

# MAHINDRA

T R A C T O R S

## OPERATOR MANUAL

# '16' Series

1816 HST



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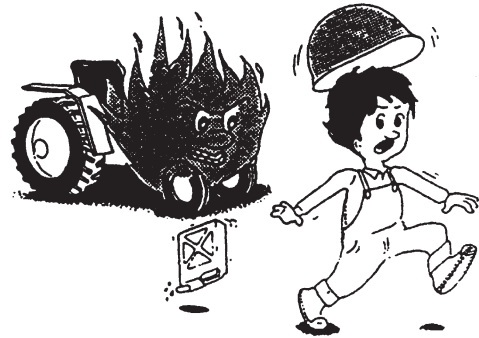
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## SAFETY/DECALS

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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.



### 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.

MAHINDRA USA, INC.		FOR APPLICATION ON MAHINDRA TRACTORS 1816 AGRICULTURAL Tractors	TYPE-CERTIFICATION FOR ROLLOVER PROTECTIVE STRUCTURES
ROPS SERIAL No.	CONFORMS TO OSHA REGULATION	1928-C	PROTECTION AFFORDED BY THIS ROPS WILL BE REDUCED IF THE ROPS IS ALTERED, HAS STRUCTURAL DAMAGE, OR HAS BEEN SUBJECT TO UPSET. SEE OPERATOR'S MANUAL FOR COM- PLETE INSTRUCTIONS AND INSPECTION REQUIREMENTS.
PERFORMANCE STANDARDS MEASURED IN ACCORDANCE WITH	SAE J1194 / ROPS MODEL NO. 2HMM-5		

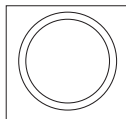
## OPERATING CONTROLS

### Control Switches



#### 1. STARTER KEY SWITCH

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



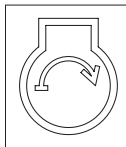
position (OFF)

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.



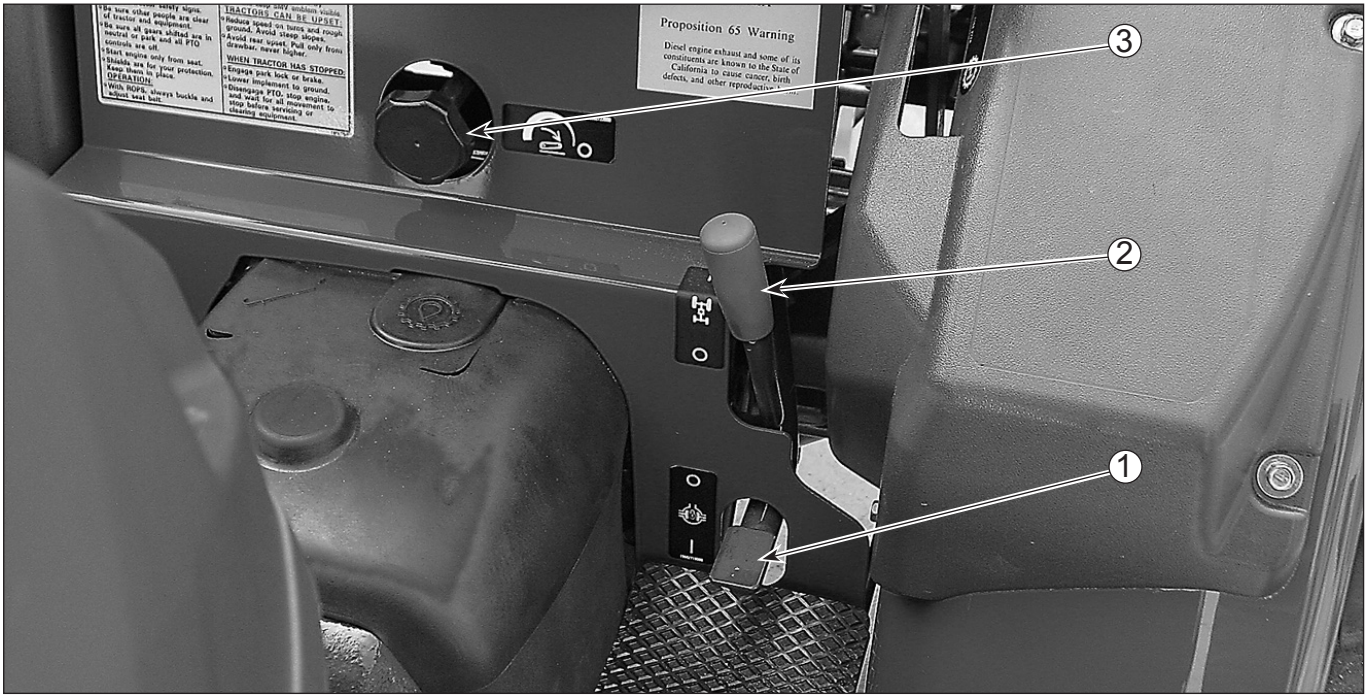
Position(START)

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 engine starts.

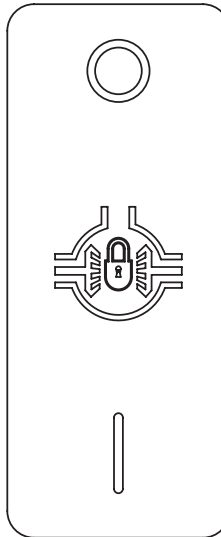
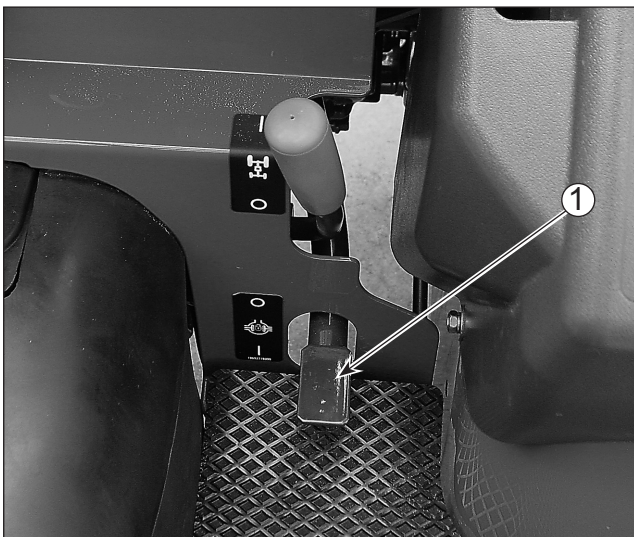
**NOTE:** To prevent operation by persons not authorized and the possible discharge of the battery, remove the starter key when you leave the tractor.

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

# Control Levers and Pedals




## 1. DIFFERENTIAL LOCK PEDAL



Push the pedal down to engage the differential lock. A spring inside of the differential lock pushes it out of engagement when pedal is released.

**NOTE:** When engaging the differential lock, push the clutch pedal down or bring speed ratio control pedal to Neutral, to stop the wheels that are rotating, then push the differential lock pedal. Do not operate the differential lock pedal while the wheels are rotating.

 Do not drive on roads, or at high speed anywhere, with the differential lock engaged. Difficult steering will occur, and can result in an accident. In field operation, use the differential lock for traction improvement, but release for turning at row ends.

## COLD TEMPERATURE OPERATION

To start and operate your tractor during cold ambient temperatures, use these procedures:

1. **BATTERY** – Must have a full charge.
2. **FUEL** – Must be clean and with no water. See Fuel Specifications in this manual.
3. **ENGINE OIL** – Must have the correct viscosity for the ambient temperature range.
4. **TRANSMISSION HYDRAULIC FLUID** – Use Hydraulic Transmission fluid.
5. **COOLING SYSTEM** – Must have ethylene glycol solution for protection.
6. **TIRES** – If there is liquid in the tires, the tires must have protection against temperatures below 0°C(32°F). See your Dealer.
7. **STOPPING THE ENGINE** – Run the engine at idle speed for a short period of time to permit the engine temperature to decrease before stopping.
8. **CONDENSATION IN FUEL TANK** – To prevent condensation in the fuel tank and water entering the fuel system, fill the fuel tank after each operating day.
9. **FUEL FILTER CUP** – During cold ambient temperatures, make sure you remove water from the fuel filter cup each day.

**NOTE:** Do not use ether as a cold temperature starting aid.

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## PTO OPERATING SAFETY

For the safe operation of the PTO, follow these safe operating procedures.

### Three Point Hitch Connecting Implements

1. Connect the implement to the hitch.  
See THREE POINT HITCH SYSTEM in this manual.
2. Connect the implement driveline to the tractor.
3. Check the driveline for correct length and for free telescopic movement by lifting and lowering hitch system. The correct length is important to prevent the driveline from hitting bottom or from separating in any tractor implement operating position.

### Drawbar Connecting Implements

1. Connect the implement hitch to the drawer with a hardened steel pin. Make sure the pin is securely held in place with a cotter pin or lock pin and does not make contact with the implement driveline.
2. Connect the implement hitch to the tractor drawbar before connecting the implement driveline to the PTO
3. Connect the implement driveline to the tractor. Check the driveline for correct length and for free telescopic movement. The correct length is important to prevent the driveline from hitting bottom or from separating in any tractor or implement operating position.



PTO driven machinery can cause serious injury. Before working on or near the PTO shaft, or servicing or clearing the driven machine, put the PTO lever in the DISENGAGE position and STOP the engine.



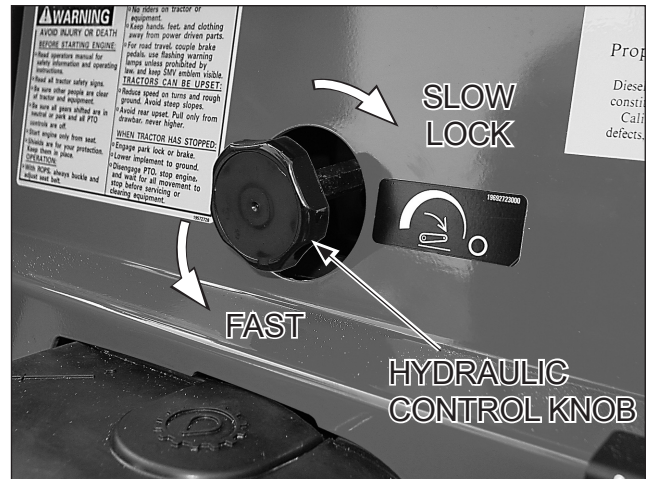
When doing stationary PTO work and dismantling from the tractor with the PTO running, keep clear of all moving parts as they are a potential safety hazard.

**IMPORTANT:** Follow the implement manufacturers recommendations in adjusting and aligning the implement and implement driveline with the tractor.

### Hitch Lowering Speed Adjustment

To adjust the hitch lowering speed, use the following procedure:

1. Move the hitch control lever forward to lower the implements.
2. Turn the hydraulic flow control knob to adjust the lowering speed. Turn the knob counter clockwise to increase the lowering speed. Turn the knob clockwise to decrease the speed or lock the hitch.
3. After adjusting the speed, raise the hitch and then lower it to check the speed.



**NOTE:**When transporting the tractor on the road with the implement mounted on the three point hitch, always set flow control knob to the LOCK position.

**IMPORTANT:**Never park a tractor with an implement in the raised position. Moving the hitch control lever forward will lower the implement even though the engine is not running. If it is necessary to service the implement in the raised position, use jack stands to safely block the implement in place. Put the hydraulic flow control knob in the LOCK position.



Lower or block elevated implements and other attachments before servicing or when leaving the equipment.

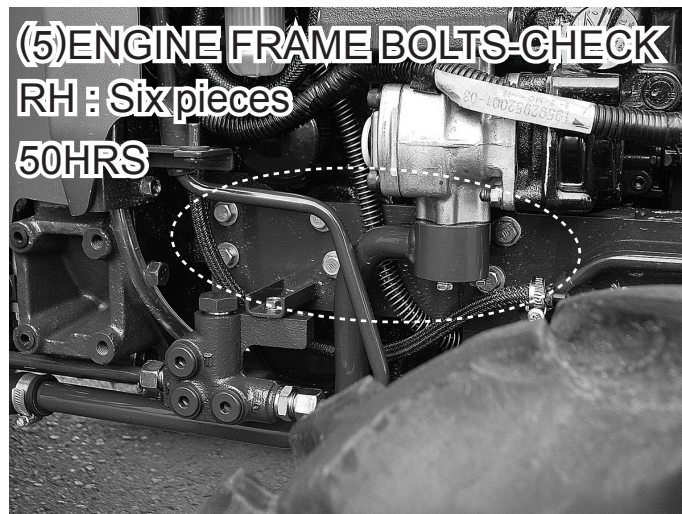
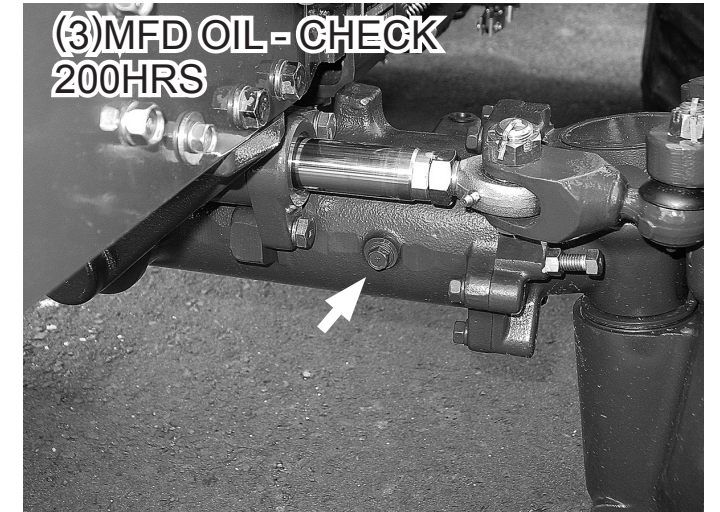
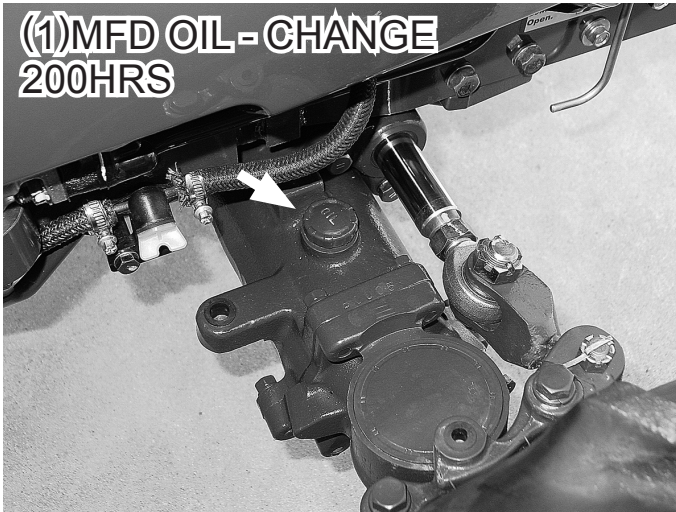
## TIRE SIZE COMBINATIONS-MFD

Your MFD Tractor must use front and rear tire combinations that are correctly matched. The use of recommended tire combinations will give maximum tractor performance, extended tire and reduced wear on drive train components.

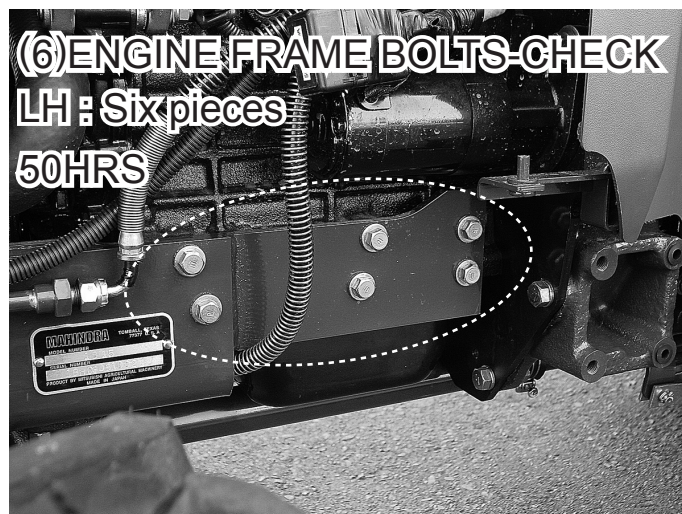
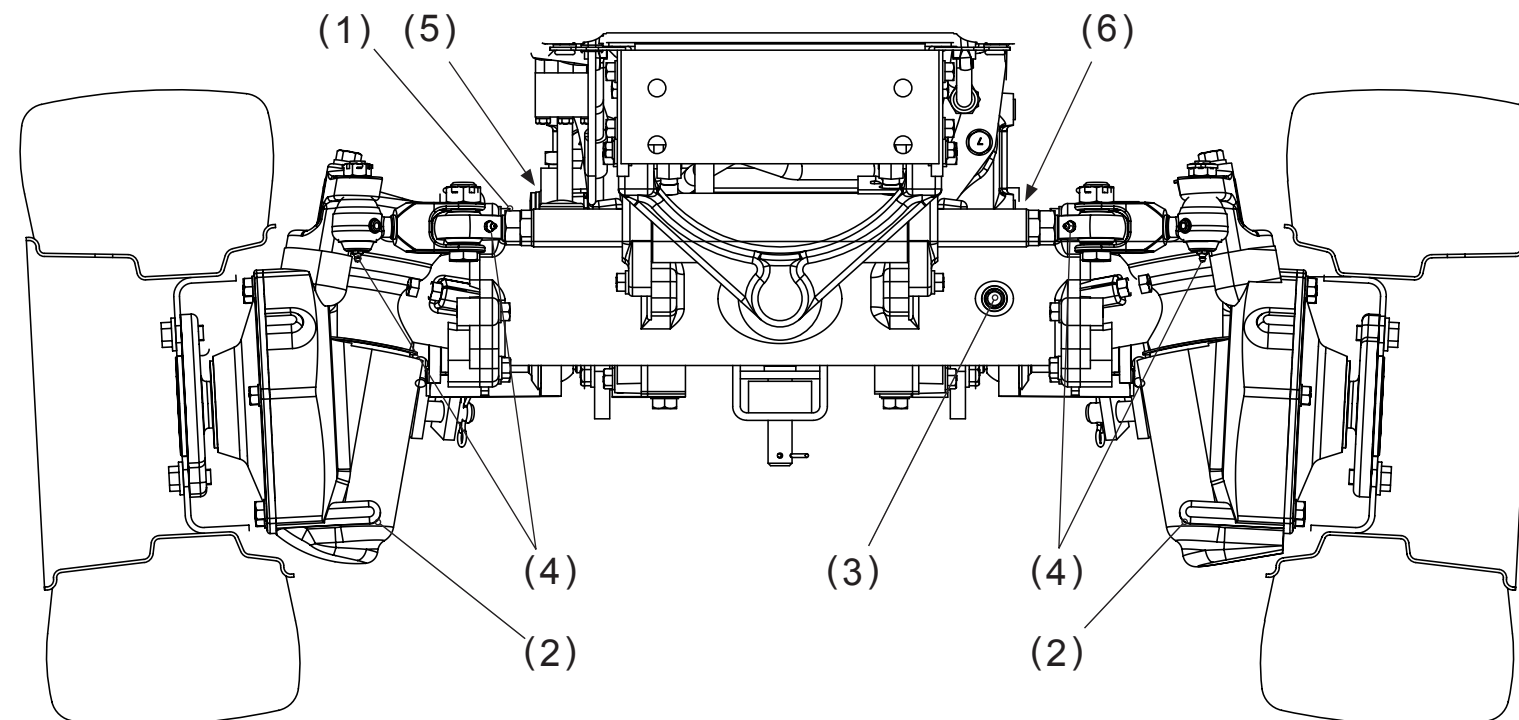
**IMPORTANT:** The tire size combinations shown below are specified to provide matched ground speeds of the front and rear tires. Mixing worn and new tires or tires of different diameters or loaded radii can give incorrect ground speed match. When replacing tires, consult your Dealer.

<b>MODEL 1816 HST</b>	
<b>TIRE</b>	<b>SIZE</b>
AG Tires (Front/Rear)	6 - 12 / 9.5 - 16
Turf Tires (Front/Rear)	20 x 8.00 - 10 / 29 x 12.50 - 15
Industrial Tires (Front/Rear)	20 x 8.00 - 10 / 27 x 12.50 - 15

# Oil Supply , Oil Level Check , Grease Supply



USE NLGI NO,2 MULTIPURPOSE LITHIUM GREASE .



### Fuel System Air Removal

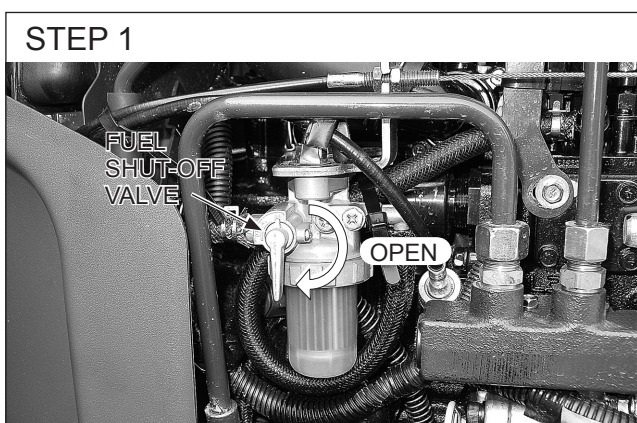
AIR MUST BE REMOVED FROM THE FUEL SYSTEM.

AIR CAN ENTER THE FUEL SYSTEM WHEN:

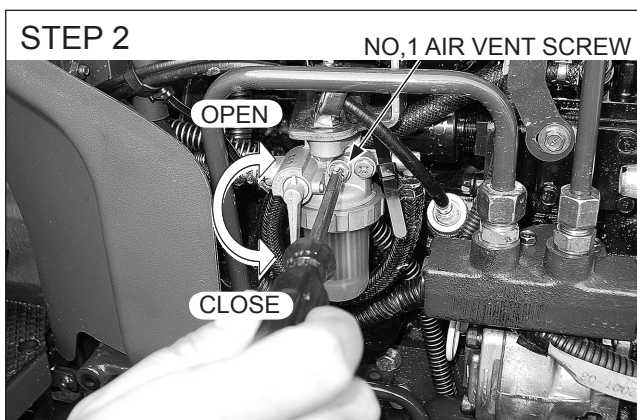
1. The engine stopped caused from lack of fuel.
2. The fuel filter has been replaced or the filter cup has been cleaned.
3. Any connections between the injection pump and fuel tank have been loosened or disconnected for any reason.
4. The tractor has not been operated for long time.
5. The fuel pump has not operated correctly.

**NOTE:** If the tractor dose not have fuel, it is possible to put fuel in the tank and start the engine without doing the air removal procedure, but a small amount of air can be in the filters. Air in the system will cause loss of power and stall the engine when a load is applied.

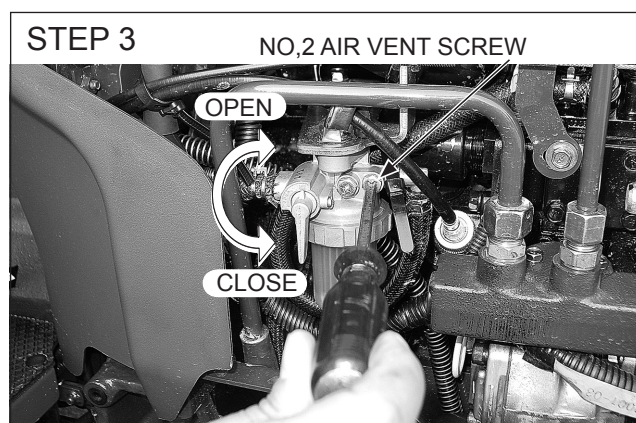
To remove air from the fuel system, turn off the engine and use the following procedures:



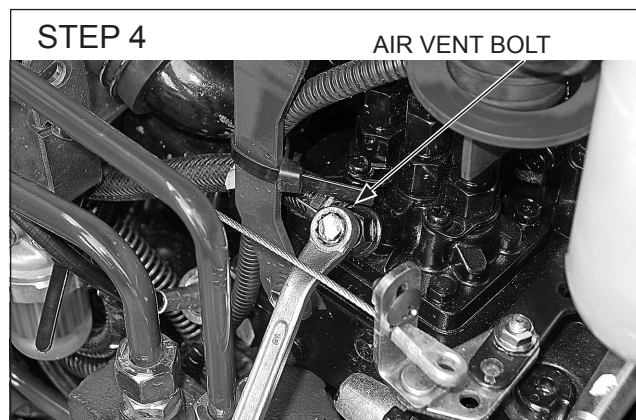
Open the fuel shut-off valve.



Loosen the No.1 air vent screw on the fuel filter until the fuel flowing from the fuel filter is free of air bubbles. Tighten the No.1 air vent screw.



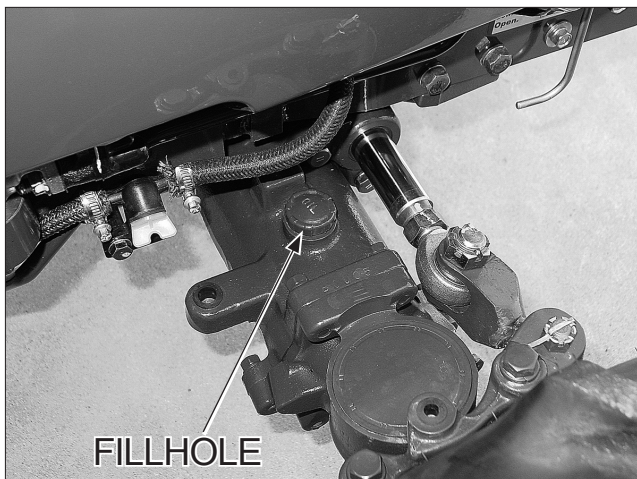
Loosen the No.2 air vent screw until the fuel flowing is free of air bubbles. Tighten the No.2 air vent screw.



Loosen the air vent screw on the injection pump and turn the key switch "ON" position until the fuel flowing from the pump is free of air bubbles. Tighten the air vent screw.

### Front Axle Oil Change

1. To change the front axle oil, put the tractor on level ground. Put the range lever in L, engage the park brake and stop the engine.



2. Remove the fill cap located on the axle housing, the gear case drain plugs located on the bottom of both side gear cases to drain the oil.

**NOTE:**For best results, drain the oil when the oil is warm.

3. Install the differential and both gear cases drain plugs.

Supply the oil of the specified quantity.

Remove the ventilator cap of right side and left side.

Tighten the ventilator cap,after oil flows out.

(During 20 seconds,oil flows out after having removed a ventilator bolt.)

Afterwards,remove the oil level plug and confirm the thing that oil flows out.

Finally,tighten the oil level check bolt.

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