




MODEL NO. 41105-40001 and UP

**OPERATOR'S  
MANUAL****MULTI PRO<sup>®</sup> 1100**

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of this vehicle read and understand the contents of this manual before the engine is ever started. Pay particular attention to the **SAFETY INSTRUCTIONS** highlighted by the triangular safety alert symbol.

 The safety alert symbol means **CAUTION**, **WARNING**, or **DANGER** - personal safety instruction. Failure to comply with the instruction may result in personal injury.



# IDENTIFICATION AND ORDERING

## VEHICLE:

The MULTI PRO® 1100 has two identification numbers: a model number and a serial number. These numbers are stamped into a plate located on the Vehicle's floor board, in front of the Seat Support. In any correspondence concerning the unit, supply the model number and serial numbers to ensure correct information and replacement parts are obtained. Record your Vehicle Identification numbers on the illustration below for future reference.

MOD. 41105
SER.
<b>THE TORO CO.</b> MINNEAPOLIS, MN. 55420

## ENGINE:

The engine has three identification number: a model number, a specification number and a serial number. These numbers appear on a decal affixed to the engine shrouding. When ordering parts or in any communication involving the engine, it will be necessary to supply the engine manufacturer with these numbers, to ensure correct information and replacement parts are obtained. Record the engine identification numbers on the illustration below for future reference.

<b>KOHLERengine</b>
20HP
MODEL NO. CH20S
SPEC. NO. 64647
*SERIAL NO. _____
REFER TO OWNER'S MANUAL FOR OPERATION, MAINTENANCE INSTRUCTIONS AND SAFETY PRECAUTIONS.
<b>K KOHLER COMPANY</b> KOHLER WISCONSIN USA

1506

DATE PURCHASED: \_\_\_\_\_

This vehicle is not a motor vehicle as defined by the National Traffic Motor Vehicle Safety Act. **It is not designed or manufactured for use on roads, streets, or highways, and is not to be licensed as a motor vehicle.**



## WARNING

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

## FOREWORD

You have purchased a vehicle from the industry leader in maintenance excellence. Its future performance and dependability are of prime importance. TORO is also concerned about future use of the vehicle and of safety to the user. Therefore, this manual must be read by you and those involved with the MULTI PRO® 1100 to assure that safety, proper set-up, operation, and maintenance procedures are followed at all times. The major sections of the manual are:

1. SAFETY INSTRUCTIONS
2. SET-UP INSTRUCTIONS
3. BEFORE OPERATING
4. OPERATING INSTRUCTIONS
5. MAINTENANCE

Safety, mechanical, and some general information in this manual are emphasized. **DANGER, WARNING, and CAUTION** identify safety messages. Whenever the triangle safety symbol appears, it is followed by a safety message that must be read and understood. For more details concerning safety, read the safety instructions on pages 4 through 6. **IMPORTANT** identifies special mechanical information and **NOTE** identifies general information worthy of special attention.

## OPTIONAL SPARK ARRESTER

In some places a Spark Arrester muffler must be used because of local, state, or federal regulations. The Spark Arrester available from your local TORO Distributor is approved by the United States Department of Agriculture and the United States Forest Service.

**When the machine is used or operated on any California forest, brush, or grass covered land, a properly operating Spark Arrester must be obtained and installed to the Muffler. The operator is violating state law, Section 442 Public Resources Code if a Spark Arrester is not used.**

All information, illustrations and specifications in this manual are based on the latest product information available at the time of publication. The right is reserved to make any changes at any time without notice.

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# SAFETY INSTRUCTIONS

The MULTI PRO® 1100 was designed and tested to offer safe service when operated and maintained properly. Although hazard control and accident prevention partially are dependent upon the design and configuration of the vehicle, these factors are also dependent upon the awareness, concern, and proper training of the personnel involved in the operation, maintenance, and storage of the vehicle. Improper use or maintenance of the vehicle can result in injury or death.

This is a specialized Utility Vehicle designed for off road use. Its ride and handling will have a different feel than what drivers experience with passenger cars or trucks. So take time to become familiar with your MULTI PRO® 1100. The attachments that adapt to the MULTI PRO® 1100 are not covered in this manual. See the specific Operator's Manual provided with the attachment for additional safety instructions. **READ THESE MANUALS.**

**TO REDUCE THE POTENTIAL FOR INJURY OR DEATH, COMPLY WITH THE FOLLOWING SAFETY INSTRUCTIONS:**

## **SUPERVISOR'S RESPONSIBILITIES**

1. Make sure operators are thoroughly trained and familiar with the Operator's Manual and all labels on the vehicle.
2. Be sure to establish your own special procedures and work rules for unusual operating conditions (e.g. slopes too steep for vehicle operation).

## **BEFORE OPERATING**

3. Operate the vehicle only after reading and understanding the contents of this manual. A replacement manual is available by sending complete model and serial number to: **Hahn Equipment Co.**, A subsidiary of The Toro Company, 1625 N. Garvin, Evansville, Indiana 47711-4596.

Read and understand the Engine Manufacturer's Operator's Manual. Follow the safety alert messages.

4. **Never** allow children to operate the vehicle or adults to operate it without proper instructions. Only trained and authorized persons should operate this vehicle. Anyone who operates the vehicle should have a motor vehicle license.

5. This vehicle is designed to carry **only You, the Operator**. **Never** carry any passengers on the vehicle.

6. **Never** operate the vehicle when under the influence of drugs or alcohol.

7. Become familiar with the controls and know how to stop the engine quickly.

8. Keep all shields, safety devices, and decals in place. If a shield, safety device, or decal is malfunctioning, illegible, or damaged, repair or replace it before operating the vehicle.

9. Always wear substantial shoes. Do not operate vehicle while wearing sandals, tennis shoes, or sneakers. Do not wear loose fitting clothing or jewelry which could get caught in moving parts and cause personal injury.

10. Wearing safety glasses, safety shoes, long pants, and a helmet is advisable and required by some local safety and insurance regulations.

11. Keep everyone, especially children and pets, away from the areas of operation.

12. Before operating the vehicle, always check all parts of the vehicle and any attachments. If something is wrong, **stop using the vehicle**. Make sure the problem is corrected before vehicle or attachment is operated again.

13. Since gasoline is highly flammable, handle it carefully.

**A.** Use an approved gasoline container.

**B.** Do not remove cap from fuel tank when engine is hot or running.

**C.** Do not smoke while handling gasoline.

**D.** Fill fuel tank outdoors and to approximately one inch below top of tank, (bottom of filler neck). Do not overfill.

**E.** Wipe up any spilled gasoline.

**F.** Always place gasoline containers on the ground away from your vehicle before filling.

**G.** Do not fill gasoline containers inside a vehicle or on a truck or trailer bed because interior carpets or plastic truck bed liners may insulate the container and slow the loss of any static charge.

# SAFETY INSTRUCTIONS

**H.** When practical, remove gas-powered equipment from the truck or trailer and refuel the equipment with its wheels on the ground.

**I.** If this is not possible, then refuel such equipment on a truck or trailer from a portable container, rather than from a gasoline dispenser nozzle.

**J.** If a gasoline dispenser nozzle must be used, Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.

**14.** Check the safety start switch daily for proper operation; refer to page 26. If the switch should malfunction, replace the switch before operating vehicle. (After every two years, replace the safety start switch, whether it is working properly or not.)

## WHILE OPERATING

**WARNING:** Do not run engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could possibly be deadly.

**15.** Operator should remain seated whenever the vehicle is in motion. Operator should keep both hands on steering wheel whenever possible. Keep arms and legs within the vehicle body at all times.

**16.** When starting the engine:

**A.** Sit on operator's seat and engage parking brake.

**B.** Raise the Accessory Control Handle to Disengage the drive mechanism of the optional attachment (Sprayer, Spreader or Hydraulic Lift for the Cargo Bed.)

**C.** Move shift lever to NEUTRAL and depress clutch pedal.

**D.** Move the Throttle Lever to midway between "SLOW" and "FAST" positions.

**E.** Pull the Choke up to full choke position, (if engine is cold).

**F.** Turn ignition key to START.

**17.** Using the vehicle demands attention. Failure to operate vehicle safely may result in an accident, tip over of vehicle and serious injury or death. Drive carefully. To prevent tipping or loss of control:

**A.** Use extreme caution, reduce speed and maintain a safe distance around sand traps, ditches, creeks, ramps, and any unfamiliar areas, or other hazards.

**B.** Watch for holes or other hidden hazards.

**C.** Always reduce speed before starting up or down a hill. Do not start or stop suddenly when traveling uphill or downhill. Use caution when operating vehicle on a steep slope. Normally travel straight up and down slopes. Avoid turning on hillsides whenever possible. Reduce speed when making sharp turns or when turning on hillsides.

**D.** Use extra caution when operating vehicle on wet surfaces, at higher speeds or with a full load. Stopping time will increase with a full load. Shift into a lower gear before starting up or down a hill.

**E.** When loading bed, distribute load evenly. Use extra caution if the load exceeds the dimensions of the vehicle/bed. Operate vehicle with extra caution when handling off-center loads that cannot be centered. Keep loads balanced and secure to prevent them from shifting.

**F.** Avoid sudden starts and stops. Do not go from reverse to forward or forward to reverse without first coming to a complete stop.

**G.** Do not attempt sharp turns or abrupt maneuvers or other unsafe driving actions that may cause a loss of vehicle control.

**H.** When dumping do not let anyone stand behind vehicle and do not dump load on anyone's feet. Release tailgate latches from side of box, not from behind.

**I.** Before backing up, be sure no one is behind the vehicle. Back up slowly.

**J.** Watch out for traffic when near or crossing roads. Always yield the right of way to pedestrians and other vehicles. This vehicle is **not** designed for use on streets or highways. Always signal your turns and stop early enough to let other people know what you plan to do. Obey all traffic rules and regulations.

**K.** Never operate vehicle in or near an area where dust or fumes which are explosive, are in the air. The electrical and exhaust systems of the vehicle can produce sparks capable of igniting explosive materials.

## SAFETY AND INSTRUCTIONS

**L.** Watch out for and avoid low overhangs such as tree limbs, door jambs, overhead walkways, etc. Make sure there is enough room overhead to easily clear the vehicle and your head.

**M.** If ever unsure about safe operation, STOP WORK and ask your supervisor.

**18.** Do not touch engine, muffler or muffler shield while engine is running or soon after it has stopped because these areas may be hot enough to cause burns.

**19.** If the vehicle ever vibrates abnormally, stop immediately, turn engine off, wait for all motion to stop and inspect for damage. Repair all damage before commencing operation.

**20.** Before getting off the seat:

- A.** Stop movement of the vehicle.
- B.** Set Parking Brake.
- C.** Shut engine off and wait for all movement to stop.
- D.** Remove Key from Ignition Switch.
- E.** Do not park on slopes unless wheels are chocked or blocked.

### MAINTENANCE

**21.** Before servicing, lubricating or making adjustments to the vehicle, stop engine, set Parking Brake and remove Key from Ignition Switch to prevent accidental starting of the engine.

**22.** Make sure the vehicle is in safe operating condition, keeping all nuts, bolts, and screws tight.

**23.** To reduce potential fire hazard, keep the engine area free of excessive grease, grass, leaves, and accumulation of dirt. Do not wash a warm engine or electrical components.

**24.** Make sure all hydraulic line connectors are tight, and all hydraulic hoses and lines are in good condition before applying pressure to the system.

**25.** Keep body and hands away from pin hole leaks in hydraulic lines that eject high pressure hydraulic fluid. Use cardboard or paper to find hydraulic leaks. Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury, or gangrene may result.

**26.** Before disconnecting or performing any work on the hydraulic system, all pressure in the system must be relieved by stopping the engine.

**27.** If major repairs are ever needed or assistance is required, contact an Authorized TORO Distributor.

**28.** Disconnect battery before servicing the vehicle. If battery voltage is required for troubleshooting, temporarily connect the battery.

**29.** If the engine must be running to perform maintenance, or an adjustment, keep hands, feet, clothing, and any parts of the body away from the engine and any moving parts. Keep everyone away.

**30.** Do not over-speed engine by changing Governor settings. Maximum engine speed is 3450 no-load rpm. To assure safety and accuracy, have an Authorized TORO Distributor check maximum engine speed with a tachometer.

**31.** Shut engine off before checking or adding oil to the crankcase.

**32.** To assure optimum performance and continued safety of the vehicle, always use genuine TORO replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous. Altering this vehicle in any manner may affect the vehicle's operation, performance, durability, or its use may result in injury or death. Such use could also void the product warranty of the TORO Company.

**33.** This vehicle should not be modified without The Toro Company's authorization. Direct any inquiries to:

#### **Hahn Equipment Co.**

A subsidiary of The Toro Company  
1625 N. Garvin Street  
Evansville, IN 47711-4596

## ⚠ SAFETY AND INSTRUCTION DECALS

The following safety and instruction decals are installed on the vehicle. If any become damaged or illegible, replace them. Decal part numbers are listed below and in the parts catalog. Order replacements from your Authorized TORO Distributor.



Part No. 87-0450: Located on underside of Seat Panel.



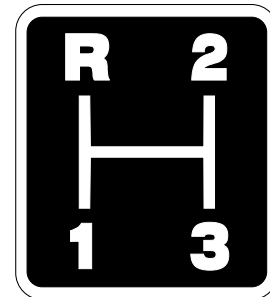
Part No. 65-3090: Located on Upper right corner of Dash Panel.



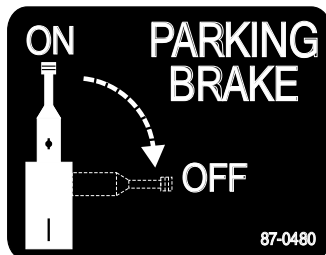
Part No. 85-4730: Located on Pump Plate Bracket.



Part No. 41176: Located on Dash Panel, next to Ignition Switch.



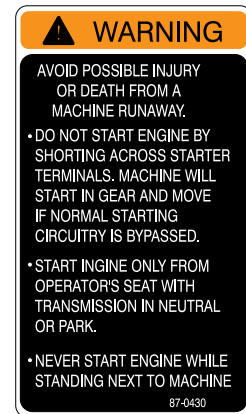
Part No. 41173: Located right hand side of Seat Support, in front of Gear Shifter.



Part No. 87-0480: Located on Floor Board at right of Emergency Brake.



Part No. 87-0640: Located on Seat Support, next to Throttle.



Part No. 87-0430: Located on left side of Seat Support.



Part No. 87-0580: Located on Floor Board, behind Console.



Part No. 41174: Located top of Seat Support near Accessory Control Handle.



Part No. 62-5550: Located on Front of Console.

# SET-UP INSTRUCTIONS

## BATTERY SERVICE:

### CAUTION

Electrolyte gases are explosive and can cause serious injury to eyes, lungs, and skin. Nausea may result if the gases are inhaled.

- Wear safety goggles and rubber gloves when working with electrolyte or battery.
- Charge the Battery in a well ventilated place so gases produced while charging can dissipate.
- Unplug charger from electrical outlet before connecting to or disconnecting charger leads from battery posts.
- Since the gases are explosive, keep open flames and electrical spark away from the battery; DO NOT SMOKE!

The Battery has been filled with electrolyte and charged at the factory. However, prior to actual operation, it may be necessary to bring the Battery to a full charge as follows:

1. First disconnect the **black negative (-)** cable, then disconnect the **red positive (+)** cable.

2. Connect a 3 to 4 amp battery charger to the Battery Posts. Charge the Battery at a rate of 3 to 4 amperes for 4 to 8 hours.

3. When Battery is charged, disconnect the charger from electrical outlet and battery posts.

**IMPORTANT!** If optional electric powered equipment is to be installed on the MULTI PRO® 1100, DO NOT connect the battery cables until all wiring harness connections for the optional equipment have been completed. If accidentally grounded, the lead to the Battery terminal will burn the accessory's wiring harness. After the accessory's wiring harness has been connected, proceed as follows:

4. Connect the **red positive (+)** cable to the **positive (+)** post on the battery **first**, then connect the **black negative (-)** cable to the **negative (-)** post on the battery. Secure with cap screws and nuts. Slide the rubber boot over the positive terminal to prevent short-out from occurring.

### WARNING

Connecting cables to the wrong post could cause the battery to explode, resulting in personal injury and damage to the electrical system.

- Make sure Battery Cables do not interfere or rub on any moving or hot parts.



## BEFORE OPERATING

**CAUTION**

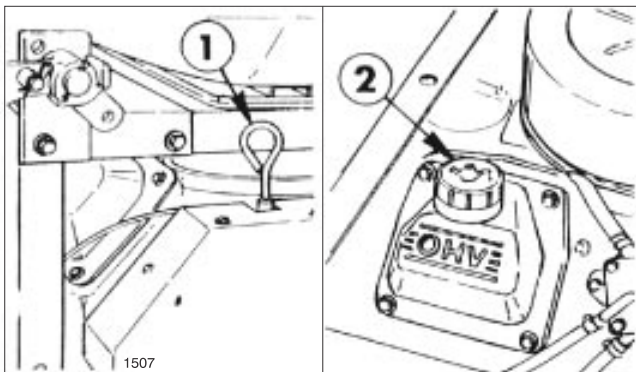
**Servicing the vehicle while the engine is running or vehicle is not properly secured could result in personal injury or death.**

- **Before servicing or making adjustments to the vehicle, stop engine, set parking brake, and remove key from the switch.**

## CHECK ENGINE OIL

The engine is shipped with approximately 2 quarts (w/ filter) of oil in the crankcase; however, level of oil **must be checked before and after the engine is first started.**

1. Position vehicle on a level surface.
2. Remove dipstick and wipe it with a clean rag. Insert dipstick into tube and make sure it is seated fully. Remove dipstick and check level of oil. If oil level is low, remove filler cap and add enough oil to raise level up to, but not over, the "F" mark on the dipstick. **Never** operate with the oil level **below** the "L" mark or **over** the "F" mark on the dipstick. Add the oil slowly and check the level often during this process.

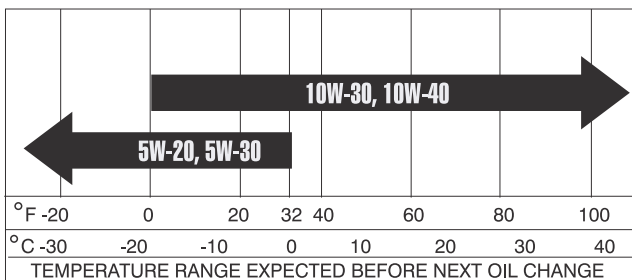


**FIG.1**

1. Dipstick
2. Oil Filler Cap

- 3. The engine uses any high-quality detergent oil having the American Petroleum Institute - API - "service classification" SF or SG. See viscosity chart for recommended weight to use.**

## RECOMMENDED SAE VISCISITY GRADES



- 4. Install the dipstick firmly in place.**

**IMPORTANT! Check** level of oil **BEFORE EACH USE**, while engine is cool so the oil has had time to drain into the sump.

**Change** oil and filter after the first 5 hours of operation, thereafter, change oil and filter after every 100 hours of operation. However, change oil more frequently when engine is operated in extremely dusty or dirty conditions. See page 19.

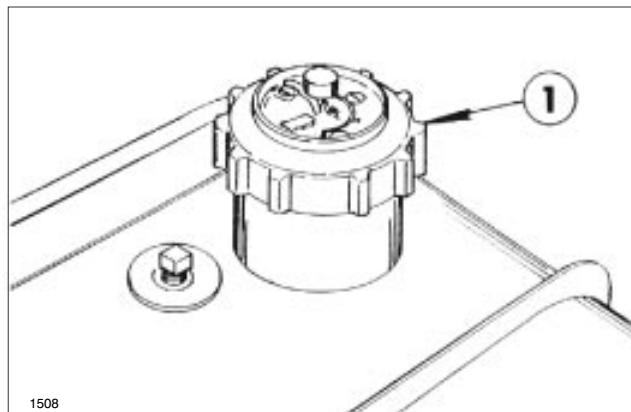
## FILL FUEL TANK

Fuel tank capacity is 5.3 gallons (20 liters).

THE TORO COMPANY STRONGLY RECOMMENDS THE USE OF FRESH, CLEAN **UNLEADED** REGULAR GRADE GASOLINE IN TORO GASOLINE POWERED PRODUCTS. UNLEADED GASOLINE BURNS CLEANER, EXTENDS ENGINE LIFE, AND PROMOTES GOOD STARTING BY REDUCING THE BUILD-UP OF COMBUSTION CHAMBER DEPOSITS. MINIMUM OCTANE RATING OF 87.

**IMPORTANT! California Emissions Regulations REQUIRE the use of UNLEADED GASOLINE ONLY!**

1. Clean area around fuel tank cap.



**FIG.2**

- ### 1. Fuel Tank Cap

2. Remove fuel tank cap.
3. Fill tank to about one inch below top of tank (bottom of filler neck). **DO NOT OVERFILL.** Then install cap.
4. Wipe up any fuel that may have spilled to prevent a fire hazard.

**FUEL GAUGE:** The Fuel Tank Cap shows amount of fuel in Tank. See FIG. 2.

# BEFORE OPERATING



## DANGER

Because gasoline is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running, hot or when machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. **DO NO SMOKE** while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outside and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline, and fill tank no higher than one inch below top of tank, (bottom of filler neck). **DO NOT OVER FILL.** Store gasoline in a clean safety approved container and keep the cap on the container. Keep gasoline in a cool, well-ventilated place; never in an enclosed area such as a hot storage shed. To assure volatility, do not buy more than a 30 day supply of gasoline. Gasoline is a fuel for internal combustion engines; therefore do not use it for any other purpose. Since many children like the smell of gas, keep it out of their reach because the fumes are explosive and dangerous to inhale.

## CHECK AIR CLEANER/AIR INTAKE

1. Check the Air Cleaner for any loose or damaged components. See FIG. 3. **NOTE:** Operating the engine with loose or damaged Air Cleaner components could allow unfiltered air into the engine causing premature wear and failure.

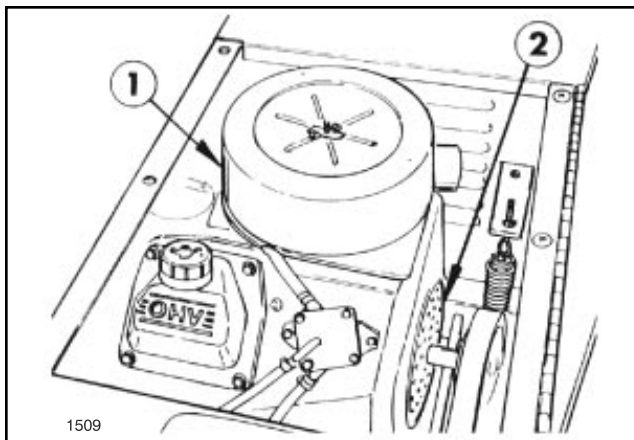


FIG. 3

1. Air Cleaner

2. Air Intake

2. Check cooling air intake areas and external surfaces of engine. Operating the engine with a blocked screen, dirty or plugged cooling fins, and/or cooling shrouds removed, will cause engine damage due to overheating.

## CHECK BRAKE FLUID

The master cylinder reservoir is shipped from the factory filled with "DOT 3" brake fluid. Check level before engine is first started and every 50 hours thereafter. See FIG. 4.

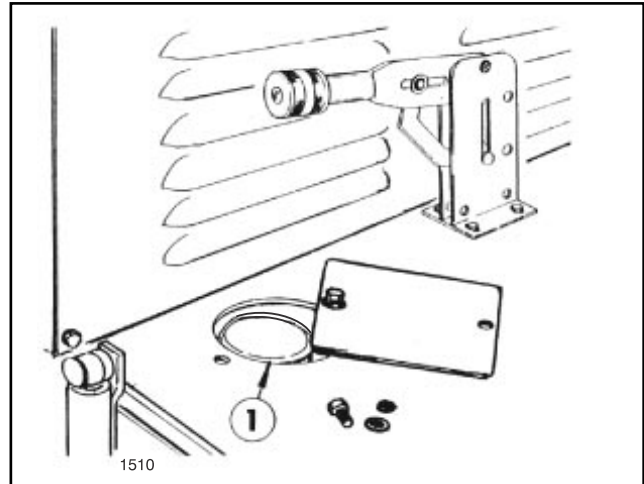


FIG. 4

1. Master Cylinder

1. Have machine on a level surface, clean area around cap and remove cap.
2. Fluid level should be within one half inch of top of the reservoir.
3. If fluid level is low, fill to proper level and replace cap. **DO NOT OVERFILL.**

## CHECK TORQUE OF WHEEL NUTS



## WARNING

Failure to maintain proper torque could result in failure or loss of wheel and may result in personal injury.

Torque front wheel nuts to 55-65 ft-lb (75-88N-m) and rear wheel nuts or bolts to 65-75 ft-lb (88 TO 102 N-m) after 1-4 hours of operation and every 200 hours thereafter.

**IMPORTANT!** After the "initial run-in" (approximately one to two hours) check all the MULTI PRO® 1100 wheel fasteners for tightness.

# BEFORE OPERATING

## CHECK TIRE PRESSURE

Check tire pressure every 8 hours or daily to assure proper levels. **Maximum** air pressure in both front and rear tires is 18 p.s.i.

The air pressure needed is determined by the payload carried. Once the desired pressure has been ascertained, it is to be used and maintained as a factor in the computer programming, to insure the accuracy of the spraying system.

## INSPECT TIRES

Check tire condition for wear or damage. Operating accidents, such as hitting curbs, can damage a tire or rim and also disrupt wheel alignment, so inspect tire condition after any accident.

## SAFETY START SWITCH:

Check and maintain the Safety Start Switch in a position that prevents the engine from starting unless the Clutch Pedal is fully depressed.

If the engine **can be started without** the Clutch Pedal being **fully depressed... DO NOT OPERATE THE VEHICLE!**

## CHECK EMERGENCY/PARK BRAKE

Adjust the Emergency/Park Brake when there is more than 1 inch of "free travel" of the Brake Pedal, or if the Brake does not work effectively. "Free travel" is the distance the Brake Pedal moves before braking resistance is felt. To reduce "free travel" of brake pedal see the MAINTENANCE section on "ADJUSTING BRAKES".

### DANGER

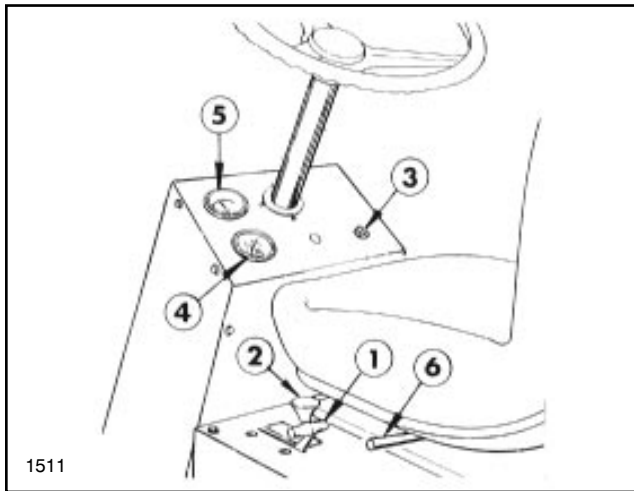
**Operating the vehicle with worn or poorly adjusted brakes can result in serious injury or death.**

**If Brake Pedal travels to within 1 inch of the Vehicle floor board, the brakes must be adjusted or repaired.**

# CONTROLS

**NOTE:** “Right”, “Left”, “Front” and “Rear” are reference while seated in the operator’s position.

**THROTTLE CONTROL:** Allows the operator to vary engine and ground speed of the vehicle, when the transmission is in gear. Pushing the Lever **forward**, away from the operator, **increases** the engine RPM and ground speed. Pulling the Lever **back**, toward the operator, **decreases** the engine RPM and ground speed. See FIG. 5.



**FIG. 5**

- |                     |                    |
|---------------------|--------------------|
| 1. Throttle Control | 4. Ammeter         |
| 2. Choke            | 5. Hour Meter      |
| 3. Ignition Switch  | 6. Seat Adjustment |

**CHOKE:** Pull up to activate for cold engine start. After engine starts, gradually push Choke in to adjust engine to best running speed. Once engine warms to normal operating temperature, Choke should not be needed. See FIG. 5.

**IGNITION SWITCH:** Starts and stops the engine. There are three positions: OFF, RUN AND START. Rotate Key clockwise - START position - to engage starter motor. Release Key when engine starts. The Key will move automatically to the ON position. To shut engine off, rotate Key counter-clockwise to OFF position. See FIG. 5.

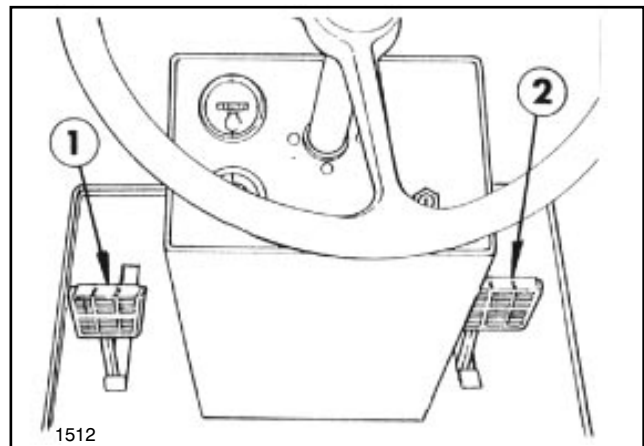
**AMMETER:** Indicates the amount of current flow at the Battery. The indicator will register near the center of the dial when Battery is fully charged. When engine is running, the indicator should register on the right hand (charge) side of the dial. When indicator is on the left side, Battery is discharging.

**HOUR METER:** Indicates the total hours of

vehicle operation. The Hour Meter starts to function whenever the key switch is rotated to “ON” position. See FIG. 5.

**SEAT ADJUSTMENT:** Pull the Seat Release Lever back and slide the Seat backward or forward as desired. See FIG. 5.

**CLUTCH PEDAL:** Depress the Clutch Pedal to disengage clutch when starting engine or shifting transmission gears. Release pedal smoothly when transmission is in gear to prevent unnecessary wear on transmission and other related parts. See FIG. 6. **IMPORTANT!** The Multi-Pro is designed so that the engine cannot be started until the Clutch Pedal is **fully depressed** and the Gear Shift Lever is in **NEUTRAL**.



**FIG. 6**

- |                 |                |
|-----------------|----------------|
| 1. Clutch Pedal | 2. Brake Pedal |
|-----------------|----------------|

## **WARNING**

**DO NOT OPERATE THE VEHICLE IF THE ENGINE STARTS WHEN THE CLUTCH IS NOT DEPRESSED.**

- Operating the Vehicle with a disabled Clutch/Interlock System can cause a sudden unexpected movement of the Vehicle or accessory action, resulting in serious injury or death.

- The Clutch Interlock System must be repaired immediately.

**IMPORTANT!** Do not ride Clutch Pedal during operation. Clutch Pedal must be fully out or clutch will slip causing friction and wear. Never hold the vehicle stopped on a hill using the Clutch Pedal. Damage to the clutch may occur.

# CONTROLS

**BRAKE PEDAL:** Depress Pedal to apply Vehicle brakes to stop or slow the Vehicle. See FIG. 6.

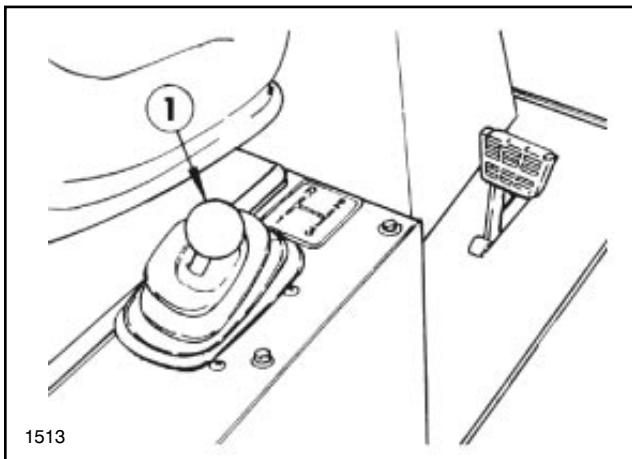


## DANGER

**Worn or misadjusted brakes can result in serious injury or death.**

- If Brake Pedal travels to within 1 inch of the Vehicle floor board, the brakes must be adjusted or repaired.

**GEAR SHIFT LEVER:** Fully depress the Clutch Pedal and move Shift Lever into desired gear selection. See FIG. 7.



**FIG. 7**

1. Gear Shift Lever

A diagram of the shift pattern is shown below.

### Shift Pattern

R 2  
H  
1 3

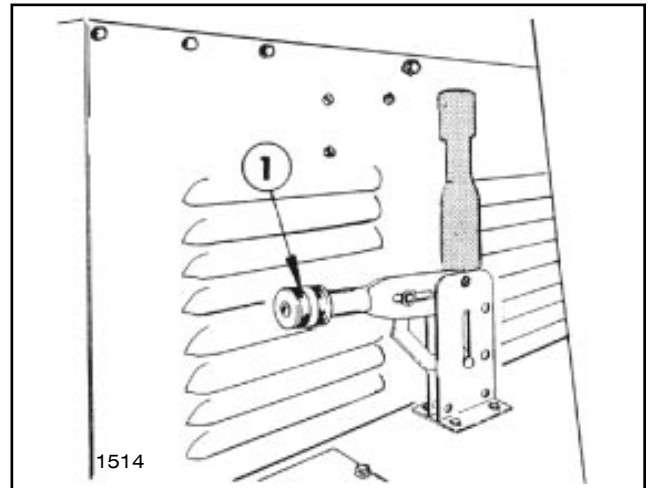
**IMPORTANT:** Do not shift the transmission to the reverse or forward gear unless the vehicle is standing still. Damage to the transmission may occur.

## CAUTION

**Down shifting from too high a speed can cause the rear wheels to skid and can result in loss of vehicle control. Shift smoothly to avoid grinding gears.**

**STEERING WHEEL:** Turns the Vehicle. If engine stalls or power assist fails due to a malfunction, Vehicle steering will require greater effort.

**PARKING BRAKE:** Pull the Lever **up**, toward the operator seat to **engage** the Parking Brake. Push Lever **down**, toward the floor board to **disengage** the Parking Brake. See FIG. 8. **IMPORTANT:** Whenever the engine is shut off, the Parking Brake **must be engaged** to prevent accidental movement of the Vehicle. Make sure Parking Brake is **disengaged** before moving Vehicle.

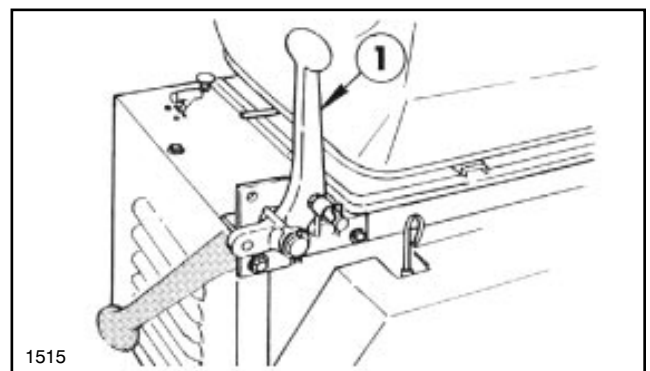


**FIG. 8**

1. Parking Brake (Disengaged)

If Vehicle is parked on a steep grade make sure the Parking Brake is **engaged**. Also shift the transmission into **1st** gear on an **uphill** grade or **reverse** on a **down hill** grade. Place chocks at the down hill side of wheels.

**ACCESSORY CONTROL LEVER:** Push the Lever **down** to **engage** the drive from the engine to an optional accessory. Pull the Lever **up** to **disengage** the drive to the accessory. See FIG. 9.



**FIG. 9**

1. Accessory Control Lever (Disengaged)

# OPERATING INSTRUCTIONS

## PRE-STARTING CHECKS

Safe operation begins before taking the vehicle out for a day's work. You should check these items each time:


1. Check tire pressure.

**NOTE: These tires are different than car tires, they require less pressure to minimize turf compaction and damage.**

2. Check all fluid levels and add the appropriate amount of TORO specified fluids, if any are found to be low.
3. Check Brake Pedal operation.
4. Turn Steering Wheel to the Left and Right to check steering response.
5. Check for oil leaks, loose parts, or any other noticeable malfunctions. Make sure engine is off and all moving parts have stopped before checking for oil leaks, loose parts, and any other malfunctions.

If any of the above items are not correct, notify your mechanic or check with your supervisor before taking the vehicle out for the day. Your supervisor may want you to check other items on a daily basis, so ask what your responsibilities are.

## STARTING ENGINE

 <b>WARNING</b>
<b>Engine exhaust gases contain poisonous carbon monoxide.</b>
<ul style="list-style-type: none"><li>• <b>Carbon monoxide is odorless, colorless and can cause death if inhaled.</b></li><li>• <b>Avoid inhaling exhaust fumes and never run the engine in a closed building or confined area.</b></li></ul>

1. Sit on Operator's Seat and engage Parking Brake.
2. Move Shift Lever to NEUTRAL position, and depress Clutch Pedal.
3. Make sure Spray System is in the "OFF" position.
4. **For a cold engine:**

Pull the Choke Control up (or "ON")

### For a warm engine:

Push the Choke Control down (or "OFF").

5. Insert Key into Ignition Switch and rotate it clockwise to start engine. Release Key when engine starts.

**IMPORTANT!** Do not hold Key in starting position longer than 10 seconds at one time. If the engine does not start, wait at least 60 seconds before attempting to start again. Continuous cranking will burn out the Starter motor. If the engine develops sufficient speed to disengage the Starter, but fails to continue running, the engine must come to a complete stop before attempting to restart the engine. If the Starter is engaged while the Flywheel is still rotating, the Starter Pinion and Flywheel ring gear may clash, resulting in damage to the Starter.

If the Starter does not turn the engine over, shut off the engine immediately and do not attempt to start the engine until the condition has been corrected. Do not "jump-start" using another, larger battery.

**NOTE:** Starter motors are pre-lubricated. Brushes normally require servicing only after extended use.

6. Gradually push the choke in to the OFF position after the engine is running.

7. Position the Throttle Lever at the desired engine RPM.

## DRIVING VEHICLE

1. Release Parking Brake.
2. With Clutch Pedal fully depressed, move Gear Shift Lever to 1st gear.
3. Release Clutch Pedal smoothly. Use the Throttle Lever to adjust the engine RPM if necessary.
4. When vehicle gains enough speed, fully depress the Clutch Pedal and move Gear Shift to the next gear and release the Clutch Pedal. Repeat procedure until desired speed is attained. Stop Vehicle before shifting to reverse and forward.

**IMPORTANT!** Do not attempt to push or tow the vehicle to get it started. Damage to drive train could result.

# OPERATING INSTRUCTIONS

Do not operate the engine continuously at angles exceeding 25° in any direction. Engine damage could result from insufficient lubrication.

## STOPPING VEHICLE:

1. Depress Clutch Pedal, then depress Brake Pedal.

## STOPPING ENGINE:

1. Move Throttle Lever to "SLOW".
2. Rotate Ignition Key to "OFF".
3. Engage Parking Brake.
4. Remove Ignition Key from Switch to prevent accidental starting.

## NEW VEHICLE BREAK-IN

Your Multi-Pro is ready for work. To provide the longest vehicle life, follow these guidelines for the first 100 operating hours.

- Check the fluid and engine oil levels regularly and be alert for indications of overheating in any component of the vehicle.
- After starting a cold engine, let it warm up for about 15 seconds before shifting into gear.
- Avoid racing the engine.
- Vary vehicle speeds during operation. Avoid excess idling. Avoid fast starts and quick stops.
- A break-in oil for the engine is not required. Original engine oil is the same type specified for regular oil changes.
- Refer to Maintenance section of Operator's Manual for any special low hour checks.

## CHECK INTERLOCK SYSTEM

The purpose of the Interlock System is to prevent the engine from cranking or starting unless the Clutch Pedal is depressed.



## CAUTION

**The interlock switch is for the operator's protection, so do not bypass it. Check operation of the switch daily to assure interlock system is operating. If the switch is malfunctioning, replace it before operating. Regardless whether switch is operating properly or not, replace it every two years to assure maximum safety. Do not rely entirely on the safety switch - use common sense!**

## To verify Clutch Interlock Switch operation:

1. Sit on operator's seat and engage Parking Brake. Move Shift Lever to NEUTRAL position.
2. Without depressing Clutch Pedal, rotate Ignition Key clockwise to start position.
3. If engine cranks or starts, there is a malfunction in the Interlock System that must be repaired before operating the Vehicle.

## OPERATING CHARACTERISTICS

The vehicle is designed with safety in mind. It has four wheels for added stability. It uses familiar automotive style controls, including the steering wheel, brake pedal, clutch pedal, and gear shifter. It is important to remember, however, that this vehicle is not a passenger car. It is a work vehicle and not designed for use on roadways.

The vehicle has special tires, low gear ratios, and other features that give it extra traction. These features add to the versatility of the vehicle but, they can also get you into dangerous situations. You must keep in mind that the vehicle is not a recreation vehicle. It is not an all terrain vehicle. And, it is definitely not meant for "stunt driving" or "horsing around". It is a work vehicle, not a play vehicle. Children should not be allowed to operate the vehicle. Anyone who operates the vehicle should have a motor vehicle license.

# OPERATING INSTRUCTIONS

If you are not experienced at driving the vehicle, practice driving in a safe area away from other people. Be sure you are familiar with all the vehicle's controls, particularly those used for braking, steering and transmission shifting. Learn how your vehicle handles on different surfaces. Your operating skills will improve with experience, but as in operating any vehicle, take it easy as you begin. Be sure you know how to stop quickly in an emergency. If you need help, ask your supervisor for assistance.

Many factors contribute to accidents. You have control over several of the most important. Your actions, such as driving too fast, turning too sharp, and combinations of these, are frequent cause of accidents.

One of the major causes of accidents is fatigue. Be sure to take occasional breaks. It is very important that you stay alert at all times.

Never operate the vehicle, or any equipment, if you are under the influence of alcohol or other drugs. Even prescription drugs and cold medicines can cause drowsiness. Read the label on the medicine or check with your doctor or pharmacist if you are unsure about a certain medication.

One of the most important rules to follow is to go slower in unfamiliar areas. It is surprising how much damage and injury common things can cause. Tree branches, fences,, wires, other vehicles, tree stumps, ditches, sand traps, streams and other things found in most parks and golf courses can be hazardous to the operator.

Avoid driving when it is dark, especially in unfamiliar areas. If you must drive when it is dark, be sure to drive cautiously.

You should remain seated at all times, keeping arms and legs inside the vehicle. The operator should keep both hands on steering wheel, whenever possible.

There should never be passengers in the Cargo Bed or on any attachments. The vehicle is meant to carry a driver only.

## **SPEED**

Speed is one of the most important variables leading to accidents. Driving too fast for the conditions can cause you to lose control and have an accident. Speed can also make a minor accident worse. Driving head-on into a tree at

slow speed can cause injury and damage, but driving into a tree at high speed can destroy the vehicle and kill you .

Never drive too fast for the conditions. If there is any doubt about how fast to drive, slow down.

## **TURNING**

Turning is another important variable leading to accidents. Turning too sharply for the conditions can cause the vehicle to lose traction and skid, or even tip over.

Wet, sandy, and slippery surfaces make turning more difficult and risky. The faster you are going, the worse this situation becomes so, slow down before turning.

During a sharp turn at higher speeds, the inside rear wheel may lift off the ground. This is not a flaw in the design, it happens with most four wheel vehicles including passenger cars. If this happens, you are turning too sharply for the speed at which you are traveling. Slow down!

## **BRAKING**

It is good practice to slow down before approaching an obstacle. This gives you extra time to stop or turn away. Hitting an obstacle can damage the vehicle and its contents. More importantly, it can injure you.

Gross vehicle weight has a major impact on your ability to stop and/or turn. Heavier loads and heavier attachments make a vehicle harder to stop or turn. The heavier the load, the longer it takes to stop.

The braking characteristics also change with no bed or attachments on the vehicle. Fast stops may cause the rear wheels to lock up, which may affect the control of the vehicle. Its a good idea to decrease the vehicle speed with no bed or attachments.

Turf and pavement are much more slippery when wet. It can take 2 to 4 times as long to stop on wet surfaces as on dry surfaces.

If you drive through standing water deep enough to get the brakes wet, they will not work well until they are dry. After driving through water, you should test the brakes to make sure they work properly. If they do not, drive slowly in first gear while putting light pressure on the brake pedal. This will dry the brakes out.



# OPERATING INSTRUCTIONS

Do not downshift for braking on icy or slippery surfaces (wet grass) or while going down a hill, because engine braking may cause skidding and loss of control. Shift to a lower gear before starting down a hill.

**NOTE: Heavy loads and turf conditions affect your vehicle's brake performance and ability to turn quickly without tipping over.**

## TIPOVERS

The Multi-Pro® can be equipped with an optional Rollover Protection Structure (ROPS) system which will reduce the risk of serious or fatal injury in the unlikely event of a tipover, although the system cannot protect the operator from all possible injuries.

Replace a damaged ROPS, do not repair or revise. Any alteration of ROPS must be approved by manufacturer.

The best way to prevent accidents involving utility vehicles is through continuous supervision and training of operators and paying constant attention to the area in which vehicle is being operated.

The best way for operators to prevent serious injury or death to themselves or others is to familiarize themselves with the proper operation of the utility vehicle, to stay alert and to avoid actions or conditions which could result in an accident. In the event of a tip over, the risk of serious injury or death will be reduced if the operator is using the ROPS system and follows the instructions provided.

## HILLS

Use extra care when on hills. Never go on hills that are extremely steep. Stopping while going down a hill will take longer than on level ground. Turning while going up or down a hill is more dangerous than turning on the level. Turns while going down hill, especially with the brakes on, and, turning up hill while traversing a hill are particularly dangerous. Even at a slow speed and without a load, tip overs are more likely if you turn on a hill.

Slow down and shift into a lower gear before starting up or down a hill. If you have to turn while on a hill, do it as slowly and cautiously as possible. Never make sharp or fast turns on a hill.



## WARNING

**Tipping or rolling the vehicle on a hill will cause serious personal injury.**

**! If engine stalls or you lose headway on a hill, never attempt to turn vehicle around.**

**! Always back straight down a hill in reverse gear.**

**! Never back down in neutral or with the clutch depressed, using only the brakes.**

**! Never drive across a steep hill, always drive straight up or down.**

**! Avoid turning on a hill.**

**! Don't "drop the clutch" or slam on the brakes. Sudden speed change can initiate tipover.**

If you stall or begin to lose headway while climbing a steep hill, quickly apply the brakes, shift to neutral, restart the engine and shift to reverse. At idle speed, engine and differential drag will aid the brakes in controlling the vehicle on the hill and help you back down the hill more safely.

Reduce the weight of the load if it is a steep hill or if the load has high center of gravity. Remember, loads can shift. Secure them.

## LOADING AND DUMPING

The Multi-Pro can be equipped with several optional accessories.

The weight and position of the accessory can change the Vehicle center of gravity and Vehicle handling. To avoid loss of control resulting in personal injury, follow these guidelines.

Do not carry loads which exceed the load limits prescribed by the decals on the individual accessories.

The height and weight of the load has a significant influence on tip overs. The higher a load is stacked, the more likely the vehicle is to tip over. Reducing the total weight is one way to reduce the risk of a tip over. Distributing the load as low as possible is another way to reduce the risk of a tip over.

# OPERATING INSTRUCTIONS

If the load is positioned toward one of the sides, it will make the vehicle much more likely to tip over on that side. This is especially true when turning if the load is on the outside of the turn.

Never position heavy loads behind the rear axle. If the load is positioned so far to the rear that it is behind the rear axle, it will reduce the weight on the front wheels and this will reduce steering traction. With the load all the way to the back, the front wheels can even come off of the ground when going over bumps or up a hill. This will result in a loss of steering and may lead to the vehicle tipping over.

**As a general rule, position the weight of the load evenly from front to rear and evenly from side to side.**

If a load is not secured, or you are transporting a liquid in a large container such as a sprayer, it can shift. This shifting happens most often while turning, going up or down hill, suddenly changing speeds or while driving over rough surfaces. Shifting loads can lead to tip overs. Always secure loads so that they do not shift. Never dump the load while the vehicle is sideways on the hill.

Heavy loads increase stopping distance and reduce your ability to turn quickly without tipping over.

The rear cargo space is intended for load carrying purposes only not for passengers.

## TOWING VEHICLE

In case of emergency the vehicle can be towed for a short distance. However, Toro does not recommend this as a standard procedure.

### CAUTION

**Towing at excessive speeds could cause vehicle to lose steering control.**

- **Never tow vehicle faster than 3 MPH.**

If machine must be moved a considerable distance transport it on a truck or trailer.

**Note: The power steering will not function, making it difficult (increase effort) to steer.**

When hauling cargo or attachment, do not overload your Vehicle. Overloading can cause poor performance or damage to the brakes, axle, engine, differential, steering suspension, body structure or tires.

**Important:** To reduce potential for drive line damage use low gear.

# MAINTENANCE



## WARNING

**Before servicing or making adjustments to the machine, stop engine, set Parking Brake and remove Key from Ignition Switch. Any load material must be removed before working under raised Bed. Always rotate safety support to the down position before working under raised Cargo Bed.**

Establish a regular schedule of lubrication to insure trouble free performance.

For a vehicle operated under normal conditions, check and service at the intervals indicated in the chart on the following page. When operating in extremely cold, hot, or dusty conditions, check and service more frequently. For additional engine maintenance information, refer to the Engine Operator's Manual supplied with the vehicle.

Pg. No.	Service at Intervals Indicated (X)	Hours of Operation					
		Daily	25	50	100	200	500
26	Check Safety Start Switch Function	X					
20	Check Engine Crankcase Oil Level	X					
	<b>Note:</b> Change Oil in New or Rebuilt Engine	5					
28	Check Brake Function	X					
25	Check Power Steering Oil Level, & Hoses	X					
21	Check Air Cleaner	X					
11	Check Tire Pressure	X					
27	Check Belt Tensions (initially)	X					
10	Tighten Wheel Nuts (initially)	2 & 10					
21	Service Air Cleaner Pre-cleaner		X				
24	Check Transmission Oil Level			X			
24	Check Differential Oil Level			X			
25	Check Master Cylinder Oil Level			X			
23	Lubricate All Grease Fittings			X			
22	Check Spark Plugs				X		
20	<b>Change</b> Engine Crankcase Oil				X		
21	Check Air Cleaner Filter				X		
20	Change Oil Filter					X	
27	Check Tension of All Belts					X	
8	Clean Battery Terminals					X	
24	Drain and Refill Transmission and Differential						X

# MAINTENANCE

## CAUTION

Only qualified and authorized personnel shall be permitted to maintain, repair, adjust or inspect the vehicle.

Avoid fire hazards and have fire protection equipment present in the work area. Do not use an open flame to check level or leakage of fuel, battery electrolyte or coolant. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts.

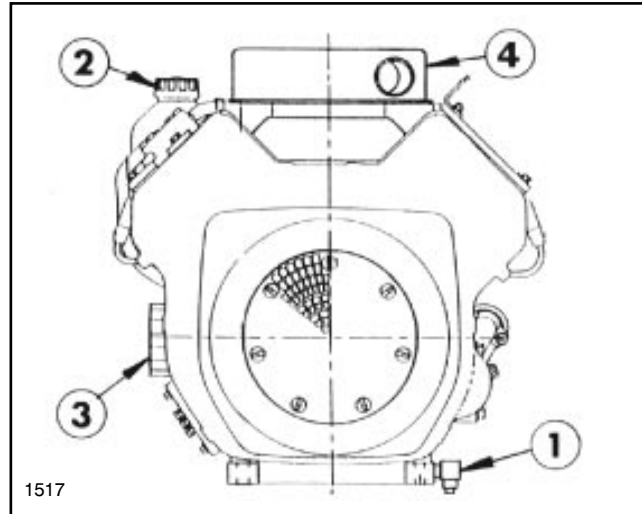


FIG. 11

- |                 |                |
|-----------------|----------------|
| 1. Oil Drain    | 3. Oil Filter  |
| 2. Oil Fill Cap | 4. Air Cleaner |

### ENGINE CRANKCASE OIL:

Check the oil level daily or before each use as follows:

1. Have the machine on a level surface with the engine OFF.
2. Add oil if necessary to bring the level up to, but not over the "F" mark on the dipstick. See FIG. 10.

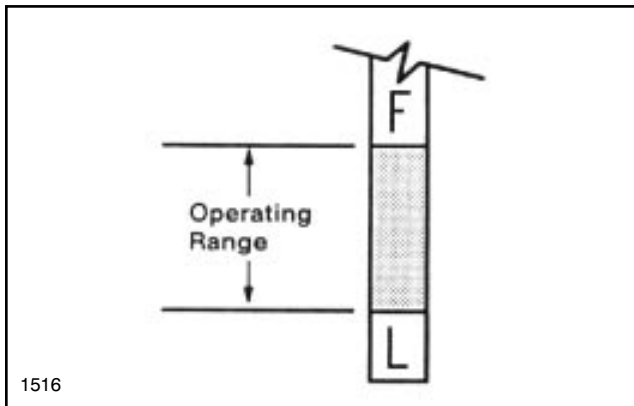


FIG. 10

**IMPORTANT!** Do not operate the engine with oil level **below** the "L" mark or **over** the "F" mark on the dipstick. Keep the area around the fill tube clean to prevent dirt from falling into the engine.

### IN A NEW OR REBUILT ENGINE:

**Change** the crankcase oil after the **first five** hours of operation and every 100 hours thereafter.

1. Have machine on a level surface. While engine is warm, drain the crankcase by removing the oil drain plug, oil fill cap and dipstick. Be sure to allow ample time for complete drainage. See FIG. 11.

2. Reinstall the oil drain plug. Make sure it is tightened to 10 ft. lbs. (13.6 N.m).

3. Refill the crankcase with new oil of the proper type, through the dipstick opening, using a screened funnel. Refer to oil type on page 8. The oil capacity is approximately 4 pints (1.9 liters), including filter.

4. Check the level with the dipstick while adding oil.

5. Reinstall the oil fill cap and tighten securely. Reinstall the dipstick.

### OIL FILTER:

**Replace** the Oil Filter **every other oil change (every 200 hours)** as follows:

1. Drain the oil from the engine crankcase.
2. Allow the Oil Filter to drain.
3. Remove the old Filter and wipe off the Filter Adaptor.
4. Apply a thin coating of new oil to the rubber gasket on the replacement Oil Filter.
5. Reinstall the replacement oil filter to the filter adapter. Turn the oil filter clockwise until the rubber gasket contacts the filter adapter, then tighten the filter an additional **1/2 turn**.
6. Reinstall the drain plug. Make sure it is tightened to **10 ft. lb. (13.6 N.m)** torque.

# MAINTENANCE

7. Fill the crankcase with new oil of the proper type, to the "F" mark on the dipstick.

8. Start the engine and check for oil leaks. Correct any leaks before placing the engine into service. Check oil level to be sure it is up to but not over the "F" mark.

## AIR CLEANER:

**Check the Air Cleaner daily or before starting the engine.** Check for and correct buildup of dirt and debris and loose or damaged components.

**IMPORTANT:** Operating the engine with loose or damaged air cleaner components could allow unfiltered air into the engine causing premature wear and failure.

**Wash and re-oil the precleaner every 25 hours** of operation (more often under extremely dusty or dirty conditions).

1. Remove wing nut and Air Cleaner Cover.
2. Remove the precleaner from the paper element and wash in warm water with detergent. Rinse the precleaner thoroughly until all traces of detergent are eliminated. Squeeze out excess water (do not wring). Allow the precleaner to air-dry.

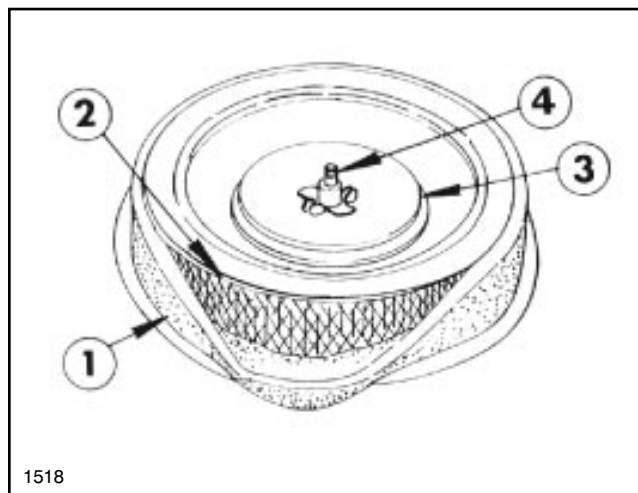


FIG. 12

- |                  |                  |
|------------------|------------------|
| 1. Precleaner    | 3. Element Cover |
| 2. Paper Element | 4. Element Cover |

3. Saturate the precleaner with new engine oil. Squeeze out all excess oil.

4. Reinstall the precleaner over the paper element.

5. Reinstall the Air Cleaner Cover. Secure Cover with wing nut.

**Every 100 hours of operation** (more often under extremely dusty or dirty conditions), **check the paper element.** Replace the element as necessary.

1. Remove the Air Cleaner Cover. Remove the element cover nut washer, element cover and paper element with precleaner.

2. Remove the precleaner from the paper element.

3. Do not wash the paper element or use **pressured air**, as this will damage the element. **Replace** a dirty, bent, or damaged element. Handle new elements carefully; **do not** use if the sealing surfaces are bent or damaged.

4. When servicing the air cleaner, check the air cleaner base. Make sure it is secured and not bent or damaged. Also check the element cover for damage or improper fit. Replace all damaged air cleaner components.

5. Reinstall the paper element with precleaner, element cover, washer, element cover nut and air cleaner cover. Secure cover with the wing nut.

## AIR INTAKE/COOLING AREAS:

To ensure proper cooling, make sure the grass screen, cooling fins, and other external surfaces of the engine are kept clean **at all times**.

**Every 100 hours of operation** (more often under extremely dusty, dirty conditions), remove the blower housing and other cooling shrouds. Clean the cooling fins and external surfaces as necessary. Make sure the cooling shrouds are reinstalled.

**IMPORTANT!** Operating the engine with a blocked grass screen, dirty or plugged cooling fins, and/or cooling shroud removed, will cause engine damage due to overheating.

# MAINTENANCE

## IGNITION SYSTEM:

This engine is equipped with an electronic CD ignition system. Other than periodically checking/replacing the spark plugs, no maintenance, timing, or adjustments are necessary or possible with this system.

In the event starting problems should occur which are not corrected by replacing the spark plugs, see your Kohler Engine Service Dealer for trouble analysis

## SPARK PLUG:

**Every 100 hour of operation**, remove the spark plugs, check condition, and reset the gap or replace with new plugs as necessary. Use a Champion® type RC12YC (or equivalent) spark plug.

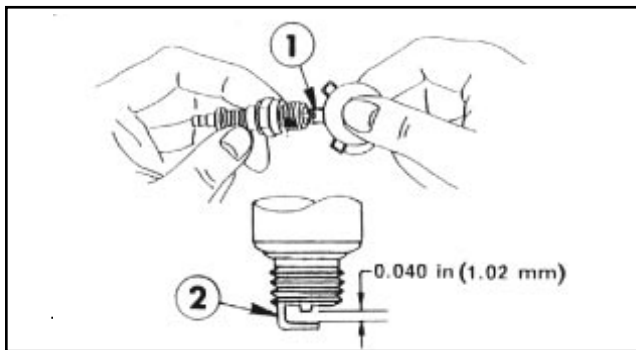
**IMPORTANT!** Equipment to be operated in Canada must use a resistor type spark plug in compliance with Canadian Government regulations.

1. Before removing the spark plug, clean the area around the base of the plug to keep dirt and debris out of the engine.

2. Remove the plug and check its condition. Replace the plug if worn or reuse is questionable.

**IMPORTANT:** A cracked, fouled, dirty or otherwise malfunctioning spark plug must be replaced. Do not sand blast, scrape, or clean electrodes by using a wire brush because grit may eventually release from the plug and fall into the cylinder. The result is usually a damaged engine.

3. Check the gap using a wire feeler gauge. Adjust the gap to .040 in. (1.02mm) by carefully bending the ground electrode. See FIG. 13.



**FIG. 13**

1. Wire Feeler Gauge      2. Ground Electrode

**NOTE:** Good operating conditions are indicated if plug has light coating of gray or tan deposit. A dead white, blistered coating could indicate overheating. A black (carbon) coating may indicate an “over-rich” fuel mixture caused by clogged air cleaner or improper carburetor adjustment.

4. Reinstall the spark plug into the cylinder head. Torque the spark plug to 18-22 ft. lbs. (24.4-29.8 N.m).

## FUEL FILTER:

Visually inspect the in-line Fuel Filter periodically and replace when dirty. Replace the Filter as follows.

1. Clamp fuel lines on each side of the Filter so gasoline cannot drain when lines are removed.

2. Loosen the hose clamps at both ends of the Filter and pull fuel lines off Filter.

3. Push fuel lines onto a replacement Filter and tighten the hose clamps to secure them to the Filter. **Be sure arrow on side of Filter points toward the fuel pump.**

## GOVERNOR:

### CAUTION

**Do not tamper with the Governor setting. Overspeed is hazardous and could void the engine warranty.**

The governor functions to maintain engine speed under changing load conditions and also acts as a speed limiting device. Governors are set in the factory and further adjustment should not be required unless linkage works loose or becomes disconnected. Readjustment should be made if engine surges with changing load or if speed drops considerably when normal load is applied. See the engine manual for adjustment instructions.

# MAINTENANCE

ENGINE TROUBLESHOOTING	Problem	No	Improper	Dirt	Dirty	Incorrect	Engine	Dirty	Faulty
		Fuel	Fuel	In	Air	Oil	Over-	Filter	Spark
		Fuel	Fuel	Fuel Line	Screen	Level	Loaded	Element	Plug
<p>When a problem occurs, do not over-look the simple causes. For example, starting problems could be caused by an empty fuel tank. The table lists some common causes of troubles.</p> <p>Do not attempt to service or replace major items or any items that call for special timing or adjustment procedures (governor, valves, etc.). Have this work done by your Kohler Engine Service Dealer.</p>	Will not start	X		X			X	X	X
	Hard Starting	X	X	X			X	X	X
	Stops Suddenly	X		X	X	x	X	X	
	Lacks Power		X	X	X	X	X	X	X
	Operates erratically		X	X	X		X	X	X
	Knocks or pings		X		X		X		X
	Skips or misfires		X	X				X	X
	Backfires			X			X	X	X
	Overheats			X	X	X	X	X	
	High fuel consumption							X	X

## CHASSIS LUBRICATION:

Lubricate Bearings and Bushings after every **50 hours** of operation, if machine is operated under normal conditions. More frequent lubrication is required if machine is used for heavy duty vehicle operations.

Use No. 2 General Purpose Lithium Base Grease to lubricate through grease fittings shown in FIG. 14 through 18. Wipe grease fittings clean so foreign matter cannot be forced into the bearing or bushing. Wipe off excess grease.

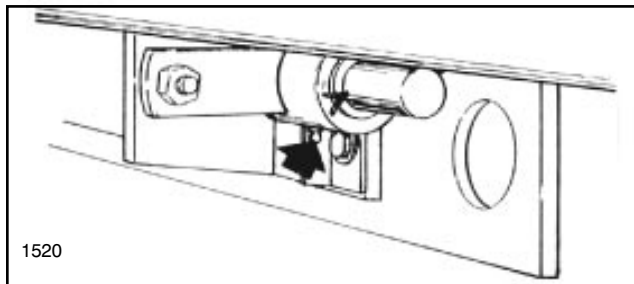


FIG. 14

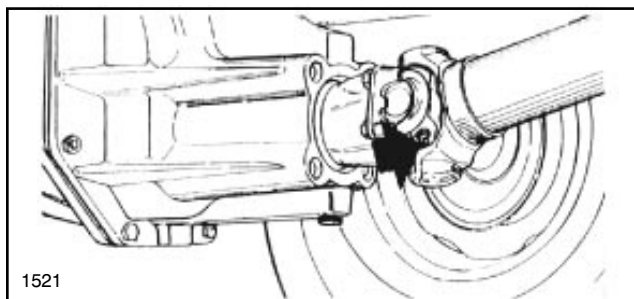


FIG. 15

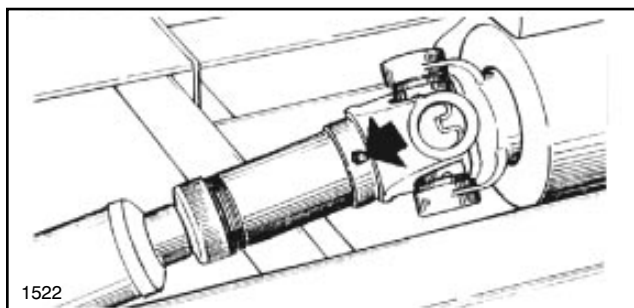


FIG. 16

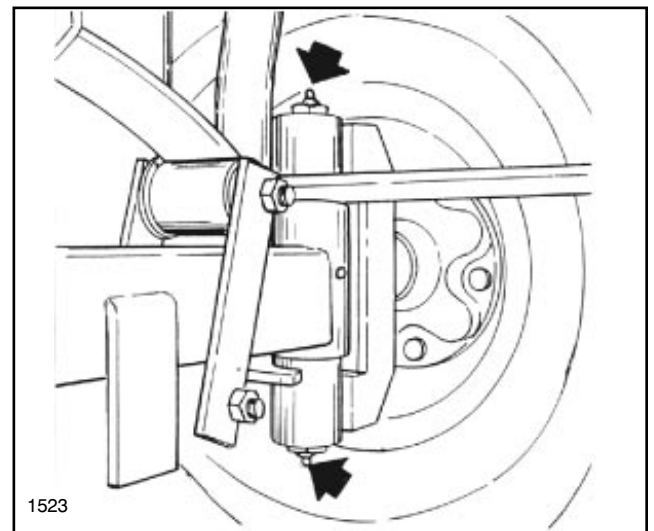


FIG. 17

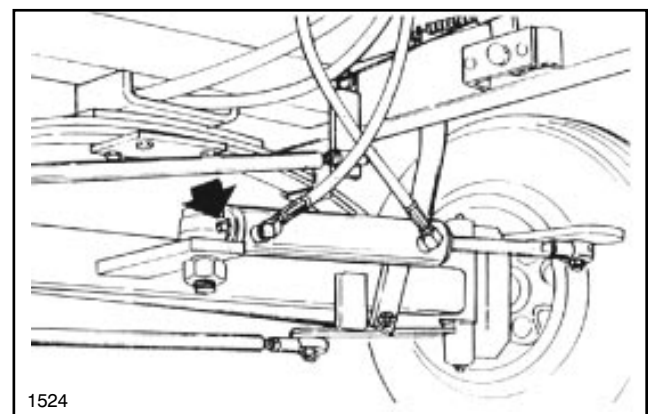


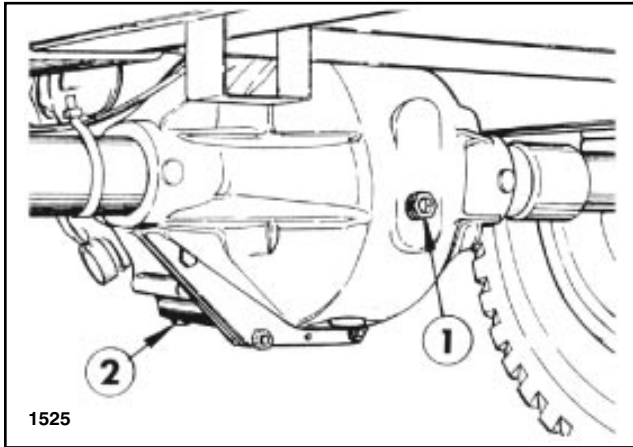
FIG. 18

# MAINTENANCE

## DIFFERENTIAL

**Check** the oil level after every **50 hours** of operation.

1. Have Vehicle on a level surface, stop engine, engage Parking Brake and remove Ignition Key.
2. Remove the oil check plug from the rear of the Differential housing. See FIG. 19.



**FIG. 19**

1. Oil Check      2. Oil Drain

3. If oil does not run out of the hole where plug was removed, add a high quality S.A.E. 85-140 gear oil. Add oil until it begins to drip from oil check hole.

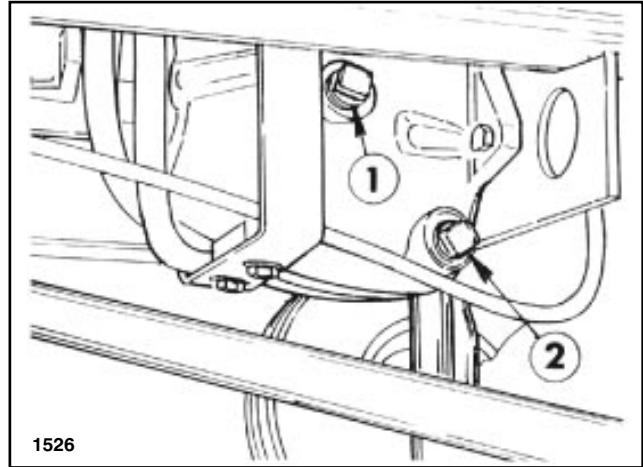
**Change** the oil in the Differential after every **500 hours** of operation. See FIG. 19.

1. Position the Vehicle on a level surface, engage the Parking Brake and remove the Ignition Key.
2. Remove the oil drain plug from the bottom of the Differential and let oil flow into drain pan. When oil stops draining, reinstall and tighten the drain plug.
3. Remove the oil check plug and fill the Differential with approximately 3 U.S. pints (1.4 liters) of S.A.E. 85-140 gear oil. Reinstall the plug and tighten securely.

## TRANSMISSION:

**Check** the oil level after every **50 hours** of operation.

1. Have Vehicle on a level surface, stop engine, engage Parking Brake and remove Ignition Key.
2. Remove the oil check plug from the side of the Transmission. See FIG. 20.



**FIG. 20**

1. Oil Check      2. Oil Drain

3. If oil does not run out of the hole where plug was removed, add a high quality S.A.E. 85-140 gear oil. Add oil until it begins to drip from oil check hole.

**Change** the oil in the Transmission after every **500 hours** of operation. See FIG. 20.

1. Position the Vehicle on a level surface, stop engine, engage Parking Brake and remove Ignition Key.
2. Remove the oil drain plug from the bottom of the Transmission and let oil flow into drain pan. When oil stops draining, reinstall and tighten the drain plug.
3. Remove the oil check plug and fill the Transmission with approximately 1-1/2 U.S. pints (1.71 liters) of S.A.E. 85-140 gear oil. Reinstall the plug and tighten securely.



# MAINTENANCE

## MASTER CYLINDER:

Check after every 50 hours of operation.

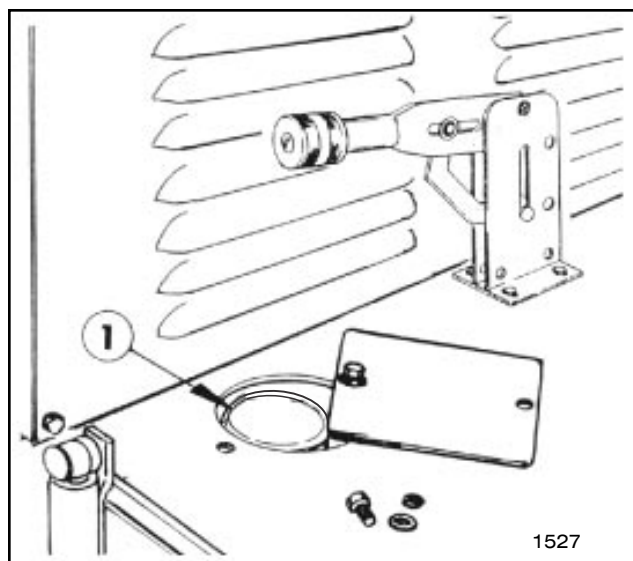


FIG. 21

1. Master Cylinder

1. Fluid level must be maintained at one half inch below the top of the Cylinder's reservoir.
2. Replenish fluid as needed with "DOT 3" brake fluid.

## STEERING PUMP:

**Check** and **maintain** the oil level above the Filter inside the Steering Pump's reservoir.

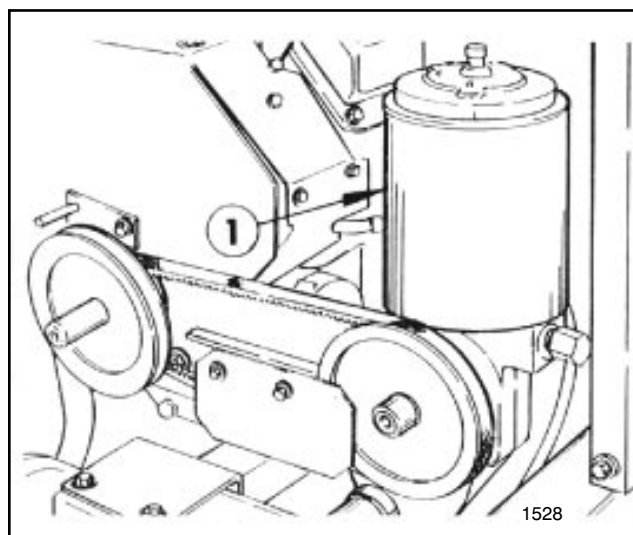


FIG. 22

1. Steering Pump Reservoir

**IMPORTANT!** When using a high pressure washer hose to clean the Vehicle, be careful not to let water enter the reservoir. Water in the power steering system will cause serious damage, resulting in premature failure of the system's components.

## BELT TENSION:

### DANGER

**ROTATING PULLEYS AND BELTS CAN CAUSE SERIOUS INJURY.**

- Keep hands, feet and clothing clear while engine is running.
- Stop engine before attempting any belt adjustment.

The best tension for a V-Belt drive is the lowest tension at which the Belts will not slip under the highest load condition. Too much tension shortens Belt and Bearing life.

Keep Belts and Pulleys free from any foreign material which may cause slippage. If a V-Belt slips, tighten it. See "ADJUSTMENTS" section.

Check the tension on a new drive Belt **frequently** during the **first day** of operation and periodically thereafter.

Check and maintain the clearances between all Belt Guides and the outside surfaces of the Belts at 1/8 inch.

After every **200 hours** of operation, check the tension of all Belts and clearances of Belt Guides. If a Belt shows signs of cracks or fraying, install a new Belt.

## BELT GUIDES:

Check and maintain the clearances between the Belt Guides and the outside surface of the Traction Belt at 1/8 inch.

# MAINTENANCE

## SAFETY START SWITCH:

### CAUTION

The Safety Start Switch is for the operator's protection against accidental starting.

- Accidental Starting could cause serious injury or death.
- Do not bypass Safety Start Switch.
- Check operation of the switch daily to assure system is operating.
- If the switch is malfunctioning, replace it before operating.
- Regardless whether switch is operating properly or not, replace it every two years to assure maximum safety.
- Do not rely entirely on Safety Start Switch - use common sense!

2. Without depressing Clutch Pedal, rotate Ignition Key clockwise to start position.

3. If engine cranks or starts, there is a malfunction in the Interlock System that must be repaired before operating the Vehicle.

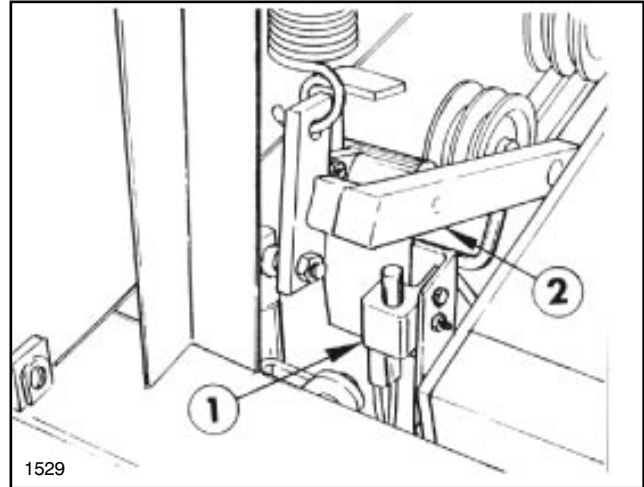


FIG. 23

1. Safety Start Switch      2. Idler Arm

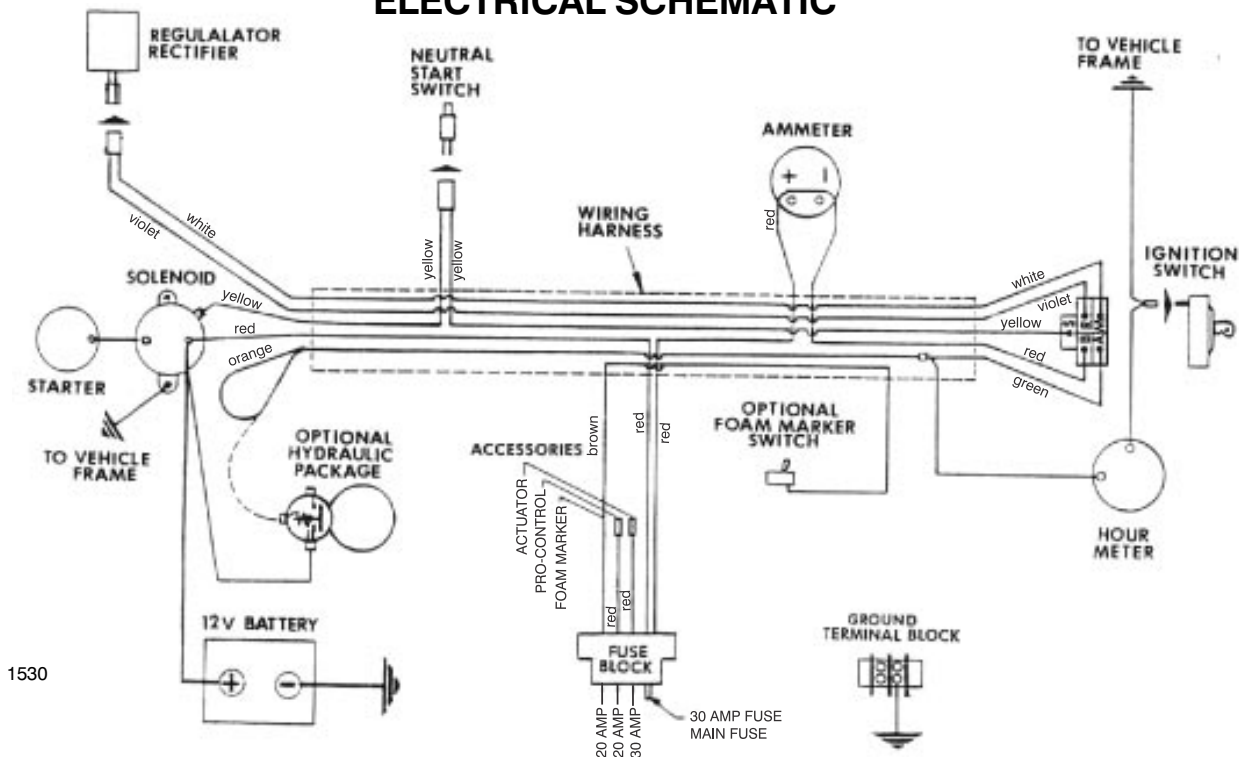
Check daily and maintain the Safety Switch in a position that prevents the engine from starting unless the **Clutch Pedal is fully depressed**.

## To verify Clutch Interlock Switch operation:

1. Sit on operator's seat and engage Parking Brake. Move Shift Lever to NEUTRAL position.

With the Clutch Pedal fully depressed, the button should be pushed approximately half-way inside the Safety Switch...engaging the Switch, completing the circuit and allowing the engine to start. See FIG. 23.

## ELECTRICAL SCHEMATIC



# ADJUSTMENTS

## CLUTCH PEDAL “FREE PLAY”:

The Clutch Pedal is set at the factory so that when the Pedal is “at rest”, it is pressed against the Rubber Bumper; and when the Clutch Pedal is depressed, it will travel approximately 1/8 to 3/8 inch before actuating the Clutch linkage. That is, “free play”. See FIG. 24.

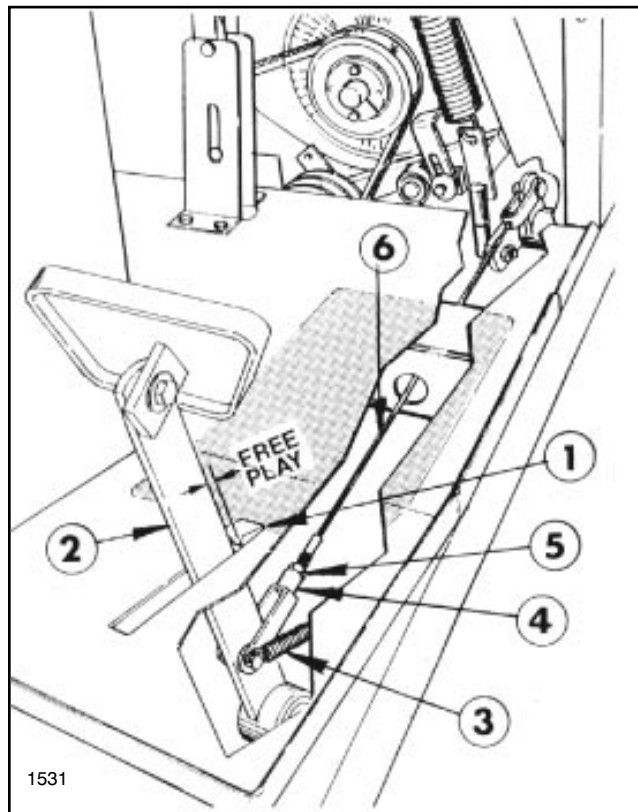


FIG. 24

- |                  |                      |
|------------------|----------------------|
| 1. Rubber Bumper | 4. Adjustable Clevis |
| 2. Clutch Arm    | 5. Jam Nut           |
| 3. Return Spring | 6. Clutch Cable      |

It is necessary to maintain this “free play” in order to insure the safe and efficient operation of the Vehicle’s drive mechanism. Adjust as follows:

1. Remove the Return Spring and the Adjustable Clevis from the Clutch Arm and loosen the Jam Nut on the Clutch Cable.
2. Turn the Adjustable Clevis on the Clutch Cable to lengthen the linkage, until the “free play” is achieved.
3. Reassemble the Adjustable Clevis to the Clutch Arm, replace the Return Spring and tighten the Jam Nut.

## VEHICLE DRIVE BELT

It is necessary to make sure that there is sufficient “free play” prior to any adjustment of the Vehicle Drive Belt. See “CLUTCH PEDAL FREE PLAY” above.

To adjust the Drive Belt tension, tighten or loosen the Stop Nut (see FIG. 25) to increase or decrease the Idler Pivot Spring tension. Tension is correct when a .010 feeler gage will slide between the coils.

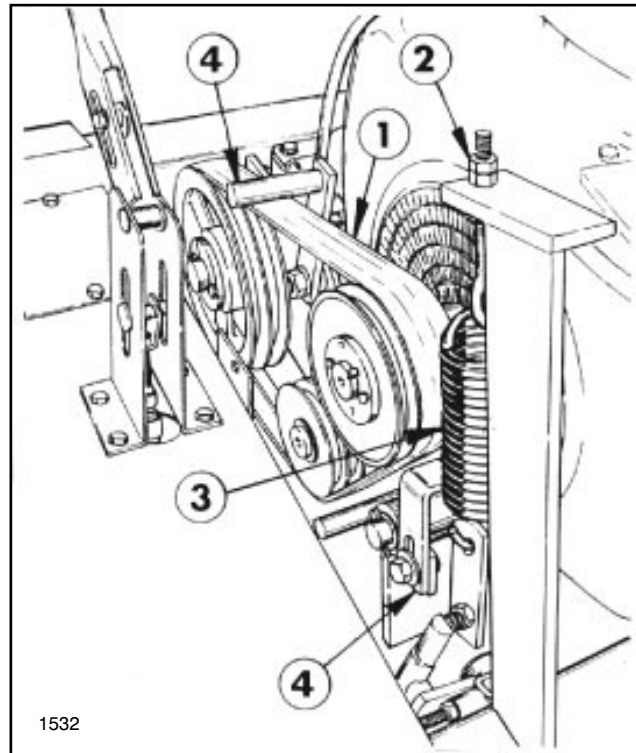


FIG. 25

- |                       |                       |
|-----------------------|-----------------------|
| 1. Vehicle Drive Belt | 3. Idler Pivot Spring |
| 2. Stop Nut           | 4. Belt Guide         |

Recheck Clutch Pedal “free play”.

Further adjustment can be obtained by sliding the engine in the slotted mounting holes in the frame.

# ADJUSTMENTS

## BRAKE PEDAL "FREE PLAY":

The Brake Pedal is set at the factory so that when the Brake Pedal is depressed, it will travel approximately 1/8 to 3/16 inch before actuating the Brake linkage. See FIG. 26.

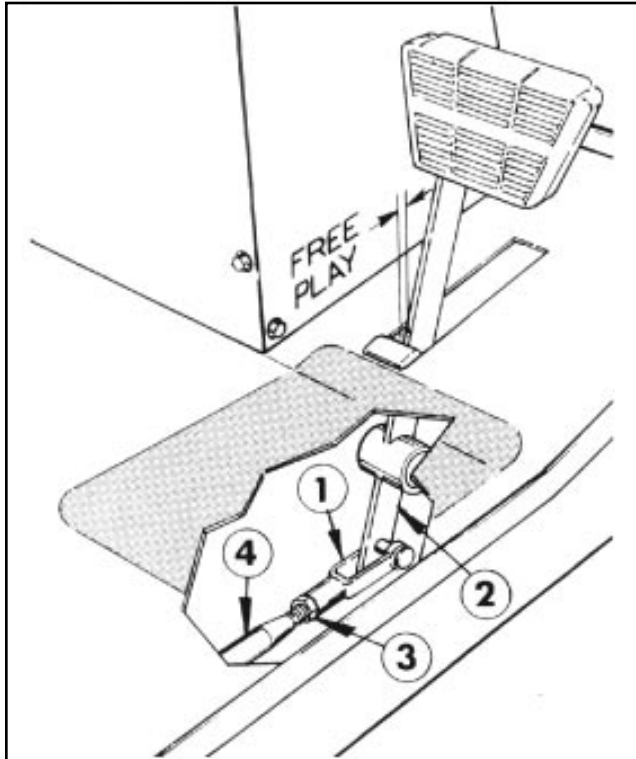


FIG. 26

- |                      |             |
|----------------------|-------------|
| 1. Adjustable Clevis | 3. Jam Nut  |
| 2. Brake Arm         | 4. Push Rod |

Maintain this "free play" in the Brake Pedal to avoid dangerously abrupt stops and undue wear on the Vehicle's brake linings. Adjust as follows:

1. Remove the Adjustable Clevis from the Brake Arm and loosen the Jam Nut on the Push Rod.
2. Turn the Adjustable Clevis on the Push Rod until there is approximately 1/8 to 3/16 inch travel in the Push Rod before the Master Cylinder Piston is engaged. Tighten the Jam Nut.

## PARKING BRAKE:

To adjust the Parking Brake, rotate the Adjustment Knob on the end of the Lever. Turn it **clockwise** to **increase** brake force, **counter-clockwise** to **decrease** brake force. See FIG. 27.

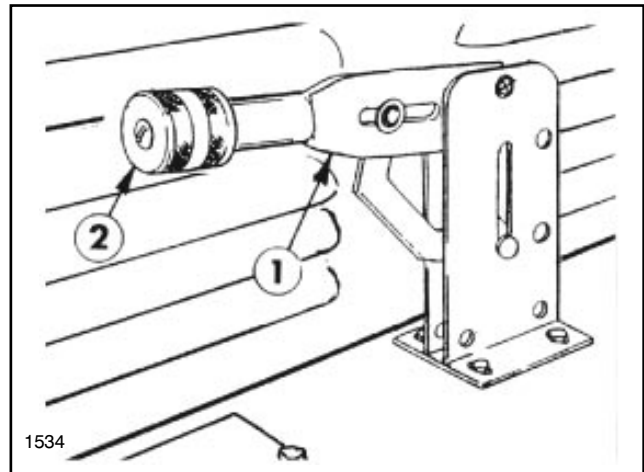


FIG. 27

- |                  |                    |
|------------------|--------------------|
| 1. Parking Brake | 2. Adjustment Knob |
|------------------|--------------------|

When further adjustment cannot be attained by rotating the Adjustment Knob, adjust the brake linkage as follows:

1. **Disengage** the Parking Brake (Lever **DOWN**).
2. Turn the Adjustment Knob **counter-clockwise** for the minimum brake force.
3. Push the threaded rod on the end of the Brake Cable through the Brake Equalizer. See FIG. 28.

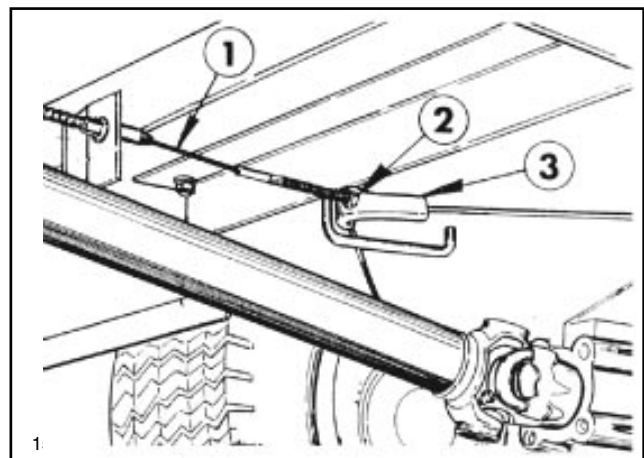


FIG. 28

- |                |                    |
|----------------|--------------------|
| 1. Brake Cable | 3. Brake Equalizer |
| 2. Jam Nut     |                    |

4. Tighten the nuts on the threaded rod until there is approximately 1/2 inch between the Jam Nut and the Equalizer as shown in FIG. 28.

5. **Engage** the Parking Brake (Lever **UP**). If additional brake force is desired, rotate the Adjustment Knob clockwise.

# ADJUSTMENTS

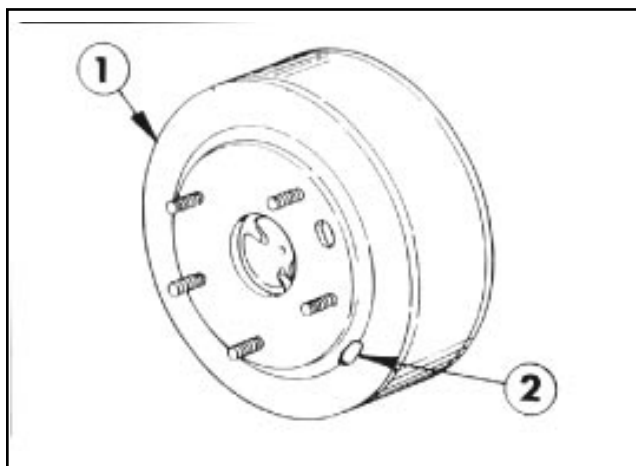
## WARNING

**BRAKE FAILURE CAN CAUSE LOSS OF CONTROL AND RESULT IN SERIOUS INJURY OR DEATH.**

- **Test Brake function before operation.**
- **Correct any problem before operation.**

To adjust the Vehicle brakes, proceed as follows:

1. Use a jack stand, with the capacity necessary to lift the Vehicle to raise the tire clear of the ground surface.
2. Remove the five (5) wheel retaining nuts and remove the Wheel and Tire from the drum.
3. Use a brake tool inserted through the slot in the drum to turn the adjusting star wheel, to expand the brake shoes within the drum. See FIG. 29.



**FIG. 29**

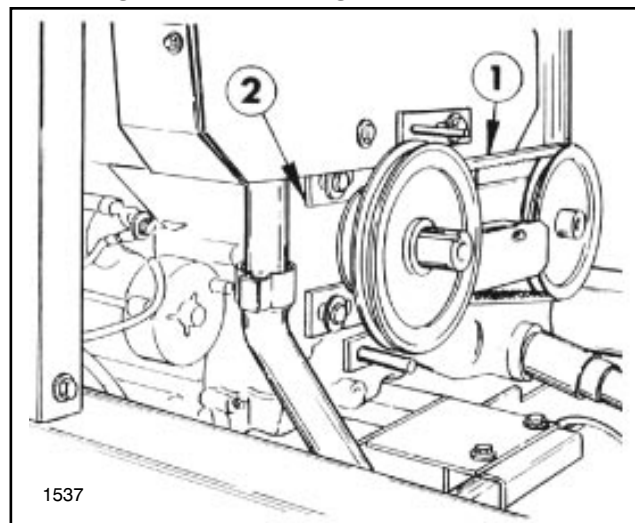
1. Brake Drum                      2. Access Slot

4. Engage one end of the tool in the star wheel teeth and pry **down** to tighten the right hand brake shoe. Pry **up** to tighten the left hand brake shoe.
5. Turn the adjusting screw until a heavy drag is felt while rotating the drum. Then back off the adjusting screw until the brake is just free of drag.
6. Reinstall the Wheel and Tire and tighten the retaining nuts to 65-75 ft. lbs. (88-102 N-m) max.

## POWER STEERING PUMP:

Check tension by depressing belt at mid span of pulleys with 22 lbs. of force. Belt should deflect 3/8 inch. If the deflection is incorrect, adjust as follows:

1. Loosen four (4) cap screws holding the Pump Mounting Plate to the Engine. See FIG. 30.



**FIG. 30**

1. Power Steering Belt                      2. Pump Mounting Plate

2. Slide the Mounting Plate until proper belt tension is attained, then tighten the four cap screws.



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# The Toro Commercial Products Two Year Limited Warranty

The Toro Company warrants your 1996 or newer Toro Commercial Product ("Product") purchased after January 1, 1997, to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Toro will repair the Product at no cost to you including diagnosis, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

**Warranty Duration: Two years or 1500 operational hours\*, whichever occurs first.**

**\*Product equipped with hour meter**

## Owner Responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

## Instructions for Obtaining Warranty Service:

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists.

If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

TORO Commercial Products Service Department  
8111 Lyndale Avenue South  
Minneapolis, MN 55420-1196  
Telephone: (612) 888-8801  
Facsimile: (612) 887-8258  
E-Mail: Commercial.Service@Toro.Com

## Maintenance Parts:

Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part.

## Items/Conditions Not Covered:

Not all product failures or malfunctions that occur during the warranty period are defects in material or workmanship. The items / conditions listed below are not covered by this warranty:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories are not covered.
- Product failures which result from failure to perform required maintenance and/or adjustments are not covered.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner are not covered.
- This warranty does not apply to parts subject to

consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, blades, reels, bedknives, tines, spark plugs, castor wheels, tires, filters, belts, etc.

- This warranty does not apply to failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- This warranty does not apply to normal "wear and tear" items. Normal "Wear and Tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

## Other Legal Disclaimers:

The above remedy of product defects through repair by an authorized distributor or dealer is the purchaser's sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of the express warranty.**

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

**The Toro Company is not liable for indirect, incidental or consequential damages in connection with the use of the Product, including any cost or expense of providing substitute Product or service during periods of malfunction or non-use.**

Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

**Note to California residents:** The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA), or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the California Emission Control Warranty Statement printed in your Owner's Manual or contained in the engine manufacturer's documentation for details.