

TORO

MODEL NO. R2120501 - 1000001 & UP
MODEL NO. R2120502 - 2000001 & UP
MODEL NO. S212B502 - 1000001 & UP

**OPERATOR'S
MANUAL****TORO WHEEL HORSE®
212-5 AND 212-5SB LAWN TRACTOR**

ENGLISH

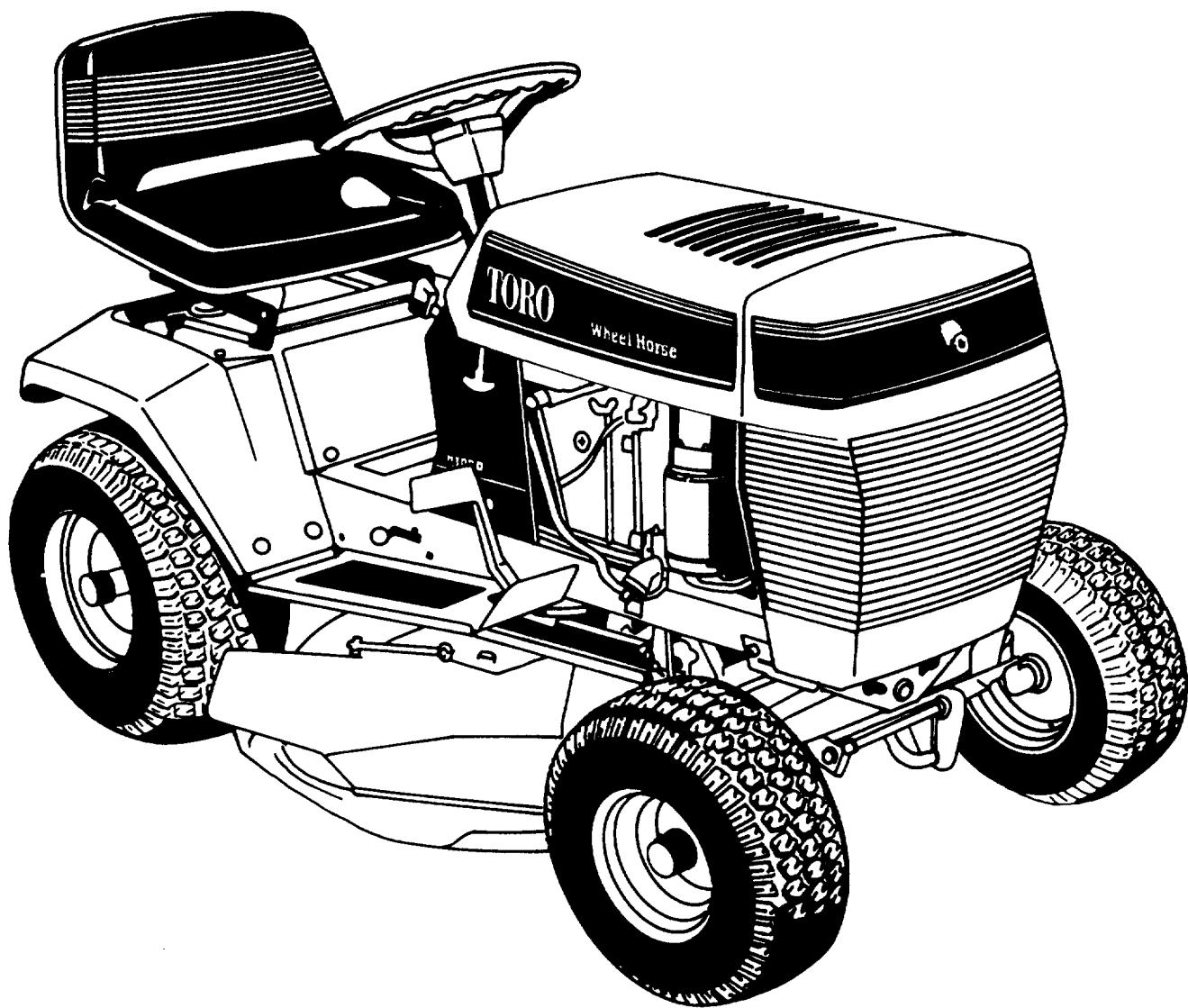


TABLE OF CONTENTS

	Page		Page
SAFE OPERATION PRACTICES-		MAINTENANCE	12
RIDING VEHICLES	1	Maintenance Check List	12
General	1	Oil Recommendations	13
Fuel/Fire Precautions	1	Cleaning The Air Filter	14
Equipment Use And Operation	2	Cleaning And Adjusting The Spark Plug	15
Stability/Tip Over/Traction	2	Adjusting The Carburetor	16
Attachment Use	3	Replacing The Fuel Filter	16
Maintenance	3	The Electrical System	17
TRACTOR SPECIFICATIONS	4	Transmission	18
MODEL AND SERIAL NUMBER LOCATIONS	5	Chassis Lubrication	18
OWNER REGISTRATION AND WARRANTY	5	Steering Gear Tooth Adjustment	19
INSTRUMENTS AND CONTROLS	6	Gear Shift Lever Adjustment	19
OPERATING YOUR TRACTOR	8	Clutch Adjustment	20
Before Starting	8	Brake Adjustment	20
Check The Fuel	8	Drive Belt Tension Adjustment	21
Check The Oil	8	The PTO Clutch/Brake Adjustment	21
Check The Safety Interlock System	8	Cleaning And Storage	22
Adjusting The Seat	9	THE 30-INCH MOWER	
Starting The Engine	9	(WITH 212-5SB TRACTOR)	23
Going Forward Or Backward	9	Mower Adjustments	23
Changing Speed Or Direction	10	Lubrication	25
Stopping	10	Blade Maintenance	25
Shutting Off The Engine	10	Underside Cleaning	26
Using Your Tractor With Attachments	10	Mower Drive Belt Replacement	26
		Mower Removal And Installation	26
		TROUBLESHOOTING CHECK LIST	28



CAUTION

This symbol marks important instructions relating to your personal safety. To avoid injury, read and follow such instructions carefully.

When the manual refers to the left or right side of the vehicle, it means your left or right when standing in the operating position.

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, such as disengaging the power-take-off, lowering attachments, shifting into NEUTRAL, setting the parking brake, stopping the engine and removing 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. 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.*
- 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.

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.

SAFE OPERATION PRACTICES-RIDING VEHICLES

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

- Use only approved drawbar hitch points.
- Limit loads to those you can safely control.
- Do not turn sharply. Use care when backing.
- 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:

- Mow only in daylight or in good artificial light.
- Never adjust cutting-height while the engine is running if you must dismount to do so.
- Shut off the engine when unclogging the chute.
- 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. If you use the machine with a snowblower and the auger becomes plugged or jammed:

- Declutch the snowblower and stop the vehicle engine immediately.
- Disconnect the spark plug wire(s).
- Clear snow from the discharge chute if it is plugged.
- If the auger is jammed, remove the foreign object and repair any damage to snowblower before you continue.
- Reconnect the spark plug wire(s) and resume operation.

61. Never permit anyone to stand near the snowblower auger or discharge opening. Objects may be present in snow, which when thrown, could cause injury.

62. When using snow/dozer blades:

- Do not hit solid objects. This can damage blades and injure the operator.
- Always travel at a safe, slow speed.

63. Keep all persons at safe distance away when operating tillers. Always disengage the PTO, lower the attachment and remove the ignition key before making any adjustments.

64. If the tiller starts to push the vehicle, disengage the PTO clutch immediately.

65. Use chains, counterweight(s) or wheel weights when necessary.

MAINTENANCE

66. 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.

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

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

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

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

71. 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.

72. 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.

73. 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.

TRACTOR SPECIFICATIONS

ENGINE:

MACHINE MODEL	ENGINE MODEL*	RATED H.P.	DISPLACEMENT cu.in./cc	BORE in./mm	STROKE in./mm	IGNITION
212-5	E125V-N/10964B	12.5	23.7/389	3.31/84.1	2.76/70.0	Electronic
212-5SB	B876707-011601	12.5	28.4/465	3.44/87.3	3.06/77.7	Electronic

* Letter Prefix: B = Briggs & Stratton; E = TORO POWER PLUS. Basic engine model number shown; type and serial numbers from the engine identification plate are required to completely identify the engine.

5-SPEED TRANSMISSION: APPROXIMATE GROUND SPEEDS (AT FULL THROTTLE):

1st	212-5: 0.9 mph (1.4 kmh);	212-5SB: 0.8 mph (1.3 kmh)
2nd	212-5: 1.2 mph (1.9 kmh);	212-5SB: 1.1 mph (1.8 kmh)
3rd	212-5: 1.8 mph (2.9 kmh);	212-5SB: 1.7 mph (2.7 kmh)
4th	212-5: 2.7 mph (4.3 kmh);	212-5SB: 2.5 mph (4.0 kmh)
5th	212-5: 4.1 mph (6.6 kmh);	212-5SB: 3.8 mph (6.1 kmh)
Rev.	212-5: 2.4 mph (3.9 kmh);	212-5SB: 1.8 mph (2.9 kmh)

ELECTRICAL SYSTEM:

Type:	12 Volt, D.C., Negative Ground
Battery:	160 Cold Cranking Amps.
Alternator:	16 Amp-regulated circuit

TIRES:

MODEL	FRONT SIZES	REAR SIZES	PRESSURE
212-5	15 x 6.00-6	18 x 9.50-8	Front 12 psi (82.7 kPa)
212-5SB	13 x 5.00-6	16 x 7.50-8	Front 12 psi (82.7 kPa)

PHYSICAL DATA:

MODEL	HEIGHT in./cm	LENGTH in./cm	WIDTH in./cm	WHEEL BASE in./cm	INSIDE TURNING RADIUS in./cm	NET WEIGHT (APPROXIMATE) lbs/kg
212-5	36/91.4	63/160	31/78.7 without mower	44.5/113	25/63.5	329/134
212-5SB	35.3/89.7	59.5/151.1	35.3/89.7 with mower	44.5/113	25/63.5	367/137

TUNE-UP AND MAINTENANCE SPECIFICATIONS:

TRACTOR MODEL	POINT GAP in./mm	TIMING MARK LOCATION	IGNITION TIMING (BTDC)	SPARK PLUG TYPE*	SPARK PLUG GAP in./mm	DIRECTION OF ROTATION (Fac, DR.P.)	GOVERNED MAX. RPM (No Load)
212-5	N/A	N/A	Fixed	BPR4HS-10*	.035/0.88	Counterclockwise	2800
212-5SB	N/A	N/A	Fixed	RJ19LM	.030/0.76	Counterclockwise	2800

* Or equivalent (Champion number shown)

LIQUID CAPACITIES:

CHASSIS:

Crankcase:	1.5 qts (1.42 l) w/o Filter 1.7 qts (1.61 l) w/Filter	Zerk Fittings:	5
Fuel Tank:	6 qt (5.6 l)	PTO Brake Adjustment (engaged)	.012 (0.3 mm) gap between brake pad and pulley

Front Wheel end Play: 0-.015 in. (0.4 mm)

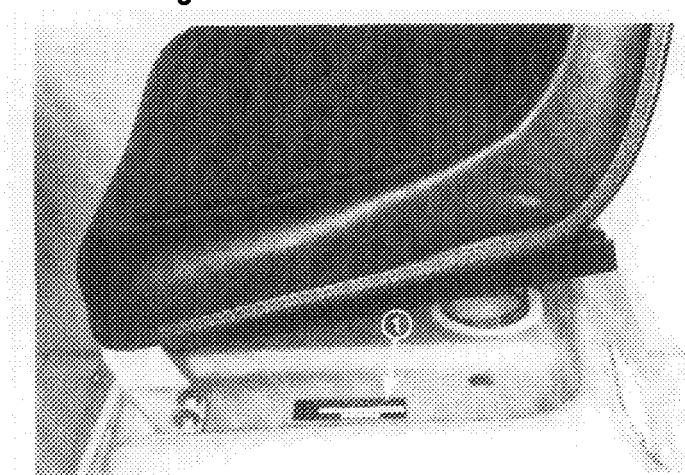
MODEL AND SERIAL NUMBER LOCATIONS

Model and serial numbers identify your new tractor and major attachments. Always refer to these numbers when consulting your dealer or factory about service, parts, or other information. If the plates showing the model and serial numbers are removed during repair operations, they should always be replaced.

The **tractor** vehicle identification number plate is just below the seat on the rear fender. The **engine**

identification numbers are on the engine shrouding and show your tractor's model, specification or type number and the serial number of the tractor's engine. Major attachments also have a vehicle identification number plate attached to them.

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



1. *Model and Serial Number Plate Location*

Tractor Model and Serial Number

MODEL	<input type="text"/>
SERIAL	<input type="text"/>
TORO Wheel Horse 515 WEST IRELAND ROAD SOUTH BEND, INDIANA 46614 USA	

Engine Identification Number

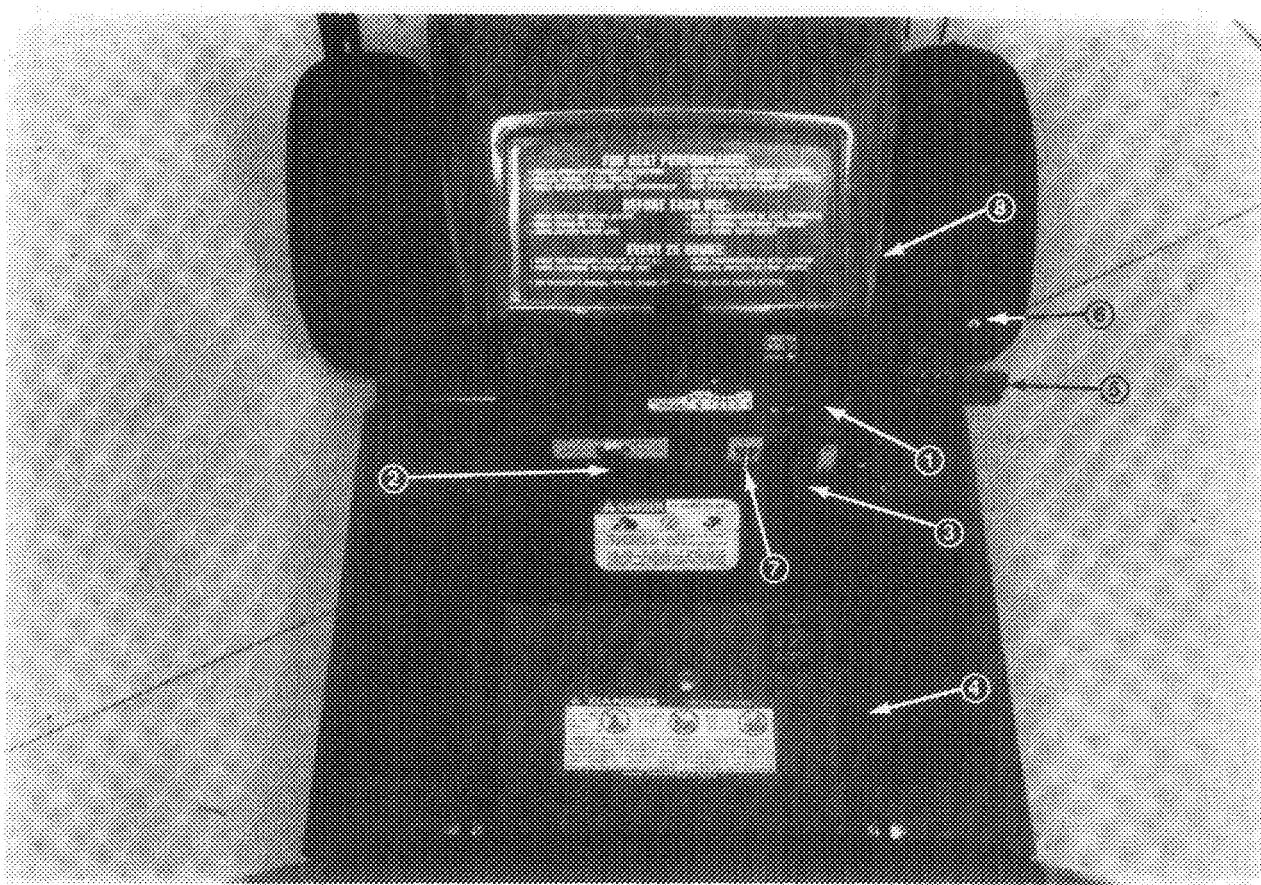
Model _____
Type or Spec. No. _____
Serial No. _____

OWNER REGISTRATION AND WARRANTY

Service and warranty assurance is 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 tractor 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. **All of us at TORO Wheel Horse want you to be satisfied with your TORO Wheel Horse tractor; please don't hesitate to contact us for assistance.**

INSTRUMENTS AND CONTROLS



1. COMBINED THROTTLE/CHOKE CONTROL

A combined throttle/choke control is on the upper right side of the dash panel. To start the engine, raise the lever all the way up past the detent to the CHOKE position. To operate the tractor, raise the lever to the detent position near the top of the slot. Lower the lever before shutting off the engine. If the engine is warm or has been running, raising the lever to the CHOKE position may not be necessary to restart it.

2. THE IGNITION SWITCH

The ignition switch is on the left center of the dash panel near 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 ignition 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 you turn the switch to OFF, the engine stops and all electrical accessories are turned off.

3. PTO (POWER TAKE-OFF) CLUTCH SWITCH

The PTO switch is located on the right center of the dash panel below the steering column. Push down on top of switch cover and pull up on bottom of cover to engage PTO. Push down on switch cover to disengage 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 a disengaged position. If the operator's seat is vacated while the PTO is engaged, the seat switch will automatically shut the engine off.

4. THE PARKING BRAKE LOCK LEVER

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

INSTRUMENTS AND CONTROLS

5. BRAKE/CLUTCH PEDAL

The brake/clutch pedal is at the front of the tractor just to the right of the steering console. Pushing down on the pedal declutches the drive belt, disconnecting the engine from the transmission, and applies the brake. Always release the pedal slowly when engaging the clutch. Always depress the pedal when shifting the transmission into or out of gear and when starting the engine.

6. GEAR SHIFT LEVER

The gear shift lever is to the right side of the steering wheel. Select any forward speed by moving the lever right or left as shown on the shift pattern decal. Push the lever down and pull back for reverse. The gear

shift lever actuates a safety switch in the starter circuit; the tractor will not start until the transmission is in NEUTRAL.

7. LIGHT SWITCH

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

8. FUEL SHUT-OFF VALVE

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

OPERATING YOUR TRACTOR

BEFORE STARTING



CAUTION

Before starting the engine, become familiar with all controls. Read this Operator's Manual thoroughly. Always check the engine oil level before starting the engine. Always check battery water level and safety interlock system before starting.

When the tractor requires refueling, fill the tank with a good grade (85 octane minimum) of regular gasoline. Leaded or unleaded may be used. Do not intermix regular and unleaded gasolines. Do not mix oil with gasoline. Use of gasohol fuel is not recommended.

Unleaded fuel reduces the build-up of combustion deposits in the engine and contributes to long valve life.

CHECK THE OIL

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 in the Maintenance section of this manual.

CHECK THE FUEL



DANGER

- **Gasoline is highly flammable, use caution when storing or handling it.**
- **Do not fill the fuel tank while the engine is running, hot, or when the machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many meters (feet) away.**
- **DO NOT SMOKE while filling the tank.**
- **Always fill the fuel tank outside and wipe up any spilled fuel before starting the engine.**
- **To prevent spilling fuel, use a funnel or spout and fill the tank to about 25 mm (1 in.) below the filler hole. DO NOT OVERFILL.**
- **Use gasoline for the engine only, not for any other purpose.**
- **Store gasoline in a clean, safety approved container and keep the container capped.**
- **Keep gasoline in a cool, well-ventilated place. Never store gasoline in an enclosed area such as a hot storage shed.**
- **Never buy more than 30 days' supply to assure volatility.**
- **Because many children like the smell of gasoline, keep it out of their reach because the fumes are explosive and dangerous to inhale.**

CHECK THE SAFETY INTERLOCK SYSTEM

The safety interlock system includes three switches for safe starting.

Starting switches are actuated by the gear shift lever and the PTO clutch control. If the tractor will not start, check whether the PTO clutch is disengaged and the transmission is in NEUTRAL.

The safety interlock system must be tested periodically. To test it, you should observe the following:

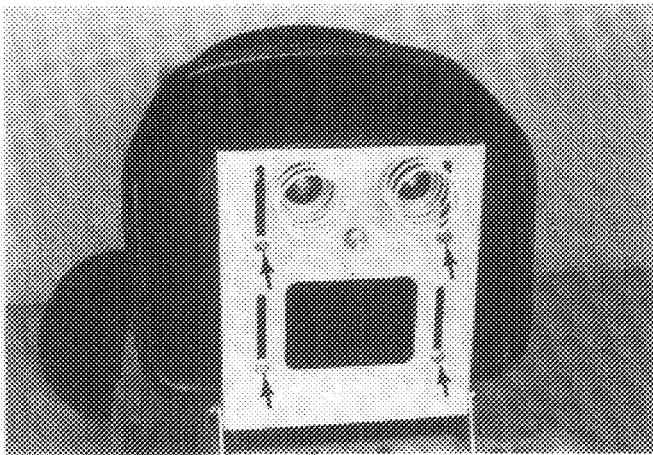
1. The engine should NOT start if:
 - A. The transmission is in gear.
 - B. The PTO is engaged.Test each, one at a time.
2. With the engine running and the PTO engaged, test the seat switch by rising off the seat. The engine should shut off.

If the safety interlock system doesn't operate as described above, have an Authorized TORO Wheel Horse Dealer make immediate repairs for your protection.

OPERATING YOUR TRACTOR

ADJUSTING THE SEAT

To move the seat, loosen the bolts under the seat, slide the seat to desired position and retighten the bolts.



Seat Adjustment

STARTING THE ENGINE



DANGER

Avoid inhaling exhaust gases because they contain carbon monoxide gas, which is colorless and odorless. Carbon monoxide is a dangerous gas that can cause unconsciousness and death. Do NOT run the engine in confined areas such as a closed garage.

Because of the safety interlock system, your tractor will not start until you depress the foot pedal with the PTO disengaged.

To start the engine, move the gear shift lever to the NEUTRAL position and disengage the PTO.

Move the throttle/choke control lever to the CHOKE position.

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.

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

Once the engine has started, slowly return the throttle/choke control to the OPERATE position. If the engine stalls or hesitates during operation, apply the choke until the engine reaches normal operating temperature.

GOING FORWARD OR BACKWARD

The throttle control regulates the engine speed as measured in rpm (revolutions per minute). This control **should not** be used to regulate the tractor's **ground speed**.

Always operate the tractor with the throttle control set at full speed. The engine has a special governor that limits maximum rpm. This allows the engine to operate most efficiently at a set speed and protects it from damage caused by excessive rpm.

IMPORTANT: The engine MUST operate at full throttle whenever you use the tractor. Operating at less than full throttle may result poor tractor performance and the battery may discharge.

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

The tractor has a reverse "lock out" that helps prevent shifting into reverse accidentally. To shift the tractor into reverse, push the lever down and pull it back into the reverse position.

To go forward or backward, depress the clutch/brake pedal. Move the gear shift lever to the desired forward or reverse speed. The shift plate decal identifies various speeds. Slowly release the pedal. As you release the pedal, the tractor will begin to move.



CAUTION

Always release the brake/clutch pedal slowly when starting the tractor in motion. Sudden starts can be damaging to equipment and could cause loss of operator control.

OPERATING YOUR TRACTOR

CHANGING SPEED OR DIRECTION

When you need to change ground speed or direction, always bring the tractor to a complete stop by depressing the clutch/brake pedal.

IMPORTANT: Never try to shift the gears with the tractor in motion. Severe transmission damage may result.

Change gears as you desire. Ground speed for each gear is shown in the specifications at the beginning of this manual. It is not necessary to shift "up" or "down" through the gears with the tractor in motion. The tractor has sufficient power to move out in any gear. If the tractor will not move out in a selected gear with a heavy load attached, use a lower gear.

STOPPING

To stop the tractor, depress the clutch/brake pedal. Always engage the parking brake before leaving the tractor.

The Parking Brake

The parking brake should be set every time you leave the tractor. To set the parking brake, depress the foot pedal and lift up on the parking brake release lever. Hold the release lever up and release the foot pedal to set the parking brake. To release the parking brake, push on the foot pedal and then release it.



Parking Brake

1. **Parking Release Lever**
2. **Foot Pedal**

SHUTTING OFF THE ENGINE

To stop the engine, return the throttle lever 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 off the key. This will help cool the engine before stopping.

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

CAUTION

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

USING YOUR TRACTOR WITH ATTACHMENTS

Because of your tractor's engine power, you should not have any problems using attachments under normal conditions. On rough, hilly or wet terrain, adding wheel weights and tire chains will minimize rear tire slippage. The front tires may be fluid filled.

Using A Mower

DANGER

Keep all shields and mower discharge chute in place. Never put hands or feet under the mower deck. Never try to clear 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 at 2 to 3.5 mph (3.2 to 5.6 kmh)* while mowing grass.

Note: Average walking speed is 2.5 mph (4 kmh).

Excessive ground speed often causes uneven cutting. Correct it by shifting into a lower gear to reduce the ground speed.

Typical lawns are usually cut at a height between 2 and 3 in. (5-7.7 cm). Cut tall grass and weeds with the mower in its highest position, then make a second pass cutting to the height desired. Always keep the mower blade sharp.

OPERATING YOUR TRACTOR

Using A Snow Blade

Be careful and maintain a slow ground speed whenever using the snow blade.

Striking a solid object may cause injury to you or damage to the blade.

You should add tire chains and wheel weights to improve traction, if necessary.

Using Other Attachments

Many attachments simply use the tractor as a towing vehicle. They are attached or removed from the tractor by installing or removing a single drawbar hitch pin.

Some attachments are powered by a separate gasoline engine, some are "ground driven" and some are simply towed, such as a lawn sweeper or dump cart. In any case, approach all attachments with the same caution you should give any mechanical device. Always read each Operating Instruction Guide carefully before using the attachment. Keep children and pets away from the operating vehicle. Never allow unauthorized personnel to operate the equipment.

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

Dump Cart Load Limits

Load limits have been set for safe braking on slopes. We recommend you observe the following load limits when using the rider with a dump cart.

150 lbs (69 kg)

MAINTENANCE

CAUTION

To minimize the chance of injury, do all maintenance and adjustments on your tractor with the engine off and the Ignition key removed, unless instructed otherwise. 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 are maximum service intervals under normal operating conditions. Increase the frequency under dirty or dusty conditions.

Check	Before Each Use	After Each Use	Every 25 Hours	Every 50 Hours	Every 100 Hours	Every 150-500 Hours
PTO Clutch Adjustment						
Safety Interlock System	X				X	
Engine Oil Level	X					
Battery Water level	X					
Tire Pressures			X			
Check Brake Adjustment				X		
Tightness of all Attaching Hardware			X			
Valve Clearance ²		X				X
Clean Engine Cooling Fins				X		
Clean Foam Air Filter			X			
Lubricate Chassis & Mower			X			
Change Engine Oil ¹			X			
Inspect Spark Plug					X	
Replace Spark Plug						X
Replace Air Filter						X
Replace Fuel Filter (Briggs & Stratton only)						X
Replace Oil Filter ²					X	

¹ Refer to the text for the initial service interval for new riders.

² TORO POWER PLUS Engine only

MAINTENANCE

OIL RECOMMENDATIONS

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

Oil Level

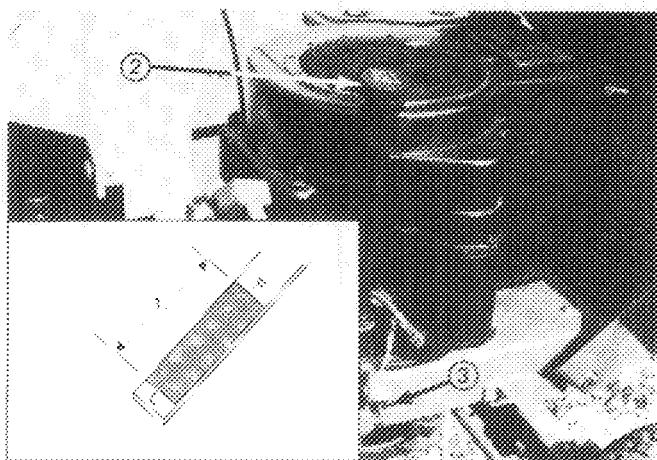
IMPORTANT: Check the engine's oil level every time you use the tractor. An improper oil level can cause extensive damage to the engine.

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 are shown in the following photos.

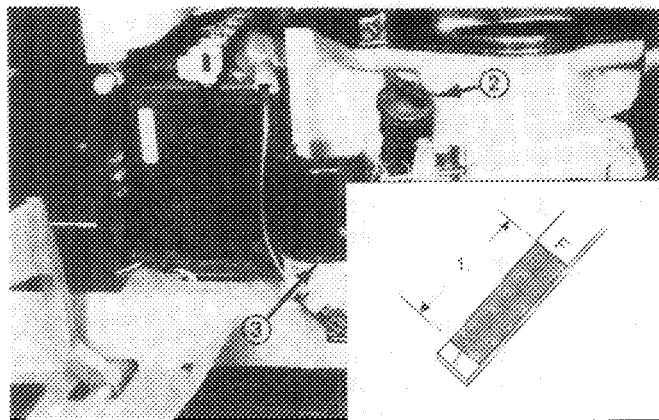
Remove the oil dipstick. The oil level should be at the top of the oil range on the dipstick. Add the same viscosity oil that is presently in the engine. (New tractors are shipped with SAE 10W30 oil in the crankcase.)

IMPORTANT: Never overfill the engine crankcase with oil.



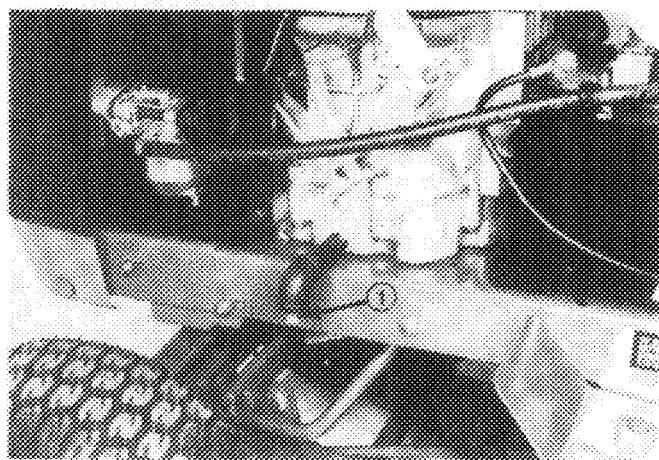
Briggs and Stratton Engine Oil Check, Fill & Drain

1. *Correct Oil Level*
2. *Dipstick & Fill Tube*
3. *Oil Drain*



TORO POWER PLUS Engine Oil Check, Fill and Filter

1. *Correct Oil Level*
2. *Oil Dipstick & Fill Tube*
3. *Oil Filter*



TORO POWER PLUS Engine Oil Drain

1. *Oil Drain*

Oil Filter

Change the oil filter after the first 50 hours of operation. After that, it should be changed after every 100 operating hours. Change the filter more often if you operate the machine in extremely dusty conditions.

MAINTENANCE

Oil Changes

Change the engine oil in a new engine after the first 5 hours of operation. After that, change the oil at 25 operating-hour intervals. If operating conditions are extremely dusty or dirty, change the oil more often.

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

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

Open the oil drain. After the oil has drained completely, reinstall drain plug or cap.

Remove the oil dipstick and add about 80 percent of amount of oil specified in following chart.

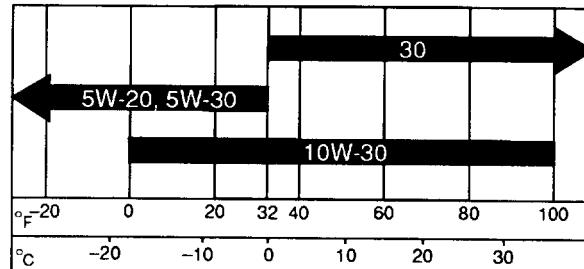
Also shown are charts for selecting correct the oil type and oil viscosity. When using temperature-viscosity chart, select air the temperatures you will most likely encounter within the next 25 hours of operation.

ENGINE OIL CHANGE	
Tractor Model	Crankcase Oil Capacity
212-5	1.5 quarts (1.4 liters)
212-5SB	1.5 quarts (1.4 liters)

ENGINE OIL TYPE	
Engine	Oil Type
212-5SB (Briggs & Stratton)	API Service SC, SD, SE or SF
212-5 (TORO POWER PLUS)	API Service SF, SF/CC, or SF

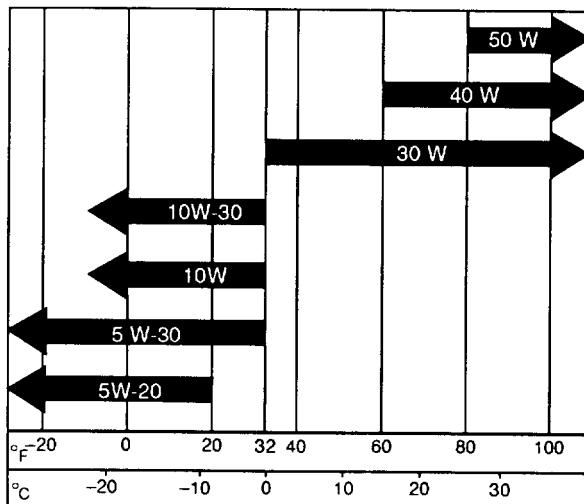
ENGINE OIL TEMPERATURE-VISCOSITY CHART BRIGGS & STRATTON ENGINE (212-5SB TRACTOR)

TEMPERATURE RANGE ANTICIPATED
BEFORE THE NEXT OIL CHANGE



ENGINE OIL TEMPERATURE-VISCOSITY CHART TORO POWER PLUS ENGINE (212-5 TRACTOR)

TEMPERATURE RANGE ANTICIPATED
BEFORE THE NEXT OIL CHANGE



After adding 80 percent of the prescribed amount of oil, check the oil level. Add oil as necessary to bring the oil to the FULL level.

CLEANING THE AIR FILTER

A clogged element also causes a richer fuel mixture that wastes gasoline, and may lead to the formation of harmful sludge deposits.

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

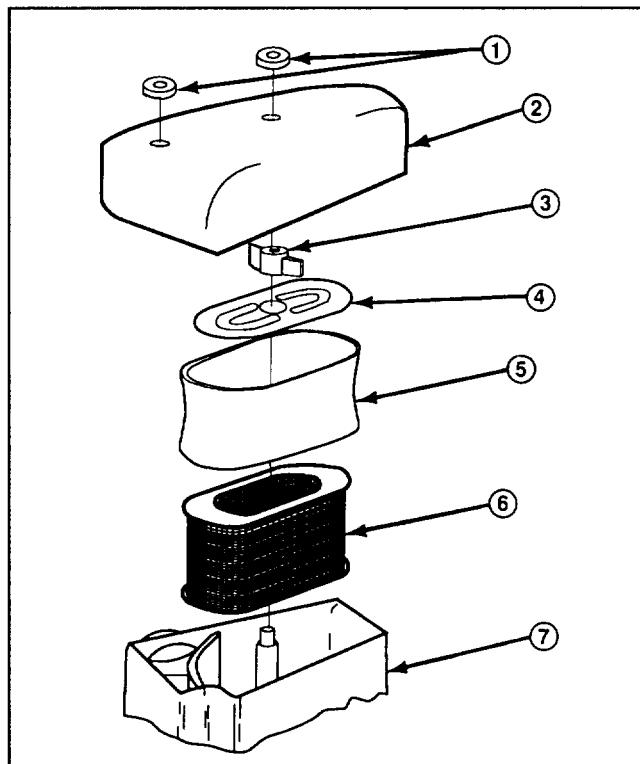
MAINTENANCE

Check the following when installing a new or serviced element:

1. The back plate must be securely tightened to the carburetor. Replace the back plate if it is bent or cracked.
2. Gasket surfaces of the element must be flat against the back plate and cover to seal effectively.
3. Hardware must be finger tight—but don't overtighten.
4. Be sure cover seals and gaskets are in good condition and will seal well. Bad gaskets and seals can let unfiltered air into the carburetor.

IMPORTANT: To prevent any dirt or other contaminants from entering the engine, always cover the carburetor air horn when you remove the air cleaner.

To service the element, remove the cover attaching hardware and lift off the cover, precleaner and dry-type element. Clean the dry type air filter element by tapping it lightly on a flat surface to remove loose dirt particles. Replace the element if dirt does not drop off easily. Do not attempt to blow dirt off with compressed air because this can puncture the filter element.



TORO POWER PLUS Air Cleaner

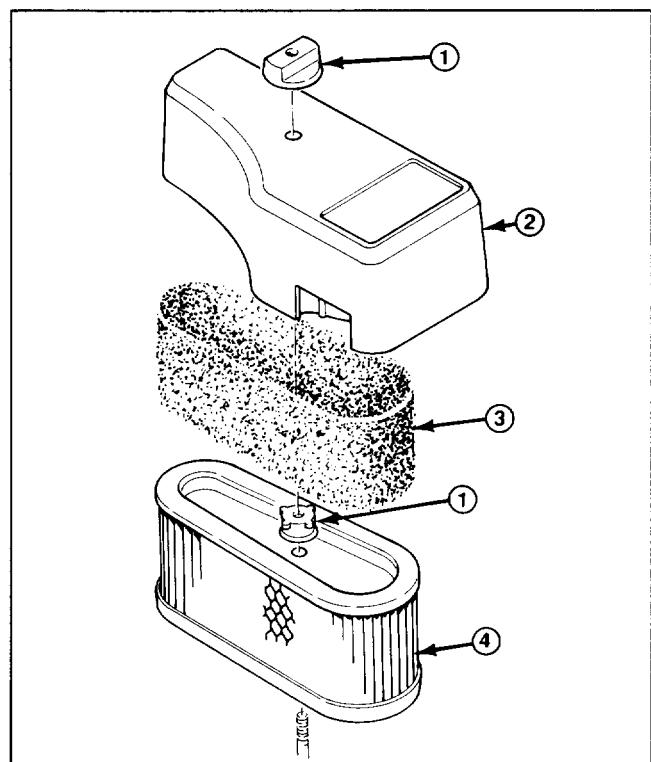
1. Knobs	5. Element Wrapper
2. Air Cleaner Cover	6. Air Cleaner Element
3. Wing Nut	7. Adapter
4. Element Cover	

Foam precleaners are used over filter elements. Clean them when you service the air cleaner. Wash the precleaner in a solution of liquid dishwashing detergent and water. Squeeze out excess water and allow it to dry. Saturate the precleaner in engine oil, then squeeze out excess oil and install the precleaner on the element.

CLEANING AND ADJUSTING THE SPARK PLUG

Engine misfires, or generally poor operation, are often caused by a spark plug in poor condition or with an incorrect spark plug gap setting. Check spark plugs after each 50 hours of operation and replace them after 150–200 hours of operation. Also, replace a spark plug if inspection reveals fouling or excessive deterioration.

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



Briggs & Stratton Air Filter

1. Knobs	3. Foam Precleaner
2. Air Cleaner Cover	4. Air Cleaner Element

MAINTENANCE

Check the plug's condition. Good operating conditions are indicated by a light coating of gray or tan deposit. A dead white, blistered coating could suggest engine overheating. A black coating could indicate 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 otherwise service 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
212-5	.035 in. (0.88 mm)
212-5SB	.035 in. (0.76 mm)

Tighten the spark plugs to: 15 ft lbs (20 Nm)

ADJUSTING THE CARBURETOR

The carburetor is set at the factory and should not have to be reset. However, if you find a condition as outlined in the charts below, have the carburetor readjusted immediately. Continued operation with incorrect carburetor settings can lead to a fouled spark plug, overheating, excessive valve wear or other problems.

One caution: If you see black exhaust, check the air cleaner first—an "overrich" mixture is usually caused by a poorly serviced, clogged air cleaner element, not an improperly adjusted carburetor.

Conditions

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

Possible Cause/Probably Remedy

- A. Mixture too rich—readjust the idle or main fuel needle
- B. Mixture too lean—readjust the idle or main fuel needle.
- C. Mixture too lean—readjust the idle or main fuel needle.
- D. Idle speed too low or improper idle adjustment—readjust speed then the idle adjustment screw if needed.

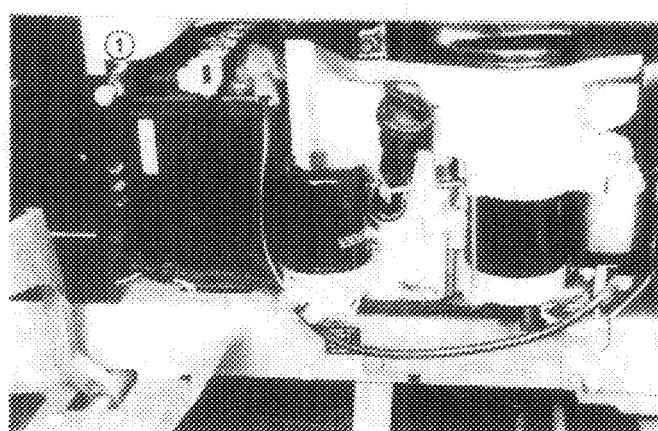
Correct carburetor adjustment requires a significant amount of knowledge and special equipment, such as a good tachometer. Also, other adjustments such as governor settings may also be necessary after adjusting the carburetor. For these reasons, we suggest that carburetor adjustments be done by an authorized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

REPLACING THE FUEL FILTER



Briggs & Stratton Fuel Filter

1. Fuel Filter



TORO POWER PLUS Fuel Filter

1. In-Tank Fuel Filter

An in-tank fuel filter is in the bottom of the fuel tank. Service is not required unless fuel becomes contaminated.

An in-line fuel filter (Models with Briggs & Stratton engine) is on the side of the engine. This filter strains foreign particles from gasoline before they reach the carburetor. This filter should be replaced after 150 hours of operation or once a year. Use only the manufacturer's filter.

MAINTENANCE

To replace the filter:

1. Allow the exhaust system to cool.
2. Close the fuel shut-off valve.
3. Place a towel or rag on the frame below the filter to catch any spilled fuel.
4. Replace the filter.
5. Open the fuel shut-off and check for leaks.



THE ELECTRICAL SYSTEM

The Alternator

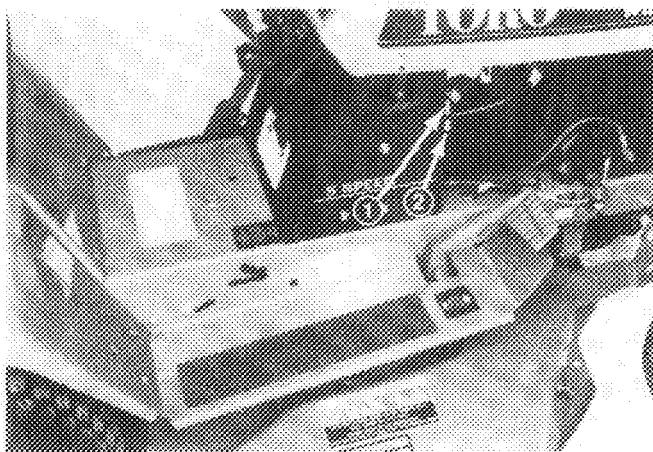
An alternator charges the tractor's battery. The alternator charging system usually needs no service, other than periodically checking that all exposed wiring and electrical connections on the tractor are clean, tight and in good condition.

IMPORTANT: Correct polarity is critical with an alternator charging system. Always disconnect the battery ground cable (negative) before working on any part of electrical system. Make sure to connect all components correctly before reconnecting the ground cable (negative) or you may damage the alternator system.

IMPORTANT: Never run the engine if the battery is removed, or if the battery is not connected to the charging system. Serious damage to the charging system may result.

Fuses – Briggs & Stratton Engine

A 25-amp automotive type ATO or ATC fuse protects the main electrical circuit.

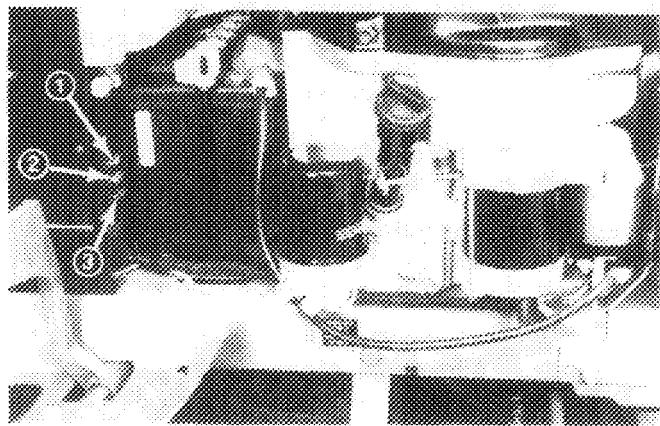


Fuse Location (Briggs & Stratton Engine)

1. 15 Amp – Light Circuit
2. 25 Amp – Main Circuit

Fuses – TORO POWER PLUS Engine

A 25-amp fuse protects the main circuit. A 15-amp fuse protects the lights and the electric PTO clutch. A 30-amp protects the battery charging circuit. All fuses are automotive type ATO or ATC.



Fuse Location (TORO POWER PLUS Engine)

1. 30 Amp – Charging Circuit
2. 25 Amp – Main Circuit
3. 15 Amp – PTO Clutch & Lights

Light Circuit – Briggs & Stratton Engine

The electrical system has a separate circuit for operating the lights. The alternator output for this circuit is ALTERNATING CURRENT (A.C.) so the lights will not operate without the engine running. A 15-amp fuse protects the light circuit.

Never interconnect the A.C. light circuit and the D.C. battery circuit because this may seriously damage the charging system.

Light Circuit – TORO POWER PLUS Engine

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

MAINTENANCE

Battery



WARNING

- When servicing the battery or any other part of the electrical system, or if the battery must be removed for any reason, always disconnect the NEGATIVE ground cable FIRST and reconnect it LAST to avoid electrical shorts.
- Wear safety goggles and rubber gloves when working with electrolyte.
- Charge the battery in a well-ventilated location so that the gasses produced by the charging can escape.
- Because gasses are explosive, keep open flames and electrical sparks away from the battery.
- Do not smoke.
- Nausea may result if you inhale the gasses. Before connecting or disconnecting charger leads from the battery, unplug the charger from the electrical outlet.
- In 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.

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

Maintain the battery at a 1.265 specific gravity charge. If you remove the battery for servicing, be sure to reconnect the cables exactly as they were before removal.

For longest service life, keep the battery clean by wiping it with a paper towel. Remove any corrosion around the battery terminals by applying a solution of one part baking soda to four parts water. Also, apply a light coating of grease or petroleum jelly to all exposed terminal surfaces to prevent corrosion.

IMPORTANT: At temperatures below 32° F (0° C), keep a full charge state to prevent the battery cell electrolyte from freezing and causing permanent battery damage.

Light Bulb Replacement

Take care when handling bulbs, particularly if they are broken.

Replace either headlamp bulb 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 the socket. Reverse this procedure to install a bulb.

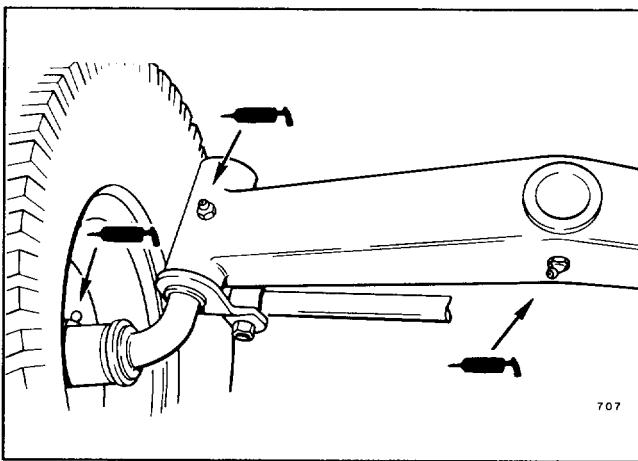
TRANSMISSION

The mechanical transmission is packed with grease and is a sealed unit. No periodic lubricant checks are required; changing the lubricant is not necessary except for major service.

Refer to the Parts and Service Manual for capacity and type of lubricant.

CHASSIS LUBRICATION

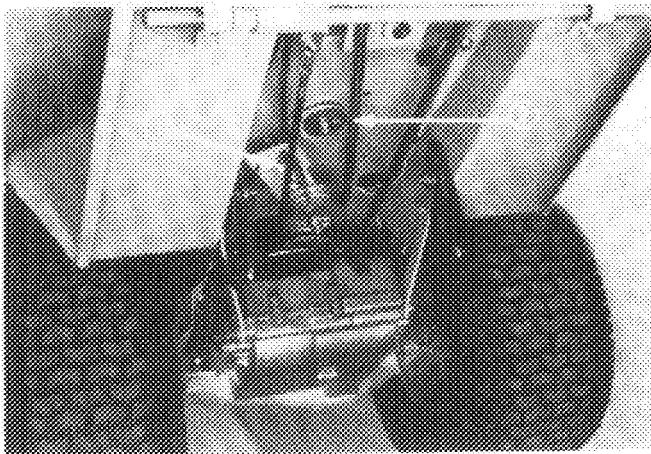
The steering gear, idler arm, spindles, front wheel bearings and front axle pivot have zerk fittings to simplify lubrication with a pressure grease gun. Before using a grease gun, clean the zerk fittings carefully to avoid forcing dirt into them. After greasing, wipe off any excess grease. Use a general purpose grease (lithium base) to lubricate the tractor.



Front Wheel, Spindle and Front-Axle Lube Fittings

MAINTENANCE

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

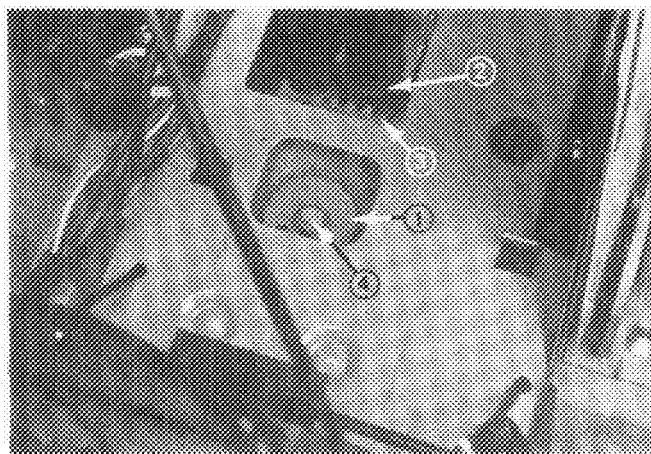


Clutch/Brake Bellcrank Lubrication Fitting

1. Clutch/Brake Bellcrank
2. Lubrication Fittings

STEERING GEAR TOOTH ADJUSTMENT

1. Remove the battery from the tractor.
2. Loosen the nut and position the steering wheel spokes so that they extend outward, from left to right. Tighten the nut until the eccentric turns with a small amount of friction. Turn the eccentric counterclockwise 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.



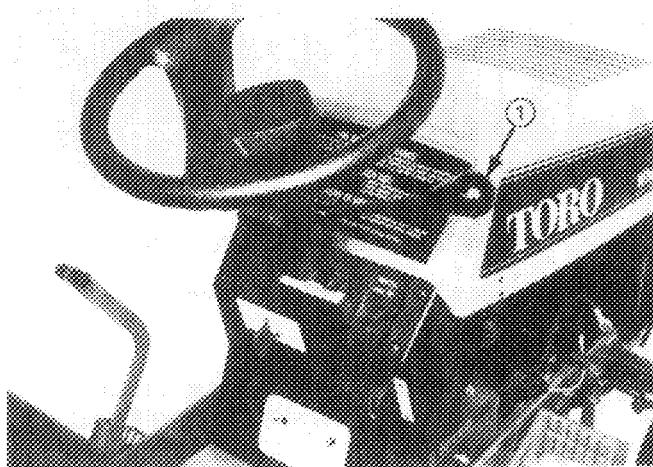
Steering Gear

1. Eccentric
2. Steering Shaft Gear
3. Steering Gear
4. Nut

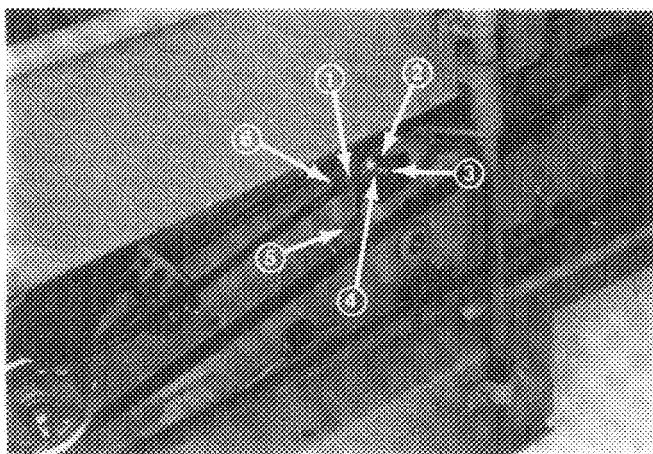
3. Turn the wheels left and right and recheck for zero clearance. Reinstall the battery and gas tank.

GEAR SHIFT LEVER ADJUSTMENT

1. Position the transmission in NEUTRAL.
2. Remove the lock nut from the rod end bolt.
3. Position the gear shift lever roll pin in the bracketed NEUTRAL stop.
4. Loosen the jam nut on the control rod and adjust the rod end so the bolt can be installed into the rod end and the lever without force. Retighten the jam nut and install the lock nut on the bolt.
5. Position the indicator on the control handle at the NEUTRAL marking. Move the indicator up on the control handle to clear the console when the handle is pushed down for reverse.



Indicator Adjustment



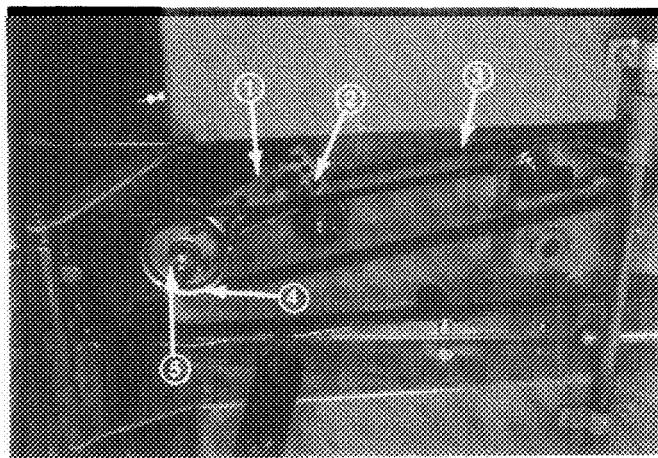
Neutral Adjustment

1. Rod End
2. Lever
3. Rod End Bolt
4. Lock Nut
5. Bracket Neutral Stop
6. Jam Nut

MAINTENANCE

CLUTCH ADJUSTMENT

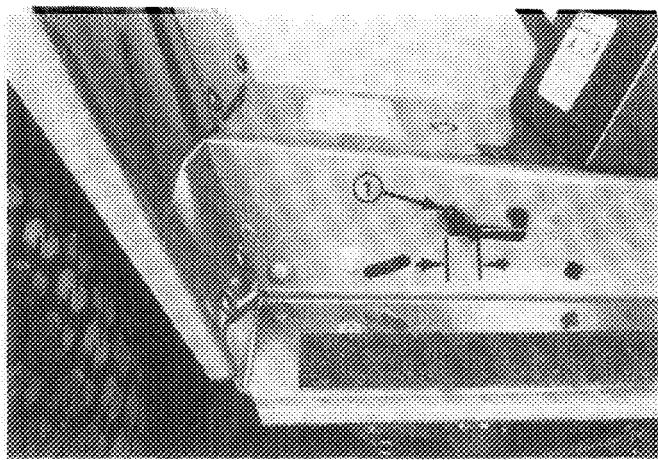
1. Stop the engine and remove the ignition key.
2. With the clutch/brake pedal released, push the pedal forward until the clutch/brake rod reaches the end of the slot in the bellcrank arm and begins to disengage the bellcrank arm.



Clutch/Brake Rod and Idler Arm

1. Bellcrank Arm	4. Idler Pulley
2. Slot	5. Nut
3. Clutch/Brake Rod	

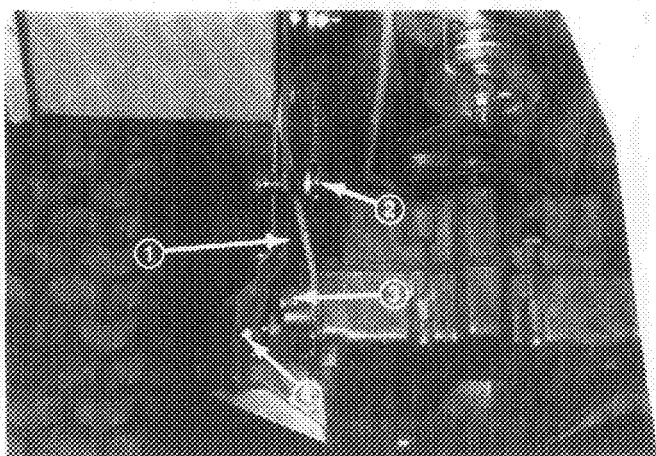
In this position the parking brake lever should be 3/8-1/2 in. from the end of the slot. Loosen the nut on the idler pulley and slide the idler pulley in or out of the slot on the idler bellcrank to get the dimension and then retighten.



Clutch Adjustment

1. Parking Brake Lever

BRAKE ADJUSTMENT

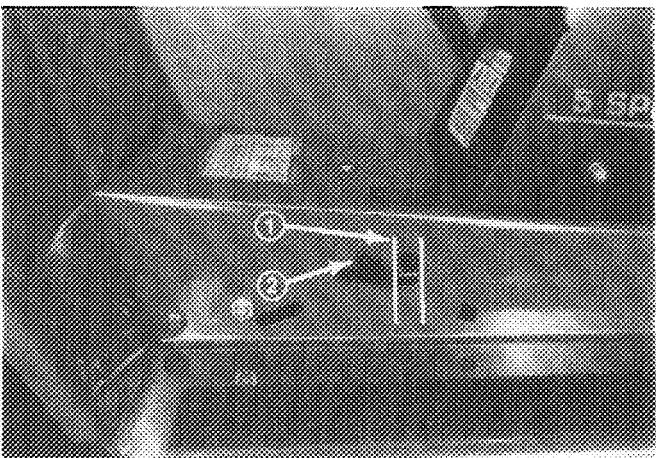


Brake Disc Adjustment

1. Lever	3. Brake Disc
2. Stop Bolt	4. Adjustment Nut

The brake adjustment is made at the brake caliper. Block the wheels to prevent the tractor from rolling and place the transmission shift lever in NEUTRAL for the brake adjustment.

1. Check that the transmission brake lever is contacting the back-stop rod when the brake pedal is released. If it doesn't, the brake pads will drag on the disc during operation, causing premature brake wear.
2. With the clutch/brake pedal released, loosen or tighten the adjustment nut until the brake disc is no longer free to turn. Turn the adjustment nut back just enough that the disc turns freely.

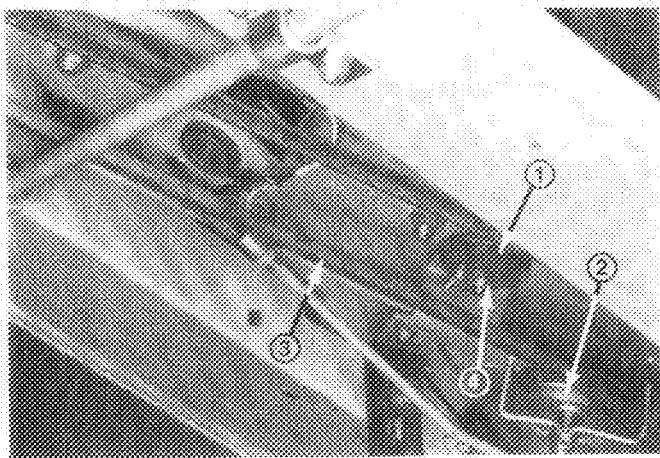


Brake Rod Adjustment

1. Parking Brake Slot
2. Parking Brake Lever

MAINTENANCE

3. When you depress the brake pedal, the brake should be locked when the front edge of the parking brake lever is even with the rear edge of the parking brake locking slot in the frame. To adjust, rotate the eccentric on the idler arm underneath the tractor.



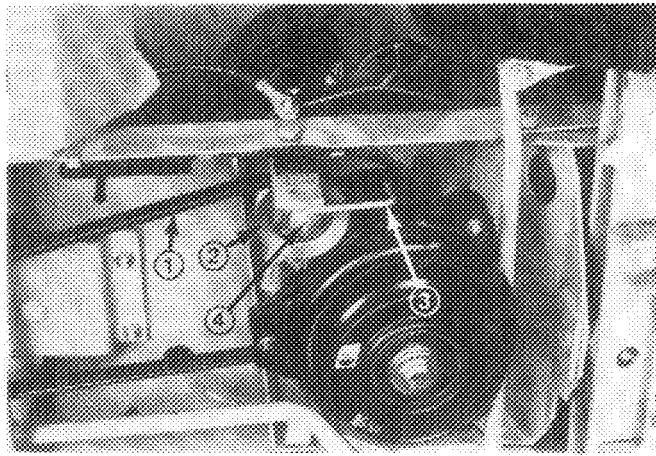
Clutch Idler Pulley and Brake Eccentric Adjustment

1. Eccentric	3. Transmission Drive Belt
2. Idler Pulley	4. Lock Nut

DRIVE BELT TENSION ADJUSTMENT

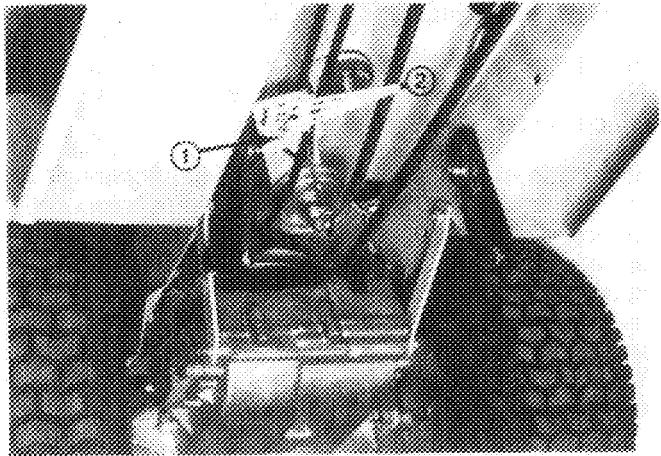
Position fixed idler belt guide 1/8" from back side of drive belt. Loosen bolt and adjust as necessary.

Reposition belt tension spring in different hole until clutch engages firmly without grabbing and moves tractor without slipping.



Fixed Idler Belt Guide Adjustment

1. Drive Belt	3. Belt Guide
2. Fixed Idler	4. Bolt



Drive Belt Adjustment

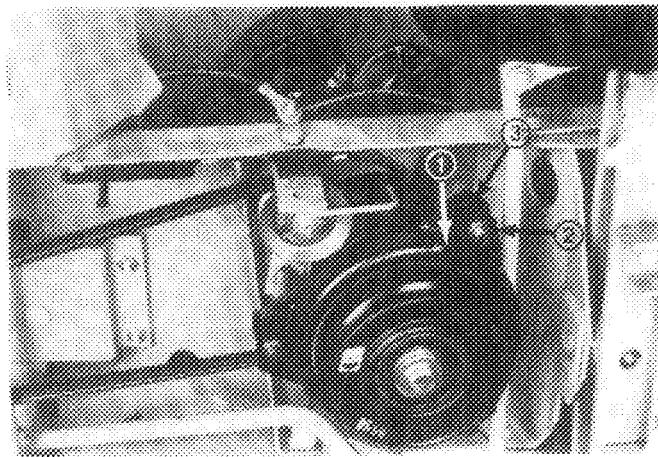
1. Clutch Spring	2. Tension Spring Adjustment
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THE PTO CLUTCH/BRAKE ADJUSTMENT

The PTO clutch/brake must be adjusted every 100 hours because of normal wear of the 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 at the same interval. Insert a 0.010 inch feeler gauge into the slots next to the adjustment nut. Turn until you feel a small amount of resistance on the feeler gauge.

Note: You should feel equal resistance in all three slots.



PTO Clutch/Brake Adjustment

1. Slots (3)	3. Springs (3)
2. Adjustment Nuts (3)	

MAINTENANCE

CLEANING AND STORAGE

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

You can remove minor paint scratches or abrasions with an automotive cleaning and polishing compound. Rubbing compound is not recommended under normal circumstances because 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 in use for an extended period, take the following steps to ensure minimum difficulty when the unit returns to service:

1. Do the required maintenance steps described 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 engine run out of gas. (As gasoline grows old, it becomes less volatile and forms harmful gums and varnish deposits in the 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 temperature). 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.

THE 30-INCH MOWER (WITH 212-5SB TRACTOR)

This section is for tractors equipped with 30-inch mower decks.

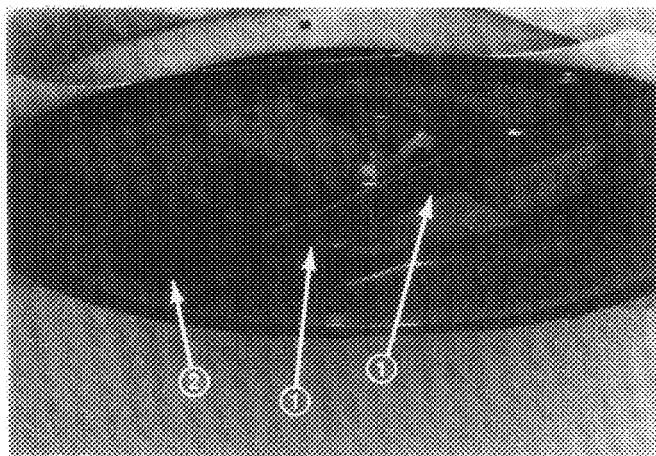
MOWER ADJUSTMENTS

Cutting Height

Cutting height is adjustable in 1/2 in. (1.3 cm) steps from 1 1/2-3 in. (1.3 to 7.6 cm), using the height control lever at the left rear of the mower. Move the lever up to raise the mower. Move the lever down to lower the mower.

Level Mower

Check the mower's blade-to-deck edge clearance, side-to-side level and front-to-rear level when you first operate the tractor, and at least once a season after that for efficient mowing. Proceed as follows:



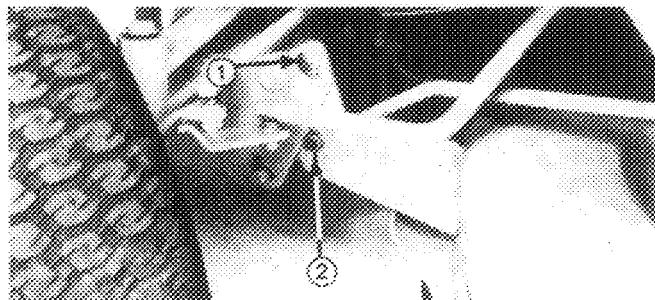
Blade Clearance Adjustment

1. *Jam nuts*
2. *Adjust so the blade tips are a minimum of 1/8 in. (3.2 mm) above the bottom edge of the mower deck*

1. Position the mower blade front-to-rear and check that the mower blade tips are 1/8-1/4 in. above the bottom edge of the mower deck. Position the mower blade side-to-side and again confirm that the mower blade tips are 1/8-1/4 in. above the bottom edge of the mower deck.

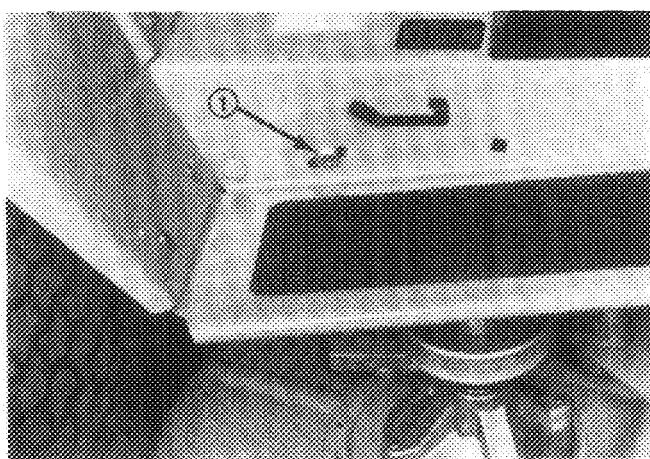
As necessary, loosen the jam nuts and adjust the bolts on the blade bar so that the blade tips (both sides) are 1/8 in. above the bottom edge of the mower deck. Recheck the dimension with the blade positioned front-to-rear and side-to-side. Tighten the jam nuts after you make the adjustments.

2. Park the tractor on a smooth level surface.
3. Check tires for correct inflation pressure – 12 psi (.85 kg/cm²).
4. Set the mower in its middle cutting height position.
5. Loosen the left mower leveling and up-stop bolts so that the bolts move freely in the slots.



1. *Adjustment bolt* 2. *Upstart bolt*

6. Adjust the right hand frame bolt in the center of the slot and secure it.

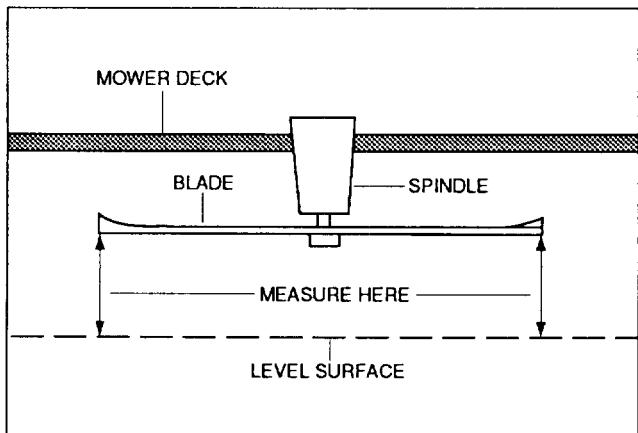


Right Hand Frame Bolt

1. *Adjustment bolt*

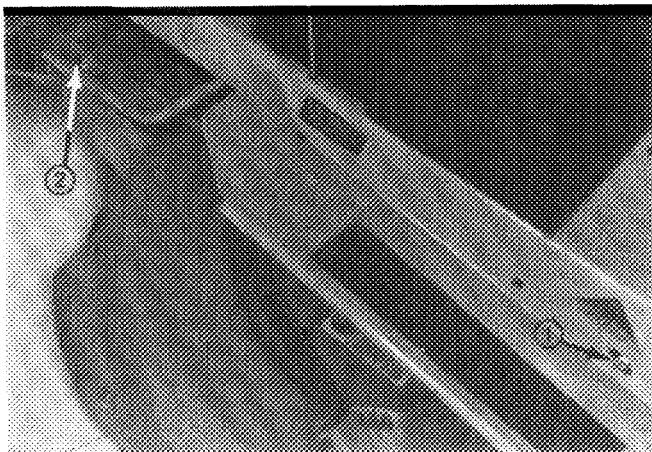
THE 30-INCH MOWER (WITH 212-5SB TRACTOR)

7. Turn the blade from side to side.
8. Adjust and secure the left frame bolt so the distance between the right and left blade tip ends and the surface is the same. If you cannot get equal distance between the blade tips and the surface, secure the left frame bolt and readjust and tighten the right frame bolt to get equal distance.



Blade Level

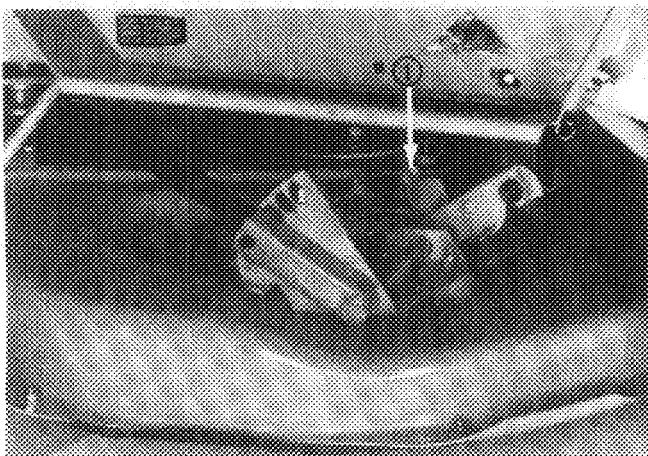
9. After you get side-to-side level and the left and right frame bolts are tight, lightly shake the left side of the deck a few times to position the left front mounting bolt in slot. Tighten the left front mounting bolt.



Side-To-Side Adjustment

1. Side-to-Side Adjustment bolt (one on each side)
2. Left front attaching bolt

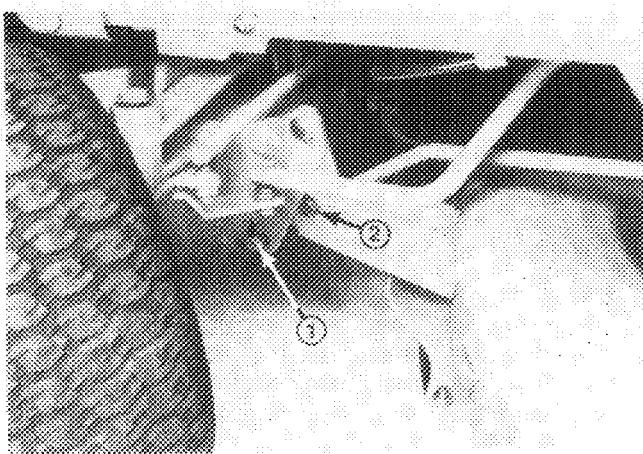
10. Turn the blade front to rear and adjust the rod trunnion so that the blade tips are equal distance from the surface. Support the front of the mower with a wood block to relieve pressure on the trunnion. After equal distance is achieved, adjust the trunnion counterclockwise one turn to lower the front of the mower slightly.



Front-To-Rear Adjustment

1. Front-to-back level adjustment trunnion

11. Set the mower in its highest cutting height position. Move the up-stop bolt against the front hitch and tighten.



Up-Stop Adjustment

1. Front hitch
2. Up-stop bolt

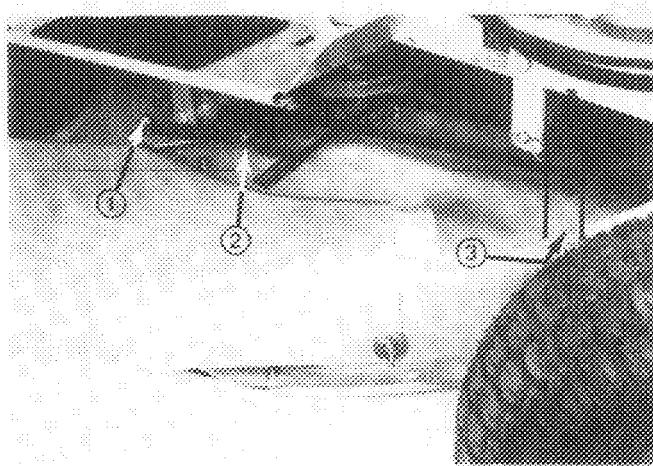
THE 30-INCH MOWER (WITH 212-5SB TRACTOR)

Drive Belt Adjustment

Set the mower height in the middle cutting adjustment.

As necessary, place a shim washer to inside the idler block so that 1/2-1 in. (1.3-2.5 cm) of rod extends past the frame bracket.

If the belt slips during operation, move the spring bolt to the rear hold.



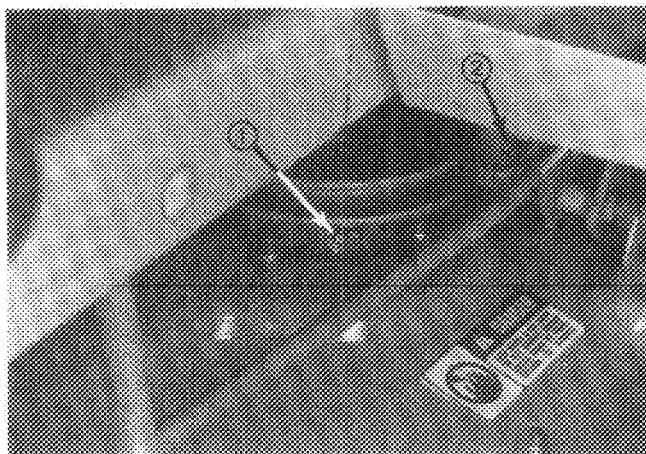
Mower Belt Adjustment

1. **Spring adjustment bolt**
2. **Remove and install the spacer to the inside of the idler pivot block to increase the belt tension.**
3. **1/2 inch to 1 inch**

LUBRICATION

Lubricate the pivoting arms and levers after every 25 hours of operation with light machine oil applied directly to wear surfaces.

The spindle bearings and idler pivot point require lubrication at 25-operating hour intervals. Use #2 multi-purpose lithium grease. Four to six pumps of hand-operated grease gun will normally fill spindle after 25 hours of operation. One of two pumps will fill idler pivot. Stop pumping if resistance is felt.



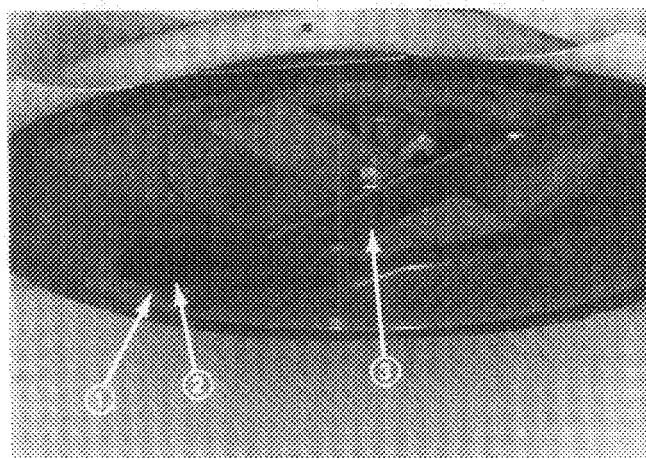
Spindle Lube Fitting

1. **Spindle lubrication fitting**
2. **Idler pivot lubrication fitting**

BLADE MAINTENANCE

For best mowing results, keep the mower blade sharp and well balanced.

Remove the mower from the tractor. Remove two blade attaching bolts from the spindle bar and remove blade. A wood block may be placed between the discharge chute opening and the blade to "lock" in position when loosening attaching hardware.



Mower Blade

1. **Lift area**
2. **Lift tab (bagger only)**
3. **Attaching bolt (2)**

File or grind the blade evenly. Take care to retain angle of original cutting edge. Reinstall the blade with the lift area (turned up section) facing the mower deck. Tighten the blade attaching bolts to a torque of 100 ft lbs (140 Nm). Reinstall the mower on the tractor.

THE 30-INCH MOWER (WITH 212-5SB TRACTOR)

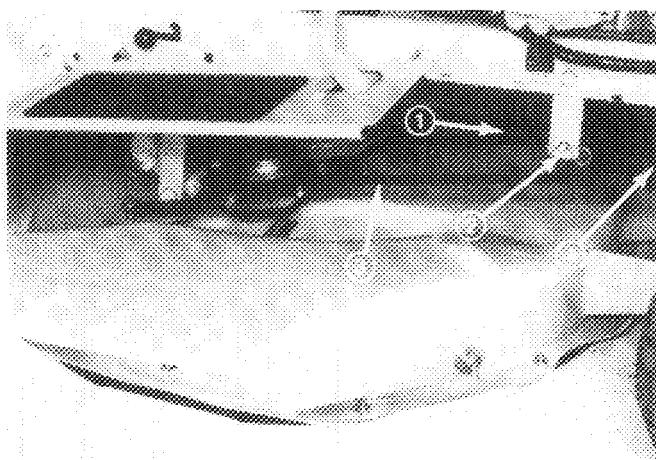
UNDERSIDE CLEANING

It is important to clean underside of the mower frequently. Accumulation of matted clippings seriously impairs the mower's ability to "lift" grass blades into cutting position and discharge clippings evenly. Matted grass that clogs the underside of the mower often causes uneven cutting. The mower should be removed from tractor for cleaning.

MOWER DRIVE BELT REPLACEMENT

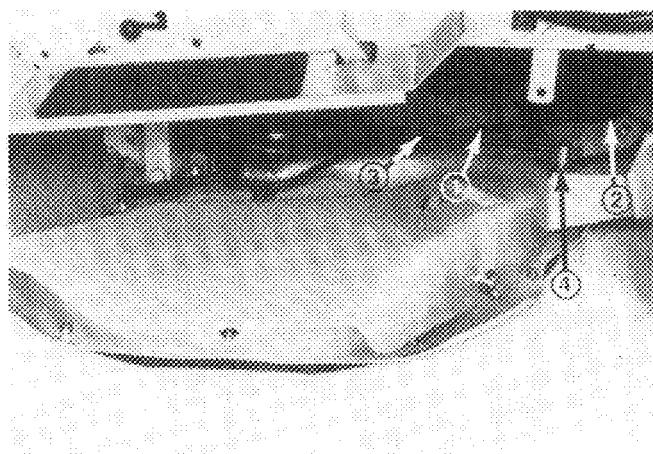
Be sure to purchase genuine TORO Wheel Horse replacements belts because they are designed for each application.

Make sure the engine is stopped and remove the ignition key. Pull on the rod handle, remove the trunnion from the frame bracket and belt from the clutch and the mower pulleys. Install the new belt in reverse order.



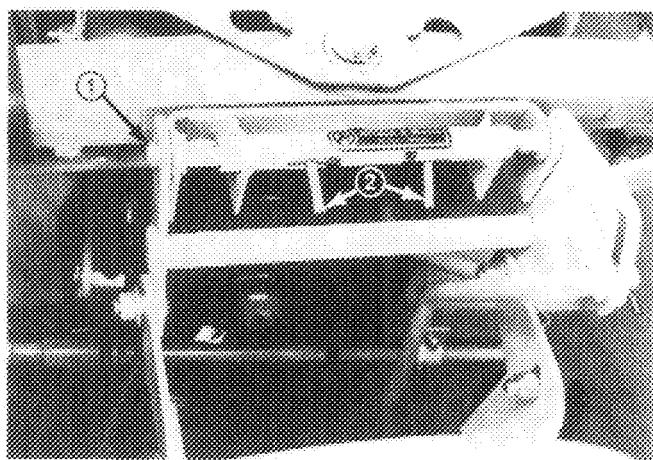
Drive Belt Replacement

- 1. Rod handle
- 2. Trunnion
- 3. Mower drive belt
- 4. PTO clutch



Trunnion and Drive Belt

- 1. Mower drive belt
- 2. PTO clutch pulley
- 3. Rod Handle
- 4. Trunnion



Mower Front Mount

- 1. Mounting pin (both sides)
- 2. Front mount lock pins

MOWER REMOVAL AND INSTALLATION

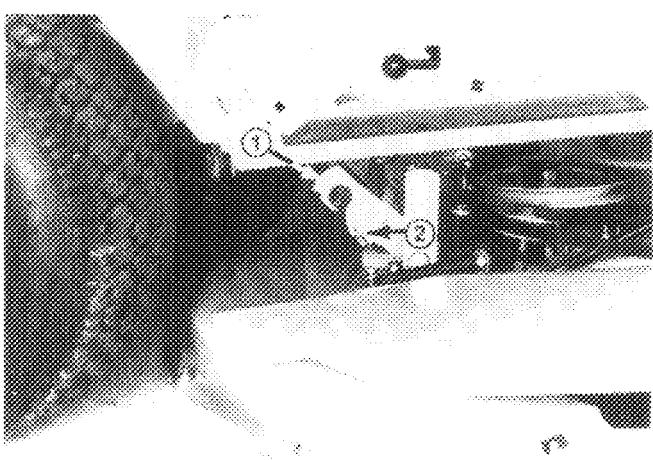
Removal

Set the mower height adjustment in the lowest notch.

Pull on the rod handle and remove the trunnion from the frame bracket and the drive belt from the clutch pulley.

Move the left and right spring-loaded front mounting pins to the center of the tractor and lock them into position. Completely lower the front mount.

Remove the left and right gear mower attaching hairpin cotters. Rotate the locks forward, lift up on the rear of the deck and release the rear mounts. Reinstall the hairpin cotters in the locks. Turn the front wheels all the way left. Slide the mower out from under the right side of the tractor.



Mower Rear Mounts

- 1. Right rear mount Lock
- 2. Hairpin cotta

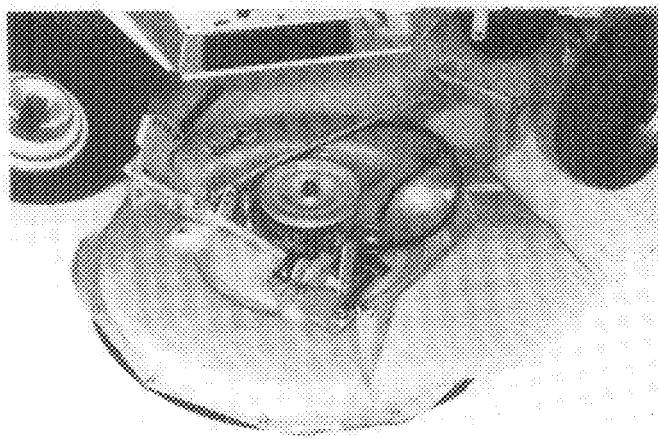
THE 30-INCH MOWER (WITH 212-5SB TRACTOR)

Installation

IMPORTANT: Before Installation, check that the mower blade bolt is tight:

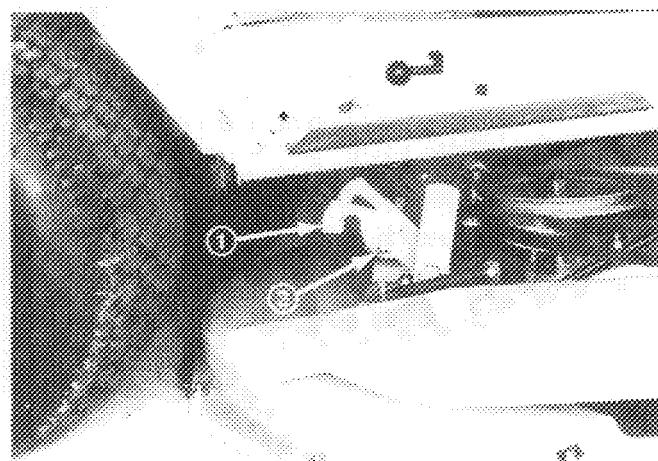
Blade Bolt Torque – 100 ft. lbs. (140 Nm) check that the mower spindle has been lubricated. (The grease fitting is on the base of the spindle housing.)

Set the mower height adjustment in the bottom hole of the quadrant. Position the mower on the right of the tractor and turn the front wheels all the way left.



Slide The Mower Under The Tractor

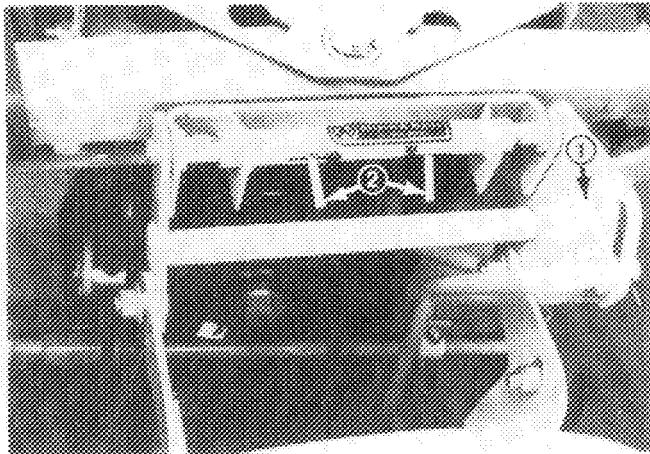
Remove the hairpin cotters from the left and right rear mounts and swing the locks forward. Lift the rear of the mower, insert the hooks in the hangers, position the locking brackets on the hangers and retain with hairpin cotters.



Prepare The Rear Mounts

1. *Move the lock forward (both sides)*
2. *Remove the hairpin cotter*

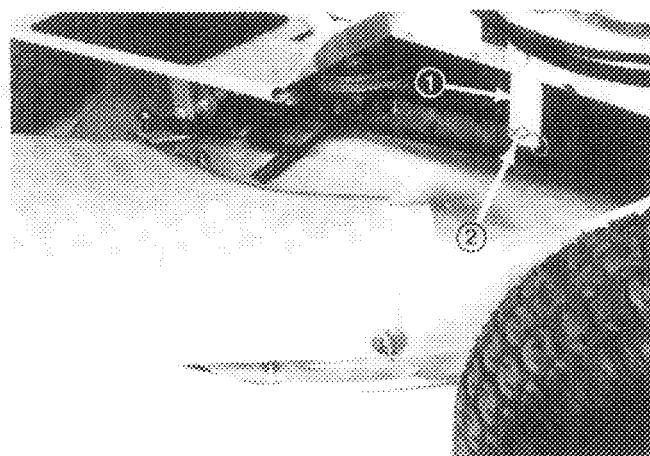
Straighten the front wheels, move the left and right spring-loaded front mounting pins to the center of the tractor and lock them in position. Raise the mower front-hitch hanger bracket, align the mounting holes and release the spring-loaded pins.



Attach The Front Mount

1. *Mower front mount*
2. *Pin lock position*

Position the drive belt on the mower spindle and idler pulleys. Pull on the rod handle and install the drive belt on the clutch pulley and the trunnion on the frame bracket with a hairpin cotter. Level the mower as described above and adjust the belt tension.



Mower Belt Routing

1. *Frame bracket*
2. *Trunnion & haripin cotter*

TROUBLESHOOTING CHECK LIST

Symptom	Possible Cause	Possible Remedy
The engine will not turn over.	Dead battery. Open safety interlock switch. Starter. Solenoid. Ignition switch.	Charge or replace the battery. Be sure the PTO is disengaged and depress the left pedal. Consult an authorized dealer. Consult an authorized dealer. Consult an authorized dealer.
The engine turns over but will not start.	Spark plug not firing. No fuel in tank. Fuel valve closed. Incorrect carburetor adjustment. Ignition switch.	Check spark plug condition and reset its gap. Refuel the tractor. Open the fuel valve. Reset the carburetor adjustment. Consult an authorized dealer.
The engine is hard to start.	Spark plug wire(s) grounded or loose. Spark plug(s) faulty or incorrectly gapped. The magneto is defective. Fuel line clogged. Carburetor dirty or incorrectly adjusted.	Check spark plug wires. Check spark plug condition and reset its gap. Consult an authorized dealer. Clean the fuel line; check the strainer in the fuel tank. Readjust the carburetor. Consult a dealer for authorized carburetor service.
The engine starts, but operates erratically.	Clogged fuel line. Water in fuel. The vent in the fuel cap is plugged. Incorrect carburetor adjustment.	Clean the fuel line, the filter, and check the strainer in fuel tank. Drain old fuel and replace with a fresh supply. Check the vent. Readjust the carburetor.
The engine knocks.	The fuel octane is too low. Faulty ignition system. The engine is overheated.	Drain fuel and replace it with higher octane supply. Consult an authorized dealer. Shut off the engine and allow it to cool.
The engine is overheating.	Air intake screen or fins are clogged. Oil level too high or too low. The fuel mixture is too lean. Faulty ignition system. The engine overloaded.	Clean the intake screen and fins. Adjust the oil level as necessary. Readjust the carburetor. Consult an authorized dealer. Reduce the load on the tractor.
The engine idles poorly.	Incorrect carburetor adjustment. Incorrect spark plug gap.	Readjust the carburetor. Check the condition and gap of spark plug(s)
The engine backfires.	Improper carburetor adjustment. Ignition system.	Readjust the carburetor. Consult an authorized dealer.
The engine runs fine, but the tractor will not move	No transmission pressure. Faulty transmission.	Engage the transmission lever. Consult an authorized dealer.

TROUBLESHOOTING CHECK LIST

Symptom	Possible Cause	Possible Remedy
The tractor loses power or the transmission overheats.	The transmission oil level is too high or too low. Transmission damage has resulted from operating the engine at low RPM or contamination of oil.	Adjust the oil level as necessary. Consult dealer for authorized service.
The engine stalls whenever the PTO is engaged.	Excessive load on PTO. Faulty interlock system.	Check for jammed attachments. Lessen the load on the attachment. The seat must be occupied to close the interlock system. Consult an authorized dealer.

