ENGLISH FORM NO. 3315-437 EN

TORO®

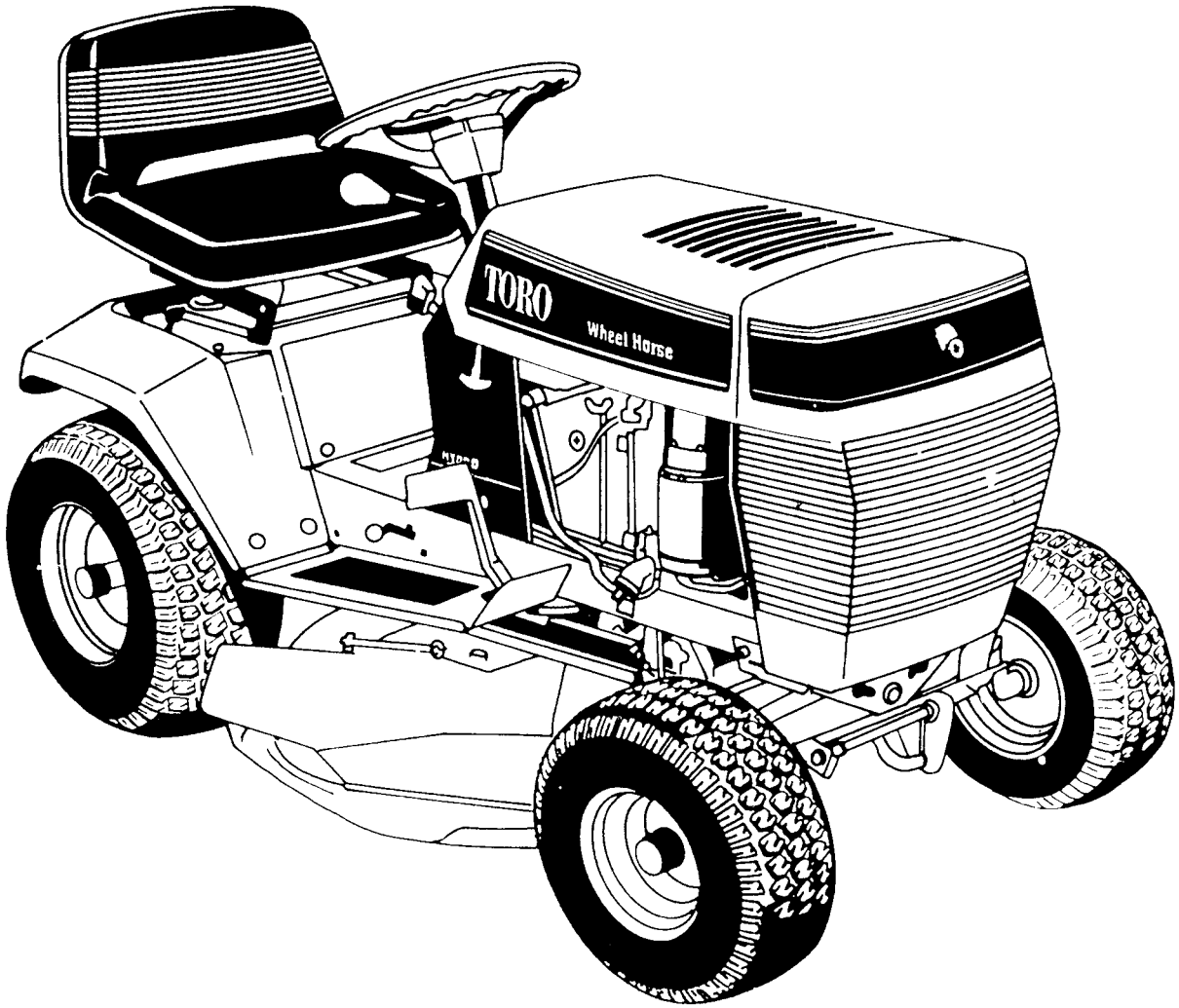
MODEL NO. 72101 - 3900101 & UP

**OPERATOR'S MANUAL**

# WHEEL HORSE®

## 246-H Lawn Tractor

ENGLISH



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**⚠ CAUTION**

**This symbol marks important instructions concerning your personal safety. To avoid injury, read and follow these instructions carefully.**

**When the manual refers to the left or right side of the vehicle, it means your left or right when sitting on the tractor seat.**

# SAFE OPERATION PRACTICES—RIDING VEHICLES

## GENERAL

**1.** This machine can amputate hands and feet and throw objects that can cause injury and damage. KNOW the controls and how to stop the machine quickly. READ THIS OPERATOR'S MANUAL and obey all safety messages appearing on the machine and in the operator's manual. LEARN from your operator's manual and from CAREFUL EXPERIENCE how to operate your equipment correctly. Know your machine's limitations.

**2.** Keep hands, feet, hair and loose clothing away from the attachment discharge area, the underside of the mower deck or any moving parts while the engine is running.

**3.** For your personal safety: Do not operate this machine while taking drugs or medication or while drinking alcoholic beverages.

**4.** Only responsible persons with mature judgment and proper physical capabilities should be allowed to operate this machine, and only after instruction in the correct use of this equipment.

**5.** Do not allow children to operate the machine.

**6.** Do not carry passengers.

**7.** The purpose of this machine is work. Do not use it for sport or recreation.

**8.** Do not mow when people or pets are in the area.

**9.** Clear the work area of objects (wire, rocks, etc.) that might be picked up and thrown.

**10.** Take all possible precautions when leaving the machine unattended. Disengage the power-take-off, lower attachments, shift into NEUTRAL, set the parking brake, stop the engine and remove the key.

**11.** Watch out for traffic when crossing or near roadways.

**12.** Stop and inspect the machine and attachments for damage after striking a foreign object. Damage should be repaired before restarting and operating the equipment.

**13.** Do not change the engine's governor settings or overspeed the engine.

**14.** Wear appropriate protective clothing when operating equipment. Long pants and substantial footwear, not bare feet or open sandals, are essential.

**15.** Do not operate the machine unless properly seated with your feet on the footrests or pedals.

**16.** Keep your eyes and mind on your machine, its attachment and the working area. Do not let other interests distract you.

**17.** Safety switch(es) stop or prevent engine starting to help prevent accidents. TAKE PRECAUTIONS —DON'T RELY ENTIRELY ON SAFETY SWITCH(ES).

**18.** Take care not to touch the equipment or attachment parts that may be hot from operation. The muffler and nearby areas may exceed 150° F (65° C). Let the engine and other parts cool before attempting to maintain, adjust or service them.

**19.** Stereo headphones, ear protection or other sound altering/dampening devices may limit your ability to hear warning sounds (horns, shouts, etc.).

## FUEL/FIRE PRECAUTIONS

**20.** Handle gasoline with care—it is highly flammable.

**21.** Use an approved gas container. Place it out of children's reach.

**22.** Use gasoline only as a fuel—never as a cleaner.

**23.** Never remove the fuel cap or add gasoline to a running or hot engine, or an engine that has not cooled for several minutes after running.

**24.** Never fill the fuel tank indoors. Wipe up spilled gasoline.

**25.** Open doors if you run the engine in a garage—exhaust fumes are dangerous. Do not run the engine indoors.

**26.** Do not fill the machine with gasoline while smoking or when near an open flame or sparks.

**27.** Never store equipment with gasoline in the fuel tank inside a building where fumes may reach an open flame or spark.

# SAFE OPERATION PRACTICES—RIDING VEHICLES

**28.** Allow the engine to cool before storing it in any enclosure.

**29.** To reduce fire hazard, keep the engine and attachments free of grass, leaves or excessive grease.

**30.** Battery acid is a poison and can cause burns. Avoid contact with skin, eyes and clothes and protect your face, eyes and clothing when working around the battery.

**31.** Battery gases can explode. Keep cigarettes, sparks and flames away from battery.

## EQUIPMENT USE AND OPERATION

**32.** We recommend that you first operate the equipment at a slow speed with any attachment disengaged until you are thoroughly familiar with the controls and have developed operating skills.

**33.** Disengage all attachment clutches, set the parking brake and shift into NEUTRAL before starting the engine.

**34.** Disengage power to the attachment(s), set the parking brake and stop the engine before leaving the operator position.

**35.** Disengage power to the attachment(s) and stop the engine before making any repairs or adjustments.

**36.** Disengage power to the attachment(s) when transporting the machine or when it is not in use.

**37.** Disengage the attachment clutch before removing the mower from a hole or other obstruction.

**38.** Disengage power to the attachment(s) before backing. Do not mow in reverse unless it is absolutely necessary and then only after careful observation of the entire area behind the machine.

**39.** LOOK behind the machine to make sure the area is clear before placing the transmission in reverse and continue looking behind while backing.

**40.** Always back the machine up loading ramps and tilt bed trailers.

**41.** The parking brake is designed to hold the vehicle in place at rest, with the engine off. *The parking brake will not restrain the vehicle with the engine running and the transmission engaged.*

## STABILITY/TIP OVER/TRACTION

**42.** Know the terrain on which you operate your equipment. There are areas on which you cannot safely operate your equipment.

**43.** Avoid operating the machine on hillsides, slopes or rough terrain. DO NOT operate the machine on hillsides or slopes exceeding 15° (27% grade). If safety is in doubt—STAY OFF THE SLOPE.

**44.** Reduce speed and exercise extreme caution on slopes above 10° (18% grade) to prevent tipping or loss of control. Never mow uphill on these slopes—mow downhill only. If you must climb a steep hill, back the machine up the hill, and drive the machine forward down the hill, keeping the vehicle in gear. If necessary to turn on hill, always turn downhill.

**45.** Mow up and down the face of slopes greater than 5° (9% grade), never across the face. Be especially cautious when changing directions on all slopes.

**46.** Operate your machine smoothly and at a ground speed slow enough to ensure complete control. Avoid erratic operation and excessive speed.

**47.** Sharp turns on any terrain may cause loss of control. Reduce speed and use caution on sharp turns.

**48.** Do not stop or start suddenly when going uphill or downhill. Avoid uphill starts. If machine stops when going up a slope, turn the attachment off and back slowly down the slope, keeping the machine in gear. Do not stop or change gears (speed) on slopes.

**49.** Know the terrain. Find hidden obstacles by walking through and inspecting the area before operating your equipment in that area. Plainly mark obstacles, such as rocks, roots or holes and **stay well clear of these obstacles** when operating.

**50.** While operating, stay alert for holes, rocks or roots, which may damage equipment or cause it to upset. Keep at least three (3) feet away from drop-offs, ditches, creeks, culverts, washouts and public highways.

**51.** Exercise care when mowing around a fixed object to prevent the equipment or attachment from striking it. When mowing, never deliberately run over any foreign object.

**52.** Areas wet with dew, rain or snow will be more slippery than when dry. Areas covered with loose gravel are more slippery than firm, dry ground. Greater stopping distances are required in these slippery areas.

**53.** Learn to expect changes in operating conditions. Adding or removing attachments or weight to your equipment will make your machine operate differently. Rain, snow, loose gravel, wet grass, etc., change the terrain's tractive conditions. Changing tractive conditions require you to change your operating technique—including deciding not to operate on that terrain sometimes.

# SAFE OPERATION PRACTICES—RIDING VEHICLES

**54.** Use care when pulling loads or using heavy equipment.

A. Use only approved drawbar hitch points.

B. Limit loads to those you can safely control.

C. Do not turn sharply. Use care when backing.

D. Use counterweight(s) or wheel weights when suggested in the operator's manual.

## ATTACHMENT USE

**55.** When using attachments, never direct the discharge of material toward bystanders, nor allow anyone near the vehicle while it operates.

**56.** When using the machine with a mower:

A. Mow only in daylight or in good artificial light.

B. Never adjust cutting-height while the engine is running if you must dismount to do so.

C. Shut off the engine when unclogging the chute.

D. Check the blade mounting bolts for proper tightness at frequent intervals.

**57.** Keep hands and feet away from rotating blade(s) underneath the mower deck. Never place your foot on the ground when the mower is engaged or in motion.

**58.** DO NOT operate the mower attachment without the chute deflector or complete bagger in place.

**59.** Exercise care while maneuvering with the grass catcher. Front-to-rear stability may change.

**60.** When using snow/dozer blades:

A. Do not hit solid objects. This can damage blades and injure the operator.

B. Always travel at a safe, slow speed.

## MAINTENANCE

**61.** Keep all nuts, bolts, fasteners and screws tight to ensure the equipment is in safe working condition and check them frequently. Repair or replace worn, damaged, distorted or broken parts as needed.

**62.** Keep the vehicle and its attachments in good operating condition and keep safety devices in place and working.

**63.** Under normal usage, the grass catcher bag's material will wear and deteriorate. Check often to see if the bag needs to be replaced.

**64.** Use only genuine TORO Wheel Horse replacement parts to maintain original standards.

**65.** Shields, deflectors, switches, blade controls and other safety devices must be in their proper position and functional.

**66.** Do not operate without a muffler or damper on the exhaust system. Damaged mufflers or spark arresters can create a fire hazard. Periodically inspect and replace whenever necessary.

**67.** If the equipment begins to vibrate abnormally, disengage power to the attachments and stop the engine immediately. Repair any damage before starting or continuing operation.

**68.** Periodically inspect all shafts, levers, friction devices and other moving parts that are subject to wear. Adjust or replace these parts if they are damaged, distorted or broken, or when wear affects the normal operation of the vehicle or attachment. DO NOT use equipment that is not operating properly.

# SPECIFICATIONS

## ENGINE:

| MACHINE MODEL | ENGINE MODEL* | RATED H.P. | DISPLACEMENT cu. in./cc | BORE in./mm | STROKE in./mm | IGNITION |
|---|---|---|---|---|---|---|
| 246-H | B-303777-0412-01 | 16 | 29.3/480 | 2.68/68 | 2.60/66 | Electronic |

* Letter Prefix: B = Briggs & Stratton. Basic engine model number shown; type and serial numbers from engine I.D. plate are required to completely identify engine.

## TRANSMISSION: APPROXIMATE GROUND SPEEDS (At Full Throttle)

| | |
|---|---|
| Type: | Eaton Model 751 HST Hydrostatic Transaxle |
| Forward: | Variable 0-5.0 mph (8.0 kph) |
| Reverse: | Variable 0-2.2 mph (3.5 kph) |

## ELECTRICAL SYSTEM (All Models):

| | |
|---|---|
| Type: | 12 Volt D.C., Negative Ground |
| Alternator: | 12 Volt, 16 Amp. Regulated |
| Battery | 12 Volt, 280 CCA |

## TIRES:

| SIZES - FRONT | SIZES - REAR | PRESSURE - FRONT | PRESSURE - REAR |
|---|---|---|---|
| 16 x 6.50-8 | 23 x 9.50-12 | 12 psi (.85 kg/cm$^2$) | 12 psi (.85 kg/cm$^2$) |

## PHYSICAL DATA:

| HEIGHT | LENGTH | OVERALL WIDTH | WHEEL BASE | INSIDE TURNING RADIUS | NET WEIGHT (Approximate) |
|---|---|---|---|---|---|
| 40 in. (101.6 cm) | 64 in. (162.6 cm) | 35.2 in. (89.4 cm) | 49.5 in. (125.73 cm) | 16 in. (40.6 cm) | 473 lbs. (188 kg) |

# TUNE-UP/GENERAL MAINTENANCE SPECIFICATIONS

## ENGINE:

| POINT GAP in./mm | TIMING MARK LOCATION | IGNITION TIMING (BTDC) | SPARK PLUG TYPE* | SPARK PLUG GAP in./mm | DIRECTION OF ROTATION (Facing Drive Pulley) | IDLE RPM (No Load) | GOVERNED MAX. RPM (No Load) |
|---|---|---|---|---|---|---|---|
| N/A | N/A | Fixed | RC12YC | .030/.76 | Counterclockwise | 1200 | 2900 |

* Or equivalent (Champion number shown)

## LUBRICANT/FUEL CAPACITIES:

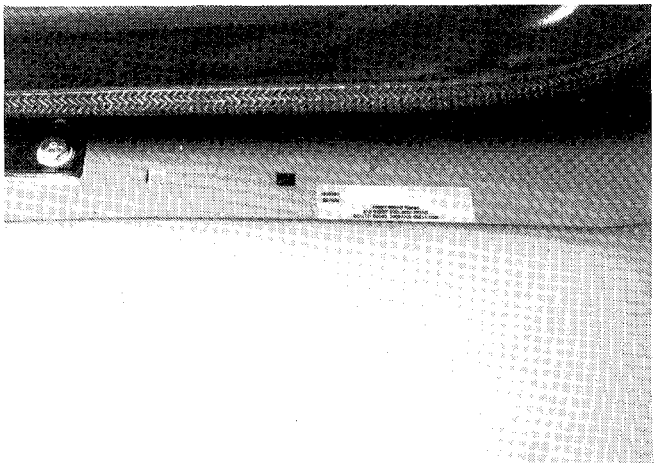
| CRANKCASE | FUEL TANK | CHASSIS |
|---|---|---|
| 3 pts. (1.4 l)<br>3.5 pts. (1.6 l) w/filter | 1-1/2 gal. (5.7 l) | Grease Fittings: 6 |

# MODEL AND SERIAL NUMBER LOCATIONS

Model and serial numbers are used to identify your new tractor and major attachments. These numbers should always be referred to when consulting your dealer or factory concerning service, parts, or other information you may require. If these plates are removed during repair operations, they should always be replaced.

**Tractor** identification plate is located just below the seat on the rear fender. **Engine** identification numbers are located on the engine shrouding and indicate model, specification or type number and serial number of your tractor's engine. Major attachments also have an identification plate attached to them.

For your convenience and ready reference, enter the tractor and engine numbers below.



**Model and Serial Number Plate Location**

*1. Model and serial number plate*

**Tractor Identification Plate**

MODEL
SERIAL
The TORO Company
8111 LYNDALE AVENUE SOUTH
MINNEAPOLIS, MN 55420

**Engine Identification Number**

Model _____

Type or Spec. No. _____

Serial No. _____

# OWNER REGISTRATION AND WARRANTY

Service and warranty assurance are as important to TORO Wheel Horse as it is to you. To simplify warranty service at an Authorized TORO Wheel Horse Dealer, TORO Wheel Horse requires factory registration. We supply a registration card with each new rider and attachment. **Either you or your dealer must supply the required information and mail the card to TORO Wheel Horse.**

The TORO Wheel Horse Limited Warranty Statement is on a "hang tag" attached to each product. This statement describes the items covered by the TORO Wheel Horse Limited Warranty, your rights and obligations, and the procedure for obtaining warranty service. Please familiarize yourself with the warranty statement. **We want you to be satisfied with your TORO Wheel Horse rider; please don't hesitate to contact us for assistance.**

# INSTRUMENTS AND CONTROLS

### 1. THROTTLE CONTROL

The throttle controls the engine speed. Raise the lever to operate the tractor; lower the lever before shutting off the engine.

### 2. IGNITION SWITCH

The ignition switch is on the dash panel under the steering column. The ignition switch has three positions from left to right: (1) OFF (2) RUN (3) START. To start the engine, turn the key all the way right to the START position. Release the key when the engine starts and it will automatically return to the RUN position. When the switch is turned to the OFF position, the engine stops and all electrical accessories are turned off.

### 3. PTO (POWER TAKE-OFF) CLUTCH SWITCH

The PTO switch is on the right center of the dash panel below the steering column. Push down on the top of the switch cover and pull up on the bottom of the cover to engage the PTO. Push down on the switch cover to disengage the PTO. The PTO clutch switch actuates a safety interlock switch in the starter circuit; therefore the tractor will not start unless the lever is in the disengaged position. If the operator's seat is vacated while the PTO is engaged, the seat switch will automatically shut the engine off.

### 4. PARKING BRAKE LOCK LEVER

The parking brake lock lever is on the right side of frame next to the foot platform. To engage the parking brake, first apply the foot brake pedal solidly and then move the parking brake lock lever up and release the brake pedal. To release parking brake, push down on the brake pedal. The parking brake lock lever is spring loaded and will return to the disengaged position when the foot brake is applied.

### 5. BRAKE/RETURN-TO-NEUTRAL LEVER

Brake/Return-to-neutral pedal at the right side of the tractor, provides braking to both rear wheels through the automatic transmission. As the brake pedal is depressed, the transmission is shifted to neutral. When a brake pedal is fully depressed, a mechanical brake is also applied for additional braking action.

### 6. MOTION CONTROL LEVER

The motion control lever is just below the steering wheel. The lever may be pushed ahead to move the tractor toward. Push the lever down and pull back to move the tractor in reverse. Move the lever to neutral to stop. The lever must be in neutral when starting engine, as lever actuates a safety interlock switch, allowing starter to operate. Brake pedal moves control lever to neutral position for dynamic braking. The control lever varies ground speed and pulling power independent of engine speed. To increase ground speed, move the lever away from neutral. Increase pulling power by moving the lever toward neutral.

### 7. TRANSMISSION PUSH VALVE LEVER

The transmission push valve lever is just to the right of the seat on the rear fender. The transmission lever actuates a pressure relief valve inside the transmission. Push the lever forward to release the transmission. Push the lever rearward to engage the transmission for operation. Always release the transmission when starting the engine in cold weather.

### 8. LIGHT SWITCH

The light switch is on the right center side of the dash panel under the steering column. Raise the toggle switch to turn the lights on. Lower the toggle switch to turn lights off. Lights will work only when the ignition switch is in the RUN position.

### 9. FUEL SHUT-OFF VALVE

The fuel shut-off valve is at the bottom of the fuel tank. The valve is normally left open, unless service on the fuel system is necessary.

### 10. DIAL-A-HEIGHT

The Dial-A-Height control is on the left side of the hoodstand under the steering column. The Dial-A-Height control is used to hold mowers and other attachments at a desired height above the ground. To adjust the height of cut or an attachment, raise the attachment to the transport position and latch. Then turn the knob clockwise to increase height or counterclockwise to lower height.

### 11. DIAL-A-HEIGHT INDICATOR

This indicator is used with Dial-A-Height to show the position of the mower or implement above ground level. It also shows the proper PTO belt pulley groove to use. A double-groove PTO pulley allows the operator to reduce belt misalignment when using mower cutting heights of 1.9 to 10.1 cm (3/4" to 4"). The upper pulley is used for typical 5.0 to 10.1 cm (2" to 4") cutting heights. The lower pulley must be used for very low cutting heights of 1.9 to 6.3 cm (3/4" to 2-1/2"). Declutch the PTO when the height set is outside the specified range of the PTO pulley being used, e.g., when lifting to transport height with the belt in the lower PTO pulley.

### 12. ATTACHMENT LIFT

Depress the lift lever release button and move the lever forward to lower attachments or pull back on the lever to raise attachments. Always lower attachments before leaving the tractor unattended.

# INSTRUMENTS AND CONTROLS

### 13. VOLTMETER

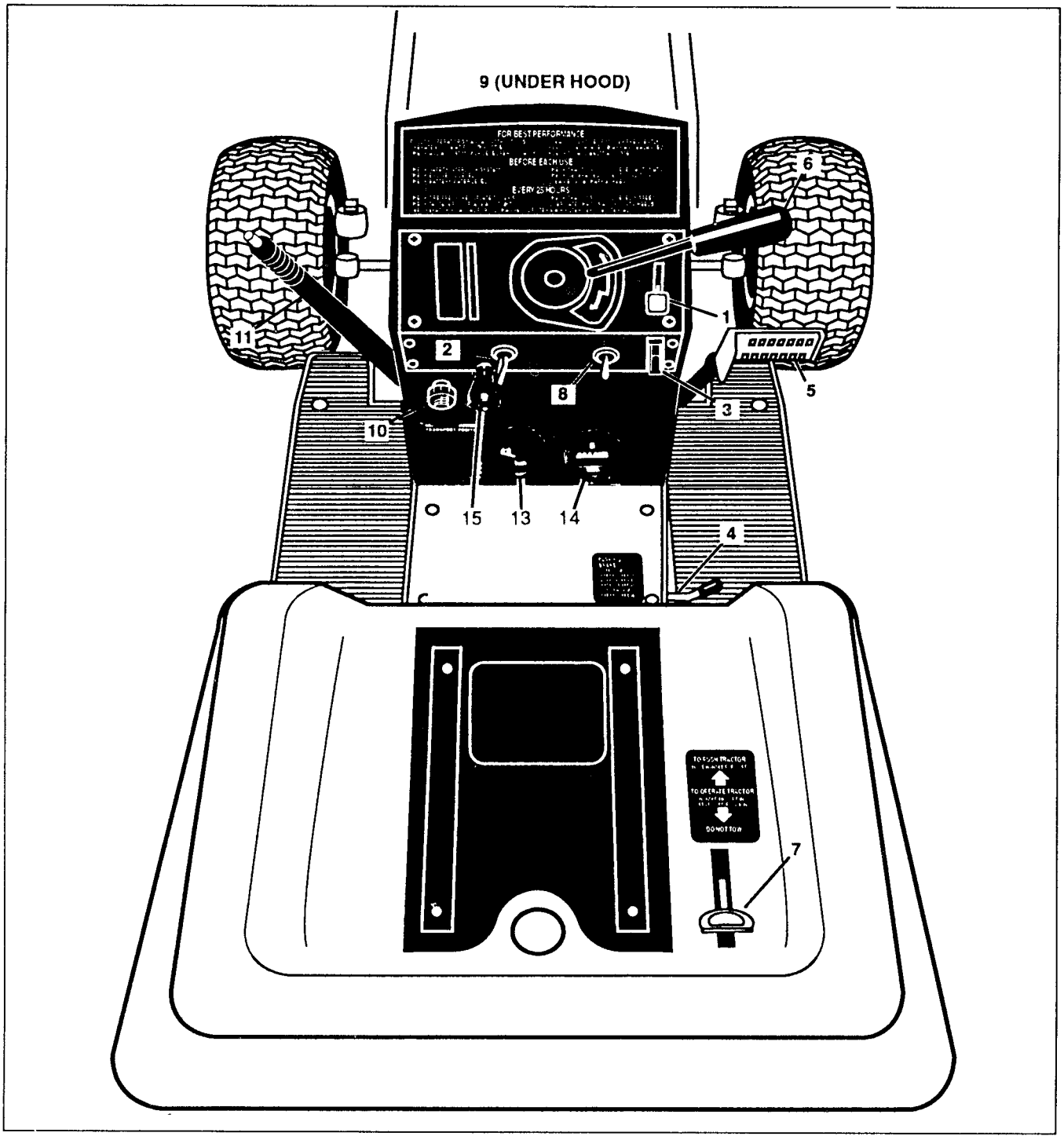
This gage shows the electrical system battery voltage. With the ignition key in the OFF position, the gage is not actuated. When the ignition key is in the RUN position, the gage should read 12 volts or slightly higher. After the engine is started and running, the gage should read between 12 and 15 volts. If the gage reads less than 12 volts, the battery is discharging. If the gage reads 15 volts for long periods of time, check the battery water more often.

### 14. HOURMETER

This gage records the machine's operating hours. It operates when the ignition switch is in the RUN position.

### 15. CHOKE CONTROL

Pull the choke knob out when starting the engine. Slowly push the knob in after the engine starts. If the engine is warm and has been running, choking may not be necessary to restart the engine.



# OPERATING YOUR TRACTOR

## SAFETY INTERLOCK SYSTEM

The safety interlock system incorporates three switches for safe starting.

Starting switches are actuated by the motion control lever, seat switch and PTO clutch control. If the tractor will not start, check that the PTO clutch is disengaged, the motion control lever is in neutral and the seat is occupied. The engine will not start unless all three switches are properly actuated.

The seat interlock system must be tested periodically. To test operation, the following functions must be observed. If not, immediate repairs must be done by your authorized TORO Wheel Horse dealer for your protection.

1. Engine should NOT start if:

   A. Seat is NOT occupied.

   B. PTO is engaged.

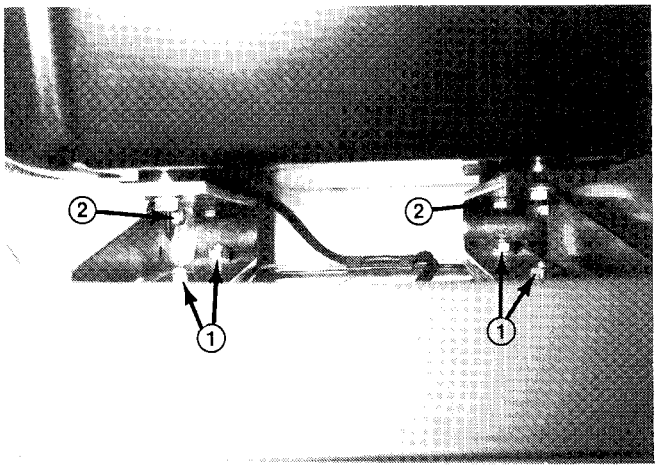
   C. Transmission is NOT in neutral.

   Test each of the above, one at a time.

2. With the engine running and the PTO engaged, test the seat switch by raising off the seat. The engine should shut off. The same should occur with the transmission in gear.

## SEAT CONTROL

For operator adjustment, loosen the bolts under the seat, slide the seat to the desired position and retighten the bolts. For friction adjustment to hold the seat in its flipped position, tighten the pivot bracket nuts.




**Seat Adjustment**

*1. Seat adjustment bolt* *2. Friction adjustment bolt*

## CORRECT ENGINE OPERATION

**IMPORTANT: Before starting the engine, become familiar with all controls. Read this Operator's Manual thoroughly. Always check engine oil level before starting. Always check transmission oil level before starting.**

**DANGER**

- **Care should be taken to avoid inhaling exhaust gases as they contain carbon monoxide gas that is colorless and odorless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal.**
- **Do not run the engine in confined areas such as a closed garage.**

### Starting The Engine

Because of a built-in safety interlock system, your tractor will not start until the transmission is in neutral, the seat is occupied and the PTO is disengaged.

To start the engine place the transmission in neutral, occupy seat and disengage the PTO. Move the throttle control lever to the OPERATE position. Pull the choke control all the way out.

Turn the ignition key clockwise until the starter engages. When the engine starts, release the key. The switch is spring loaded and will return to the RUN position automatically.

**Note:** If the engine falls to start after 30 seconds of continuous cranking, turn the key off and let the starter motor cool. Check for cause of hard starting; consult the Troubleshooting Check List.

Once the engine has started, slowly push in the choke control. If the engine stalls or hesitates during operation, the choke should be applied as necessary until the engine reaches normal operating temperature.

# OPERATING YOUR TRACTOR

### Stopping The Engine

To stop the engine, lower the throttle control to the idle position and turn the ignition key to OFF. If the engine has been working hard, or is hot, let it idle a short time before turning the key off. This practice will help to cool the engine before stopping.

**Note:** In an emergency, the engine may be stopped by turning the ignition key off.

**⚠ CAUTION**

**Always remove the key and set the parking brake when leaving tractor unattended, even if for just a few minutes. Prevent accidents; do not give children or unauthorized persons an opportunity to operate this tractor.**

### Throttle Control

The throttle control regulates the speed of the engine as measured in RPM (Revolutions Per Minute). This control should not be used to regulate the ground speed of the tractor.

The engine in your new TORO Wheel Horse has been designed with a special governor that limits maximum RPM. The governor allows the engine to operate most efficiently at a set speed, and protects it from damage caused by excessive RPM. Always operate the tractor with the throttle control set at full speed.

**IMPORTANT: The engine MUST be operating at full throttle whenever the tractor is in use. Using the tractor while the engine is operating at less than full throttle may result in poor overall tractor performance and cause transmission damage.**

### Choke Control

The choke control activates a 'butterfly' valve in the carburetor. When the choke is partially or completely closed, less air is admitted to the engine. This results in a higher fuel-to-air (richer) mixture that is easier to ignite when the engine is started cold. Warm engines may not need choking.

### Fuel Specification

**⚠ CAUTION**

**Handle fuel with care - it is highly flammable. Use only an approved fuel container. Never add fuel while the engine is running. Never fill the fuel tank indoors. Fill the fuel tank outdoors with extreme care. Replace the gasoline cap securely and wipe up all spilled fuel.**

When the tractor requires refueling, fill the tank with a good grade (85 octane minimum) of regular gasoline. Leaded or unleaded regular gasoline may be used. Do not intermix regular and unleaded gasolines. Do not mix oil with gasoline. Use of gasohol is not recommended by the engine manufacturer, but either blend of 50% or less is permitted.

In general, use of unleaded fuel will reduce build-up of combustion deposits in the engine and contribute to long valve life.

### Oil Specification

To protect your tractor's engine, check the oil level before each use. Complete information concerning recommended oils and how to check oil level is given in the 'Maintaining Your Tractor' section of this manual.

## CORRECT HYDROSTATIC TRANSMISSION OPERATION

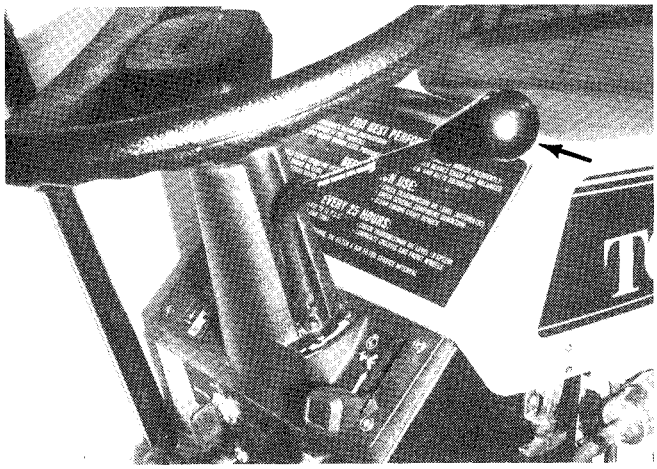
**IMPORTANT: During cold weather, start the engine with the parking brake engaged and transmission pressure released. Run the engine for at least two minutes to allow it to warm up; engage the transmission with the engine at full throttle. For temperatures between 0° and 30° F (-18° and -2° C) let the transmission run in neutral for 5 minutes before attempting to set the unit in motion. For temperatures below 0° F (-18° C) let the transmission run in neutral for 10 minutes before attempting to set the unit in motion. Failure to do so may result in extensive transmission damage.**

# OPERATING YOUR TRACTOR

### To Go Forward

**Note:** Before the tractor will move either forward or backward, the parking brake must be disengaged. ALWAYS depress the brake/return-to-neutral pedal when disengaging the parking brake.

Motion of your tractor is controlled by a single "motion control lever." To go forward, push the lever forward. The farther forward the lever is pushed, the faster tractor will go.



**Motion Control Lever**

> **CAUTION**
>
> **For safe operation, never move the motion control lever too rapidly, especially on grades.**

By adjusting the motion control lever, the forward speed of tractor can be regulated without adjusting the engine throttle control. For heavy pulling, moving the control lever toward neutral reduces tractor ground speed and increases pulling power, just as shifting to a lower gear with a mechanical transmission.

### To Go Backward

To reverse the motion of the tractor, return the motion control lever to neutral, then push the lever down and pull the lever back. The farther back the lever is pulled, the faster the tractor will go in reverse.

> **CAUTION**
>
> **For safe operation, never move the motion control lever too rapidly, especially on grades.**

By adjusting the motion control lever, the reverse speed of the tractor can be regulated without adjusting the engine throttle control.

### To Stop

Stopping the tractor from either forward or reverse direction can be done by one of two methods:

1. Return the motion control lever to its neutral position.

2. Depress the brake pedal.

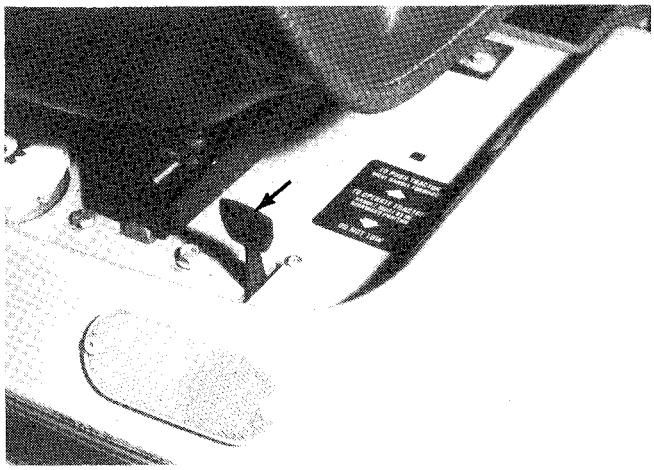
Activating the brake pedal automatically returns the motion control lever to its neutral position and applies a mechanical brake. The brake pedal will hold the motion control lever in neutral. The pedal must be released before the motion control lever can be moved either forward or back.

The tractor is stopped by a "dynamic braking" action inside the hydrostatic transmission and a mechanical brake. Although the tractor will tend to remain stationary in neutral even when brake is released, use of parking brake is recommended to avoid accidental movement when stopped.

### Hand Pushing The Tractor

**IMPORTANT: Hand push the tractor only. Do not tow. Towing can cause severe damage to the hydrostatic transmission.**

Tractors can be pushed at a slow speed. To do this, push the transmission push valve lever forward. Remember to pull back on the push valve control lever to pressurize the transmission.



**Transmission Push Valve Lever**

# OPERATING YOUR TRACTOR

## OPERATION OF THE TRACTOR

When using attachments under normal conditions, your tractor should have sufficient power. On rough, hilly, or wet terrain, adding wheel weights and tire chains will minimize rear tire slippage. All front tires may be fluid filled.

### With Mower

**DANGER**

**Keep all shields and the mower discharge chute in place. Never put your hands or feet under the mower deck. Never attempt to clear the discharge areas or mower blades without disengaging the PTO clutch and removing the ignition key.**

For best operation on average lawns, operate the engine at full throttle while controlling the ground speed with the transmission. Operate the tractor so that its speed across the mowing surface is between 2 and 3.5 mph (3.2 and 5.6 kph)* while mowing grass. Uneven cutting is often a result of excessive ground speed. To correct uneven cutting, reduce the ground speed with the transmission. Average lawns are usually cut at a height between 2 and 3 in. (5 and 7.6 cm). Tall grass and weeds should be cut with the mower in its highest position, making a second pass to cut at the height desired.

**CAUTION**

**Sharp edges of the mower blades can cut you during blade maintenance or adjustment. Use suitable covering over the blade's cutting edges to prevent bodily harm.**

**Average walking speed is 2.5 mph (4 kph).*

### Other Attachments

There are many other special-purpose attachments available that greatly increase the tractor's versatility. Some attachments are custom designed for a particular tractor model, but many others simply use the tractor as a towing vehicle. They attach or remove from the tractor by installing or removing a single drawbar hitch pin. Some of these attachments are ground driven and some are towed, such as a dump cart.

In any case, approach all attachments with the same caution you give any mechanical device. Always read each Operating Instruction Manual carefully before using the attachment. Keep children and pets away from the tractor when it is operating. Never allow any unauthorized personnel to operate equipment.

Your authorized TORO Wheel Horse dealer can help you select attachments for your tractor.

**CAUTION**

- **Exercise care while maneuvering with a grass bagger. Front-to-rear stability could be adversely affected.**
- **TORO Wheel Horse recommends following load limit be observed when using the tractor with a dump cart on slopes. A load limit has been set to provide for safe braking on slopes.**

**150 lbs. (69 kg)**

### With a Rear Bagger

The optional rear-mount grass bagger can affect the way the tractor is operated. Because of the bagger's added weight and the extra power required, operate the tractor in a lower transmission gear.

Under normal usage, the grass bagger bag material is subject to deterioration and wear. Check bag condition frequently and replace when needed.

# MAINTAINING YOUR TRACTOR

**⚠ CAUTION**

**To minimize chance of injury, do all maintenance and adjustments on your tractor with the engine off and the ignition key removed, unless instructed otherwise in this section. Use extreme care when working near operating machinery. Do not wear loose fitting clothing. Remove your watch and jewelry before beginning work and observe common safety practices when using tools.**

## MAINTENANCE CHECK LIST

**Note:** These service intervals are considered **MAXIMUM** under normal conditions. Increase frequency under extremely dirty or dusty conditions.

| Service Operation | Before Each Use | After Each Use | Every 25 Hours | Every 50 Hours | Every 100 Hours |
|---|---|---|---|---|---|
| Check PTO Clutch Adjustment | | | | | X |
| Check Safety Interlock System | X | | | | |
| Check Engine Oil Level | X | | | | |
| Check Battery Water Level | X | | | | |
| Check Tire Pressures | | | X | | |
| Check Brake Adjustment | | | | X | |
| Check Tightness of all Attaching Hardware | | | X | | |
| Check Valve Clearance | | | | | X |
| Clean Engine Fins | | X | | | |
| Clean Air Filter | | | X | | |
| Lubricate Chassis | | | X | | |
| Change Engine Oil (1) | | | | X | |
| Inspect Spark Plug | | | | X | |
| Replace Spark Plug | | | | | X |
| Replace Air Filter | | | | | X |
| Replace Oil Filter | | | | | X |

(1) Refer to text for initial service interval for new tractors.

# MAINTAINING YOUR TRACTOR

## ENGINE

### Oil Quality

For maximum engine protection under all operating conditions, use API Service Classification SE, SF, and SG oil. These letters may appear on oil cans singularly or in combination with other letters.

### Oil Level

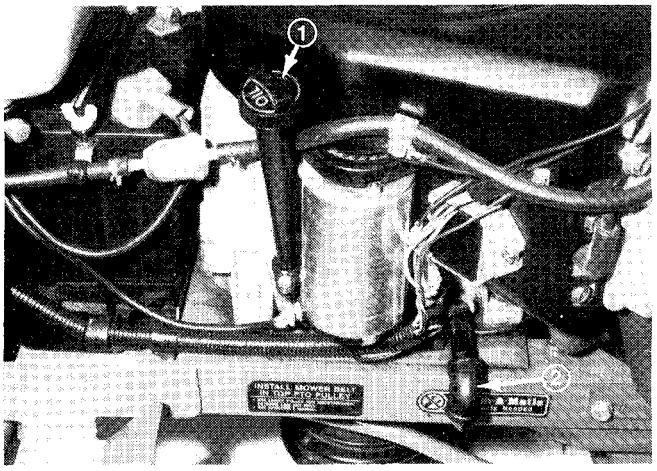
Form a habit of checking the oil level regularly.

**IMPORTANT: Check the engine oil level engine every time you use the tractor. An incorrect oil level can cause extensive internal damage to the engine.**

To check the engine oil level, stop the tractor where the engine is level. Shut off the engine and remove the key.

The oil drain and oil fill locations are shown in the following photos. Remove the oil fill dipstick from the engine. The oil level should be maintained at the range on the dipstick.

**IMPORTANT: Never overfill an engine crankcase with oil.**



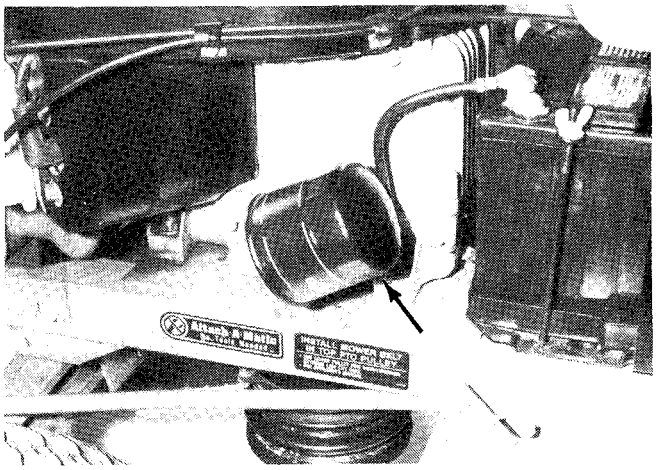

**Engine Oil Check, Fill and Drain**

*1. Oil check* *2. Oil drain*

Be sure to add the same viscosity oil that is presently in the engine.

### Oil Filter

The oil filter should be changed every 100 hrs. If operating conditions are extremely dusty, increase the frequency of oil filter changes.



**Engine Oil Filter**

### Oil Changes

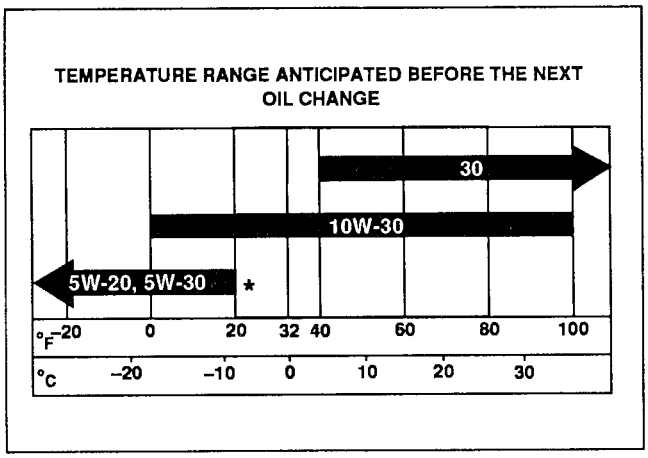
The engine oil in a new tractor should be changed after 8 hours of operation. Thereafter, oil should be changed at 50 operating-hour intervals. If operating conditions are extremely dusty, increase the frequency of oil changes.

Before changing oil, start the engine and let it warm up. This will help the oil flow more freely. Shut off the tractor and remove the ignition key.

**IMPORTANT: Failure to change engine oil at recommended intervals can lead to serious engine damage. This is especially true when using detergent oils that are designed to hold impurities in suspension; when the saturation point is reached, oil may suddenly break down to form a gelatin-like substance that seriously impairs and can even stop the flow of oil. Increase the frequency of oil and oil filter changes if the tractor is operated under extremely dusty conditions.**

Open the oil drain. The oil drain plug is shown in the "Oil Level" section of this manual. After the oil has drained completely, reinstall the drain plug.

Remove the oil dipstick and add about 80% of amount of the oil specified in the following chart. Also shown are charts for selecting the correct oil type and oil viscosity. When using the temperature-viscosity chart, select the air temperature you will most likely encounter within the next 50 hours of operation.




**Engine Oil Temperature-Viscosity Chart**

| ENGINE OIL CHANGE | |
|---|---|
| **Tractor Model** | **Crankcase Oil Capacity** |
| 246-H | 3 pts. (1.4 l)<br>3.5 pts. (1.6 l) w/filter |
| **ENGINE OIL TYPE** | |
| **Engine** | **Oil Type** |
| Briggs & Stratton | API Service SE, SF, SG |

After adding 80% of the amount of oil, check the oil level. Add oil as necessary to bring it into the range on the dipstick.

### Air Filter

Dirt induced through improperly installed, poorly serviced, or inadequate air filter elements, is more often the cause of a worn out engine than long hours of operation. A small amount of dirt will destroy a set of piston rings in a matter of hours. A clogged element causes a richer fuel mix, wastes gasoline, and may lead to formation of harmful sludge deposits.

Clean the engine air cleaner filter after every 25 hours of operation (more often if the tractor is operated under extremely dusty conditions).

Replace the precleaner and dry-type element every 100 hours or once a year, whichever comes first.

Check the following when installing a new or serviced element:

**1.** The back plate must be securely tightened to carburetor. Replace back plate if it is distorted or cracked.

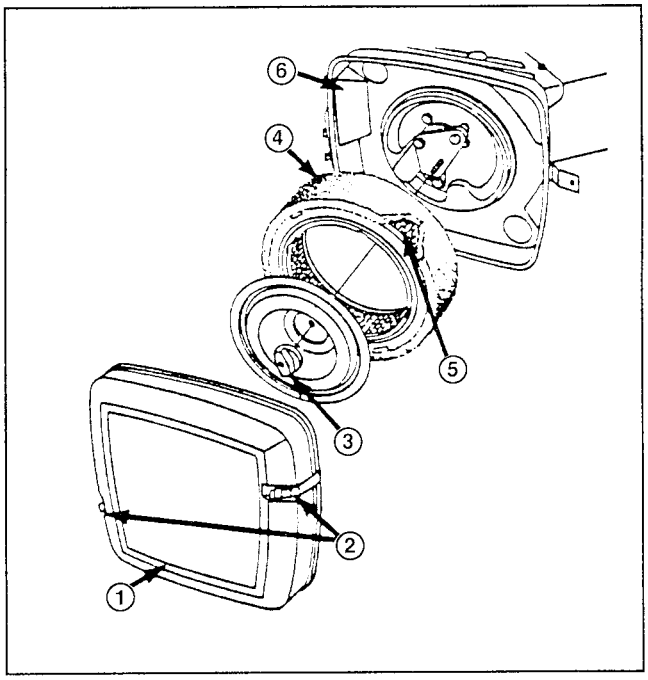
**2.** Gasket surfaces of the element must be flat against the filter case and cover to seal effectively.

**3.** Hardware must be finger tight - do not overtighten. Tighten securely.

**4.** Be sure cover seals and gaskets, where used, are in good condition and will seal properly. Bad gaskets and seals can let unfiltered air into the carburetor.

**Note:** To prevent any dirt or other contaminates from entering the engine, always cover the carburetor in-take manifold when the air cleaner is removed.

### Service Pre-Cleaner and Air Cleaner Body




**Air Filter**

1. *Cover*
2. *Clips*
3. *Knob*
4. *Foam pre-cleaner*
5. *Cartridge*
6. *Body*

*To service the pre-cleaner*, unhook the clips on both sides of the air cleaner and remove the cover. Slide the foam pre-cleaner off the cartridge. Wash it in liquid detergent and water. Squeeze it dry in a clean cloth. Saturate it in the engine oil. Wrap it in a clean, absorbent cloth and squeeze to remove excess oil. Reinstall the pre-cleaner over the cartridge. Reinstall the air cleaner cover and reattach the clips to the sides of the air cleaner body.

**IMPORTANT: Do not use petroleum solvents, such as kerosene, to clean the cartridge. They may cause it to deteriorate. DO NOT OIL THE CARTRIDGE. DO NOT USE PRESSURIZED AIR TO CLEAN OR DRY THE CARTRIDGE.**

*To service the cartridge*, unhook the clips on both sides of the air cleaner and remove the cover. Remove the foam pre-cleaner from the cartridge and service it, if needed. Remove the knob and cover plate. Remove the cartridge and clean it by tapping it gently on a flat surface. If it is very dirty, replace it or wash it in a nonsudsing detergent and warm water solution. Rinse thoroughly with water from inside out until water runs clear. Let the cartridge dry thoroughly before using it. Reinstall the cartridge, cover plate, knob and foam pre-cleaner. Reinstall the air cleaner cover and reattach the clips to sides of the air cleaner body.

### Spark Plug

Engine misfire, or generally poor running, is often caused by spark plugs in poor condition or an incorrect spark plug gap setting. Check the spark plug after each 50 hours of operation and replace it after 100 hours of operation. Replace a spark plug if inspection reveals fouling or excessive deterioration.

Always clean the area around a spark plug when removing it to prevent dirt from entering the engine. Use a spark plug wrench to remove and install the plug.

Check the plug's condition. Good operating conditions are indicated by a light coating of a gray or tan deposit. A dead white, blistered coating could indicate the engine overheating. A black coating could suggest an 'overrich' fuel mixture caused by a clogged air cleaner, or improper carburetor adjustment.

Replace a spark plug that is not in good condition. **Never sandblast, wire brush, scrape or reinstall a spark plug in poor condition. Best results are obtained with a new plug.**

Always check the spark plug gap before installing a new plug or reinstalling an original plug. Use a spark plug gap gauge to adjust the electrode air gap to specification for the engine.

| TRACTOR MODEL | PLUG GAP |
|---|---|
| 246-H | .030 in (.8 mm) |
| Tighten the spark plug to: 15 ft. lbs. (20 Nm) | |

### Carburetor Adjustment

The carburetor was adjusted at the factory and should not have to be reset. If a condition is noted as outlined in the chart below, the carburetor should be readjusted immediately. Continued operation with incorrect carburetor settings can lead to a fouled spark plug, overheating, excessive valve wear or other problems. If black exhaust smoke is noted, check the air cleaner first - an 'overrich' mixture is usually caused by a poorly serviced, clogged air cleaner element, not an improperly adjusted carburetor

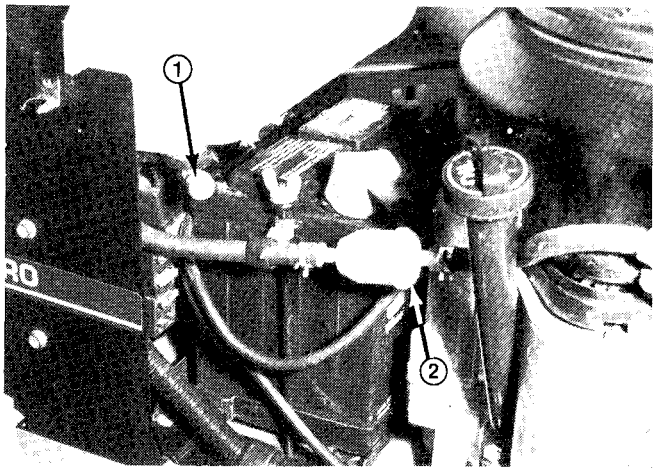
| CONDITION |
|---|
| A. Black, sooty exhaust smoke, engine sluggish. |
| B. The engine misses and backfires at high speed. |
| C. The engine starts, sputters and dies under cold weather starting. |
| D. The engine runs rough or stalls at idle speed |

**Adjustment Chart**

Correct carburetor adjustment requires a significant amount of knowledge and special equipment, such as a good tachometer. Other adjustments, such as governor settings, may also be necessary after adjusting the carburetor. For these reasons, it is suggested that carburetor adjustments be done by an authorized dealer.

### Fuel Filters

An in-tank fuel filter is in the bottom of the gas tank. Servicing the in-tank fuel filter is not required unless fuel becomes contaminated. The in-line fuel filter should be replaced more often if required.




**Fuel Filters**

*1. In-tank fuel filter* *2. In-line fuel filter*

## CHARGING AND ELECTRICAL SYSTEMS

### Alternator

An alternator is used to charge the battery. The alternator charging system normally requires no service other than periodically checking that all exposed wiring and electrical connections on the tractor are clean, tight and in good condition.

**IMPORTANT: Proper polarity is critical with an alternator-equipped charging system. Always disconnect the battery ground cable (negative) before working on any part of the electrical system. Verify that all components are connected correctly before reconnecting the ground cable (negative) or damage to alternator system components will result. Never run the engine if the battery is removed, or if the battery is not connected to the charging system. Serious damage to the voltmeter and charging system components may result.**

### Battery

**⚠ CAUTION**

- **When servicing the battery or any other part of the electrical system, or if battery must be removed for any reason, always disconnect the negative (ground) cable FIRST and reconnect it LAST to avoid electrical shorts.**
- **Battery electrolyte solution is poisonous and can injure eyes, skin and clothing. In event of an accident, flush the affected area immediately with a solution of one part baking soda to four parts water. Notify a physician immediately. If baking soda is not immediately available, flush the affected area with water. Notify a physician immediately.**

Keep the electrolyte level above the plates in each cell by adding distilled water when necessary. The best time to add water is just before operating the machine so water will mix with solution. Do not overfill the battery. Electrolyte solution is corrosive and overfilling can cause damage to surrounding metal parts.

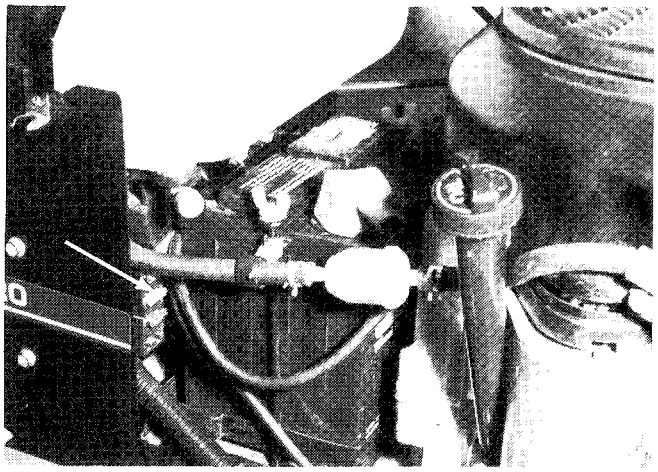
The battery should be maintained at a 1.265 specific gravity charge. When the battery has been removed for servicing, take care to connect cables to the battery exactly as they were before removal.

For longest service life, the battery should be kept clean by wiping it off with a paper towel. Any corrosion around the battery terminals should be removed by applying a solution of one part baking soda to four parts water. A light coating of grease may be applied to all exposed terminal surfaces to prevent corrosion.

**Note:** At temperatures below 32° F (0° C), a full charge must be maintained to prevent cell electrolyte from freezing and causing permanent battery damage.

### Main Fuse

A 25-amp fuse is used to protect the main circuit. A 15-amp fuse is used to protect the light circuit. A 30-amp fuse is used to protect the battery charging circuit. All fuses are automotive type ATO or ATC.



**Fuse Location**

1. *15-amp - Light circuit*
2. *25-amp - Main circuit*
3. *30-amp - Charging circuit*

### Light Circuit

The light circuit is powered by the battery. Lights will operate when the ignition switch is in the RUN position. A 15-amp fuse protects the light circuit.

### Light Bulb Replacement

Headlights are replaced as described below. Care should be taken when handling bulbs, especially if they are broken. Either headlamp bulb is replaced by disconnecting the bulb wires, turning the bulb socket counterclockwise and removing the socket from the hood. Turn the bulb counterclockwise and remove it from its socket. Reverse this procedure to install a bulb.

# MAINTAINING YOUR TRACTOR

## HYDROSTATIC TRANSMISSION

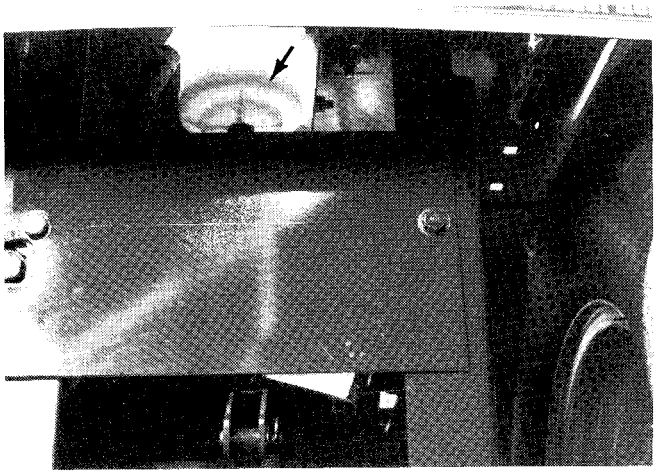
### Oil Quality

The hydrostatic transmission in your TORO Wheel Horse requires a straight SAE 20 weight premium quality motor oil, API Service Classification SC, SD, SE, or SF.

### Oil Level

The lubricant level should be checked before each use. The oil reservoir can be observed through the hole in the fender under the seat. The reading is obtained when the oil is cold; if the oil level is not visible by looking through the reservoir or if oil must be added, unscrew the cap from the reservoir and observe/add oil to the reservoir through the hole in the opening at the rear of the tractor. DO NOT OVERFILL THE TRANSMISSION. Overheating and transmission damage can result.

**Note:** Use care to prevent dirt, clippings or other foreign material from entering the transmission during oil level checks, oil fillings, or oil changes.



**Transmission Oil Level**

1. ***Reservoir oil level (cold) viewed from rear of tractor under fender***

### Oil Changes

Changing lubricant in hydrostatic transmission is not required except for major service. If oil must be added frequently to the transmission, a leak is indicated, which should be corrected immediately.

Oil capacities are:
Hydrostatic Transmission 1-3/4 qt. (1.7 l) SAE 20

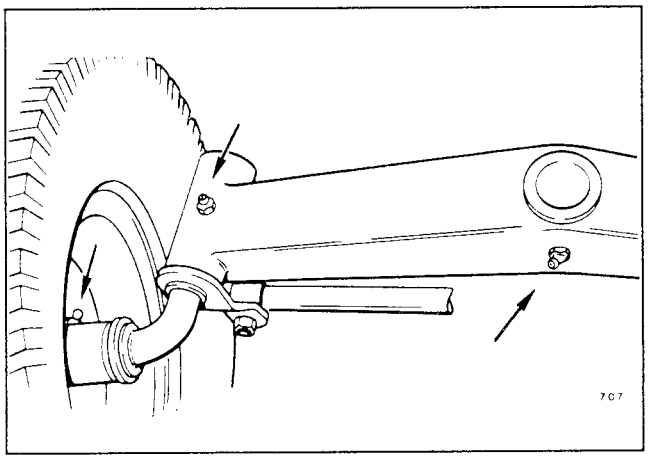
### Cooling Fan

A cooling fan is bolted to the transmission input shaft (on top of the transmission). The fan forces air over the transmission's cooling fins to cool the transmission oil. Replace the cooling fan if it becomes cracked or broken. Be sure to install it so that maximum airflow is directed across the transmission. A significant amount of disassembly is required to replace the fan. For this reason, we suggest fan replacements be done by an authorized dealer.

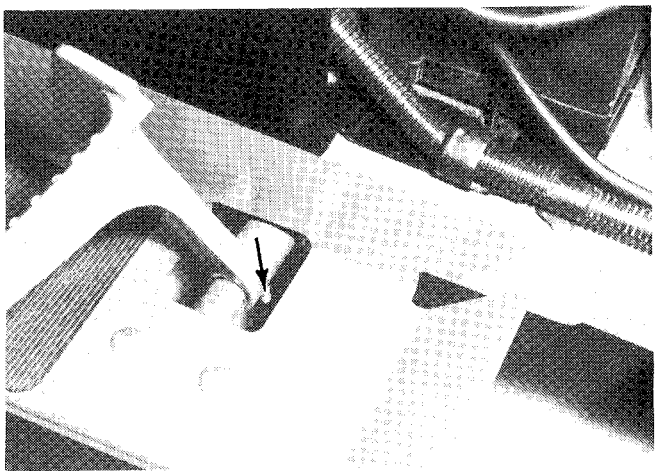
Keep the cooling fins on the transmission clean for best cooling efficiency. Periodically inspect for build-up, and brush or wash out any accumulated dirt or clippings. If pressure washing equipment is used, avoid directing spray at joints, seal areas and the reservoir, to prevent forcing water into system.

## CHASSIS LUBRICATION

The spindles, front wheel bearings, brake/return-to-neutral pedal and front axle pivot are equipped with fittings to facilitate lubrication with a pressure grease gun. Before greasing, clean the zerk fittings carefully to prevent dirt from being forced into them. After inserting grease, wipe off any excess grease. A general purpose grease (lithium base) is used to lubricate the tractor.



**Front Wheel, Spindle and Front Axle Lube Fittings**



**Brake/Return-to-Neutral Pedal Grease Fitting**

# MAINTAINING YOUR TRACTOR

Lubricate the chassis after each 25 hours of operation. All other pivoting arms and levers should be lubricated at the same intervals with either general purpose grease or machine oil, applied directly to wear surfaces.

## BRAKE ADJUSTMENT

Brake adjustment is made at the rear of the tractor.

1. Set the parking brake and loosen the lock nut.

2. Release the transmission push valve.

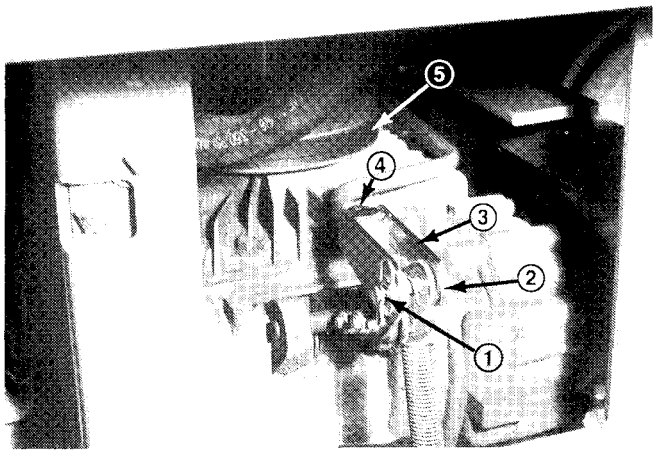
3. Remove the hairpin cotter, spring and clevis pin from the yoke. Turn the yoke one complete revolution for adjustment and reinstall the clevis pin, spring and hairpin cotter.

4. Repeat step 3 until both rear tires skid when the tractor is pushed with the parking brake set.

5. Tighten the lock nut while holding the adjustment screw.

6. Release parking brake and make sure the tractor rolls freely.

If the tractor creeps after the foot pedal is depressed and then released, the neutral setting requires adjustment. See your authorized TORO Wheel Horse dealer for this adjustment.




**Brake Adjustment**

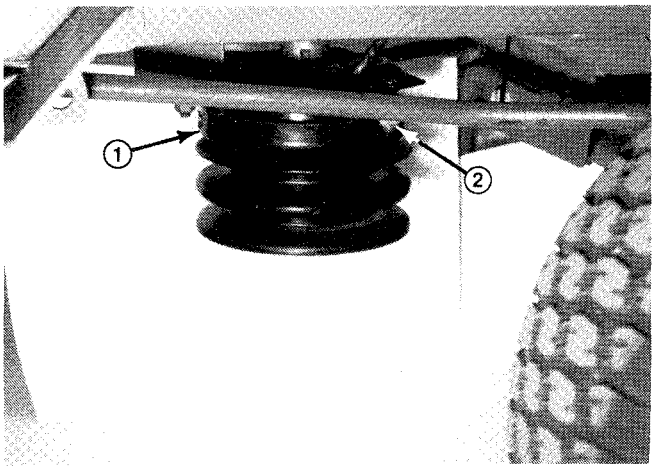
1. *Hairpin cotter*
2. *Clevis pin*
3. *Yoke*
4. *Lock nut*
5. *Transmission pulley*

## PTO CLUTCH/BRAKE ADJUSTMENT

The PTO clutch/brake must be adjusted every 100 hours due to normal wear of friction surfaces.

1. Stop the engine and remove the ignition key.

2. The clutch has three springs and adjustment nuts; all three must be adjusted to the same interval. Insert a 0.010-inch (0.25 mm) feeler gauge into the slot next to the adjustment nut. Turn until you feel a small amount of resistance on the feeler gauge.



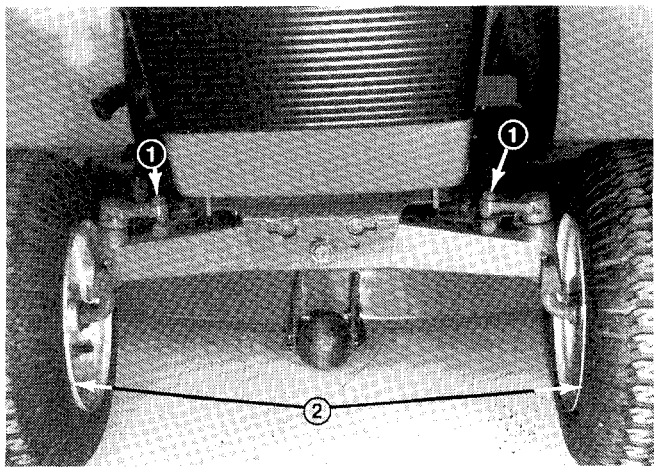

**PTO Clutch Adjustment**

1. *Slots (3) .010" (0.25 mm) feeler gauge*
2. *Springs (3) & adjustment nuts (3)*

## ADJUST FRONT WHEEL TOE-IN

Toe-in should be set at 0.12 to 0.31 inches (3.05 to 8 mm), measured between the wheel rims. To adjust, push the front of the tires outward to take up normal looseness, loosen the jam nut on either steering link and adjust the link to specified tolerance.

If more than two turns are required on one side, both sides should be used for adjustment. Lock the jam nut against the adjustable balljoint end while holding the link. It is important to position wrench flats since this setting positions the steering link in the opening between the tire and frame.




**Front Wheel Toe-in Adjustment**

1. *Adjustment nut & link*
2. *Measure here*

# MAINTAINING YOUR TRACTOR

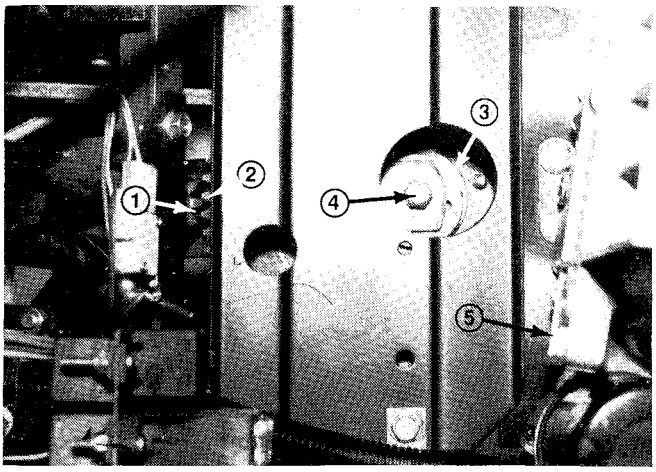
## STEERING GEAR ADJUSTMENT

**1.** Remove the battery and gas tank from the tractor.

**2.** Loosen the nut and position the steering wheel spokes so that they extend outward, left to right. Tighten the nut until the eccentric turns with small amount of friction. Turn the eccentric clockwise until zero clearance is obtained between the end of the gear tooth and the groove of the steering shaft pinion gear. DO NOT OVERTIGHTEN. Torque the nut to 25-35 ft. lbs.

**3.** Turn the wheels left and right. Recheck for zero clearance. Reinstall the battery and gas tank.

**4.** Check the toe-in setting which is affected by adjustment.




**Steering Gear Adjustment**

1. *Steering shaft gear*
2. *Steering gear*
3. *Eccentric*
4. *Nut*
5. *Engine*

## CLEANING AND STORAGE

Wash the tractor regularly with a mild detergent and water. After 30 days, the painted surfaces may be waxed to protect the original finish.

Minor paint scratches or abrasions can be removed with an automotive cleaning and polishing compound. Rubbing compound is not recommended under normal circumstances, as it is highly abrasive. Exposed bare metal surfaces should be given a light coating of oil or grease to prevent rust until permanent repairs can be made. Aerosol cans of TORO Wheel Horse paint are available through your authorized TORO Wheel Horse dealer.

When the tractor will not be used for an extended period, the following steps will help insure minimum difficulty when unit is returned to service:

**1.** Do the required maintenance steps in the "Maintenance Check List".

**2.** Check the tires for proper inflation.

**3.** Drain all fuel from the fuel tank. Start the tractor and let the engine run out of gas. As gasoline grows old, it becomes less volatile and forms harmful gum and varnish deposits in carburetor and fuel pump. DO NOT STORE GASOLINE FOR MORE THAN 2 MONTHS.

**4.** Wash the tractor and repaint all bare metal surfaces.

**5.** Charge the battery. In temperatures lower than 40° F (4° C) a battery will maintain a charge for about 60 days. In temperatures above 40° F (4° C) the water level should be checked and the battery 'trickle charged' every 30 days, (more often in higher temperatures). The battery must be fully charged to prevent freezing and internal damage in weather below 32° F (0° C).

**6.** Remove the key from the tractor.

# TROUBLESHOOTING CHECK LIST

| Symptom | Possible Cause | Possible Remedy |
|---|---|---|
| Engine will not turn over. | 1. Dead battery. | 1. Charge or replace the battery. |
| | 2. Open the safety interlock switch. | 2. Be sure the PTO is disengaged, seat is occupied and gear shift is in neutral. |
| | 3. Starter. | 3. Consult an authorized dealer. |
| | 4. Solenoid. | 4. Consult an authorized dealer |
| | 5. The ignition switch. | 5. Consult an authorized dealer. |
| Engine turns over but will not start. | 1. Spark plug not firing. | 1. Check spark plug condition and reset gap. |
| | 2. No fuel in tank. | 2. Refuel the tractor. |
| | 3. Fuel valve closed. | 3. Open fuel valve. |
| | 4. Improper carburetor adjustment. | 4. Reset carburetor adjustment. |
| | 5. The ignition switch. | 5. Consult an authorized dealer. |
| Engine hard to start. | 1. Spark plug wire grounded or loose. | 1. Check spark plug wires. |
| | 2. Spark plug faulty or improperly gapped. | 2. Check spark plug condition and reset gap. |
| | 3. Magneto defective. | 3. Consult an authorized dealer. |
| | 4. Fuel line clogged. | 4. Clean fuel line; check strainer in fuel tank. |
| | 5. Carburetor dirty or improperly adjusted. | 5. Readjust carburetor. Consult dealer for authorized carburetor service. |
| Engine starts, but operates erratically. | 1. Clogged fuel line. | 1. Clean fuel line and check the filter; check strainer in fuel tank. |
| | 2. Water in fuel. | 2. Drain the old fuel and replace with a fresh supply. |
| | 3. Vent in fuel cap plugged. | 3. Check vent. |
| | 4. Improper carburetor adjustment. | 4. Readjust carburetor. |
| Engine knocks. | 1. Fuel octane too low. | 1. Drain fuel and replace with higher octane supply. |
| | 2. Faulty ignition system. | 2. Consult an authorized dealer. |
| | 3. Engine overheated. | 3. Shut off the engine and allow to cool. |
| Engine occasionally "skips" at high speed. | 1. Spark plug(s) fouled, faulty or gap too wide. | 1. Check spark plug condition and gap. |
| | 2. Faulty ignition system. | 2. Consult an authorized dealer. |
| | 3. Incorrect carburetor adjustment. | 3. Readjust the carburetor. |
| Engine overheating. | 1. Air intake screen or fins clogged. | 1. Clean intake screen and fins. |
| | 2. Oil level too high or too low. | 2. Adjust oil level as necessary. |
| | 3. Fuel mixture too lean. | 3. Readjust carburetor. |
| | 4. Faulty ignition system. | 4. Consult an authorized dealer. |
| | 5. Engine overloaded. | 5. Reduce load on the tractor. |

# TROUBLESHOOTING CHECK LIST

| Symptom | Possible Cause | Possible Remedy |
|---|---|---|
| Engine idles poorly. | 1. Improper carburetor adjustment.<br>2. Improper spark plug gap. | 1. Readjust the carburetor.<br>2. Check condition and gap of spark plug(s). |
| Engine backfires. | 1. Improper carburetor adjustment. | 1. Readjust the carburetor. |
| Engine runs fine, but the tractor will not move. | 1. No transmission pressure.<br>2. Faulty transmission. | 1. Engage transmission lever.<br>2. Consult an authorized dealer. |
| The tractor loses power or transmission overheats. | 1. Transmission oil level too high or too low.<br>2. Transmission damage has resulted from operating the engine at low RPM or contamination of oil. | 1. Adjust oil level as necessary.<br>2. Consult an authorized dealer for service. |
| The engine stalls whenever PTO is engaged. | 1. Excessive load on PTO.<br>2. Faulty interlock system. | 1. Check for jammed attachments. Lessen load on attachment.<br>2. Seat must be occupied to close interlock system. Consult an authorized dealer. |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