

MAHINDRA

T R A C T O R S

OPERATOR'S MANUAL '60' Series

8560 2WD / 4WD

Tier - III Compliant

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**Cultivate
Your
DreamsSM**

OPERATOR'S MANUAL

'60' Series 2WD/4WD

Model - 8560

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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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.

Introduction

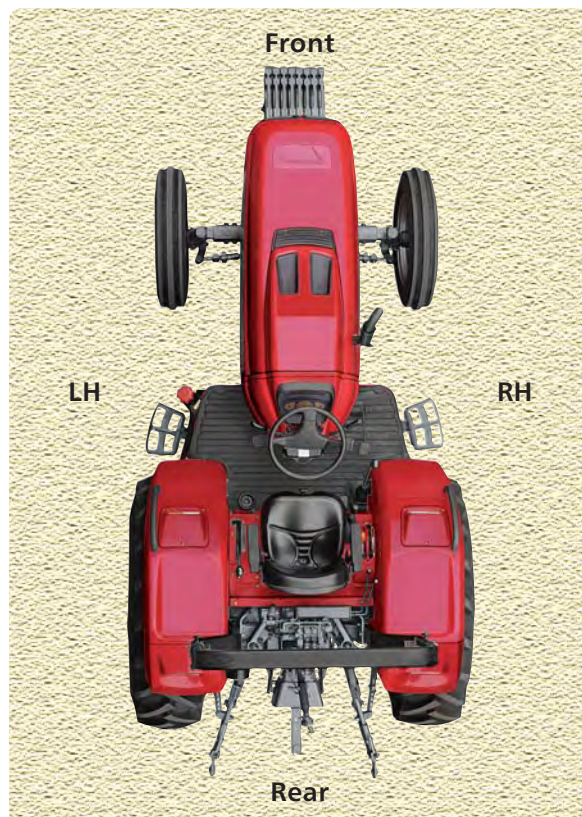
Tractor

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.

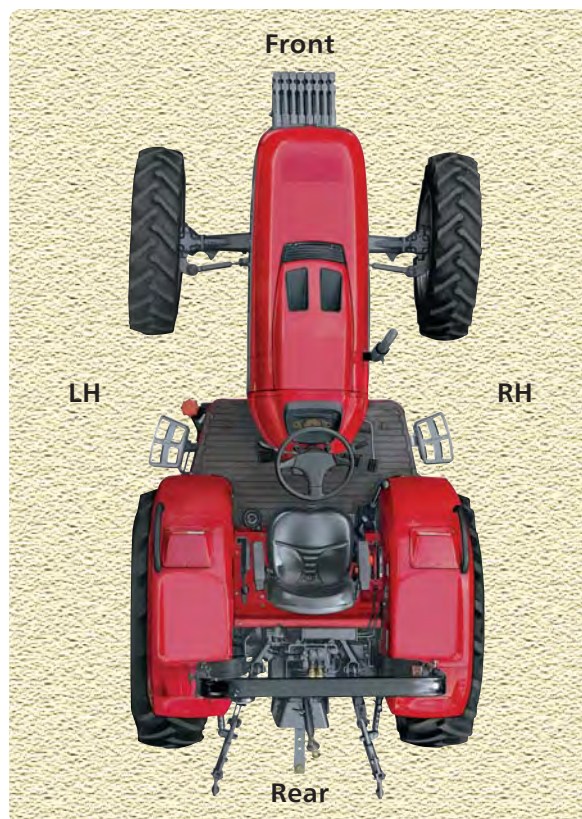
In this book the operation and maintenance instructions for 8560 - 2WD/4WD model of Mahindra diesel tractors have been compiled. This material has been prepared in detail to help you in better understanding of maintenance and efficient operation of the machine.

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.



8560 2WD



8560 4WD

Tractor Serial No.

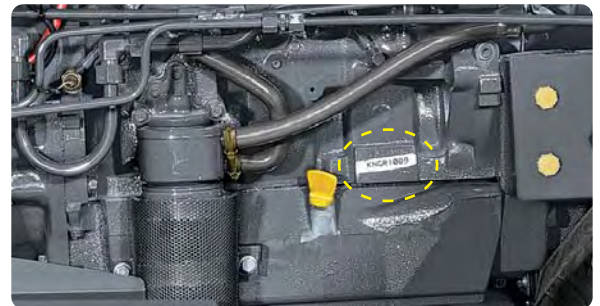
The tractor serial number is stamped on a plate rivetted below the operator's seat. For easy reference, we suggest you to write this number in the space provided in the owner's personal data.

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



Serial Numbers

Note the serial number of your tractor. (Punched to the right side of engine). Always quote the serial number in any communication to your authorised Mahindra dealer.



General Description

General Construction

The transmission case, clutch housing, engine and front axle are bolted together to form a rigid unit.

Engine

This tractor is fitted with fuel-efficient US EPA certified Mahindra-NE483 TCI engine. These are turbocharged, Intercooled, 4 cylinder, direct injection type, comprising of rotary fuel injection pump and comply with US Tier-III norms.

Front Axle & Wheels (For 8560 2WD)

This is a square tube design, mounted on a central pivot pin and is having adjustable wheel track. The front wheels are mounted on taper roller bearings housed in a hub which itself is mounted on the steering knuckle. The tie rod is adjustable in four inches increments in case of three piece front axle.

Front Axle & Wheels (For 8560 4WD)

Front Axle is live front axle, with planetary reduction. The front wheels are directly mounted on the axle. The front track is adjustable with adjustment provided on the rims. The turning angles are all preset.

Power Steering

The Power Steering System consists of a Hydrostatic Steering Unit (HSU), Hydraulic cylinder, Separate Reservoir with Return line filter and Dipstick. Rear section of tandem pump supplies oil to this system.

Clutch

These tractors are fitted with normally disengaged PTO dual clutch assembly, having one each 12" driven plate for transmission drive and an independent Power Take-Off.

Transmission

The transmission is combination type wherein the Speed and Forward-Reverse shifting is synchromesh whereas Range is Constantmesh.

The speed gearshift arrangement is provided on RH side of operator's seat. Speed gears can be operated in 4 modes.

The range gearshift arrangement is also provided on RH side of operator's seat thus providing more leg-room and comfort of operation to the operator. The Range gears can be operated in 3 modes Viz. High, Medium and Low.

A Forward-Reverse shuttle is provided under the steering wheel on (LH side) the tractor. This enables to change the direction of tractor from forward to reverse (and vice versa) in any of the pre-selected gear combination. This feature is helpful in application like loader, dozer, leveler etc.

Use of Range and speed shift with F-R Shuttle shift arrangement enables the transmission to give 12 forward & 12 Reverse speeds.

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 rim & disc, fitted with rear tires, are bolted to the outer flange of rear axle. The Rear track adjustment is provided on the rims.

Oil Immersed Disc Brakes

These are oil-immersed brakes with five discs on either side of tractor. The actuating disc is centrally located between two pairs of brake discs. The two drive plates are sandwiched between two pairs. Entire brake assembly is housed in the brake housing which is an integral part of transmission housing. Brake pedal and linkages actuate brake.

A parking brake lever is fitted in front of operator's seat.

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 and auxiliary valve entirely independent of any clutch movement when changing gear or operating the power take-off. The Oil reservoir is common with that of transmission.

Three Point Linkages

Three Point Linkage is suitable for category 2 type implements. For ease of implement attachment, a sliding mechanism is provided in the lower links.

Electrical System

A 12 volt lead acid battery is used to crank the engine with the starter motor. The electrical system is comprised of the head lamp, scuttle lamp, side indicator lamps, plow lamp, brake light, parking lamp, instrument cluster, alternator and fuse box and relays.

Safety

PTO and Transmission neutral switch are a standard feature

Sheet Metal

Hood, Scuttle, side panels, front grille & panel, fenders, bracketaries, including platform are constructed of sheet metal. After undergoing through surface preparation, it is first primed & then painted.

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:

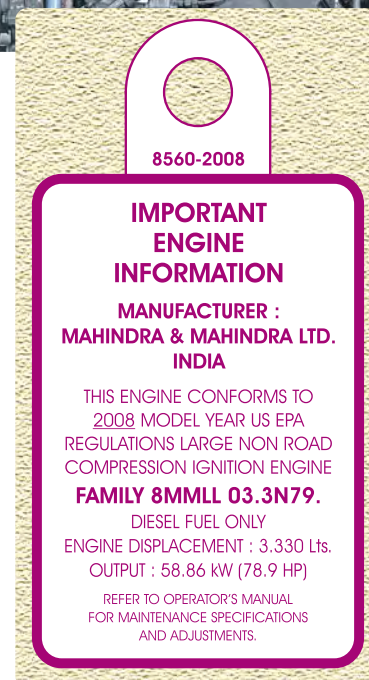
Contact the Owner or General Manager of the dealership, explain the problem, and request assistance. Your Dealer has direct access to the Mahindra office. If you cannot obtain satisfaction through your Dealer, contact the Mahindra USA Inc. office (1-800-561-9256) and provide the following:

- 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 the Front Cover 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 operators 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.

(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

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.



Fold Down ROPS

⚠ 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.

Safety Instructions

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.

Protect Children

Keep children and others away from the tractor while operating.

BEFORE YOU REVERSE

- Look behind tractor for children and others.

Do not allow children to ride on tractor or any implement.

Use Of ROPS And Seat Belt

The Roll Over Protective Structure (ROPS) has been certified to industry and/or government standards. Any damage or alteration to the ROPS, mounting hardware, or Seat belt voids the certification and will reduce or eliminate protection for the operator in the event of a roll-over. The ROPS, mounting hardware, and seat belt should be checked after the first 100 hours of tractor 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.

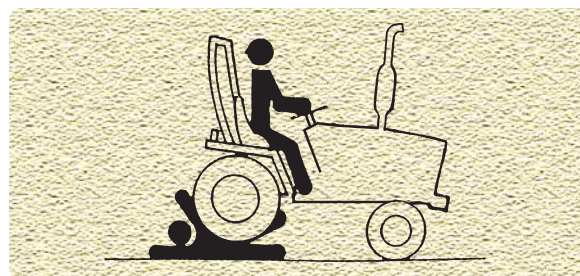
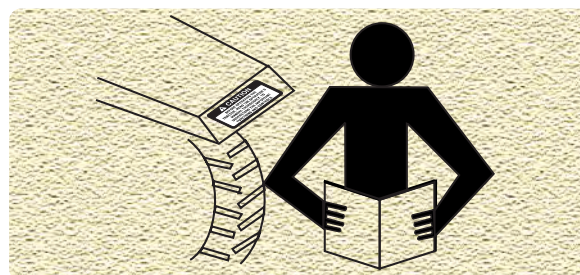
Precautions To Avoid Tipping

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.

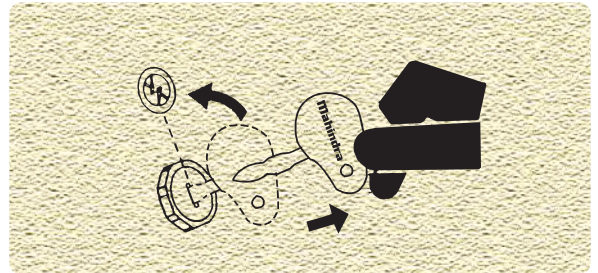
Driving forward out of a ditch or mired condition could cause tractor to tip over backward. Back out of these situations if possible.



Park Tractor Safely

Before parking the tractor :

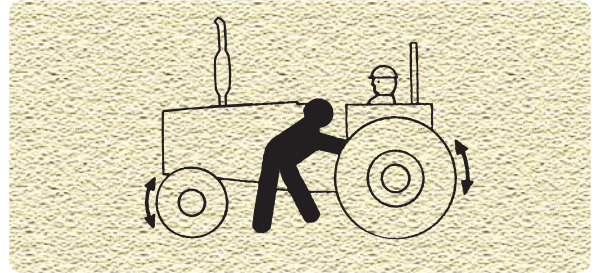
Lower all equipments to the ground, bring transmission in neutral. Engage the parking brake. Stop the engine and remove the key.



Keep Riders Off Tractor

Do not allow riders on the tractor.

Riders on tractors 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.

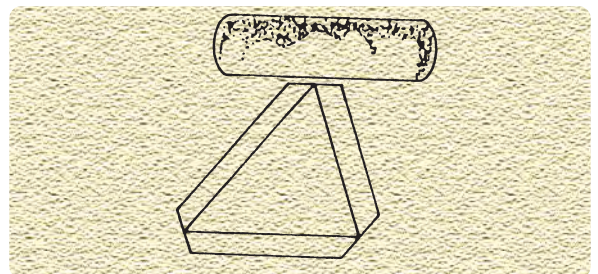
Wear close fitting clothing. Stop the engine and be sure PTO drive is stopped before making adjustments, connections, or cleaning out PTO driven equipment.



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.



Safety Instructions

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 (-) 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.

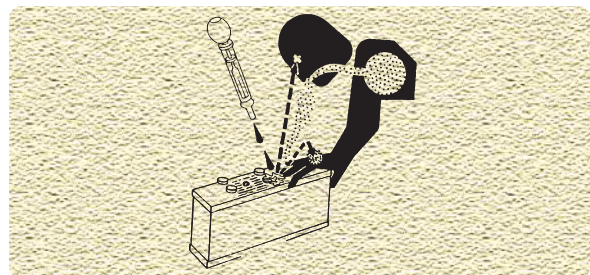
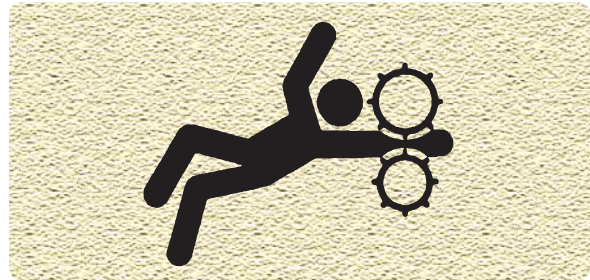
If you spill acid on yourself :

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

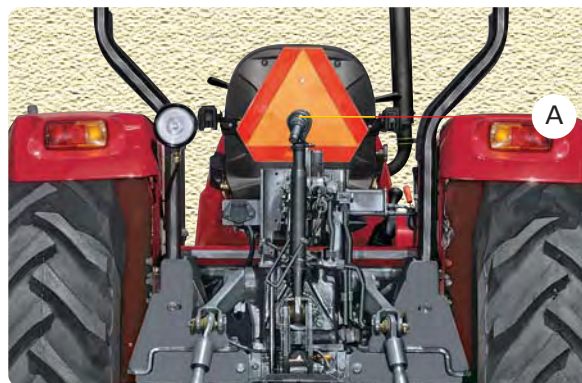
Do not start the tractor in an enclosed building unless the doors & windows are open for proper ventilation, as tractor exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area remove the exhaust fumes by connecting exhaust pipe extension and drawing them out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



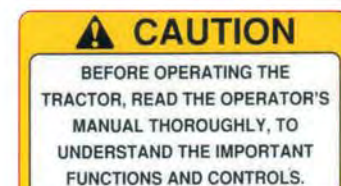
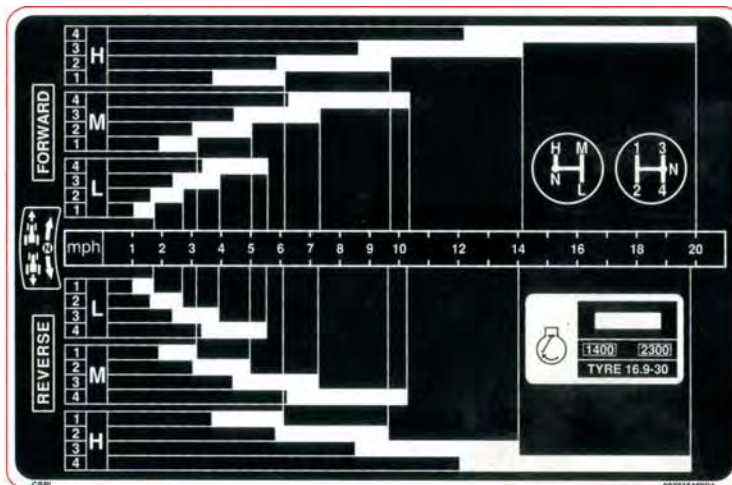
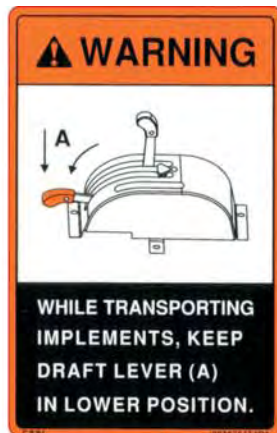
Tractor Runaway

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 lever in disengaged position.

The tractor can start only if the transmission is in neutral position and PTO lever in neutral as well.

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



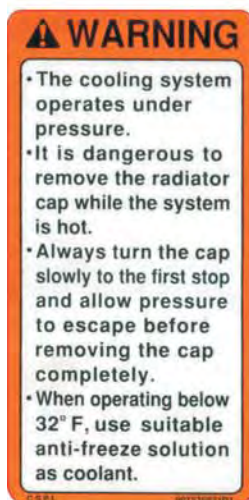
RECOMMENDED POWER STEERING FLUID
ISO - VG - 46 / 48 AS PER DIN - 51524

EXAMPLE

1. MOBIL DTE 24 46
2. SHELL TELLUS 46
3. CHEVRON CLARITY AW 46
4. TEXACO RANDO HD 46

IMPORTANT

1. CHANGE OIL AND FILTER ELEMENT AT FIRST 50 HRS. & EVERY 1000 HRS. THEREAFTER.
2. CHECK OIL LEVEL REGULARLY.



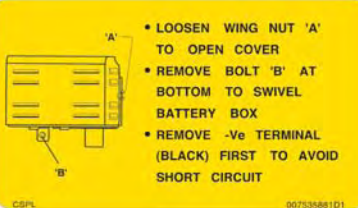
! WARNING

- 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.
- Start engine only from Operators seat with depressed clutch pedal, transmission in the neutral, PTO disengaged and hydraulic control in lower position.
- Lock brakes together, use warning lights and SMV emblem while driving on road.
- 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 gear shift levers 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.

PARKING BRAKE

The Brakes can be locked in the engaged position by depressing the brake pedal and pulling the brake lever upward. Ensure that the brake lock plate is engaged across the pedals. To disengage, press the brake pedals and push the parking lever downwards.



! 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.



⚠ 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.

CSP/L

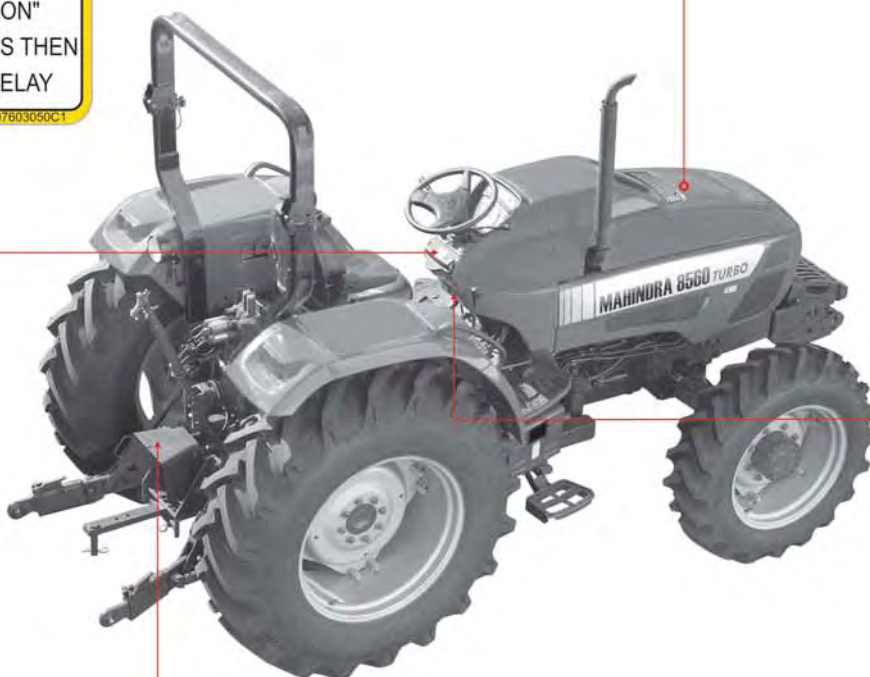
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⚠ CAUTION

- TURN THE IGNITION KEY TO "OFF" POSITION WHENEVER YOU LEAVE THE OPERATOR SEAT
- IF HEATER INDICATOR IS "ON" FOR MORE THAN 2 MINUTES THEN REPLACE HEATER TIMER RELAY

CSP/L

007603050C1



CSP/L 00753049501

⚠ WARNING

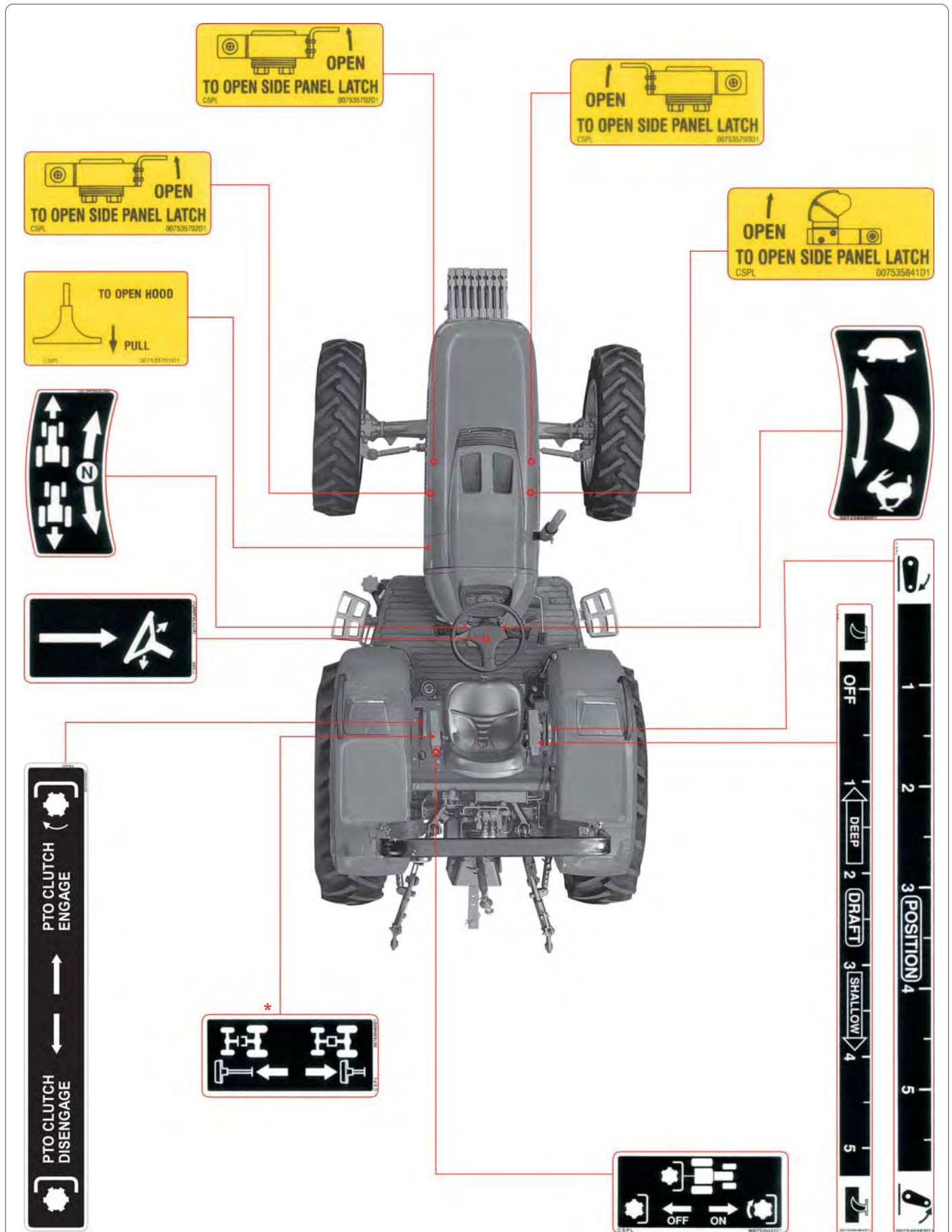
TO AVOID POSSIBLE PERSONAL INJURY, THIS GUARD MUST BE KEPT IN PLACE

⚠ 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.

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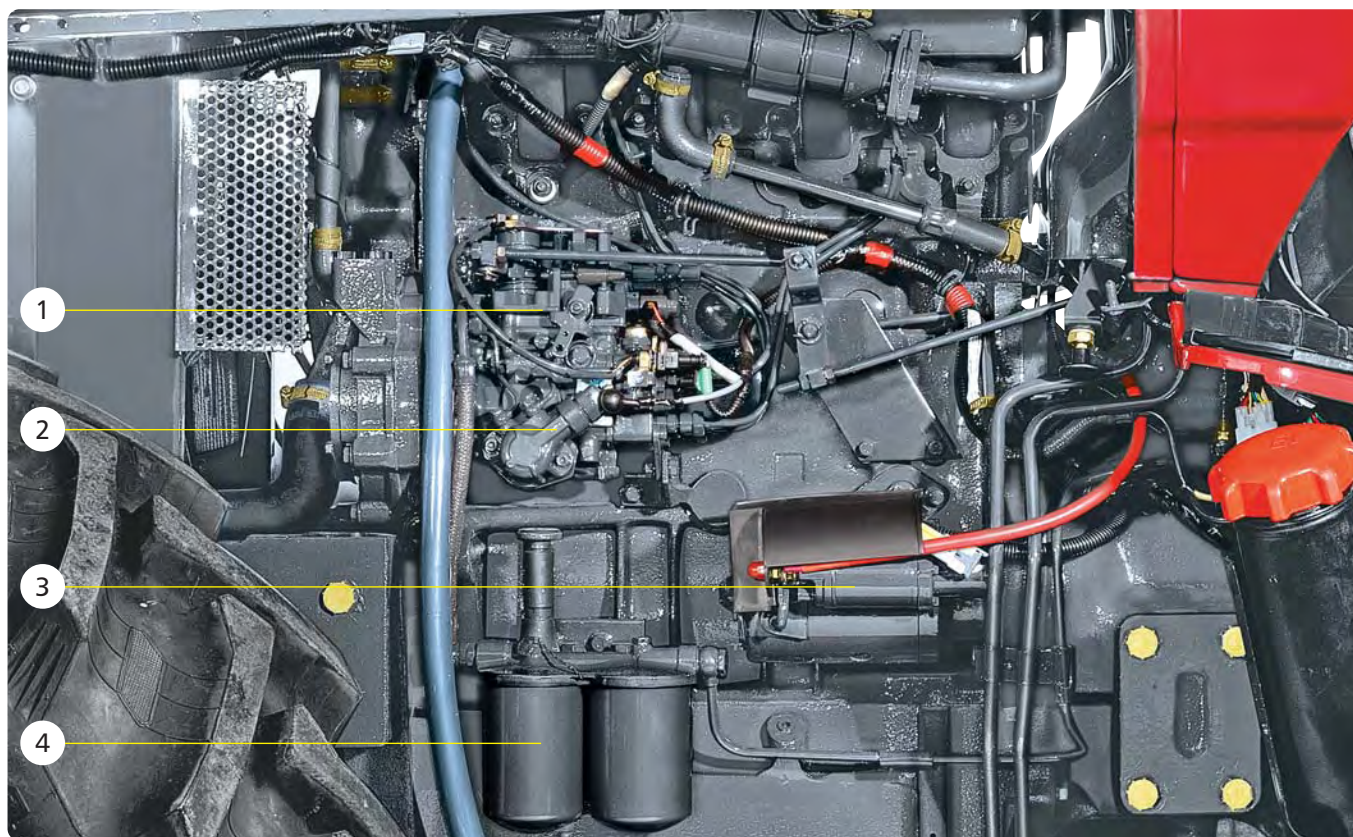


Universal Symbols

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 & RH View of Engine

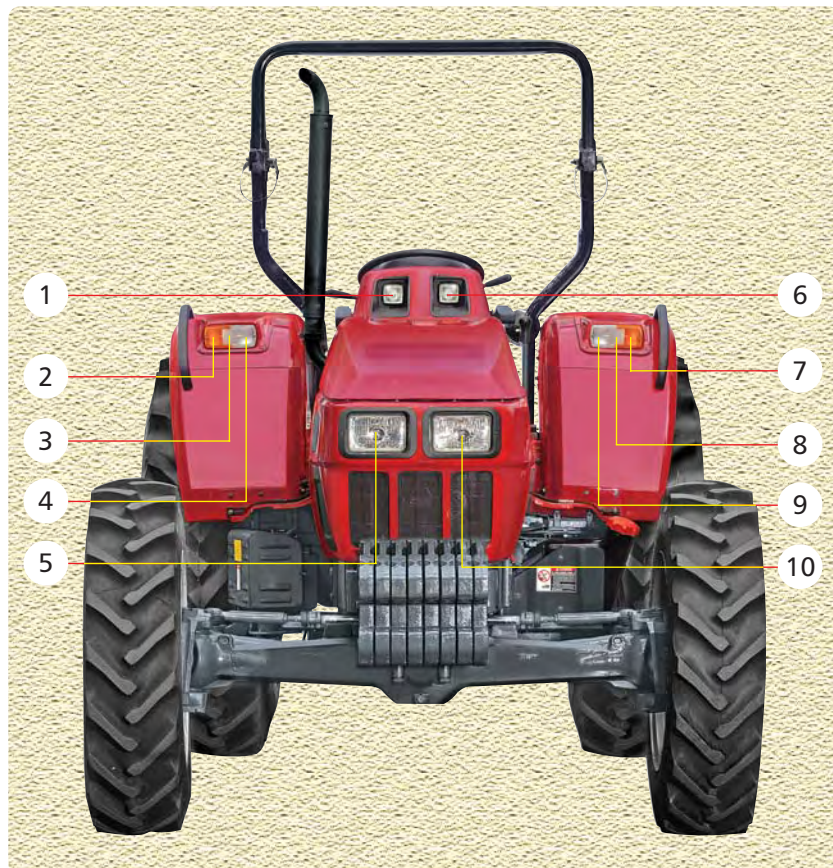


LH View : 1. Rotary Fuel Injection Pump 2. KKS Unit 3. Starter Motor 4. Fuel Filter



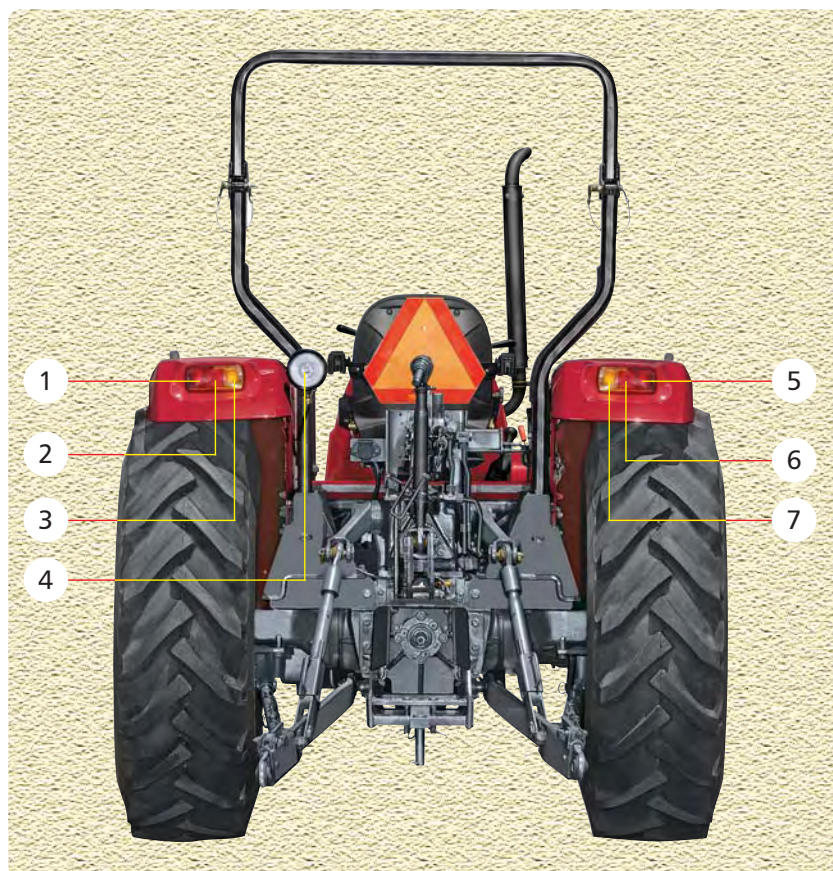
RH View : 1. Alternator 2. Hydraulic Tandem Pump 3. Dipstick 4. Oil Filter Engine

60 Series 2WD/4WD, Model - 8560



Front View :

1. Scuttle Lamp (RH)
2. Front Turn Signal (RH)
3. Reflector / Position Lamp (RH)
4. Front Position (RH)
5. Head Lamp (RH)
6. Scuttle Lamp (LH)
7. Front Turn Signal (LH)
8. Reflector / Position Lamp (LH)
9. Front Position (LH)
10. Head Lamp (LH)



Rear View :

1. Rear Turn Signal (LH)
2. Reflector / Position Lamp (LH)
3. Rear Brake Lamp (LH)
4. Plow Lamp
5. Rear Turn Signal (RH)
6. Reflector / Position Lamp (RH)
7. Rear Brake Lamp (RH)

Controls, Instruments & Operations

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.



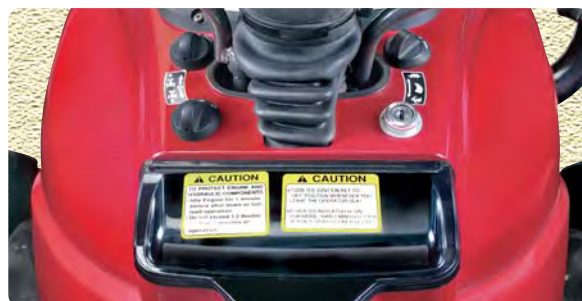
Instrument Cluster



Operator Controls - Front



Operator Controls - LH, RH

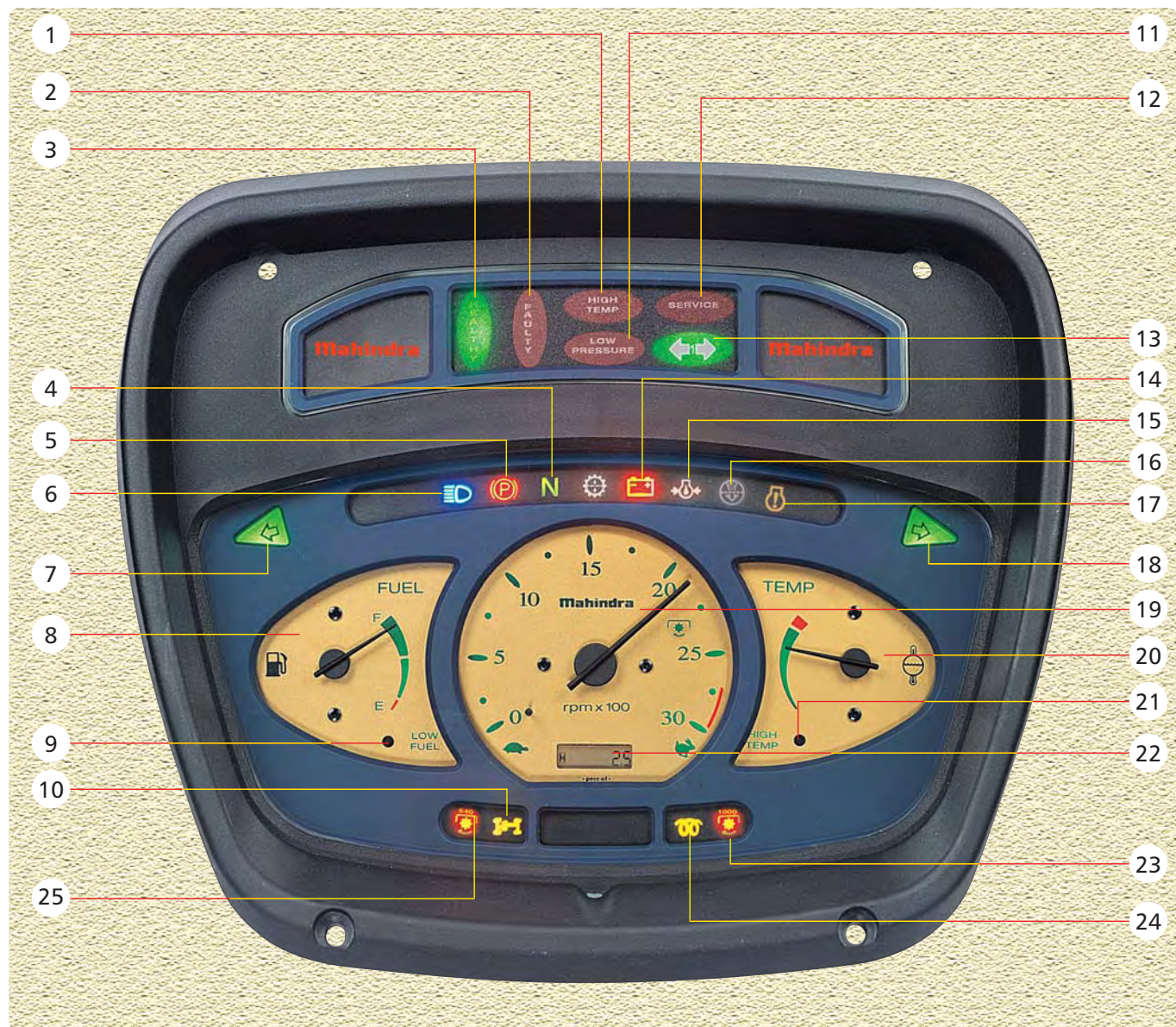


Switches

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



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 Temperature Defect Indicator | 14. Battery Charging Indicator |
| 2. Engine Defect Indicator | 15. Low Engine Oil Pressure Indicator |
| 3. Engine Healthy Indicator | 16. Air Filter Clog Indicator |
| 4. Transmission & PTO Neutral Indicator | 17. Emission Control System Indicator |
| 5. Parking Brake Indicator | 18. R.H. Turn Indicator |
| 6. High Beam Indicator | 19. RPM Meter |
| 7. L.H. Turn Signal | 20. Coolant Temperature Gauge |
| 8. Fuel level Gauge | 21. High Temperature Warning Indicator |
| 9. Low Fuel Warning Indicator | 22. Hour Counter |
| 10. 4WD Engagement indicator * | 23. PTO 1000 RPM Indicator |
| 11. Low Oil Pressure Defect Indicator | 24. Heater Indicator |
| 12. Service Due Indicator | 25. PTO 540 RPM Indicator |
| 13. Trailer Indicator | |

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 = $15 \times 100 = 1500$.

Hour Counter

This is a Liquid Cluster display Hour counter located in the RPM meter. It is operated by signal 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. The Indication is divided into three stages Viz. Half, Empty, and Full.

Low Fuel Warning Indicator

This is a RED LED marked as "LOW FUEL" and is located in the Fuel Level Gauge. It will glow continuously when fuel quantity in the fuel tank falls below 5 liters / 1.32 US gallons. The pointer of fuel level gauge will lie in the RED band under such condition.

Flickering of indicator implies loose connection or disconnected wire from sensor unit or a defective sensor unit.



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.

High Temperature Warning Indicator

This is a RED LED marked as "High Temp" and is located in the Temperature Gauge. It will glow continuously when temperature of coolant rises above 103°C / 217.4°F .

The pointer of Temperature gauge will lie in the RED band under such condition.



Instrument Cluster

High Temperature Defect Indicator

If operation of engine is continued despite glowing of the High Temperature Warning Indicator at 217.4°F, the coolant temperature may further shoot-up and lead to engine seizure. Thus to avoid such seizure, an alarm is given to the operator through a beeper and glowing of "Engine Defect indicator" along with "High Temperature Defect indicator". Flickering of indicator implies loose connection or disconnected wire from sensor unit or a defective sensor unit.

Engine Defect Indicator

This indicator glows in case of any defect in :

- a) High Temperature
- B) Low Pressure

Engine Healthy Indicator

The Engine Healthy Indicator will glow for one minute after every one hour when there are NO alarm signals for High coolant temperature or Low Engine Oil Pressure.

Transmission & PTO Neutral Indicator

It glows when tractor is not engaged in any speed gear and PTO lever in neutral position.

Parking Brake Indicator

It glows when Parking Brake is applied.

High Beam Indicator

It glows when Head Lamps are operated in High Beam.

Battery Charging Indicator

The indicator will be ON if battery is not getting charged.
The indicator will be OFF if battery is getting charged.

Low Engine Oil Pressure Indicator

This indicator when glows alongwith "Defect indicator" indicates the engine operation at Low lub oil pressure.
This indicator will also glow alone when the Key is in ON position before starting the engine and continue to glow till engine oil pressure builds up after starting the engine.

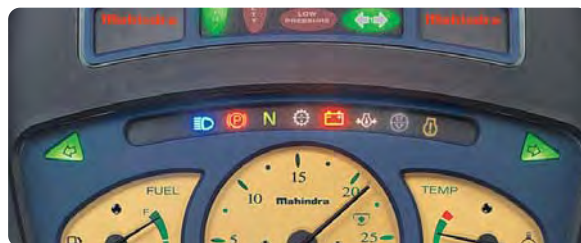
Air Filter Clog Indicator

It is ON when Air filter requires periodic maintenance.

Turn Indicators

L.H and R.H turn indicators are provided to indicate the direction of turning.

A blinking L.H turn indicator implies that the L.H.Turn Signal indicator of tractor is ON whereas a blinking R.H turn indicator implies that the R.H.Turn Signal indicator of tractor is ON.



Emission Control System Indicator

This indicator will glow when the starter switch is turned to "ON" position. This indicator shall turn-off after two minutes of starting the engine.

A malfunction in the electronic emission control system is indicated by a continuously "GLOWING" or "BLINKING", even past TWO MINUTES of starting the engine. In such an event, get the problem rectified by an authorized Mahindra Dealer.

4WD Indicator

It glows when 4WD is engaged.

PTO 540 RPM Indicator

It glows when PTO is engaged at 540 rpm.

Heater Indicator

It glows for 35 seconds when Key is in 'ACC' position before starting the engine and further for 35 seconds after starting the engine.

PTO 1000 RPM Indicator

It glows when PTO is engaged at 1000 rpm.

Service Due Indicator

This will glow for one minute after every one hour when the service of tractor is due. This function is set for first 50th hour and thereafter for 250th hour of engine running. The operator is thus indicated for General Service Due.

Resetting can be done by authorized Mahindra Dealer as soon as the general service is done.

Low Oil Pressure Indicator

Continued operation of engine despite the low oil pressure indicator glowing may lead to engine seizure. Thus to alarm the operator, this indicator will also glow along with 'Engine Defect indicator'. A beeper will also give an audio alarm in such case.

Beeper Output

The Beeper will beep during following conditions.

1. Turn Left & Turn Right
2. High Coolant Temperature
3. Engine Low Oil Pressure
4. Service Due.

Self Test Function

When the Key is switched to ON position, all the LEDs on instrument panel glow for 7 seconds to indicate that the electrical circuit of the instrument cluster is in proper working condition.

If the LEDs fail to glow as stated above, get the cause identified and rectified from Mahindra authorised dealer.

Trailer Indicator

When trailer socket (Seven Pole Socket) is connected and RH or LH turn indicator is switched ON.

This indicator starts flashing at the rate of 60-120 cycles per minute. In case of bulb failure this indicator remains OFF. (i.e. Turn indicator bulb load is less than 3 x 21 Watts)



Buzzer for Transmission Low Oil Pressure

This is located on the firewall inside scuttle. The Buzzer will be ON whenever alternator is running and the low pressure (below 0.5kg/cm²) condition for transmission oil persists for 5 minutes continuously.





Switches

In addition to the Key Switch, a combination of 3 nos. rotary and 1 Piano type switches is provided for various operations.

1. Scuttle and Plow Lamp Switch
2. Light Switch
3. Turn Signal Switch
4. Key Switch
5. Hazard Switch

Scuttle and Plow Lamp Switch

This is 4-Way rotary switch located on LH side of Steering column on dashboard. It operates in clockwise direction and the positions are as follows:

1. Off
2. Illuminates Scuttle Lamp.
3. Illuminates Plow Lamp and puts OFF Scuttle lamp.
4. Illuminates Scuttle & Plow Lamp simultaneously.



Light Switch

This is 4-Way rotary switch located on RH side of Steering column on dashboard. It operates in clockwise direction and the positions are as follows:

1. Off
2. Illuminates Instrument Cluster illumination lamp, Position lamps and also gives supply to Trailer socket.
3. Illuminates Low-Beam of Head lamp in addition to the position – 2.
4. Illuminates Hi-Beam of Head lamp in addition to the position – 2.



Turn Signal Switch

This is 3-Way rotary switch located on LH side of Steering column on dashboard. The Vertical position of knob operates in both directions and the positions are as follows:

- Vertical - Off
- Left - Operates L.H. Turn signal lamp.
- Right - Operates R.H. Turn signal lamp.



Key Switch

This is a Key operated 4-Way rotary switch located on RH side of Steering column on dashboard. It operates in clockwise direction and the positions are as follows:

1. Off
2. ACC/IG. This Position it gives a readiness to the electrical circuit for operation of Scuttle & Plow lamp switch, Brake light switch, Turn Signal switch, IPTO switch and Glow plug & this puts ON the supply to Instrument-cluster & readiness to the electrical circuits for operation of light switch.
3. It is identical with position 2.
4. St. Turning the Key to this position activates the Starting circuit for starting the engine. When released, the key springs back to 3rd position.



NOTE : The Starting circuit is interconnected with Transmission and PTO Neutral switches. Thus the Engine will not start unless the transmission and PTO is in neutral.

Hazard Switch

This is Piano type switch located below the utility-box on LH side of Steering column.

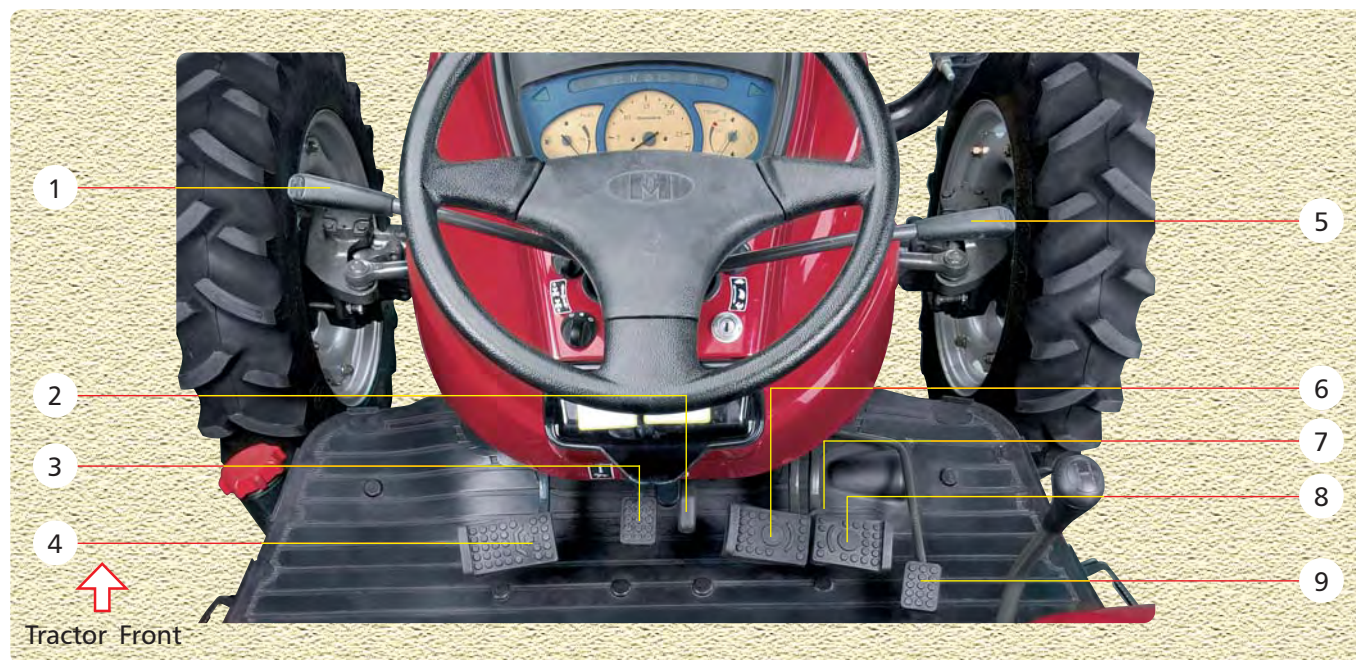
On Position - Operates L.H. and R.H. Turn signal lamp simultaneously. This operation can be performed even if the Key Switch is in OFF position.

Horn

Pressing the horn push pad will blow the horn.



Controls



Operator's Front Side Controls



Operator's LH & RH Side Controls

- | | | |
|----------------------------|----------------------------|-----------------------------|
| 1. F-R Shuttle Shift Lever | 8. Brake Pedal RH | 15. Differential Lock Pedal |
| 2. Parking Brake Lever | 9. Foot Throttle | 16. Operator's Seat |
| 3. Tilt Steering Pedal | 10. Auxiliary Valve Levers | 17. 4WD Engagement Lever |
| 4. Clutch Pedal | 11. Draft Control Lever | 18. IPTO Clutch Lever |
| 5. Hand Throttle Lever | 12. Range Shift Lever | 19. Can Holder |
| 6. Brake Pedal LH | 13. Position Control Lever | |
| 7. Brake Pedal Latch | 14. Speed Shift Lever | |

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 (F) 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 (C) till the weight indicator registers your approximate weight on indicator (E).

Tilt Adjustment

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

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. Do not jump if machine tips.

Fasten Seat belt

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

Release Seat belt

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



CAUTION

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

WARNING

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

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 :

- Low Idle Speed – 850 \pm 50 rpm
- Rated Engine Speed – 2300 rpm
- High Idle Speed – 2500 rpm \pm 50 rpm

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

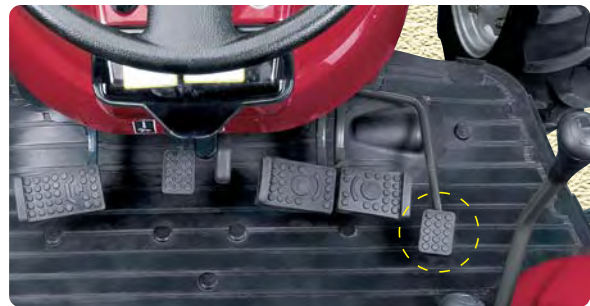
Constant Speed Setting : Certain operations may require a particular engine speed. This can be achieved by resting the Hand Throttle Lever in a position where you get the desired engine speed.



Foot Throttle Operation

When tractor operation requires repeated speed change, use the foot throttle pedal to temporarily increase engine speed above hand throttle setting. We recommend to keep the hand throttle at minimum and use foot throttle when driving on highway.

- Set the hand throttle lever at desired rpm.
- Depress foot throttle pedal to Increase Engine rpm.
- Release foot throttle pedal to decrease Engine rpm to achieve the previous engine speed set by hand throttle lever.



Can Holder

A Can holder is located at the LH side of operators seat on the platform.



Glove Box

A small utility box is located in front of operator's seat near the steering column.

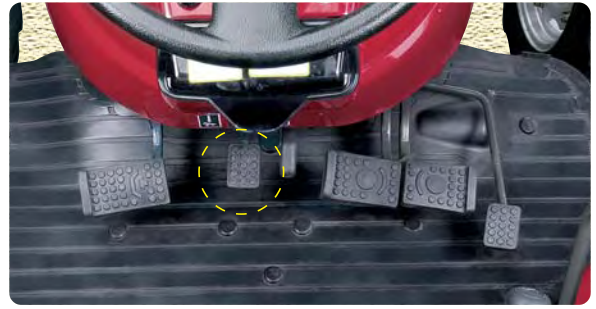


Tilt Steering

The steering can be tilted towards or away from 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 pedal by foot.
3. Tilt the steering wheel to desired position.
4. Release foot pressure on the pedal.



⚠ 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 (8560-4WD)

This lever is located on L.H 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. Depress clutch pedal and stop the tractor motion completely.
2. Press the lever down to engage the drive.
3. Lift the lever upwards to disengage the drive.



⚠ WARNING

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

Brake

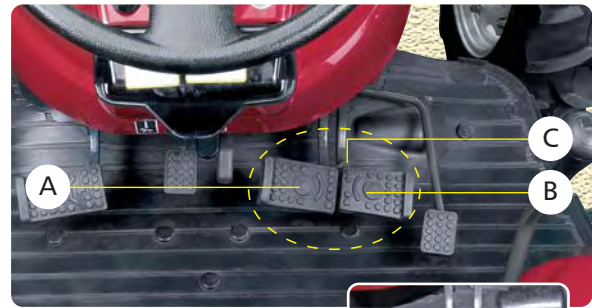
Two independent brake pedals are provided for L.H and R.H wheel braking to enable sharp turns during field operations.

- To make a sharp turn to the left, depress L.H brake pedal (A).
- To make a sharp turn to the right, depress R.H 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 R.H. brake pedal (B)
2. Depress any of the brake pedal to slow or stop the tractor.
3. 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.

Parking brake :

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

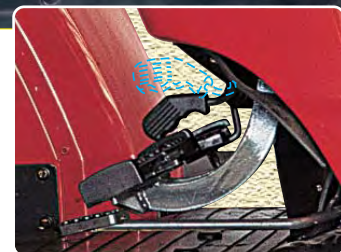
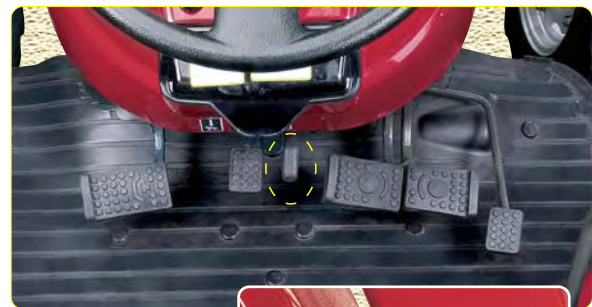
Locking :

1. Lock both brake pedals together by using latch.
2. Pull park brake lever completely upwards to the lock position and hold it.
3. Fully press the brake pedals with foot and release parking brake lever.
4. Remove foot from the brake pedals. Both pedals should now stay depressed in locked position.

Unlocking :

1. Fully 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.



CAUTION

Always lock the parking brake when the tractor is left unattended.

Differential Lock Pedal

This pedal located on the R.H. 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 the 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,

- The tractor is in high speed.
- 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.

Main and IPTO Clutch

A dual clutch assembly of 12" clutch plates each is provided for main clutch and "Independent PTO" (IPTO) operation.

Main clutch gives drive to the transmission and is operated by clutch pedal.

Depressing the clutch pedal fully disengages the drive to gearbox for selection of different speeds.



PTO

The PTO power is obtained by engaging the hand operated IPTO lever (A).

IPTO Clutch

The term IPTO means, PTO is independent of main clutch. The power is transmitted to PTO shaft through an IPTO clutch which can be engaged or disengaged by IPTO clutch lever (A) located on LH side of operator's seat.

The IPTO clutch is always to be kept in disengaged position and engagement of PTO drive can be achieved by putting the IPTO lever forward in engaged position.

To engage the PTO unit, proceed as under

Move the IPTO clutch lever forward to engage the clutch.
The PTO is now in engaged position.

To disengage the PTO unit, proceed as under

Slowly move the IPTO clutch lever rearward to disengage the clutch.

The PTO is now in disengaged position.

WARNING

The free play of the PTO clutch is preset at factory. It is not recommended to adjust the same through PTO clutch linkage.

NOTE :

The clutch may required replacement due to normal wear, if loss of power to PTO shaft is observed when IPTO lever is engaged. Get the cause identified & rectified from the nearest Mahindra dealers under such circumstances.



Disengaged



Engaged

WARNING

When PTO drive is not in use keep the IPTO lever in disengaged position.

WARNING

Firmly apply the parking brakes, place all gear shift levers in neutral and block all four wheels before operating any stationary PTO equipment

Do not approach or work on the PTO shaft or equipment while the PTO is in motion.

Shut-off engine and the PTO and wait for all movement to stop before working on the PTO or equipment.

F-R Shuttle Shift Lever

This lever is located on L.H side of Steering. This lever enables to choose the direction of tractor motion and has three positions as follows:

1. Forward – for forward motion of tractor.
2. Reverse – for rearward motion of tractor.
3. Neutral

The lever can be engaged as follows.

1. Depress Clutch pedal and stop tractor motion completely.
2. Choose Forward or Reverse mode as desired.
3. Release clutch pedal gradually.

Refer Chart for road speed of tractor in different positions.



WARNING

Do not engage the F-R Shift lever while the tractor is in motion.

Range Shift Lever

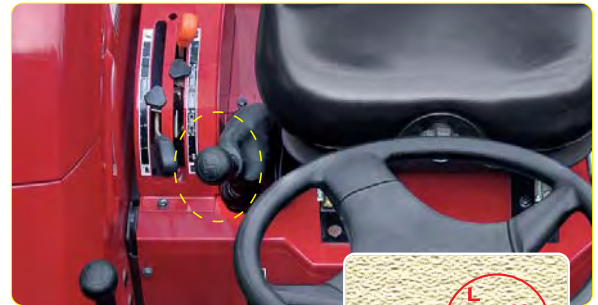
This lever is located on R.H side of operator's seat. This lever has four positions as follows:

1. High – for High speed range
2. Medium – for Intermediate speed range
3. Low – for Low speed range
4. Neutral

This lever enables 3 different speed options for every Speed Gear selection. The lever can be engaged as follows.

1. Depress Clutch pedal and stop tractor motion completely.
2. Choose H, M or L speed range to match work application.
3. Release clutch pedal gradually.

Refer Chart for road speed of tractor in different positions.



WARNING

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

Speed Shift Lever

This lever is located on R.H side of operator's seat. This lever has five positions.

This lever enables 4 different speed options within a particular "Range Gear" selection. The road speed increases in higher gears.

1. Depress Clutch pedal completely.
2. Choose any one gear from 1 to 4 to match work application.
3. Release clutch pedal gradually.

The gears can be shifted on-the-go.

Refer Chart for road speed of tractor in different positions.



Auxiliary Valve

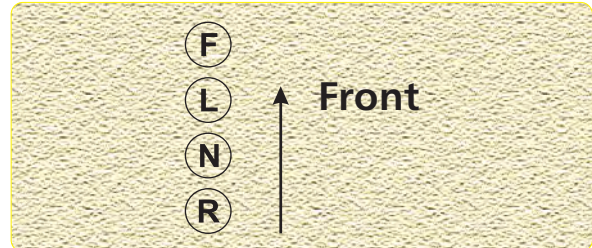
The Auxiliary valve is provided with 2 nos bi-directional levers.

Each lever has four positions as follows :

- a. Float (F) Detent
- b. Lower (L) Detent
- c. Neutral (N)
- d. Raise (R) Detent

The lever returns to neutral position from Lower or Raise position when the cylinder is fully retracted / extended.

Keep the levers in neutral position (N) when auxiliary valve is not in use.

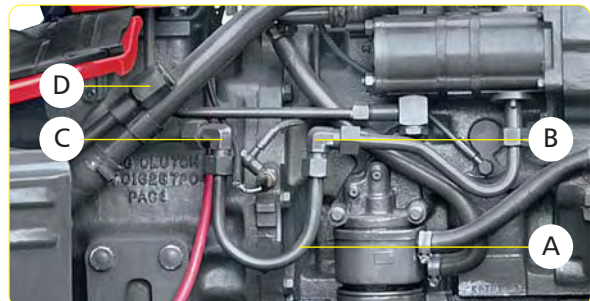


Loader

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

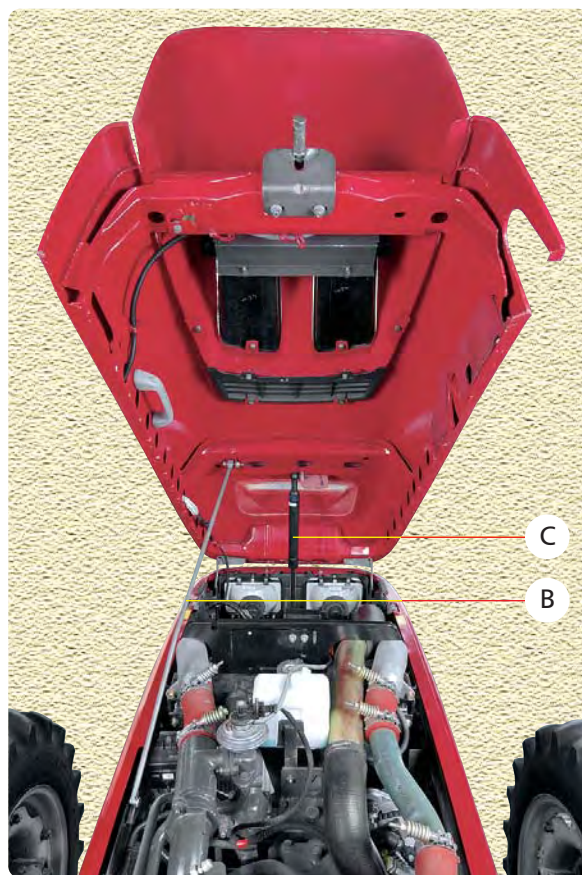
The hood is hinged at the front side and opens away from the operator as follows,

1. Pull the knob (A). The hood will unlock.
2. Lift the hood upwards by hand. A gas spring (C) provided inside will assist in minimising the effort for lifting.
3. Pull the stay rod (B) out of hood assembly and lock it in the slot (D) or (E) as indicated.



Closing the Hood

1. Ensure that side panels are properly locked.
2. Fold the stay rod and lock it in the hood.
3. Press the hood downwards till it gets locked.

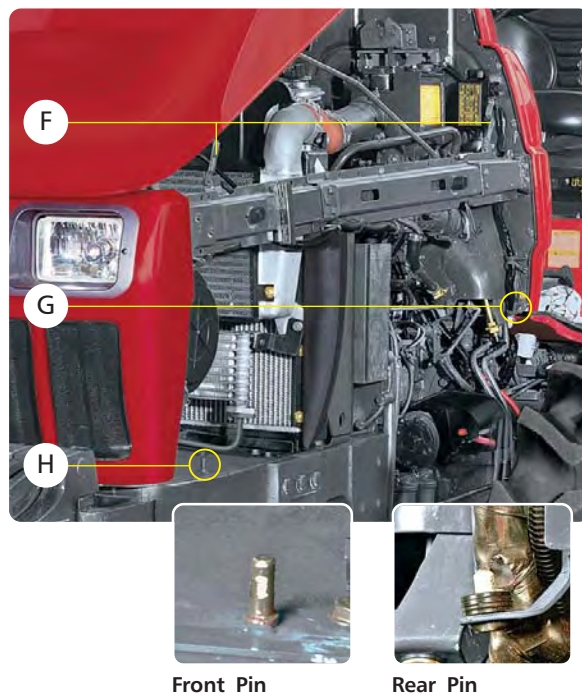


Opening Side Panels

1. Open the hood.
2. Turn the locks (F) to free the side panel.
3. Lift the panel gently out of the locating rear pin (G).
4. Lift the panel gently out of the locating front pin (H).

Closing the Side Panels

1. Locate the bottom holes in panel around the locating pin (H) and then in (G).
2. Gently press the panel against tractor.
3. Turn the lock (F) until the panel is locked.



Emission Control System (ECS System)

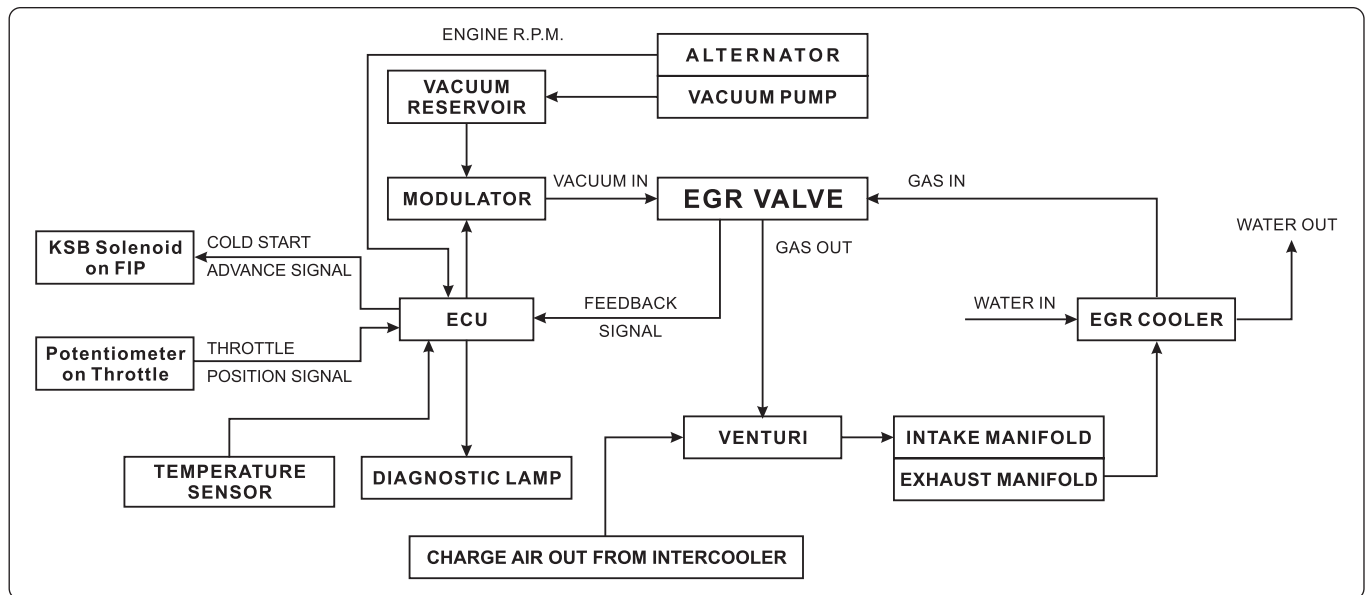
Purpose of ECS system is to keep Emission under control. ECS system is designed to send appropriate quantity of exhaust gas into the engine cylinder under various engine operating conditions.

- Potentiometer on Throttle gives signal to (Electronic Control Unit) ECU about position of throttle.
- Alternator gives signal about the Engine r.p.m.
- ECU analyses the LOAD on Engine based on inputs for Throttle Position Vs Engine rpm. It gives appropriate signal to MODULATOR.
- MODULATOR then allows controlled vacuum to operate EGR valve.

Thus appropriate quantity of exhaust gas is recirculated into the engine cylinder under various engine operation conditions.

WARNING

The Emission Control System Indicator will glow continuously indicating presence of fault in ECS. The tractor needs attention by Mahindra Authorised Dealer immediately.



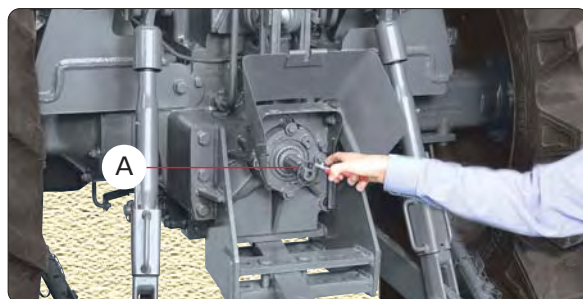
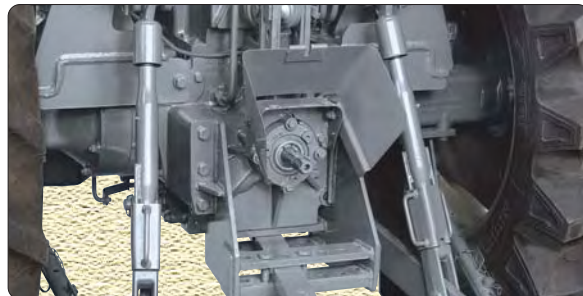
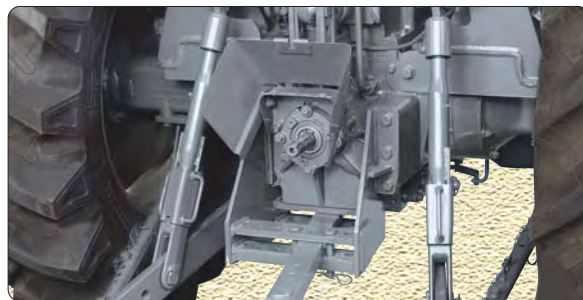
PTO Speed Selection

PTO Speed Selection

Two speeds viz. 540 rpm and 1000 rpm are provided for the PTO. These speeds can be achieved by reversing the PTO shaft.

The PTO shaft consists of 6 splines on one end and 21 splines at the other end. This shaft can be detached after removing the circlip (A) and can be refitted from either end.

1. Shaft fitment with 6 splines pointing towards the implement gives you an output of 540 rpm at PTO.
2. Shaft fitment with 21 splines pointing towards the implement gives you an output of 1000 rpm at PTO. Always lock the shaft with circlip (A) after closing the speedmode.

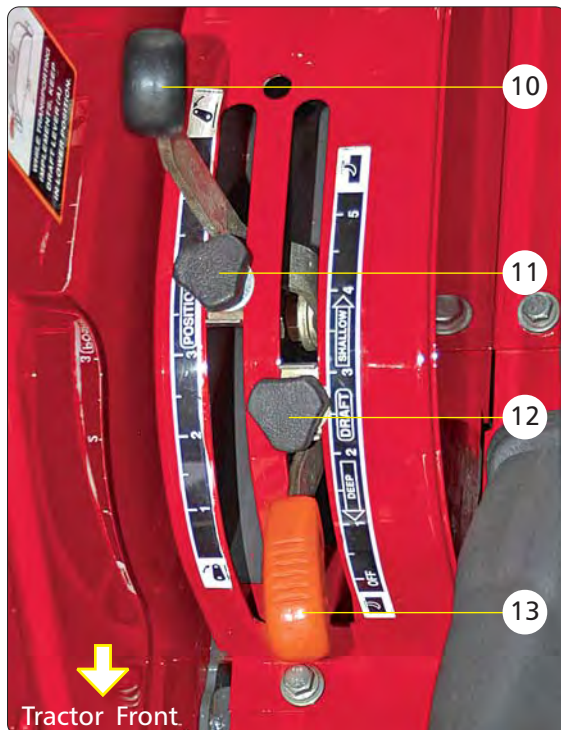
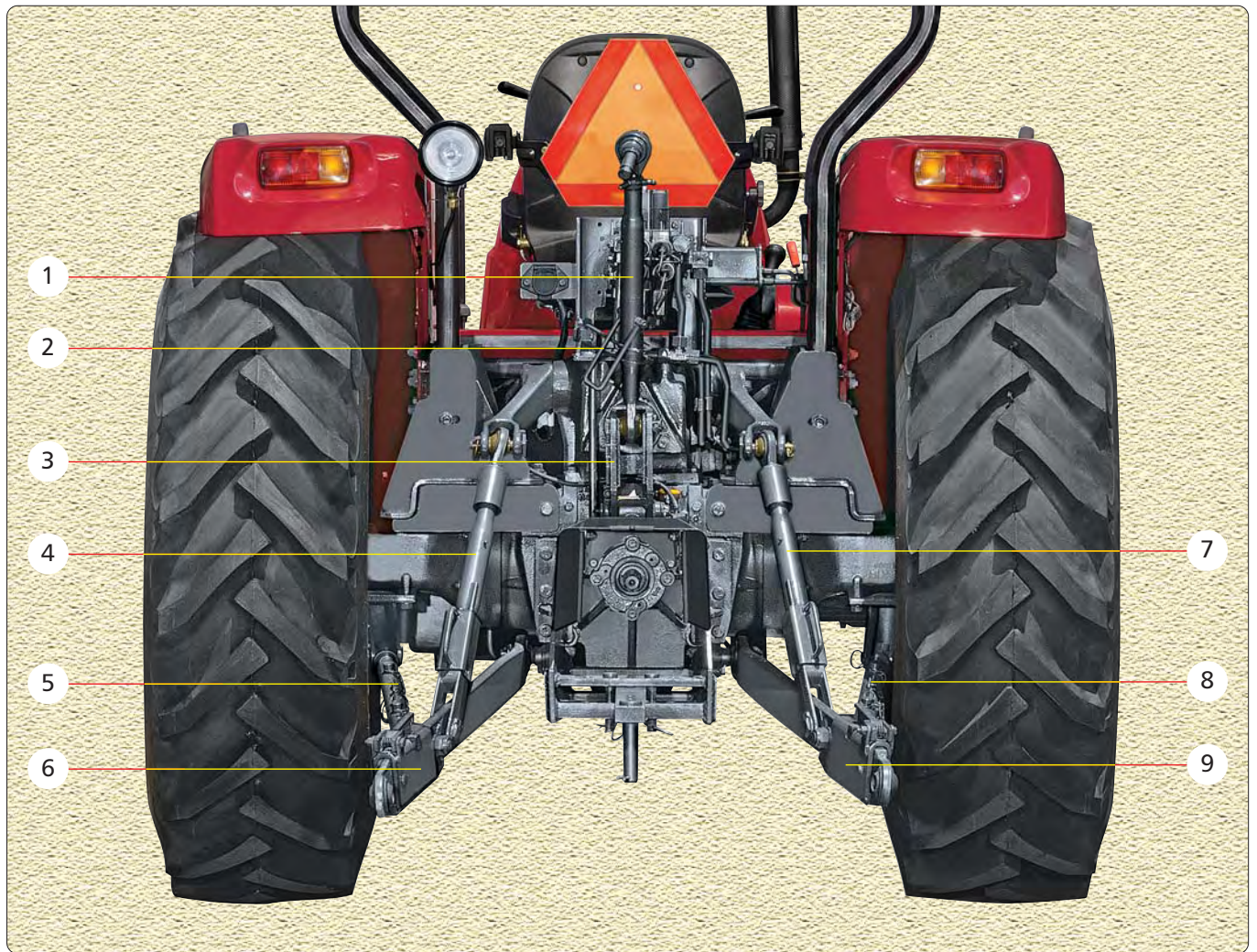


WARNING

Firmly apply the parking brakes, place all gearshift levers in neutral and block all four wheels before operating any stationary PTO equipment.

Do not approach or work on the PTO shaft or equipment while the PTO is in motion.

Shut-off engine and the PTO and wait for all movement to stop before working on the PTO or equipment.



Three Point Linkage

1. Top Link
2. Hanger Top Link
3. Draft Sensing Bracket
4. Adjustable Lift Rod LH
5. Lateral Stabiliser LH
6. Lower Link LH
7. Adjustable Lift Rod RH
8. Lateral Stabiliser RH
9. Lower Link RH

Quadrant Assembly

10. Position Control Lever
11. Position Control Stop Screw
12. Draft Control Stop Screw
13. Draft Control Lever

Position Control - Operation

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

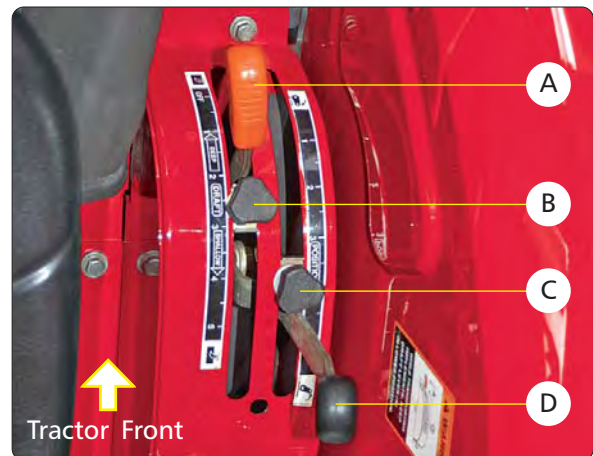
This lever (D) controls the lifting and lowering of all implements used on the three point linkage.

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 run.

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

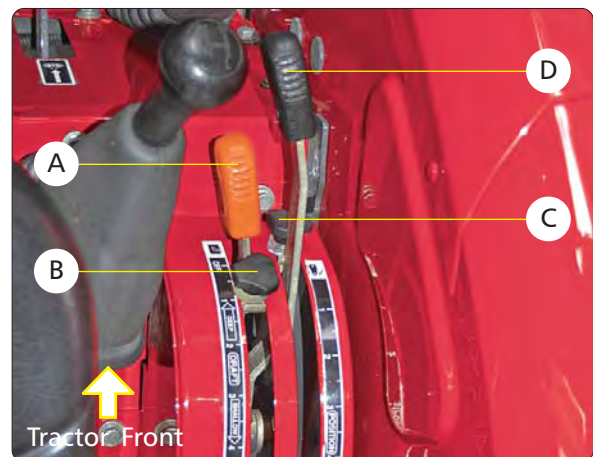
1. TRANSPORT of implements and turn around at the end of the field.
2. CONSTANT DEPTH of implements on level terrain and for non-ground engaging implements such as spreaders or sprayers. Place the PC lever at desired depth.



Position Control Lever Stop

1. Move the DC lever (A) to its most forward 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 & tighten the knob.

Whenever the lever is returned to the stop from the lift position, the implement will return to and remain at the preset height.



Draft Control

As the draft of the implement varies due to irregularities of ground contour, soil texture, or pitching of the tractor, so 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.

Setting the Draft Control

1. Move the PC lever (D) to its most forward position.
2. Move the position control stop screw (B) 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 most forward position. The faster the lever is moved Forward the quicker the implement will drop.
5. Move the tractor slowly in forward gear. 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 (C) until it touches the DC lever (A) and lock it in this position.

When the soil texture remains constant, the implement 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 go to 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.

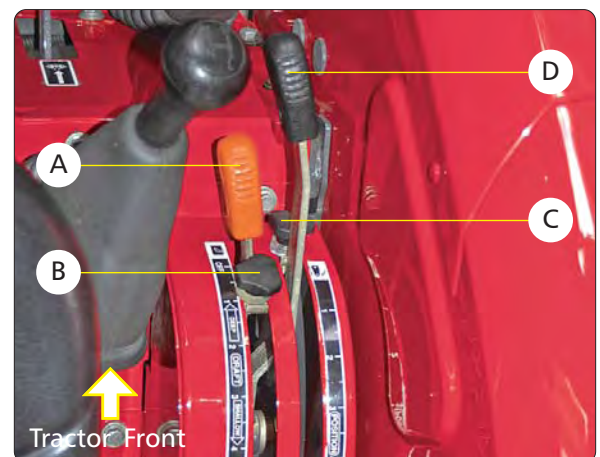
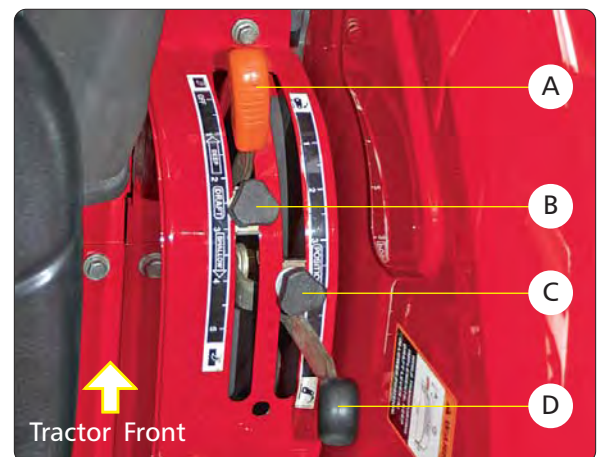
When the front wheels of the tractor drop into a furrow, the tendency for the implements is to lift out of the ground. As the implement lifts, the draft decreases and the system goes lower to maintain the pre-set depth. If the rear wheel drops into a furrow, the reverse will occur.

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

⚠ 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.

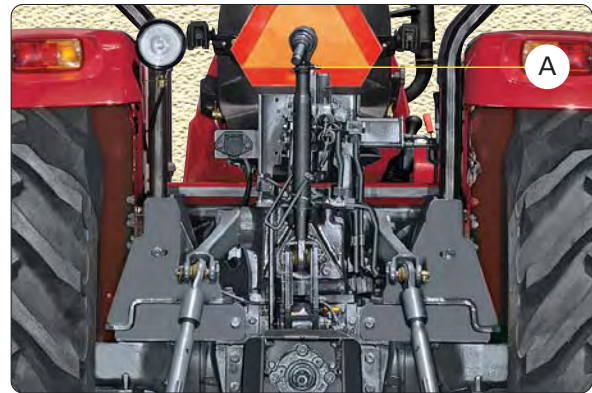


Three Point Linkage

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 locknut (A).
2. Clockwise rotation of turn buckle will decrease the distance.
3. Anticlockwise rotation will increase the distance.
4. Tighten the locknut (A) after desired adjustment.



Draft Sensing Bracket

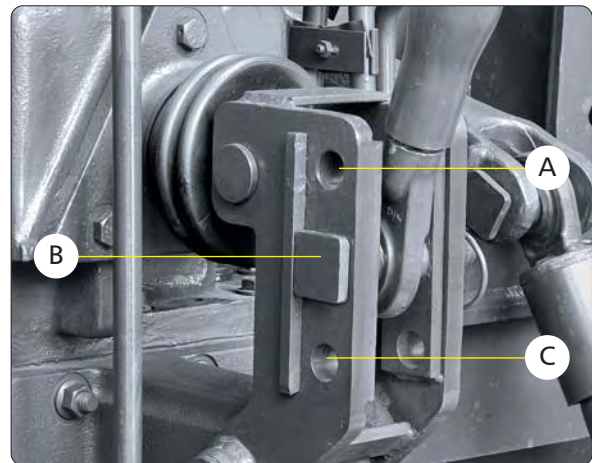
Draft sensing bracket transfers the topline force to the draft sensing mechanism. It has three holes (A), (B) and (C) for hitching the topline.

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

Top Hole (A) : Attach topline to hole (A) where higher and medium draft sensitivity is required Viz. Cultivator in soft soil.

Centre Hole (B) : Attach topline to hole (B) where medium to Low draft sensitivity is required Cultivator in Hard soil and Plow in soft soil.

Lower Hole (C) : Attach topline to hole (C) where very Low draft sensitivity is required Viz. Plow in hard soil.



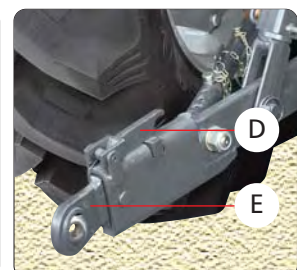
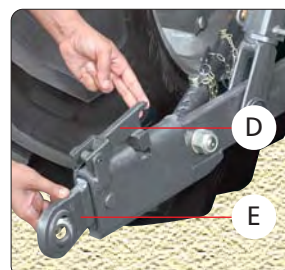
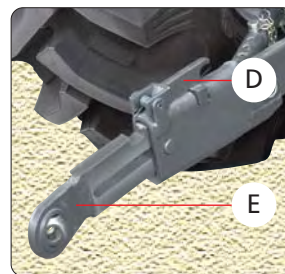
Contact your Mahindra dealer to understand hitching position of topline for specific implements used by you.

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. Raise lock lever (D) and pull link (E) 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.

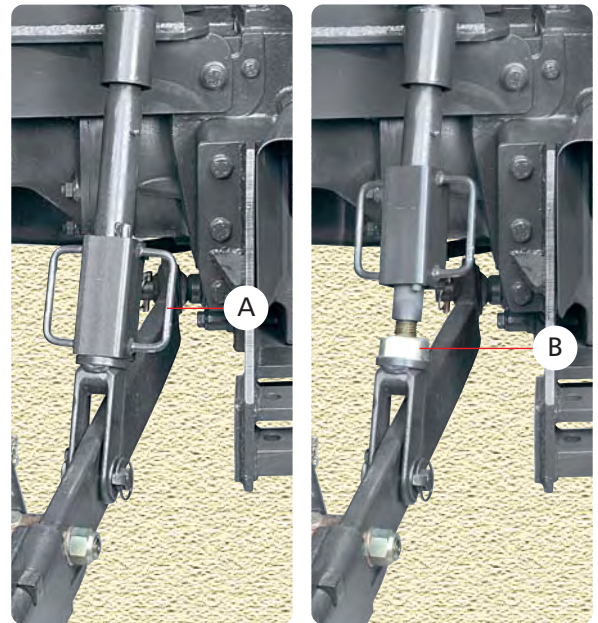
The Lower Link is available with adaptability of Cat-2 implements.



Adjustable Lift Rods

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. Raise lift rod turn handle (A) out of locking tab (B).
2. Rotate turn handle (A) clockwise to raise the lower link or anticlockwise for lowering.
3. After adjustment, make sure to engage handle (A) with locking tab (B). Always transport the implement with turn handle in this position.



Locked

Unlocked

Lateral Stabilizers

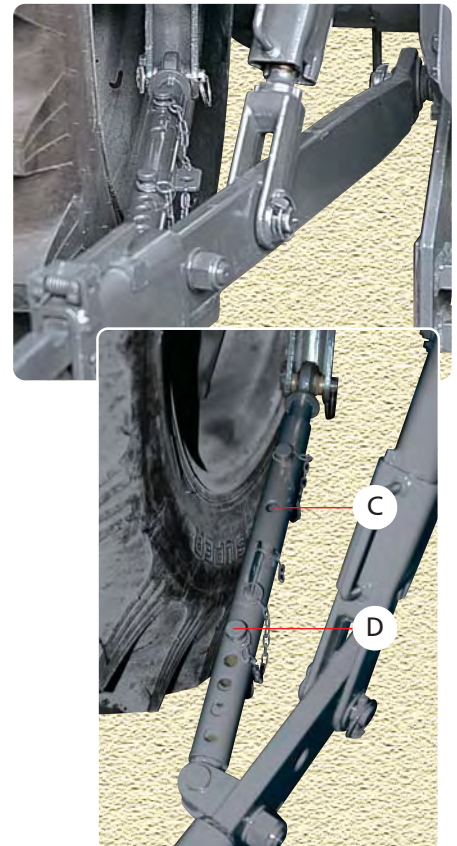
These are provided for adjustment of width between two lower links according to varying implement spans.

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.



Attachments

Swinging Drawbar

Tractor can be equipped with a drawbar for connecting to pull behind implements. It can swing from side to side and can be adjusted fore and aft. It can be set at various positions.

The distance between end of PTO shaft and implement / attachment pin hole can be set at three positions. In each position the dimensions achieved are as per chart.

Certain heavy equipment such as a loaded single axle trailer can place excessive strain on the drawbar. Strain is greatly increased by rough road and high speed. Static vertical load on drawbar should not exceed as stated in chart.

The drawbar can also be offset from the center on both sides. See your implement operator's manual for drawbar positions.

The drawbar must be locked in center position when

1. Operating a drawbar pulled PTO driven implement.
2. Towing implements/Trailers on road or field.

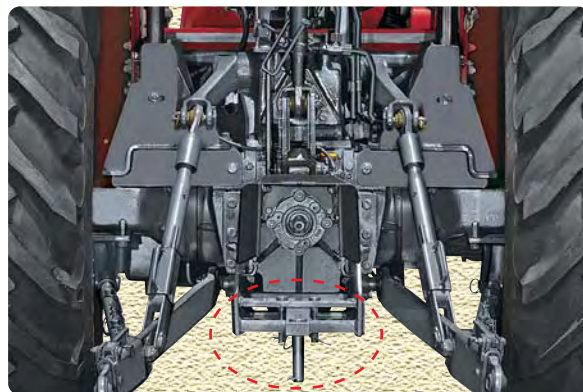
Adjusting Drawbar length

1. Remove Nut (A).
2. Pull drawbar pin (B)
3. Slide drawbar to desired position.
4. Insert the drawbar pin (B) in hole of drawbar.
5. Lock the drawbar pin (B) in position with Nut (A)

Using swinging Drawbar

1. Remove "R" pin (D) of both pins (C).
2. Remove both pins (C).
3. Shift to next holes as desired.
4. Lock the "R" pins.
5. See your implement operator's manual for drawbar positions.

Drawbar Positions	I	II
Dist. of Implement Pin Hole from PTO shaft end (in)	14	12
Max. Vertical (kg)	800	1000
Load On Drawbar (lb)	1763	2204

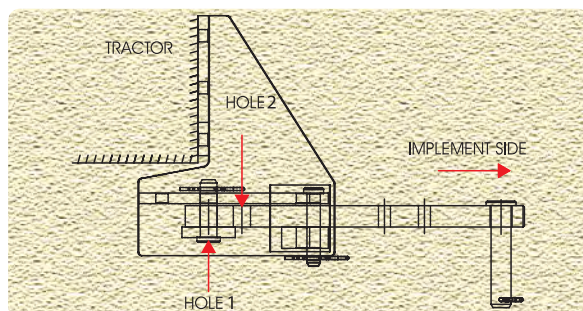
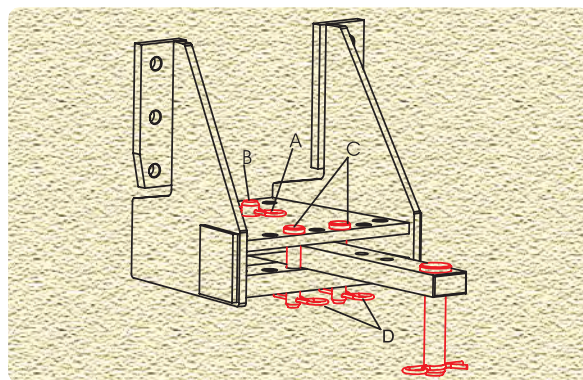


⚠ WARNING

Rear roll-over can result if pulling from wrong location on tractor. Hitch only to drawbar. Use three 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. Add Jerrycan weights for improved stability. Engage the clutch smoothly, avoid jerking and use brakes cautiously to avoid jack-knifing.



Attaching PTO driven Implement

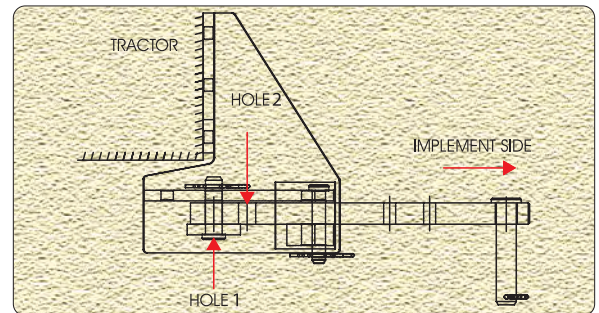
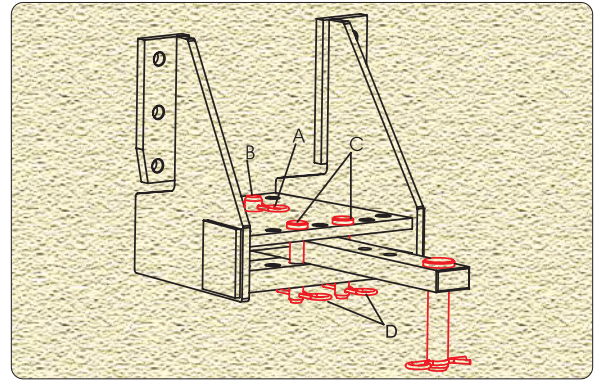
1. Turn Key to "OFF" position.
2. Disengage the PTO lever.
3. Position the drawbar according to the requirement of implement and drive line.

NOTE : There are two holes at the front of drawbar.

For drawn PTO driven implements, lock the drawbar pin in hole (1) for proper 16 inch distance from end of PTO shaft end and implement / attachment pin hole.

For maximum traction and efficiency while pulling a trailer, lock the drawbar pin in Hole (2) for 14 inch distance from end of PTO shaft end and implement/ attachment pin hole.

4. Attach implement to tractor before connecting PTO driveline. Raise Hitch upwards if it is not to be used.
5. Rotate PTO shield upward 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 drive line is locked to PTO shaft.
7. Place PTO shield in downward position.



Jerrycan Weights

To obtain desired level of traction and stability, these weights are provided as optional fitment. The pin (E) is used for towing purpose.

With loader application on the tractor, these weights are to be removed. However the weight mounting bracket shall not be removed and the pin (E) with this bracket can be used for towing purpose.

If situation demands, the weights can be removed in pair :

1. Remove nut (A) and washer (B) from of threaded rod (C).
2. Remove weight (D) from both ends of the threaded rod (C).
3. Refit washer (B) and tighten nut (A) on threaded rod (C).



For procuring "Jerrycan Weights" if required contact your Mahindra Dealer.

Wheel Weights (Optional fitment)

The drawbar pull of the tractor can be increased by the addition of weight to the driving wheels, either by adding cast iron wheel weights or by use of liquid in the tires. Should the tractor tires wear excessively due to wheel slippage, increase the traction by adding weight to the rear wheels.

Two nos cast iron rear wheel weights are provided as a standard fitment on each wheel.

If increased drawbar pull is required to suit different applications and conditions, only experience can indicate the correct amount of extra weight required, it may be sometimes necessary to use both cast iron wheel weights and liquid ballast.

For procuring additional weights if required contact your Mahindra dealer.

Wheel Tread Adjustment

Adjustment of Front Wheel Tread - 2WD

Adjustment of Front Wheel Tread for 8560 2WD Adjustment of the front axle extension allows variation of the tread in 4" (10.16 cm) increments from 58" (121.92 cm) to 66" (142.2 cm). The axle can be off-set in 4" (10.16 cm) increments as required.

Milled in the tie rod are adjustment grooves, which give adjustment to correspond with the axle extension settings.

Whenever the axle extensions are altered the tie rod and toe-in must be re-set. It is to be noted that the track width may vary with change in the front tire size.

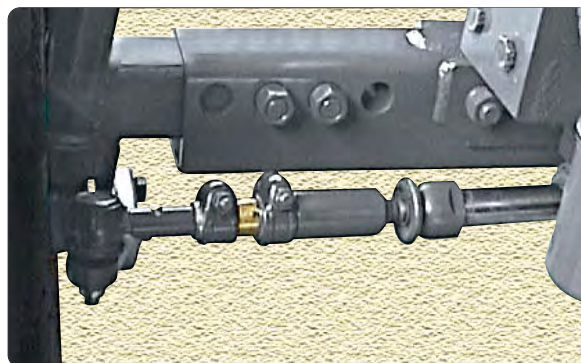
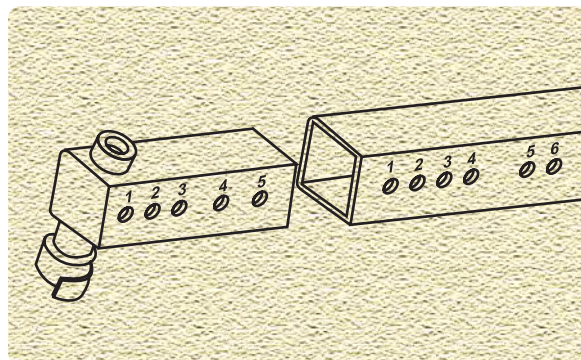
To adjust the front wheel tread, raise the front end of the tractor and remove bolts holding the axle extension pieces.

Remove the tie rod nut and bolt and pull out the axle extensions.

Move the axle extensions to the required position and adjust the tie rod to the corresponding position. Replace bolts in holes selected and tighten the axle extensions. Replace the tie rod bolt and tighten.

Sr. No.	Tread Width	F.A. Extension Holes	F.A. Box (Piece) Holes
1.	58"	1, 2, 3	2, 3, 5
2.	62"	1, 2, 5	1, 2, 6
3.	66"	2, 3, 5	1, 2, 5

For Front Tire Size 11L x 15



IMPORTANT

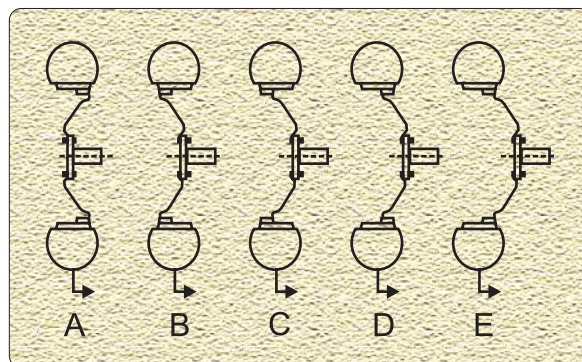
An arrow is marked on the sidewall of the tire, which must always point in the direction of forward rotation to obtain maximum traction.

Adjustment of Front Wheel Tread - 4WD

Setting of various offset combinations can result in adjustment of the Front wheel tread.

The Wheel tread obtained with Front Tire size 9.5L x 24 is as follows :

	Offset				
	A mm/ inch	B mm/ inch	C mm/ inch	D mm/ inch	E mm/ inch
Front Wheel	1644 64.72	1679 66.10	1791 70.51	1831 72.08	1943 76.5



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.

Adjustment of Rear Wheel Tread

The rear wheel tread obtained with Rear Tire size 16.9 x 28 is as follows :

	Offset				
	A mm/ inch	B mm/ inch	C mm/ inch	D mm/ inch	E mm/ inch
Rear Wheel	1509 59.4	1600 63	1712 67.4	1803 71	1916 75.4

Pneumatic Tires

Adding Liquid Weight

Tractor tire can be 80% filled with liquid as follows,

1. Raise the wheel. Rotate the tire until the valve, stem is at 1'O Clock position.
2. Remove the valve core housing and screw on the adapter.
3. Force liquid into the tire from a tank placed at least five feet higher than the tractor tire, or by using a compressor and pressure tank filled with water.
4. When the liquid has reached the required level, remove the adapter, screw in the valve core and inflate to the recommended pressure.

Where ambient temperatures are likely to fall below freezing point use calcium chloride solution, methanol for antifreeze.

The instructions and recommendation shown below should be followed in order to secure maximum life and efficient service from pneumatic tires.

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.

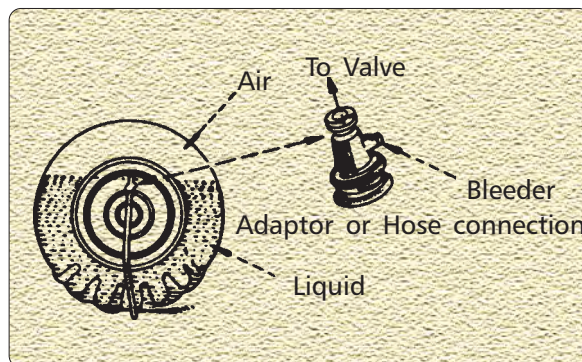


Chart A-1

Tire Load Rating - Agricultural & Industrial Tires :

	Tire Size	Tire Type	Tire SLR in	Tire Cap. @ 20 mph lb. @ psi	Rolling Circ inch.
Rear	16.9 x 30 6PR R1 TL	Agricultural	27	4150 @ 16	176
	19.5L x 24 8PR R4	Industrial	23.5	4640 @ 20	154
Front (2WD)	11L x 15 8PR F-2M TL	Agricultural	14.7	2090 @ 25	94
Front (4WD)	11.2 x 24 6PR R1 TL	Agricultural	20.1	2320 @ 26	130
	12.5 / 80 x 18 10PR R4 TL	Industrial	17.4	4710 @ 46	114

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.

	2WD	4WD
Front	28 PSI	26 PSI
Rear	20 PSI	20 PSI

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

After mounting a new or old tire on the rim, inflate it to 30 p.s.i. pressure to seat the tire bead on the rim flange and to prevent the tire from creeping and shearing off the valve. Then deflate or inflate tire to correct operating pressure.

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.
- Never attempt tire repairs on a public road or highway.

WARNING

- 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 clipon 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 steering.
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. Forward reverse shuttler lever in neutral.
 - b. Speed and Range shift lever in neutral.
 - c. PC and DC levers in lowermost position.
 - d. PTO lever in neutral.
 - e. Auxiliary valve lever in neutral position.
2. Turn the Key to ON position and observe SELF TEST function of instrument cluster. The Intake manifold heater will glow for 35 seconds.
3. 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.
4. 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 are provided on the transmission speed shifter and PTO lever. The tractor can be started when speed shifter lever is in neutral and PTO lever as well in neutral.

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.

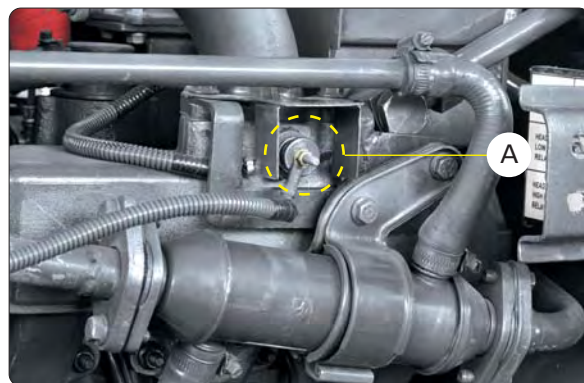
NOTE : It is normal for the engine to be louder and have bluish-white exhaust smoke during engine warm-up. The amount of smoke depends on the temperature of air entering the engine.

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

Glow Plug

The tractor is equipped with Intake Manifold Heater for easy startability in cold conditions. However to enhance the startability in extreme cold ambient conditions, the tractor is equipped with provision for fitment of glow plugs (an optional fitment). These glow plugs can be fitted in the cylinder head after removing the plugs.

A glow plug kit consisting of requisite spares is available with Mahindra dealer. Contact your nearest Mahindra dealer for further details on installation and maintenance of glow plugs.

Indications on Instrument Cluster

Following indicators will glow under different circumstances.

When the Key is turned to its second position "ACC" following indicators shall glow for :

First 7 seconds When the Key is turned to its third position "IG", following indicators shall glow,
4 to 6, 9, 10, 14 to 17, 21 to 25.

While Cranking following indicators shall glow,
4
5 - If Park brake is engaged.
14 & 15

After 7 seconds following indicators shall glow,
4 - If Transmission and PTO are in neutral.
5 - If Park brake is engaged.
14, 15 &
24 - It shall continue to glow for 35 seconds.

After Starting the Engine following indicators shall glow,
4
5 - If Park brake is engaged.



Operating Instructions

Driving the Tractor

With the engine running and the clutch in disengaged position, engage Forward Reverse shuttle, Speed lever and the Range lever to their appropriate desired positions. Free the parking brake. Slowly release the clutch and 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 and turbocharger lubrication 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 in 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. Keep the clutch disengaged.
15. 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

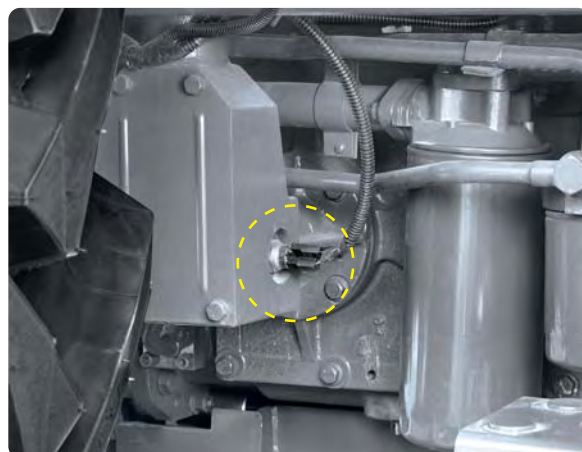
1. Before starting the tractor ensure parking brake is engaged, place the IPTO lever in the disengaged, hydraulic control levers in downward position, remote control valve levers and transmission in neutral.
2. Do not apply load on tractor at low engine speeds. Always apply heavy loads at full throttle 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 system of the tractor is connected through the switch on Speed Shifting System which becomes operative only if the transmission is in neutral position to complete the starting circuit. Do not bypass the safety Key Switch. Consult your Mahindra tractor dealer if your safety starting switch malfunctions.

5. Avoid accidental contact with the gear shifter 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. Shut off the engine and apply the parking brake before getting off 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.
16. **Emergency stopping instruction** : If tractor fails to stop even after application of brakes shut off the engine while the tractor is in gear and clutch engaged.



PTO Neutral switch



Transmission Neutral switch

Precautions

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 rollover bar and seat belt for safe operation. Overturning of a tractor without a rollover bar can result in death or injury.
3. Do not remove ROPS (Roll Over Protective Structure). Always use the seat belt.
4. 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 in 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. To avoid injury, always move down flip part of PTO shield do not clean, adjust or service PTO driven equipment when the tractor engine is running.
5. Make sure the PTO master shield is installed at all times and always replace the PTO shield cap when the PTO is not in use.

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 your 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 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. Add Jerrycan weights for improved stability. Engage the clutch smoothly, 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. Pull PTO "ON-OFF" rearward to OFF position.
2. Disengage differential lock.
3. Place Range shift lever in neutral
4. Place Speed shift lever in neutral.
5. Place F-R Shuttle shift lever in neutral.
6. Disengage 4WD. (Applicable for 8560 4WD)
7. Connect L.H & R.H brake pedals together to slow down or brake the tractor.

Diesel Fuel

1. Keep the equipment clean and 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.

DONT'S - For Safe Operation

- DON'T - Run the engine without the air cleaner.
- DON'T - Start the tractor in high idle.**
- 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 or clutch pedal. This will result in excessive wear of the brake linings, clutch driven member and clutch release bearing.
- 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 - Start the engine with the P.T.O. engaged.
- 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 forward reverse lever while tractor is in motion.
- 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.

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/cm²) 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

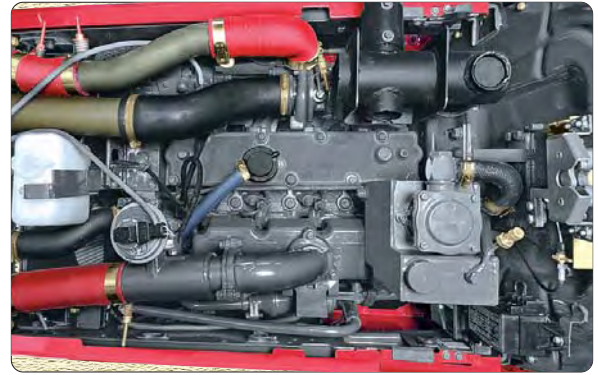
When the engine is in operation, certain amount of coolant passes out of the radiator overflow pipe. This coolant is not allowed to escape into the atmosphere and captured into a Surge tank.

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°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.

Cooling System

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 7 Blade metallic fan is mounted on water pump and is driven by fan belt by the main drive 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.

Main drive pulley is assembled on a roller bearing mounted shaft. Grease nipple is provided on front cover to grease the bearings. Grease the bearings every 600 hrs. of operation.

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 (270-320 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 Nut (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 L.H. 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.

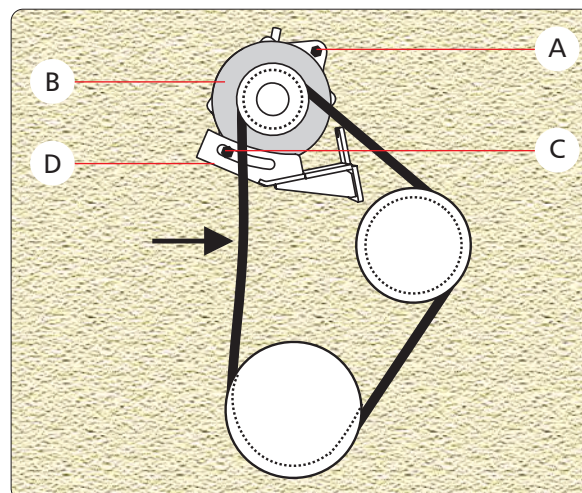
Cleaning out Dirt and Sludge

Drain cooling system as directed above. Fill the cooling system with a solution of 1.0 Kg. of ordinary baking soda to 8.0 litres (2.11 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.

NOTE : Under normal conditions use Lithium based NLGI-2 grease with EP additives.

Contact your Mahindra dealer for grade of grease to be used under extreme ambient conditions.



- A. Alternator Mounting
- B. Alternator
- C. Adjusting Nut
- 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

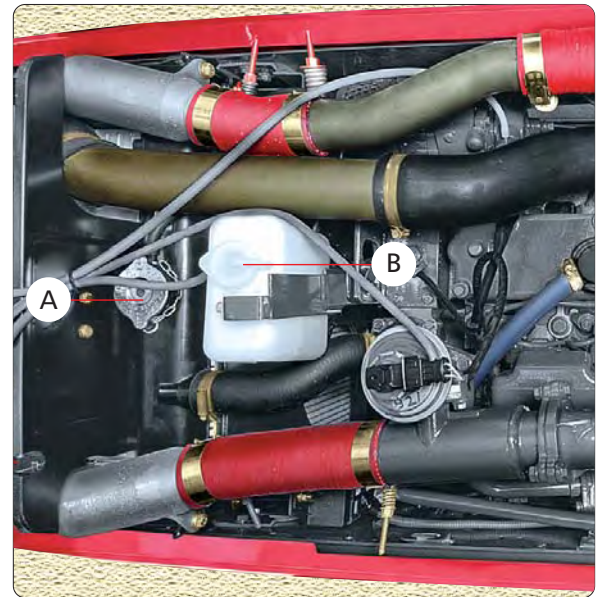
A common cause of the engine overheating is a rust clogged cooling system. Rust causes overheating by interfering with circulation and cooling. The tractors are filled with a mixture of new low silicate antifreeze (50% - antifreeze - 50% water) with a rust inhibitor in it.

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.

Low silicate antifreeze is available through out the United States. 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.

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



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 :

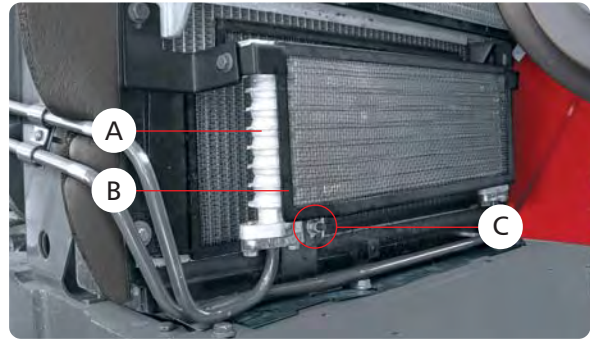
% Anti Freeze / % Water	50/50	60/40
Freeze Protection	-34°F -36.67°C	-64°F -53°C
Boil over protection	+265°F 129°C	+275°F 135°C

(with 13 psi (0.91kg/cm²) radiator cap)

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

Transmission Oil Cooler

Transmission Oil Cooler (A) is fitted in front of the radiator and just below the intercooler. It helps in cooling the transmission oil to have better performance.

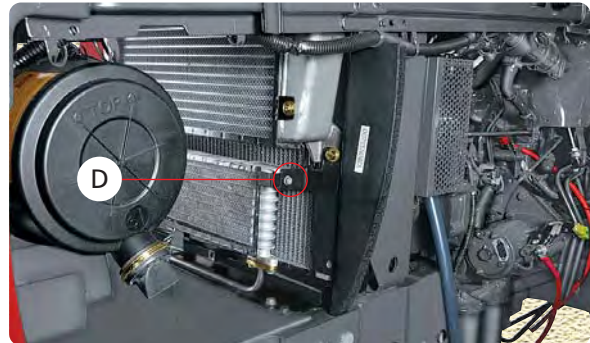


Trash Guard Transmission Oil Cooler

This is a single piece construction. This can be easily removed for cleaning as follows:

1. Loosen nut (C) and bolts (D) to free trash guard (B) from both sides.
2. Remove the trash guard (B) and clean it thoroughly.

Reverse procedure of removal for assembly.



Trash Guard Radiator

To clean trash guard, open the hood, remove both side panels.

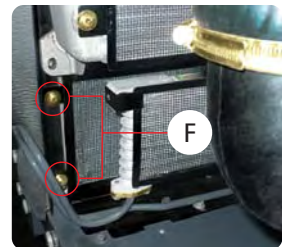
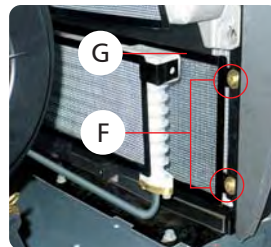
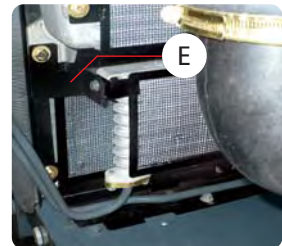
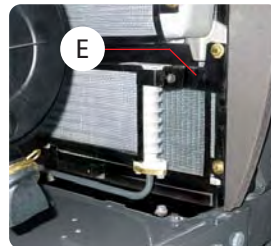
Then remove transmission oil cooler mounting brackets (E) from both sides.

Loosen required mounting hardware (F) of trash guard (G) of radiator.

Take out trash guard from LH side of Engine.

Clean it thoroughly.

Reassemble the trash guard after cleaning.

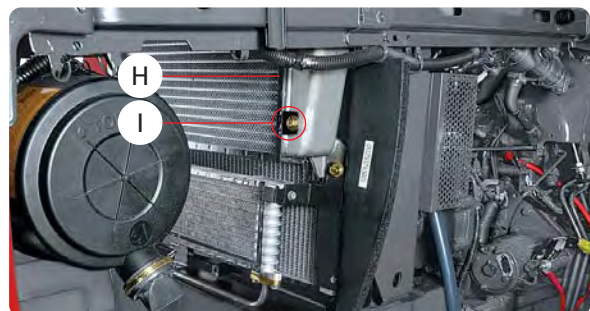


Trash Guard Intercooler

Further, to take out trash guard (H) of intercooler, remove required mounting hardware (I) and take out trash guard.

Clean it thoroughly.

Reassemble the trash guard after cleaning.



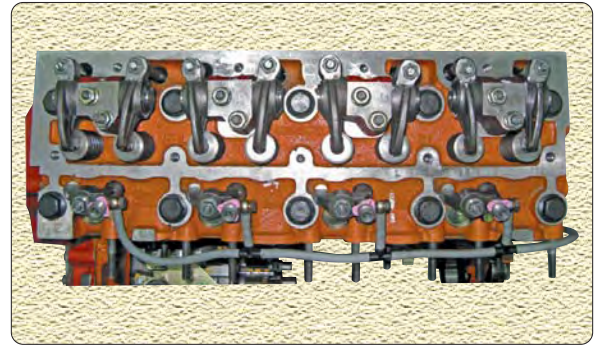
Adjusting The Valve Clearance

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.

Replace 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 (Cold Values)	mm	0.3	0.4
	Inch	0.012	0.016

Air Intake System

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 (B) 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

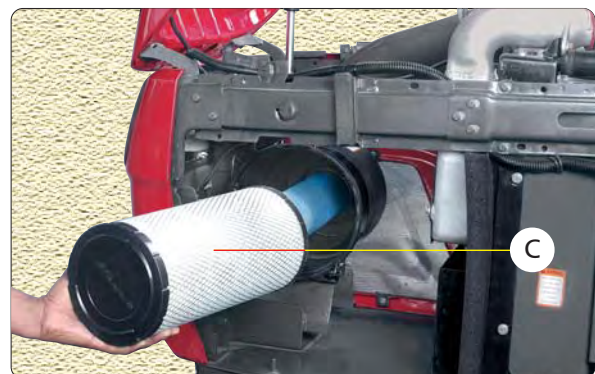
Check Hose clamps for proper tightness.



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 calibration 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. Any FIP related work should be carried at Mahindra / BOSCH authorised dealership.

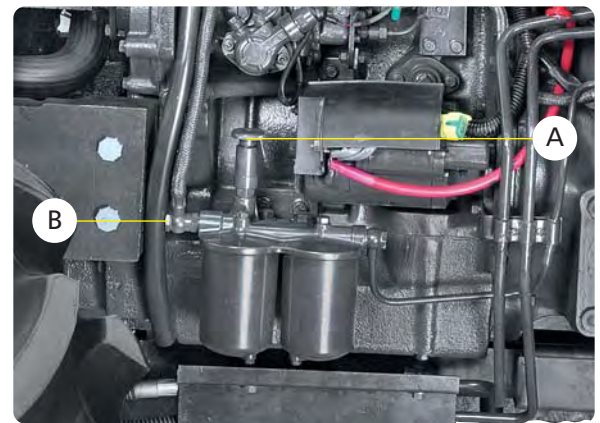
CAUTION

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

The life of the filter depends on the amount of impurities it is required to remove from the fuel. Therefore, clean fuel will not only increase the life of the filter element, but also make it more efficient.

Plugs (B) are provided to remove dirt and water. Drain water in fuel at these points once every 50 hrs. of operation.

Both paper type filter elements at the primary stage and at the secondary stage are fitted in twin bowls of the fuel filtration system as original equipment. The arrow on the filter cover indicates the direction of fuel flow.

Filter elements should not be cleaned but only replaced as recommended below :

Primary stage paper insert - Every 250 hrs. or earlier if required.

Secondary stage paper insert - Every 500 hrs. or earlier if required.

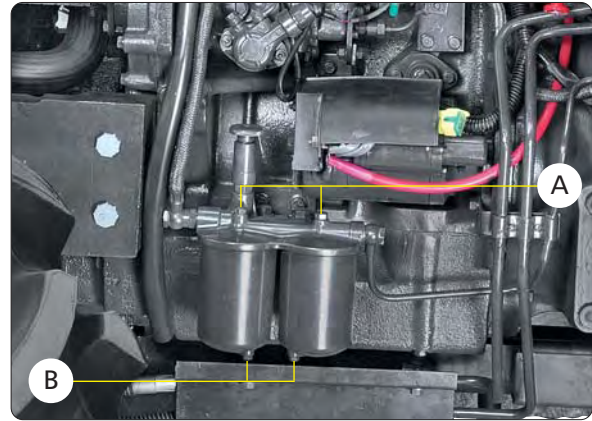
If impaired, engine operation indicates the filter has become clogged, replace the filter elements immediately. This condition will be indicated by loss of power and engine mis-firing at full load. Avoid replacing both the elements simultaneously.

Servicing the fuel filter

Filter elements should not be cleaned but only replaced. Primary stage paper insert should be performed every 250 hours and the secondary stage paper insert should be performed every 500 hours.

To service the primary fuel filter, use a clean cloth and clean the filter assemblies externally. Close the fuel tank cock. Loosen the center bolt (A) on the primary filter and remove the filter bowl. Remove the filter insert from the bowl and discard it. Clean the filter bowl and assemble the filter using new filter element. Tighten the centre bolt to a torque of 2 kg.m.

Bleed the secondary stage fuel filter similarly.



Oil Level Check

Check engine oil before starting the engine.

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

Oil Change

Change Engine Oil as per Routine Service Schedule given in this Manual.

1. Ensure that the engine is stopped before changing oil.
2. Remove the drain plug 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 (C) to expose the oil filler neck.
6. Refill the oil sump slowly by recommended grade of oil (15W40-CI4) from the oil filler neck.
7. Clean and place the breather again.

Engine Oil Filter

The life of engine and turbocharger 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 Engine oil filter (B) should be replaced as per Routine Service Schedule given in this Manual or whenever engine oil is changed.

Changing Spin On Filter

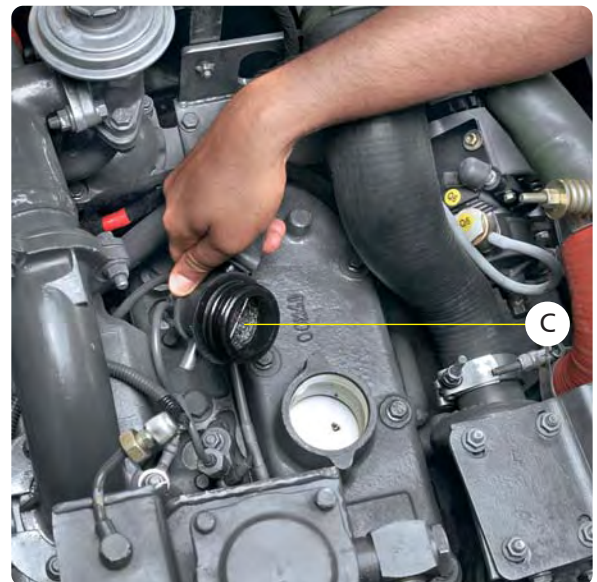
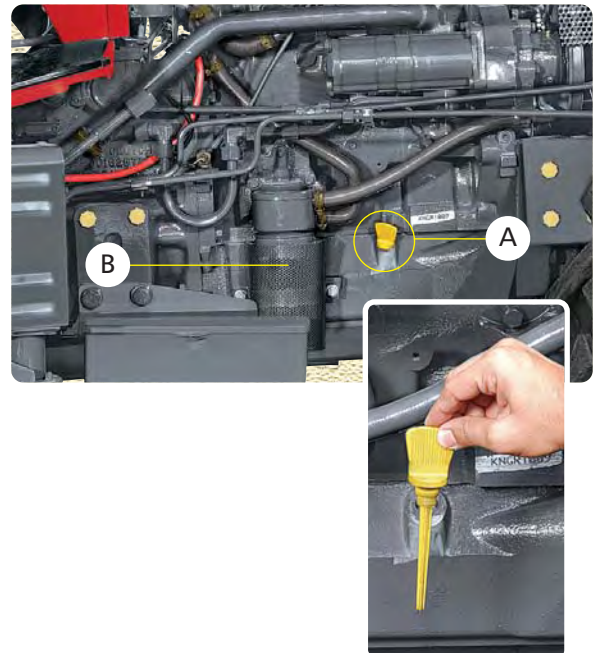
1. Ensure that engine is stopped before changing filter.
2. Remove the lub oil filter Guard.
3. Unscrew the oil filter (B).
4. Prime the new spin-on filter with clean oil.
5. Screw the new filter to the adapter.
6. Move the Hand and foot throttle to engine "Idle" position.
7. Start the engine, check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

Turbocharger

Check the turbocharger periodically as follows.

1. Move the Hand and foot throttle to engine "Idle" position.
2. Inspect the oil filter for oil leaks through oil supply and drain line.
3. Stop the engine immediately if leakage or abnormal sound is observed. Get the cause identified and rectified before proceeding further.



NOTE : Engine oil and filter element must be changed after initial 50 hrs. of operation in new tractor or whenever major overhaul of engine is carried out and subsequently after every 250 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 (-) 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. Taking 100% of cranking power at 80°F then at 32°F, only 65% and 0°F only 40% cranking power is available.

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 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.

Charging Circuit

Should the battery be 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.

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.

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.

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

IMPORTANT

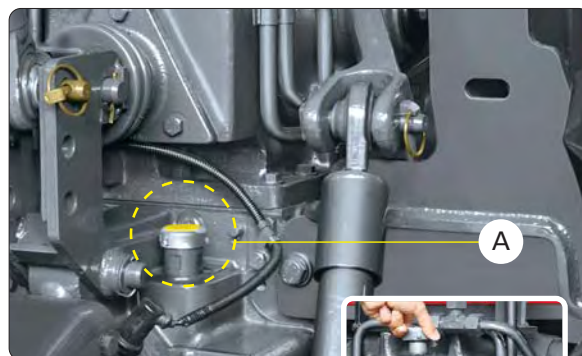
Should the starter motor be removed, and a replacement motor or drive end bracket be fitted, a check must be made of the out of mesh clearance after assembling the starter motor to the engine. The dimension between the leading edge of the pinion and the engine flywheel should be no less than 0.32 cms.

Adding Hydraulic and Transmission Oil

Change Transmission & Hydraulic oil at every 1000 hrs. of operation. While changing the complete oil of transmission, 8.59 US gallon oil has to be filled in rear housing and 0.66 US gallon oil in each rear axle.

Check the level of oil in the Transmission & hydraulic reservoir as follows,

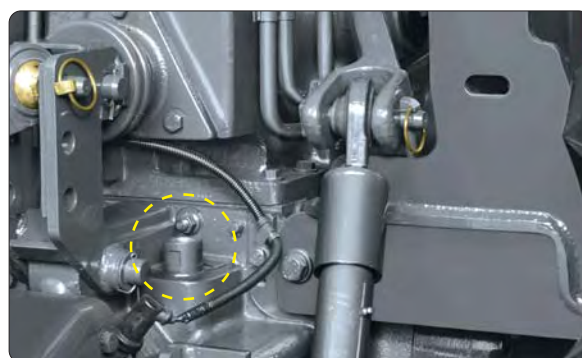
1. Keep the tractor on level ground.
2. Clean the area around dipstick cum filler cap (A) before removing.
3. Unscrew and remove the dipstick cum filler cap (A).
4. Clean the dipstick cum filler cap (A) and refit it in the housing till it reaches its bottom by slight hand pressure.
5. Again unscrew the 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 when ever required.



Dipstick Location



Oil Level Check



Oil Filling

Adding Oil in Rear Axle

1. Open filler cum breather (B) of both rear axle.
2. Add 0.66 US gallon oil in each rear axle.
3. Clean the breather with diesel.
4. Refit breather.



Adding Oil to Rear Axle

Hydraulic Suction Filter and Transmission Oil Filter

Change Transmission oil filter (A) initially at 50 hrs. and subsequently at every 400 hrs. of operation.

Change Hydraulic suction filter (B) initially at 50 hrs. and subsequently at every 400 hrs. of operation.

These Spin-on type filters are located behind the Battery box on RH side of tractor.

The battery box is pivot mounted and when unlocked can be swung outwards as depicted in the illustration.

The filters can be accessed after swinging the Battery box outwards.

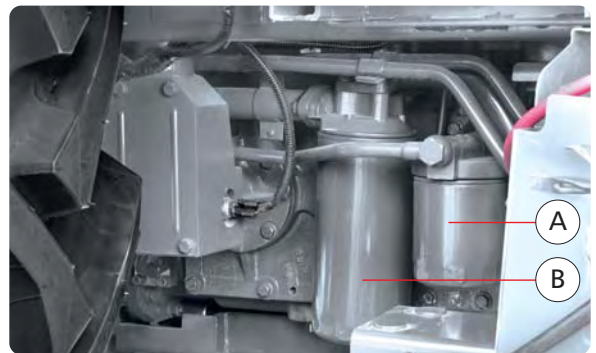
Remove old spin-on filters.

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

Swing the battery box to its normal position after replacement of filters and lock Bolt (C).



Battery Box Closed



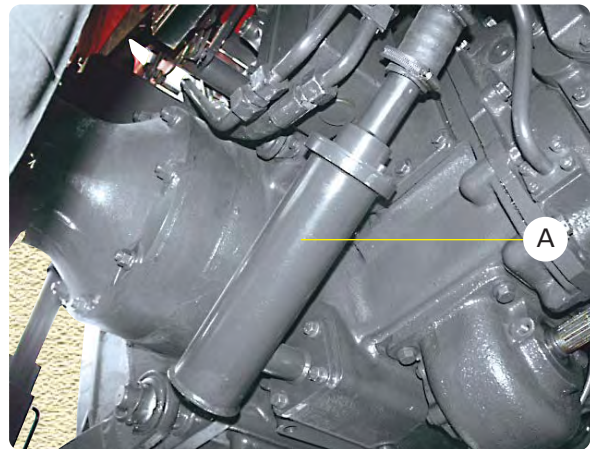
Battery Box Swung Open

NOTE : The hydraulic suction filter though resembles with engine oil filter, it differs in construction and usage. Hence these are not interchangeable.

Hydraulic and Transmission Strainer

Clean the suction strainer during every oil change. The Suction strainer (A) is located on R.H.Side of rear housing as indicated in the given figure.

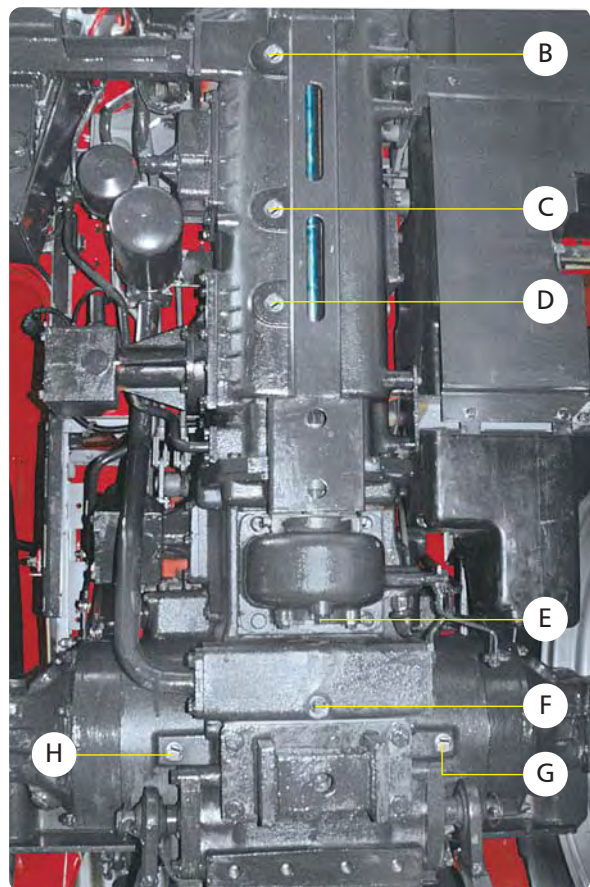
For Service / Replacement of strainer, contact your Mahindra Dealer.



Transmission Oil Drain

Six drain plugs (C to H) are provided on the transmission for draining transmission oil. The drain plug (E) located on the dropbox is at the lowest position.

The plug (B) is provided to check for oil leakage from clutch housing.



Bottom view

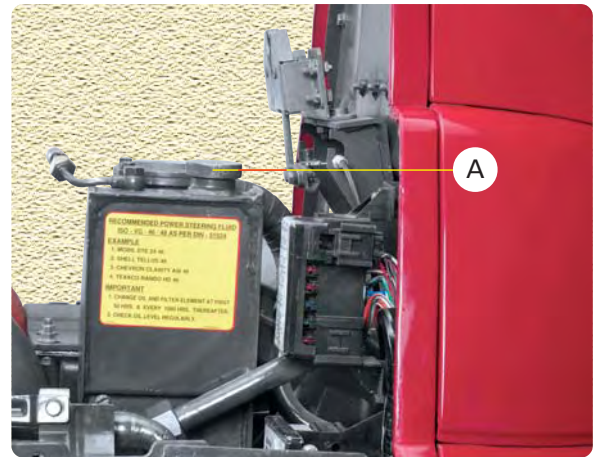
Filling and Air Bleeding for Power Steering System

Open the dipstick cum filler (A).

1. Fill the reservoir with recommended oil up to the upper level mark on the dipstick cum filler (A).
2. Start the engine using start key and immediately stop it by turning the key to the stop position.
3. Check the oil level and refill oil such that the level is between upper and lower level marks.
4. Repeat this procedure three times, each time checking level and refilling the reservoir if required.
5. Start the engine and let it idle for 2 minutes.
6. Shut the engine off and check the fluid level in the reservoir again, top-up if required.
7. Start the engine and steer the vehicle from full left to full right positions five times. Check the oil level and top-up oil if required.

Tips for maintaining the power steering system

- Top up fluid level in reservoir as necessary.
- Maintain correct inflation of front tires.
- Always use a puller to remove the steering wheel. Do not use a hammer, torch or crow bar.
- Investigate and immediately correct any play, rattle, shimmy, or other unusual condition in the steering system.
- Do not attempt to weld any broken steering component. Replace the component with original part only.
- Do not cold straighten, hot straighten or bend any steering part.
- Prevent dirt or other foreign matter from entering the hydraulic system. Clean off around filler caps before checking oil level.
- Investigate and correct any external leakage in the steering system.
- Comply with the manufacturers specifications for replacing the filter, first change after 50 hrs. and then 1000 hrs. subsequently.



Front Axle

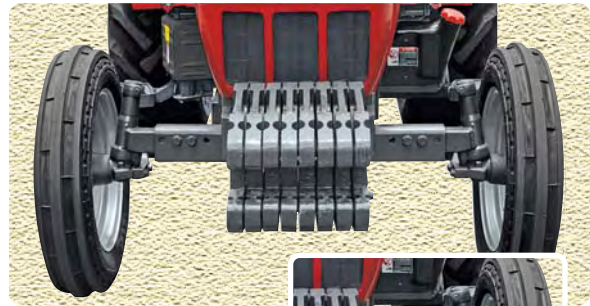
Front Axle - Front Wheel "Toe-in" Check

In the event of the tie rod setting being interfered with, then 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,

	Toe-in Value	
	inch.	mm.
8560 2WD	0.16 - 0.24	4 - 6
8560 4WD	0.09	2 - 4

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.



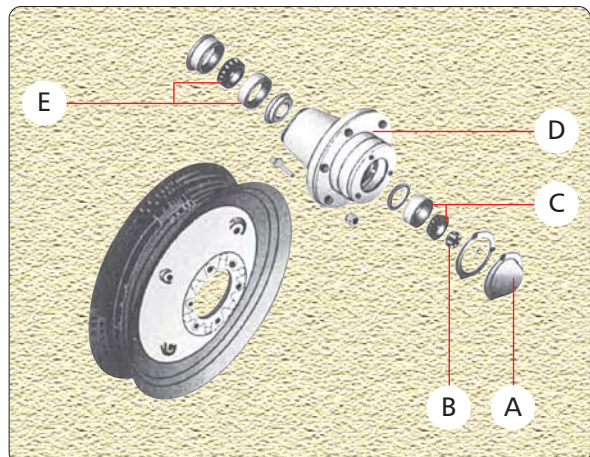
For 2WD



For 4WD

CAUTION

When the TOE-IN adjustments have been made the tractor should be jacked-up and the axle tilted to its maximum tilt position. In this position the wheels should be turned to the full left-hand lock and at this angle the welded stop on the steering knuckle pivot pin sleeve should be hard against the stop on the steering knuckle.



Preloading Bearings - 2WD

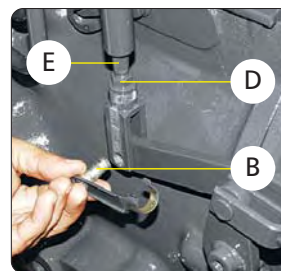
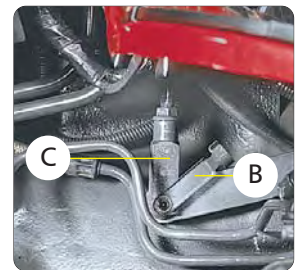
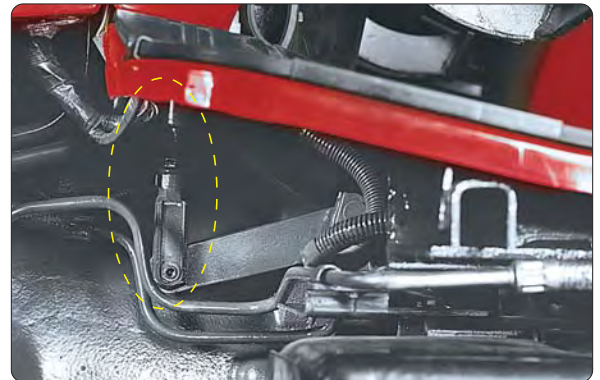
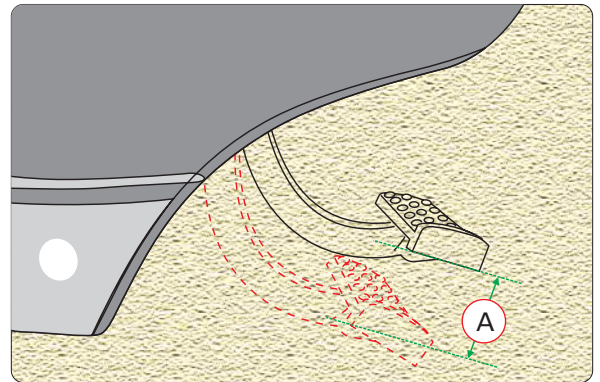
When replacing the front wheels it is essential that bearings are pre-loaded properly. To ensure this the nut 'B' should be tightened up while the wheel is being revolved until it stops. Slacken off the nut upto the first pin hole where the washer is free to move and place the split pin. It is advisable to leave the bearing (E) in place and clean with a brush and solvent. Before reassembling the bearings, repack the rollers with new grease.

Check and adjust clutch 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 clutch linkage as shown below.

Free Play - Distance 1.6 to 1.8 inch (40 to 45 mm)

1. Unlock the lock pin (B).
2. Pull out Lockpin (B) out of yoke (C).
3. Loosen jam nut (D).
4. Lock the turn buckle (E) by spanner.
5. Turn the yoke anticlockwise (from eyesight view) to decrease play and clockwise to increase play.



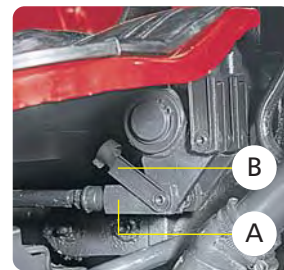
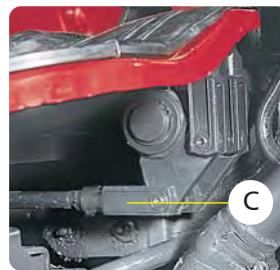
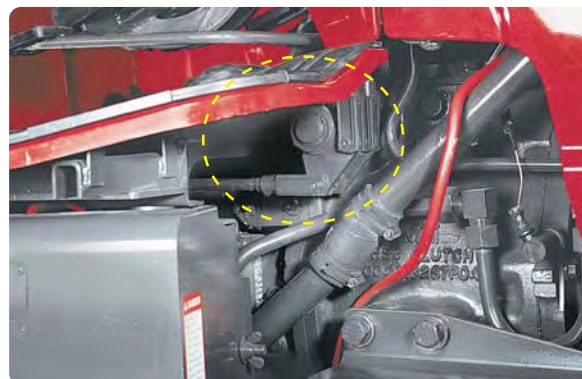
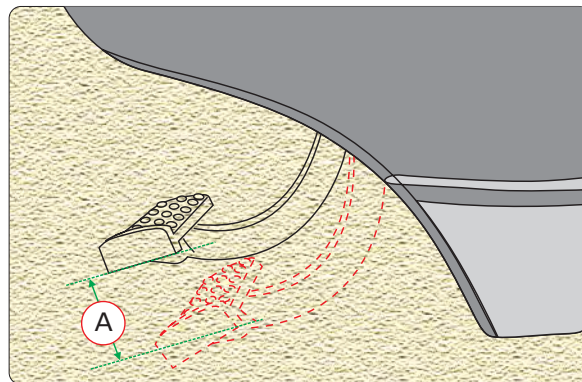
Brake Pedal Free Play

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 to 1.2 inch (25 to 30 mm)

1. Unlock the lock pin (B).
2. Pull out Lockpin (B) out of yoke (C).
3. Loosen jam nut (D).
4. Turn the yoke (C) anticlockwise to increase play and clockwise to decrease play.

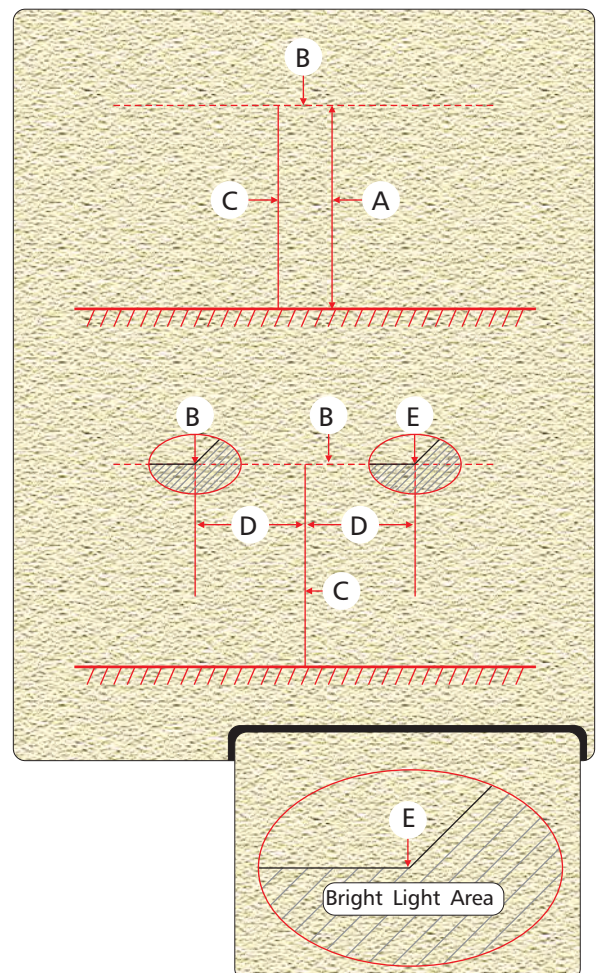


Head lamp adjustment

1. Remove Head Lamp cover by unscrewing screws (S).
2. Tighten screws (X), (Y) and (Z) fully.
3. Turning screw (X) in anticlockwise direction will raise the Beam.
4. Turning screw (Y) in anticlockwise direction will lower the Beam and move towards Right of the operator's view.
5. Turning screw (Z) in anticlockwise direction will lower the Beam and move towards Left 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 headlamp 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 centerline. Mark tractor centerline (C) on wall.
5. From tractor centerline (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 (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 idling time for the engine should not be longer than one year but it is advisable to check the oil after 6 months.

It is not the policy of the Mahindra & Mahindra Ltd. to guarantee oil performance under the conditions of operation, and its compatibility with the diesel fuels used, must remain with the supplier of the lubricant. 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 :

- 15W40-CI4 oil to be used.

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.

Following oils of SAE grade 15W40 are recommended for temperature range of -15°C to 50°C with CI4 API quality grade.

1. Citgo - Citgard 500 15W40.
2. Exxon - XD3 Extra 15W40.
3. Chevron - Delo 400 15W40.
4. Mobil - Devlac 1300 15W40.
5. Shell - Rotella T 15W40.
6. Texaco - Ursa Super Plus 15W40.

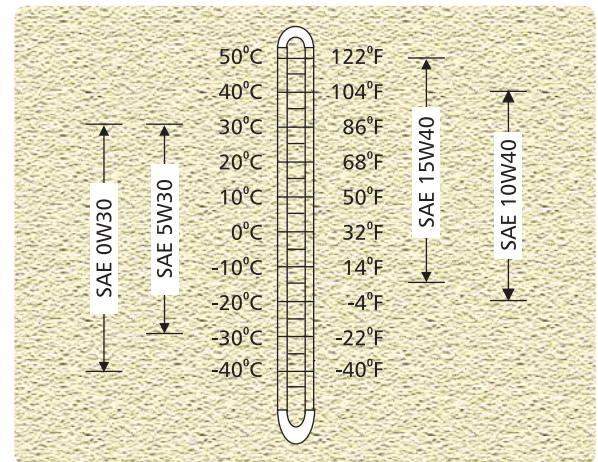
Ambient temperature conditions in other range warrants other SAE grade of oil as per illustration.

Fluid for Power Steering

One of the following fluids can be used in the Power Steering System :

1. Citgo - Citgo ATF Dexron III
2. Exxon - Dexron III
3. Chevron - ATF Dexron III
4. Mobil - ATF Dexron III
5. Shell - Donax TG
6. Texaco Mercon Dexron III
7. Mobil DTE 24 - 46
8. Shell Tellus 46
9. Chevron Clarity AW 46
10. Texaco Rando HD 46

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-CI4 and may change in future.

From first Service onwards 15W40-CI4 Oil to be used.

* Factory filled oil is Enclor 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

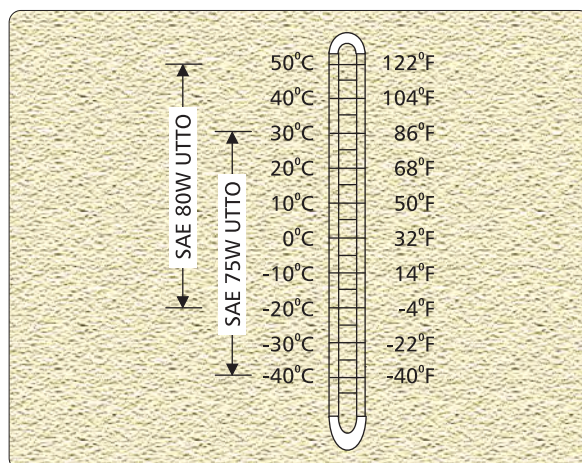
Use gear oil complying to API GL5, MIL-L-2105D specifications. Please refer Oil Specifications Chart for oil viscosity grade at different range of ambient temperatures.

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

Oil Specifications Chart (Table A)

Sr. No.	Application	Capacity Gallon / Quarts	Anticipated minimum air temperature				
			-40 to +88°F	-22 to +88°F	-4 to +122°F	+32 to +104°F	+50 to +122°F
1.	Crankcase	2.37 / 9.48	SAE 0W30 CI4	SAE 5W30 CI4	SAE 10W40 / SAE 15W40 CI4	SAE 15W40 CI4	SAE 15W40 CI4
2.	Power Steering	1.18 / 4.72	As recommended	As recommended	As recommended	As recommended	As recommended
3.	Transmission & Hydraulics	8.59 / 34.36	SAE 75W UTTO		SAE 80W UTTO listed above.		
4.	Lubrication Fittings	C. L.	NLGI No. as recommended				
5.	Front Axle	1.79 / 7.16	SAE75W90EP		SAE80W140EP	SAE80W90EP	SAE80W140EP
			SAE80W90EP listed above for ambient temperature range - 4°F to 104°F				



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.

Special Bolt Torques N.m / Lbs. ft.

	N.m	Lbs. ft.
Bolt for cover cylinder head	25 ± 3	16 - 20
Bolt cylinder head*	90±5 + 60° + 60°	66-70 + 60° + 60°
Bolt crankshaft gear	65 ± 5	44 - 52
Bolt crankshaft main bearing cap	168 ± 8	118 - 130
Bolt connecting rod	65 ± 5	44 - 52
Bolt flywheel mounting	168 ± 8	118 - 130
Bolt for swinging drawbar mounting	275 ± 25	185 - 221
Nut carrier rear axle	112 ± 12	74 - 91
Drain plug for engine oil pan	85 ± 5	59 - 66
Bolt fender mounting M8	21 - 24	16 - 18
Bolt fender mounting M12	65 ± 5	48 - 52
Nut for front axle support	200 - 225	148 - 167
Nut for jerrycan weight	340 - 400	240 - 262
Nut steering wheel	50 - 55	37 - 41
Nut rear wheel	350 - 400	260 - 295
Nut rear wheel weight	250 - 275	184 - 202
Nut rear wheel rim / disc	200 - 280	148 - 206
Nut front wheel	290 - 300	213 - 221
Nut front wheel rim / disc	200 - 280	148 - 206
Nut lock spiral pinion bevel shaft	180 - 200	132 - 162
Drop box drain plug	40 - 47	29 - 33
Transmission drain plugs	70 - 77	51 - 56

* First torque all bolts to 90±5 N.m (66-70 Lbs.ft) then rotate it by 60° and again rotate it by 60° as per torquing sequence.

Specifications

MAHINDRA – 8560 2WD

ENGINE

Four Stroke, Turbo Charged, Intercooled, Direct Injection, Water Cooled Diesel Engine

Model	: NE 479 TCI
No. of Cylinders	: 4
Displacement	: 203.2 cubic inch.
Bore	: 3.78 in.
Stroke	: 4.53 in.
Compression Ratio	: 17.2:1
Max. Engine Hp* (Manufacturing Rating)	: 83 max. as per DIN-70020
Rated Speed	: 2300 rpm
High Idle r.p.m.	: 2500 ± 50
Low Idle r.p.m.	: 850 ± 50
Fuel Injection Pump	: Rotary FIP with KSB Unit MICO (BOSCH)
Cylinder Sleeve	: Wet-Replaceable
Air Cleaner	: Dry type with safety cartridge & dust unloader valve
Exhaust Muffler	: Vertical
Firing Order	: 1 - 3 - 4 - 2
Accelerator	: Hand & foot accelerator
Injector Opening Pressure	: 3625 - 3742 PSI

Electrical Starting and Lighting

Battery Capacity	: 12 volt
Starter	: Solenoid engaged. Key start with interlock safety neutral switch.
Alternator	: 12 volt, 55 amp
Instrument Cluster	: Gauges : Electronic RPM cum Hour Meter, Coolant Temp. Gauge, Fuel Level Gauge Indicator : Annunciator Window (Bulb Indicators) - High Temp., Fault, Healthy, Low Oil Pressure, Service Trailer. LED Indicator : Turn Signal (LH & RH), Head Lamp, High Beam, Park, Transmission & PTO Neutral, Battery Charging, Low Engine Oil Pressure, Air Filter Clog, High Temp., Low Fuel Level, PTO 540, Heater ON & ECS.
Lighting	: Wedge type bulbs for gauges illumination & Halogen bulbs for Scuttle lamp, Head lamps and Plow lamp, Service, Brake.

CLUTCH

Type	: Dry Dual Clutch (Normally disengaged PTO clutch)
Diameter	: 12" for Main Drive. 12" for P.T.O.

TRANSMISSION

Type	: With Safety Neutral Switch Speed section full Synchro mesh, Range section full Constantmesh, Shuttle section Synchro mesh.
No. of gears	: 12 - Forward, 12 - Reverse

STEERING

: Hydrostatic (Power Steering)

POWER TAKE OFF

Type	: Rear independent PTO shaft.
P.T.O. HP* (metric)	: 70 max.
P.T.O. RPM (Independent P.T.O.)	: 540 (6 Splines) @ 2187 & 1000 (21 Splines) @ 2180 engine rpm with reversible shaft

BRAKES - OIL IMMERSED

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

Number of lining	: 5 each side
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HYDRAULIC SYSTEM

Independent fully 'live' hydraulic pump.

Vary-Touch draft & position controls. Two spool auxiliary valve as standard fitment.

Working pressure	: 2690 PSI
Max. lifting force at lower link hitch point	: 5500 lbs.
Max. lifting force at 24" Behind hitch point	: 3850 lbs.
Total Pump Flow at Rated Engine RPM	: 22.3 Gallons/min.
Hydraulic Pump Output at Rated Engine RPM	: 17 Gallons/min.
Steering Pump Output at Rated Engine RPM	: 5.3 Gallons/min.
3 Point linkage	: Category II ball joints with adjustable outside lateral stabilizer.
Auxilliary valve	: Standard - Double acting 2 sections Optional - Double acting 1 section
Each section is detent type raise, lower and float position. Hydraulic kickback in raise and lower.	

MAHINDRA – 8560 2WD

DIMENSIONS (STANDARD)

Length overall	:	162.04 in.
Width overall standard setting	:	77.3 in.
Height overall upto Silencer	:	89.5 in.
Wheel base	:	85.31 in.

TREAD ADJUSTMENT

Front	:	58.8 in. to 66.7 in.
Rear	:	59.4 in. to 75.4 in.

OPERATING WEIGHT (APPROX.)

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

WEIGHT DISTRIBUTION *

(when measured without optional weights fitted)

Front weight	:	2370 lbs.
Rear weight	:	4508 lbs.
Total weight	:	6878 lbs.

TIRES

Front (standard) - Ag	:	11L x 15 - 8 ply
Rear (standard) - Ag	:	16.9 x 30 - 8 ply

TURNING RADIUS (MINIMUM)

With brakes	:	126 in.
Without brakes	:	157 in.

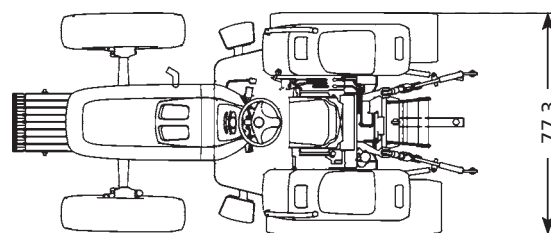
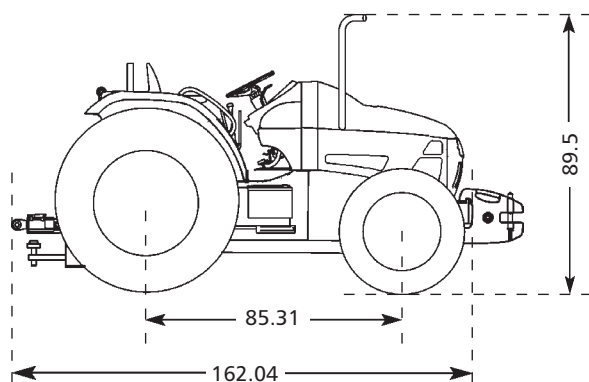
NOTE :- One US gallon = 4 quarts.

CAPACITIES	US Gallons	Quarts
Fuel Tank	19.28	77.12
Cooling System	2.58	10.32
Engine Oil	2.37	9.48
Transmission	8.59	34.36
Power Steering	1.18	4.72

SPEEDS :

Speed chart in mph at 2300 engine rpm.
(Rolling Circumference - 172")

Gear	Forward	Reverse
L1	1.71	1.69
L2	2.70	2.67
L3	3.94	3.90
L4	5.57	5.52
M1	3.17	3.15
M2	5.02	4.97
M3	7.32	7.25
M4	10.35	10.26
H1	6.14	6.08
H2	9.69	9.61
H3	14.14	14.02
H4	20.00	19.82



Dimensions are in inch. and based on standard 11L x 15 front tires and 16.9 x 30 rear tires.

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

NOTE : Specifications and design subject to change without notice.

NOTE : Jerrycan Weights along with the bracket and the Rear Wheel Weights are optional on this model.

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

Specifications

MAHINDRA – 8560 4WD

ENGINE

Four Stroke, Turbo Charged, Intercooled, Direct Injection, Water Cooled Diesel Engine

Model	: NE 479 TCI
No. of Cylinders	: 4
Displacement	: 203.2 cubic inch.
Bore	: 3.78 in.
Stroke	: 4.53 in.
Compression Ratio	: 17.2:1
Max. Engine Hp* (Manufacturing Rating)	: 83 max. as per DIN-70020
Rated Speed	: 2300 rpm
High Idle r.p.m.	: 2500 ± 50
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Fuel Injection Pump	: Rotary FIP with KSB Unit MICO (BOSCH)
Cylinder Sleeve	: Wet-Replaceable
Air Cleaner	: Dry type with safety cartridge & dust unloader valve
Exhaust Muffler	: Vertical
Firing Order	: 1 - 3 - 4 - 2
Accelerator	: Hand & foot accelerator
Injector Opening Pressure	: 3625 - 3742 PSI

Electrical Starting and Lighting

Battery Capacity	: 12 volt
Starter	: Solenoid engaged. Key start with interlock safety neutral switch.
Alternator	: 12 volt, 55 amp
Instrument Cluster	: Gauges : Electronic RPM cum Hour Meter, Coolant Temp. Gauge, Fuel Level Gauge Indicator : Annunciator Window (Bulb Indicators) - High Temp., Fault, Healthy, Low Oil Pressure, Service Trailer. LED Indicator : Turn Signal (LH & RH), Head Lamp, High Beam, Park, Transmission & PTO Neutral, Battery Charging, Low Engine Oil Pressure, Air Filter Clog, High Temp., Low Fuel Level, PTO 540, Heater ON, 4WD & ECS.
Lighting	: Wedge type bulbs for gauges illumination & Halogen bulbs for Scuttle lamp, Head lamps and Plow lamp, Service, Brake.

CLUTCH

Type	: Dry Dual Clutch (Normally disengaged PTO clutch)
Diameter	: 12" for Main Drive. 12" for P.T.O.

TRANSMISSION

Type	: With Safety Neutral Switch, Speed section full Synchro mesh, Range section full Constantmesh, Shuttle section Synchro mesh and 4WD.
No. of gears	: 12 - Forward, 12 - Reverse

STEERING

: Hydrostatic (Power Steering)

POWER TAKE OFF

Type	: Rear independent PTO shaft.
P.T.O. HP* (metric)	: 70 max.
P.T.O. RPM (Independent P.T.O.)	: 540 (6 Splines) @ 2187 & 1000 (21 Splines) @ 2180 engine rpm with reversible shaft

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Independent fully 'live' hydraulic pump.

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MAHINDRA – 8560 4WD

DIMENSIONS (STANDARD)

Length overall	:	162.04 in.
Width overall standard setting	:	77.3 in.
Height overall upto Silencer	:	94.5 in.
Wheel base	:	85.8 in.

TREAD ADJUSTMENT

Front	:	63.15 in. to 71.69 in.
Rear	:	59.4 in. to 75.4 in.

OPERATING WEIGHT (APPROX.)

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

WEIGHT DISTRIBUTION *

(when measured without optional weights fitted)

Front weight	:	2789 lbs.
Rear weight	:	4508 lbs.
Total weight	:	7297 lbs.

TIRES

Front (standard) - Ag	:	11.2 x 24 - 6 ply
Rear (standard) - Ag	:	16.9 x 30 - 8 ply

TURNING RADIUS (MINIMUM)

With brakes	:	157 in.
Without brakes	:	180 in.

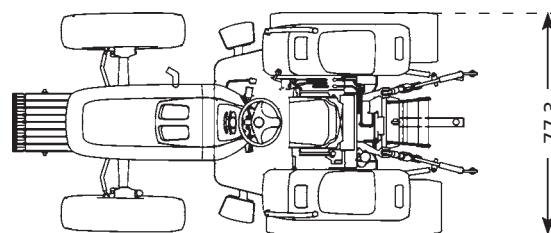
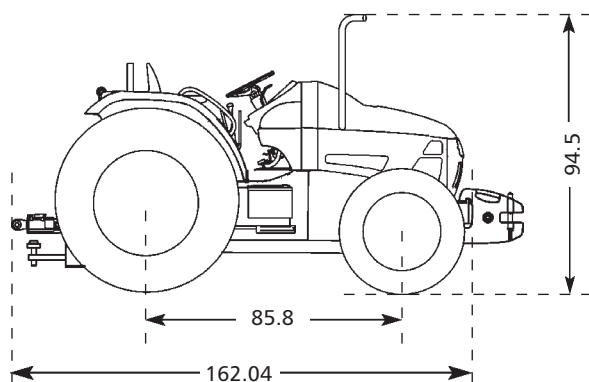
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Dimensions are in inch. and based on standard 11.2 x 24 front tires and 16.9 x 30 rear tires.

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

NOTE : Specifications and design subject to change without notice.

NOTE : Jerrycan Weights along with the bracket and the Rear Wheel Weights are optional on this model.

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

Trouble Shooting

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.
Lubricating oil of wrong viscosity	Clean exhaust system.
Fuel feed pump inoperative	Drain and refill with proper lubricant - (refer to LUBRICANT SPECIFICATION).
Fuel injection pump has lost its efficiency	Check pump for restriction in system and clean out. Also check valves and spring./*
	*

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.

PROBABLE CAUSE

Air lock in fuel system

Faulty valve action

Clogged fuel filter

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

Dirty or faulty injectors

Restriction between compressor & intake manifold

Air leak between compressor & intake manifold

Air leak between intake manifold and engine

Foreign object in exhaust manifold (from engine)

Restricted exhaust system

Exhaust manifold cracked, gaskets blown or missing ...

Gas leak at turbine inlet/exhaust manifold joint

Turbocharger malfunctioning

Engine Misfires

Restriction in engine air supply

Air lock in fuel system

Poor compression

Sticking valves

Fuel injection timing incorrect

Vent in fuel tank cap obstructed

Low coolant temperature

Clogged fuel filter

Water, dirt, or air in fuel system

Dirty or faulty injectors

Improper type of fuel

Engine solenoid linkage out of adjustment

Engine Does Not Idle Properly

Low idle rpm too less

Restriction in fuel delivery

Injection nozzles defective

Injection timing incorrect

Excessive wear on throttle shaft

Poor compression

Sticking valves

Governor inoperative

POSSIBLE REMEDY

Check vent hole in tank filler cap.

Check valve clearance. If valves are stuck, burnt or warped, replace them.

Replace filter element.

*

*

*

*

*

Check brake linkages for free movement & adjust free play.

Have Mahindra dealer check injectors.

Check and rectify.

Check and rectify.

Check and rectify.

*

Check and rectify.

Check and replace.

Check and replace.

*

Check air cleaning system.

Vent air from fuel system.

*

*

*

Clean cap in solvent. Blow dry.

Remove and check thermostat.

Replace filter element.

Drain, flush, fill and bleed system.

Have Mahindra dealer check injectors.

Use proper fuel. See Fuels and Lubricants section.

*

Check and correct.

Inspect fuel system. Clean out fuel lines.

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Trouble Shooting

PROBABLE CAUSE

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

Loose main or connecting rod bearing

Injection nozzles defective

Insufficient oil

Injection pump out of time

Low coolant temperature

High speed too slow

Excessive Oil Consumption

Crankcase oil to light.....

Piston rings worn, broken, stuck or not staggered

Oil level in crankcase too high.....

Oil leaking

Sump drain plug loose or worn.....

Overheating

Crankcase breather clogged

Engine operating temperature too low

Engine Overheats

Faulty heat indicator

Cooling system clogged.....

Fan and water pump belt slipping

Insufficient oil

Defective thermostat

Water pump defective

Fuel injection timing incorrect.....

Valve clearance incorrect

Clutch plate slippage

Brakes dragging

Engine overloaded

Low coolant level

Faulty radiator cap

Dirty radiator core or grille screens

Defective thermostat

POSSIBLE REMEDY

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*

*

Locate and correct cause.

*

Get them serviced.

Add oil.

*

Remove and check thermostat.

Check high speed.

Use proper viscosity oil

*

Maintain correct oil level.

Rectify the leakage.

Tighten or replace.

Refer to ENGINE OVERHEATS.

Wash in mineral spirits or naphtha, blow dry and replace.

Check the thermostat opening temperature.

Replace.

Clean out radiator and engine

Check tension and make proper adjustment.

Maintain proper oil level.

*

*

*

Adjust correctly.

*

Check brake linkages for free movement and adjust free pedal play.

Select gear according to load.

Fill cooling system to proper level; check radiator, coolant recovery tank, and hoses for loose connections or leaks.

Have service person check.

Remove all trash.

Remove and check thermostat

PROBABLE CAUSE

Lubricating Oil Pressure Too High Or Too Low

Defective oil pressure indicator

Wrong viscosity, diluted or insufficient oil

Broken, loose or plugged oil lines

Low oil level in the crankcase

Defective or dirty oil pressure regulating valve

Oil pump strainer clogged or pump not working

Worn bearings

Clogged oil filter

Excessive Smoke

Air cleaner pipe clogged

Improper grade of fuel/oil

Worn pistons, rings and/or sleeves

Air-cleaner clogged/Paper element choked

Incorrect valve adjustment

Fuel injection pump has lost its efficiency

Engine overloaded with respect to gear selection

Engine Emits White Smoke

Improper type of fuel

Low engine temperature

Defective thermostat

Restriction / choking of fuel lines

Engine Emits Blue Smoke

Air leak between compressor & intake manifold

Air leak between intake manifold & engine

Foreign object in exhaust manifold (from engine)

Restricted turbocharger oil drain line

Turbocharger malfunctioning

Engine Emits Black Or Gray Exhaust Smoke

Improper type of fuel

Clogged or dirty air cleaner

Engine overloaded

Injection nozzles dirty

Restriction between compressor & intake manifold

Restriction in intake manifold

Air leak between intake manifold and engine

Foreign object in exhaust manifold (from engine)

Restricted exhaust system

POSSIBLE REMEDY

Replace.

Refer to LUBRICANT SPECIFICATIONS. Select correct grade of oil, drain fill crankcase with oil of proper viscosity and quality.

Replace, clean and tighten./*

Add oil and check for oil leakage, also refer to LUBRICATION GUIDE and ENGINE AND CHASSIS. LUBRICANT SPECIFICATIONS.

*

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*

Change filter element.

Remove, check and clean.

Drain off and replace with correct grade of fuel/oil.

*

Remove and clean. If defective, replace paper element.

Set valve clearance as specified.

*

Select gear according to load.

Use proper fuel.

Warm engine to normal operating temperature.

Remove and check thermostat.

Clean lines, replace filter element if required

Check and rectify.

Check and rectify.

*

Check and rectify.

*

Use proper fuel.

Service air cleaner.

Reduce load or shift to a lower gear.

*

Check and rectify

Check and rectify

Check and rectify

*

*

Trouble Shooting

PROBABLE CAUSE

Exhaust manifold cracked, gaskets blown or missing ...
 Gas leak at turbine inlet/exhaust manifold joint
 Turbocharger malfunctioning

Excessive Fuel Consumption

Valve clearance incorrect
 Fuel leaks.....
 Engine overloaded

Engine not operating at proper temperature
 Air cleaner clogged
 Incorrect viscosity or quantity of lubricating oil.....

Fuel injection nozzles not operating properly

High idle rpm too high

Fuel injection pump has lost its efficiency

Incorrect tire pressure

Improper type of fuel

TURBOCHARGER

Turbocharger Noisy

Restricted compressor intake duct
 Restriction between compressor & intake manifold
 Restricted intake manifold

Air leak between air cleaner & compressor
 Air leak between compressor & intake manifold
 Air leak between intake manifold & engine

Foreign object in exhaust manifold (from engine)
 Exhaust manifold cracked, gaskets blown or missing ...
 Gas leak at turbine inlet/exhaust manifold joint

Gas leak in ducting after turbine outlet
 Excessive dirt build up on compressor wheel and/or
 diffuser vanes

Turbocharger bearing defective
 Foreign body damage on compressor or turbine.....
 Insufficient oil supply to turbocharger.....

High Oil Consumption

Restricted compressor intake duct

POSSIBLE REMEDY

*

Check and rectify

*

*

Tighten or replace fuel lines.

Select the gear with respect to load, speed, & soil condition.

Check cooling system and thermostat.

Service the air cleaner.

Refer to LUBRICANT SPECIFICATIONS. Keep oil up to the correct level.

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. /*

Check and rectify.

Do not change service faulty injection pump. See your Mahindra dealer

Inflate/deflate up to recommended pressure to avoid wheel slippage and improper tire wear.

Use proper fuel.

*

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Check and rectify.

PROBABLE CAUSE

Air leak between compressor & intake manifold
 Air leak between intake manifold & engine
 Foreign object in exhaust manifold (from engine)
 Restricted turbocharger oil drain line
 Turbocharger bearing housing sludged or coked
 Excessive dirt build up on compressor wheel and/or
 diffuser vanes
 Turbocharger bearing defective

Oil Leak From Compressor Seal

Restricted compressor intake duct
 Foreign object in exhaust manifold (from engine)
 Restricted exhaust system
 Restricted turbocharger oil drain line
 Turbocharger bearing housing sludged or coked
 Excessive dirt build up on compressor wheel and/or
 diffuser vanes
 Turbocharger bearing defective

Oil Leak From Turbine Seal

Restricted turbocharger oil drain line
 Turbocharger bearing housing sludged or coked
 Excessive dirt build up on compressor wheel and/or
 diffuser vanes
 Turbocharger bearing defective

Compressor / Turbine Wheel Defective

Turbocharger bearing defective
 Foreign body damage on compressor or turbine
 Insufficient oil supply to turbocharger

HYDRAULICS

No Lifting Or Slow Lifting

Less/no oil in system
 Suction filter clogged
 Hydraulic pump has lost its efficiency
 Control valve defective
 Control linkage defective
 System overloaded
 Hydraulic oil too cold
 Screen clogged

Hydraulic Lift Arms Lifting Without Lever Operation

Control valve/linkage defects

System Overheating

Air in the system
 Water in the system

POSSIBLE REMEDY

Check and rectify.
 Check and rectify.
 *

Check and rectify.
 *
 *

*

Check and rectify. /*
 Check and rectify. /*
 Check and rectify.
 Check and rectify.

*

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*

Check and rectify.

*

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*

Check and rectify.

Check & fill oil to correct level.

Clean filter replace damaged.

Get the pump replaced.

*

*

Reduce load on system.

Allow oil to warm.

Clean or replace screen.

*

Locate the source of air entry and seal it.

Drain oil & refill.

Trouble Shooting

PROBABLE CAUSE

Restriction in suction delivery pipes
 Relief valve continuously blowing
 Control valve defects

Lift Arms Will Not Hold

Control valve defective

BRAKES

Does not hold or slips
 Drag or uneven
 Return spring broken
 Will not release

TRANSMISSION

Hard to shift gears
 Shifter fork or lever defective
 Gears slipping out of mesh
 Excessive noise
 Damaged parts
 Noisy gear shifting

REAR WHEELS

Do not turn
 Engine clutch drags

ELECTRICALS

Battery Does Not Charge

Loose or corroded connections
 Sulfated or worn-out battery
 Loose or defective fan belt
 Low engine speed
 Alternator malfunctioning

Charging System Indicator Glows With Engine Running

Defective battery
 Defective alternator
 Loose defective fan belt

Starter Inoperative

Loose or corroded connections
 Low battery output
 Gear shift lever in gear
 PTO engaged

Starter Cranks Slowly

Low battery output
 Crankcase oil too heavy

POSSIBLE REMEDY

Clean and refit.
 Check linkage & upper limit stop. /*
 *
 *
 Adjust brakes or change linings if needed. Linings oil soaked; check bull pinion shaft oil seal. /*
 Adjust brakes.
 Replace.
 Release hand-brake. Check brake shaft for seizure.
 Use correct viscosity lubricant. /*
 Replace. /*
 *
 Check oil level, use proper viscosity lubricant. /*
 *
 Adjust clutch pedal play. /*
 Release brake lock. Transmission, differential or clutch faulty. Refer to TRANSMISSION above. /*
 *
 Clean and tighten connections.
 Check electrolyte level and specific gravity.
 Adjust belt tension or replace belt.
 Increase speed.
 *
 Check electrolyte level and specific gravity.
 Have your Mahindra dealer check alternator.
 Adjust belt tension or replace ball.
 Clean and tighten loose connections.
 Check electrolyte level and specific gravity.
 Move lever to neutral.
 Disengage PTO.
 Check electrolyte level and specific gravity.
 Use proper viscosity oil.

PROBABLE CAUSE

Loose or corroded connections

No Lights

Fuse blown

Loose wiring or improper connections causing mal-functioning

Lights burn dim

POWER STEERING

Steering wander

No recovery for open cylinder unit

Shimmy

High steering effort in one direction

Lost motion (Lash) at the steering wheel

Excessive heat

POSSIBLE REMEDY

Clean and tighten loose connections.

Replace fuse.

Check wiring to see that all connections are clean and tight.

Re-charge battery, tighten cable terminals, check lamps, clean contacts.

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.

Check tire pressure.

Check for tightness of front axle kingpins.

Check for alignment of steering column.

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.

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.

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.

Check for correct size of hose.

Check for the centering of control unit.

Check for excessive fluid flow.

Tractor History Card

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

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

Part Replacement Record

Date	Part Description	Qty	Cost	Date	Part Description	Qty.	Cost

Tractor Storage Precautions

Precautions to be taken for Tractor Storage

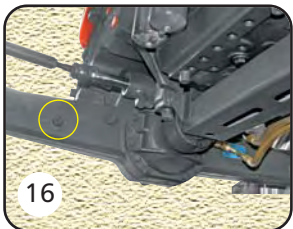
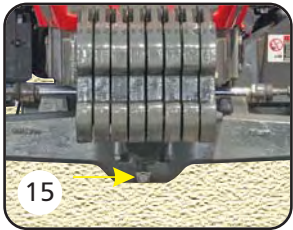
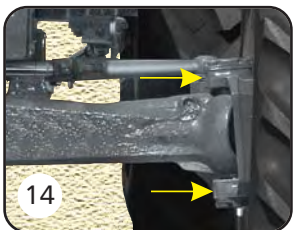
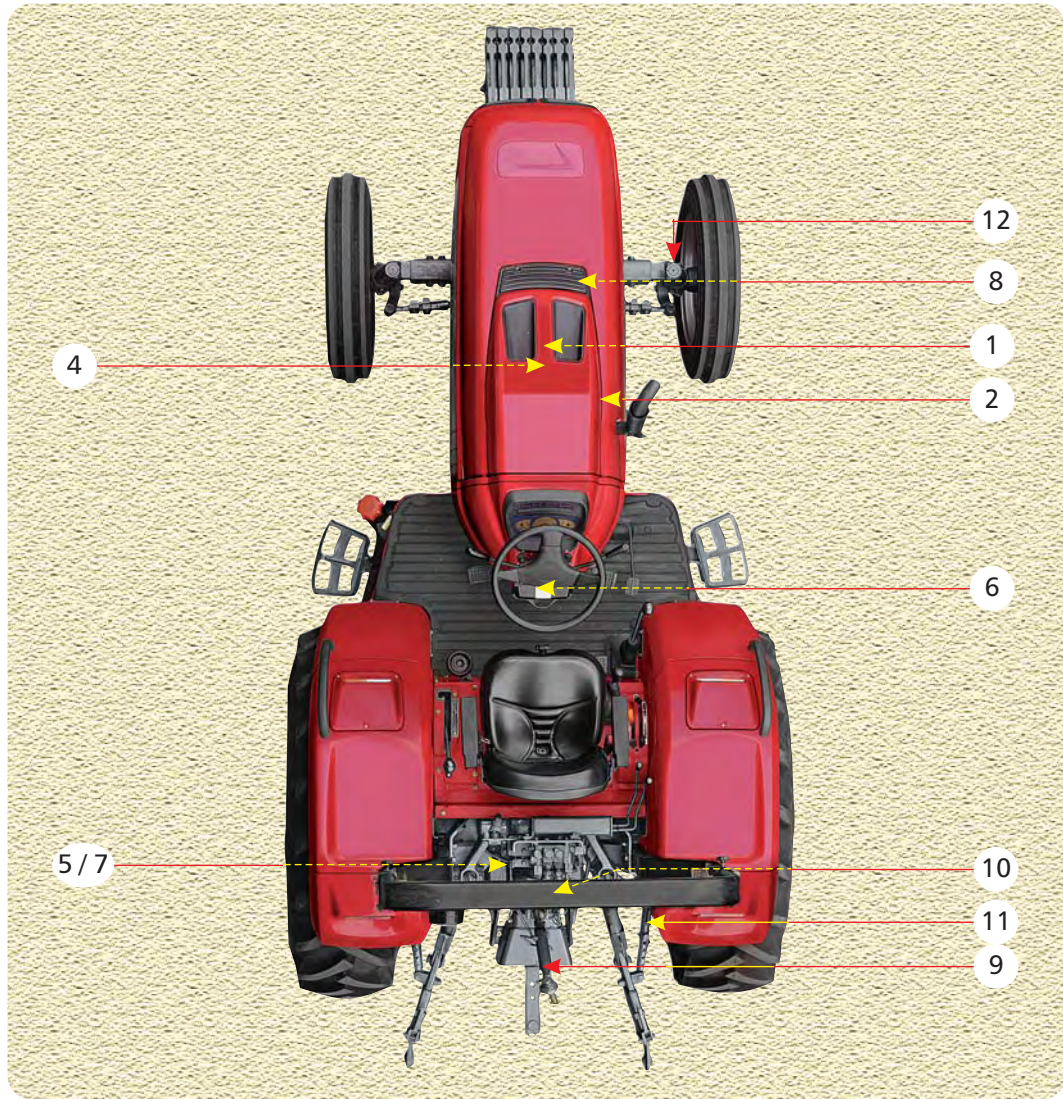
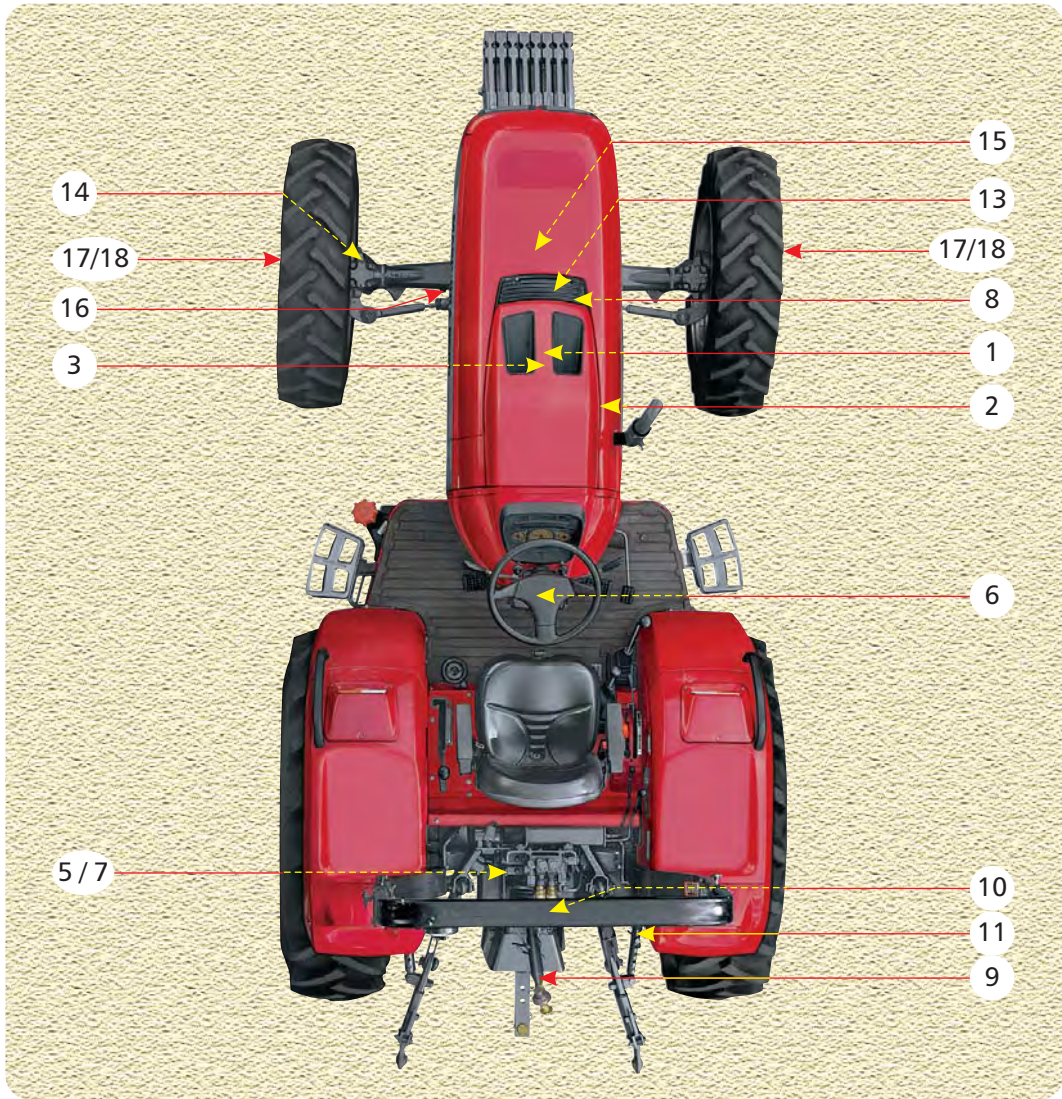
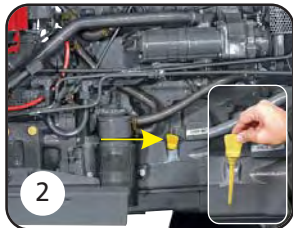
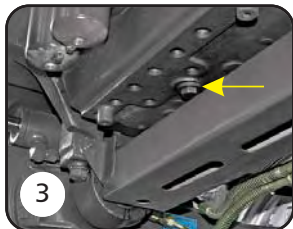
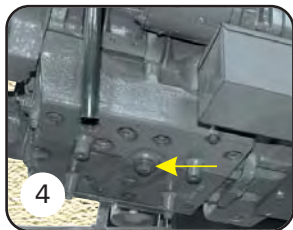
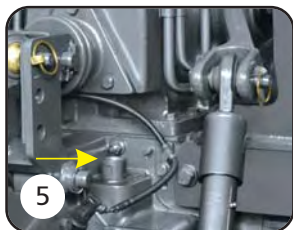
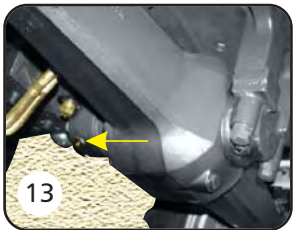
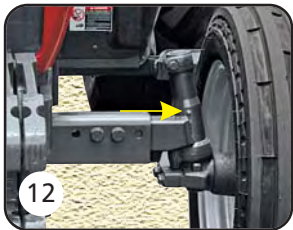
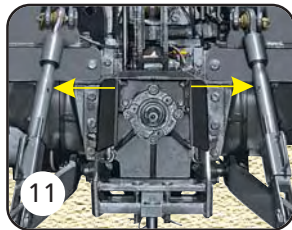
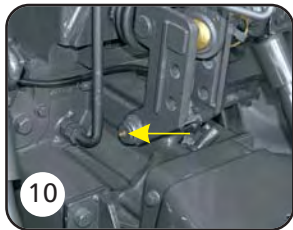
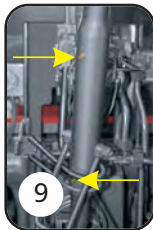
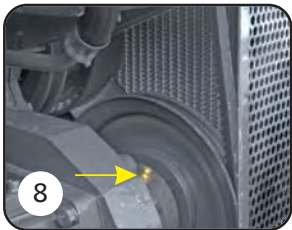
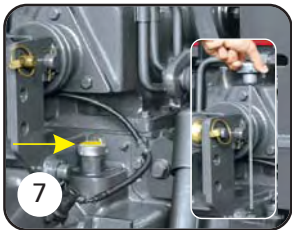
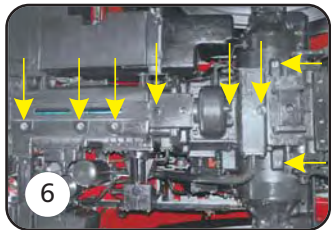
Sr. No.	Activity	Objective	Every 15 days	Every 45 days	More than 45 days
1	a) First start the Engine & allow it to idle for 2 to 3 minutes.	Lubrication to internal parts of the Engine.	✓		
	b) Then run the tractor for 10 minutes from one place to another place at 1800 to 2000 RPM.	Lubrication to Internal parts of the 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 & lock the hydraulic system using the isolating valve on right hand side of control valve on 05,25,30 & 00 series tractors and in 20 & 60 series just raise the lift arms using PC 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 deterioration 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.	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 deterioration in the performance.



No.	Description	Lubricant
1	Engine Oil Filler Cap	EO
2	Engine Oil Dipstick	EO
3	Crankcase Drain Plug - 4WD	EO
4	Crankcase Drain Plug - 2WD	EO
5	Transmission Oil Filling	GO
6	Transmission Oil Drain Plug	GO
7	Transmission Oil Dipstick	GO

No.	Description	Lubricant
8	Roller Bearing Front Cover	CL
9	Top Link	CL
10	Bell Crank	CL
11	Lift Rod LH / RH	CL
12	Steering Knuckle Post LH / RH - 2WD	CL
13	Front Axle Central Trunnion Support - 4WD	CL

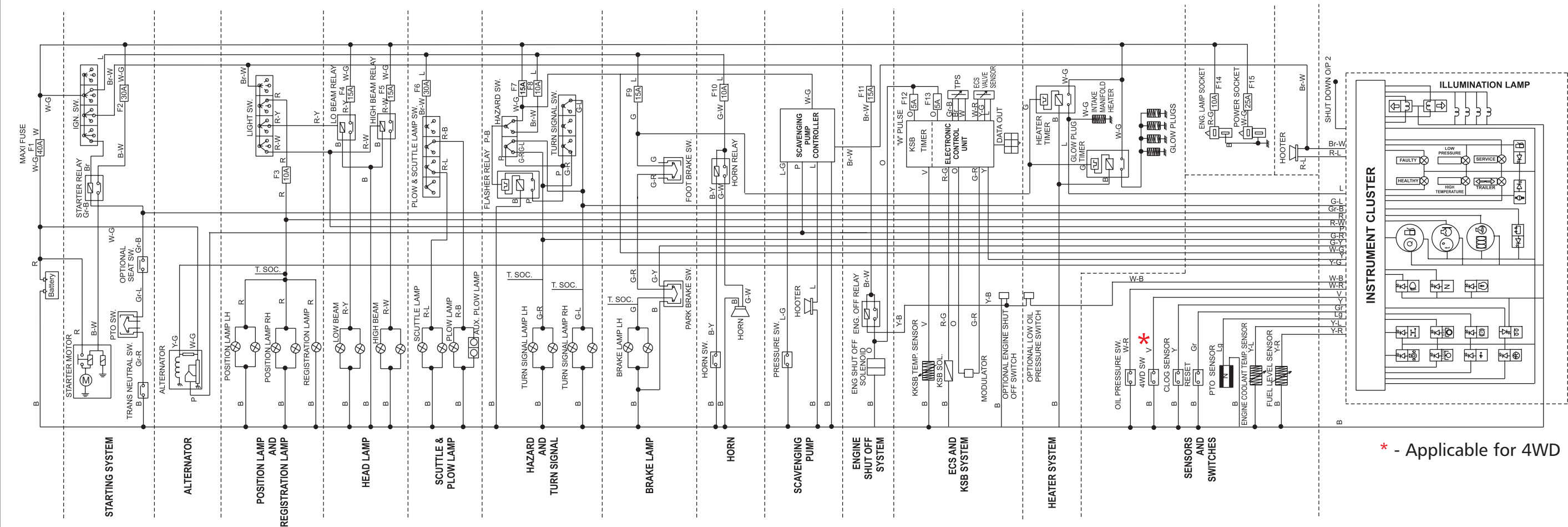
No.	Description	Lubricant
14	Hub Reduction Steering Case LH / RH - 4WD	CL
15	Front Axle Oil Drain Plug - 4WD	FO
16	Beam Housing Drain Plug - 4WD	FO
17	Hub Housing Level Plug LH / RH - 4WD	FO
18	Hub Housing Fill Plug LH / RH - 4WD	FO

Routine Service Schedule - 8560 2WD

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 250 Hrs.
Clean Crankcase Breather						■				■				■				■				■	Every 200 Hrs.
Torque Cylinder Head Bolts and adjust Valve Clearance																						■	Every 1000 Hrs.
Check and adjust Injector Pressure																						■	Every 1000 Hrs.
Radiator Descaling																						■	Every 1000 Hrs.
Rubber Clutch Gear Hydraulic Pump																						■	Every 1000 Hrs.
Greasing for Roller Bearing at Front Cover **														■									Every 600 Hrs.
AIR INTAKE SYSTEM																							
Clean dust collector	●	●																					Daily
Check Air-cleaner connections and tighten if required							■					■					■					■	Every 250 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 Filters (every 15 days)	*																						Periodically
Change Primary Filter Element (earlier, if required)							■					■					■					■	Every 250 Hrs.
Change Secondary Filter Element (earlier, if required)												■										■	Every 500 Hrs.
EGR SYSTEM																							
Cleaning of EGR Valve, Venturi, Cooler & Pipings																							Every 1500 Hrs.
COOLING SYSTEM																							
Check Coolant Level and Top-up if necessary			●																				Every 50 Hrs.
Check Radiator Hose Connection & tighten if required			●																				Every 50 Hrs.
Check Fan Belt tension and adjust if necessary			#				■					■					■					■	Every 250 Hrs.
Flush Cooling System																						■	Every 1000 Hrs.
ELECTRICAL SYSTEM																							
Clean Battery Terminals							■					■					■					■	Every 250 Hrs.
Check Starter Motor and Alternator Carbon Brushes & replace if necessary																						■	Every 1000 Hrs.
TRANSMISSION																							
Check Oil Level and Top-up if necessary			#				■					■					■					■	Every 250 Hrs.
Change Oil																						■	Every 1000 Hrs.
Clean Strainer (During Every Oil Change)			#																			■	Every 1000 Hrs.
Change Strainer																							Every 2000 Hrs.
HYDRAULIC SYSTEM																							
Change Suction Filter			#									■										■	Every 500 Hrs.
CLUTCH AND BRAKES																							
Check and Adjust Clutch & Brake Pedal Free Play	*																						Periodically
STEERING																							
Check Steering Wheel Play & Set Toe-in												■										■	Every 500 Hrs.
POWER STEERING																							
Check Oil Level & Top-up if necessary							■					■					■					■	Every 250 Hrs.
Change Power Steering Oil																						■	Every 1000 Hrs.
FRONT AXLE, WHEELS AND TIRES																							
Check Tire Pressure & Inflate if necessary	*																						Periodically
Torque Wheel Nuts			#				■					■					■					■	Every 250 Hrs.
Repack & Preload Front Wheel Bearings										■								■					Every 400 Hrs.
GREASE ALL NIPPLES	*		●																				Every 50 Hrs.

Routine Service Schedule - 8560 4WD

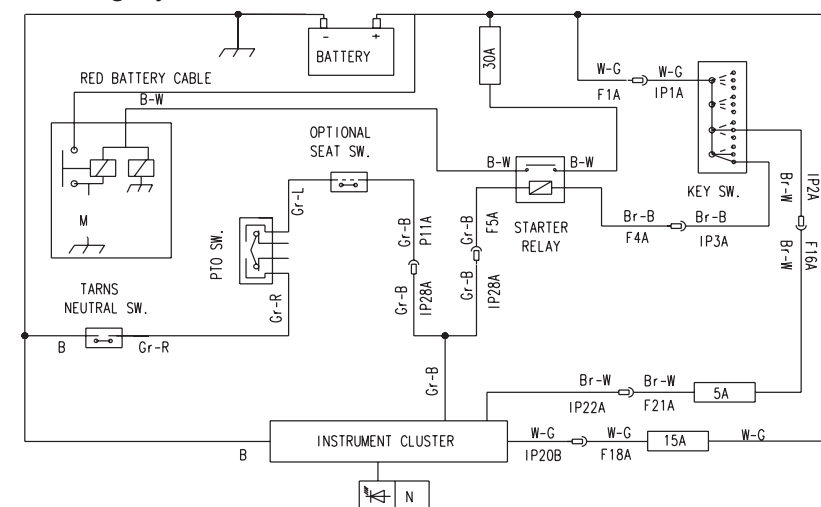
CHECK POINTS	Perio- dically	10 Hrs. or Daily	50 Hrs.	100 Hrs.	150 Hrs.	200 Hrs.	250 Hrs.	300 Hrs.	350 Hrs.	400 Hrs.	450 Hrs.	500 Hrs.	550 Hrs.	600 Hrs.	650 Hrs.	700 Hrs.	750 Hrs.	800 Hrs.	850 Hrs.	900 Hrs.	950 Hrs.	1000 Hrs.	Since then
ENGINE																							
Check Oil Level and Top-up if necessary		●																					Daily
Change Oil and Filter Element			#				■					■					■					■	Every 250 Hrs.
Clean Crankcase Breather						■				■				■				■				■	Every 200 Hrs.
Torque Cylinder Head Bolts and adjust Valve Clearance																						■	Every 1000 Hrs.
Check and adjust Injector Pressure																						■	Every 1000 Hrs.
Radiator Descaling																						■	Every 1000 Hrs.
Rubber Clutch Gear Hydraulic Pump																						■	Every 1000 Hrs.
Greasing for Roller Bearing at Front Cover **														■									Every 600 Hrs.
AIR INTAKE SYSTEM																							
Clean dust collector	●	●																					Daily
Check Air-cleaner connections and tighten if required							■					■					■					■	Every 250 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 Filters (every 15 days)	*																						Periodically
Change Primary Filter Element (earlier, if required)							■					■					■					■	Every 250 Hrs.
Change Secondary Filter Element (earlier, if required)												■										■	Every 500 Hrs.
EGR SYSTEM																							
Cleaning of EGR Valve, Venturi, Cooler & Pipings																							Every 1500 Hrs.
COOLING SYSTEM																							
Check Coolant Level and Top-up if necessary			●																				Every 50 Hrs.
Check Radiator Hose Connection & tighten if required			●																				Every 50 Hrs.
Check Fan Belt tension and adjust if necessary			#				■					■					■					■	Every 250 Hrs.
Flush Cooling System																						■	Every 1000 Hrs.
ELECTRICAL SYSTEM																							
Clean Battery Terminals							■					■					■					■	Every 250 Hrs.
Check Starter Motor and Alternator Carbon Brushes & replace if necessary																						■	Every 1000 Hrs.
TRANSMISSION																							
Check Oil Level and Top-up if necessary			#				■					■					■					■	Every 250 Hrs.
Change Oil																						■	Every 1000 Hrs.
Change Oil Filter			#							■								■					Every 400 Hrs.
HYDRAULIC SYSTEM																							
Change Suction Filter			#									■										■	Every 500 Hrs.
CLUTCH AND BRAKES																							
Check and Adjust Clutch & Brake Pedal Free Play	*																						Periodically
STEERING																							
Check Steering Wheel Play & Set Toe-in												■										■	Every 500 Hrs.
POWER STEERING																							
Check Oil Level & Top-up if necessary							■					■					■					■	Every 250 Hrs.
Change Power Steering Oil																						■	Every 1000 Hrs.
FRONT AXLE, WHEELS AND TIRES																							
Check Oil Level							■					■					■					■	Every 250 Hrs.
Change Oil																						■	Every 1000 Hrs.
Check Tire Pressure	*																						Periodically
Torque Wheel Nuts			#				■					■					■					■	Every 250 Hrs.
GREASE ALL NIPPLES	*		●																				Every 50 Hrs.



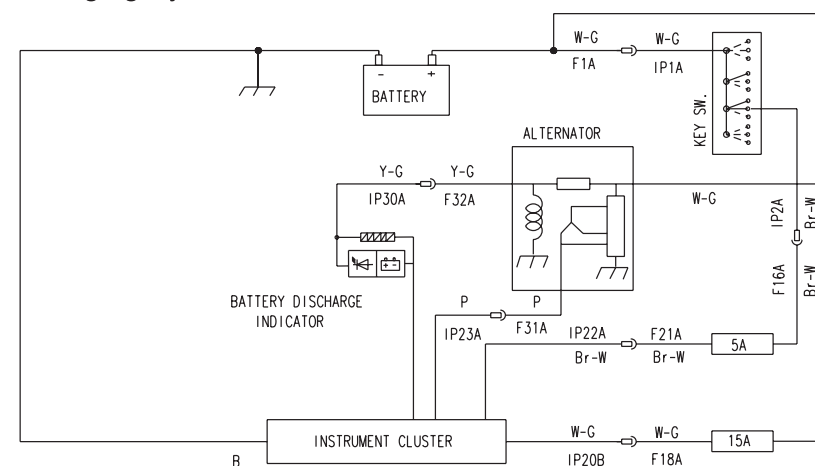
* - Applicable for 4WD

Fuse	Description
F1	MAXI FUSE
F2	STARTER RELAY
F3	PARK ILLUMINATION
F4	LOW BEAM
F5	HI BEAM
F6	SCUTTLE PLOW LAMP
F7	HAZARD
F8	TURN
F9	BRAKE SWITCH
F10	HORN
F11	INST CLUSTER, ENG SHUT OFF & SCAVENGING PUMP CONTROLLER
F12	KSB SUPPLY
F13	ECU SUPPLY
F14	ENGINE LAMP
F15	POWER SOCKET

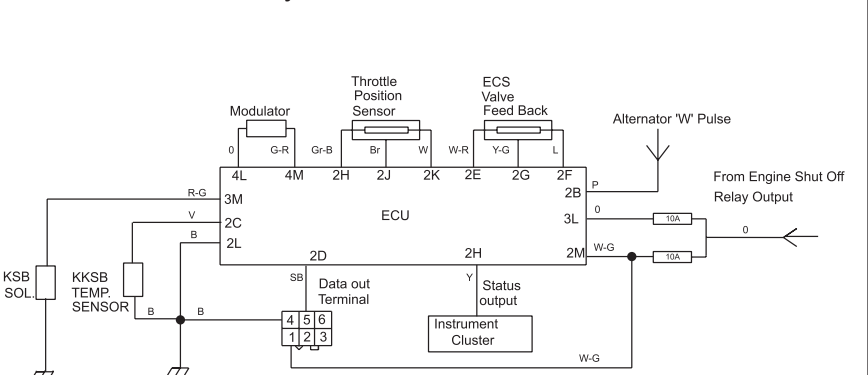
Starting System



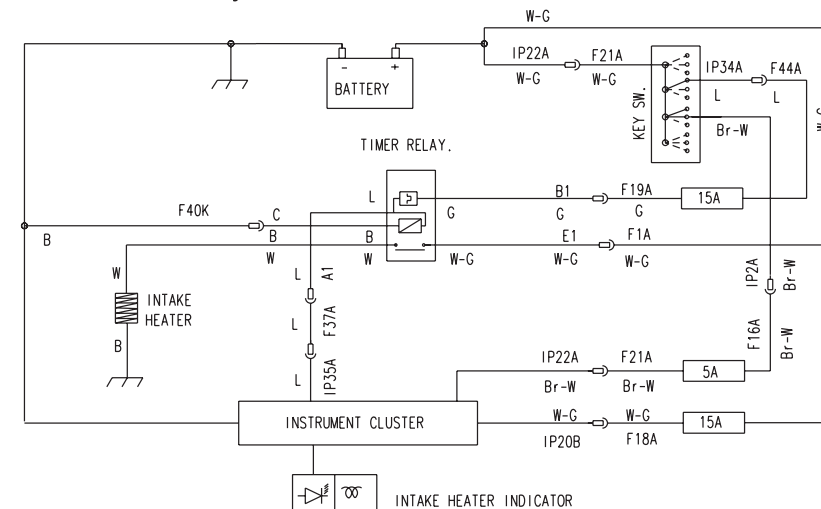
Charging System



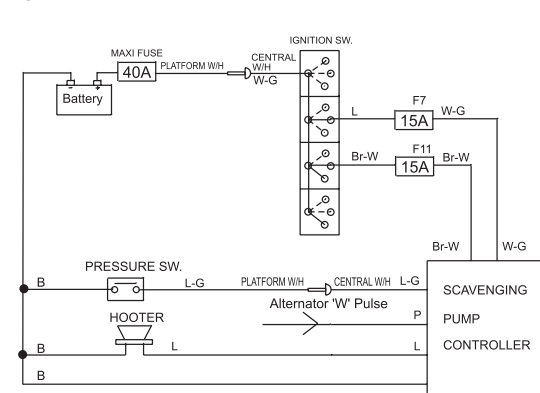
Emission Control System



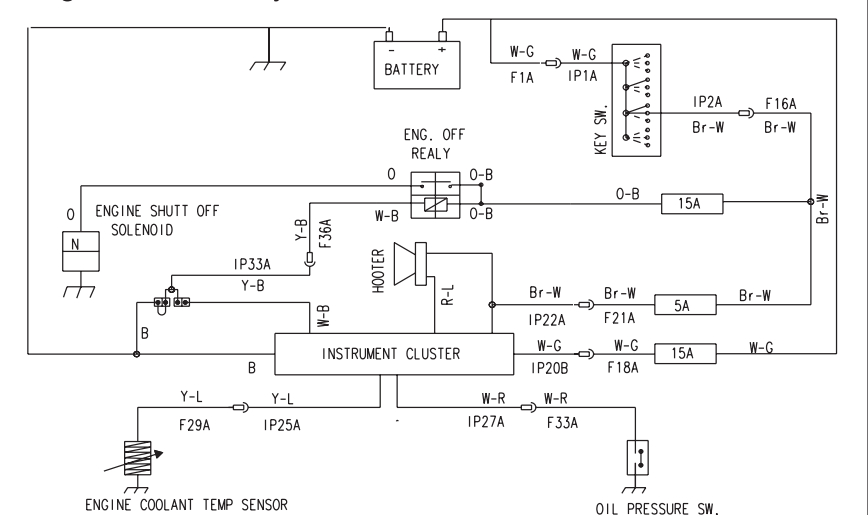
Intake Heater System



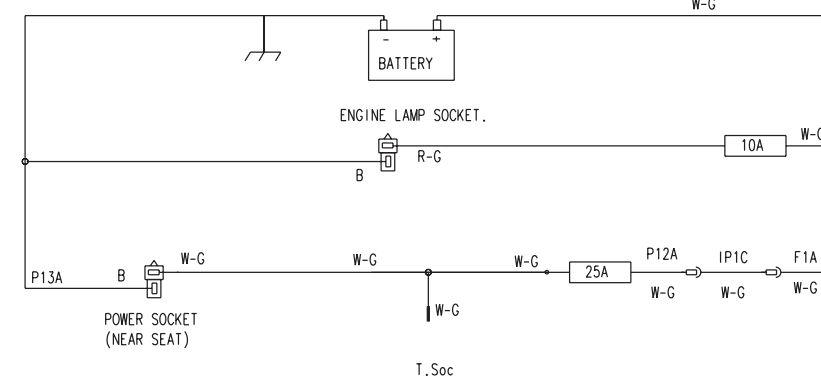
Scavenging Pump Controller



Engine Shutt-Off System



Raw Power



Wire Colour Code Details

V	VOILET
O	ORANGE
W	WHITE
L	BLUE
Br	BROWN
Gr	GREY
G	GREEN
Y	YELLOW
B	BLACK
R	RED
P	PINK
Lg	LIGHT GREEN
G-Y	GREEN-YELLOW
Gr-L	GREY-BLUE
R-G	RED-GREEN
Y-R	YELLOW-RED
Y-L	YELLOW-BLUE
Y-W	YELLOW-WHITE
Y-B	YELLOW-BLACK
Y-G	YELLOW-GREEN
B-Y	BLACK-YELLOW
O-B	ORANGE-BLACK

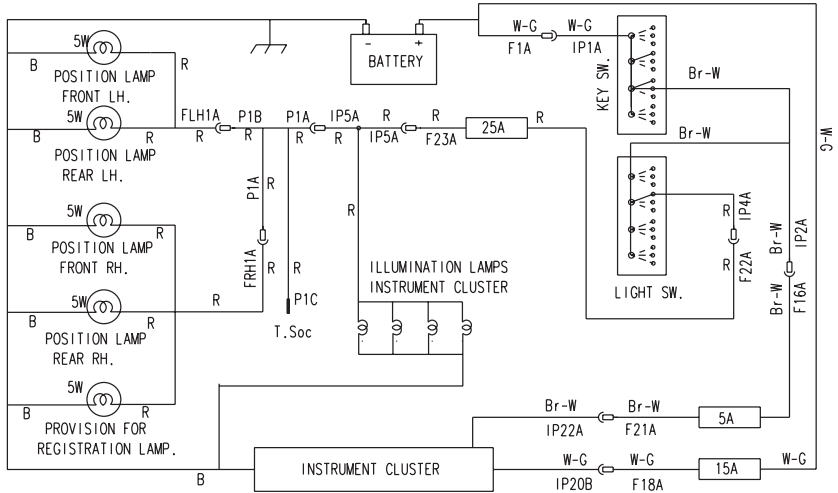
W-G	WHITE-GREEN
W-B	WHITE-BLACK
W-R	WHITE-RED
R-L	RED-BLUE
R-W	RED-WHITE
R-Y	RED-YELLOW
R-B	RED-BLACK
G-L	GREEN-BLUE
G-R	GREEN-RED
Gr-B	GREY-BLACK
Gr-R	GREY-RED
L-G	BLUE-GREEN
Br-W	BROWN-WHITE
Br-B	BROWN-BLACK
P-B	PINK-BLACK

WIRE COLOURS FOR
CIRCUIT MAY CHANGE

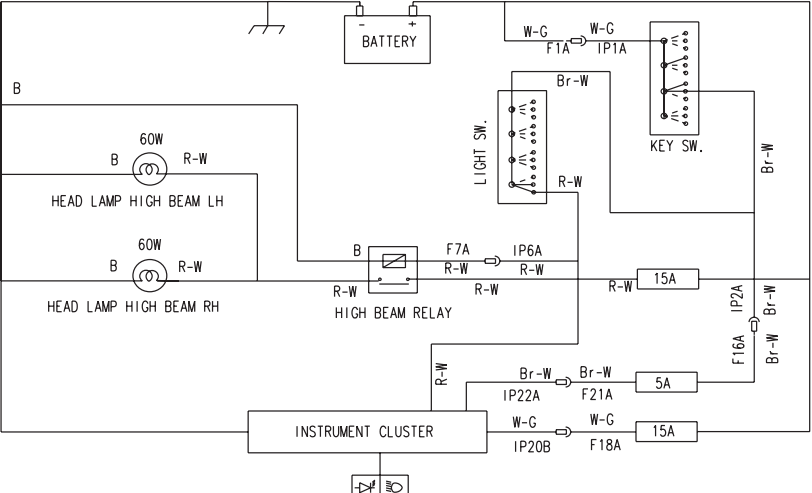
Wiring Harness Inter-Connector Details (View Form Cable Insertion End)

From Front Wire Harness To Inst. Wire Harness	From Inst. Panel Wire Harness To Platform Wire Harness	From Platform Wire Harness To Fender RH	From Platform Wire Harness To Fender LH	From Front Wire Harness To Scuttle Wire Harness
Inst. Panel Wire Harness To Front Wire Harness	From Platform Wire Harness To Inst. Panel Wire Harness	From Fender RH To Platform Wire Harness	From Fender LH To Platform Wire Harness	Scuttle Wire Harness To Front Wire Harness

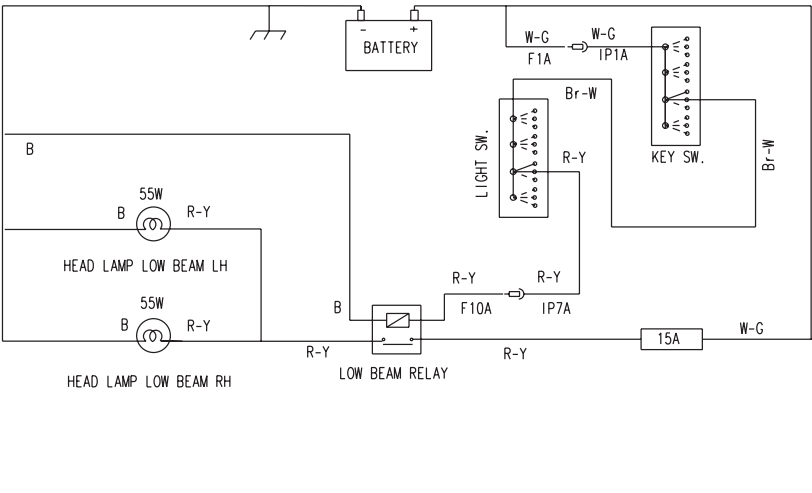
Lighting System Position and Illumination Lamps



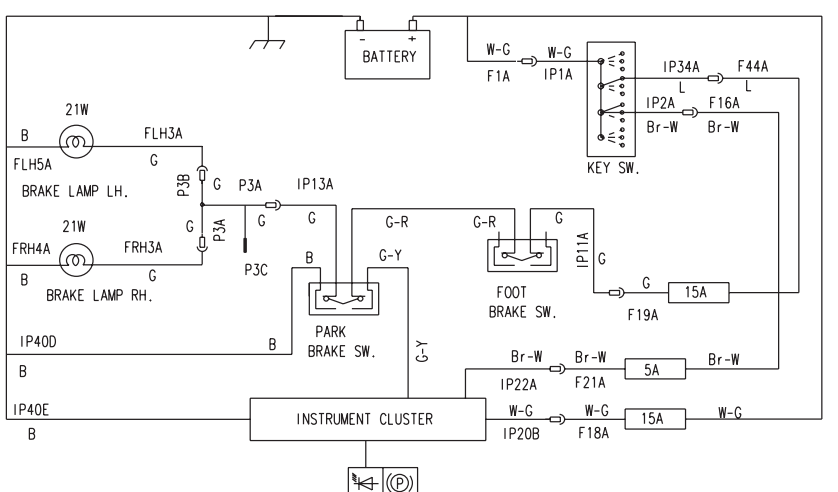
Lighting System Head Lamp High Beam



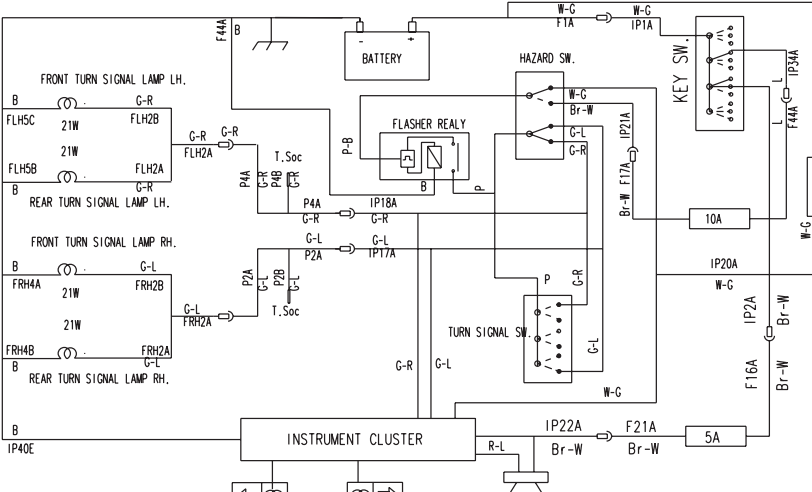
Lighting System Head Lamp Low Beam



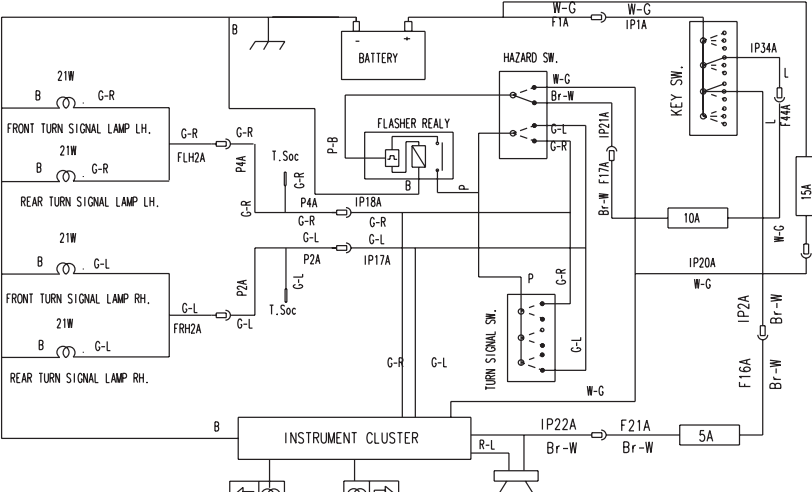
Signaling System Brake Light



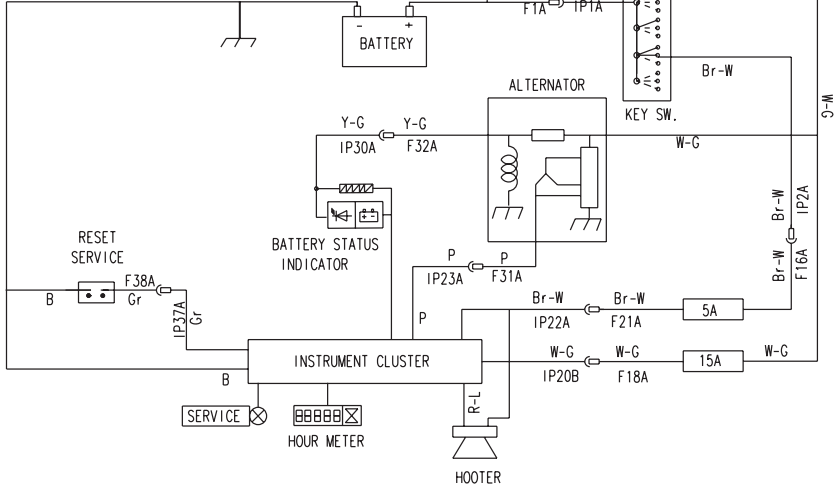
Signaling System Hazard Warning



Signaling System Turn Signal



Indication System Service



Wire Colour Code Details

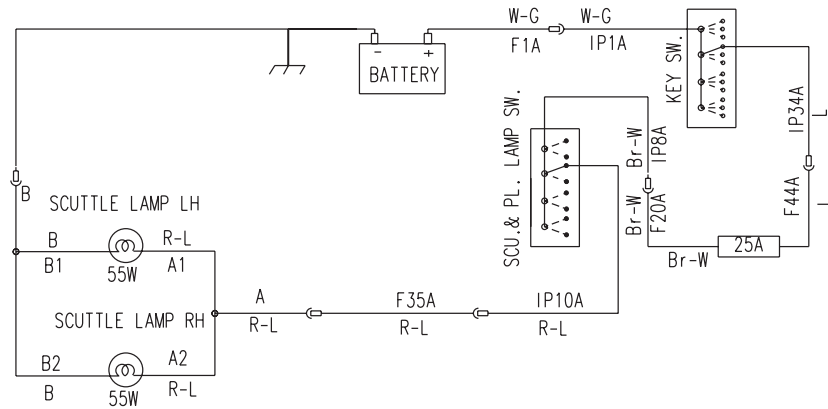
V	VOILET	W-G	WHITE-GREEN
O	ORANGE	W-B	WHITE-BLACK
W	WHITE	W-R	WHITE-RED
L	BLUE	R-L	RED-BLUE
Br	BROWN	R-W	RED-WHITE
Gr	GREY	R-Y	RED-YELLOW
G	GREEN	R-B	RED-BLACK
Y	YELLOW	G-L	GREEN-BLUE
B	BLACK	G-R	GREEN-RED
R	RED	Gr-B	GREY-BLACK
P	PINK	Gr-R	GREY-RED
Lg	LIGHT GREEN	L-G	BLUE-GREEN
G-Y	GREEN-YELLOW	Br-W	BROWN-WHITE
Gr-L	GREY-BLUE	Br-B	BROWN-BLACK
R-G	RED-GREEN	P-B	PINK-BLACK
Y-R	YELLOW-RED		
Y-L	YELLOW-BLUE		
Y-W	YELLOW-WHITE		
Y-B	YELLOW-BLACK		
Y-G	YELLOW-GREEN		
B-Y	BLACK-YELLOW		
O-B	ORANGE-BLACK		

WIRE COLOURS FOR CIRCUIT MAY CHANGE

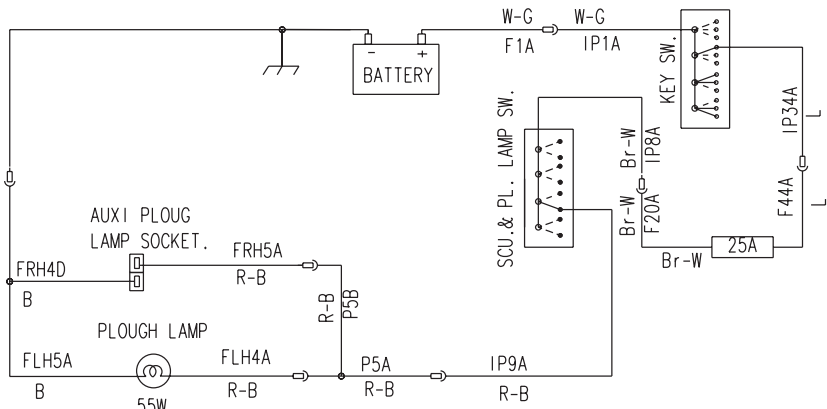
Wiring Harness Inter-Connector Details (View Form Cable Insertion End)

From Front Wire Harness To Inst. Wire Harness	From Inst. Panel Wire Harness To Platform Wire Harness	From Platform Wire Harness To Fender RH	From Platform Wire Harness To Fender LH	Front Wire Harness To Scuttle Wire Harness
Inst. Panel Wire Harness To Front Wire Harness	From Platform Wire Harness To Inst. Panel Wire Harness	From Fender RH To Platform Wire Harness	From Fender LH To Platform Wire Harness	Scuttle Wire Harness To Front Wire Harness

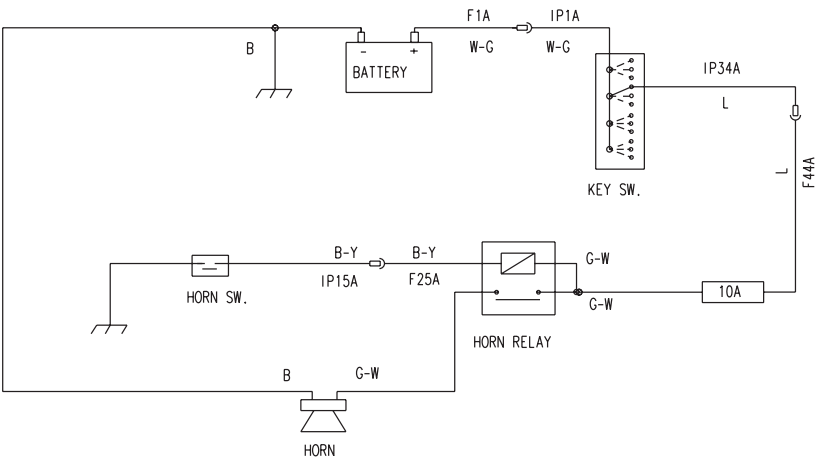
Lighting System Scuttle Lamp



Lighting System Plow Lamp

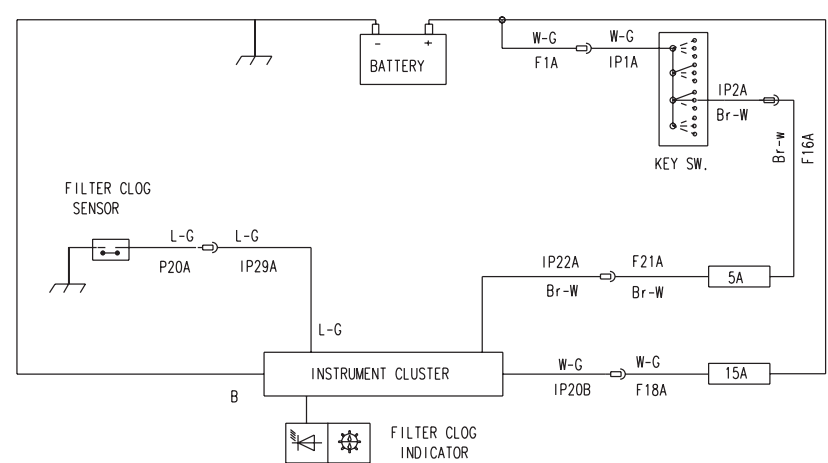


Horn System

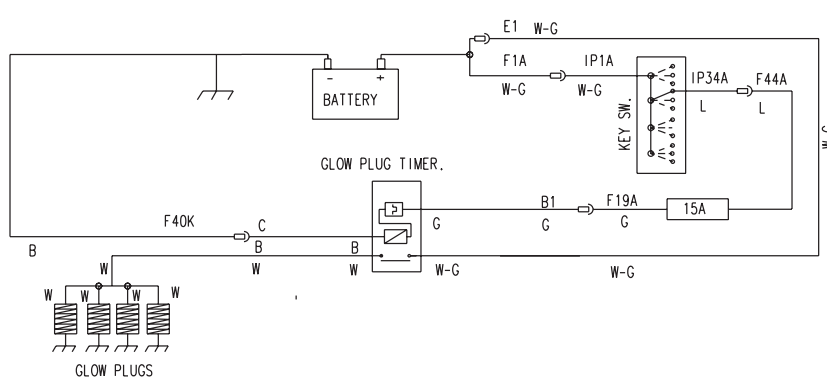


Horn Relay and Horn to be procured by customer separately if desired

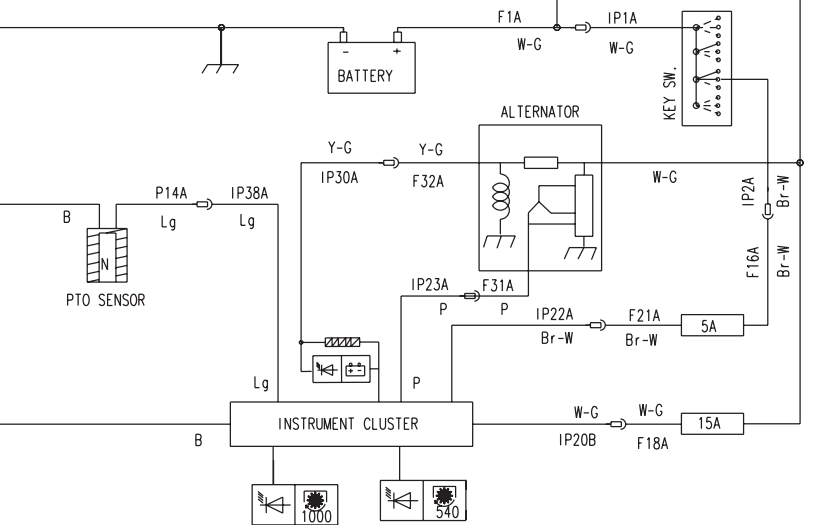
Transmission Filter Clog Indication System (Optional)



Glow Plug System



Two Speed PTO Indication System



Wire Colour Code Details

V	VOILET	W-G	WHITE-GREEN
O	ORANGE	W-B	WHITE-BLACK
W	WHITE	W-R	WHITE-RED
L	BLUE	R-L	RED-BLUE
Br	BROWN	R-W	RED-WHITE
Gr	GREY	R-Y	RED-YELLOW
G	GREEN	R-B	RED-BLACK
Y	YELLOW	G-L	GREEN-BLUE
B	BLACK	G-R	GREEN-RED
R	RED	Gr-B	GREY-BLACK
P	PINK	Gr-R	GREY-RED
Lg	LIGHT GREEN	L-G	BLUE-GREEN
G-Y	GREEN-YELLOW	Br-W	BROWN-WHITE
Gr-L	GREY-BLUE	Br-B	BROWN-BLACK
R-G	RED-GREEN	P-B	PINK-BLACK
Y-R	YELLOW-RED		
Y-L	YELLOW-BLUE		
Y-W	YELLOW-WHITE		
Y-B	YELLOW-BLACK		
Y-G	YELLOW-GREEN		
B-Y	BLACK-YELLOW		
O-B	ORANGE-BLACK		

WIRE COLOURS FOR CIRCUIT MAY CHANGE

Wiring Harness Inter-Connector Details (View Form Cable Insertion End)

From Front Wire Harness To Inst. Wire Harness	From Inst. Panel Wire Harness To Platform Wire Harness	From Platform Wire Harness To Fender RH	From Platform Wire Harness To Fender LH	Front Wire Harness To Scuttle Wire Harness
Inst. Panel Wire Harness To Front Wire Harness	From Platform Wire Harness To Inst. Panel Wire Harness	From Fender RH To Platform Wire Harness	From Fender LH To Platform Wire Harness	Scuttle Wire Harness To Front Wire Harness