

ERASER



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1. INTRODUCTION

Thank you for purchasing a Holt Industrial HGW60R Stump Grinder.

You must read, understand, and follow all instructions in this manual before operating, adjusting or servicing this machine.

If you do not understand any part of this manual or you are unsure about any aspect of this machine, contact Holt Industrial. Information provided in this manual was current as of the issue date.

Information furnished in this manual does not include all of the details of design, production, or variations of equipment. It does not cover all the possible contingencies, which may arise during operation or maintenance.

Should special issues arise, or further information be desired, contact your dealer.

This manual covers the Holt Industrial HGW60R Stump Grinder and is provided to assist in the safe operation and maintenance of the equipment.

Equipment modifications from original design and specifications without written permission are strictly prohibited.

Modifications may compromise safe operation of machine, subject users to serious injury or death and may void any remaining warranty.

This operator's manual does not replace, nor does its use discharge the operator from observing all safety codes or operating limitations as well as any applicable federal, state, provincial or local regulations.

There are three different types of labeling on this machine: safety, informative and product labels.

Safety Labels are pictorial with a yellow background and generally 2 panel. Top panel indicates the potential hazard and the bottom panel indicates how to avoid the hazard.

Informative Labels are generally pictorial, have a white background and can vary to the number of panels. The label will illustrate the function of a feature and is accompanied by detailed instructions in the owners manual, with the label illustrated along side.

Product Labels contain product information such as model number or serial number.

2. WARRANTY

This product is warranted to be free of defects in materials and workmanship under normal use and service, for a period of one year from the date of purchase, when operated and maintained in accordance with the Operating and Maintenance Instructions supplied with this unit. This warranty does not cover misuse or negligence.

Under no circumstances will the manufacturer be liable for any consequential damage or expense of any kind, including loss of profits.

The manufacturer is not liable for the maintenance of the product. This warranty is extended only to the original purchaser. Warranty is void if repairs are attempted by anyone other than an Authorized Service Center.

If a difficulty develops with the product, you should contact your nearest Authorized Repair Center, or distributor. Only these locations are authorized to make repairs to the product or affect the replacement of defective parts, which will be done at no charge within a reasonable time after the receipt of the product. Units or parts should be returned at the customer's expense to the nearest repair location or Authorized Service Center. Pack in a strong container and pad tightly to avoid damage. Damage in-transit is not covered by warranty. Include original purchase receipt with any claim (keeping a copy for your files).

The Manufacturer's Liability is limited to repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no warranties, expressed or implied other than those specified herein. For the nearest Authorized Service Center, call the manufacturer.

Please note the following details and file this information in an appropriate place.

Model Number: _____

S/N: _____

Date of Purchase: _____

Owner's Name _____

3. PREDELIVERY

This predelivery procedure must be performed and signed off by the owner, maintenance supervisor or operator at the time of delivery and before going into service.

Owner / Owner Representative

Address

City, State/Province, Postal Code

Phone Number

Holt Industrial Representative

Phone Number

VIN Number

Delivery Date

The owner or owner representative is thoroughly trained on the Holt Industrial HGW60R Stump Grinder. Predelivery inspection has been performed. Safe operation, care, adjustments, warranty policy and manuals for the HGW60R Stump Grinder have been reviewed.

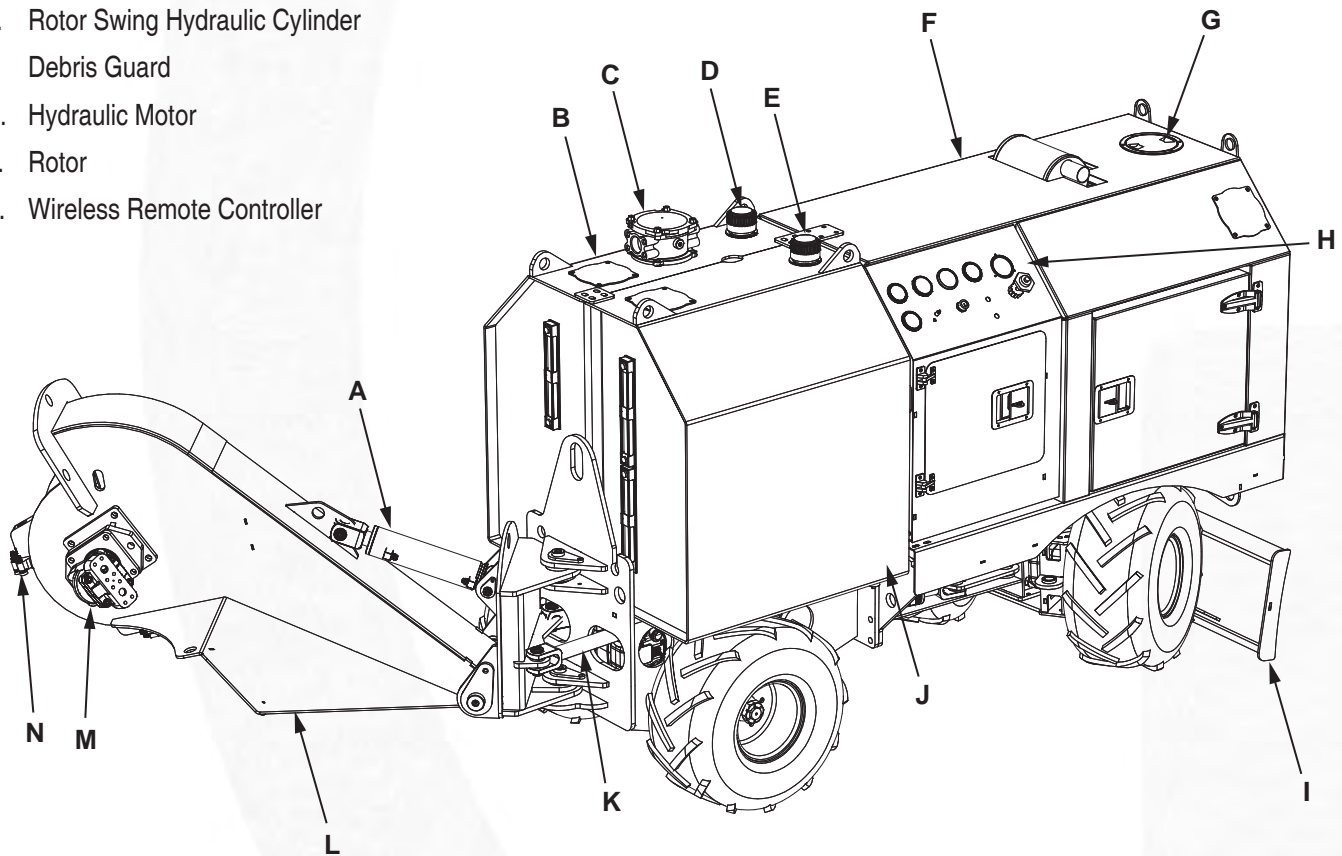
Owner / Owner Representative Signature

Date

X	Predelivery Inspection
	Verify rotor turns freely.
	Verify all fluids are at proper level.
	Verify tires are properly inflated.
	Verify all wheel lugs are tight.
	Lubricate all grease fittings.
	Verify all fasteners are tight.
	Verify all decals are installed.
	Start engine and operate all functions to verify operation. Stop engine.
	Check hoses and fittings for leaks.

4. COMPONENTS

- A. Rotor Raise/Lower Hydraulic Cylinder
- B. Hydraulic Oil Reservoir
- C. Hydraulic Oil Filter
- D. Hydraulic Oil Reservoir Fill
- E. Fuel Tank Fill
- F. Engine Compartment
- G. Engine Radiator Fill Access
- H. Engine Control Panel
- I. Backfill Blade
- J. Fuel Tank
- K. Rotor Swing Hydraulic Cylinder
- L. Debris Guard
- M. Hydraulic Motor
- N. Rotor
- O. Wireless Remote Controller



5. SPECIFICATIONS

Engine	60 hp / 2615 cc
Rotor Size.....	18 in. (457 mm)
Number Of Teeth.....	20
Rotor Speed	2000 RPM
Cutting Height Above Ground.....	36 in. (914 mm)
Cutting Depth Below Ground.....	15 in. (381 mm)
Maximum Cutting Depth Per Pass	3.5 in. (89 mm)
Maximum Horizontal Cut	58 in. (1473 mm)
Swing Arc	82°
Input Speed	3000 RPM
Unit Weight.....	3500 lbs (1588 kg)
Width	35 in. (890 mm)
Length.....	145 in. (3683 mm)
Hydraulic Oil	ISO 46 Rated
Maximum Hydraulic Oil Temperature At 100° F (38° C) Ambient Conditions.....	180° F (82° C)*

*Hydraulic oil operating temperatures above 180° F (82° C) damage most seal and hose compounds and accelerate degradation of the oil.

6. SAFETY

6.1 Safety Alert Symbol And Signal Words

You must read, understand and follow the instructions given by the operating unit manufacturers, as well as the instructions in this manual.

The safety information in this manual is denoted by the safety alert symbol:



This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

The level of risk is indicated by the following signal words:

DANGER

DANGER - Indicates a hazardous situation, which, if not avoided, **WILL** result in death or serious injury.

WARNING

WARNING - Indicates a hazardous situation, which, if not avoided, **COULD** result in death or serious injury.

CAUTION

CAUTION - Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE - Indicates a situation that could result in damage to the equipment or other property.

6.2 Operational Hazards

California Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer, birth defects and other reproductive harm. Wash hands after handling.

WARNING

Prevent serious injury or death.

Read and understand this manual before operating stump grinder.

Always stop engine and allow rotor to stop before approaching rotor.

Never allow anyone near stump grinder during operation.

Travel at a safe speed.

WARNING

Prevent serious injury or death from moving parts.

Moving parts can crush and dismember. Do not operate without guards and shields in place.

Lockout engine controls before adjusting or performing maintenance.

WARNING

Safely operate equipment.

Allow only properly trained and qualified personnel to operate this equipment.

! WARNING

Use stump grinder only for the designed applications.

Any other use may result in personal injury, damage to equipment and may void the warranty.

! WARNING

Prevent serious injury or death.

Engine exhaust contains carbon monoxide. Carbon monoxide is an odorless gas that can cause death.

Avoid any areas or actions that expose you or others to carbon monoxide.

Never refuel a running engine or refuel near ignition sources.

Carefully read all safety messages in this manual and on equipment safety signs. Keep safety signs in good condition and replace missing or damaged safety signs.

New equipment components and repair parts must include the current safety decal.

Learn how to properly operate equipment. NEVER operate or work around this equipment without proper instruction, while fatigued or under the influence of alcohol, prescription or non-prescription medication or if feeling ill.

Keep your equipment in proper working condition. Know the regulations and laws that apply to you and your industry. This manual is not to replace any regulations or laws. Additional information may be found at:

www.asae.org or www.osha.gov.

If you do not understand any part of this manual, contact your dealer.

6.2.1 Replace Safety Signs

Replace missing or damaged safety signs.

Safety sign location are identified in Section 5.5 of this manual.

Replacement safety signs are available from your dealer.

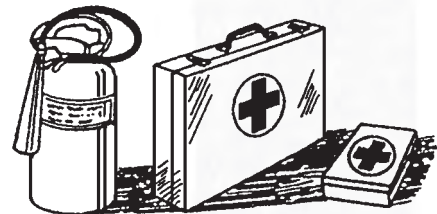
6.2.2 Prepare For Emergencies

Be prepared in case of emergencies.

Keep a fire extinguisher and first aid kit close to the machine.

Keep emergency phone numbers close to your phone.

Know your address so emergency services can locate you if an emergency arises.



6.2.3 Do Not Allow Riders

NEVER lift or carry anyone on stump grinder.

NEVER use stump grinder as a work platform.

NEVER allow passengers on stump grinder.

6.2.4 Lower Operating Speed

Keep rotor low and move at slow speeds on rough or uneven terrain.

6.2.5 Prevent Rollover

The equipment may rollover, resulting in death or serious injury. To help prevent rollover:

- Travel at a slow speed.
- Avoid sharp turns & sudden movement on slopes.
- Travel with rotor close to the ground.
- Avoid holes, ditches and other obstructions which may cause equipment to rollover.
- Use caution when operating on slopes and do not operate on excessively steep slopes.

6.2.6 Avoid Power Lines And Underground Utilities

WARNING

Prevent electrocution.

Death or serious injury can result if equipment comes near or contacts power lines.

Electrocution can occur without direct contact.

Have local utilities locate and mark under ground wires, cables, pipelines and other hazards before grinding.

6.2.7 Avoid Loud Noise

WARNING

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device.

6.2.8 Raised Rotor

WARNING

Crushing hazard.

Raised, unsupported rotor can fall, resulting in death or serious injury.

Never enter the area under a raised rotor.

A raised rotor can lower unexpectedly, resulting in death or serious injury.

NEVER enter area under a raised rotor.

Lower rotor to ground, engage parking brake, shut off engine and lockout engine controls before servicing.

6.2.9 Avoid High Pressure Fluids

WARNING

Pressurized fluids can penetrate the skin.

Hydraulic hoses can fail from age, damage and exposure.

Use body and face protection while searching for leaks. A tiny, almost invisible leak can penetrate the skin, thereby requiring immediate medical attention.

Use wood or cardboard to detect hydraulic leaks, never use your hands.

Escaping fluid under pressure can penetrate the skin causing serious injury.

Prevent the hazard by relieving pressure before connecting or disconnecting hydraulic lines. Verify all connections are tight before applying pressure.

Search for leaks with a piece of cardboard or wood.

Protect hands and body from high pressure fluids. If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or serious infection may result.

Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

6.3 Maintenance Hazards

Before servicing, park machine on a firm and level surface, set parking brake, chock wheels, and place a “Do Not Operate” tag on engine controls. Read and understand this manual. If you do not understand any part of this manual, contact your dealer.

Always wear face and/or eye protection, safety shoes, and other protective equipment appropriate for the job.

Always use Holt Industrial replacement parts.

WARNING

Moving parts can crush and cut.

Keep clear of moving components.

WARNING

Crushing and severing hazard.

Before performing inspections, service or maintenance:

- **Park machine on firm, level surface.**
- **Engage parking brake.**
- **Turn engine off and lockout engine controls.**

WARNING

Entanglement hazard.

Keep clear of moving components.

WARNING

Burn hazard.

Hot and high pressure hydraulic oil.

Allow oil to cool before servicing.

WARNING

Prevent serious injury or death.

Wear proper protective equipment appropriate for the job.

6.4 Hazards From Modifying Equipment

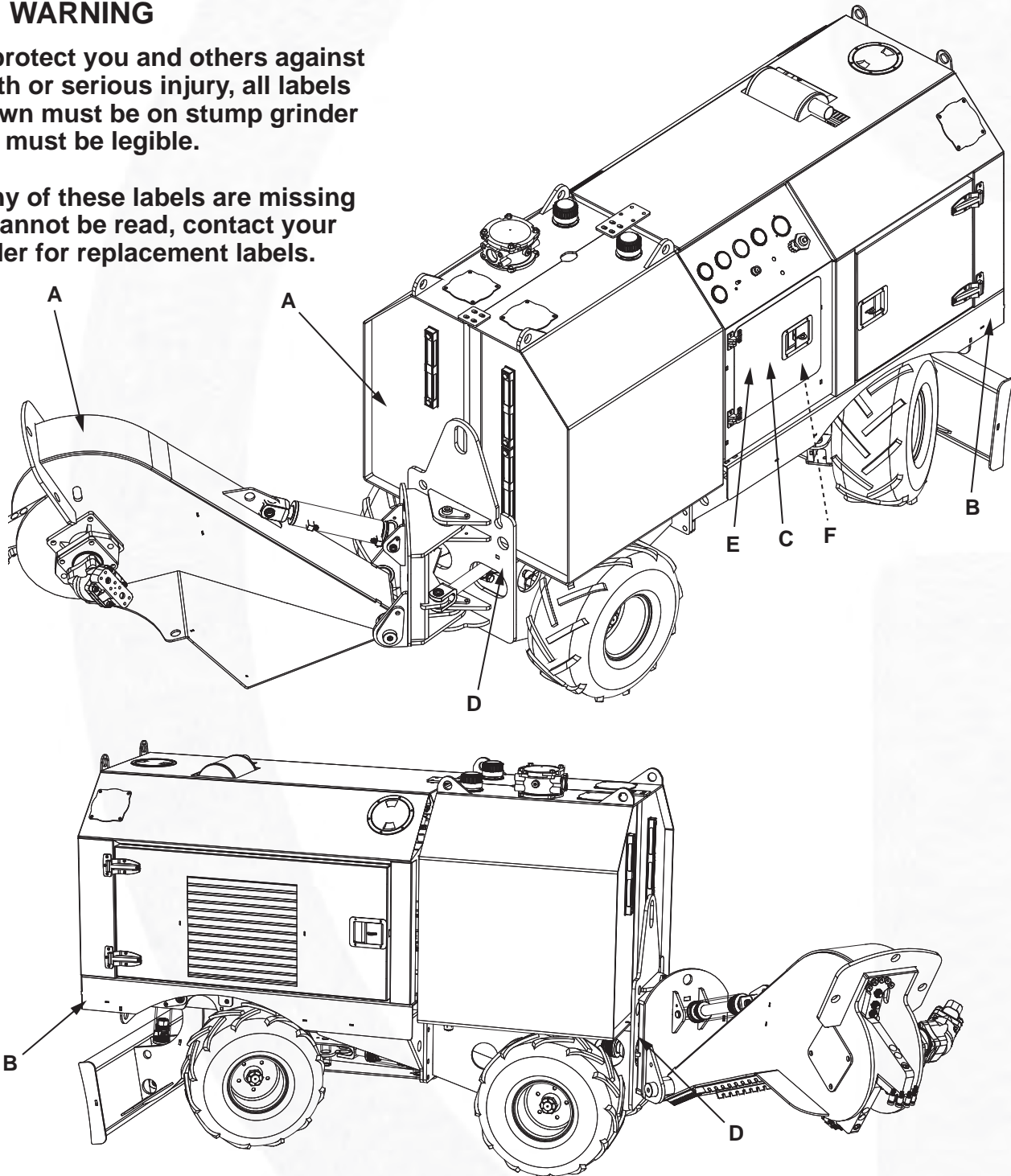
Do not make any alterations to the stump grinder. Altering may cause equipment to be unsafe and may void the manufacturers' warranty.

6.5 Safety Warning Labels

WARNING

To protect you and others against death or serious injury, all labels shown must be on stump grinder and must be legible.

If any of these labels are missing or cannot be read, contact your dealer for replacement labels.



Decal A - MTB108



Decal C - MTB182




Decal B - MTB065



Decal D - MTB180




Decal E - MTB175



CAUTION


- Read and understand the operator's manual before starting. Review safety instructions annually.
- Do not permit rider on the carrier or equipment. Never carry children on the machine.
- Do not allow children to operate the equipment.
- Operate only with guards installed and in good condition.
- Keep away from moving parts.
- Before operating, clear debris away from production area.
- Do not operate in unsafe position.
- Turn machine off, lower machine to ground, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, repairing, adjusting or unplugging.
- Support equipment securely before working beneath unit.
- Wear Personal Protective Equipment (PPE) including but not limited to hard hat, safety shoes with slip resistant soles, safety goggles or face shield and hearing protection whenever operating equipment.
- Transport with clean reflectors, SMV and working lights as required by federal, provincial and local laws.



MTB-175


Decal F - D002508 On Inside Of Door And On Remote

ENGAGING
REMOTE










Holt Industrial
1-844-444-4658

1. Engine must be running.
2. Make sure emergency stop is pulled out.
3. Make sure cutting head switch is off.
4. Move **ON/OFF** switch from **OFF** to **ON** and wait 2 secs.
5. Move **ON/OFF** switch from **ON** to **START** and wait 2 secs.
6. Green light should be flashing slowly .
7. Bump **ON/OFF** switch from **ON** to **START**.
8. Green light should be flashing fast.
9. Repeat bump to **START** until green light flashes fast
- waiting 2 secs between bumps.



D002508

7. OPERATION

-  Keep bystanders, livestock, pets, etc away from work area.
-  Always wear protective equipment appropriate for the job.
-  Do not operate, work on or around this machine while under the influence of alcohol, drugs or if feeling ill.
-  Keep clear of moving machinery at all times.
-  Stop stump grinder engine before leaving operators area.
-  It is your responsibility to operate this equipment safely. You must be familiar with the equipment and all safety practices before use.
-  Do not allow untrained or unqualified people to operate this equipment.

7.1 Pre-Operation Check List

Perform the following checks prior to operation.

- Review and understand this manual and engine operators manual.
- Verify safety decals are installed and legible. Replace if damaged or missing.
- Verify that all hardware is tight.
- Inspect hoses and fittings for wear, damage and leaks. Replace damaged or leaking hoses before use.
- Verify hydraulic oil is at full level on sight glass.
- Verify that local utilities have marked all underground utilities.

7.2 Carbide Teeth Break In

New carbide teeth are razor sharp and can chip and shatter easily when they hit hard objects. Once the razor sharpness has worn away, tips do not chip as easily. Observing these precautions will extend the life of the carbide teeth and reduce operating expenses.

7.3 Operation

WARNING

Prevent serious injury or death.

Keep clear of moving machinery.

WARNING

Prevent serious injury or death.

Engine exhaust contains carbon monoxide. Carbon monoxide is an odorless gas that can cause death.

Avoid any areas or actions that expose you or others to carbon monoxide.

WARNING

Wear an approved respirator (N95 Type as a minimum).

Follow local, state and federal regulations.

The health effects from exposure to wood dust are due to chemicals in the wood or chemical substances in the wood created by bacteria, fungi, or molds.

WARNING

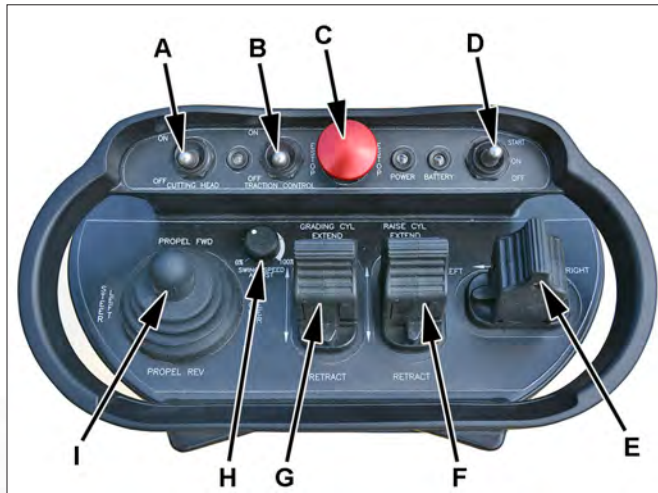
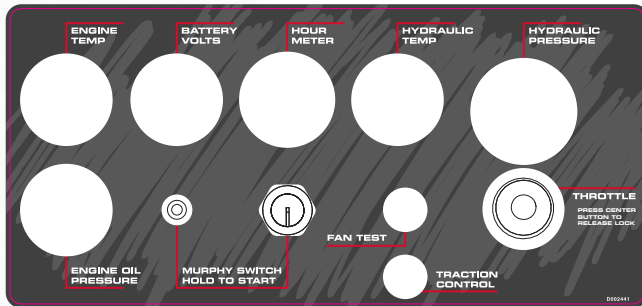
Never operate stump grinder when other people are in the vicinity. Debris can be thrown several feet from cutting area.

Keep all shields in place.

NOTICE

Maximum hydraulic oil temperature at 100° F (38° C) ambient conditions is 180° F (82° C).

7.3.1 Operator Controls



Wireless Controller

- A. Cutting Head - Engage and disengage rotor.
- B. Traction Control - Engage and disengage four wheel drive.
- C. Emergency Stop - Press to stop all functions. Pull up for operation.
- D. Start - Activate wireless remote.
- E. Rotor Swing - Swing rotor left or right.
- F. Rotor Lift - Raise or lower rotor.
- G. Blade - Raise or lower backfill blade.
- H. Swing Speed Adjust - Rotate to adjust rotor swing speed.
- I. Propel - Drive forward or reverse and turn left or right.

7.3.2 Starting



WARNING

Prevent serious injury or death.

Keep clear of moving machinery.

Refer to wireless remote operators manual for detailed operational information.

1. Turn ignition switch counter-clockwise to preheat engine if necessary.
2. Hold Murphy Switch in and turn ignition switch clockwise to start stump grinder engine. See OEM engine manual for safety, prestart and operational information.

7.3.3 Activate Wireless Remote

1. Verify emergency stop (C) is pulled out.
2. Verify cutting head switch (A) is off.
3. Move on/off switch (D) from off to on and wait 2 seconds.
4. Move on/off switch (D) from on to start and wait 2 seconds. Green light should be flashing slowly.
5. Bump on/off switch (D) from on to start. Green light should be flashing fast.
6. Repeat bump to start until green light flashes fast, wait 2 seconds between bumps.

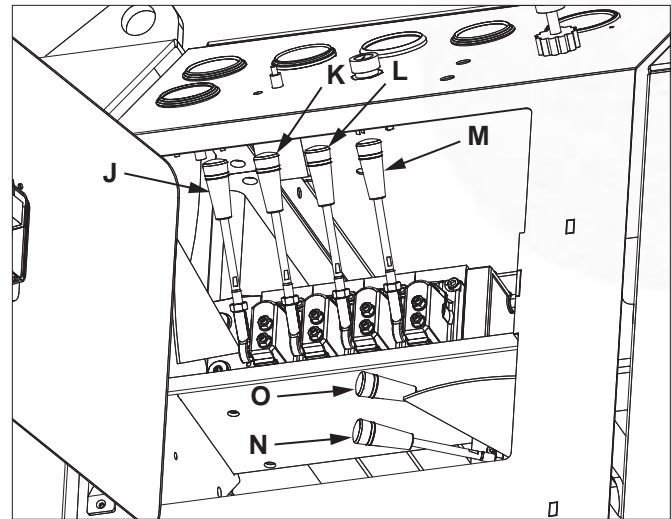
7.3.4 Operation With Wireless Remote

1. Set engine speed at high idle.
2. Adjust stump grinder swing speed on knob (H). Rotate control counter clockwise to slow setting. It is recommended to start at the slow setting and adjust speed up as desired.
3. If necessary, move and hold traction control (B) to ON position to engage four wheel drive.
4. If the stump is on a grade, position stump grinder lower on the grade with the cutting wheel on the stump grinder higher up the grade.
5. Position stump grinder up to the front edge of the stump using propel joystick (I).
6. Check position of the stump grinder to the stump. Verify

stump grinder is positioned at the edge of the stump that is closest to the stump grinder.

7. Adjust rotor height using lever (F). Verify rotor is close to, but not touching stump.
8. Engage rotor with cutting head switch (A).
9. Move rotor swing (E) to swing cutting head to one side of the stump.
10. Move rotor lift (F) and lower cutting head so rotor is 1 in. (25 mm) lower than top of stump
11. Move rotor swing (E) and make the first pass across front edge of stump, moving cutting wheel from side to side.
12. Continue to take passes across the front edge of the stump, lowering cutting head 1 in. (25 mm) for each pass.
13. When ground level is reached, continue to grind up to 15 in. (381mm) below the surface to the bottom of the stump where the roots branch out.
14. Lift cutting head and swing to the side of the stump.
15. Operate joystick (I) to move stump grinder forward to position the cutting head beside new front edge of the stump.
16. Repeat steps 10-15.
17. Reposition stump grinder as needed until the entire stump has been removed to below ground level.
18. Follow the roots, taking as much of the larger surface roots as possible. If these are not removed they can, over time, protrude from the ground in areas where there is a heavy freeze/thaw cycle.
19. Move stump grinder away from stump to a flat surface.
20. Set engine speed at low idle.
21. Stop stump grinder engine.

7.3.5 Operation With Manual Controls



Machine Controls

- J. Rotor Lift - Raise or lower rotor.
 - K. Rotor Swing - Swing rotor left or right.
 - L. Steer - Turn left or right.
 - M. Blade - Raise or lower backfill blade.
 - N. Drive - Drive machine forward or reverse.
 - O. Rotor - Engage and disengage rotor.
1. Set engine speed at high idle.
 2. If necessary, press and hold traction control on control panel to engage four wheel drive.
 3. If the stump is on a grade, position stump grinder lower on the grade with the cutting wheel on the stump grinder higher up the grade.
 4. Position stump grinder up to the front edge of the stump using levers (L) and (N).
 5. Check position of the stump grinder to the stump. Verify stump grinder is positioned at the edge of the stump that is closest to the stump grinder.
 6. Adjust rotor height using lever (J). Verify rotor is close to, but not touching stump.
 7. Engage rotor with lever (O).
 8. Move rotor swing (K) to swing cutting head to one side of the stump.
 9. Move rotor lift lever (J) and lower cutting head so rotor is 1

- in. (25 mm) lower than top of stump
10. Move rotor swing (K) and make the first pass across front edge of stump, moving cutting wheel from side to side.
 11. Continue to take passes across the front edge of the stump, lowering cutting head 1 in. (25 mm) for each pass.
 12. When ground level is reached, continue to grind up to 15 in. (381mm) below the surface to the bottom of the stump where the roots branch out.
 13. Lift cutting head and swing to the side of the stump.
 14. Operate levers (L) and (N) to move stump grinder forward to position the cutting head beside new front edge of the stump.
 15. Repeat steps 9-14.
 16. Reposition stump grinder as needed until the entire stump has been removed to below ground level.

 17. Follow the roots, taking as much of the larger surface roots as possible. If these are not removed they can, over time, protrude from the ground in areas where there is a heavy freeze/thaw cycle.
 18. Move stump grinder away from stump to a flat surface.
 19. Set engine speed at low idle.
 20. Stop stump grinder engine.

8. ROUTINE MAINTENANCE

8.1 Maintenance Intervals

ITEM	DAILY BEFORE USE	EVERY 4 HOURS	EVERY 30 HOURS	WEEKLY	EVERY 100 HOURS	EVERY 200 HOURS	EVERY 500 HOURS	EVERY 2000 HOURS
Check hoses and fittings for leaks.	•							
Test auto shutdown devices.	•							
Check cutting teeth for wear. Rotate or replace cutting teeth as necessary.		•						
Lubricate pivot point grease fittings.			•					
Check rotor bearings for side-to-side and up/down movement. Replace bearing if movement is found.				•				
Change engine oil filter.					•			
Change engine air filter.					•			
Change engine oil and filter.						•		
Change hydraulic oil filter.							•	
Change hydraulic oil and filter.								•

WARNING

Moving parts can crush and cut.

Keep clear of moving components.

Lockout operating engine controls before performing inspections or maintenance.

WARNING

Prevent serious injury or death.

Wear proper protective equipment appropriate for the job.

WARNING

Moving parts can crush and cut.

Keep clear of moving components.

Lockout operating engine controls before performing inspections or maintenance.

WARNING

Prevent serious injury or death.

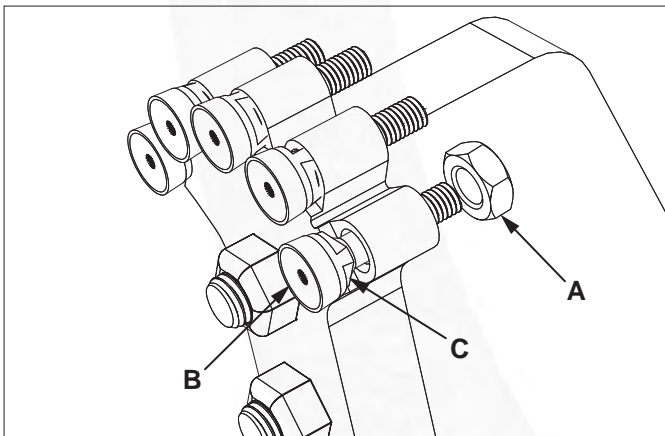
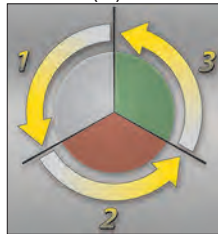
Wear proper protective equipment appropriate for the job.

8.3 Rotate Cutting Teeth

Check cutting teeth every 4 hours of use. Keep cutting teeth in good condition. Unit will cut faster and remaining teeth will last longer if broken or worn teeth are replaced.

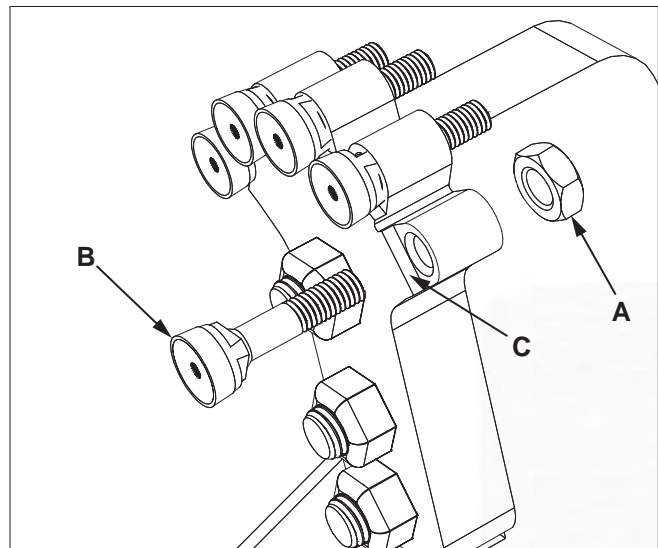
Each tooth can be rotated up to two times from its original position before replacement is necessary.

1. Park stump grinder on a level surface.
2. Lower rotor to the ground.
3. Shut off engine and lockout engine controls.
4. Inspect teeth for wear on top edge. Once top edge is worn, rotate tooth so a new edge is on top (cutting) edge.
5. Loosen locknut (A) on tooth (B) and rotate tooth 1/3 turn. Flat shoulder on tooth will fit against shoulder (C) on tooth holder.
6. Tighten locknut (A) to 65 lb/ft (88 Nm) of torque.



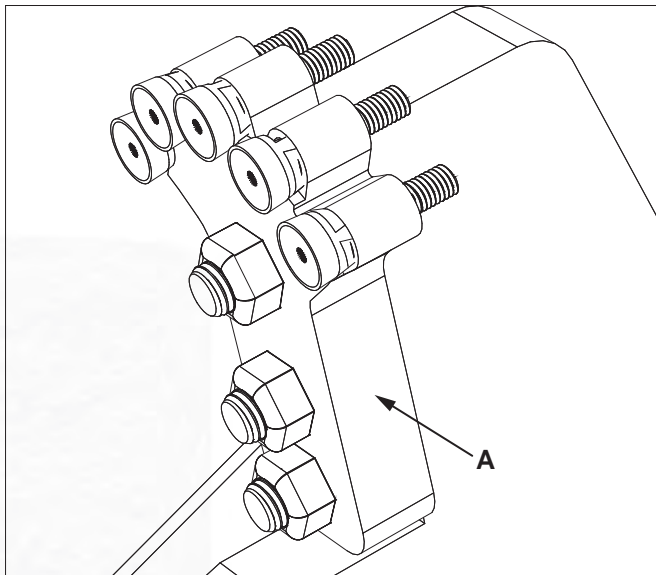
8.4 Replace Cutting Teeth

1. Park stump grinder on a level surface.
2. Lower rotor to the ground.
3. Shut off engine and remove key.
4. Inspect cutting teeth (B) for damage and wear. Replace individual teeth as needed.
5. Remove locknut (A) and spacer from tooth (B). Install new tooth. Flat shoulder on tooth will fit against shoulder (C) on tooth holder.
6. Install spacer and locknut. Tighten locknut (A) to 65 lb/ft (88 Nm) of torque.



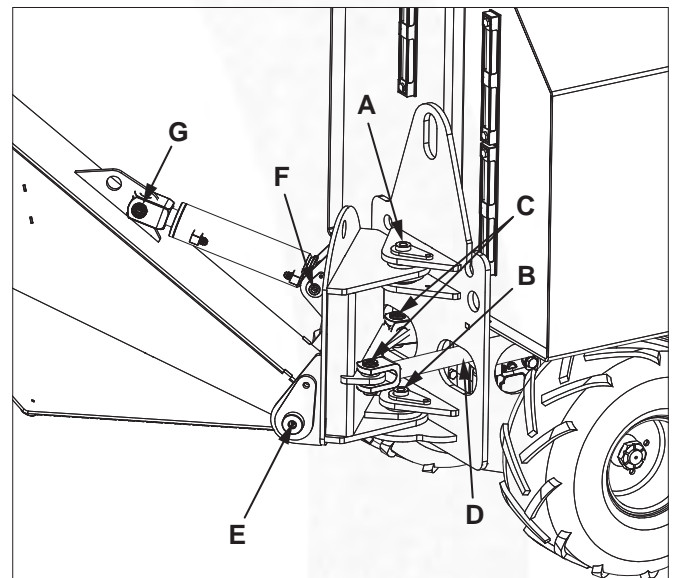
8.5 Replace Tooth Holder

1. Park stump grinder on a level surface.
2. Lower rotor to the ground.
3. Shut off engine and remove key.
4. Inspect tooth holders (A) for damage and wear. Replace individual tooth holders as needed.
5. Remove teeth from tooth holder.
6. Remove mounting hardware on tooth holders. Install new tooth holder and tighten mounting hardware.
7. Install teeth into new tooth holder.
8. Tighten tooth locknut to 65 lb/ft (88 Nm) of torque.

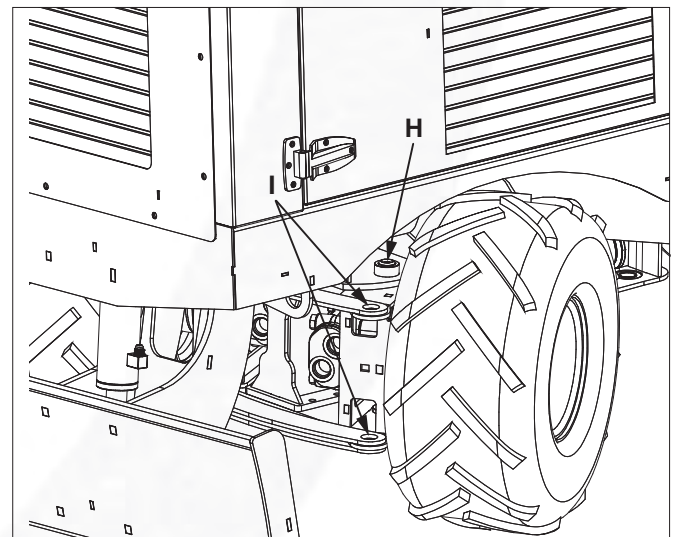


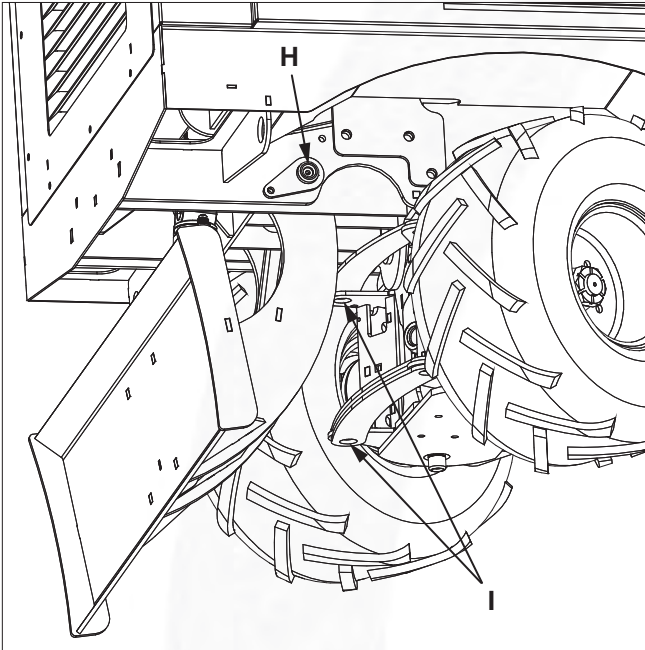
8.6 Lubrication - Every 30 Hours

1. Lubricate swing pivot pins (A), (B), (C) and base end pin of both swing cylinders (D).
2. Lubricate raise/lower pivot pin (E) and cylinder pins (F) and (G).

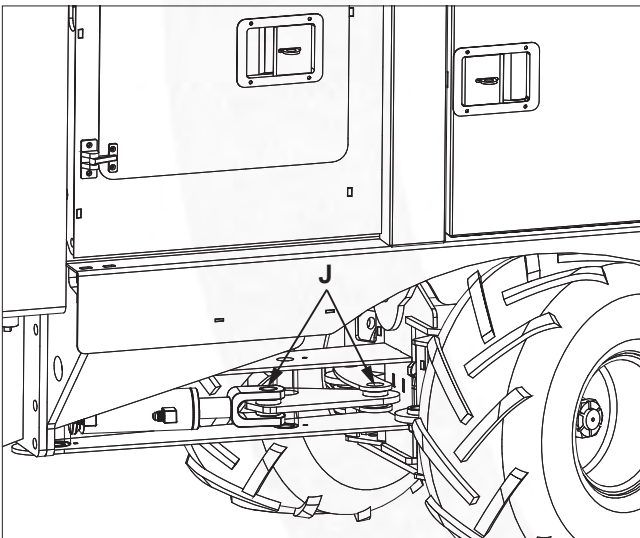


3. Lubricate axle king pins (H), tie rod pins (I) and steering cylinder pins (J).





4. Lubricate steering cylinder pins (J).



8.7 Change Hydraulic Oil Filter

Change hydraulic oil filter every 500 hours or when optional oil filter restriction indicator shows that filter is clogged.

Waiting too long to change the filter will allow the system to bypass contaminated oil back into the oil system. Contaminated oil will compromise the service life of every component in the hydraulic system.

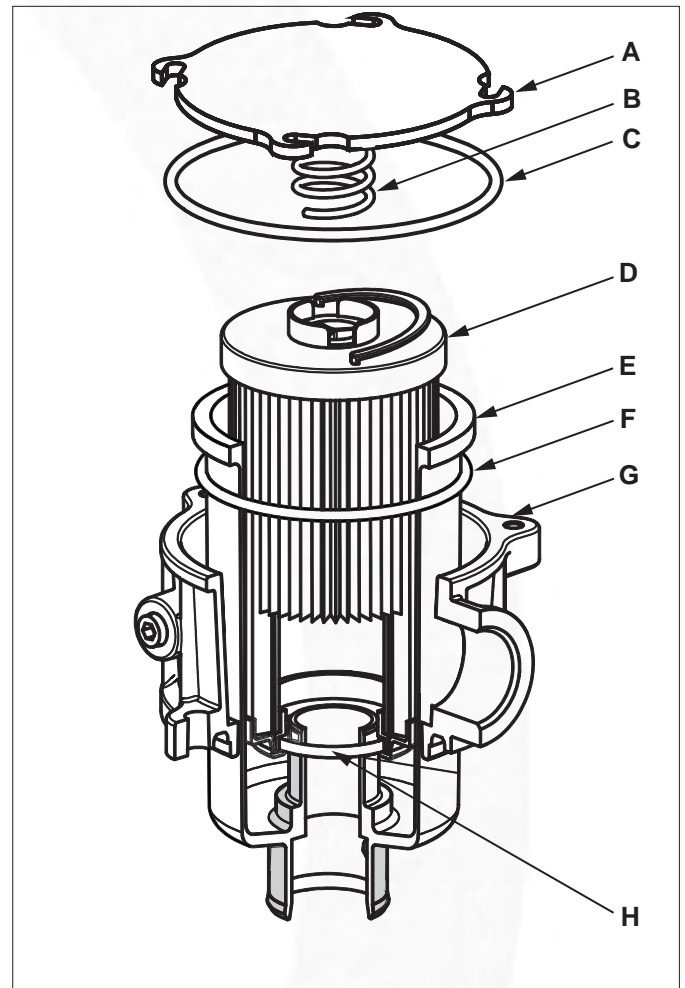
1. Park stump grinder on a level surface.
2. Lower rotor to the ground.
3. Shut off engine and remove key.
4. Remove hydraulic oil filter cover (A), spring (B) and O-ring (C).

NOTICE

Prevent contamination from entering oil tank.

DO NOT remove filter element (D) from canister (E) at this time.

5. Remove canister (E) and filter (D) as an assembly from housing (G). Do not remove filter from canister at this time! Removing filter from canister will allow contaminants to fall into oil tank.
6. Move canister/filter assembly to a clean area away from machine.
7. Remove filter (D) from canister (E).
8. Clean canister (E).
9. Install new O-ring (H).
10. Install new filter into canister.
11. Install new O-ring (F) and install canister/filter assembly into housing (G).
12. Install new O-ring (C), spring (B) and cover (A)



8.8 Change Hydraulic Oil

Change hydraulic oil filter every 2000 hours or as determined by an oil analysis.

Operating the machine with the hydraulic oil past its service life will compromise the service life of every component in the hydraulic system.

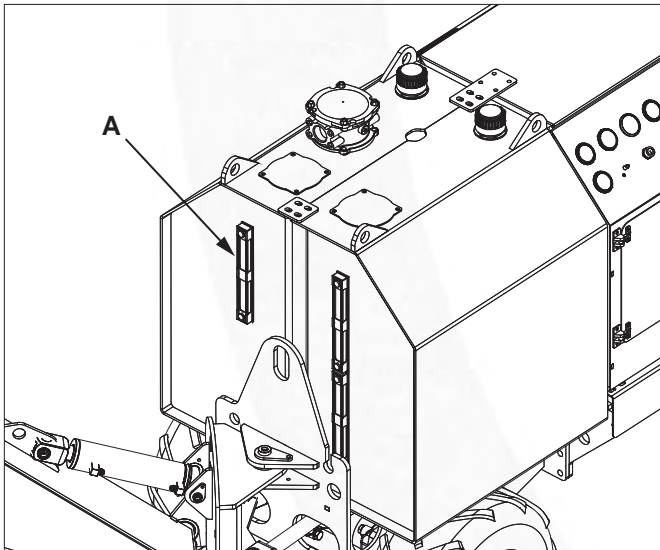
Drain hydraulic oil and dispose of oil in an environmentally safe manner.

Refill hydraulic system with ISO 46 Rated hydraulic oil.

Verify oil is filled to proper level on sight gauge (A).

If you use oil with a viscosity that's too high for the climate in which the machine will operate, the oil won't flow properly or lubricate adequately during cold start. If you use oil with a viscosity too low for the prevailing climate, it won't maintain the required minimum viscosity, and therefore adequate lubrication, on the hottest days of the year. Using the wrong viscosity oil also increases power consumption.

Verify that there is hydraulic oil in the pump before starting engine.



9. TROUBLESHOOTING

Problem	Probable Cause	Solution
Rotor does not spin.	Rotor jammed.	Lock out power and clear debris from rotor.
	Low hydraulic oil level.	Check hydraulic oil level. Add if necessary.
	Low hydraulic oil flow.	Have a qualified hydraulic technician check hydraulic oil flow.
Rotor rotates slow or sluggish.	Low hydraulic oil level.	Check hydraulic oil level. Add if necessary.
	Oil hydraulic filter plugged.	Replace hydraulic oil filter.
	Relief valve not set properly.	Have a qualified hydraulic technician set relief valve.
	Low hydraulic oil flow.	Have a qualified hydraulic technician check hydraulic oil flow.
Excessive vibration.	Insufficient hydraulic pressure.	Check hydraulic oil level. Add as needed.
	Debris lodged in rotor.	Lock out power and clear debris from rotor.
Smoke emitting from engine exhaust pipe.	Dirty or clogged engine air filter.	Change engine air filter.
Wireless controller does not function.	Controller batteries discharged.	Replace batteries in wireless controller.

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