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Mahindra TRACTORS

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OPERATOR'S MANUAL

'16' Series

3016 / 3616
3616 CABIN

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

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ABOUT THIS MANUAL

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 service,as specified in this manual,are carried out at the recommended intervals.

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.Dimension & 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.

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Off-Road Diesel Engine

Emission Control System Warranty Statement

MITSUBISHI

DIESEL ENGINE

MITSUBISHI HEAVY INDUSTRIES,LTD.

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS

Off-Road Diesel Engine

Emission Control System Warranty Statement

Emission Related System Defect Warranty

Manufacturer Statement

Mitsubishi Heavy Industries, ltd. (MHI) will give a warranty condition, required by the U.S. Environmental Protection Agency(EPA) and the California Air Resource Board(CARB) to Original Equipment Manufacturers (OEMs) for small off-road engines purchased in 1997 and later which are used in U.S.A.

It is the OEMs responsibility to give the following warranty to the end-users for small off-road engines purchased in 1997 and later which are used in U.S.A.

The manufacturer of MHI small off-road engines has authorized equipment manufacturers to be the direct contact for all warranty and service related questions and/or repairs. All inquiries should be directed to equipment manufacturers only.

Emission Control Warranty Statement

Applicable only to engines purchased in U.S.A. in 1997 and thereafter which are used in U.S.A..

EPA emission control defects warranty statement – Your (Customer) defects warranty rights and obligations:

EPA and Mitsubishi Heavy Industries, Ltd. are pleased to explain the emission control system warranty on your 1997 and later small off-road engine. In U.S.A., new small off-road engines must be designed, built and equipped to meet the EPA stringent anti-smog standards. Mitsubishi Heavy Industries, Ltd. must warrant the emission control system on your small off-road engine for the periods of time listed below, provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Where a warrantable condition exists, the (OEMs) will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

Manufacturer's Emission Control Warranty Coverage

Applicable only to engines purchased in U.S.A. in 1997 and thereafter which are used in U.S.A.

Emission control systems warranty coverage.

The small off-road engines are warranted as to emission control parts defects for a period, which is prescribed by US EPA CFR Part 89, subject to provisions as set forth hereafter. If any covered part on your engine is defective, the part will be repaired by (OEMs).

Owner's warranty responsibilities:

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. (OEMs) recommends that you retain all receipts covering maintenance on your small off-road engine. But (OEMs) cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

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

You are responsible for presenting your small off-road engine to an authorized service dealer (authorized by OEMs) of small off-road engines as soon as a problem exists. The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have any question regarding your warranty rights and responsibilities, you should contact (Mahindra, USA Inc) at 1-877-449-7771. The emission warranty is a defects warranty. Defects are judged on normal engine performance.

The warranty is not related to an in-use emission test.

Specific Warranty Provisions

The following are specific provisions relative to your emissions control systems warranty coverage.

Warranted Parts

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

Fuel injection system

- Fuel injection pump
- Fuel injectors

Inlet system

- Intake manifold

Exhaust system

- Exhaust manifold

Turbocharger system

- Turbocharger (if equipped)

Miscellaneous items used in above systems

- Cylinder Head Gasket
- Valve Stem Seal

Length of Coverage

MHI warrants to the initial owner and each subsequent purchaser that the warranted parts shall be free from defects in materials and workmanship which cause the failure of the warranted part(s) for a period, which is prescribed by US EPA CFR Part 89, from the date the engine is delivered to a retail purchaser.

For all engines rated under 19kW and for constant speed engines rated under 37kW with rated speeds greater than or equal to 3,000rpm, the warranty period is 3,000 hours or 5 years of use, whichever first occurs.

For all other engines rated at or above 19kW, the warranty period is 5,000 hours or 7 years of use, whichever first occurs.

No Charge

Repair or replacement of any warranted part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an authorized service dealer of small off-road engines to whom OEMs would sell engines.

Claims and Coverage Exclusions

Warranty claims shall be filled in accordance with the provisions of the OEMs engine warranty policy. Warranty coverage shall be excluded for failures of warranted parts

which are not original OEMs parts or because of abuse, neglect or improper maintenance as set forth in the OEMs engine warranty policy. OEMs is not liable to cover failures of warranted parts caused by the use of add-on, non-original, or modified parts.

Maintenance

Any warranted part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any warranted part which is scheduled for replacement as required maintenance shall be warranted as to defects only of the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the MHI owner's manual.

Consequential Coverage

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

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INTRODUCTION

This instruction manual contains information on the operation, lubrication and maintenance of your tractor. The information contained is comprehensive and essential, and is designed to assist you, even if unexperienced, in utilizing your tractor.

How well your tractor continues to give satisfactory performance depends greatly upon the manner in which it is operated. It is, therefore, requested that this manual be read carefully and kept ready for use so that the operation and maintenance service will properly be carried out in order to keep the tractor in top mechanical condition at all times.

Should any information as to your tractor be required, consult your local dealer or distributor stating the machine and engine serial numbers of the tractor concerned. We are sure you will be happy with your tractor.

NOTE: Expressions such as LEFT, RIGHT, FRONT, or REAR used in this manual should be understood in accordance with following rules:

FRONT means the front grill end while REAR means the lifting arm end of the tractor. LEFT or RIGHT means the left or right hand side of the tractor looking forward from operator's seat.

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SERIAL NUMBER

Write your machine Model Name and Serial Numbers of major components on the lines provided. If needed, give these numbers to your dealer when you need parts or information for your machine.

1. TRACTOR MODEL NUMBER _____

2. TRACTOR SERIAL NUMBER _____

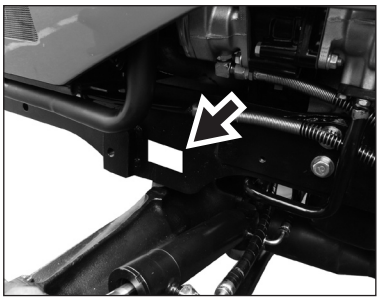
3. ENGINE SERIAL NUMBER _____

4. ROPS SERIAL NUMBER(Only Open Model) _____

5. CABIN SERIAL NUMBER(Only CABIN Model) _____

SERIAL NUMBER LOCATIONS

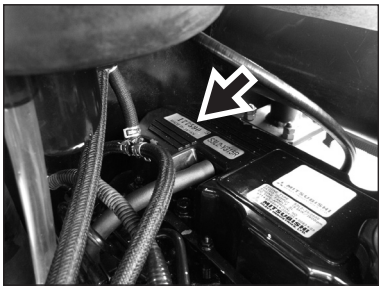
TRACTOR MODEL NUMBER AND SERIAL NUMBER PLATE



ROPS SERIAL NUMBER PLATE

ENGINE SERIAL NUMBER

(3016)



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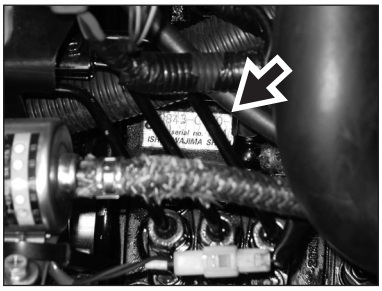

CABIN SERIAL NUMBER PLATE

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SAFETY PRECAUTIONS

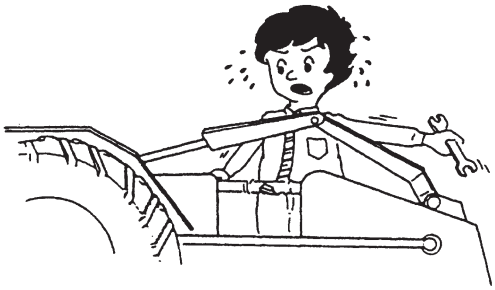
REMEMBER: "SAFETY" IS ONLY A WORD UNTIL IT IS PUT INTO PRACTICE

Improper handling of the tractor could cause an accident. Prior to the operation of the tractor, be sure to read this Manual carefully and have a through understanding of all of the contents. In particular, the instructions given in this section entitled "Safety Precautions" must be strictly followed.

A. GENERAL OPERATING SAFETY PRECAUTION

1. Observe all the safety precautions in this manual when operating the tractor.

2. Operate the tractor while wearing tight clothing that allows easy movement. Avoid loose jackets, mufflers, ties, scarves, or loose shirt sleeves to prevent from being caught by moving parts.



3. Always work when you are in good physical condition by taking sufficient rest to avoid overwork.

4. Do not allow children or adults having no knowledge of the tractor or tractor operation, to operate the tractor.

5. Never allows riders on the tractor, linkage drawbar or attachment while traveling and operating them.

B. BASIC SAFETY REQUIREMENTS FOR MAINTENANCE

Always follow these maintenance instructions before operating the tractor:

1. Immediately repair the head lights and work lamps required to conform to traffic regulations where the tractor is operated.
2. Keep tractor steps clean to avoid accidents due to slippage.

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3. Cover the PTO shaft with a guard when not using.

4. Be sure to engage the brake and lower any attachment or implement before disassembling any part.

5. Never adjust or service the tractor when it is in motion or while the engine is running. Always adjust the brake or clutch properly in accordance with the adjusting procedure in the instruction book.

6. Do not remove the radiator cap while the engine is running. Shut down the engine and wait until it cools sufficiently. For removal, turn the cap to the first stop to relieve pressure. To replace the coolant, use the coolant recovery tank.

7. Hydraulic oil or fuel escaping under pressure can penetrate the skin, causing serious injury. Before disconnecting oil or fuel lines, be sure to relieve all pressure. Before restoring pressure after repair, be sure all connections are tight and all hydraulic components are in normal condition. If injured by leaked fluid, see a doctor immediately for proper treatment.

8. When refueling, be particularly careful first to stop the engine completely to prevent the fuel from igniting. Never refuel in the presence of an open flame or while smoking.

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9. Before starting any work on electrical equipment or work that may cause you to touch the electrical parts accidentally, first disconnect the battery cables. Never remove the rubber cap cover at the positive terminal of the battery cable end. Before connecting the battery to the charger, make sure that the charger switch is in "OFF" position.
   Be sure to connect the charger to the correct terminals on the battery (positive to positive, negative to negative).
   A great amount of hydrogen gas is generated by the battery when it is being charged. Take precautions against fire: Do not have any exposed flame in the area where you are working.
   Be sure not to cause any leakage of the electrolyte, since it will corrode the skin or clothing. In case of accident as described below, immediately seek first aid, and see a doctor immediately for proper treatment.

a) If the diluted sulphuric acid from the battery has gotten into the eyes:
   Clean the eyes with a lot of clean running water for more than 15 minutes, while opening the eyes widely, and see a doctor immediately for proper treatment.

b) If the diluted sulphuric acid from the battery has been swallowed: Rinse the mouth with clean water immediately, and see a doctor immediately for proper treatment.

c) If diluted sulphric acid has gotten on the skin of clothing: Wash away the diluted euphoric acid completely with a lot of clean running water and neutralize with soap solution. Then rinse with water.

d) If the diluted sulphric acid is spilled: Wash away with a lot of water or neutralize with slacked lime or bicarbonate of soda.

10. Stop the engine and make sure the PTO shift lever is in Neutral before performing any of the following services, including.

a) Removal of the propeller shaft between PTO and any attachment.

b) Adjustment of PTO drive train and hitch.

c) Adjustment or cleaning of PTO driven attachment.

11. The steering wheel always wheel always has built-in play to some extent, which is required for smooth meshing of sector gear and pinion gear.
   Always inspect the amount of the play. Do not operate the tractor if there is too much or too little play in the steering.

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C. OPERATION OF THE TRACTOR

Before driving the tractor, follow these rules:

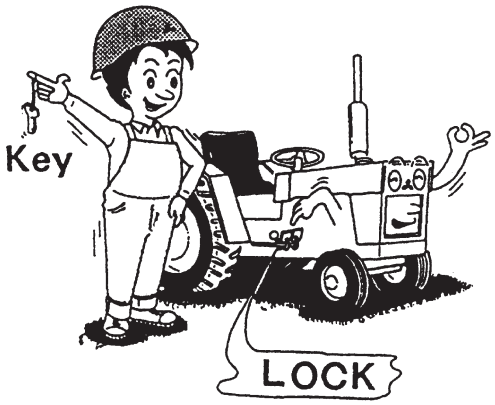
1. Before starting and Driving the Tractor

   Operate the tractor only when seated properly in operator's seat and keep a firm grip on the steering wheel at all times. Never attempt to perform any operation of the tractor from anywhere else, on or off the tractor. Always wear a "hard hat" when operating the tractor.

2. Starting and Driving the Tractor

   Always operate the tractor at the proper speeds which enable you to keep the tractor in complete control.

To start traveling, lower the engine speed and release the clutch pedal slowly.
Before leaving the tractor, stop the engine, remove the key, apply the parking brake and make sure that the engine has come to a complete stop, and any attachment is completely touching the ground.



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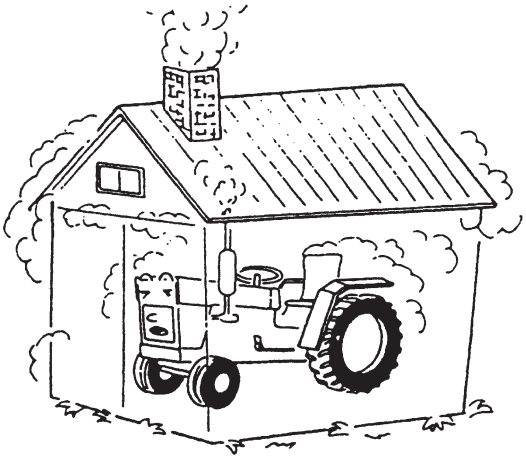
Slow down when operating the tractor on rough round.

Never attempt to jump on or off from moving tractor.

When starting the tractor, operating any attachment or engaging the PTO make sure that no one is in the way, especially children.

When starting the engine in an enclosed area or building, ensure proper ventilation by opening the doors and/or windows to prevent carbon monoxide inhalation.
Mount the extension exhaust pipe on the tractor which has a cabin.



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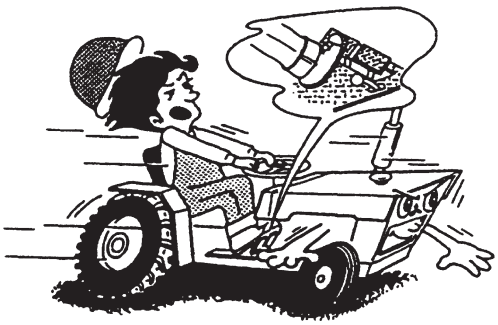
3. Traveling on Roads and Streets

For traveling on roads and streets, be sure to lock both brake pedals together before driving to prevent either brake from acting independently.



Never operate the differential lock while driving at high speed or traveling on the road. For driving the 4-WD tractor on the road, be sure to place the 4-WD shift lever in OFF position.

4. Steering and Turning the Tractor

Slow down your tractor and disengage the differential lock before going into a turn, being careful to prevent any attachments mounted on the front or rear from hitting anyone or anything.

5. Towing and Operating on Hills

For towing work on downward slope, place the shift lever in low speed and use engine brake.

Never try to reduce the speed with brake only.

Towing a heavy object on a hill is highly hazardous. Widen the tread of the tractor and mount the wheel weight or chassis weight to increase the stability and operate with extra precaution.

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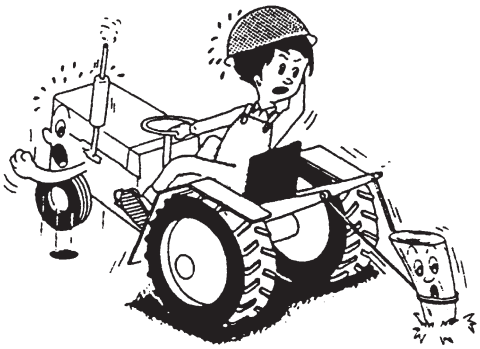
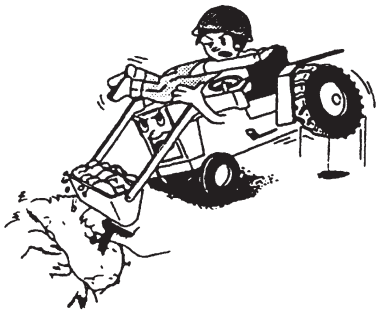
When operating the tractor on either a steep slope or flat ground, be sure not to suddenly steer, brake, clutch or operate attachments.
Do not operate the tractor at the edge of cliff or slope. Be particularly careful right after the rain when soil is soft and may give way easily.

For towing, be sure to use the drawbar only. Set the hitch point below the center line of the rear axle. When using a chain, never try to move forward abruptly.



Avoid operating the tractor on an extreme slope that appears hazardous, when forced to operate on such slope, use extra care. Driving forward out of a ditch or mired condition or up a steep slope could cause tractor to tip over rearward.
Back out of such situation does not permit you back out, use the front wheel weight or the chassis weight for balancing the tractor lengthwise. Also in case any extra-heavy rear mounting. Attachments is used, try to obtain better balance in this manner.

C-6. Using Attachment
To mount or operate attachment, follow the instruction manual for the particular attachment for safe operation.



When using agricultural chemicals with an attachment on the tractor, always follow the instructions in the manual for the attachment as well as the instructions provided by the chemical manufacturer.

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DECALS

IMPORTANT: Install new decals if the old decals are destroyed, lost, painted over or can not be read. When parts are replaced that have decals, make sure you install a new decal with each new part.

NOTE: New decals are available from your Dealer.

WARNING

EXPLOSION AND INJURY CAN RESULT FROM USE OF STARTING AIDS WITH HOT GLOW PLUGS.
DO NOT INJECT GASOLINE OR ETHER IN AIR INTAKE.

WARNING

BATTERIES CONTAIN ACID AND EXPLOSIVE GAS. EXPLOSION CAN RESULT FROM SPARKS,FLAMES, OR WRONG CABLE CONNECTIONS. TO CONNECT JUMPER CABLES OR CHARGER, SEE MANUAL(S) FOR THE CORRECT PROCEDURE. FAILURE TO FOLLOW THE ABOVE INSTRUCTIONS CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH

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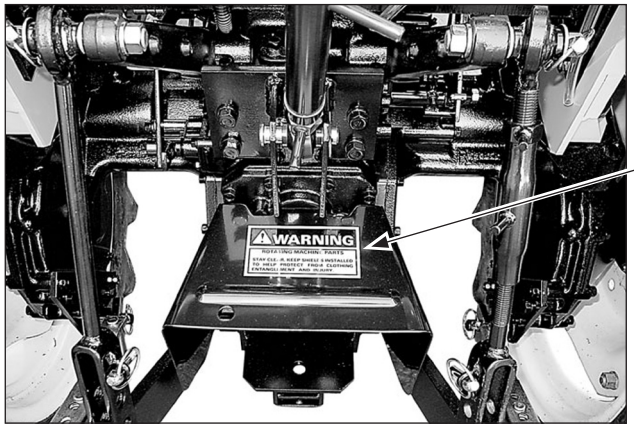

WARNING

ROTATING MACHINE PARTS

STAY CLEAR,KEEP SHIELDS INSTALLED TO HELP PROTECT FROM CLOTHING ENTANGLEMENT AND INJURY.

321-3710

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WARNING

AVOID INJURY OR DEATH

BEFORE STARTING ENGINE:

- Read operators manual for safety information and operating instructions.
- Read all tractor safety signs.
- Be sure other people are clear of tractor and equipment.
- Be sure all gears shifted are in neutral or park and all PTO controls are off.
- Start engine only from seat.
- Shields are for your protection. Keep them in place.

OPERATION:

- With ROPS, always buckle and adjust seat belt.
- No riders on tractor or equipment.
- Keep hands, feet, and clothing away from power driven parts.
- For road travel, couple brake pedals, use flashing warning lamps unless prohibited by law, and keep SMV emblem visible.

TRACTORS CAN BE UPSET:

- Reduce speed on turns and rough ground. Avoid steep slopes.
- Avoid rear upset. Pull only from drawbar, never higher.

WHEN TRACTOR HAS STOPPED:

- Engage park lock or brake.
- Lower implement to ground.
- Disengage PTO, stop engine, and wait for all movement to stop before servicing or clearing equipment.

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WARNING

When improperly operated,this tractor can rollover or upset.Use of ROPS and seat belt minimize the possibility of injury or death if rollover or upset occurs.For low clearance use only,the ROPS can be lowered.NO protection is provided in this position and the seat belt should not be fastened.For all other uses.secure ROPS in upright position and fasten seat belt.

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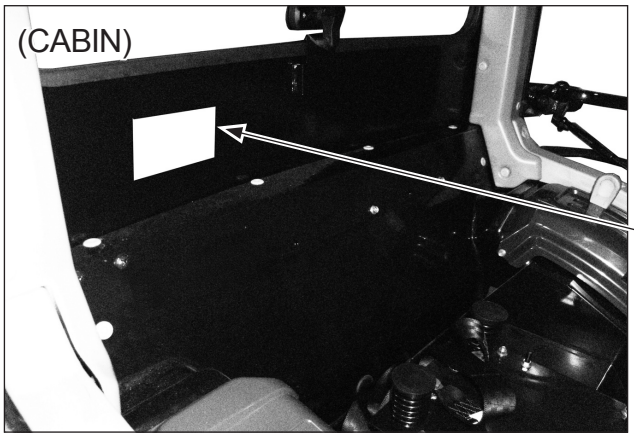

CAUTION Refrigenrat Under Pressure

Improper service methods may cause Injury. Air conditioning system SHOULD be serviced by a qualified personnel. See Service Manuals for Details

Refrigerant		oil	
HFC134a USE ONLY	Max. 0.95kg (2.09lbs.) Min. 0.85kg (1.87lbs.)	ND-OIL 8 OR EQUIVALENT	SAE J-639

MFD. BY DENSO CORPORASION JAPAN.

1946 8865

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ROLL OVER PROTECTIVE STRUCTURE (ROPS)

Foldable ROPS Frame

WARNING: When improperly operated, this tractor can roll over or upset. Use of the ROPS and seat belt minimize the possibility of injury or death if rollover or upset occurs. For low clearance use only, the ROPS can be lowered. No protection is provided in this position and the seat belt should not be fastened. For all other uses, secure the ROPS in the upright position and the fasten the seat belt.

ROPS is foldable so that the tractor can be operated in places such as orchards where the height is restricted. See Folding the ROPS in this manual.

Normal Operating Position

For normal operation, including transport, always use the foldable ROPS in the secured upright position with a fastened seat belt for full rollover protection.

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Low Clearance Positions

For low clearance operation, such as operating in buildings, orchards or vineyards, the ROPS can be lowered and secured in the down position.
No rollover protection is provided in the lowered positions and the seat belt should not be fastened. When the low clearance operation is completed, return the ROPS to the secured upright position for all other tractor uses and transport.

INPORTANT: When the ROPS frame is in the lowered position, make sure there is clearance between the frame and hitch mounted equipment. Slowly raise the hitch to maximum height to check for necessary clearance. For drawbar attached and/or PTO driven equipment, check for clearance including turning corners.

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Tractor Roll Over

ROPS is a special safety unit. After an accident, The ROPS must be replaced so that you will get the same protection as a new ROPS.
ROPS, the seat, the seat belts and all the mounting, accessories and wiring inside the operator's protective area must be carefully checked after a tractor accident and all parts with damage should be replaced immediately. DO NOT TRY TO MAKE REPAIRS WELDING THE ROPS.

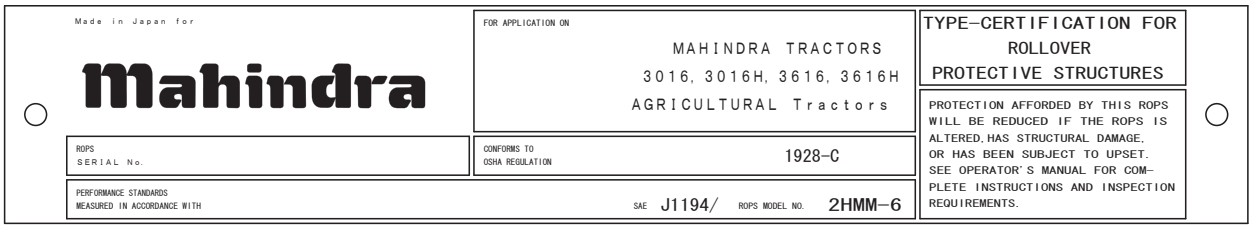
Safety Rules

1.Do not make modification to the ROPS. Example, welding an accessory to the ROPS, or drilling a hole in the ROPS.
2.Special fasteners are used to install the operator protective parts. Replacement parts must be the same as given in the Parts Catalog for your tractor.

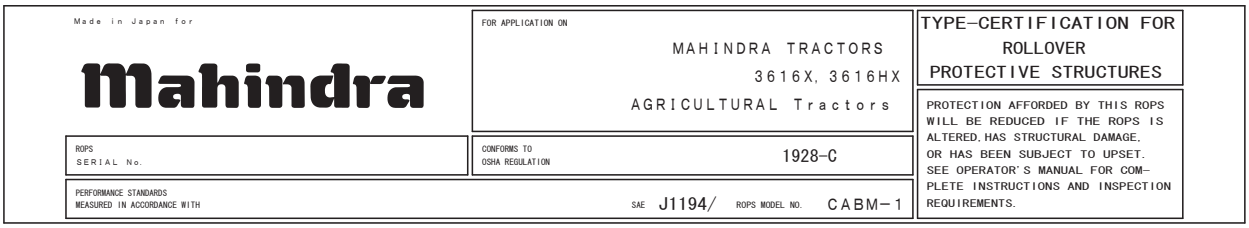
ROPS Label

1.ROPS is equipped with a ROPS label.
2.The label contains the ROPS serial number and applicable standards.

ROPS SERIAL NUMBER PLATE



CABIN SERIAL NUMBER PLATE



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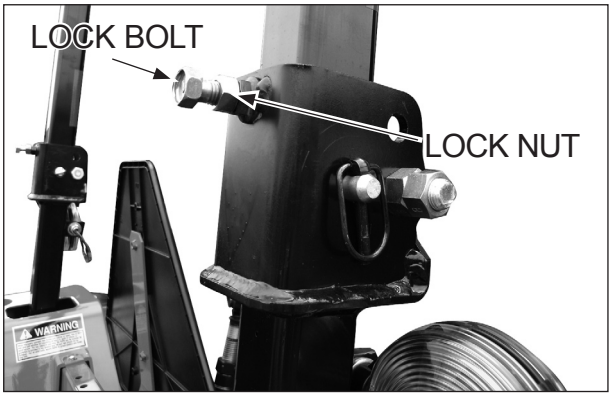
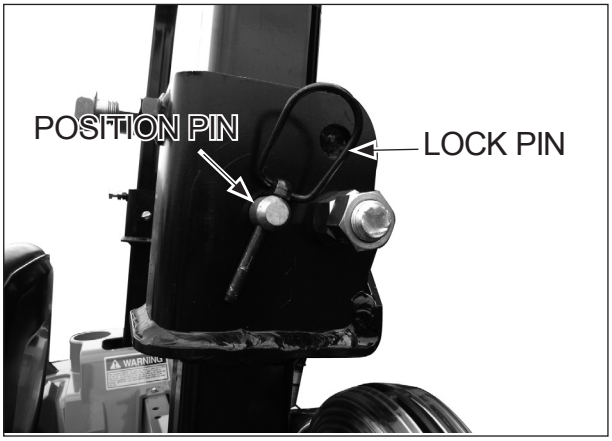
Holding and Adjustment

STEP1



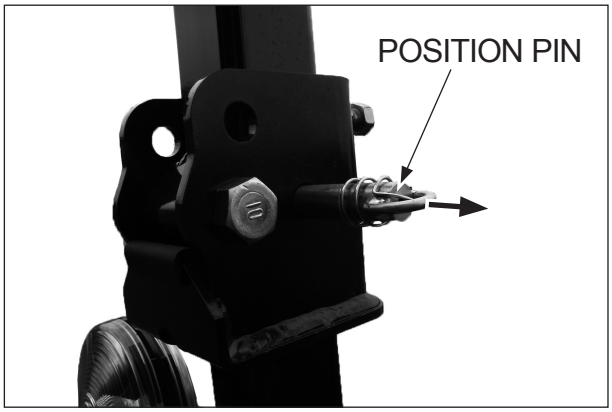
Loosen the lock nut and the lock bolt.

STEP2



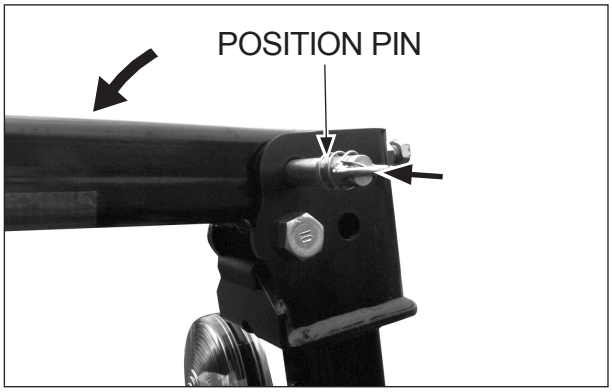
Remove the lock pin from the position pin.

STEP3



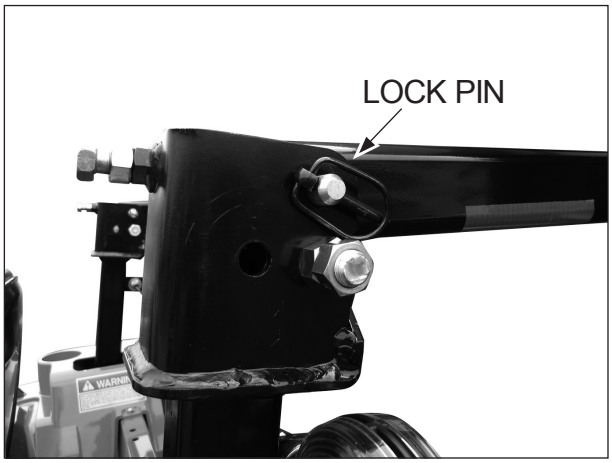
While holding the ROPS bar CAREFULLY remove the position pins.

STEP4



Down the ROPS bar slowly for the second position.
While holding the ROPS bar carefully install the position pins.

STEP5



Install the lock pin to the position pin.

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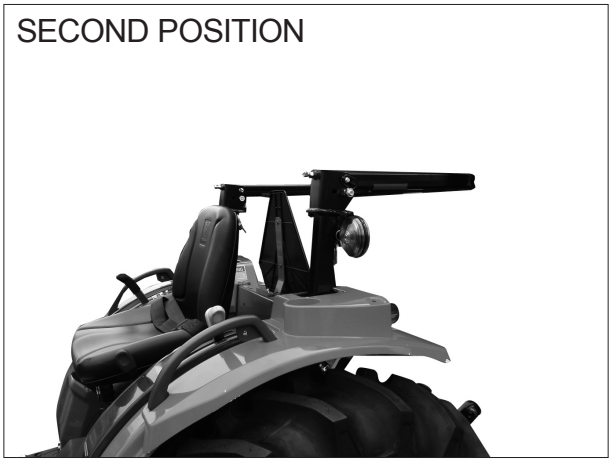
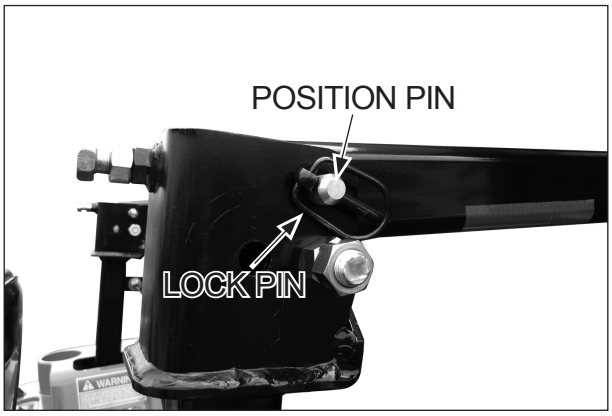
SECOND POSITION

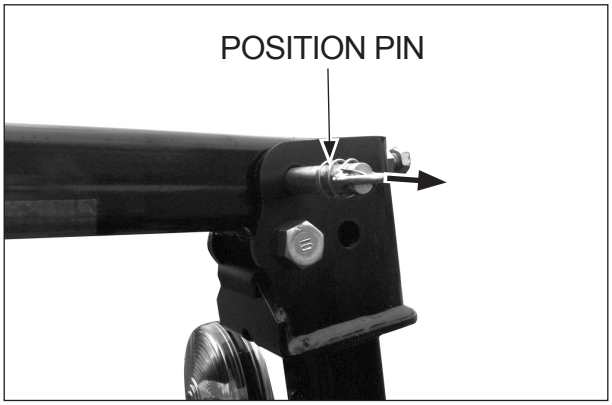


STEP6



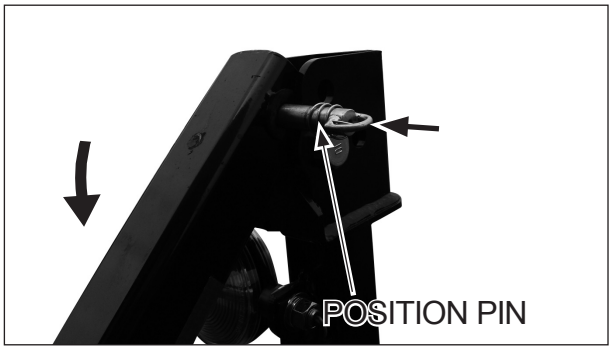
Remove the lock pin from the position pin.

STEP7



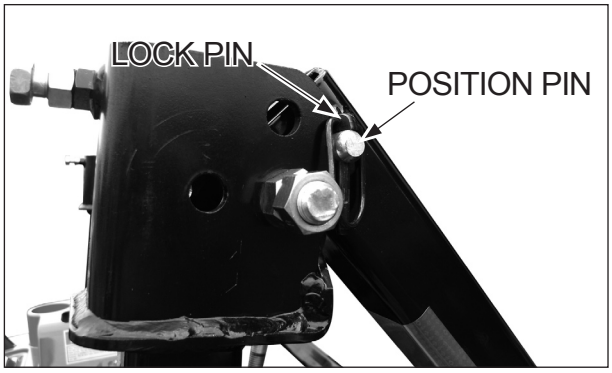
While holding the ROPS bar CAREFULLY remove the position pins.

STEP8



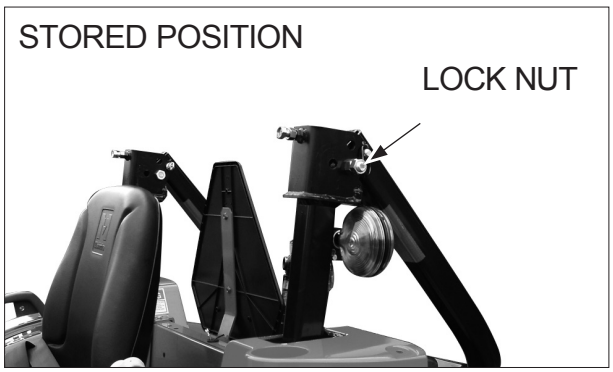
Down the ROPS bar slowly from the second position.
While holding the ROPS bar carefully install the position pins.

STEP9



Install the lock pin to the position pin.

STORED POSITION



Adjustment of Foldable ROPS.
If you feel less friction when the ROPS is at the upright position , tighten the Lock Nut until you feel the right friction in the movement.

WARNING: Rollover protection is provided only with proper assembly. Lock pins, must be in place. Correct parts may be obtained from your dealer.

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DIESEL ENGINE

GENERAL

TYPE Three Cylinders, Four Cycle, Valve in Cylinder Head, Cross Flow Porting

FIRING ORDER

3016.....1-3-2

3616.....1-2-3

BORE

3016.....78mm (3.071 inch)

3616.....84mm (3.307 inch)

STROKE

3016.....92mm (3.622 inch)

3616.....100mm (3.937 inch)

PISTON DISPLACEMENT

3016.....1318cm^3 (80.43 inch3)

3616.....1662cm^3 (101.4 inch3)

COMPRESSION RATIO

3016.....22.0 to 1

3616.....22.5 to 1

GOVERNOR ENGINE SPEED WITHOUT LOAD

3016.....2670 to 2690 RPM

3616.....2810 to 2835 RPM

RATED ENGINE SPEED

3016.....2600 RPM

3616.....2600 RPM

ENGINE IDLE SPEED

3016.....970 to 1000 RPM

3616.....995 to 1020 RPM

MAXIMUM HORSE POWER (Manufacturing Rating)

3016.....26 HP at 2600 RPM

3616.....34.5 HP at 2600 RPM

VALVE CLEARANCE (Intake and Exhaust Cold Engine)

3016.....0.25 mm (0.010 inch)

3616.....0.20 mm (0.008 inch)

IMPORTANT : Valve clearance adjustment must be made when the engine is not running and is cold.

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ENGINE LUBRICATION SYSTEM

OIL PRESSURE

3016.....49 kPa (7.1psi)

3616.....39.2 to 58.8 kPa (5.7 to 8.5 psi)

FUEL SYSTEM

Fuel Injection Pump

3016.....BOSCH M type
ND-PFR, DENSO

3616.....BOSCH-PFR

Fuel Injectors

3016.....Throttle Type, DENSO

3616.....Throttle Type, BOSCH

AIR INTAKE SYSTEM

TYPE..... Dry Type Air Cleaning System with Double Filter

COOLING SYSTEM

TYPE ..... Pressure System, Thermostat
Controlled Bypass, Impeller Type Pump

RADIATOR ..... New Rectangle Fin Type

THERMOSTAT

3016.....Start to Open at Approx.76.5°C(170°F)
Fully Open at 90°C (194°F)

3616.....Start to Open at Approx.71°C(156°F)
Fully Open at 82°C (180°F)

PRESSURE CAP..... 88.0kPa (12.8psi)

WATER TEMPERATURE ..... Thermometer on Instrument Panel

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POWER TRAIN

TRACTOR BRAKES
TYPE .....Wet Disk Plate Type
OPERATION.....Mechanical
PARKING BRAKES .....Hand Operating Lock Type

TRANSMISSION
TYPE
GEAR DRIVE .....Synchromesh on Shuttle (Forward-Reverse Position) and main Gear Shift of constant mesh with Two Ranges of Selective Sliding Gears
HYDROSTATIC DRIVE .....Hydrostatic Transmission with Three Ranges of Selective Sliding Gears

RANGES OF SELECTIVE SLIDING GEARS
GEAR SELECTION
GEAR DRIVE .....8 Speeds Forward and 8 Speeds Reverse
HYDROSTATIC DRIVE .....3 Speed ranges in Forward and Reverse with Variable Speeds.
SHIFT CONTROL
GEAR DRIVE ..... Actuated by Two Shift Levers on the LH Fender and shuttle lever on the column.
HYDROSTATIC DRIVE .....Actuated by Pedal on the RH Step and lever on the LH Fender

OIL COOLER .....Hydrostatic Drive only

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CLUTCH

TYPE, DIAMETER

GEAR DRIVE .....Dry, Single Disc, Diaphragm Type, 215mm (8.46 Inch)

HYDROSTATIC DRIVE .....Dry, Single Disc, Diaphragm Type, 215mm (8.46 Inch)

OPERATION.....Mechanical

MECHANICAL FRONT DRIVE (MFD)

FRONT AXLE .....Spiral Bevel Gear Type Differential with Bevel Gear Reductions

DIFFERENTIAL LOCK

TYPE

GEAR DRIVE .....Controlled by Pedal on the RH Step and Mechanically Actuated

HYDROSTATIC DRIVE .....Controlled by Pedal on the LH Step and Mechanically Actuated

STEERING

TYPE OF STEERING.....Hydrostatic Type

HITCH SYSTEM

TYPE .....Three Point, Category Ⅰ

TYPE CONTROL.....Positions Control

TYPE VALVE .....Three Positions,Lift,Hold and lower

LIFTING CAPACITY AT 24"BEHIND LIFT POINT (Per ASAE S349.1)

.....780kg (1720 lbs)

TYPE OF CYLINDER .....Single Acting Type

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HYDRAULIC SYSTEM

HYDRAULIC PUMP TYPE .....Front Mounted, Engine Driven, Pressure Loading Gear Type

CAPACITY

PUMP FOR THREE POINT HITCH

3016.....29.6 l/min (7.8GPM) at 2600 Engine RPM

3616.....29.0 l/min (7.7GPM) at 2600 Engine RPM

PUMP FOR POWER STEERING

3016.....12.7 l/min (3.4GPM) at 2600 Engine RPM

3616.....12.7 l/min (3.4GPM) at 2600 Engine RPM

MAXIMUM SYSTEM PRESSURE

3016 / 3616.....15211 kPa (2205psi)

AUXILIARY CONNECTOR .....Front Hydraulic Block

CONNECTOR SIZE .....9.5mm (3/8 inch)

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REAR POWER TAKEOFF (PTO)

PTO Type

GEAR DRIVE.....Independent PTO

HYDROSTATIC DRIVE.....Live PTO (Internal over running clutch)

LOCATION ..... At the rear of transmission

ROTATION .....Clockwise from rear of tractor

SHAFT SIZE .....34.9 mm (1.375 Inch) Diameter, 6Splines

SPEED .....540 RPM at 2376 Engine RPM

MID POWER TAKEOFF (PTO) OPTION

PTO Type

GEAR DRIVE .....Independent PTO

HYDROSTATIC DRIVE .....Live PTO

LOCATION .....At the Bottom of Transmission

ROTATION .....Clockwise from rear of tractor

SHAFT SIZE .....25.4mm (1 Inch) Diameter, 15Splines

SPEED .....2000 RPM at 2525 Engine RPM

DRAWBAR

TYPE .....Fixed Type

DISTANCE FROM HITCH HOLE TO THE END OF PTO SHAFT

.....358mm (14.092 inch)

MAXIMUM VERTICAL LOAD ON DRAWBAR

.....440kgf (969 lbf)

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SPECIFICATIONS

OVERALL LENGTH (TO END OF LOWER LINK)

3016 / 3616 .....3080 mm (121.3 inch)

OVERALL WIDTH (TO END OF TIRE)

3016 (15x19.5) .....1600 mm (63 inch)
3616 (43x16.00-20) .....1575 mm (62 inch)

HEIGHT (TO TOP OF ROPS)

3016 (15x19.5) .....2069 mm (81.5 inch)
3616 (43x16.00-20) .....2145 mm (84.4 inch)
3616 CABIN (43x16.00-20) .....2107 mm (83 inch)

WHEELBASE

3016 .....1710 mm (67.3 inch)
3616 .....1750 mm (68.9 inch)

GROUND CLEARANCE

3016 (27x8.50-15) .....290 mm (11.4 inch)
3616 (28x8.50-15) .....315 mm (12.5 inch)

TURNING RADIUS (WITH BRAKE ASSISTANCE)

3016 .....2400 mm (94.5 inch)
3616 .....2500 mm (98.4 inch)

WEIGHT

3016 Gear Drive (15x19.5).....1105 kg (2437 lbs)
3016 Hydrostatic Drive (15x19.5).....1115 kg (2459 lbs)
3616 Gear Drive (43x16.00-20).....1160 kg (2560 lbs)
3616 Hydrostatic Drive (43x16.00-20).....1170 kg (2566 lbs)
3616 Gear Drive CABIN (43x16.00-20).....1390 kg (3065 lbs)
3616 Hydrostatic Drive CABIN (43x16.00-20)....1400 kg (3087 lbs)

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SPEED CHART

3016

Gear Drive

Range shift	Gear shift	Tire size	Speed : miles/h(km/h)	
			F	R
L	1	Industrial tires (Front/Rear) 27x8.50-15/15x19.5	0.9(1.5)	0.8(1.2)
	2		1.3(2.1)	1.1(1.8)
	3		2.0(3.2)	1.6(2.6)
	4		3.0(4.8)	2.5(4.0)
H	1		3.4(5.4)	2.8(4.5)
	2		4.8(7.7)	4.0(6.5)
	3		7.2(11.7)	6.1(9.8)
	4		11.0(17.7)	9.2(14.8)
MAX			11.9(19.1)	9.9(16.0)

Hydrostatic Drive

Range shift	Tire size	F	R
L	Industrial tires (Front/Rear) 27x8.50-15/15x19.5	0-2.9(4.7)	0-1.5(2.4)
M		0-5.3(8.5)	0-2.6(4.3)
H		0-12.2(19.6)	0-6.1(9.8)
MAX		0-13.8(22.2)	0-6.9(11.1)

3616

Gear Drive

Range shift	Gear shift	Tire size	Speed : miles(km/h)	
			F	R
L	1	Industrial tires (Front/Rear) 28x8.50-15/43x16.00-20	1.0(1.6)	0.8(1.3)
	2		1.4(2.2)	1.2(1.9)
	3		2.1(3.4)	1.8(2.8)
	4		3.2(5.1)	2.7(4.3)
H	1		3.6(5.8)	3.0(4.9)
	2		5.1(8.3)	4.3(6.9)
	3		7.8(12.5)	6.5(10.5)
	4		11.8(19.0)	9.9(15.9)
MAX			12.7(20.5)	10.7(17.2)

Hydrostatic Drive

Range shift	Tire size	F	R
L	Industrial tires (Front/Rear) 28x8.50-15/43x16.00-20	0-3.1(5.1)	0-1.6(2.5)
M		0-5.7(9.2)	0-2.8(4.6)
H		0-13.1(21.1)	0-6.5(10.5)
MAX		0-14.8(23.8)	0-7.4(11.9)

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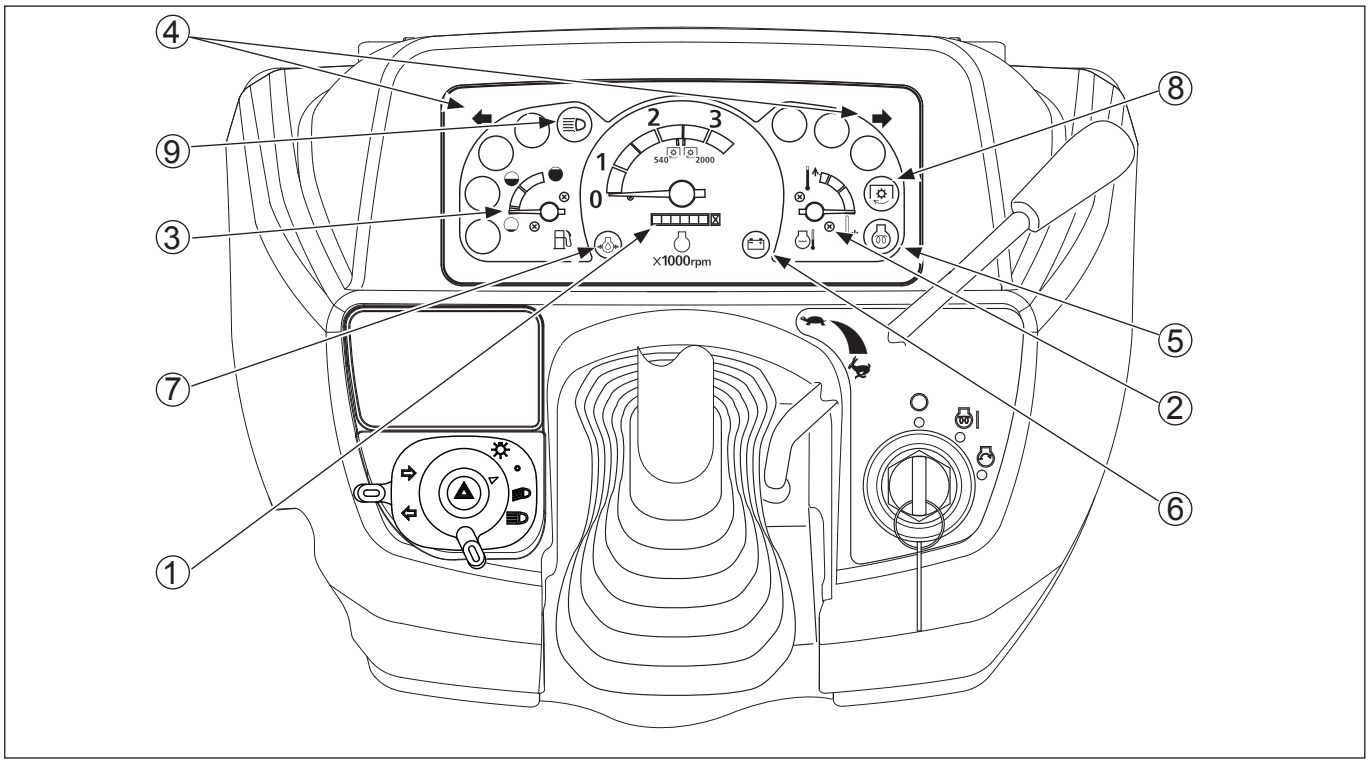
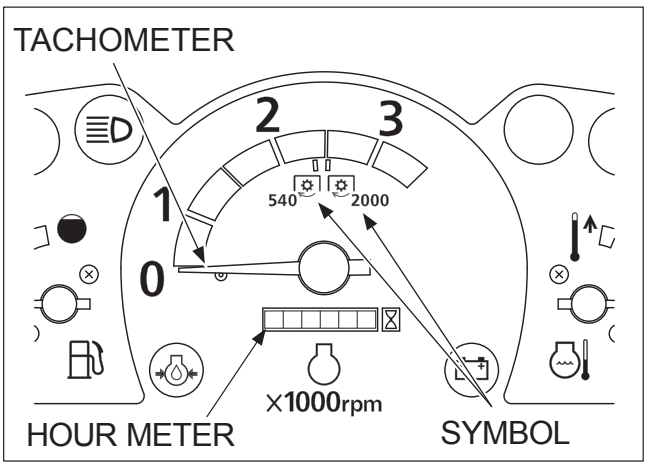
INSTRUMENTS AND INDICATORS



1.TACHOMETER AND HOUR METER

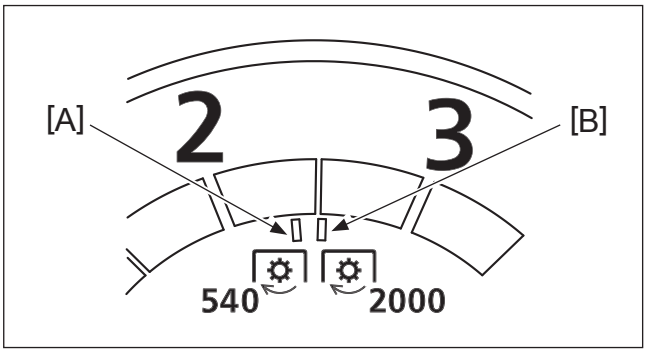


●The tachometer shows the engine speed in revolutions per minute (RPM). A symbol on the face indicates the correct Power Take Off (PTO) operating speed.

●The tachometer displays "Engine rotational speed / minute" (RPM) .

●The symbol of the shape of the cogwheel directs the speed that uses appropriate PTO.

●The hour meter displays the adjusting time at the engine driving time.



White line [A] shows the 540 rpm of the Rear PTO speed.

White line [B] shows the 2000 rpm of the MID PTO speed.

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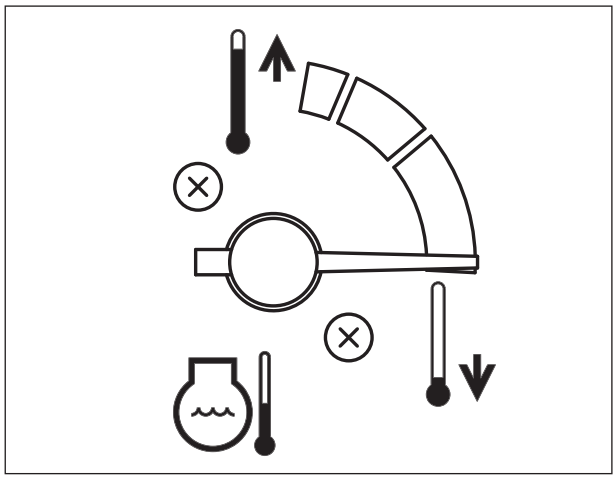
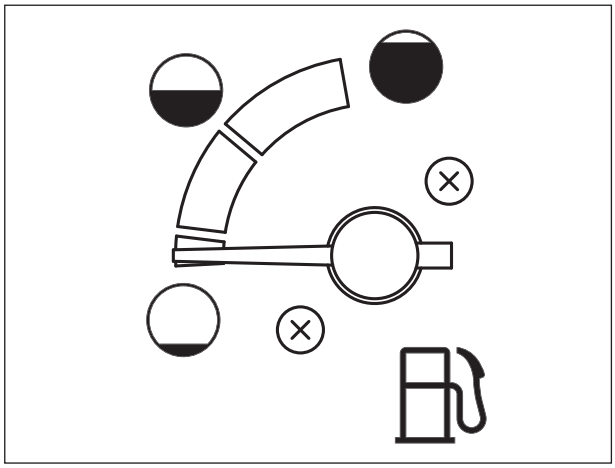
2. ENGINE COOLANT TEMPERATURE GAUGE



The gauge indicates the coolant temperature when the starter key switch is in ON position. If the engine overheats, the pointer moves turns the up side into ⮝ position area. In this case, stop the engine immediately and check for the cause.

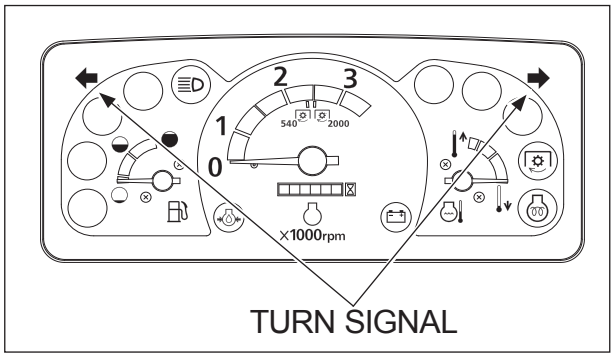
3. FUEL GAUGE



The meter shows how much fuel is in the tank.

NOTE: The pointer can be in lowest position when the starter key switch is in the OFF position.To get a fuel level indication, turn the starter key switch to the ON position.

4. TURN SIGNAL INDICATORS



The LH indicator on the TACHOMETER will operate when the turn signal switch is turned to the left. The RH indicator will operate when the switch is turned to the right.

Both indicators will operate ON and OFF when hazard switch is pushed down.

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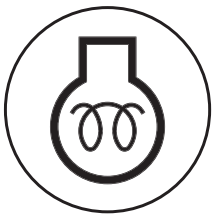
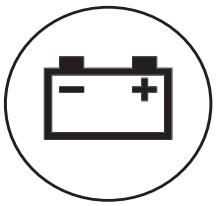
5. ENGINE GLOW PLUG INDICATOR



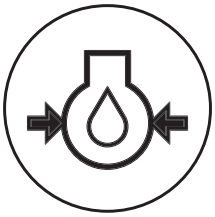
This signal indicates the correct functioning of the glow plug circuit. When the glow plugs have reached the correct temperature for engine starting, the glow plug indicator lamp will be turned off.

6. CHARGE INDICATOR



The charge indicator shows the battery is being discharged. If the lamp illuminates during operation, stop the engine and check for the cause.

7. ENGINE OIL PRESSURE INDICATOR



The engine oil pressure indicator shows low engine oil pressure. If the engine oil pressure drops below its normal pressure, the engine oil pressure indicator will turn on. Shut off the engine immediately. Check for the cause.

8. INDEPENDENT PTO CLUTCH INDICATOR (Gear Drive Only)

This signal indicates the INDEPENDENT PTO CLUTCH is ON or OFF.

9. HIGH BEAM INDICATOR

This signal indicates the head light high beam is ON or OFF.
The INDICATOR illuminates when the head light is on high beam position.

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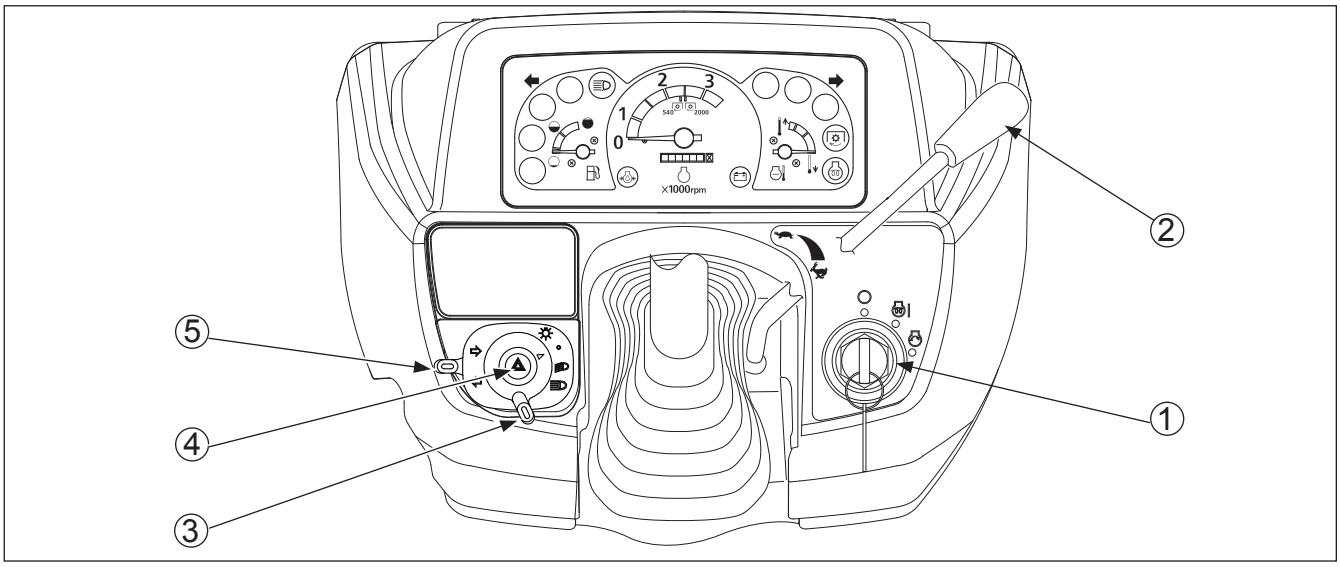
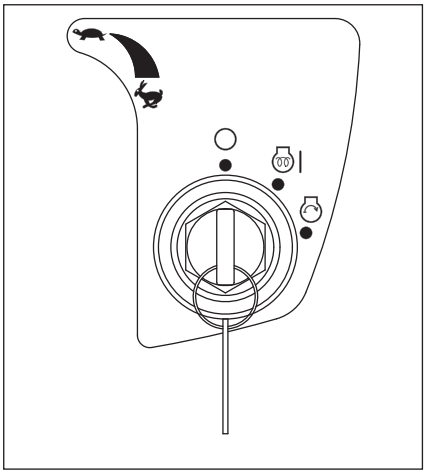
OPERATING CONTROLS

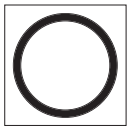
Control Switches



1. STARTER KEY SWITCH (See page 136 for CABIN type)



The starter key switch can be removed in the OFF position. Three switch positions are as follows:



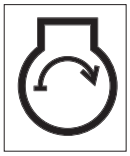
Position (OFF)

Engine and all lamps except the turn signal and flasher lamps are turned off.

Position (HEAT)&(ON)

First position clockwise from OFF. In this position (Engine not running) energizes the glow plugs. The charge indicator, glow plug indicator and oil pressure indicator will illuminate.

The fuel gauge and temperature gauge will show correct values.



Position(START)

Turn the key fully clockwise against the force of the spring in the switch. The starter motor will turn the engine. Release the key immediately when the engine starts.

NOTE: To prevent operation by persons not authorized and the possible discharge of the battery, remove the starter key when you leave the tractor.

IMPORTANT: Do not keep the starter key switch in the ON position for a long time when the tractor is not operating.

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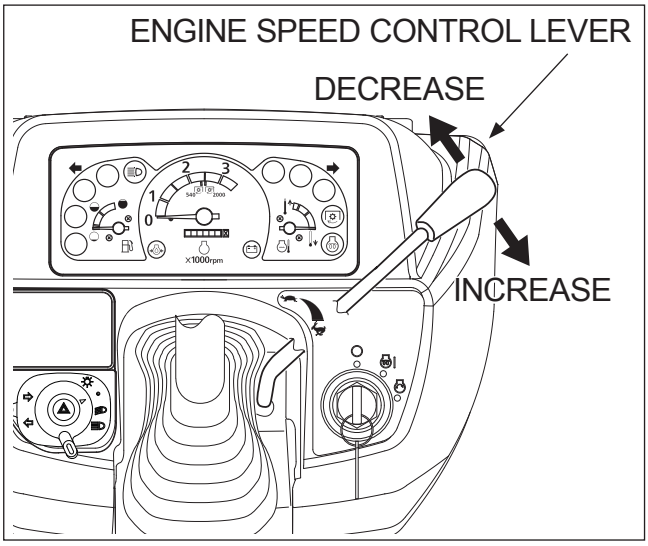
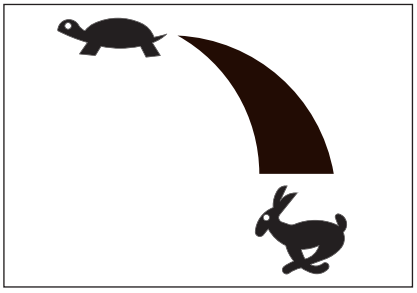
2. ENGINE SPEED CONTROL LEVER



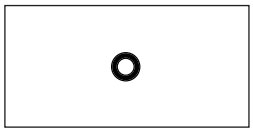
Pull the engine speed control lever to the rearward to increase the engine speed. Push the engine speed control lever forward to decrease the engine speed.



3. LAMP SWITCH

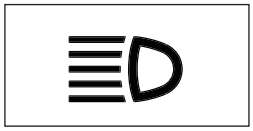
Three position switch as follows:

ALL lamps are OFF. (Turn signal and flasher lamps can be turned on.)



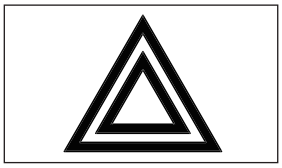
First position clockwise illuminates head lamps, instrument panel and rear red lamp.

Second position is for head lamp high beam.



4. HAZARD SWITCH

To flash the Flasher Lamps whenever the tractor is operated or traveling on roads.



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5. TURN SIGNAL SWITCH

To indicate that you are going to turn the tractor to the RIGHT, move the turn signal switch to right . To indicate that you are going to turn the tractor to the LEFT, move the turn signal switch to left . Center position is OFF.

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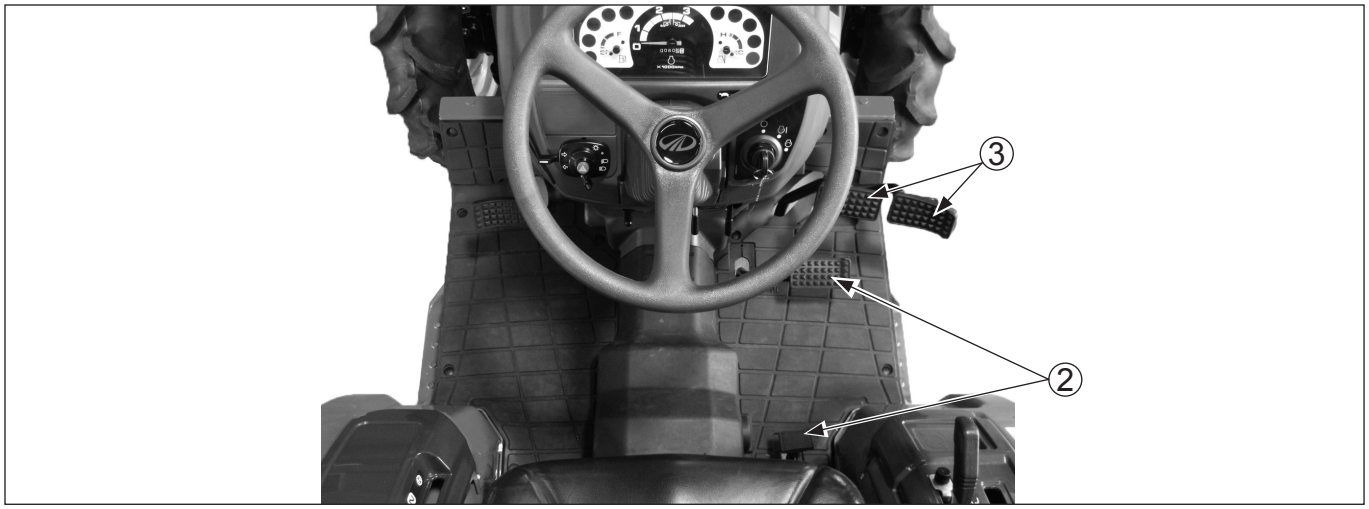
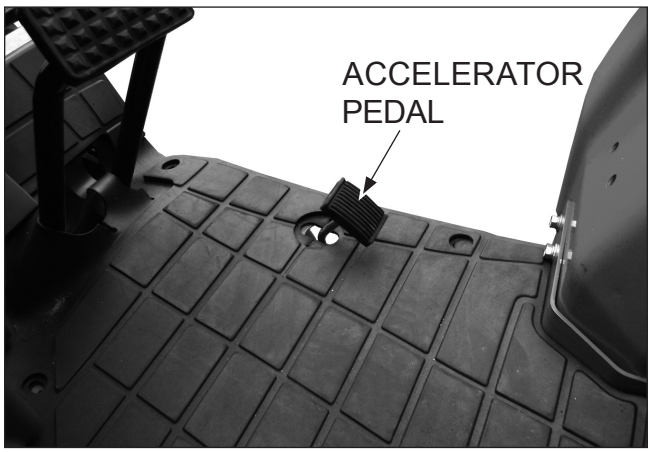
Control Levers and Pedals
(Gear Drive)

(Hydrostatic Drive)



1.ACCELERATOR PEDAL (Gear Drive Only)



Use this pedal when operating the tractor on the road. Press the pedal down to increase the engine speed.

NOTE: The engine speed control lever must be set to give the slowest engine speed when the throttle pedal is used.