll bar is raised. Seat belts save lives when they are used. Do not use the seat belt when the roll bar is lowered.

(ROPS) Maintenance and Inspection

The ROPS has been certified to industry and/or government standards. Any damage or alteration to the ROPS, mounting hardware or seat belt voids the certification and will reduce or eliminate protection for the operator, in the event of a roll-over.

The ROPS, mounting hardware and seat belt should be checked after the first 100 hrs. of machine operation and every 500 hours thereafter for any evidence of damage, wear or cracks. In the event of damage or alteration the ROPS must be replaced prior to further operation of the machine. The seat belt must be worn during machine operation when it is equipped with a certified ROPS. Failure to do so will reduce or eliminate protection of the operator in the event of a roll-over.

Substitution of mounting hardware, seat belt etc. with components not equal to or superior to the original certified components will void the certification and will reduce or eliminate protection for the operator in the event of a roll-over.

Damage of the ROPS

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

⚠ WARNING

Never attach chains or ropes to the ROPS for pulling purposes; this will cause the tractor to tip backwards. Always pull from the tractor drawbar. Be careful when driving through door openings or under low overhead objects. Make sure there is sufficient overhead clearance for the ROPS.

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

Always wear your seat belt if the tractor is equipped with a ROPS.

Recognize Safety Information

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

Signal Words

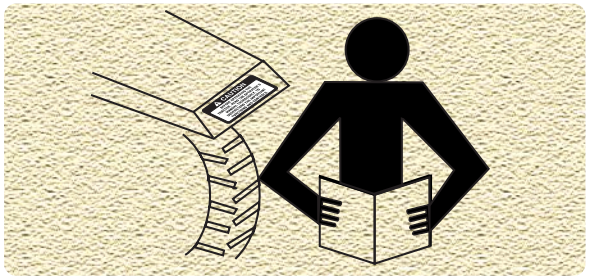
A signal word - DANGER, WARNING OR CAUTION is used with safety alert symbol. DANGER identifies the most serious hazards. Safety signs with signal word - DANGER OR WARNING are typically near specific hazards.

General precautions are listed on CAUTION safety signs.

Read Safety Instructions

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

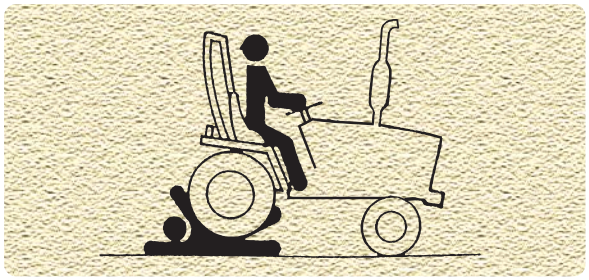
Keep your tractor in proper condition and do not allow any unauthorised modifications to be carried out on the tractor which may impair the function / safety and affect tractor life.



Safety for Children

Tragedy can occur if the operator is not alert to the presence of children. Children generally are attracted to machines and the work they do.

1. Never assume that children will remain where you last saw them.
2. Keep children out of the work area and under the watchful eye of another responsible adult.
3. Be alert and shut your machine down if children enter the work area.
4. Never carry children on your machine. There is no safe place for them to ride. They may fall off and be run over or interfere with your control of the machine.
5. Never allow children to operate the machine even under adult supervision.
6. Never allow children to play on the machine or on the implement.
7. Use extra caution when backing up. Look behind and down to make sure are is clear before moving.
8. When parking your machine if at all possible park on a firm, flat and lever surface; if not, park across a slope. Set the parking brake(s), lower the implements to the ground, remove the key from the ignition (and lock the cab door if equipped) and chock the wheels.



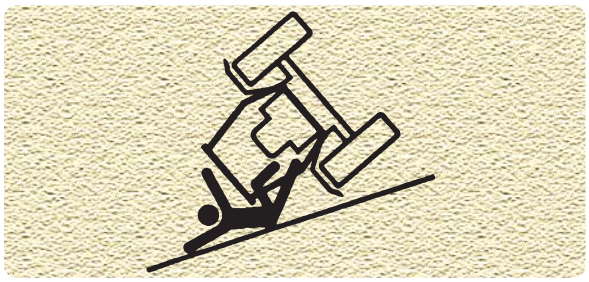
Precautions To Avoid Tipping

Do not drive where the tractor could slip or tip.

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

Slow down before you make a sharp turn.

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



Use Of ROPS And Seat Belt

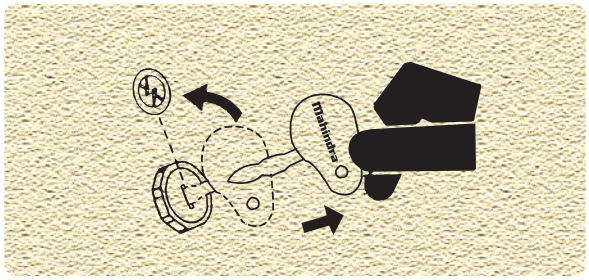
The Roll Over Protective Structure (ROPS) has been certified to industry and/or government standards. Any damage or alteration to the ROPS, Mounting hardware, or Seat belt voids the certification and will reduce or eliminate protection for the operator in the event of a roll-over. The ROPS, mounting hardware, and seat belt should be checked after the first 100 hours of tractor operation and every 500 hours thereafter for any evidence of damage, wear or cracks. In the event of damage or alteration, the ROPS must be replaced prior to further operation of the tractor.

The seat belt must be worn during machine operation when the machine is equipped with a certified ROPS. Failure to do so will reduce or eliminate protection for the operator in the event of a roll-over.

Park Tractor Safely

Before parking the tractor :

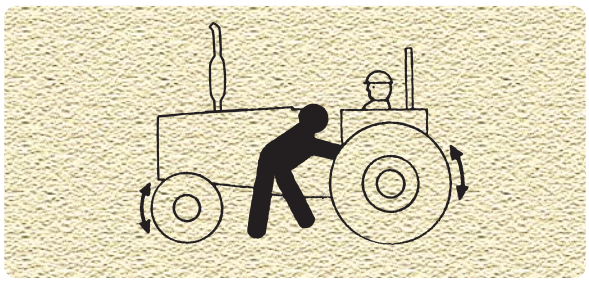
Lower all equipments to the ground, bring transmission in neutral. Engage the parking brake. Stop the engine and remove the key.



Keep Riders Off Tractor

Do not allow riders on the tractor.

Riders on tractors are subject to injury such as being struck by foreign objects and being thrown off from the tractor.



Handle Fuel Safely — Avoid Fires

Handle fuel with care. It is highly flammable. Do not refuel the tractor while smoking or near open flame or sparks.

Always stop engine before refueling tractors.

Always keep your tractor clean of accumulated grease and debris. Always clean up spilled fuel.

Stay Clear of Rotating Shafts

Entanglement in rotating shaft can cause serious injury or death.

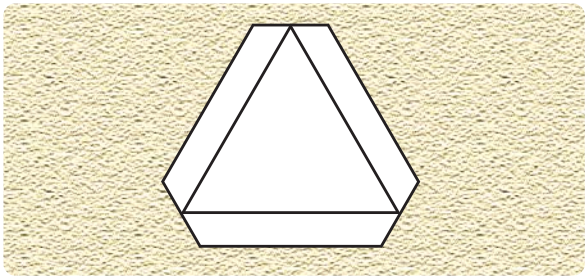
Keep PTO shields in place at all times.

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

Always Use Safety Lights And Devices

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

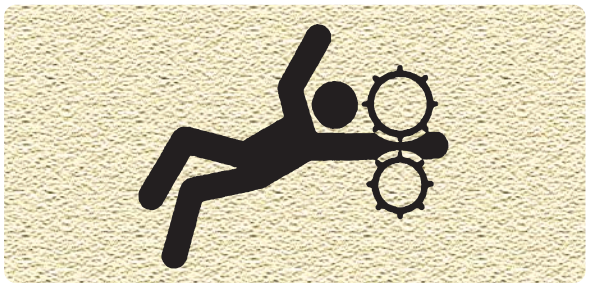
Use slow moving vehicle (SMV) sign when driving on public road during both day & night time, unless prohibited by law.



Service Tractor Safely

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

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



Practice Safe Maintenance

Understand service procedure before doing work. Keep the surrounding area of the tractor clean & dry.

Do not attempt to service tractor when it is in motion. Keep body and clothing away from rotating shafts. Always lower equipment to the ground. Stop the engine. Remove the key. Allow tractor to cool before any work/repair is performed on it.

Securely support any tractor components that must be raised for service work.

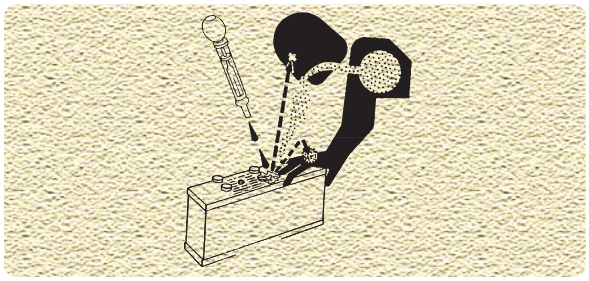
Keep all parts in good condition and properly installed. Replace worn or broken parts. Replace damaged or missing decals. Remove any buildup of grease or oil from the tractor.

Disconnect the battery ground cable (- ve) before making adjustments on electrical systems or welding on tractor.

Prevent Acid Burns

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, cause holes in clothing and cause blindness if it contacts the eye.

For adequate safety always :



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

If you spill acid on yourself :

1. Flush your skin with water.
2. Flush your eyes with water for 10-15 minutes. Get medical attention immediately.

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.

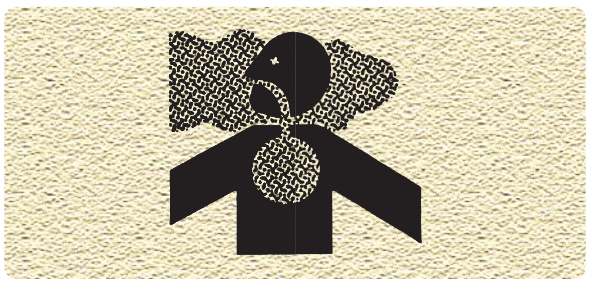
Avoid High-pressure Fluids

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. Do not operate Auxiliary valve when terminal pipes are open.

If ANY fluid is injected into the skin. Consult your doctor immediately.

Work In Ventilated Area

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



Slow Moving Vehicle Emblem

Observe the following precautions when operating the tractor on road.

1. Ensure that Slow Moving vehicle (SMV) emblem affixed on back side of operator seat is clean and visible.
2. If towed or rear-mounted equipment obstructs this emblem, install SMV emblem on equipment.

Tractor Runaway

Avoid possible injury or death from possible runaway.
Do not start the engine by shorting across electrical circuit. The tractor will start in gear if starting circuit is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat with, transmission in neutral position, hand brake lever engaged and PTO switch in OFF position.

The tractor can start only if the transmission is in neutral position and PTO switch is in OFF position.

For additional safety, keep the engine starting key in OFF position, transmission in neutral position, hand brake lever engaged, PTO switch in OFF position while servicing the tractor.

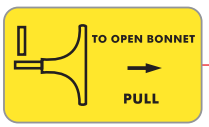
WARNING

- Before starting and operating know the operating and safety instructions in the Operators Manual and on the tractor.
- Clear the area of bystanders.
- Locate and know operation of controls.
- Neutral safety switch is connected with forward/reverse pedal. Place cruise lever in neutral, forward/reverse pedal in neutral. Place one of the PTO switch in OFF position. turn the ignition key in clockwise direction start engine only from operators seat.
- Lock brakes together, use warning lights and SMV emblem while driving on roads.
- Do not permit anyone but the operator to ride on the tractor . There is no safe place for riders, unless mate seat is provided on fender.
- Slow down on turns, rough ground and slopes to avoid upset.
- Lower equipment, place range shift lever in neutral, stop engine and apply parking brake before leaving the tractor seat.

FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR.

IMPORTANT

1. ENSURE THAT BOTH BRAKE PEDALS ARE LATCHED TOGETHER, WHEN THE TRACTOR IS OPERATED ON ROAD
2. CRUISE LEVER WILL RETURN TO NEUTRAL, ONLY WHEN BOTH BRAKE PEDALS ARE DEPRESSED TOGETHER
3. CRUISE LEVER WILL NOT RETURN TO NEUTRAL WHEN LH/RH BRAKE PEDAL IS PRESSED INDIVIDUALLY

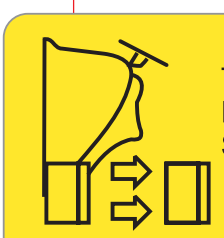


DANGER

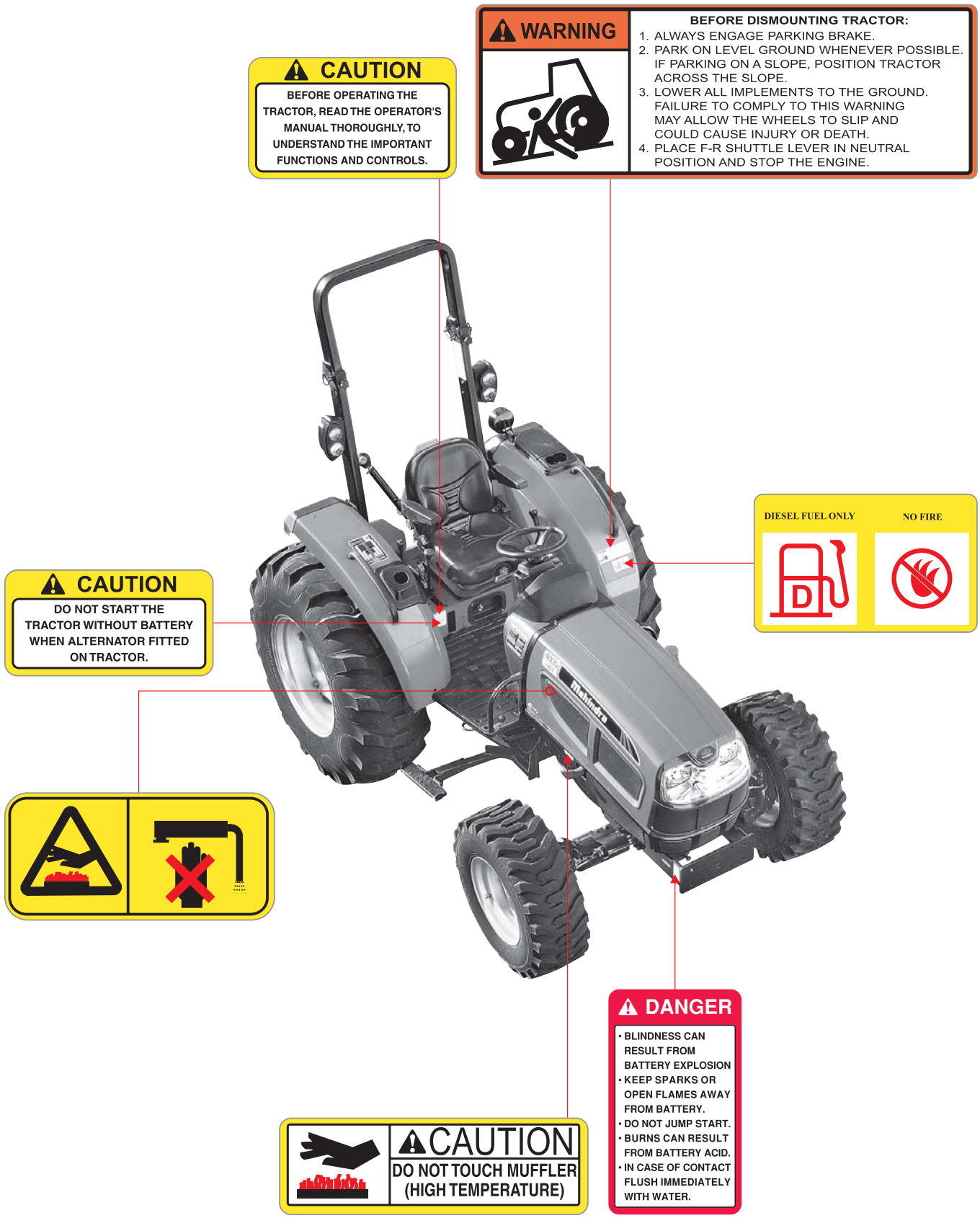
TO AVOID POSSIBLE INJURY OR DEATH
DEATH FROM MACHINE RUNWAY

1. Do not start engine by shorting across starter solenoid terminals or bypassing the safety switch. Machine may start in gear and move if normal starting circuitry is bypassed.
2. Start engine only from operator's seat with transmission in neutral PTO OFF.

NEVER START ENGINE WHILE STANDING ON THE GROUND.



TO ACCESS
FUSE BOX
SLIDE COVER


WARNING
BEFORE DISMOUNTING TRACTOR:
1. ALWAYS ENGAGE PARKING BRAKE.
2. PARK ON LEVEL GROUND WHENEVER POSSIBLE. IF PARKING ON A SLOPE, POSITION TRACTOR ACROSS THE SLOPE.
3. LOWER ALL IMPLEMENTS TO THE GROUND. FAILURE TO COMPLY TO THIS WARNING MAY ALLOW THE WHEELS TO SLIP AND COULD CAUSE INJURY OR DEATH.
4. PLACE F-R SHUTTLE LEVER IN NEUTRAL POSITION AND STOP THE ENGINE.
CAUTION
BEFORE OPERATING THE TRACTOR, READ THE OPERATOR'S MANUAL THOROUGHLY, TO UNDERSTAND THE IMPORTANT FUNCTIONS AND CONTROLS.
DIESEL FUEL ONLY
NO FIRE
CAUTION
DO NOT START THE TRACTOR WITHOUT BATTERY WHEN ALTERNATOR FITTED ON TRACTOR.
DANGER
• BLINDNESS CAN RESULT FROM BATTERY EXPLOSION
• KEEP SPARKS OR OPEN FLAMES AWAY FROM BATTERY.
• DO NOT JUMP START.
• BURNS CAN RESULT FROM BATTERY ACID.
• IN CASE OF CONTACT FLUSH IMMEDIATELY WITH WATER.
CAUTION
DO NOT TOUCH MUFFLER (HIGH TEMPERATURE)

⚠ CAUTION

TO PROTECT ENGINE AND HYDRAULIC COMPONENTS

- **Idle Engine for 1 minute before shut down or full load operation.**
- **Do not exceed 1/2 throttle for first 5 minutes of operation.**

INSTRUCTION

NEUTRAL SAFETY SWITCH IS CONNECTED WITH FORWARD/REVERSE PEDAL. TO START THE ENGINE, PLACE CRUISE LEVER IN NEUTRAL, FORWARD/REVERSE PEDAL IN NEUTRAL. PLACE ONE OF THE PTO SWITCH IN OFF POSITION. TURN THE IGNITION KEY IN CLOCKWISE DIRECTION.

IMPORTANT

1. TO START THE PTO, START ENGINE FIRST, CHOOSE "AUTO MODE" OR "MANUAL MODE"
2. THEN PRESS THE PTO ON/OFF SWITCH TO START THE PTO

⚠ WARNING

TO AVOID POSSIBLE PERSONAL INJURY, THIS GUARD MUST BE KEPT IN PLACE

⚠ WARNING

TO AVOID POSSIBLE PERSONAL INJURY, THIS GUARD MUST BE KEPT IN PLACE

⚠ WARNING

- Pull only from drawbar. Pulling from any other point can cause rear overturn.
- Do not operate with unshielded PTO.
- Disengage PTO and stop engine before servicing tractor or Implements or attaching and detaching Implements.
- When towing equipment use a safety chain.

FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS

INSTRUCTION FOR APPLYING PARKING BRAKE

1. ENSURE THAT THE BRAKE LOCK PLATE IS ENGAGED ACROSS THE PEDAL
2. PRESS THE BRAKE PEDALS COMPLETELY
3. MOVE PARKING BRAKE LEVER IN UPWARD DIRECTION TO ENGAGE
4. TO DISENGAGE PRESS AND RELEASE THE BRAKE PEDALS

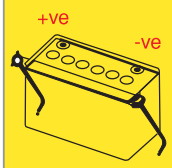
⚠ WARNING

- The cooling system operates under pressure.
- It is dangerous to remove the radiator cap while the system is hot.
- Always turn the cap slowly to the first stop and allow pressure to escape before removing the cap completely.
- When operating below 32°F, use suitable anti-freeze solution as coolant.

⚠ WARNING

DO NOT INJECT ETHER OR GASOLINE IN AIR INTAKE AS STARTING AID. EXPLOSION AND INJURY MAY RESULT IF USED. AS THIS TRACTOR IS EQUIPPED WITH INTAKE AIR HEATER AS STARTING AID.

⚠ CAUTION



- REMOVE THE -ve AND +ve TERMINALS
- LOOSEN WING NUTS ON THE CLAMP
- REMOVE THE CLAMP
- HOLD THE BATTERY AND TAKE IT OUT (BATTERY WEIGHT = 55 lb)

⚠ WARNING

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

CAUTION

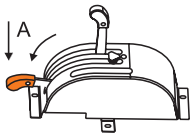
KEEP COOLANT LEVEL BETWEEN "FULL" AND "LOW" WHEN ENGINE IS COLD.

PTO
OFF ON

ENGAGE
DISENGAGE

L
N
M
H

⚠ WARNING



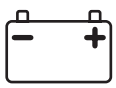
WHILE TRANSPORTING IMPLEMENTS, KEEP DRAFT LEVER (A) IN LOWER POSITION.

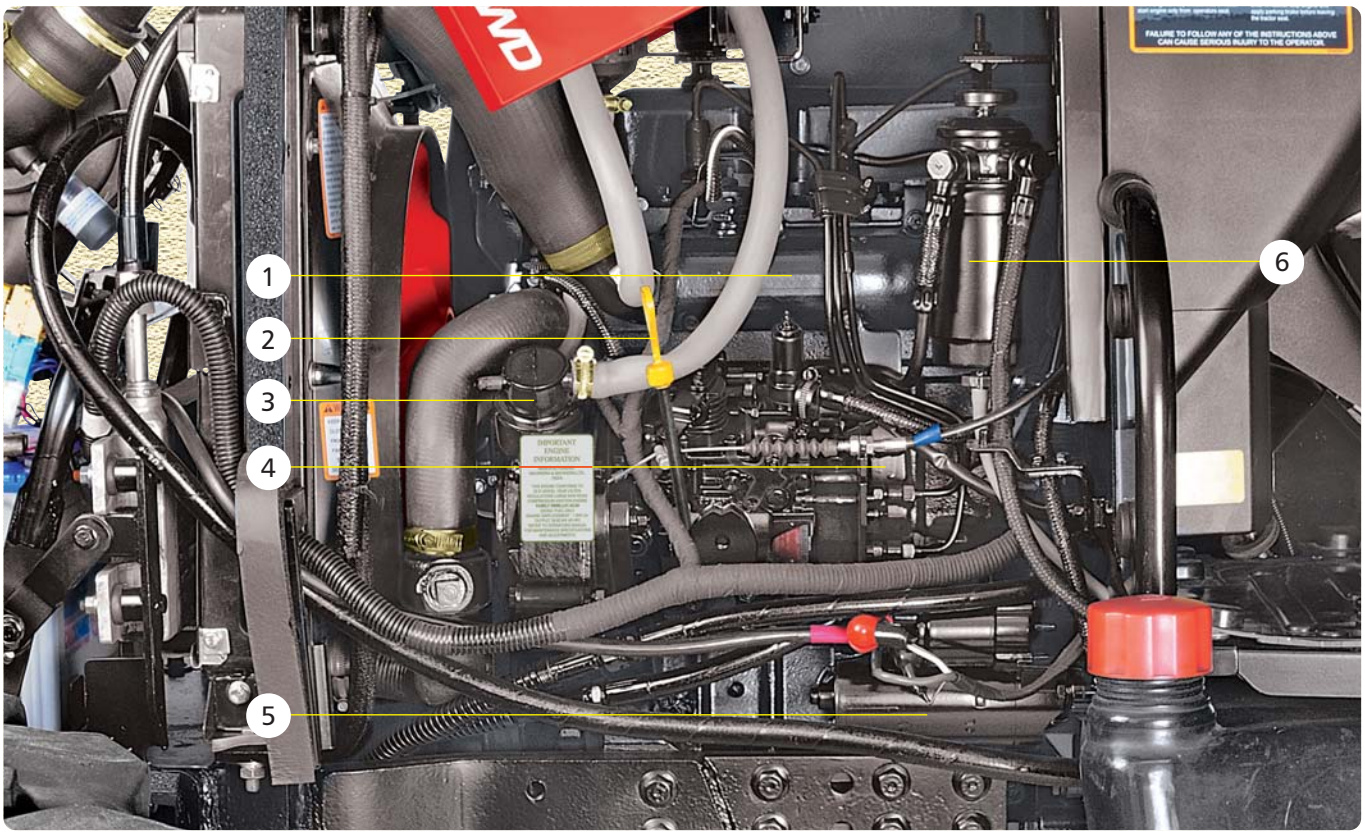
0 1 DEEP 2 DRAFT 3 SHALLOW 4 5

0 1 2 3 POSITION 4 5

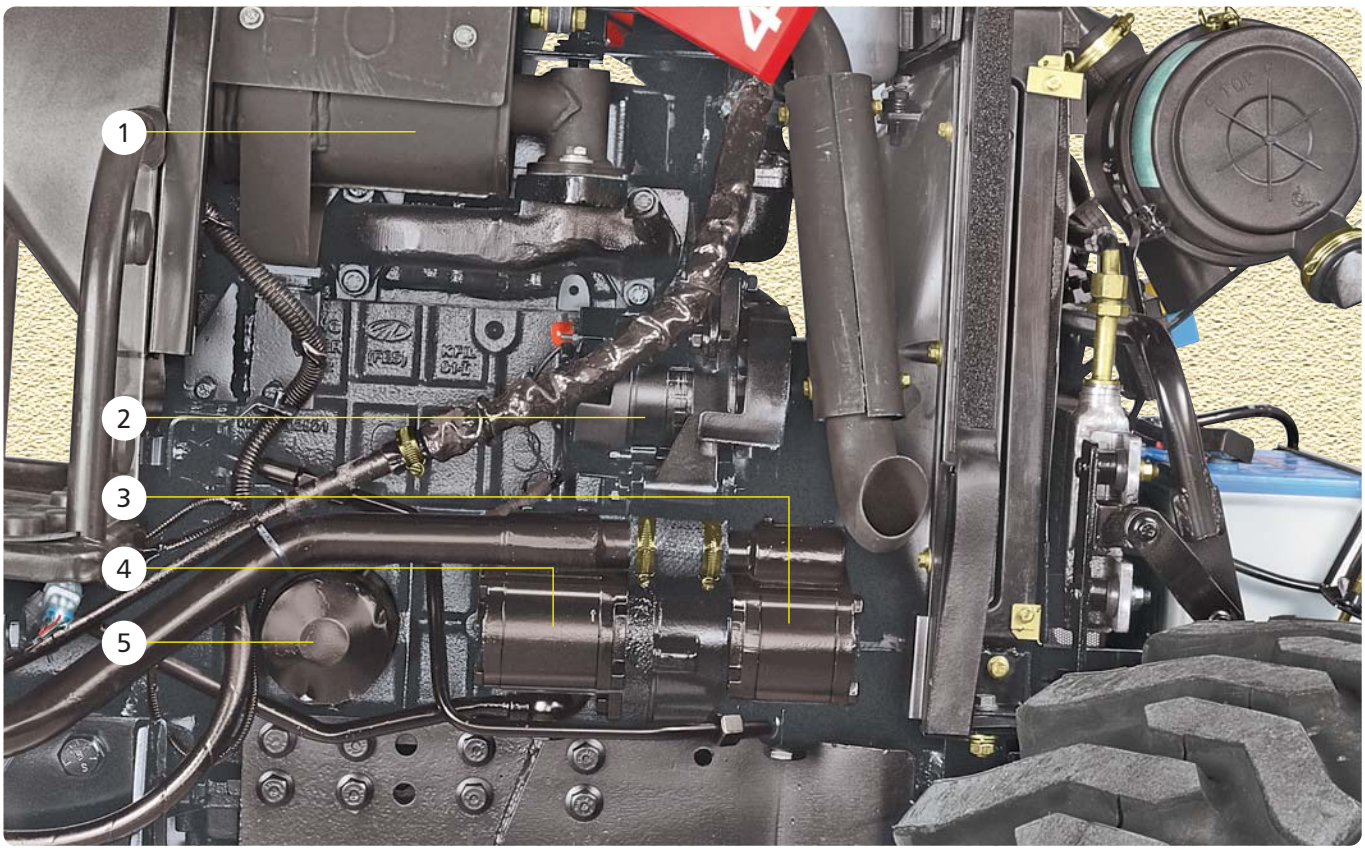
Universal Symbols

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

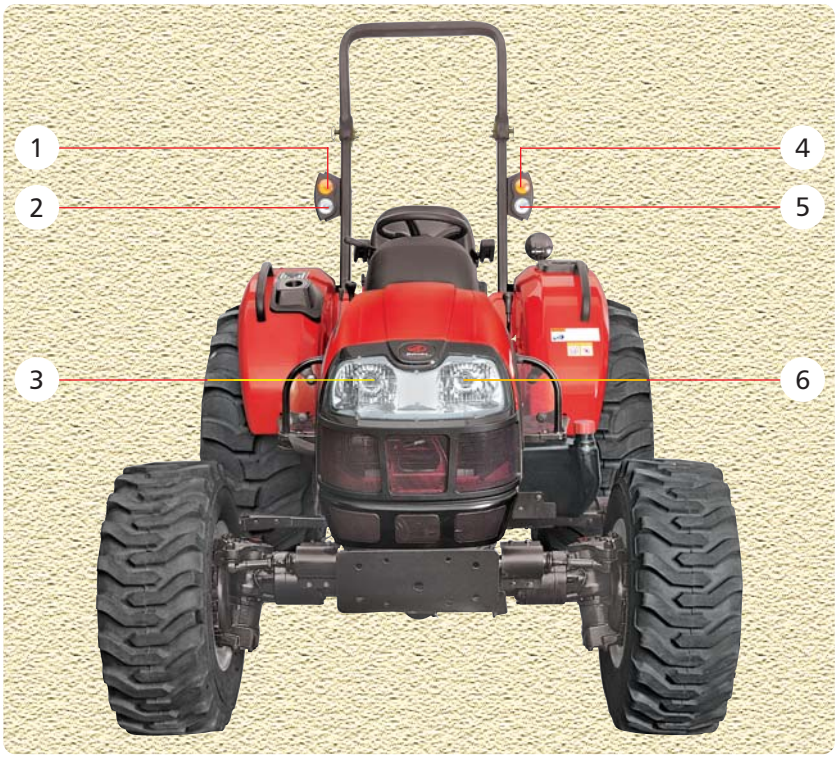
 Engine speed (rev/minX100)	 Pressured-open slowly	 Corrosive substance
 Hours, recorded	 Continuous variable	 "Tortoise" slow or minimum setting
 Engine coolant temperature	 Warning	 "Hare" fast or maximum setting
 Fuel level	 Hazard warning	 Transmission oil pressure
 Engine stop control	 Neutral	 Turn signal
 Lights	 Fan	 Transmission oil temperature
 Horn	 Power take off engaged	 Parking brake
 Engine oil pressure	 Power take off disengaged	 Work lamps
 Air filter	 Lift arm/raise	 Differential lock
 Battery charge	 Lift arm/lower	 See operator's manual



LH View : 1. Intake Manifold 2. Engine Oil Level Dipstick 3. Oil Filling Port 4. Rotary Fuel Injection Pump 5. Starter Motor 6. Fuel Filter

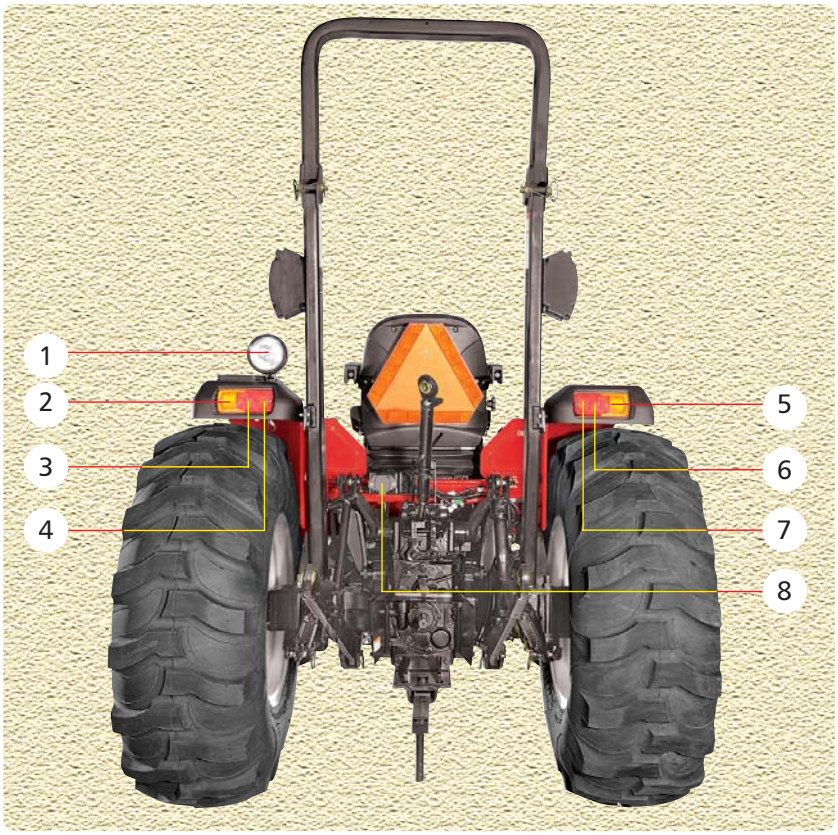


RH View : 1. Exhaust Muffler 2. Alternator 3. Steering Pump 4. Hitch Pump 5. Oil Filter Engine



Front View :

1. Turn Signal Lamp RH
2. Parking Lamp RH
3. Head Lamp RH
4. Turn Signal Lamp LH
5. Parking Lamp LH
6. Head Lamp LH



Rear View :

1. Plow Lamp
2. Turn Signal Lamp LH
3. Reflector & Rear Position Lamp LH
4. Rear Brake Lamp LH
5. Turn Signal Lamp RH
6. Reflector & Rear Position Lamp RH
7. Rear Brake Lamp RH
8. Seven Pole Socket

The following pages in this section detail the location and function of various instruments, switches and controls on your tractor. Even if you operate other tractors, you should read through this section of the manual and ensure that you are thoroughly familiar with the location and function of all the features of your new tractor.

Do not start the engine or attempt to drive or operate the tractor until you are fully accustomed to all the controls. It is too late to learn once the tractor is moving. If in doubt about any aspect of operation of the tractor consult your Mahindra USA Inc. tractor dealer.

This section explains briefly the operation of instruments, and controls. Full details wherever necessary will be found in forthcoming chapters at relevant operating sections.

Instrument Cluster

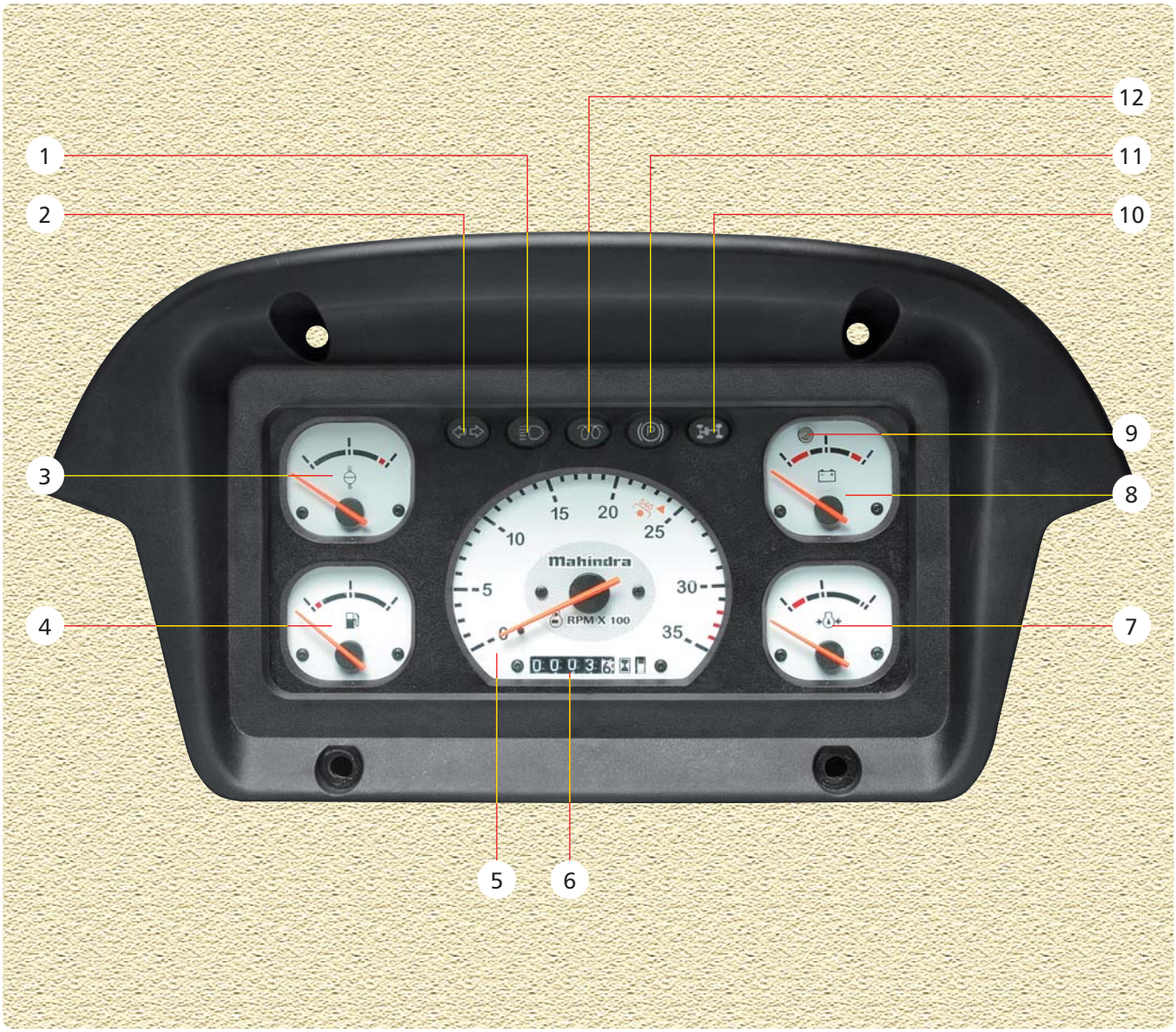
Operator Controls - Front

Operator Controls - LH, RH

Switches

⚠ WARNING

The operator must be thoroughly acquainted with the location and use of all instruments and controls regardless of experience, must read this section carefully before attempting to operate the tractor.



Instrument Cluster

The Instrument Cluster is a descriptive unit that gives the user various indications about the working of the tractor and its various features. It consists of the following.

1. High Beam Indicator
2. LH / RH Turn Signal Indicator
3. Coolant Temperature Gauge
4. Fuel Level Gauge
5. Engine RPM Meter
6. Hour Counter
7. Engine Low Oil Pressure Gauge
8. Voltmeter
9. Battery Charge Indicator
10. 4WD Indicator
11. Parking Brake Indicator
12. Heater Indicator

Engine RPM Meter

This meter gives the number of Revolution Per Minute of the engine. To arrive at the RPM value at any given point of time, multiply the pointer reading by 100.

Example : If the reading shows 15, the actual engine RPM value = 15 x 100 = 1500.

PTO 540 RPM Mark

This mark is located in the Engine RPM Meter. It indicates Engine RPM at which the PTO shaft will rotate at 540 RPM.

Hour Counter

This is a Digital Hour Counter located in the RPM meter. It is operated by pulses coming from Alternator when the engine is running. Hour counter displays the cumulative engine running hours.

⚠ WARNING

Do not drive the vehicle when Engine RPM is in Red Zone for longer duration.

Fuel Gauge

The Fuel Gauge indicates quantity of fuel available in the fuel tank. Refill the fuel tank when the pointer lies in Red Band.

Coolant Temperature Gauge

This gauge indicates coolant temperature of the engine. When the pointer lies in RED band :

1. Indicates excessive engine coolant temperature.
2. Get the cause identified.
3. Further engine operation should be done only after elimination of the problem.

Turn Indicators (LH/RH)

LH and RH turn indicator is provided to indicate the direction of turning.

A blinking turn indicator implies that either LH Turn Signal or RH Turn Signal indicator of tractor is ON.

High Beam Indicator

It glows when Head Lamps are operated in High Beam.

Heater Indicator

When the key is turned to 2nd position, the Heater Indicator glows to indicate the activation of heater element provided in engine's intake manifold. The indicator continues to glow for approx. 42 seconds. A timer controls this time.

1. Turn the key to "ON" position and hold it till the heater indicator is put-off.
2. Crank the engine when the heater indicator light is put off after approx. 42 seconds.

Parking Brake Indicator

It glows when parking brake or foot brake pedals (latched together) is applied.

4WD Indicator

It glows when 4WD is engaged.

Battery Charging Indicator

This indicator will glow if battery is not getting charged. Once the engine is running, this indicator should go OFF, if the Battery is getting charged. If the indicator glows continuously even when the engine is running above low idle rpm of the engine, the cause should be investigated to prevent complete discharge of battery and possible damage of alternator.

Voltmeter

This gauge indicates the battery voltage at all times.

Engine Low Oil Pressure Gauge

This gauge will be in RED Zone if Engine lubricating oil pressure is less while engine is operating. The pointer will be in GREEN Zone when pressure is Okay. After putting ignition switch in "ON" position, the oil pressure gauge pointer should be in RED Zone. When the Engine is running and healthy it should be in GREEN Zone. If the pointer is in RED Zone, the problem should be eliminated before starting the engine.

Switches

Following switches are provided for various operations.

1. PTO ON / OFF Switch
2. Work Lamp Switch
3. Combination Switch

3a. Light Switch

3b. Horn Push Button

3c. Turn Signal Switch

4. Hazard Switch
5. Starter Key Switch
6. PTO AUTO / MANUAL / OFF Switch

Hazard Switch

The piano type switch is located below the starter key switch on RH side of steering column on dashboard.

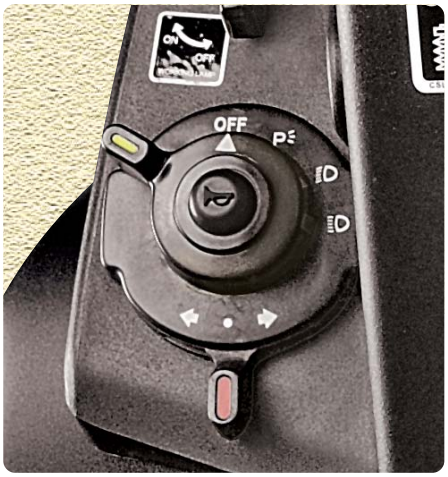
ON position operates LH, RH turn signal lamps simultaneously. This operation can be performed even if the key switch is in OFF position.

Switches

Combination Switch:

It is located in LH side of steering column on dashboard. It consists of:

1. Horn (in centre)
2. Light Switch
3. Turn Signal Switch



Horn

Pressing the horn switch will blow the horn.

Light Switch

It is a 4 positions rotary switch. It operates in clockwise direction and positions are as follows:

1. Off
2. Illuminate Parking Lamps
3. Illuminate low beam of head lamps & Parking Lamps
4. Illuminate high beam of head lamps & Parking Lamps

Turn Signal Switch

This is 3 positions rotary switch. The vertical position of knob operates in both directions and the positions are as follows:

1. Vertical - OFF
2. Left - Operates LH Turn signal Lamp
3. Right - Operates RH Turn Signal Lamp

Starter Key Switch

It is a key operated 3 position rotary switch. It is located on RH side of steering column on dashboard. It operates in clockwise direction and positions are as follows:

1. Off
2. It gives readiness to electrical circuit for operation of plow lamp switch, combination switch, instrument cluster.
3. Activates the starting circuit for engine.

Note : The Starting circuit is interconnected with the Forward / Reverse system. Thus the Engine will not start unless the Forward / Reverse pedals are in neutral.

Work Lamp Switch

It is a 2 positions rotary switch located in LH side of steering column on dashboard. It operates in clockwise direction and positions are as follows:

1. Off
2. Illuminates the plow lamp

PTO Operation Switches

PTO can be operated by using a combination of "PTO ON/OFF Switch" and "PTO Mode Switch".

To start the PTO, start engine first, choose "AUTO MODE" or "MANUAL MODE".

Then press the PTO ON/OFF switch to start the PTO.

PTO ON/OFF Switch

This is a 2 in 1 switch, located on LH side of steering column on the dashboard.

1. Press the PTO switch to engage the PTO.
2. To disengage the PTO, press the PTO switch again.

PTO MODE switch (PTO Auto / Manual / Off Switch)

This rotary switch enables the operator to choose the AUTO or Manual mode of PTO and even turn-off the PTO when desired.

The Operating positions of knob are as follows:

1. **Alignment of OFF - Mark with Pointer - PTO Turn-OFF**

The Auto and Manual Mode switch will be activated when the "PTO Engage - Disengage Switch" is in ON position.

2. **Alignment of Auto-mark with pointer - Operates AUTO mode**

This switch can be used when the "PTO Engage - Disengage Switch" is in ON position.

When this switch is in AUTO-POSITION, the PTO shaft rotation will be stopped as soon as the implement is raised.

While this switch is in AUTO-POSITION, if the PC lever is lowered, the PTO shaft will become operative and will be indicated by a **CONTINUOUSLY-GLOWING** "PTO Engage - Disengage Switch".

⚠ WARNING

Tampered electrical wiring or connections will render this feature INEFFECTIVE. In such a case, some Inadvertent movement of personnel near the PTO shaft can prove fatal.

3. Alignment of Manual-mark with pointer - Operates Manual mode

This switch can be used when the "PTO Engage - Disengage Switch" is in ON position.

Keeping this switch in MANUAL-POSITION, will FORCE the PTO shaft rotation in RAISED as well as LOWERED position of implement. The "PTO Engage - Disengage Switch" will be **CONTINUOUSLY-GLOWING** when this switch is in MANUAL mode.

⚠ WARNING

While the PTO is in MANUAL-MODE, some inadvertent movement of personnel near the PTO shaft can prove fatal.

POWER TAKE OFF

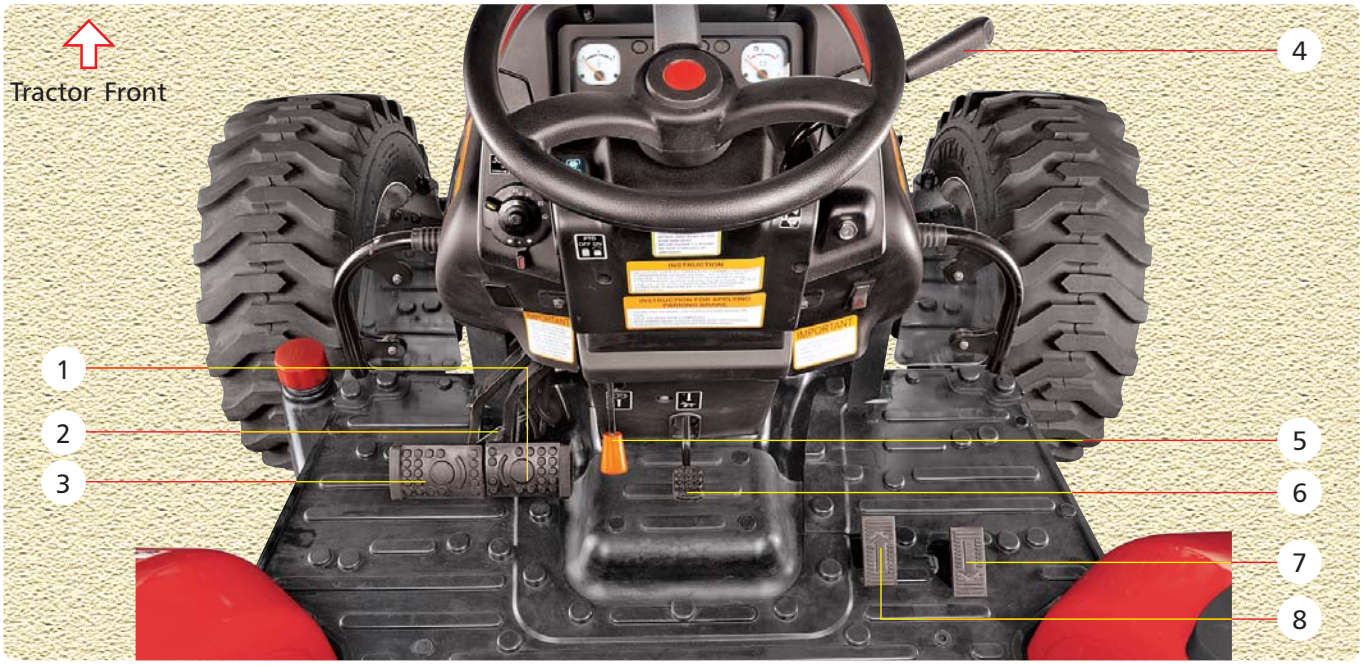
PTO is operated electrically. PTO can be operated by using a combination of "PTO Engage - Disengage Switch" and "PTO Mode Switch".

After switching ON the "PTO Engage - Disengage Switch" the operator has a CHOICE to select AUTO or MANUAL MODE through "PTO Mode Switch".

The PTO will turn-Off if the "PTO Engage - Disengage Switch" or "PTO Mode Switch" is in OFF position.

Refer table shown for combinations of PTO Operations.

PTO ON / OFF Switch	PTO Control Switch	PC Lever	PTO Switch	PTO Shaft
ON	Manual Mode	Either raised or lowered	Glows	Rotates
ON	Auto Mode	Raised	Blinks	Stationary
ON	Auto Mode	Lowered	Glows	Rotates



Operator's Front Side Controls

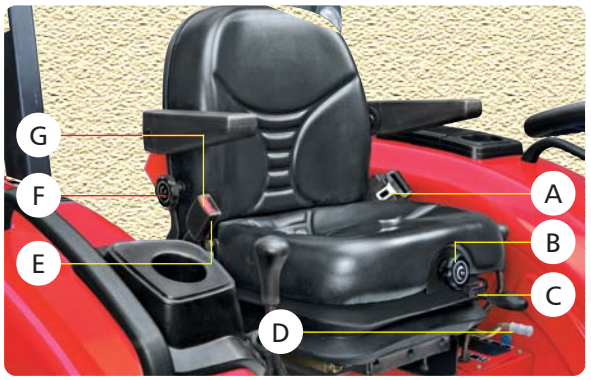
Operator's LH & RH Side Controls

Controls

1. Brake Pedal RH
2. Latch Brake Pedal
3. Brake Pedal LH
4. Hand Throttle
5. Parking Brake Lever
6. Tilt Steering Pedal
7. Reverse Pedal
8. Forward Pedal
9. Position Control Lever
10. Draft Control Lever
11. Cruise Control Lever
12. Slow Fast Valve Control Knob
13. 4WD Engagement Lever
14. Range Shift Lever
15. Differential Lock Pedal

Operator Seat

The operator seat can be adjusted for position, tilt and weight of operator. These adjustments are to be done prior to starting the engine.



Adjusting Seat Position

1. Sit on the operator seat.
2. Push the lever (D) upwards and slide seat forward or rearward to desired position.
3. Release Lever to lock seat in position. Ensure that all controls can be accessed easily.

Weight Adjustment

To achieve optimum seat suspension, turn the knob (B) till the weight indicator indicates your approximate weight on indicator (C).

Tilt Adjustment

To achieve optimum seat tilt, turn the knob (F) till the desired angle of tilt is achieved.

⚠ CAUTION

Attempting to adjust the seat while driving the tractor may cause the operator to lose control of the tractor

Using Seat belt

Use a seat belt when you operate with Roll over protective structure (ROPS) to minimise chance of injury from an accident such as an overturn.

⚠ WARNING

Do not use seat belt if operating without a ROPS or ROPS in the folded position.

Fasten Seat belt

1. Pull belt end (A) across operator lap.
2. Install tab into buckle (E). A click will be heard when the tab locks into the buckle.

Release Seat belt

Press red button (G). The seat belt will automatically retract.

Slow Fast Valve Control Knob

3 Point Linkages drops faster when a heavy implement is attached. Adjust Slow / Fast Valve Knob (H) so that it is slow enough to be safe and prevent damage.

Turn the Slow / Fast Valve Knob, located on rear platform besides differential lock pedal, clockwise to slow rockshaft drop.

This knob is also called implement lock. When the knob is fully tightened in, implement will not lower down even if position control lever is fully down. Use implement lock while transporting implement.

Hand Throttle Operation

Use the Hand Throttle Lever to set a constant engine speed for stationary operation or for field operation wherever desired.

Increasing Engine Speed : Pull throttle lever towards operator as indicated in the sticker on the dashboard.

Engine Tachometer Speeds :

a. Low Idle speed - 1000 RPM

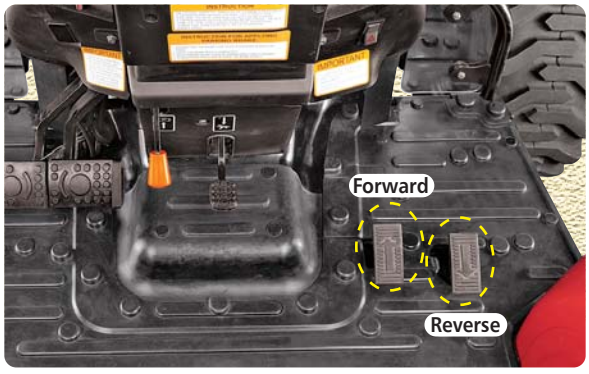
b. Rated engine speed - 2800 RPM

c. High Idle speed - 2975 RPM

Decreasing Engine Speed : Push throttle lever away from the operator as indicated in the sticker on the dashboard.

Constant Speed Setting : Certain operations may require a particular engine speed. This can be achieved by resting the Hand Throttle Lever in a position where you get the desired engine speed.

Forward-Reverse Operation



The tractor is equipped with two pedals to change the direction of travel. Depress the forward pedal (rubber cover showing arrow towards front of tractor) to move forward. Depress the reverse pedal (rubber cover having arrow mark towards rear of tractor) to move backwards.

Can Holder

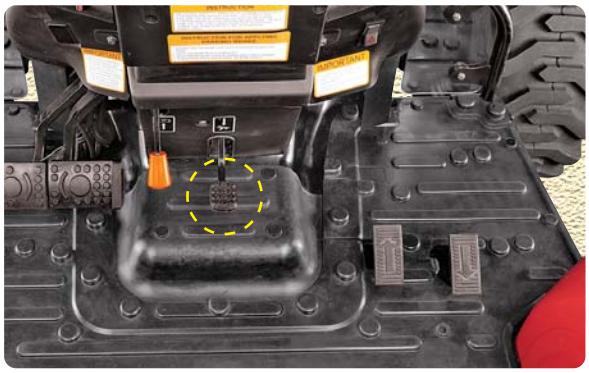
A Can holder is located on RH side of fender.

Glove Box

A small utility box is located on LH side of fender.

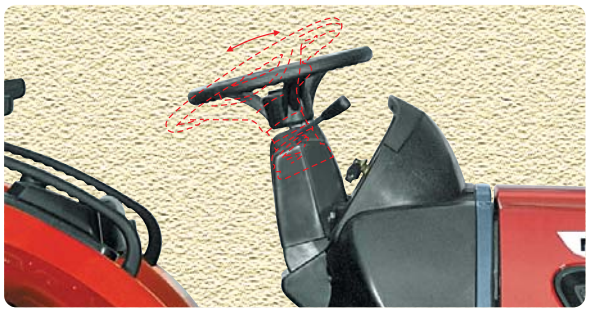
Tilt Steering

The steering can be tilted towards the operator as per the need and convenience of operator and is recommended to be done in tractor parked condition.



Tilt Adjustment

1. Park the tractor safely.
2. Press the Tilt steering pedal by foot.
3. Pull the steering wheel to desired position.
4. Release foot pressure on the pedal.
5. To position the steering wheel back, press the tilt steering pedal to allow the steering wheel to travel back to the top position. It will go back automatically.



⚠ CAUTION

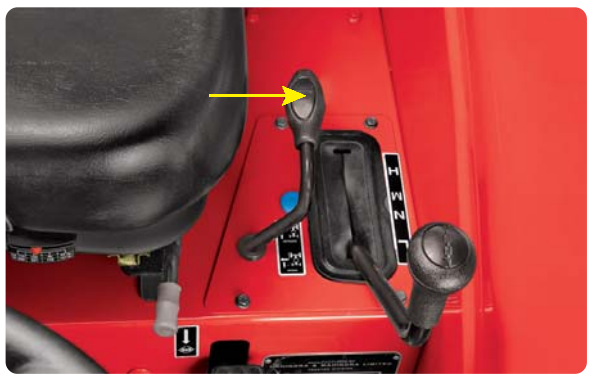
Attempting to adjust the steering wheel while driving the tractor may cause the operator to lose control of the tractor.

Lock the steering wheel in position before driving the tractor.

4WD Engagement Lever

This lever is located on LH side of operator's seat. It is used to engage or disengage the drive to front wheels and is recommended to be done in tractor stand still condition.

1. Stop the tractor motion completely.
2. Lift the lever upwards to engage the drive.
3. Push the lever down to disengage the drive.



Disengaged Position

⚠ WARNING

Do not engage or disengage the 4WD Engagement lever while the tractor is in motion.

Brake

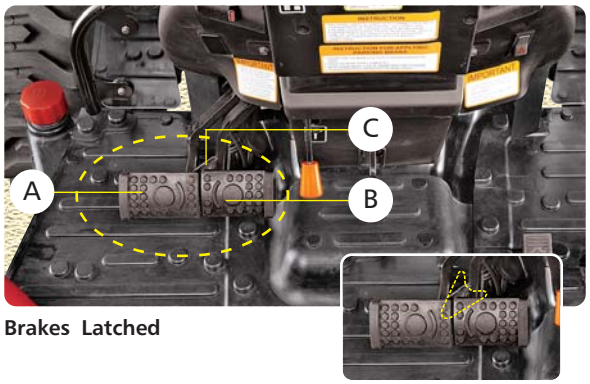
Two independent brake pedals are provided on left side of the operator for LH and RH wheel braking to enable sharp turns during field operations.

- To make a sharp turn to the left, depress LH brake pedal (A).
- To make a sharp turn to the right, depress RH brake pedal (B).

The brakes can be latched together to act simultaneously by means of brake pedal latch (C) as follows,

1. Rotate brake pedal latch (C) clockwise until it locks into RH brake pedal (B).
2. When brakes are applied with brake pedals latched together, the tractor should stop in a straight line. Check and adjust brake settings if the tractor is dragged to either side on applying brakes.

The Hand Throttle Lever should be brought to low idle rpm position before applying brakes.



Brakes Latched

Unlatched

⚠ CAUTION

Using unlocked brakes to stop the tractor at high speeds may cause accidental turning or tipping.

Lock pedals together when not using the turn brakes or for road travel.

Slow down before making a turn.

Do not apply independent brakes while an attachment is engaged with the ground. This can cause damage to the attachment , three point linkage of tractor and may also result in tipping of the tractor.

The brake pedals for this tractor are provided on the LH side. While getting down from the tractor LH side, after applying parking brake, get down slowly and ensure that the brake pedal do not get pressed and disengaged the parking brake. When parking on a slope, ensure that the vehicle is parked across the slope.

Parking brake

The Parking brake lever is provided in front of operator's seat.

Locking :

1. Lock both brake pedals together by using latch.
2. Press the brake pedals by foot.
3. Pull park brake lever completely upwards to the lock position and hold it.
4. Remove foot from the brake pedals. Both pedals should now stay depressed in locked position.
5. Parking brake indicator lamp will glow when key switch is 'ON'.

Unlocking :

1. Press the brake pedals with foot.
2. The park brake lever will spring back to unlock position.
3. Remove foot from the brake pedals. Both pedals should now be released from the lock position.

Always ensure to unlock parking brake before driving the tractor. Check for indicator lamp on the instrument cluster when the parking brake is released. The indicator light should be 'OFF'.

⚠ CAUTION

To avoid personal injury :

Before dismounting the tractor,

Always apply the parking brake and lower all implements to the ground. Leaving the transmission in gear with engine stopped will not prevent the tractor from rolling.

Differential Lock Pedal

This pedal located on the LH side of the Operator's Seat when depressed by heel pressure, operates a differential lock mechanism which locks both of the axle shafts together.

Its purpose is to overcome completely one-wheel slip encountered under bad field conditions, especially when plowing or when hauling heavy trailers on slippery surfaces.

The condition where one wheel spins completely uselessly digging itself Into the soil while the other stands idle, is thus overcome resulting in saving fuel, brake wear and tire abuse.

Differential lock is designed for occasional use. Do not attempt to lock differential while,

a. The tractor is in high speed.

b. Turning tractor.

⚠ CAUTION

The Differential Lock design is solely for the use with pneumatic tires. If steel wheels, girdles etc. are fitted, the differential lock should be removed as a precaution.

⚠ WARNING

Attempting to turn the tractor while differential lock is engaged may result in damage to transmission.

Range Shift Lever

It is located on LH side of operator's seat. This lever has 4 positions as follows.

1. Low - For low speed range
2. Neutral
3. Medium - For medium speed range
4. High - For high speed range speed range

This lever enables 3 different speed ranges. It can be engaged as follows,

1. Choose High / Medium / Low range to match work application.

Refer Specification for road speed of tractor in different ranges.

⚠ WARNING

Never shift Range shift lever while the tractor is in motion.

Cruise Control Lever

Cruise control is designed for tractor efficiency and operator comfort. This device will provide a constant forward operating speed by mechanically holding the cruise control lever at the selected position.

To engage cruise control lever :

1. To move the tractor in forward direction at any required speed, move the cruise lever forward and set it at any position.
2. To travel faster than the set speed, depress the forward pedal further down in this condition. The set speed will resume if the pedal is released.

To disengage cruise control lever :

1. Move the cruise lever all the way backwards till it stops to disengage the cruise control.
2. Depressing both brake pedals together will also disengage the cruise lever.

⚠ CAUTION

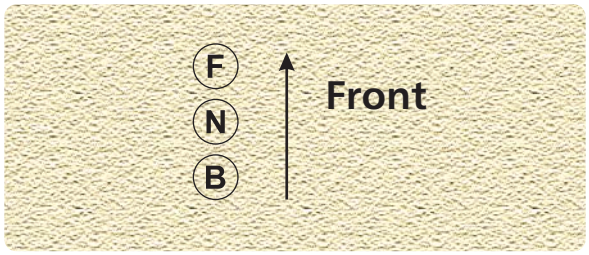
The cruise lever will not disengaged if the brake pedals are applied independently. Both brakes should be latched together while using the cruise control feature.

The cruise control feature is provided for forward motion only. Do not try to set the cruise lever while moving the tractor in the reverse direction as it will cause the tractor to stop moving suddenly.

Hydraulic Remote (Auxiliary Valve) Operation

The hydraulic remote is a single spool, double acting type hydraulic control valve. It is provided with an operating lever which is located towards the right side of the operator seat. The lever has three positions.

1. To direct the hydraulic oil flow to 'A' Port, move the lever in the forward direction (F).
2. To direct the hydraulic oil flow to 'B' Port, move the lever in the backward direction (B).
3. The lever will return to neutral position (N) when it is released at forward or backward position.



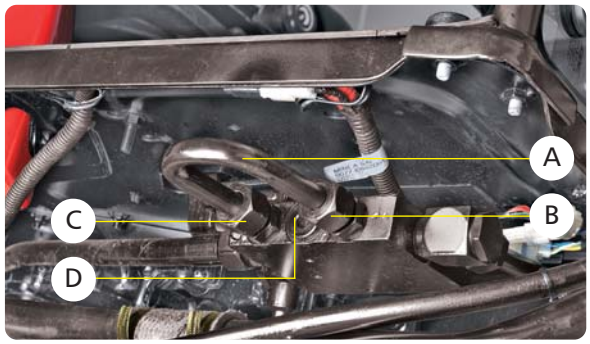
Aux Valve Lever Positions

Loader

An easy option of connecting the loader valve is provided and the same can be connected as follows :

1. Remove the U-Tube (A) from elbows (B) and (C).
2. Connect pressure line of Loader valve to elbow (B).
3. Connect High Pressure Carry-Over line (HPCO) of Loader valve to elbow (C).
4. Remove the plug from adapter (D).

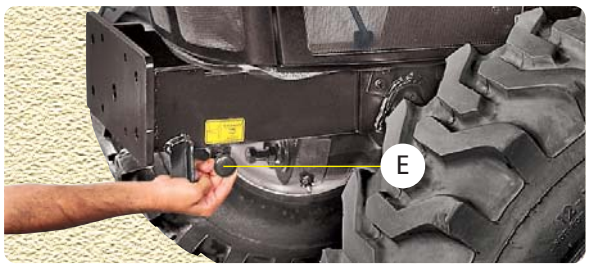
   Connect tank line of Loader valve to adapter (D).



Opening the Hood

Hood is hinged at rear side, near the fire wall (at junction of bonnet and firewall) and opens towards operator as follows:

1. Pull the knob (E). The hood will unlock.
2. Lift the hood upwards by hand. A gas spring provided inside will assist in minimising the effort for lifting.

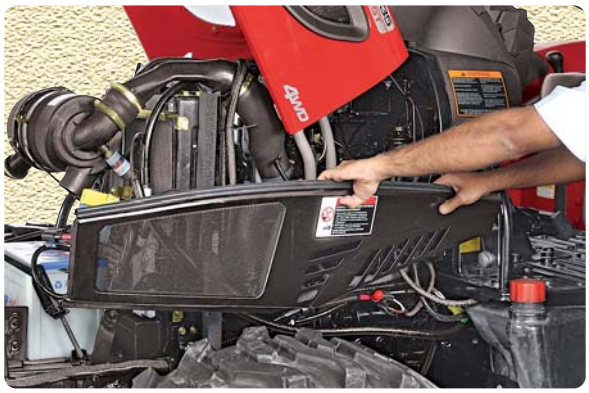


Closing the Hood

1. Ensure that side panels are properly locked.
2. Press the hood downwards till it gets locked.

Removing The Side Panels

1. Open the hood.
2. Lift the side panels gently out of locating front and rear pins.



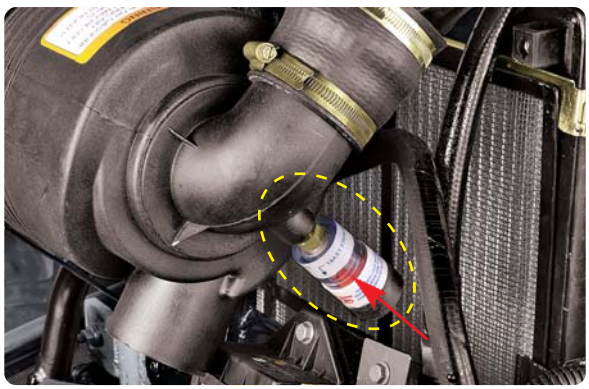
Assembling The Side Panels

Locate the side panels in front and rear locating pins.

Air Cleaner Clog Indicator

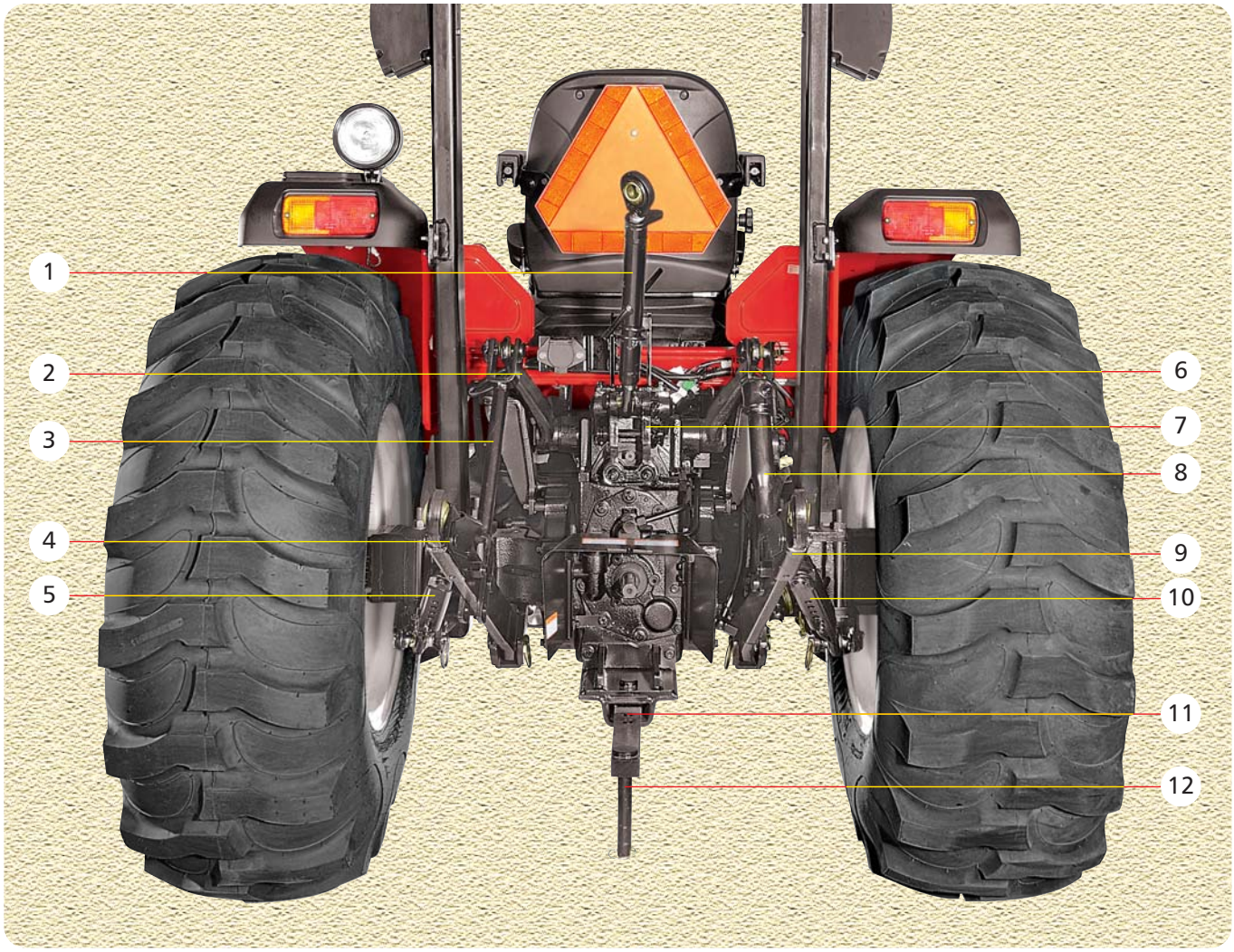
It is fitted on air cleaner outlet connecting to air intake manifold. This is a mechanical type indicator set to 80 milli-bar vacuum in intake system. The red band will be visible in the transparent cover, when the 80 milli-bar vacuum is reached. At this stage air cleaner has to be cleaned / Serviced.

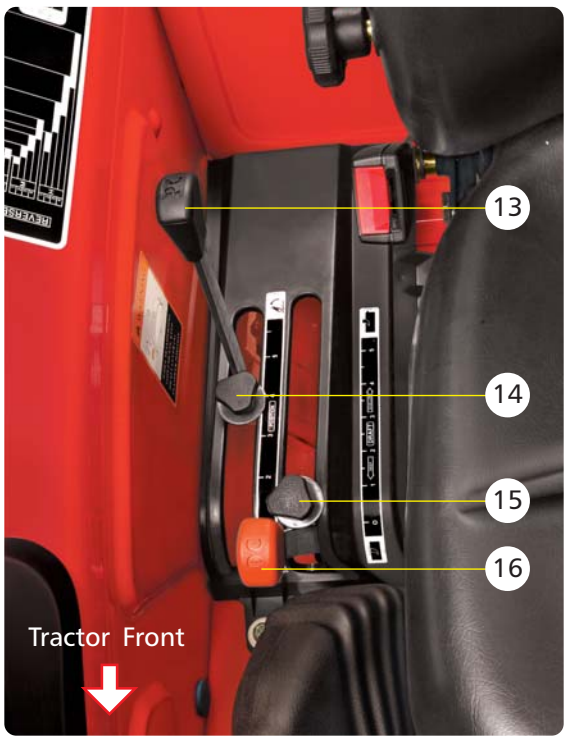
After servicing, reset the clog indicator by pressing rubber cap. (As marked in the figure).



IMPORTANT

Ensure red band will move to the original position after resetting.





Three Point Linkage

1. Top Link.
2. Lift Arm LH
3. Lift Rod LH
4. Lower Link LH
5. Lateral Stabiliser LH
6. Lift Arm RH
7. Draft Sensing Bracket
8. Adjustable Lift Rod RH
9. Lower Link RH
10. Lateral Stabiliser RH
11. Drawbar
12. Towing Pin

Quadrant Assembly

13. Position Control Lever
14. Position Control Stop Screw
15. Draft Control Stop Screw
16. Draft Control Lever

Quadrant Assembly

This system incorporates a Position control and a Draft control. Both these controls are within easy reach of the operator.

⚠ WARNING

The operator must be thoroughly acquainted with the location and use of all controls regardless of experience, must read this section carefully before attempting to operate the tractor.

Position Control

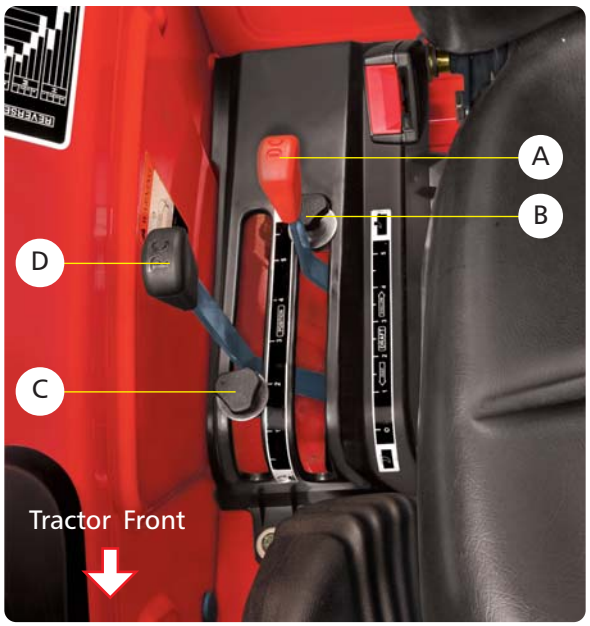
This lever (D) controls the lifting and lowering of all implements used on the three point linkage.

1. Moving the lever Forward will lower the implement.
2. Moving the lever Rearward will raise the implement.

The control can also be set by PC stop screw (C) to govern the height of out-of-ground implements such as mowers, rakes etc., so that the implement can be lowered to exactly the same height at the commencement of each turn.

PC lever (D) should be used for the following applications:

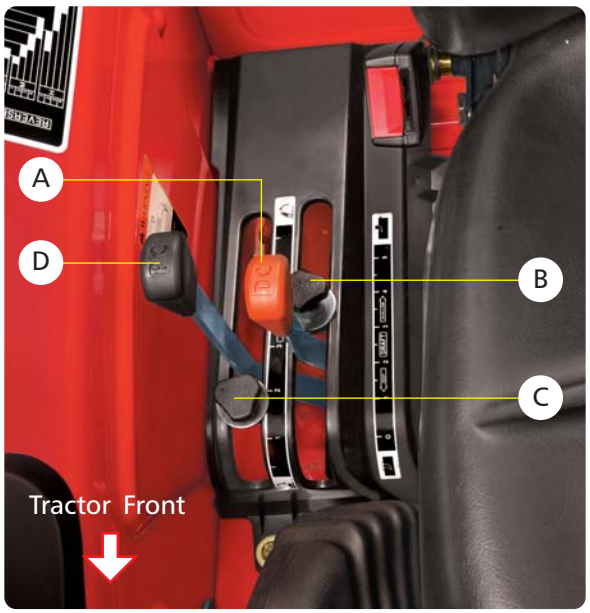
1. TRANSPORT of implements and turn around at the end of the field.
2. CONSTANT DEPTH of implements on level terrain and for non-ground engaging implements such as spreaders or sprayers. Place the PC lever at desired depth.



Setting of Position Control

1. Move the DC lever (A) to its forward most position.
2. Move the PC lever (D) back to the upper limit and allow the implement to lift fully.
3. Move the PC lever (D) forward until the implement has reached the desired working height.
4. Set the position control stop screw (C) against the PC lever and tighten the knob.

Whenever the PC lever is returned to the front position till the stopper, the implement will return to the same preset height.



Draft Control

As the draft of the implement varies due to irregularities of ground contour, soil texture, or pitching of the tractor, the load on the top link of the three point linkage will vary. These changes are transferred through the internal mechanism into hydraulic valve movement.

By means of the top link, the draft control system reacts not only when the top link is in compression, as is usually the case, when plowing, but also when the top link is in tension, as with shallow working implements. An increase in implement draft will increase the compression or reduce the tension on the top link and the system will go to lift. Conversely, a decrease in implement draft will cause the system to go lower.

Due to setting of the draft control lever, the load required to maintain the valve in the hold position is governed. Therefore, the load the tractor has to pull is maintained irrespective of ground contour, soil conditions, or the pitching of the tractor.

The lever is moved Forward to deepen the implement and Rearward to shallow it.

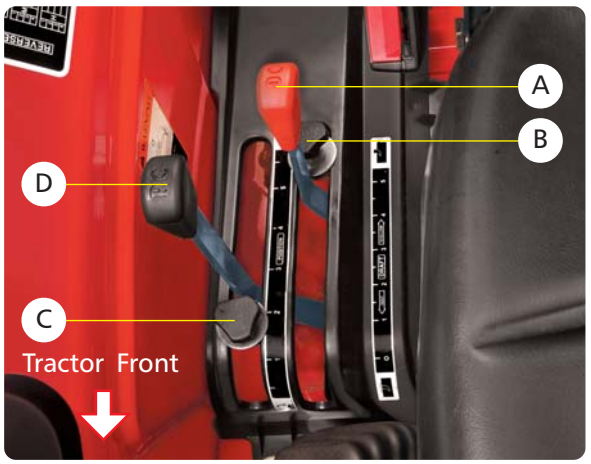
⚠ WARNING

Do not transport or attach equipment when the hydraulic system is in Draft Control. Use Position Control for these operations. Always lower hydraulic equipment to the ground before stopping the Tractor.

Under No Circumstances must the Draft Control Lever be used to Lift the implement to its uppermost Position. To do so will cause overheating of the system. All movements into and out of the soil must be made by using the Position Control lever.

Setting the Draft Control

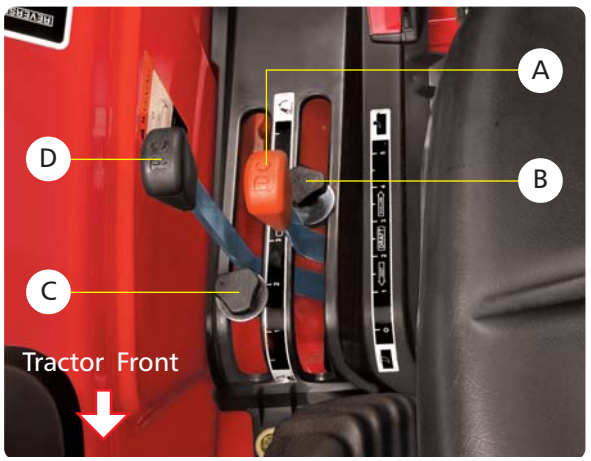
1. Move the PC lever (D) to its forward most position.
2. Move the position control stop screw (C) to the front of the quadrant and lock it.
3. Lift the implement off the ground by pulling the PC lever back to upper limit.
4. Lower the implement into work by moving the PC lever to its forward most position. The faster the lever is moved forward the quicker the implement will drop.
5. Move the tractor slowly in forward direction. When the implement has reached the desired working depth, move the draft control lever (A) rearward, until the linkage begins to lift, due to the load on top link. This will be the position of the lever for that particular depth in a particular type of ground.
6. Having obtained a desired setting move DC Stop screw (B) until it touches the DC lever (A) and lock it in this position.



When the soil texture remains constant, the implement weight is partially carried on the three point linkage. Therefore, proportion of the implement weight is transferred to the tractor rear wheels to improve traction. When a condition arises which causes an increase in draft, the system will lift and all the weight of the implement will be transferred to the tractor rear wheels to provide maximum traction. As soon as the draft returns to normal, the system goes to lower position and the situation returns to its former condition.

When the front wheels of the tractor drop into a furrow, the tendency for the implements is to lift out of the ground. As the implement lifts, the draft decreases and the system goes lower to maintain the pre-set depth. If the rear wheel drops into a furrow, the reverse will occur.

Thus under all operating conditions, the "Vary-Touch" system provides maximum traction and constant implement depth.



Toplink

It is used to attach the implement and control its inclination front-to-rear with respect to ground. The distance between its two ball-joints can be increased or decreased by rotating the turn-buckle as follows,

1. Loosen the lockplate (A).
2. Clockwise rotation of turn buckle will increase the distance.
3. Anti-clockwise rotation will decrease the distance.
4. Tighten the lockplate (A) after desired adjustment.

Top link implement end has provision for mounting CAT-I & CAT-II implements.

Draft Sensing Bracket

Draft sensing bracket transfers the toplink force to the draft sensing mechanism. It has three holes (B), (C) and (D) for hitching the toplink.

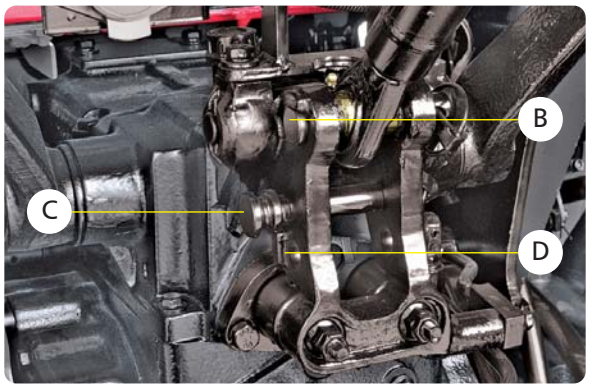
Maximum achievable depth of implement increases as the toplink is shifted from top to lower holes.

Top Hole (B) : Attach toplink to hole (B) where draft sensing function is not required.

Centre Hole (C) : Attach toplink to hole (C) where medium to Low draft sensitivity is required.

Lower Hole (D) : Attach toplink to hole (D) where very high draft sensitivity is required.

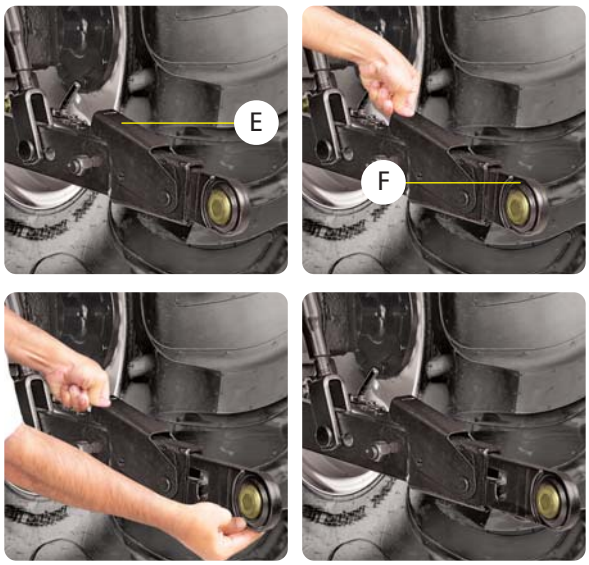
Contact your Mahindra dealer to understand hitching position of toplink for specific implements used by you.



Telescopic Lower Links

Telescopic Lower Links are provided for ease of hitching the implement as follows,

1. Slowly back tractor into position to align the lower links with implement pins.
2. Park tractor safely.
3. Press the bracket (E) in lower link and pull link (F) to extend as needed.
4. Connect lower links to the implement. Sit on operator's seat and start engine.
5. Back tractor until each lock lever snaps and secures each lower link in the lock position.

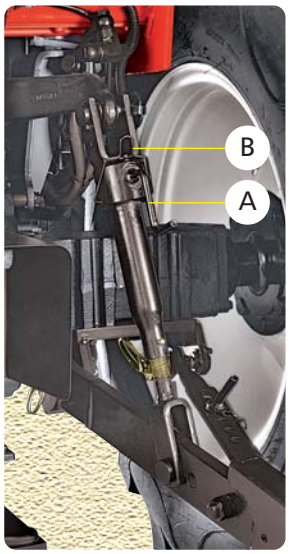


Adjustable Lift Rod RH

Use turn handle (A) on the adjustable lift rod to raise or lower the Telescopic Lower Link for side-to-side leveling of implement with respect to ground.

1. Release the levelling gear box operating lever (A) out locking clip (B).
2. Rotate turn handle (A) clockwise to raise the lower link or anti-clockwise for lowering.
3. After adjustment, make sure turn handle is secured with the locking clip. Always transport the implement with turn handle in this position.

Locked



Unlocked

Lateral Stabilizers

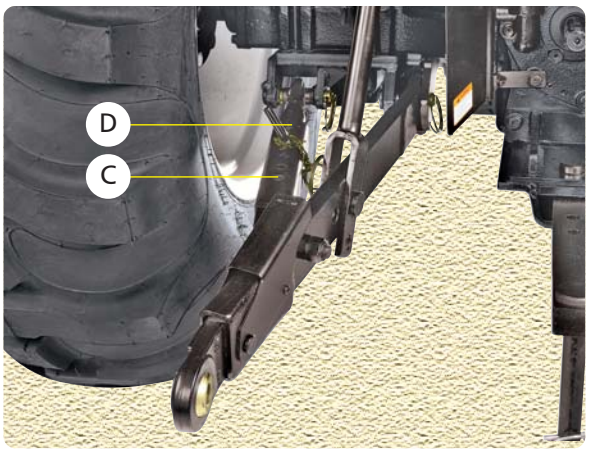
These are provided for adjustment of width between two lower links according to varying implement spans.

These enable to keep the implement in either FIXED or FLOATING position.

Placing the locating pin in (C) position shall keep the stabilizer and implement in “Fixed” position.

Placing the locating pin in (D) position shall keep the stabilizer and implement in “Float” position.

We recommend to use the fixed position while transporting the implement.



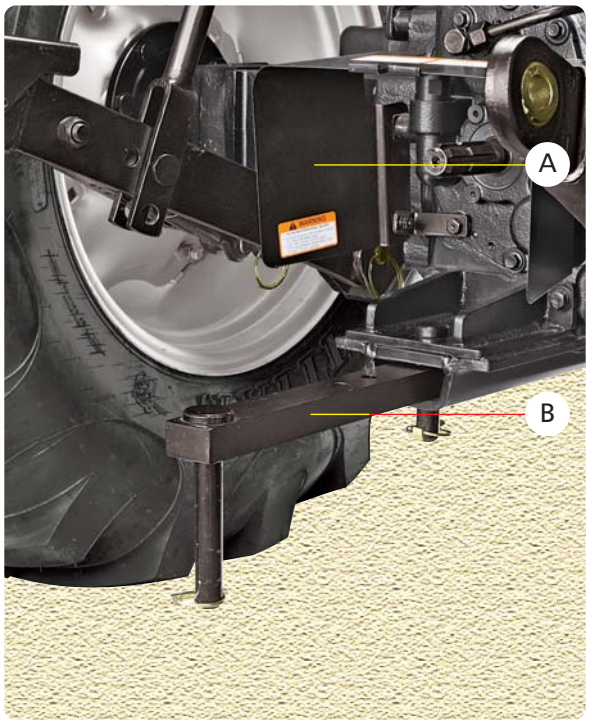
Lift Rod L.H.

There are two holes provided on the lift rod LH. This is provided to adjust the height of lower link LH as desired.

To adjust the height of the lower link, remove locking pin out of the lift rod-Lower link and adjust the height by putting the locking pin in the required hole as needed.

Drawbar

Tractor is equipped with a drawbar (B) for connecting to pull behind implements. It can be set at two positions.



Attaching PTO Driven Implement

1. Turn key to "OFF" position.
2. Position PTO switch in OFF position.
3. Position the drawbar according to the requirement of implement and driveline.
4. Attach implement to tractor before connecting PTO driveline.
5. Remove PTO shield (A) for clearance.
6. With the engine still OFF, turn the shaft slightly by hand if necessary to line up splines. Connect driveline to PTO shaft. Pull out on shaft to be sure driveline is locked to PTO shaft.
7. Reassemble the PTO shield.

⚠ WARNING

Rear roll-over can result if pulling from wrong location on tractor. Hitch only to drawbar. Use 3 point hitch only with implements designed for its use, not as a drawbar.

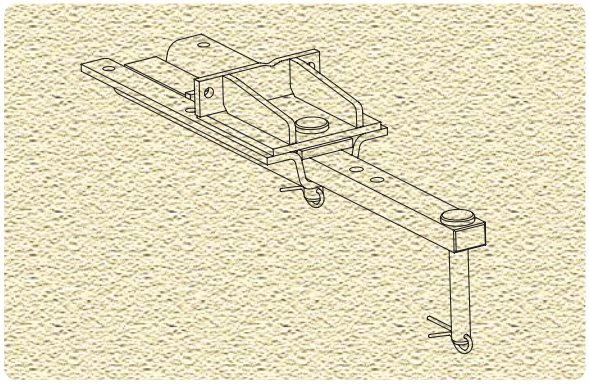
⚠ WARNING

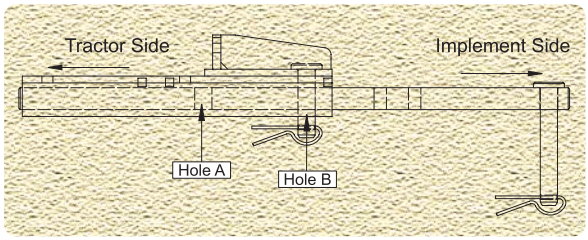
Try to balance the load primarily on the implement wheels. Avoid overloading the drawbar. Ballast the tractor for improved stability. Engage the clutch smoothly, avoid jerking and use brakes cautiously to avoid jack-knifing.

Drawbar

There are two holes on the drawbar for attaching the drawbar to the drawbar bracket.

1. For regular PTO driven implement and for maximum traction while pulling the trailer lock the drawbar to the drawbar bracket using hole B.
2. Lock the drawbar to the drawbar bracket in the hole A for a position intended for special PTO driveshaft condition where equal angularity of driveshaft joints cannot be obtained using regular position.





Tractor Model		3535		4035		4535		5035	
Drawbar Hole Positions		A	B	A	B	A	B	A	B
Dist. of Implement Pin Hole from PTO shaft end	mm	500	350	500	350	500	350	500	350
	inch	19.69	13.78	19.69	13.78	19.69	13.78	19.69	13.78
Max. Vertical Load On Drawbar	Kg	306	383	338	422	376	470	415	519
	Lb	675	844	743	929	829	1036	914	1143

Adjustment of Rear Wheel Tread & Front Wheel Tread

Setting various offset combinations can do adjustment of the Front and Rear wheel tread.

The Wheel tread obtained are as follows:

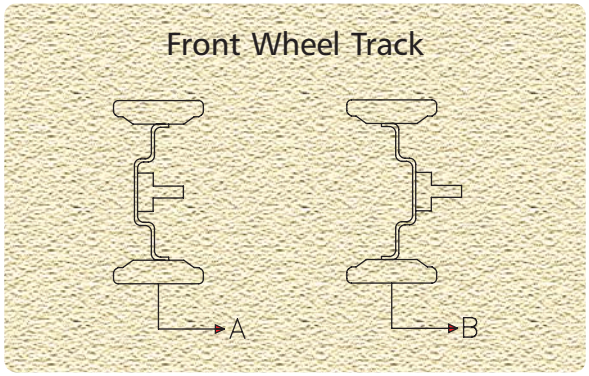
Track Setting Combinations

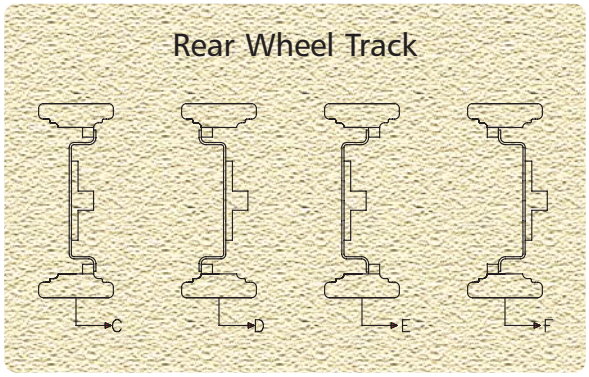
Model	Tire Type	Side	Value in	1*	2	3	4	5
3535	Ind.	Front	mm	1210 (A)	1231 (B)			
			in.	47.63 (A)	48.46 (B)			
		Rear	mm	1351 (D)	1351 (D)			
			in.	53.18 (D)	53.18 (D)			

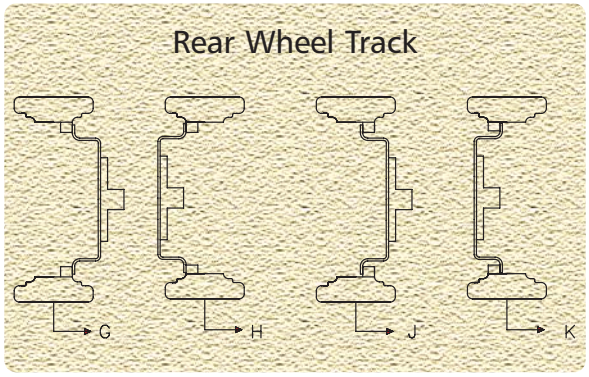
Model	Tire Type	Side	Value in	1*	2	3	4	5
4035/ 4535	Ind.	Front	mm	1423 (B)	1423 (B)	1343 (A)		
			in.	56.02 (B)	56.02 (B)	52.87 (A)		
		Rear	mm	1429 (F)	1520 (J)	1429 (F)		
			in.	56.25 (F)	59.84 (J)	56.25 (F)		

Model	Tire Type	Side	Value in	1*	2	3	4	5
5035	Ind.	Front	mm	1450 (B)	1450 (B)	1310 (A)		
			in.	57.08 (B)	57.08 (B)	51.57 (A)		
		Rear	mm	1429 (F)	1520 (J)	1429 (F)		
			in.	56.25 (F)	59.84 (J)	56.25 (F)		

* Standard Track Settings







IMPORTANT

An arrow is marked on the sidewall of the tire, which must always point in the direction of forward rotation to obtain maximum traction.

Adding Liquid Weight

It is acceptable to add liquid ballast to the tire / wheel assembly on your Mahindra Tractors.

Consult your Local Tire Dealer or Manufacturer of Tires for ballasting process.

Inflation

Keep tires properly inflated to the pressure as shown in the Chart below. Under inflation will damage tire cord and may cause the tire to slip on the rim and tear out the tube valve stem. Over inflation results in excessive slippage, causing rapid tire wear. Air pressure should be checked once a week with an accurate low pressure gauge having one pound graduations. Air pressure should not be allowed to drop or exceed the recommendations.

Always see that the tire valve caps are in place and screwed tight. The caps prevent loss of air through the valve core. Further, they prevent debris from entering and damaging the valve core and air chamber in the tires.

Exceptions (Rear Tires only)

When plowing with a moulded plow, the left hand or land wheel should be inflated to 2 p.s.i. lesser than right hand or furrow wheel.

Chart A-1

Tire Load Rating

Model	Side	Tire Size	Tire Type	Tire Capacity @ 25 mph kg @ kg/cm^2	Rolling Circum-ference (mm)
3535	Front	28 x 8.5 - 15, 6PR, TTL	Industrial	1309 @ 3.17	2108
	Rear	43 x 16 - 20, 4PR, TTL	Industrial	1959 @ 0.59	3251
4035 / 4535	Front	12 x 16.5, 6PR, TTL	Industrial	1918 @ 2.82	2489
	Rear	16.9 x 24, 8PR, R4, TIT	Industrial	2909 @ 1.26	3810
4035	Front	9.5 x 16, 6PR, R1 HTL	Ag	632 @ 1.41	2540
	Rear	14.9 x 24, 6PR, R1 HTL	Ag	1364 @ 0.79	3810
5035	Front	14 x 17.5, 6PR, TTL	Industrial	2191 @ 2.11	2718
	Rear	19.5 x 24, 8PR, R4, TIT	Industrial	3000 @ 1.10	3912
	Front	9.5 x 20, 6PR, R1 HTL	Ag	750 @ 2.11	2870.20
	Rear	16.9 x 24, 6PR, R1 HTL	Ag	1855 @ 0.94	3987.8

Care of Tires

Cuts in tires should be repaired immediately. If neglected, it will decrease the tire life. Avoid stumps, stones, deep ruts and other hazards. Keep tires free from oil and grease as both destroy rubber. After using the tractor for spraying, wash off any chemicals that may be left on the tractor and tires.

Shipping Tractors Equipped with Pneumatic Tires

When tractors are transported on a carrier, inflation pressure should be as follows to make possible rigid blocking and to prevent bouncing.

MODEL	SIDE	TYPE	MAX INFLATION	
			kg/cm^2	psi
3535	Front	Industrial	3.17	45.09
	Rear	Industrial	0.59	8.39
4035 / 4535	Front	Industrial	2.82	40.11
	Rear	Industrial	1.26	17.92
4035	Front	Ag	1.41	20.05
	Rear	Ag	0.79	11.23
5035	Front	Industrial	2.11	30.01
	Rear	Industrial	1.1	15.65
	Front	Ag	2.11	30.01
	Rear	Ag	0.94	13.37

Tire Protection during Storage

When not in use the tractor should be stored where the tires are protected from light. Before storing the tractor clean the tires thoroughly. Jack up the tractor so that the load is off the tires when it is to be out of service for a long period. If it is not jacked up, the tires should be inflated at regular intervals. Before putting the tractor in service, always inflate tires to the correct operating pressures.

Do not load tires beyond their rated capacity.

Mounting Tires on the Rim

Consult your Local Tire Dealer for methodology of mounting Tires on the rim.

⚠ WARNING

Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called in to service or install tires. In any event to avoid the possibility of serious or fatal injury, follow the safety precautions below:

- Upon receiving your tractor, check the air pressure in the tires and recheck every 50 hours or weekly.
- When checking tire pressures, inspect the tires for damaged tread and side walls. Neglected damage will lead to early tire failure.
- Inflation pressure affects the amount of weight that a tire may carry. Do not over or under inflate the tires.

⚠ WARNING

- Never attempt tire repairs on a public road or highway.
- Do not inflate a steering tire above the manufacturer's maximum pressure shown on the tire or beyond the maximum shown in the tire pressure and load Chart A-1. If tire is not marked with the maximum pressure.
- Never inflate a traction tire (front tire on a four wheel drive tractor or any rear tire) over 35 psi (2.4 bar). If the bead does not seat on the rim by the time this pressure is reached, deflate the tire, relubricate the bead with a soap/water solution and re-inflate. Do not use oil or grease. Inflation beyond 35 psi with unseated beads may break the bead or rim with explosive force sufficient to cause a serious injury.
- After seating the beads, adjust inflation pressure to the recommended operating pressure.
- Do not re-inflate a tire that has been run flat or seriously under-inflated until it has been inspected for damage by a qualified person.
- Torque wheel to axle nuts to specification after re-installing the wheel. Check nut tightness daily until torque stabilizes.
- Ensure the jack is placed on a firm, level surface.
- Ensure the jack has adequate capacity to lift your tractor.
- Use jack stands or other suitable blocking to support the tractor while repairing tires.
- Do not put any part of your body under the tractor or start the engine while the tractor is on the jack.
- Never hit a tire or rim with a hammer.
- Ensure the rim is clean and free of rust or damage. Do not weld, braze, repair or use a damaged rim.
- Do not inflate a tire unless the rim is mounted on the tractor or is secured so that it will not move if the tire or rim should suddenly fail.
- When fitting a new or repaired tire, use a clip-on valve adapter with a remote gauge that allows the operator to stand clear of the tire while inflating it. Use a safety cage, if available.

Before Starting The Tractor

1. Clean the tractor.
2. Make all prestart checks according to preventive maintenance schedule.
3. Check coolant level in surge tank & oil level in engine, transmission and front axle.
4. Check fuel level in fuel tank.
5. Ensure all the tires are properly inflated as per the load conditions.
6. For operator's maximum comfort, adjust seat suspension as per the operator's weight. Also adjust seat position forward or rearward as per operators convenience to operate all controls and switches.
7. If, necessary, ballast the tractor.
8. Adjust wheel tread, if necessary.
9. Adjust stabilizer and three point linkage.

⚠ WARNING

Do not use starting fluid. Tractor is equipped with intake manifold heater.

Starting the Tractor

1. Move the controls as under :
   a. Range shift lever in neutral.
   b. PC and DC levers in lowermost position.
   c. PTO switch should be in OFF.
   d. Auxiliary valve lever in neutral position (5035).
2. Turn the starter key in clockwise to engage the starter and hold in this position till the engine fires. When released, the key springs back to the "ON" position.
3. Idle the Engine for 1 to 2 minutes before driving it. If required, warm-up the engine at suitable speed. For faster warm-up, raise the engine rpm to approx. 2000.

The starter safety switches is provided on Forward / Reverse pedal linkage. The tractor can be started when the Forward / Reverse pedals are in neutral position (its original position).

Never push or tow the tractor to start the engine. Doing so may overstress the drive train.

Do not crank the starter continuously for more than 30 seconds to avoid starter motor failure.

Stopping the Engine

a. Idle the Engine for 1 to 2 minutes.

b. Turn the Key to "OFF" position.

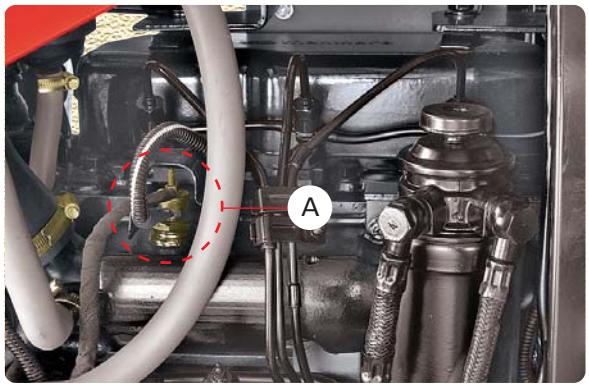
Note : It is normal for the engine to be louder and have bluish-white exhaust smoke during engine warm-up. The amount of smoke depends on the temperature of air entering the engine.

In cold weather, idle the engine and warm-up for 5 minutes at approx. 2000 rpm before loading.

Cold Starting Aid

A heater element (A) is provided in engine's intake manifold. When the Key is turned to "ON" position, the element is activated. Heater indicator in the instrument cluster indicates the activation. The element continues to heat the air in the intake manifold for approx. 35 seconds.

1. Turn the Key to "ON" position and hold it till the heater indicator is put-off.
2. Crank the engine when the heater indicator is put-off after 35 seconds.



Cold Starting Aid

General driving care to be taken

Driving a tractor with hydrostatic transmission is a bit different than with a mechanical transmission.

Here HST pedal acts as a gear shifter. The harder you depress the pedal, the higher gear you are in.

With a hydrostatic transmission (HST) as your load increases (i.e. pulling a heavy load, operating with a loader in a dirt pile, pulling a trailer up a hill or operating in soft soil conditions) you need to decrease the force on the pedal to over come the load.

If you are driving the tractor up a hill or a gradient, it is advised to use the low or medium speed range. Using high range may overload the engine. At certain extreme load conditions the engine may stop.

While hauling large implements or filled loader bucket, high range may cause the engine to overload. For safety use low or medium speed range to match load.

When operating in heavy load conditions, it makes a huge difference to operate in low range which allows the HST to maintain lower pressures and work more efficiently.

Driving the Tractor

With the engine running and the range lever to their appropriate desired positions. Free the parking brake. Slowly press the forward / reverse pedal and the tractor will start moving.

During the field operations, assistance in making sharp turns can be gained by applying pressure to the independent foot brake pedal of the side to which the turn is to be made.

The brakes can be latched together to act simultaneously by means of the brake pedal latch.

Do not attempt to start the engine while standing beside the Tractor, because serious injury or death would occur. Always sit on the operator's seat.

Always latch the brake pedals together when tractor is not being used in field.

⚠ CAUTION

Do not apply load on tractor at low engine speeds.

Always apply heavy loads at full throttle rpm of engine.

If the tractor is being used after long storage, care must be taken to prime the engine by cranking the engine for at least 5 seconds without firing the engine.

To avoid firing of engine while cranking, remove the electrical connection to FIP solenoid and crank the engine.

IMPORTANT

If the engine stalls while operating under load, start engine immediately to prevent abnormal heat build up in engine.

TRACTOR STORAGE

If the tractor is not in frequent use then ensure to run the tractor for atleast 15 minutes once is ten days.

However if the tractor is to be out of service for extended period, it should be stored in a dry place. Leaving the tractor exposed to weather will shorten its life considerably.

When placing the tractor in storage for more than a month, follow the procedure given below,

1. Wash down and thoroughly clean and dry the tractor.
2. Completely lubricate the tractor in accordance with the lubrication chart.
3. Drain the fuel tank, water trap, feed pump and fuel filters.
4. Disconnect the return pipe at the fuel tank and connect a suitable tubing to allow excess fuel to drain into a container. Fill the system with calibrating oil (if available) of 4 US gallon (15 lit.) quantity.
5. Drain the old lubricating oil from the crankcase sump and fill to normal level with new rust preventive lubricating oil.
6. Run the engine for 1.5 minutes. Switch off the engine. Remove the starting key.
7. If calibrating oil is filled, drain it from the fuel tank only.
8. Seal the fuel system with the same quantity of calibrating oil (if available) in it.
9. Remove air cleaner hose from the manifold of the engine and spray rust preventive oil through the air intake while the engine is being turned.
10. Drain the cooling system.
11. Plug all orifices which expose the internal parts of engine to the atmosphere. Detach additional weights from tractor, if any.
12. Jack the tractor so that the tires are clear off the ground. If this is not possible, check tire pressures regularly and keep inflated to recommended pressures. Rotate wheels periodically to prevent them from standing on the same place for long periods.
13. Remove batteries and store in a cool dry place, keep topped up and fully charged.
14. Disconnect the hydraulic accessories.

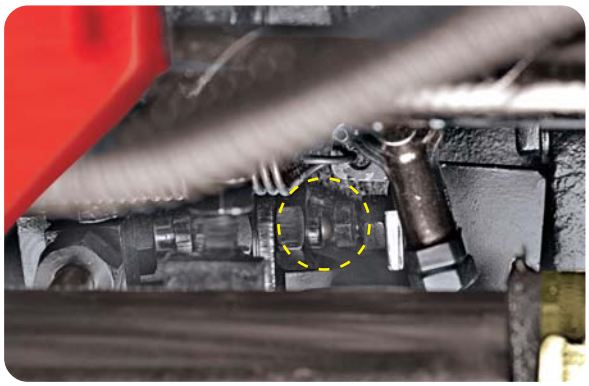
USING THE TRACTOR AFTER STORAGE

1. Check tire air pressure and inflate, if necessary
2. Jack the tractor up and remove the support blocks from under the front and rear axles.
3. Install the battery. Be sure it is fully charged.
4. Check the fan and alternator belt tension.
5. Refill coolant into the cooling system.
6. Drain the rust preventive oil from engine and oil filter and fill the crankcase with specified oil & refit oil filter.
7. Check all fluid level (engine oil, transmission / hydraulic oil and engine coolant.
8. Remove the extra plugs, if fitted on the engine.
9. Service air cleaner.
10. Drain the calibrating oil from fuel system and fill the fuel tank with clean fuel.
11. Open all the doors and windows or move the tractor out of storage room, to avoid danger from exhaust fumes. Then start the engine and run it at 1500 rpm to ensure that the lubricant attains operating temperature and reaches all points. Observe all gauges and be sure they are functioning properly and reading normal. Ensure there is no evidence of oil or water leakage. Now run the engine at low idle rpm for 1 min. and shut off the engine. Remove the key and apply the parking brake.

Operating the Tractor

1. Before starting the tractor ensure parking brake is engaged, place the PTO switch in the "OFF" position, hydraulic control levers in downward position, remote control valve levers (5035) and transmission in neutral.
2. Do not apply load on tractor at low engine speeds. Always apply heavy loads at full throttle rpm of engine.
3. Do not start the engine or operate controls while standing besides the tractor. Always sit on the tractor seat when starting the engine or operating controls.
4. **Transmission Neutral Switch**

   In order to prevent accidental starting of the tractor in gear, a safety switch is provided. The starting circuit of the tractor is connected through the switch on the forward / reverse pedal system. This system becomes operative only when the forward / reverse pedal is in neutral condition. Do not bypass the safety Key Switch. Consult your Mahindra tractor dealer if your safety starting switch malfunctions.
5. Avoid accidental contact with the cruise control lever while the engine is running. Unexpected tractor movement can result from such contact and may cause accident.
6. Do not get off or climb the tractor while it is in motion.
7. Put the range lever in neutral position and apply parking brake before getting down from the tractor.
8. Do not operate tractor in an enclosed building without adequate ventilation. Exhaust fumes can cause death.
9. Do not park the tractor on a steep slope.
10. If power steering ceases to operate, stop the tractor immediately.
11. Pull only from the swinging drawbar or the lower link drawbar in the down position. Use only a drawbar pin that locks in place. Pulling from the tractor rear axle carriers or any point above the rear axle may cause the tractor's front end to lift and the tractor to turnover.
12. Always use hydraulic position control lever when attaching equipment / implements and when transporting equipment. Be sure that the hydraulic couplers are properly mounted and will disconnect safely in case of accidental detachment of implement.
13. Do not leave equipment/implements in the raised position.
14. Use the turn signal lamps and slow moving vehicle (SMV) signs when driving on public roads during both day and night time, unless prohibited by law.
15. Dim tractor Head lamps when meeting a vehicle at night. Be sure the Head lamps are adjusted to prevent blinding on the eyes of oncoming vehicle operator.



Forward / Reverse Neutral Switch

⚠ WARNING

Tractor will not start if PTO control switch and PTO On / Off switch are in 'ON' position. For starting both or one of the switches has to be in 'OFF' position.

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. Read and take the following precautions before operating the tractor to prevent accidents. The tractor should be operated only by those who are responsible and instructed to do so.

The Tractor

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

Driving the Tractor

1. Watch where you are going especially at row ends, on roads, around trees and low hanging obstacles.
2. To avoid rollover, 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 on uphill. Do not coast or free wheel down hills.
5. Any towed vehicle and/or trailer, whose total weight exceeds that of the towing tractor, must be equipped with its own brakes for safe operation.
6. When the tractor is stuck or tires are frozen to the ground, back out to prevent roll over.
7. Always check overhead clearance, especially when transporting the tractor.
8. Do not engage the Range Shift or 4WD engagement lever while the tractor is in motion.
9. The "balancing" of the braking system should be checked every week, or whenever the tractor is taken on the road after working extensively or when one brake is used more often than the other. If this precaution is not taken an accident may occur. Hand brake should only be used for parking purpose.
10. Use extra caution when Front wheel drive is used on slopes. Compared to 2-wheel drive, a front wheel drive maintains traction on steeper slopes increasing the possibility of tip over.
11. When driving on wet, icy or graveled surfaces, reduce speed and be sure tractor is properly ballasted to avoid skidding and loss of steering control. For best control, engage front wheel drive.

Servicing the Tractor

1. Keep the tractor in good operating condition for your safety. An improperly maintained tractor can be hazardous.
2. Stop the engine before performing any service on tractor.
3. The cooling system operates under pressure which is controlled by the radiator cap. It is dangerous to remove the cap while the system is hot. First turn the cap slowly to first stop and allow the pressure to escape before removing the cap entirely.
4. The fuel injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust fuel injection pump, injector, nozzle or any part of the fuel injection system. Failure to follow these instructions can result in serious injury.
5. Keep open flame away from battery or cold weather starting aids to prevent fire or explosions.
6. Do not alter or permit anyone else to modify or alter this tractor or any of its components or functions.
7. Ensure all electrical connections are secure and clean.
8. Ensure that no connection in the charging circuit, including battery, is broken while engine is running.
9. Observe correct polarity when refitting the battery or when using a slave battery to start the engine.
10. Do not short the Alternator output leads to check its working.

Operating the PTO (Power Take Off)

1. When operating PTO driven equipment, shut off the engine and wait until the PTO stops before getting off the tractor and disconnecting the equipment.
2. Do not wear loose clothing when operating the power take-off or near rotating equipment.
3. When operating stationary PTO driven equipment, always apply the tractor parking brake and block the rear wheels from front and rear side.
4. Always keep the PTO Shield in proper assembled position.
5. Make sure the PTO shield is installed at all times.

ROPS

1. Never attach chains or ropes to the ROPS for pulling purposes; this will cause the tractor to tip backwards.
2. Always pull from the tractor drawbar.
3. Be careful when driving through door openings or under low overhead objects. Make sure there is sufficient overhead clearance for the ROPS.
4. If the ROPS is removed or replaced, make certain that the proper hardware is used to replace the ROPS and the recommended torque values are applied to the attaching bolts.
5. Always wear seat belt if the tractor is equipped with a ROPS.

Transporting Tractor on a Trailer

1. Drive machine forward onto a trailer.
2. Lower any attachments to trailer deck.
3. Lock the parking brake.
4. Stop the engine.
5. Remove the key.
6. Fasten tractor to trailer with heavy-duty straps, chains or cables. Both front and rear straps must be directed down and outward from the tractor. Trailer must have signs and lights as required by law.
7. Cover the silencer outlet with water proof material to avoid entry of water and other foreign material.

Towing

1. Hitch the towed load only to the drawbar. Lock the drawbar and pin in place.
2. Before descending a hill, shift to a gear low enough to control tractor travel speed without having to use the brake pedals to brake the tractor and installed attachments.
3. Try to balance the load primarily on the implement wheels. Avoid overloading the drawbar. Avoid jerking and use brakes cautiously to avoid jack-knifing.
4. Use 3 point hitch only with implements designed for its use, not as a drawbar.

IMPORTANT

1. Position PTO Auto / Manual / Off Switch in Off Position.
2. Disengage differential lock.
3. Place Range shift lever in neutral
4. Disengage 4WD.
5. Connect LH & RH brake pedals together to slow down or brake the tractor.

Diesel Fuel

1. Keep the equipment clean & properly maintained.
2. Under no circumstances should gasoline, alcohol or blended fuels be added to diesel fuel. These combinations can create an increased fire or explosive hazard. Such blends are more explosive than pure gasoline in a closed container, such as a fuel tank. DO NOT USE THESE BLENDS.
3. Never remove the fuel cap or refuel the tractor with the engine running.
4. Do not smoke while refuelling or standing near fuel.
5. Maintain control of the fuel filler pipe when filling fuel.
6. Do not fill the fuel tank to capacity. Allow room for expansion.
7. Wipe up spilled fuel immediately.
8. Always tighten the fuel cap securely.
9. If the original fuel tank cap is lost, replace it with Mahindra approved cap. A non-approved cap may not be safe.
10. Do not drive equipment near open fire.
11. Never use fuel for cleaning purposes.
12. Arrange fuel purchases such that winter grade fuel are not held over and used in the spring.

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

DO'S - For Better Performance

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

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

DO - Carry out all maintenance tasks without fail.

DO - Keep the air cleaner clean.

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

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

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

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

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

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

DO - Allow the engine to cool before removing the radiator cap and remove the radiator cap slowly.

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

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

DO - Keep draft control lever and position control lever fully down when not in use.

DO - Visit dealer for adjustment on Injector pressure. Adjust if required.

DO - Keep the auxiliary valve levers in neutral (N) when not in use.

DO - Latch the brake pedals together when driving with cruise control engaged.

⚠ CAUTION

DO'S - For Safe Operation

DO - While operating the Mahindra supplied loader, the operator is advised to be careful of Bucket location at all times, particularly while raising a loaded bucket rolled back.

DO - Refer loader operator's manual for safe operation and trouble free performance.

DONT'S - For Safe Operation

DON'T - Run the engine without the air cleaner.

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

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

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

DON'T - Tamper with the fuel injection pump. If the seal is broken the warranty becomes void. Tampering with the injection pump may constitute an EPA violation. Significant fines could apply.

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

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

DON'T - Ride the brake. This will result in excessive wear of the brake linings.

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

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

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

DON'T - Use the hand throttle while driving on roads.

DON'T - Run cold engine at full throttle.

DON'T - Run the tractor on road with 4WD engaged above 10 mph.

DON'T - Operate the power steering when the oil level is below the minimum level in the reservoir.

DON'T - Run the tractor if the power steering system is damaged. In this condition, contact the dealer.

DON'T - Park the tractor on a gradient with transmission gear engaged and with no parking brake.

DON'T - Try to engage cruise control lever when tractor is moving in reverse direction.

Cooling System

The cooling system consists of :

A. Radiator
B. Surge Tank
C. Fan
D. Thermostat
E. Water Pump
F. Fan Belts
G. Hoses & Connections

To ensure an even temperature within the engine, the cylinder head and cylinder walls of the engine are water cooled. This water is in turn cooled in the radiator. The water is circulated from the radiator to the engine and back through the radiator by means of a water pump.

Radiator

The radiator consists of a cluster of hollow tubes enshrined into a number of fins and enclosed at both ends vide a Top Tank and a bottom tank.

Air sucked by Fan passes through the radiator fins thereby cooling the coolant flowing through radiator tubes.

The fins should be kept clear of mud or dirt accumulation. Over heating may be caused by bent or clogged radiator fins. If the spaces between the radiator fins become clogged, clean them with compressed air or coolant blown from engine side.

Radiator Cap

A pressurised radiator cap is provided which is set at 13 psi (0.9 kg/cm^2) pressure. This cap ensures better cooling and avoids loss of coolant due to evaporation. It also reduces corrosion in engine sleeve & crankcase, hence it is strongly recommended that the engine should not be run without radiator cap. Also ensure that rubber gasket is intact & perfectly sealing the system pressure.

Surge Tank

When the engine is in operation, certain amount of coolant passes out of the radiator overflow pipe. This coolant is not allowed to escape into the atmosphere and captured into a Surge tank.

When the engine is not operating and the coolant cools down, certain amount of coolant comes back into the radiator from surge tank. The surge tank thus helps to prevent loss of coolant.

Thermostat

This device prevents coolant circulating through the radiator until the engine reaches its operating temperature. With the thermostat closed, the coolant circulates only through the engine block.

It is important that if the thermostat is defective, do not attempt to repair it, replace with new. When installing a new thermostat, ensure the valve is facing upward. The thermostat operating temperature is 180^{0}F.

⚠ WARNING

When straightening bent fins be careful not to damage the tubes or to break the bond between the fins and tubes.

⚠ WARNING

The cooling system operates under pressure.

- It is dangerous to remove the radiator cap while the system is hot.
- Always turn the cap slowly to the first stop, and allow pressure to escape before removing the cap completely.

⚠ WARNING

Do not run the engine when the cooling system is empty, and do not add cold coolant or cold antifreeze solution if the engine is hot.

The coolant level in surge tank should not fall below the MIN level mark.

⚠ WARNING

Do not run the Engine without Thermostat Valve.

Water Pump

The water pump is provided with a sealed bearing. Adjusting or greasing will not be necessary.

Hose Connections

Check periodically to ensure all the connections are in good order and the clips are tight. A leaking connection results in loss of coolant and thus engine efficiency.

When using antifreeze in the cooling system, it is absolutely essential to have efficient connection so check these and should there be any doubt as to their serviceability, renew.

Fan & Fan Belts

A 6 Blade plastic fan is mounted on water pump and is driven vide fan belt by the main drive crank pulley. While the engine is in operation, the fan sucks air through the radiator core.

Slippage of belt on pulley can cause over heating. The Fan belts shall always be dry and free from oil or Grease. Incorrect belt tension results in its rapid wear.

Crank pulley is assembled on crank shaft.

Belt Adjustment

To adjust belt tension, loosen the alternator on the adjustable bracket and lock the bolt in the location that gives correct belt tension (270-310 N) such that the belt can be depressed without much effort by the thumb, 0.25 to 0.4 inch.

Belt Removal

1. Loosen the Bolt (C).
2. Push the alternator down.
3. Ease the fan belt off the alternator pulley.
4. Ease the fan belt off the main drive pulley.
5. Slide out the belt from water pump pulley over the fan blades.

Belt Replacement

Reverse the procedure of fan belt removal stated above.

Adjust the fan belt tension as previously detailed.

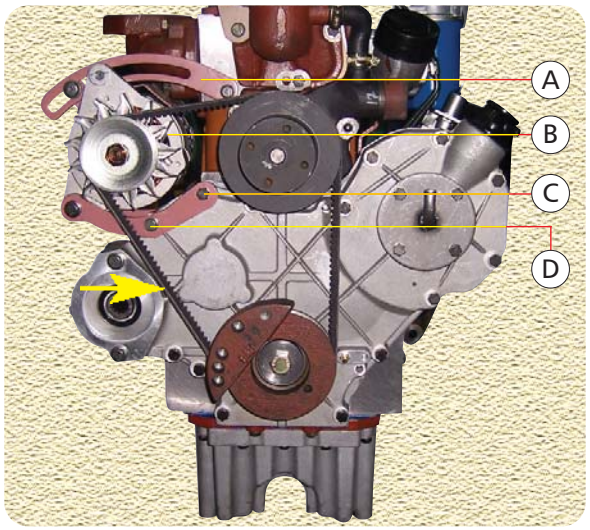
Draining the System

Two drain plugs must be opened. One is on LH side of crankcase and one on radiator bottom tank. To speed up draining, remove the radiator cap. Ensure that the drains are not clogged. Close the taps after draining is complete.

Cleaning out Dirt and Sludge

Drain cooling system as directed above. Fill the cooling system with a solution of 1.0 Kg. of ordinary baking soda to 7.0 litres (1.84 US Gallons) of water.

Do not replace the radiator cap. Operate the engine until the coolant is hot. Drain, flush with clean water and refill with a rust inhibitor or anti-freeze solution.



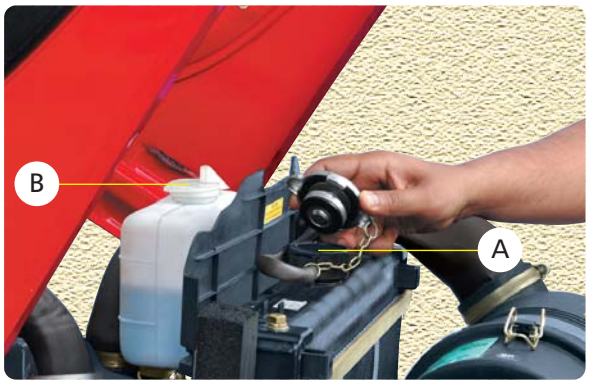
A. Alternator Mounting
B. Alternator
C. Adjusting Bolt
D. Adjusting Bracket

Adding Coolant to the System

Allow the engine to cool if it is hot.

1. Open the Hood.
2. Remove the radiator cap.
3. Fill the radiator from fill neck (A) with clean coolant upto a level approx. 2" below the radiator neck.
4. Start the engine and let it idle to remove air from the system. Coolant level in radiator will reduce.
5. Slowly pour coolant into the radiator till the coolant level in radiator does not go down further.
6. Fill coolant in surge tank from fill neck (B) upto the Max level mark.
7. Refit the radiator cap.
8. Shut down the Engine.
9. Close the Hood.

Ensure that the filler cap is clean and free of dirt particles before replacing.



Cooling System Protection

A common cause of the engine overheating is a rust clogged cooling system. Rust causes overheating by interfering with circulation and cooling. The tractors are filled with a mixture of new low silicate antifreeze (50% - antifreeze - 50% water) with a rust inhibitor in it.

Use of approved supplemental corrosion inhibitor along with ethylene glycol will add increased rust prevention, reduce scale formation, minimize cylinder wall erosion & reduce foaming or tendency to foam.

Antifreeze : There are numerous antifreeze products marketed today. Diesel engines are adversely affected by the additives added to protect the aluminum surfaces. Antifreeze suitable for diesel engines conforms to an industry recognised standards which limits silicates to 0.1%. Once silica-gel has formed it is very difficult and costly to remove.

We are listing below some low silicate antifreezes that meet GM 6038 M formulation specification. There may be other suppliers who can make available low silicate antifreezes.

No.	Company	Product
1	Texaco (1)	2354 / 2055 Startex (Was JC-04)
2	BASF WYANDOTTE	241-7
3	Shell	ShellZone-LS
4	International Harvester	I.H. Antifreeze
5	Old Water Trading	Full Force
6	Conoco	Fleet Antifreeze
7	Northern Petrochemical	All Weather (NPC 220)

Note :

% Anti Freeze / % Water	50/50	60/40
Freeze Protection	-34^{0}F -36.67^{0}C	-64^{0}F -53^{0}C
Boil over protection	+265^{0}F 129^{0}C	+275^{0}F 135^{0}C

(with 13 psi (0.91kg/cm^2) radiator cap)

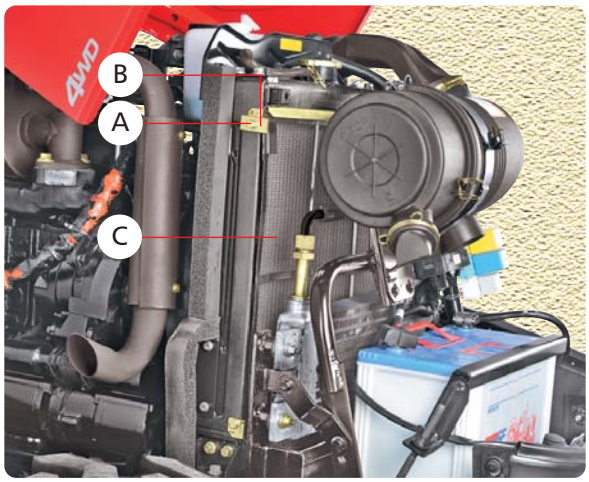
Recommended change period : 1 year or when ever the radiator water is drained.

Trashguard

The trashguard is a one piece construction and mounted in front of radiator. This can be easily removed for cleaning as follows :

1. Open the hood.
2. Remove the RH side panel.
3. Loosen bolt (A) of stopper plate (B) and rotate plate by 90^0.
4. Gently take out trashguard (C) from the mounting.

Reverse the procedure of removal for assembly.



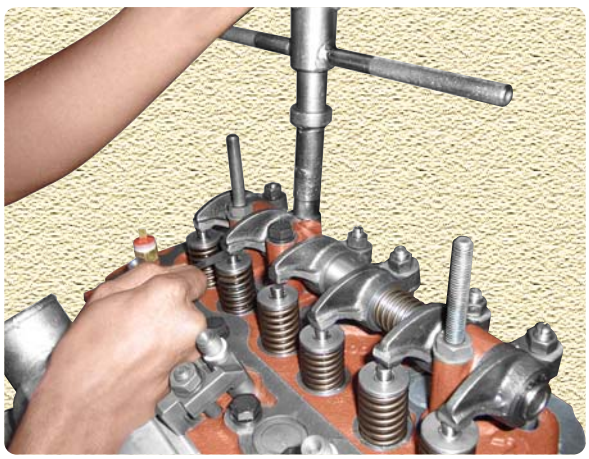
Adjusting The Valve Clearance

After the first 1000 hrs. the cylinder head bolts should be re-tightened to a torque as recommended. The bolt in the center should be tightened first and then work outwards. Check the valve clearance as given in specifications. Following this a further check should be made after every 1000 hrs.

1. Remove the valve housing.
2. Turn the engine until the No. 1 cylinder is at the top dead center of the compression stroke.
3. Loosen the locknut and adjust the screw in each valve lever so that the feeler gauge slips snugly between the ends of the valve lever and the valve stem.
4. Tighten the locknut and re-check the clearance.
5. Crank the engine for 2/3 revolutions in case of 3 cylinder engine in order to bring the TDC position of subsequent cylinder number as per the respective firing orders. Now adjust the valve clearance as explained earlier.

Repeat the process until clearance for each set of valves is adjusted.

Reassemble the valve housing and ensure that the valve housing gasket makes an oil tight seal with the cylinder head. Use a new gasket, if necessary.



Checking Valve Clearance

IMPORTANT

Be accurate - use a feeler gauge for checking the valve clearance.

Valve Clearance

		Intake	Exhaust
Clearance	mm	0.25	0.3
(Cold Values)	Inch	0.01	0.012

Air Cleaner

The important function of the air cleaner is to filter the air entering into combustion chamber so that no dust or chaff etc. enters the engine to cause abrasion and excessive wear. Thus it is most important that the air cleaner should have regular maintenance to continually and efficiently protect the engine from dust and other harmful substances.

The air cleaner comprises of the following parts,

Body Air-Cleaner

This serves as the main frame for housing all parts associated with the air cleaner system.

Cyclopack or built-in Pre-Cleaner

The coarse dust particles are separated by the curved blades of the Cyclopack and get collected in the dust collector (A).

Paper element filter

Paper element filter (C) screens the fine impurities. This has to be cleaned by compressed air during every service or earlier if required. The filter should be replaced after every 2 cleanings or 900 hrs. or earlier if required.

Safety Cartridge

Safety cartridge (D) fits inside the paper element filter. It is a safeguard against uncontrolled dust entry into engine due to paper filter element rupture and also when the paper element is removed for cleaning

Dust Collector Bowl

It collects the dust and releases it automatically.

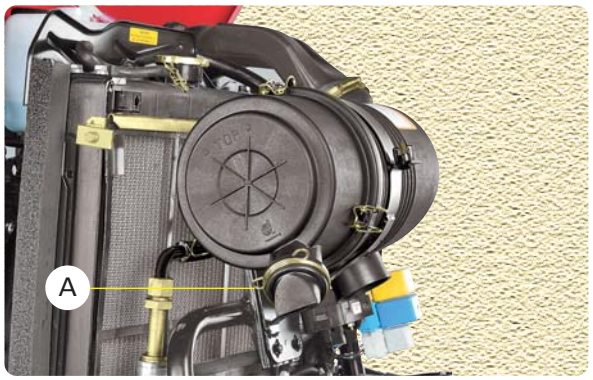
The following are the service instructions for the Air Cleaner assembly :

1. Check functioning of auto unloader of the dust collector regularly.
2. Paper element of air cleaner should be cleaned with compressed air every 300 hrs. or earlier if required.
3. Paper element of air cleaner should be replaced after every 2 cleanings or 900 hrs. or even earlier if required.
4. Safety Cartridge should be replaced after every 900 hrs. or earlier if required.
5. Assemble the air cleaner and refit the same on the Tractor ensuring all joints to be leak-proof.
6. After ensuring all fittings to be O.K., start the Tractor.

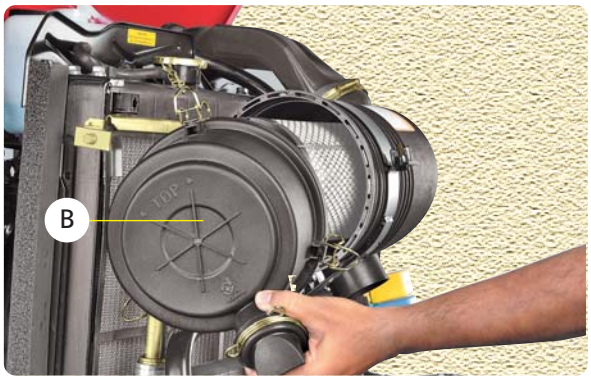
NOTE : During every service of dry type air cleaner, the paper element should be cleaned with compressed air directed from inside to outside. Even after this if the element is found choked, replace it with a new one. Do not use dirty or damaged paper element as the impure air may severely reduce the engine performance/ life.

Hose and Clamps

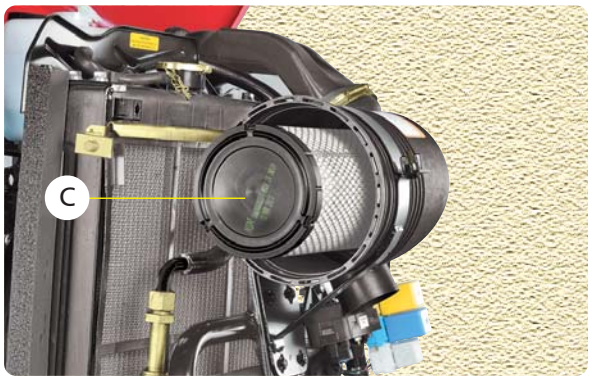
Check Hose clamps for proper tightness.



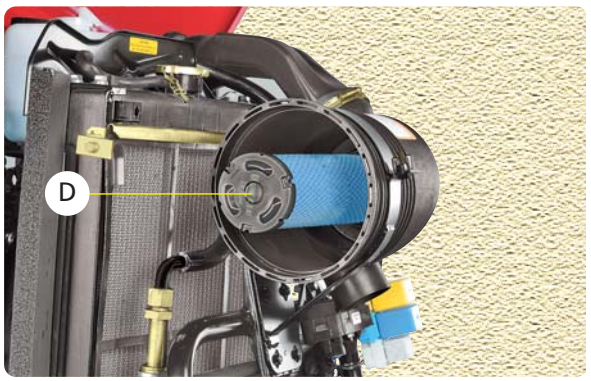
Dust Unloader



Cyclopack



Primary Element Filter



Safety Cartridge

Clean Diesel Fuel

Diesel Fuel should be poured so that no sediment can enter the tractor fuel tank whilst it is being filled. Fuel storage facilities should allow for the periodic removal of sediment from the bottom of the storage tank.

The Diesel fuel filters will remove any sediment still present in the fuel and ensure that the fuel reaching the injection pump and injectors is free of impurities. The fuel filter should be serviced regularly to ensure maximum engine reliability.

Bleeding the Fuel Filter

The presence of air in the fuel can cause fuel stoppages. The air should be completely bled so that the machine operates satisfactorily. Loosen the banjo bolt (B) on FIP side of filter. Operate hand primer (A) on fuel filter till you get the flow of fuel free of air from the banjo. Re-tighten the banjo bolt (B).

Bleeding the Fuel Injection Pump

Loosen the High-Pressure pipes at the nozzle end. Operate the hand primer (A) on fuel filter till you get a streamline flow of fuel from the High-Pressure pipes. Retighten the High-Pressure pipes and start the engine. Observe till the engine runs smoothly and then shut-off till further use.

Fuel Tank and Fuel Pipes

Fill the tank each time the tractor finishes the days work. This prevents condensation inside the fuel tank. Check regularly to ensure all fuel pipe unions are tight and in good order. Ensure that vent hole provided on fuel tank cap is not choked. Water or dirt settled in the bottom of fuel tank should be drained daily, before starting the engine by loosening the drain cock till clean diesel flows.

Tamper Proofing

Calibration of Fuel Injection Pump plays a vital role in Engine performance and hence the same shall not be disturbed by unauthorised persons.

In order to prevent tampering, a tamper-proof arrangement is provided on Fuel Injection Pump consisting of SPECIAL SEALS (C). Any FIP related work should be carried at Mahindra / BOSCH authorised dealership.

⚠ CAUTION

Escaping hydraulic diesel fluid under pressure can penetrate the skin causing serious injury.

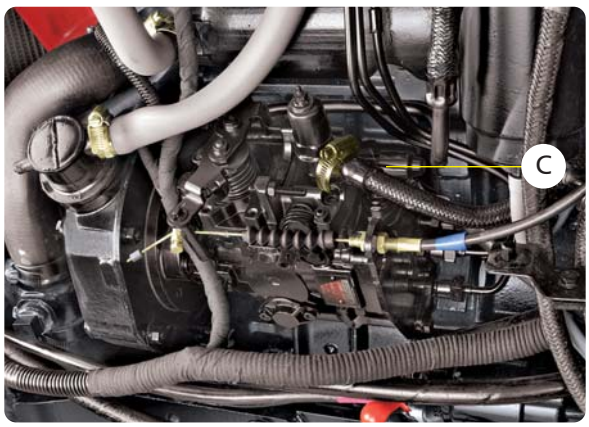
Do not use your hand to check for leaks. Use piece of cardboard or paper to search for leaks.

Stop engine and relieve pressure before connecting or disconnecting lines.

Tighten all connections before pressurizing lines.

If any fluid is injected into the skin obtain medical attention immediately or else, serious injury may result.

Tractor Front



Fuel Filter

This filter provides clean, moisture free fuel for the injection process. A hand primer is provided to manually remove excess air from the fuel filter and fuel lines.

Major Components:

- Hand Primer (F)
- Air Bleeding Screw (G)
- Fuel Filter (D)

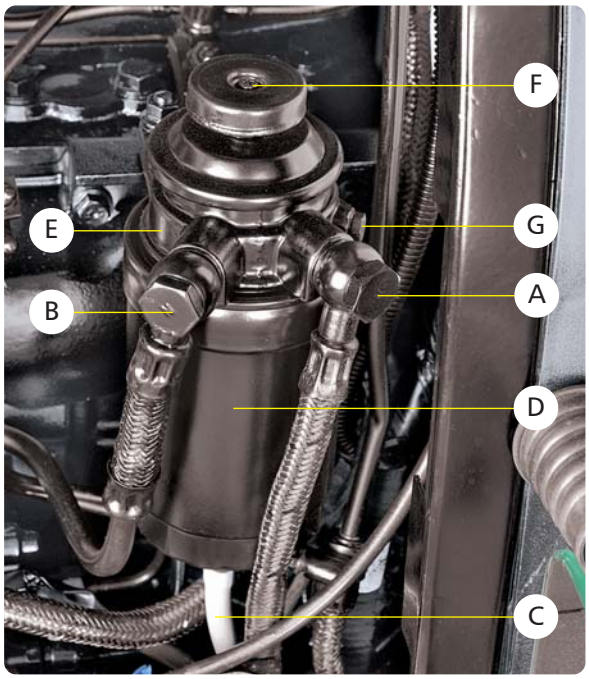
Fuel enters the filter at inlet (A) and flows through the filter element separating water it contains before flowing through outlets (B) to the fuel injection pump.

Since water and contaminants settle at the bottom of the sediment bowl, a drain plug is provided at the bottom of the filter. Drain water in fuel, by loosening drain plug once every 50 hrs. of operation.

To drain water in fuel, loosen the drain plug upto 1 or 2 turns. During loosening drain plug, place a small tray to collect the water coming from pipe (C). Retighten the drain plug by hand.

Servicing the fuel filter

1. It is recommended to replace the fuel filter every 500 hrs.
2. To remove Filter, unscrew the filter (D) from adaptor (E).
3. Check O'rings of fuel filter for any crack / damage. Smear oil on the new O'ring before installation.
4. Clean the adaptor with clean diesel from inlet and outlet. Ensure no dirt, foreign particles entangled in flap valves or filter head.
5. Assemble the new filter. Do not over tighten.
6. Prime the system and bleed the filter. Tighten the bleeding screw.



Tractor Front

Note : Drain water once in a week or earlier if water contamination is excessive. Continued driving with water accumulation in fuel filter will cause damage to fuel pump / other fuel system components.

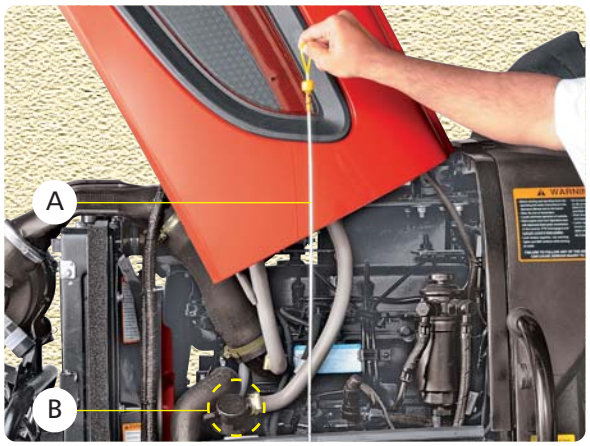
Note : Replace fuel filter at the recommended period or whenever it gets clogged. Discard the old filter and do not repair or clean the filter.

Always fit the spin-on filter dry.

Oil Level Check

Check engine oil before starting the engine.

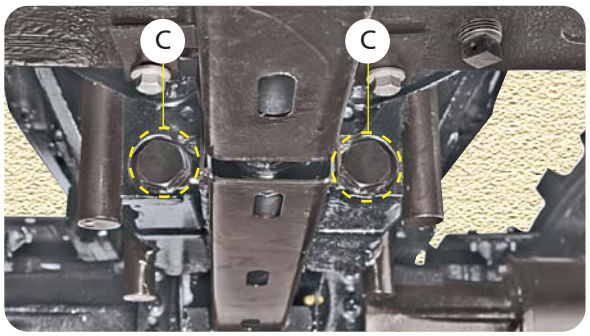
1. Remove dipstick gauge (A) provided on the left hand side of the crankcase.
2. Oil level should be between the two marks provided on the dipstick (A).



Oil Change

Change engine oil as per Routine Service Schedule Chart given in this manual.

1. Ensure that the engine is stopped before changing oil.
2. Remove the drain plug (C) provided at bottom of oil sump.
3. Allow the oil to drain at least for five minutes. All the oil can be drained out when engine is still warm.
4. Now reinstall the drain plug. Service the oil filter as explained below.
5. Remove the breather cum oil filler cap (B) to expose the oil filler neck.
6. Refill the oil sump slowly by recommended grade of oil (15W40) from the oil filler neck.
7. Clean and place the breather again.



Engine Oil Filter

The life of engine depends upon clean oil being circulated to its bearings. In the normal course of engine operation the lubricating oil undergoes changes which produce harmful by-products. The purpose of the oil filter is to separate and remove dirt and other injurious foreign materials from the oil and prevent these from being circulated in the engine.

The oil filter (D) should be replaced as per Routine Service Schedule Chart given in this manual or whenever engine oil is changed.

Changing Spin On Filter

1. Ensure that engine is stopped before changing filter.
2. Unscrew the oil filter (D).
3. Prime the new spin-on filter with clean oil.
4. Screw the new filter to the adapter.
5. Move the Hand and foot throttle to engine "Idle" position.
6. Start the engine, check the oil pressure gauge to see whether the lubricating oil is circulating through the Engine.
7. Inspect the oil filter (D) for oil leaks.

Note : Stop the engine immediately if Oil pressure is not recorded within 10 seconds of engine starting or Leakage is observed. Get the cause identified and rectified before proceeding further.

Note : Engine oil and filter element must be changed after initial 100 hrs. of operation in new tractor or whenever major overhaul of engine is carried out and subsequently after every 200 hrs. respectively.

To avoid delays, we recommend that you carry extra filter elements on hand so that replacements can be made at the correct time. The FILTER is located on the right-hand side of the crankcase.

Filling oil consumes time. Allow sufficient time for the oil to settle down in crankcase.

Battery Maintenance Cleaning

Battery terminals must be kept clean and tight. The cable terminals will corrode and interfere with battery performance unless regularly checked. A light smear of petroleum jelly on the terminal posts and connections will help to resist corrosion.

Occasionally remove the connections and clean the terminal posts with wire wool or emery cloth, smear with petroleum jelly and reassemble.

Wash the battery top with warm water and soda. Ensure that none of this solution gets into the battery cells. Finally rinse with plain water. The vent holes in the filler caps should be open at all times.

Servicing

Check the battery at every 50 hrs. of operation for electrolyte level and specific gravity. If the battery shows need of charging it must be given immediate attention. Keeping the battery fully charged not only preserve its life but makes itself available for instant use when needed.

When replacing the battery the earth cable must be connected to the negative (– ve) terminal and the battery cover secured in its correct position.

Do not, under any circumstances, allow an electric spark or open flame near the battery, during or immediately after charging. Do not lay steel tools across the terminals, as this may result in a spark or a short circuit which could cause an explosion. Be careful to avoid spilling electrolyte on hands or clothing.

Effect of Low Temperatures

Battery capacity is greatly reduced in cold condition which has a decided numbing effect on the electrochemical action of the battery. Based on ambient temperature cranking power is available as listed below:

At 80°F : 100%

At 32°F : 65%

At 0°F : 40%

If your tractor is not to be operated for some time during winter months, it is advisable to remove the battery and store in a dry place where the temperature will not fall below freezing point.

Maintaining the electrical system in good working order will enable the alternator to provide the current needed necessary to keep battery fully charged thus ensuring maximum efficiency of the electrical devices.

Ensure that the terminals are clamped tight, and the battery is securely fastened down in the battery tray.

Do not over-tighten.

⚠ WARNING

When the alternator is charging, an explosive gas is produced inside the battery. Therefore always check the electrolyte level with the engine stopped. Do not use an exposed flame and do not smoke while checking the battery.

⚠ CAUTION

Before working on any part of the electrical system disconnect the battery ground cable. Do not reconnect this cable until all electrical work has been completed. This will prevent short circuits and damage to electrical units.

Electric storage batteries give off a highly inflammable gas when charging and continue to do so some time after receiving a steady charge

Note : Contact 'Exide' Dealer for Warranty.

Website : www.exideworld.com

Phone : 1 - 800 - start it

Alternator

Following checks of alternator charging system will avoid many problems that might otherwise develop.

1. Check belt tension. Refer your operator's manual (page no. 57) for proper belt tension.
2. Keep pulley nut tight.
3. Check alternator terminals and cable connections for good condition, secure fastening and freedom from corrosion.
4. Check battery cables and connections for good condition, secure fastening and freedom from corrosion.
5. Check electrolyte level in battery. If battery will not take adequate charge, or is otherwise unsatisfactory replace battery.

Note : Alternator Maintenance should be done by authorised dealer.

Too tight a belt will cause rapid wear of belt and damage to bearings.

A slack belt will not drive the Alternator, and therefore the battery will not be charged.

Charging Circuit

If the battery is in a low state of charge, which will be shown by lack of power when starting, poor lights and hydrometer readings below 1.200 and may be due to either alternator not charging or giving lower intermittent output, then proceed as below :

- Check Battery Charging Indicator when the engine is running steadily at working speed.
- If the Battery Charging Indicator glows, have the equipment checked by your Mahindra tractor dealer.
- Inspect alternator drive belt and adjust as necessary.
- Examine the charging and field circuit wiring, tighten any loose connections, replace any broken cables, pay particular attention to the connections.

⚠ WARNING

To avoid damage to alternator charging system, service precautions should be observed as follows,

1. Never make or break any of the charging circuit connections, including the battery when engine is running.
2. Never short any of the charging components to ground.
3. Do not use a jumper battery of higher than 12 volts.

Always disconnect the battery ground cable before carrying out arc welding on the tractor or any implement attached to the tractor.

Use only specified cable for replacement

Starter Motor Removal

1. Disconnect the battery to starter solenoid coil cable, earth cable from the battery, Key Switch to solenoid coil cable.
2. Remove the mounting bolts and withdraw the starter motor. To install the starter motor, reverse the above procedure.

IMPORTANT

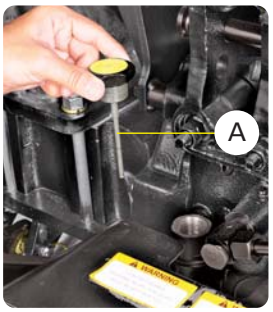
Should the starter motor be removed, and a replacement motor or drive end bracket be fitted, a check must be made of the out of mesh clearance after assembling the starter motor to the engine. The dimension between the leading edge of the pinion and the engine flywheel should be no less than 0.32 cms.

Adding Hydraulic and Transmission Oil

Oil for hydraulic system & transmission is common in this tractor and reservoir for this common oil is the transmission case. Change Hydraulics and Transmission oil initially at 50 hrs. and subsequently at every 350 hrs. of operation. While changing, oil has to be filled in rear housing. Check the level of oil in the transmission & hydraulic reservoir as follows:

1. Keep the tractor on level ground.
2. Clean the area around dipstick cum filler cap (A) before removing.
3. Unscrew and remove the dipstick cum filler cap (A).
4. Clean the dipstick cum filler cap (A) and refit it in the housing.
5. Again unscrew the Dipstick cum filler cap and observe the level of oil on Dipstick of filler-level plug (A).
6. The oil level should be maintained between upper and lower mark on the Dipstick cum filler cap.
7. Add oil of specified grade only whenever required.


Dipstick Location



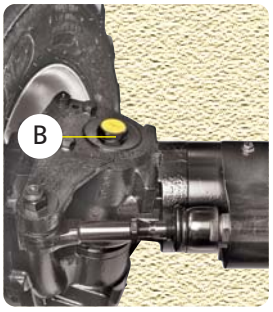
Oil Level Check


Oil Filling Location

Front Axle

Oil Level Checking

To check the oil level, keep the tractor on level ground. Clean the area around dipstick (B), remove the dipstick, clean it and refit it in the housing till it reaches its bottom. Again remove the dipstick and check oil level. The oil level should be maintained between upper and lower mark on it.



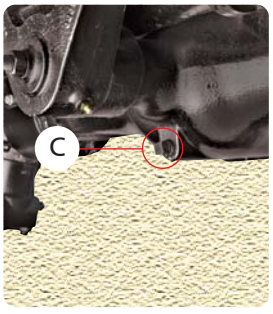
Dipstick Location

Oil Level Check

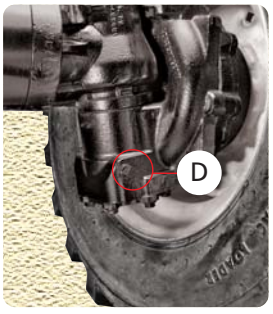
Draining Front Axle Oil

Drain oil from differential housing (C) as well as left hand side and right hand side hub housing (D) through respective drain plug.

Remove the respective drain plug and allow the oil to drain out. Be patient and allow the oil to drain for sufficient time. Refit the plug.



Oil Drain Plug



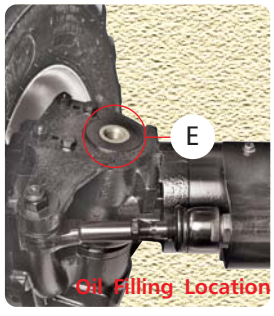
Oil Drain Plug

Filling Front Axle Oil

Reassemble the drain plug and fill the oil gradually from the oil filler neck till the oil reaches desired level on the dipstick. Be patient and wait till the oil settles down in housing before checking oil level on the dipstick.

Top-up Oil to Front Axle

To top-up oil in the front axle, open the dipstick (B) on both sides of swivel housing and refill oil via filling port (E) upto the required level and refit the dipstick. Ensure tightening the dipstick properly.

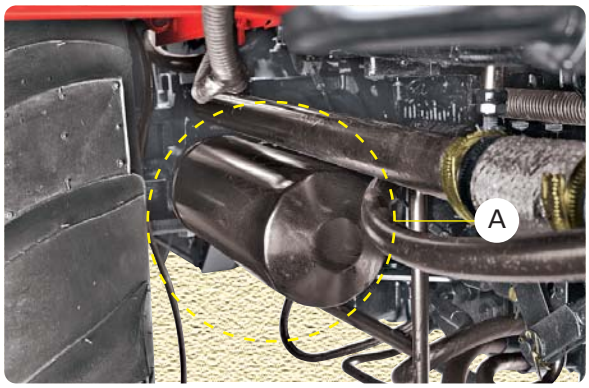


Hydraulic and Transmission Suction Oil Filter

Change Hydraulics and Transmission oil filter (A) initially at 50 hrs. and subsequently at every 350 hrs. of operation.

These Spin-on type filters are located behind on RH side of the tractor. Remove old spin-on filters.

Prime the new spin-on filter with clean oil, and fit them.



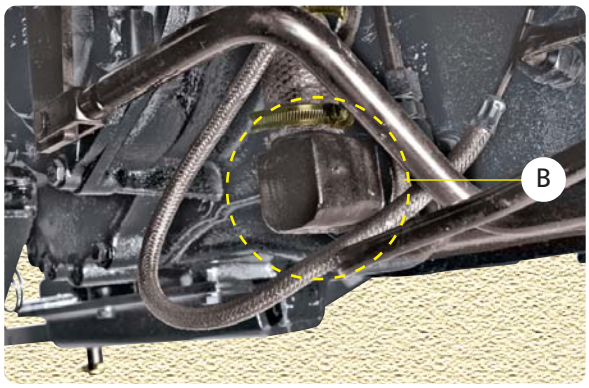
Note : The Hydraulic and Transmission filter though resembles with engine oil filter, it differs in construction and usage. Hence these are not interchangeable.

Hydraulic and Transmission Strainer

Clean suction strainer during every oil change. The suction strainer (B) is located on RH side of rear housing and can be removed as follows:

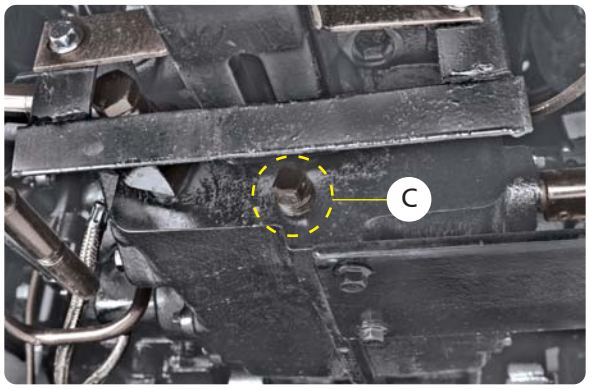
1) Remove suction filter of Hydraulic & Transmission.
2) Remove the Cover Plate (B) by unscrewing four bolts.
3) Pull the suction strainer out from housing.
4) Clean the strainer in clean diesel fuel, using a soft brush, then blow dry with compressed air.
5) Refit the strainer.
6) Refit the cover plate and suction filter.

   For Service / Replacement of strainer contact your Mahindra Dealer.



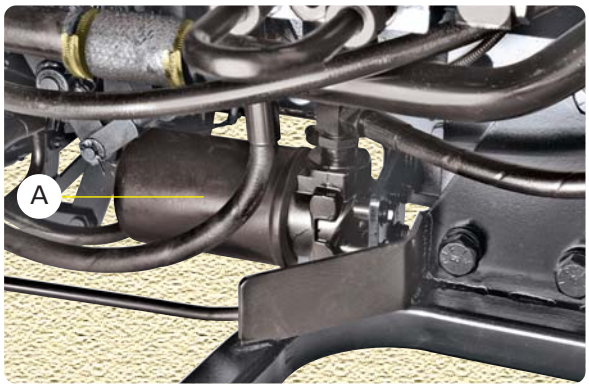
Transmission Oil Drain

Drain plug (C) is provided on the transmission for draining transmission oil. The drain plug located at the bottom of the transmission case.



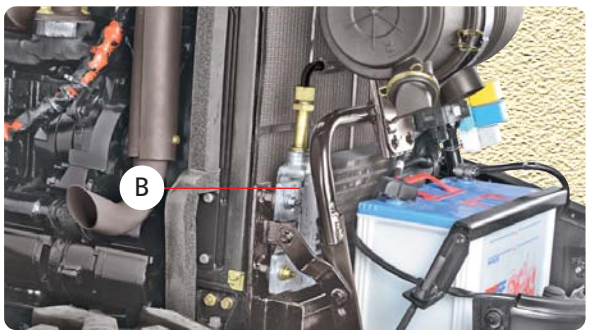
Hydrostatic Transmission (HST) Oil Filter

Change HST oil filter (A) initially at 50 hours and subsequently at every 350 hours of operation.



Transmission Oil Cooler

Transmission Oil Cooler (B) is fitted in front of the radiator. It helps in cooling the transmission oil to have better performance.



DO'S

1. Ports to be protected from ingress of dirt and foreign particles.
2. Always keep oil cooler in vertical position to avoid fin damage.
3. Use correct torquing of oil cooler inlet and outlet connectors.
4. Periodically remove fin clogging with pressurized air flow from reverse side of oil cooler.
5. Always use filtered oil.
6. Periodically clean inside passage of cooler with "Try Chloro Ethylene" to remove tubulator clogging.

DONT'S

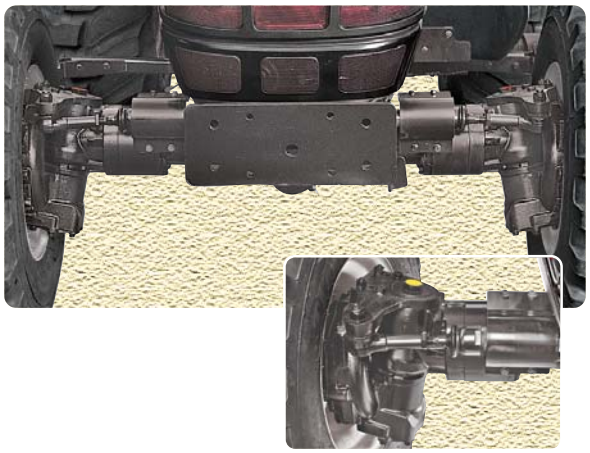
1. Do not rinse the oil cooler with water.
2. Do not pressurize cooler beyond 300 psi pressure.
3. Do not paint the threaded area and spot face / sealing surface.
4. Do not paint the fins.
5. Do not weld or fit any type of mounting on cooler.
6. Do not repair the cooler if it is leaking. Incase of leakage, replace with new unit.
7. Do not try to tilt elbow / toil ports as these are brazed to avoid physical damage.
8. Do not use damaged oil cooler.

Front Axle - Front Wheel "Toe-in" Check

In the event of the tie rod setting being interfered with, it is necessary to adjust the TOE-IN. Before measuring and adjusting the TOE-IN, ensure the front wheels are in the straight ahead position and the front axle is not tilted.

After adjusting the front wheel tread and with all connections secured, the front wheel Toe-in shall be as follows,

MODEL	Toe-in Value	
	inch.	mm.
3535 / 4035 / 4535 / 5035	0 - 0.23	0 - 6



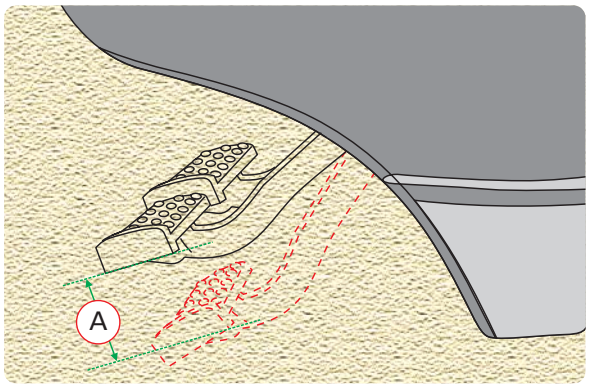
Measure the distance between the outer edges of the wheel rims at the same height as the hub caps. Mark the point measured and turn the wheels half revolution so that the marked points are at the rear. Measure again the distance between these two points and this distance must be the same as measured before without variance. To adjust the TOE-IN shorten or extend the tie rod clockwise or anti-clockwise.

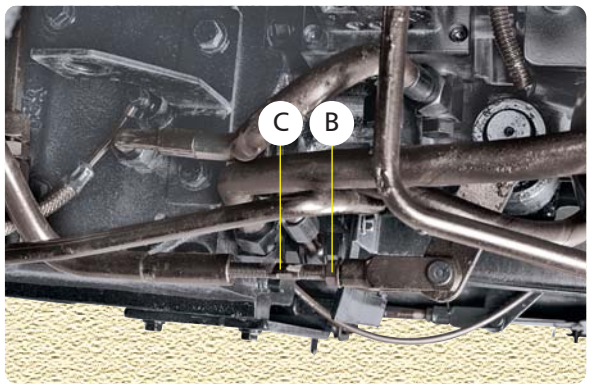
Check and adjust brake pedal free play

Measure free play of pedal stroke (A). Ensure free play is within specified limits. If free play is not within specified limits, adjust brake linkage as shown below.

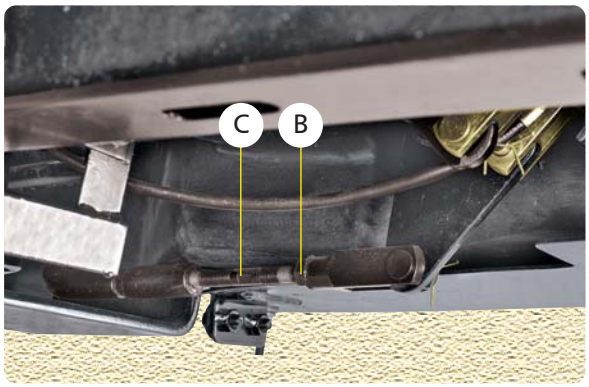
Free Play - Distance 1.57 to 1.77 inch (40 to 45 mm)

1. Loosen jam nut (B).
2. Turn the Turn Buckle (C) anti-clockwise to increase play and clockwise to decrease play.





Brake Setting from RH Side



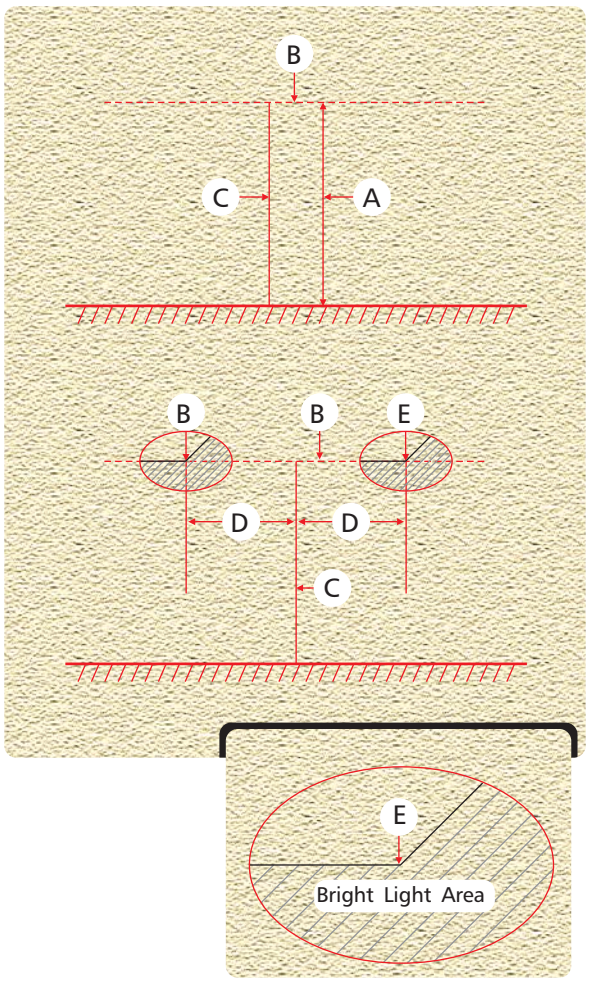
Brake Setting from LH Side

Head lamp adjustment

1. Tighten screws (W), (X), (Y) and (Z) fully.
2. Turning screw (W) & (Y) in anti-clockwise direction will raise the Beam.
3. Turning screw (X) & (Z) in anti-clockwise direction will lower the Beam and move towards Right of the operator's view.

Aiming Head Lamps

1. Park tractor on level ground, with lights 9.8 ft. (3 m) from a wall.
2. Measure centre of head lamp to ground height (A). Place a strip of masking tape (B) on the wall at the same height.
3. Place a piece of tape, folded in the middle to make a point, on the top front center of the Hood.
4. Using the Hood tape as a guide, sight across steering wheel and Hood to locate tractor center line. Mark tractor center line (C) on wall.
5. From tractor center line (C), mark a point (D) 5 inch. (127 mm) out in each direction.
6. Turn light switch to dim position.
7. Locate point (E) of bright light projected by each lamp by adjusting screws (W), (X), (Y) and (Z) as required. Cover other lamps, if necessary.



General

Oil has a limited working life after which the effects of time, condensation, engine heat and by-products of combustion will combine to reduce its lubricating properties. **It is therefore, detrimental to use a lubricant for more than the specified period.** The intervals between lubricant changes detailed in this manual have been determined after prolonged tests and have been proved the most suitable for normal operation. **In extremely arduous conditions, however, it may be necessary to reduce these periods** and this point should be discussed with Mahindra tractor dealer.

Oil can go bad while in the engine due to condensation and leakage of Diesel. Also running of engine in cold conditions may lead to such contamination.

Lubricant Storage

Tractors can operate efficiently only when clean oils are used Oils when stored shall be protected from dust, moisture and other contaminants. Store containers on their side to avoid water and dirt contamination. Please ensure that old and used oils are suitably disposed.

Alternate and Synthetic Lubricants

Conditions in certain locations may warrant usage of other lubricants than specified in the manual. In such cases the alternates may be used provided they meet the minimum performance levels specified.

Synthetic lubricants may be used if they meet minimum performance levels specified in the manual. Manufacturers of these oils may be consulted for temperature applicability and suitability.

Bio-degradable oils and fuels are not advised.

Diesel Engine Lubricating Oil

Engine oil (for use in the crankcase) should be a well refined petroleum oil free from water and sediment.

Heavy duty oils are additive type oils possessing the oxidation-stabilising, anti-corrosive and anti-sludging properties necessary to make them generally suitable for high speed diesel engines. They provide the most satisfactory lubrication and should be used in diesel engines with present day diesel fuels. The quality of the base oil and the amount and type of additives used, determines their suitability for use in high speed diesel engines under severe operating conditions and also their suitability for use with diesel fuel containing sulphur or other injurious products.

Please note that engine breathes even while it is not running and once condensation take place rapid deterioration of oil may happen.

Hence idle time for the engine should not be longer than one year but it is advisable to check the oil after 6 months.

High-speed diesel fuels and lubricants should be procured from a reliable source. When in doubt, consult your Mahindra tractor dealer.

Mixing of Lubricants

It is generally advised not to mix different brands or types of oil.

Certain additives blended by the oil manufacturers to meet certain performance levels may adversely affect that of other brands causing compatibility problems.

NOTE : The term heavy duty as used here does not refer to the viscosity rating or “weight” of the oil.

Engine Oil

Refer table A for oil specifications. Other oils can be used if they meet minimum requirement of :

- API service classification CF4 + Mb228.1
- CCMC D-4 / G-4 / PD-2
- MIL - L - 2104E.

Multi-Viscosity Diesel Engine oils are preferred.

Selecting the Viscosity of Engine Oil (EO)

During cold weather the selection of oil should be based on the coldest anticipated operating temperature to make starting easier.

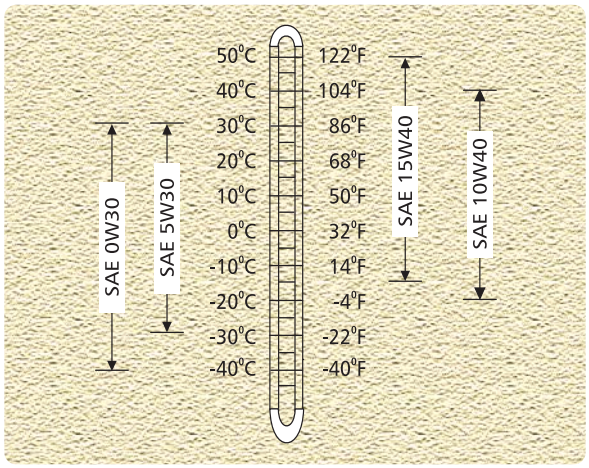
During hot weather, selection should be based on the highest anticipated operating temperature.

When the prevailing temperature changes substantially, even though the regular intervals of lubricant change have not been reached, the lubricant must be changed.

Refer Oil Specifications Chart for oil specifications at different range of ambient temperatures.

Ambient temperature conditions in other range warrants other SAE grade of oil as per illustration.

Note : If diesel fuel with sulphur content greater than 0.05% is used, reduce the service interval by 50%.



Note : It is not necessary to change the lubricant when the temperature enters into a different range during a working day, unless difficulty in starting is experienced.

Change oil if the tractor is not used for 6 months.

PRECAUTIONS :

After changing the oil, operate the engine at low speed without load, for at least 5 minutes. This will allow the oil to work into the bearings and onto the cylinder walls.

* Factory filled oil is 15W40 and may change in future.

* Factory filled oil is Enclo 46 and may change in future.

Transmission, Hydraulics and Oil Immersed Brakes

Use mild EP type gear lubricant. They should meet API GL4 performance category with suitable additives compatible for paper based brake liner and taking care of noise. Use viscosity based on the expected air temperature range during the period between oil changes.

Please refer Oil Specifications Chart for oil specifications at different range of ambient temperatures.

Following oils are recommended.

1. GULF Universal Tractor Transmission Fluid
2. Exxon Torque fluid 56
3. Shell Donax TD
4. Mobil fluid 424
5. Tractelf BF 12
6. Tractelf C4 - 1000
7. Hydro Clear Power Train Fluid

Other brands may be used if they meet all the specifications and performance levels of the above.

Chassis Lubricant (CL)

Use good grade of grease designed for pin and bushings on agricultural equipment. Lithium or aluminum complex type grease with high viscosity base oil, tackiness and molybdenum disulphide are suitable. Grease approved for the NLGI certification mark GC-LB are recommended.

Grease must be SAE Multipurpose High Temperature Grease with Extreme Pressure (EP) performance and capable of operating at assembly temperatures above 150°C (302°F)

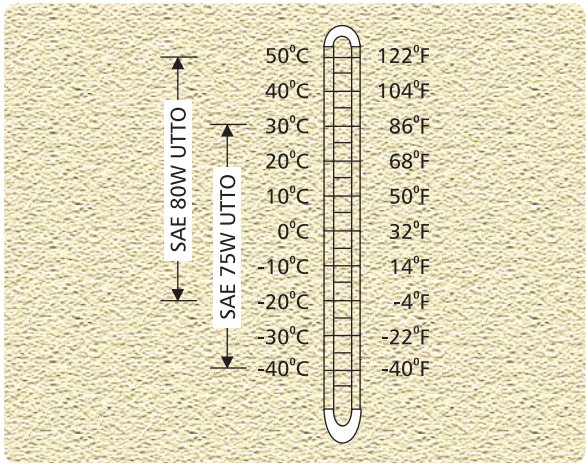
Depending upon the expected ambient temperature range during the service interval, use grease as shown on the Oil Specifications Chart.

Front Axle

Use gear oil complying to API GL5, MIL-L-2105D specifications. Please refer Oil Specifications Chart for oil viscosity grade at different range of ambient temperatures.

Following oils are recommended,

1. Chevron RPM Universal Gear Lubricant SAE 80W90
2. Texaco Havoline Gear Oil 80W90
3. Total Transmission DA 80W90
4. Shell Spirax Heavy Duty 80W90
5. Mobilube HD Plus 80W90



Note : Universal Tractor Transmission Oil. Oil shall meet API GL4 performance category.

Factory filled oil is Tractelf MM H3 and is subject to change in future.

Grease Type	Temperature Limits
Arctic Grease	Below -30°C (-22°F)
SAE (NLGI) #0	-30°C to 10°C (-22°F to 50°F)
SAE (NLGI) #1	-20°C to 20°C (-4°F to 68°F)
SAE (NLGI) #2	14°F to 122°F (-10°C to 50°C)

* Factory filled oil is SAE80W90EP complying to API GL5, MIL-L-2105D specifications and is subject to change in future.

Oil Specifications Chart (Table A)

Sr. No.	Application	Capacity Gallon / Quarts	Anticipated minimum air temperature				
			–40 to +88^{0}F	–22 to +88^{0}F	–4 to +122^{0}F	+32 to +104^{0}F	+50 to +122^{0}F
1	Crankcase	3 Cyl. 1.58 / 6.32 4 Cyl. 2 / 8.03	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40	SAE 15W40
2	Transmission & Hydraulics	10.03 / 40.12	SAE 75W UTTO		SAE 80W UTTO listed above.		
3	Lubrication Fittings	C. L.	NLGI No. as recommended				
4	Front Axle - 3535	1.71 / 6.84	SAE75W90EP		SAE80W140EP	SAE80W90EP	SAE80W140EP
	4035, 4535 & 5035	2.24 / 8.96	SAE80W90EP listed above for ambient temperature range - 4^{0}F to 104^{0}F				

Special Bolt Torques

	Lbs. ft	Nm
Bolt for cover cylinder head	9 - 11	12 - 15
Bolt cylinder head	44 - 48	60 - 65
Bolt crankshaft gear	44 - 55	60 - 75
Bolt crankshaft main bearing cap	66 - 70	90 - 95
Bolt connecting rod	29 - 33	40 - 45
Bolt flywheel mounting	44 - 51	60 - 70
Bolt for drawbar mounting	74 - 81	100 - 110
Nut carrier rear axle	74 - 91	100 - 124
Drain plug for engine oil pan	22 - 29	30 - 40
Bolt fender mounting M8	20 - 24	27 - 33
Bolt fender mounting M10	22 - 29	30 - 40
Nut steering wheel	29 - 33	40 - 45
Nut rear wheel	166 - 170	225 - 230
Bolt front wheel	85 - 96	115 - 130
Bolt for semi chassis mounting	129	175
Transmission drain plugs	51 - 57	70 - 77
Axle mounting bolts	221 - 258	300 - 350

MAHINDRA – 3535 HST

ENGINE

Four Stroke, Naturally Aspirated, Direct Injection, Water Cooled Diesel Engine

Model	:	CE 35
No. of Cylinders	:	3
Displacement	:	115.4 cubic inch.
Bore	:	3.5 in.
Stroke	:	4 in.
Compression Ratio	:	19.4:1
Max. Engine Hp* (Manufacturing Rating)	:	35 max. as per DIN-70020
Rated Speed	:	2800 rpm
High Idle r.p.m.	:	2975 ± 50
Low Idle r.p.m.	:	1000 ± 50
Fuel Injection Pump	:	Rotary FIP with I-KSB Unit MICO (BOSCH INDIA)
Cylinder Sleeve	:	Wet-Replaceable
Air Cleaner	:	Dry type with safety cartridge & automatic dust unloading
Exhaust Muffler	:	Under Hood, Horizontal, Downswept
Firing Order	:	1 - 3 - 2
Accelerator	:	Hand & Foot Accelerator
Injector Opening Pressure	:	3510 - 3742 PSI

ELECTRICAL STARTING AND LIGHTING

Battery Capacity	:	12 volt, 96 amp
Starter	:	Solenoid engaged. Key start with interlock safety neutral switch.
Alternator	:	12 volt, 45 amp
Instrument Cluster	:	Water Temperature Gauge, Fuel Gauge, Voltmeter, Electronic RPM Meter + Hour Meter, Battery Charging Indicator. Tell-tales : LH & RH Turn Indicators, High Beam Indicator, Parking Brake Indicator, 4WD Indicator.
Lighting	:	Head Lights, Direction Indicator, Front and Rear Position, Brake Lamp, Plow Lamp.
Heater Plug System for Cold Starting	:	Main Components : 1. Heater Plug 2. Timer Relay

TRANSMISSION

Type	:	HST, with Safety Neutral Switch in Forward / Reverse
	:	Range Section Full Constantmesh
No. of gears	:	3 Range HST

STEERING : Hydrostatic with Tiltable Column

POWER TAKE OFF

Type	:	Rear Independent PTO shaft
P.T.O. HP* (metric)	:	27.5 max.
P.T.O. RPM	:	540 (6 Splines) (Independent P.T.O.) @ 2404 Engine RPM
PTO System	:	Main Components : 1. PTO Solenoid 2. PTO Relay 3. PTO Flasher Specs : Nominal Voltage : 12 volt Current Consumption : 1 amp

BRAKES

Oil Immersed Wet Brake, Foot operated, independent with provision of interlock for simultaneous operation. A hand brake lever is provided for parking.

Number of lining : 4 each side

HYDRAULIC SYSTEM

Open Center, Full Live Hydraulics with Position and Draft Controls.

Working pressure	:	2900-2972 PSI
Max. lifting force at lower link hitch point	:	2835 lbs.
Pump output	:	11 Gallons/min.
3 Point linkage	:	Category I ball joints with Telescopic Lower Link.

AUXILIARY VALVE

1. Single Spool - Standard
2. Two Spool - Optional, available as kit with Dealer

FRONT AXLE

Mechanical Front Wheel Drive (MFWD) with Bevel Gear Final Reduction.

MAHINDRA – 3535 HST

DIMENSIONS

Length overall	:	123 in.
Width overall	:	69.4 in.
Height overall upto ROPS	:	94.7 in.
Wheel base	:	70.87 in.

TREAD ADJUSTMENT

Front (Industrial)	:	47.6 in. to 48.5 in.
Rear (Industrial)	:	53.1 in.

OPERATING WEIGHT (APPROX.)

Basic tractor including fuel, oil coolant, hydraulic system, 3 point linkage, transmission, P.T.O., lighting and standard wheel sizes.

WEIGHT DISTRIBUTION *

(when measured without optional weights fitted)

Front weight	:	1705 lbs.
Rear weight	:	2420 lbs.
Total weight	:	4125 lbs.

TIRES

Front (Industrial)	:	28 x 8.5 - 15, 6 Ply
Rear (Industrial)	:	43 x 16 - 20, 4 Ply

TURNING RADIUS (MINIMUM)

With brakes	:	112 in.
Without brakes	:	132 in.

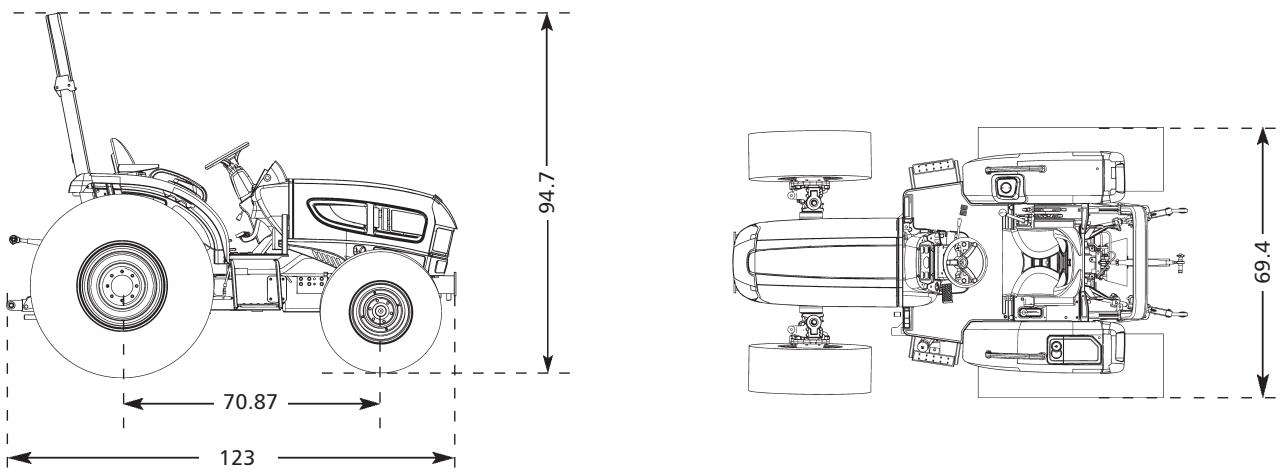
CAPACITIES	US Gallons	Quarts
Fuel Tank	11.36	45.44
Cooling System	1.85	7.4
Engine Oil	1.58	6.32
Transmission	10.03	40.12
Front Axle	1.71	6.84

SPEEDS :

Speed chart in mph.

TIRE	43 x 16 - 20 Industrial	
Gear	Forward	Reverse
Low	2.8	2.8
Medium	6.8	6.8
High	13.3	13.3

Note :- One US gallon = 4 quarts.



Dimensions are in inch and based on Industrial 28 x 8.5-15 front tires and 43 x 16-20 rear tires.

Note : Roll over protection structure is standard fitment on all tractors.

Note : Specifications and design subject to change without notice.

* Manufacturer's estimate under standard condition and subject to change without prior notice.

MAHINDRA – 4035 HST

ENGINE

Four Stroke, Naturally Aspirated, Direct Injection, Water Cooled Diesel Engine

Model	:	CE 40
No. of Cylinders	:	3
Displacement	:	115.4 cubic inch.
Bore	:	3.5 in.
Stroke	:	4 in.
Compression Ratio	:	19.4:1
Max. Engine Hp* (Manufacturing Rating)	:	40 max. as per DIN-70020
Rated Speed	:	2800 rpm
High Idle r.p.m.	:	2975 ± 50
Low Idle r.p.m.	:	1000 ± 50
Fuel Injection Pump	:	Rotary FIP with I-KSB Unit MICO (BOSCH INDIA)
Cylinder Sleeve	:	Wet-Replaceable
Air Cleaner	:	Dry type with safety cartridge & automatic dust unloading
Exhaust Muffler	:	Under Hood, Horizontal, Downswept
Firing Order	:	1 - 3 - 2
Accelerator	:	Hand & Foot Accelerator
Injector Opening Pressure	:	3510 - 3742 PSI

ELECTRICAL STARTING AND LIGHTING

Battery Capacity	:	12 volt, 96 amp
Starter	:	Solenoid engaged. Key start with interlock safety neutral switch.
Alternator	:	12 volt, 45 amp
Instrument Cluster	:	Water Temperature Gauge, Fuel Gauge, Voltmeter, Electronic RPM Meter + Hour Meter, Battery Charging Indicator. Tell-tales : LH & RH Turn Indicators, High Beam Indicator, Parking Brake Indicator, 4WD Indicator.
Lighting	:	Head Lights, Direction Indicator, Front and Rear Position, Brake Lamp, Plow Lamp.
Heater Plug System for Cold Starting	:	Main Components : 1. Heater Plug 2. Timer Relay

TRANSMISSION

Type	:	HST, with Safety Neutral Switch in Forward / Reverse
	:	Range Section Full Constantmesh
No. of gears	:	3 Range HST

STEERING : Hydrostatic with Tiltable Column

POWER TAKE OFF

Type	:	Rear Independent PTO shaft
P.T.O. HP* (metric)	:	31.5 max.
P.T.O. RPM	:	540 (6 Splines) (Independent P.T.O.) @ 2404 Engine RPM
PTO System	:	Main Components : 1. PTO Solenoid 2. PTO Relay 3. PTO Flasher Specs : Nominal Voltage : 12 volt Current Consumption : 1 amp

BRAKES

Oil Immersed Wet Brake, Foot operated, independent with provision of interlock for simultaneous operation. A hand brake lever is provided for parking.

Number of lining : 4 each side

HYDRAULIC SYSTEM

Open Center, Full Live Hydraulics with Position and Draft Controls.

Working pressure	:	2900-2972 PSI
Max. lifting force at lower link hitch point	:	3090 lbs.
Pump output	:	11 Gallons/min.
3 Point linkage	:	Category I ball joints with Telescopic Lower Link.

AUXILIARY VALVE

1. Single Spool - Standard
2. Two Spool - Optional, available as kit with Dealer

FRONT AXLE

Mechanical Front Wheel Drive (MFWD) with Bevel Gear Final Reduction.

MAHINDRA – 4035 HST

DIMENSIONS

Length overall	:	123.8 in.
Width overall	:	73.7 in.
Height overall upto ROPS	:	98.7 in.
Wheel base	:	70.87 in.

TREAD ADJUSTMENT

Front (Industrial)	:	52.9 in. to 56 in.
Rear (Industrial)	:	56.3 in. to 59.8 in.
Front (Ag)	:	53.6 in. to 55.2 in.
Rear (Ag)	:	52.1 in. to 60.1 in.

OPERATING WEIGHT (APPROX.)

Basic tractor including fuel, oil coolant, hydraulic system, 3 point linkage, transmission, P.T.O., lighting and standard wheel sizes.

WEIGHT DISTRIBUTION *

(when measured without optional weights fitted)

Front weight	:	1804 lbs.
Rear weight	:	2563 lbs.
Total weight	:	4367 lbs.

TIRES

Front (Industrial)	:	12 x 16.5, 6 Ply
Rear (Industrial)	:	16.9 x 24, 8 Ply
Front (Ag)	:	9.5 x 16, 6 Ply
Rear (Ag)	:	14.9 x 24, 6 Ply

TURNING RADIUS (MINIMUM)

With brakes	:	116 in.
Without brakes	:	136 in.

CAPACITIES	US Gallons	Quarts
Fuel Tank	11.36	45.44
Cooling System	1.85	7.4
Engine Oil	1.58	6.32
Transmission	10.03	40.12
Front Axle	2.24	8.96

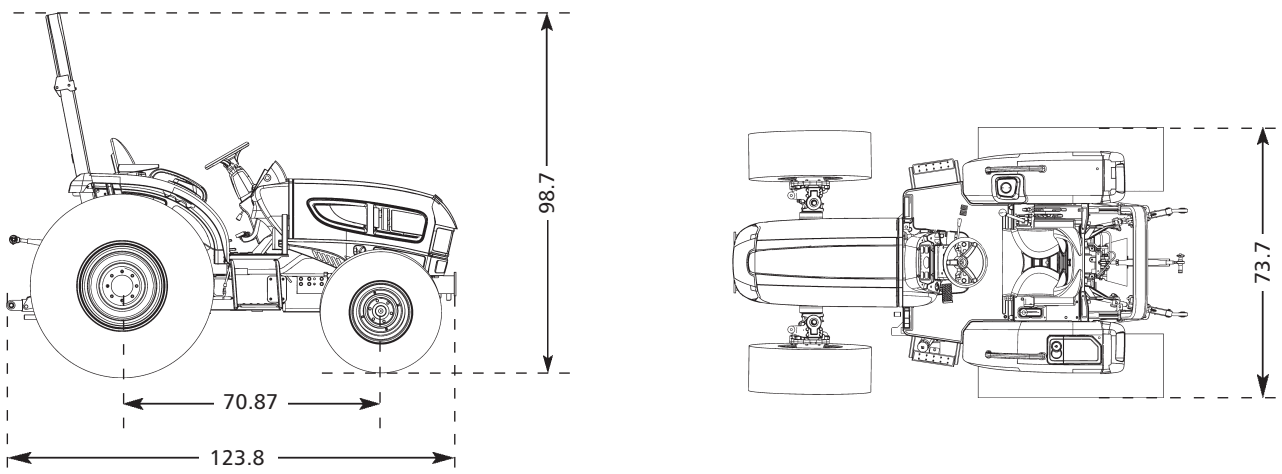
SPEEDS :

Speed chart in mph.

TIRE	16.9 x 24 Industrial	
Gear	Forward	Reverse
Low	3.2	3.2
Medium	8.0	8.0
High	15.5	15.5

TIRE	14.9 x 24 Ag	
Gear	Forward	Reverse
Low	3.52	3.52
Medium	7.75	7.75
High	16.86	16.86

Note :- One US gallon = 4 quarts.



Dimensions are in inch and based on Industrial 12 x 16.5 front tires and 16.9 x 24 rear tires.

Note : Roll over protection structure is standard fitment on all tractors.

Note : Specifications and design subject to change without notice.

* Manufacturer's estimate under standard condition and subject to change without prior notice.

MAHINDRA – 4535 HST

ENGINE

Four Stroke, Naturally Aspirated, Direct Injection, Water Cooled Diesel Engine

Model	:	CE 45
No. of Cylinders	:	4
Displacement	:	153.7 cubic inch.
Bore	:	3.5 in.
Stroke	:	4 in.
Compression Ratio	:	19.4:1
Max. Engine Hp* (Manufacturing Rating)	:	45 max. as per DIN-70020
Rated Speed	:	2800 rpm
High Idle r.p.m.	:	2975 ± 50
Low Idle r.p.m.	:	1000 ± 50
Fuel Injection Pump	:	Rotary FIP with I-KSB Unit MICO (BOSCH INDIA)
Cylinder Sleeve	:	Wet-Replaceable
Air Cleaner	:	Dry type with safety cartridge & automatic dust unloading
Exhaust Muffler	:	Under Hood, Horizontal, Downswept
Firing Order	:	1 - 3 - 4 - 2
Accelerator	:	Hand & Foot Accelerator
Injector Opening Pressure	:	3510 - 3742 PSI

ELECTRICAL STARTING AND LIGHTING

Battery Capacity	:	12 volt, 96 amp
Starter	:	Solenoid engaged. Key start with interlock safety neutral switch.
Alternator	:	12 volt, 45 amp
Instrument Cluster	:	Water Temperature Gauge, Fuel Gauge, Voltmeter, Electronic RPM Meter + Hour Meter, Battery Charging Indicator. Tell-tales : LH & RH Turn Indicators, High Beam Indicator, Parking Brake Indicator, 4WD Indicator.
Lighting	:	Head Lights, Direction Indicator, Front and Rear Position, Brake Lamp, Plow Lamp.
Heater Plug System for Cold Starting	:	Main Components : 1. Heater Plug 2. Timer Relay

TRANSMISSION

Type	:	HST, with Safety Neutral Switch in Forward / Reverse
	:	Range Section Full Constantmesh
No. of gears	:	3 Range HST

STEERING : Hydrostatic with Tiltable Column

POWER TAKE OFF

Type	:	Rear Independent PTO shaft
P.T.O. HP* (metric)	:	36.5 max.
P.T.O. RPM	:	540 (6 Splines) (Independent P.T.O.) @ 2404 Engine RPM
PTO System	:	Main Components : 1. PTO Solenoid 2. PTO Relay 3. PTO Flasher Specs : Nominal Voltage : 12 volt Current Consumption : 1 amp

BRAKES

Oil Immersed Wet Brake, Foot operated, independent with provision of interlock for simultaneous operation. A hand brake lever is provided for parking.

Number of lining : 4 each side

HYDRAULIC SYSTEM

Open Center, Full Live Hydraulics with Position and Draft Controls.

Working pressure	:	2900-2972 PSI
Max. lifting force at lower link hitch point	:	3090 lbs.
Pump output	:	11 Gallons/min.
3 Point linkage	:	Category I ball joints with Telescopic Lower Link.

AUXILIARY VALVE

1. Single Spool - Standard
2. Two Spool - Optional, available as kit with Dealer

FRONT AXLE

Mechanical Front Wheel Drive (MFWD) with Bevel Gear Final Reduction.

MAHINDRA – 4535 HST

DIMENSIONS

Length overall	:	128.9 in.
Width overall	:	73.7 in.
Height overall upto ROPS	:	98.7 in.
Wheel base	:	75 in.

TREAD ADJUSTMENT

Front (Industrial)	:	52.9 in. to 56 in.
Rear (Industrial)	:	56.3 in. to 59.8 in.

OPERATING WEIGHT (APPROX.)

Basic tractor including fuel, oil coolant, hydraulic system, 3 point linkage, transmission, P.T.O., lighting and standard wheel sizes.

WEIGHT DISTRIBUTION *

(when measured without optional weights fitted)

Front weight	:	1782 lbs.
Rear weight	:	2695 lbs.
Total weight	:	4477 lbs.

TIRES

Front (Industrial)	:	12 x 16.5, 6 Ply
Rear (Industrial)	:	16.9 x 24, 8 Ply

TURNING RADIUS (MINIMUM)

With brakes	:	120 in.
Without brakes	:	140 in.

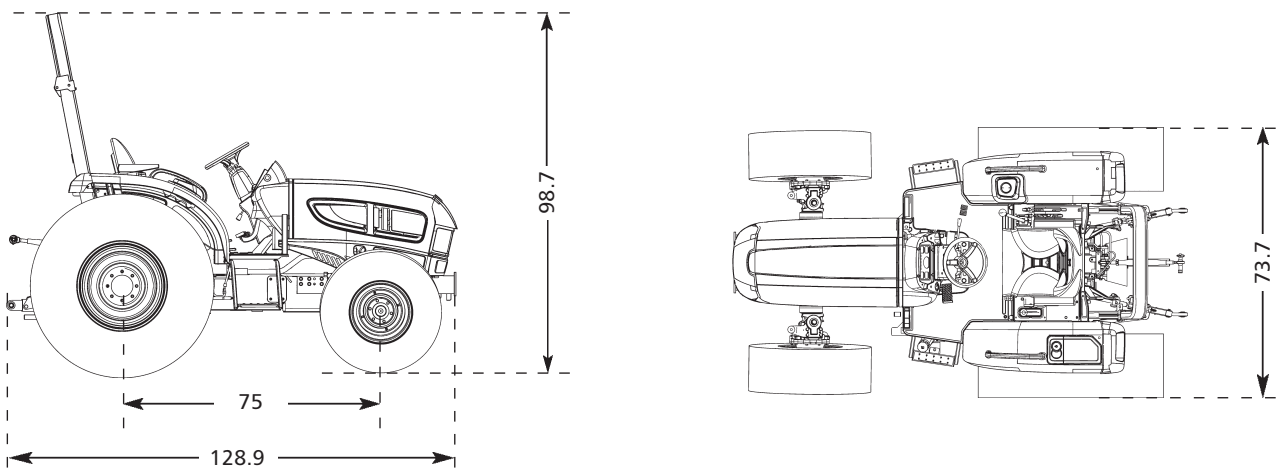
CAPACITIES	US Gallons	Quarts
Fuel Tank	11.36	45.44
Cooling System	1.85	7.4
Engine Oil	2	8.03
Transmission	10.03	40.12
Front Axle	2.24	8.96

SPEEDS :

Speed chart in mph.

TIRE	16.9 x 24 Industrial	
Gear	Forward	Reverse
Low	3.2	3.2
Medium	8.0	8.0
High	15.5	15.5

Note :- One US gallon = 4 quarts.



Dimensions are in inch and based on Industrial 12 x 16.5 front tires and 16.9 x 24 rear tires.

Note : Roll over protection structure is standard fitment on all tractors.

Note : Specifications and design subject to change without notice.

* Manufacturer's estimate under standard condition and subject to change without prior notice.

MAHINDRA – 5035 HST

ENGINE

Four Stroke, Naturally Aspirated, Direct Injection, Water Cooled Diesel Engine

Model	:	CE 50
No. of Cylinders	:	4
Displacement	:	153.7 cubic inch.
Bore	:	3.5 in.
Stroke	:	4 in.
Compression Ratio	:	19.4:1
Max. Engine Hp* (Manufacturing Rating)	:	49.5 max. as per DIN-70020
Rated Speed	:	2800 rpm
High Idle r.p.m.	:	2975 ± 50
Low Idle r.p.m.	:	1000 ± 50
Fuel Injection Pump	:	Rotary FIP with I-KSB Unit MICO (BOSCH INDIA)
Cylinder Sleeve	:	Wet-Replaceable
Air Cleaner	:	Dry type with safety cartridge & automatic dust unloading
Exhaust Muffler	:	Under Hood, Horizontal, Downswept
Firing Order	:	1 - 3 - 4 - 2
Accelerator	:	Hand & Foot Accelerator
Injector Opening Pressure	:	3510 - 3742 PSI

ELECTRICAL STARTING AND LIGHTING

Battery Capacity	:	12 volt, 96 amp
Starter	:	Solenoid engaged. Key start with interlock safety neutral switch.
Alternator	:	12 volt, 45 amp
Instrument Cluster	:	Water Temperature Gauge, Fuel Gauge, Voltmeter, Electronic RPM Meter + Hour Meter, Battery Charging Indicator. Tell-tales : LH & RH Turn Indicators, High Beam Indicator, Parking Brake Indicator, 4WD Indicator.
Lighting	:	Head Lights, Direction Indicator, Front and Rear Position, Brake Lamp, Plow Lamp.
Heater Plug System for Cold Starting	:	Main Components : 1. Heater Plug 2. Timer Relay

TRANSMISSION

Type	:	HST, with Safety Neutral Switch in Forward / Reverse
	:	Range Section Full Constantmesh
No. of gears	:	3 Range HST

STEERING : Hydrostatic with Tiltable Column

POWER TAKE OFF

Type	:	Rear Independent PTO shaft
P.T.O. HP* (metric)	:	41.5 max.
P.T.O. RPM	:	540 (6 Splines) (Independent P.T.O.) @ 2404 Engine RPM
PTO System	:	Main Components : 1. PTO Solenoid 2. PTO Relay 3. PTO Flasher Specs : Nominal Voltage : 12 volt Current Consumption : 1 amp

BRAKES

Oil Immersed Wet Brake, Foot operated, independent with provision of interlock for simultaneous operation. A hand brake lever is provided for parking.

Number of lining : 4 each side

HYDRAULIC SYSTEM

Open Center, Full Live Hydraulics with Position and Draft Controls.

Working pressure	:	2900-2972 PSI
Max. lifting force at lower link hitch point	:	3090 lbs.
Pump output	:	11 Gallons/min.
3 Point linkage	:	Category I ball joints with Telescopic Lower Link.

AUXILIARY VALVE

1. Single Spool - Standard
2. Two Spool - Optional, available as kit with Dealer

FRONT AXLE

Mechanical Front Wheel Drive (MFWD) with Bevel Gear Final Reduction.

MAHINDRA – 5035 HST

DIMENSIONS

Length overall	:	128.9 in.
Width overall	:	75.4 in.
Height overall upto ROPS	:	99.2 in.
Wheel base	:	75 in.

TREAD ADJUSTMENT

Front (Industrial)	:	51.6 in. to 57 in.
Rear (Industrial)	:	56.3 in. to 59.8 in.
Front (Ag)	:	53 in. to 55.4 in.
Rear (Ag)	:	56.3 in. to 59.8 in.

OPERATING WEIGHT (APPROX.)

Basic tractor including fuel, oil coolant, hydraulic system, 3 point linkage, transmission, P.T.O., lighting and standard wheel sizes.

WEIGHT DISTRIBUTION *

(when measured without optional weights fitted)

Front weight	:	1837 lbs.
Rear weight	:	2783 lbs.
Total weight	:	4620 lbs.

TIRES

Front (Industrial)	:	14 x 17.5, 6 Ply
Rear (Industrial)	:	19.5L x 24, 8 Ply
Front (Ag)	:	9.5 x 20, 6 Ply
Rear (Ag)	:	16.9 x 24, 6 Ply

TURNING RADIUS (MINIMUM)

With brakes	:	124 in.
Without brakes	:	144 in.

CAPACITIES	US Gallons	Quarts
Fuel Tank	11.36	45.44
Cooling System	1.85	7.4
Engine Oil	2	8.03
Transmission	10.03	40.12
Front Axle	2.24	8.96

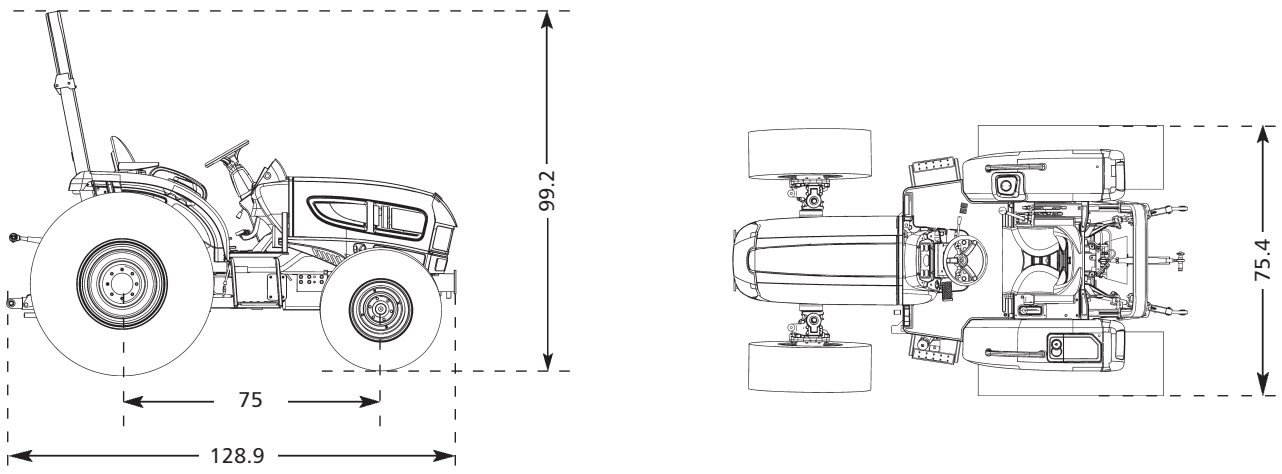
SPEEDS :

Speed chart in mph.

TIRE	19.5L x 24 Industrial	
Gear	Forward	Reverse
Low	3.3	3.3
Medium	8.2	8.2
High	15.9	15.9

TIRE	16.9 x 24 Ag	
Gear	Forward	Reverse
Low	3.69	3.69
Medium	8.12	8.12
High	17.65	17.65

Note :- One US gallon = 4 quarts.



Dimensions are in inch and based on Industrial 14 x 17.5 front tires and 19.5L x 24 rear tires.

Note : Roll over protection structure is standard fitment on all tractors.

Note : Specifications and design subject to change without notice.

* Manufacturer's estimate under standard condition and subject to change without prior notice.

If any trouble is experienced, make sure of the cause before attempting to make any adjustments. Before making any adjustments make note of the previous setting, in case, the new adjustment is not effective.

PROBABLE CAUSE	POSSIBLE REMEDY
ENGINE	
Engine Fails To Start	
Defective key switch	Inspect for faulty cables and terminals. Replace key switch if necessary.
Faulty safety starter switch	Replace.
Battery too low to turn engine	Charge or install new battery.
Faulty shut-off solenoid	Replace.
Engine oil too heavy	Drain oil and refill with correct grade.
Internal seizure	Hand crank the engine, with the injector nozzles removed, and engine clutch disengaged. If engine does not turn easily seizure due to internal damage is indicated/*
Starter motor inoperative	Inspect cables and terminals. Check for tightness of mounting screw. Inspect brushes for wear or damage and commutator for dirt, wear or damage.
No fuel	Check fuel tank.
Cold weather	Use cold weather starting aids and start with throttle at 1/2 to 1/3 position .
Water, dirt, or air in fuel system	Drain, flush, fill and bleed system.
Clogged fuel filter	Replace filter element.
Dirty or faulty injectors	Clean and replace nozzle body and if required replace the injector.
Engine Cranks But Will Not Start	
Mechanical lever pulled out on FIP	Push the lever in to rest on stopper.
Water in fuel	Drain system, clean and refill with proper fuel.
Fuel system clogged	Check through and remove blockage.
Batteries discharged	Charge or replace.
Lack of compression	*
Intake or Exhaust system clogged	Service air cleaner and check air intake for restriction. Clean exhaust system.
Lubricating oil of wrong viscosity	Drain and refill with proper lubricant - (refer to LUBRICANT SPECIFICATION).
Fuel feed pump inoperative	Check pump for restriction in system and clean out. Also check valves and spring./*
Fuel injection pump has lost its efficiency	*
Loss Of Power	
Engine overloaded	Reduce load or shift to lower gear.
Restriction in engine air supply	Check air cleaning system.
Restriction in exhaust	Clean exhaust system.
Restriction in fuel supply	Clean fuel system.
Water in the fuel	Drain and clean fuel system.

* See Mahindra Tractor Dealer

PROBABLE CAUSE	POSSIBLE REMEDY
Air lock in fuel system	Check vent hole in tank filler cap.
Faulty valve action	Check valve clearance. If valves are stuck, burnt or warped, replace them.
Clogged fuel filter	Replace filter element.
Lack of engine compression	*
Engine overheating	*
Fuel injection timing incorrect	*
Governor operating improperly/overflow valve faulty	*
Fuel injection pump has lost its efficiency	*
Clutch plate slippage	*
Brakes dragging	Check brake linkages for free movement & adjust free play.
Dirty or faulty injectors	Have Mahindra dealer check injectors.
Restriction between compressor & intake manifold	Check and rectify.
Air leak between compressor & intake manifold	Check and rectify.
Air leak between intake manifold and engine	Check and rectify.
Foreign object in exhaust manifold (from engine)	*
Restricted exhaust system	Check and rectify.
Exhaust manifold cracked, gaskets blown or missing	Check and replace.
Gas leak at turbine inlet/exhaust manifold joint	Check and replace.
Engine Misfires	
Restriction in engine air supply	Check air cleaning system.
Air lock in fuel system	Vent air from fuel system.
Poor compression	*
Sticking valves	*
Fuel injection timing incorrect	*
Vent in fuel tank cap obstructed	Clean cap in solvent. Blow dry.
Low coolant temperature	Remove and check thermostat.
Clogged fuel filter	Replace filter element.
Water, dirt, or air in fuel system	Drain, flush, fill and bleed system.
Dirty or faulty injectors	Have Mahindra dealer check injectors.
Improper type of fuel	Use proper fuel. See Fuels and Lubricants section.
Engine solenoid linkage out of adjustment	*
Engine Does Not Idle Properly	
Low idle rpm too less	Check and correct.
Restriction in fuel delivery	Inspect fuel system. Clean out fuel lines.
Injection nozzles defective	*
Injection timing incorrect	*
Excessive wear on throttle shaft	*
Poor compression	*
Sticking valves	*
Governor inoperative	*

PROBABLE CAUSE	POSSIBLE REMEDY
Engine Operates Unevenly And Vibrates	
Valve and spring assembly inoperative	*
Injection timing incorrect	*
Injection nozzles defective	*
Fuel injection pump needs recalibration	*
Engine Knocks	
One or more cylinders misfiring	Locate and correct cause.
Loose main or connecting rod bearing	*
Injection nozzles defective	Get them serviced.
Insufficient oil	Add oil.
Injection pump out of time	*
Low coolant temperature	Remove and check thermostat.
High speed too slow	Check high speed.
Excessive Oil Consumption	
Crankcase oil too light	Use proper viscosity oil
Piston rings worn, broken, stuck or not staggered	*
Oil level in crankcase too high	Maintain correct oil level.
Oil leaking	Rectify the leakage.
Sump drain plug loose or worn	Tighten or replace.
Overheating	Refer to ENGINE OVERHEATS.
Crankcase breather clogged	Wash in mineral spirits or naphtha, blow dry and replace.
Engine operating temperature too low	Check the thermostat opening temperature.
Engine Overheats	
Faulty heat indicator	Replace.
Cooling system clogged	Clean out radiator and engine
Fan and water pump belt slipping	Check tension and make proper adjustment.
Insufficient oil	Maintain proper oil level.
Defective thermostat	*
Water pump defective	*
Fuel injection timing incorrect	*
Valve clearance incorrect	Adjust correctly.
Clutch plate slippage	*
Brakes dragging	Check brake linkages for free movement and adjust free pedal play.
Engine overloaded	Select gear according to load.
Low coolant level	Fill cooling system to proper level; check radiator, coolant recovery tank, and hoses for loose connections or leaks.
Faulty radiator cap	Have service person check.
Dirty radiator core or grille screens	Remove all trash.
Defective thermostat	Remove and check thermostat

* See Mahindra Tractor Dealer

PROBABLE CAUSE	POSSIBLE REMEDY
Lubricating Oil Pressure Too High Or Too Low	
Defective oil pressure indicator	Replace.
Wrong viscosity, diluted or insufficient oil	Refer to LUBRICANT SPECIFICATIONS. Select correct grade of oil, drain fill crankcase with oil of proper viscosity and quality.
Broken, loose or plugged oil lines	Replace, clean and tighten./*
Low oil level in the crankcase	Add oil and check for oil leakage, also refer to LUBRICATION GUIDE and ENGINE AND CHASSIS. LUBRICANT SPECIFICATIONS.
Defective or dirty oil pressure regulating valve	*
Oil pump strainer clogged or pump not working	*
Worn bearings	*
Clogged oil filter	Change filter element.
Excessive Smoke	
Air cleaner pipe clogged	Remove, check and clean.
Improper grade of fuel/oil	Drain off and replace with correct grade of fuel/oil.
Worn pistons, rings and/or sleeves	*
Air-cleaner clogged/Paper element choked	Remove and clean. If defective, replace paper element.
Incorrect valve adjustment	Set valve clearance as specified.
Fuel injection pump has lost its efficiency	*
Engine overloaded with respect to gear selection	Select gear according to load.
Engine Emits White Smoke	
Improper type of fuel	Use proper fuel.
Low engine temperature	Warm engine to normal operating temperature.
Defective thermostat	Remove and check thermostat.
Restriction / choking of fuel lines	Clean lines, replace filter element if required
Engine Emits Blue Smoke	
Air leak between compressor & intake manifold	Check and rectify.
Air leak between intake manifold & engine	Check and rectify.
Foreign object in exhaust manifold (from engine)	*
Engine Emits Black Or Gray Exhaust Smoke	
Improper type of fuel	Use proper fuel.
Clogged or dirty air cleaner	Service air cleaner.
Engine overloaded	Reduce load or shift to a lower gear.
Injection nozzles dirty	*
Restriction between compressor & intake manifold	Check and rectify
Restriction in intake manifold	Check and rectify
Air leak between intake manifold and engine	Check and rectify
Foreign object in exhaust manifold (from engine)	*
Restricted exhaust system	*

PROBABLE CAUSE	POSSIBLE REMEDY
Exhaust manifold cracked, gaskets blown or missing	*
Gas leak at inlet/exhaust manifold joint	Check and rectify
Excessive Fuel Consumption	
Valve clearance incorrect	*
Fuel leaks	Tighten or replace fuel lines.
Engine overloaded	Select the gear with respect to load, speed, & soil condition.
Engine not operating at proper temperature	Check cooling system and thermostat.
Air cleaner clogged	Service the air cleaner.
Incorrect viscosity or quantity of lubricating oil	Refer to LUBRICANT SPECIFICATIONS. Keep oil up to the correct level.
Fuel injection nozzles not operating properly	Do not service or remove injection nozzles. The service life of the injection nozzles may be shortened by : 1. Overheating 2. Improper operation 3. Poor quality fuel 4. Excessive idling If injection nozzles are not working correctly or are dirty, engine will not run normally. /*
High idle rpm too high	Check and rectify.
Fuel injection pump has lost its efficiency	Do not change / Service faulty injection pump. See your Mahindra dealer.
Incorrect tire pressure	Inflate / deflate up to recommended pressure to avoid wheel slippage and improper tire wear.
Improper type of fuel	Use proper fuel.
HYDRAULICS	
No Lifting Or Slow Lifting	
Less/no oil in system	Check & fill oil to correct level.
Suction filter clogged	Clean filter replace damaged.
Hydraulic pump has lost its efficiency	Get the pump replaced.
Control valve defective	*
Control linkage defective	*
System overloaded	Reduce load on system.
Hydraulic oil too cold	Allow oil to warm.
Screen clogged	Clean or replace screen.
Hydraulic Lift Arms Lifting Without Lever Operation	
Control valve/linkage defects	*
System Overheating	
Air in the system	Locate the source of air entry and seal it.
Water in the system	Drain oil & refill.

* See Mahindra Tractor Dealer

PROBABLE CAUSE	POSSIBLE REMEDY
Restriction in suction delivery pipes	Clean and refit.
Relief valve continuously blowing	Check linkage & upper limit stop. /*
Control valve defects	*
Lift Arms Will Not Hold	
Control valve defective	*
BRAKES	
Does not hold or slips	Adjust brakes or change linings if needed. Linings oil soaked; check bull pinion shaft oil seal. /*
Drag or uneven	Adjust brakes.
Return spring broken	Replace.
Will not release	Release hand-brake. Check brake shaft for seizure.
TRANSMISSION	
Hard to shift gears	Use correct viscosity lubricant. /*
Shifter fork or lever defective	Replace. /*
Gears slipping out of mesh	*
Excessive noise	Check oil level, use proper viscosity lubricant. /*
Damaged parts	*
Noisy gear shifting	Adjust clutch pedal play. /*
REAR WHEELS	
Do not turn	Release brake lock. Transmission, differential or clutch faulty. Refer to TRANSMISSION above. /*
Engine clutch drags	*
ELECTRICALS	
Battery Does Not Charge	
Loose or corroded connections	Clean and tighten connections.
Sulfated or worn-out battery	Check electrolyte level and specific gravity.
Loose or defective fan belt	Adjust belt tension or replace belt.
Low engine speed	Increase speed.
Alternator malfunctioning	*
Charging System Indicator Glows With Engine Running	
Defective battery	Check electrolyte level and specific gravity.
Defective alternator	Have your Mahindra dealer check alternator.
Loose defective fan belt	Adjust belt tension or replace ball.
Starter Inoperative	
Loose or corroded connections	Clean and tighten loose connections.
Low battery output	Check electrolyte level and specific gravity.
Gear shift lever in gear	Move lever to neutral.
PTO engaged	Disengage PTO.
Starter Cranks Slowly	
Low battery output	Check electrolyte level and specific gravity.
Crankcase oil too heavy	Use proper viscosity oil.

PROBABLE CAUSE	POSSIBLE REMEDY
Loose or corroded connections	Clean and tighten loose connections.
No Lights	
Fuse blown	Replace fuse.
Loose wiring or improper connections causing mal-functioning	Check wiring to see that all connections are clean and tight.
Lights burn dim	Re-charge battery, tighten cable terminals, check lamps, clean contacts.
POWER STEERING	
Steering wander	Check the size of tires. Check tire pressure.
	Check for loose or worn steering linkage parts.
	Check wheel bearings for wear.
	Check front wheel alignment.
No recovery for open cylinder unit	Check tire pressure.
	Check for tightness of front axle kingpins.
	Check for alignment of steering column.
Shimmy	Check for proper mounting of tires.
	Check steering linkages for looseners, improper adjustment, wear and rectify accordingly.
	Check for air in hydraulic system and bleed.
High steering effort in one direction	Check if the vehicle is overloaded.
	Check for correct hydraulic system pressure.
	Check if the flow plate valve is stuck due to excessive heat in the system.
	Check for correct size tires.
	Check for vehicle overloading.
	Check the hydraulic fluid level.
	Check for correct flow pressure of the pump.
	Check if the steering linkages are binding.
	Check for restriction in fluid return line.
Lost motion (Lash) at the steering wheel	Check for firmness of steering wheel on column.
	Check for components of the steering linkages.
	Check for tightness of flow unit at mounting.
	Check for air in the hydraulic system & bleed it.
Excessive heat (200ºF Maximum)	Check for correct size of hose.
	Check for the centering of control unit.
	Check for excessive fluid flow.

Date	Job	Card No.	Nature of Defect	Parts Replaced	W/Claim No. and Date	Remarks

Service Record

Date	Tractor Hours	Nature / Type of Repair / Service Carried Out

Part Replacement Record

Date	Part Description	Qty	Cost	Date	Part Description	Qty.	Cost

Daily Operating Log

Date	Job Done	Machine Hours		Fuel Consumed	Engine Oil Topped Up	Remarks
		Start	End			

Date	Job Done	Machine Hours		Fuel Consumed	Engine Oil Topped Up	Remarks
		Start	End			

Tractor Storage Precautions

Precautions to be taken for Tractor Storage

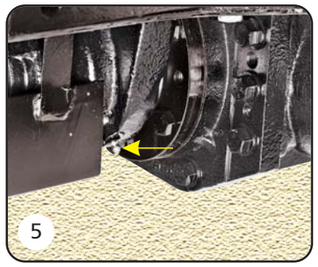
Sr. No.	Activity	Objective	Every 15 days	Every 45 days	More than 45 days
1	a) First start the Engine & allow it to idle for 2 to 3 minutes. b) Then Run the Tractor for 10 minutes from one place to Another Place at 1800 to 2000 RPM.	Lubrication to internal parts of the Engine.	✔		
		Lubrication to Internal parts of the Transmission.	✔		
		Charging of the Battery.	✔		
		Splashing of fuel from inside of the fuel tank.	✔		
2	Operate all Electricals such as Switches, Flasher, Lamps, horn.	To avoid malfunctioning due to oxidation of the contacts.	✔		
3	Drain the water inside the Fuel tank using Drain Plug.	To avoid Algae/ Rust formation & subsequent chocking of the fuel lines.		✔	
4	Raise The Lift arms of Hydraulics to their full raised position by raising the lift arms using position control lever on right hand.	This raised position will fill the Cylinder & protect it's walls from corrosion.		✔	
5	Apply Anti-oxidant spray on the Battery / Alternator / Starter motor terminals.	To avoid oxidation of terminals.		✔	
6	Clean Sheet Metal & Chassis with dry cloth.	To avoid accumulation dust which may result into detoriation of Paint Quality.		✔	
7	Keep the Tractor with Hand brake disengaged.	To avoid locking of the Brakes			❋
8	De-clutching - Place spacers between clutch pedal & foot plate to keep clutch plate free. (Not Applicable for HST)	To avoid sticking of the clutch plate & subsequent damage.			❋
9	Masking (with Tape) of all the openings (Such as Aircleaner, Fuel tank cap, Silencer, Breathers of Engine / Brakes / Transmission / VTU).	To avoid rusting due to moisture entry.			❋
10	Disconnect Battery Terminals.	To avoid discharge of the Battery.			❋

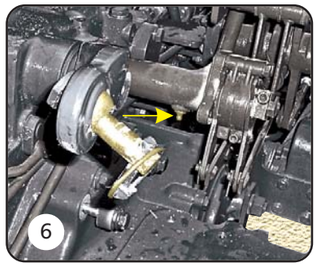
✔ Indicates Activity to be carried out at these intervals.

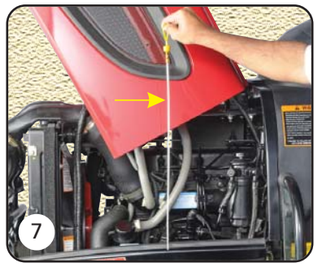
❋ To be done whenever tractor is not in use for a long period of time i.e. more than 45 days.

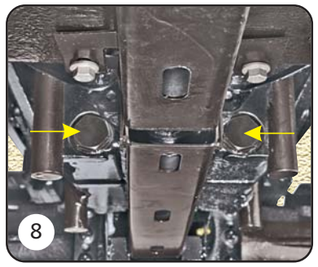
a) It is recommended to Fill the fuel Tank with Diesel fuel & Top up the tank to prevent any condensation in unfilled portion of the tank resulting into rust formation & contamination.

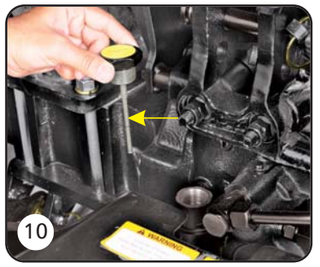
b) If the tractor is standstill (not run) for more than 3 months then It is recommended to replace the Diesel to avoid detoriation in the performance.

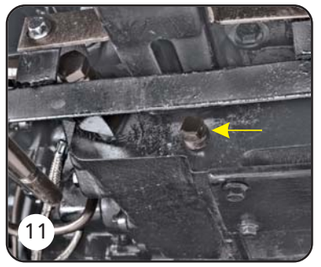


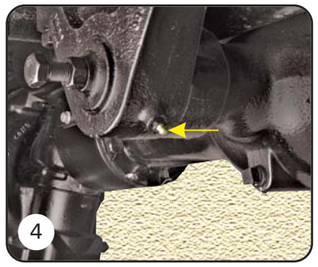


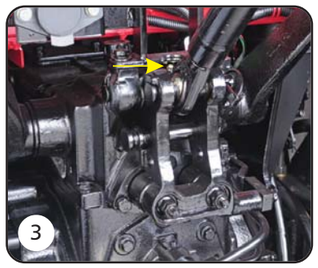


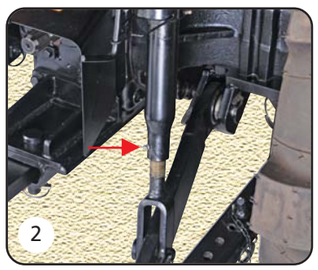


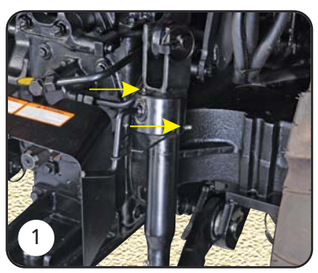


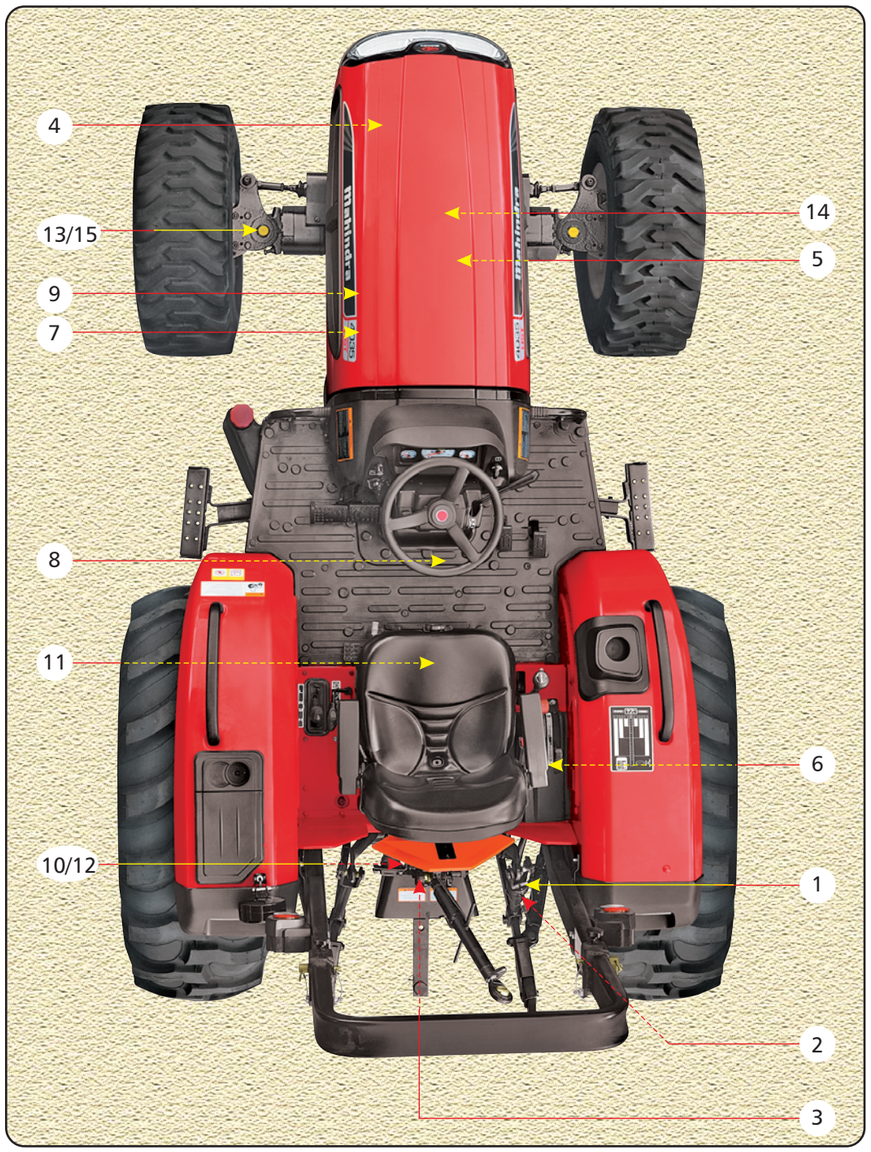




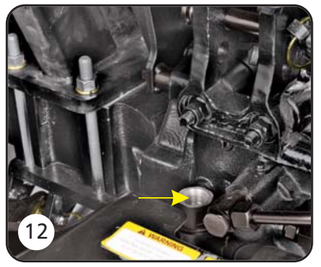


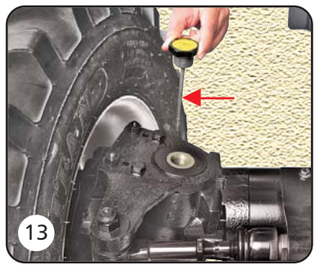


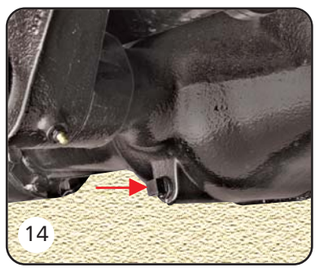


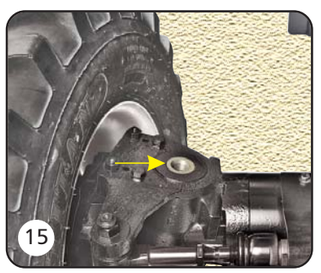


No.	Description	Lubricant
1	Lift Rod RH	CG
2	Levelling Rod RH	CG
3	Pin Pivot Sensing Bracket	CG
4	Front Pillow Block	CG
5	Rear Pillow Block	CG
6	Quadrant Linkages Shaft Hyd.	CG
7	Engine Oil Level Check	EO
8	Engine Oil Drain Plug	EO
9	Engine Oil Filling Port	EO
10	Trans/Hydraulic Oil Level Check	GO
11	Trans/Hydraulic Oil Drain Plug	GO
12	Trans/Hydraulic Oil Filling Port	GO
13	Front Axle Oil Level Check	FO
14	Front Axle Oil Drain Plug	FO
15	Front Axle Oil Filling Port	FO





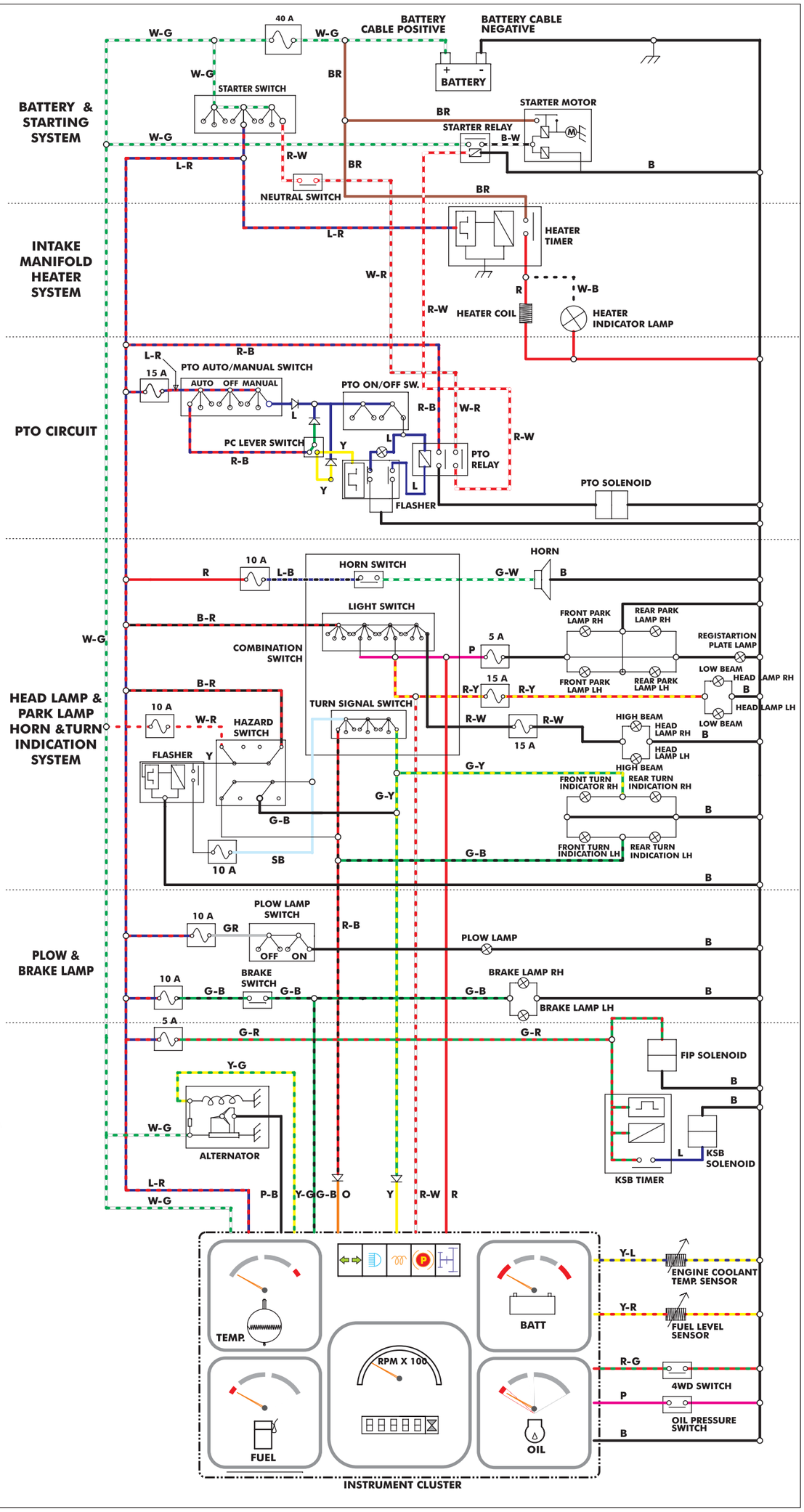




CHECK POINTS	Perio-dically	10 Hrs. or Daily	50 Hrs.	100 Hrs.	150 Hrs.	200 Hrs.	250 Hrs.	300 Hrs.	350 Hrs.	400 Hrs.	450 Hrs.	500 Hrs.	550 Hrs.	600 Hrs.	650 Hrs.	700 Hrs.	750 Hrs.	800 Hrs.	850 Hrs.	900 Hrs.	950 Hrs.	1000 Hrs.	Since then
ENGINE																							
Check Oil Level and top-up if necessary		●																					Daily
Change Oil and Filter Element				#		■				■				■				■				■	Every 200 Hrs.
Tighten Cylinder Head Bolts to specified torque and adjust Valve Clearance																						■	Every 1000 Hrs.
Check and adjust Injector Pressure																						■	Every 1000 Hrs.
Radiator Descaling																						■	Every 1000 Hrs.
Change Rubber Clutch Gear Hydraulic Pump																						■	Every 1000 Hrs.
AIR CLEANER																							
Clean dust collector	●	●																					Daily
Check Air-cleaner connections and tighten if required						■				■				■				■				■	Every 200 Hrs.
Clean Primary Element								■						■						■			Every 300 Hrs.
Change Primary Element																				■			Every 900 Hrs.
Change Safety Cartridge																				■			Every 900 Hrs.
FUEL SYSTEM																							
Drain Water from Fuel Filter (every 15 days)	*																						Periodically
Change Fuel Filter (earlier, if required) Spinon Element						■				■				■				■				■	Every 200 Hrs.
COOLING SYSTEM																							
Check Coolant Level in Radiator & top-up if necessary			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Every 50 Hrs.
Check Radiator Hose Connections & tighten if required			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Every 50 Hrs.
Check Fan Belt Tension and adjust if necessary			#			■				■				■				■				■	Every 200 Hrs.
Flush Cooling System																						■	Every 1000 Hrs.
ELECTRICAL SYSTEM																							
Clean Battery Terminals						■				■				■				■				■	Every 200 Hrs.
Check Starter Motor and Alternator Carbon Brushes and replace if necessary																						■	Every 1000 Hrs.
TRANSMISSION / HYDRAULIC SYSTEM																							
Check Oil Level and top-up if necessary			#			■				■				■				■				■	Every 200 Hrs.
Change Transmission/Hydraulic Oil			#							■							■						Every 350 Hrs.
Change Suction Filter Element			#							■							■						Every 350 Hrs.
Change HST Oil Filter			#							■							■						Every 350 Hrs.
Clean Strainer (During every oil change)			#																			■	Every 1000 Hrs.
Change Strainer																							Every 2000 Hrs.
AXLES, WHEELS AND TIRES																							
Check Tire Pressure and inflate if necessary	*		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Every 50 Hrs.
Torque Wheel Nuts			#			■				■				■				■				■	Every 200 Hrs.
Check Front Axle Oil Level						■				■				■				■				■	Every 200 Hrs.
Change Front Axle Oil																						■	Every 1000 Hrs.
STEERING																							
Check Steering Wheel Play												■										■	Every 500 Hrs.
Set Toe-in												■										■	Every 500 Hrs.
CLUTCH AND BRAKES																							
Check and adjust Brake Pedal Free Play	*																						Periodically
GREASE ALL NIPPLES	*		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Every 50 Hrs.

* Depends upon the conditions in which the tractor is being operated.
\# Indicates that this must be done initially at specified hrs.

■ Activity due.
● Repeat the activity.



COLOR CODE	DESCRIPTION
R	RED
B	BLACK
W-G	WHITE - GREEN
L-R	BLUE - RED
R-W	RED - WHITE
B-W	BLACK - WHITE
R-L	RED - BLUE
L-B	BLUE - BLACK
L-Y	BLUE - YELLOW
L-W	BLUE - WHITE
G-W	GREEN - WHITE
R-W	RED - WHITE
BR-W	BROWN - WHITE
R-G	RED - GREEN
R-Y	RED - YELLOW
W-R	WHITE - RED
Y	YELLOW
SB	SKY BLUE
G-L	GREEN-BLUE
G-R	GREEN-RED
GR	GRAY
R-B	RED-BLACK
BR	BROWN
W-B	WHITE-BLACK
G-B	GREEN-BLACK
Y-G	YELLOW-GREEN
O	ORANGE
L	BLUE
W	WHITE
P	PINK
G	GREEN
G-R	GREEN-RED
GR-B	GRAY-BLACK
W-R	WHITE-RED
BR	BROWN
Y-L	YELLOW-BLUE
Y-R	YELLOW-RED

INSTRUMENT CLUSTER CONNECTION DETAILS

L-R	POWER SUPPLY (IGN.SW)
W-G	POWER SUPPLY (BAT.+VE)
B	GROUND
P	CHARGE INDICATOR
Y-L	TEMPERATURE INDICATOR
P	OIL PRESSURE INDICATOR
R-G	CLOG INDICATOR
Y-R	FUEL LEVEL INDICATOR
R-W	HIGH BEAM
G-L	LEFT TURN INDICATOR
G-B	PARK BRAKE INDICATOR
G-R	RIGHT TURN INDICATOR
R	ILLUMINATION
BR-W	HEATER INDICATOR
R-B	PLOW LAMP INDICATOR
P	ENGINE SYS. INDICATOR

WIRING DIAGRAM - HST Models