

14SX 21-Inch Commercial Walk-Behind Rotary Mower (Serial No. 140001-)



JOHN DEERE

OPERATORS MANUAL

14SX 21-Inch Commercial Walk-Behind
Rotary Mower (Serial No. 140001-)

OMM121609 D6 English

John Deere
Lawn & Grounds Care Division
OMM121609 D6

Export Version

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ENGLISH



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INTRODUCTION

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages (see your John Deere dealer to order).

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing the direction of forward travel.

BEFORE DELIVERING THIS MACHINE, your dealer performed a predelivery inspection to ensure best performance.

THIS WALK-BEHIND MOWER IS DESIGNED SOLELY for use in customary lawn mowing or similar operation. Use in any other way is considered as contrary to the intended use.

The manufacturer accepts no liability for damage or injury resulting from this misuse, and these risks must be borne solely by the user. Compliance with and strict adherence to the conditions of operation, service and repair as specified by the manufacturer also constitute essential elements for the intended use.

INTRODUCTION

THIS WALK-BEHIND MOWER SHOULD BE OPERATED, serviced and repaired only by persons familiar with all its particular characteristics and acquainted with the relevant safety rules (accident prevention). The accident prevention regulations, all other generally recognized regulations on safety and occupational medicine and the road traffic regulations must be observed at all times.

Any arbitrary modifications carried out on this walk-behind mower will relieve the manufacturer of all liability for any resulting damage or injury.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the space provided below. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

Date of Purchase:

Dealer Name:

Phone:

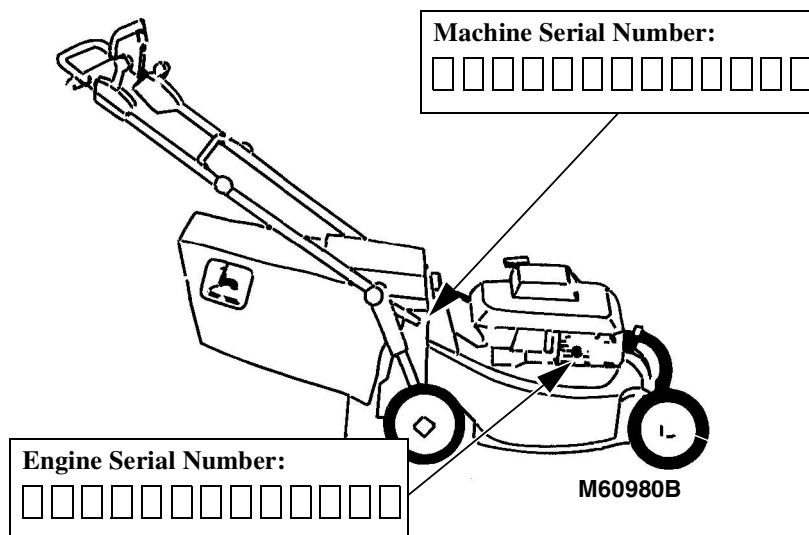


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SAFETY SIGNS

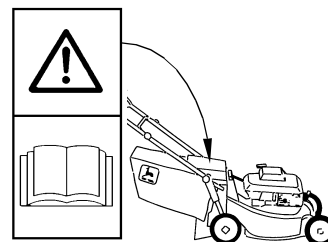
Pictorial Safety Signs

At several important places on this machine safety signs are affixed intended to signify potential danger. The hazard is identified by a pictorial in a warning triangle . An adjacent pictorial provides information how to avoid personal injury. These safety signs, their placement on the machine and a brief explanatory text are shown in this Safety Signs section.



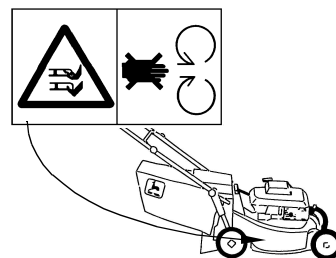
Read Operators Manual

This operator's manual contains important information necessary for safe machine operation. Observe all safety rules to avoid accidents.



Avoid Injury From Rotating Blades

DO NOT put hands or feet under or into mower when engine is running.



Appears on both sides of deck

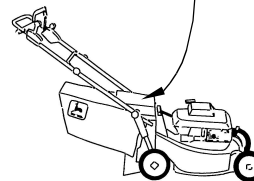
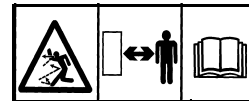
SAFETY SIGNS

Avoid Injury From Thrown Objects

DO NOT operate mower without discharge chute or entire grass catcher in place.

Stay clear while engine is running.

Read operator's manual.

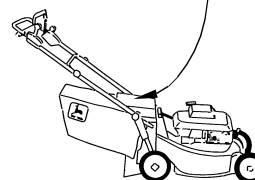


Avoid Injury From Rotating Blades

DO NOT operate mower without discharge chute.

Stop engine before lifting door and clearing discharge.

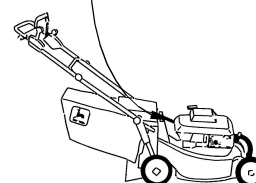
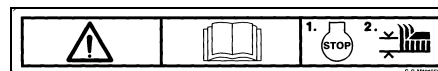
DO NOT lift or block door open with blade engaged.



Avoid Injury When Adjusting Cutting Height

Read operator's manual.

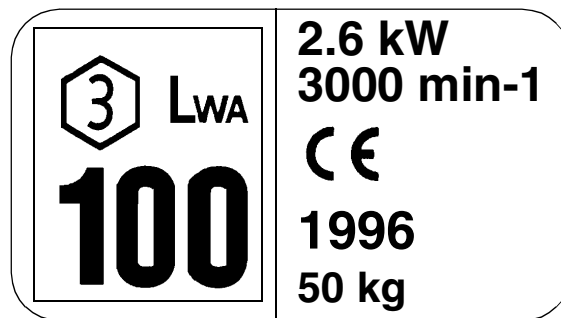
STOP engine before adjusting cutting height.



SAFETY SIGNS

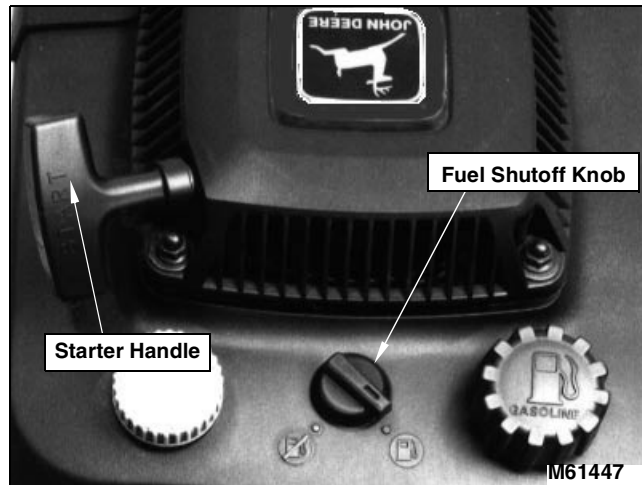
Sound Label

This label on your mower indicates that this model has been certified and is in compliance with European Directive 84/538EEC Standards.

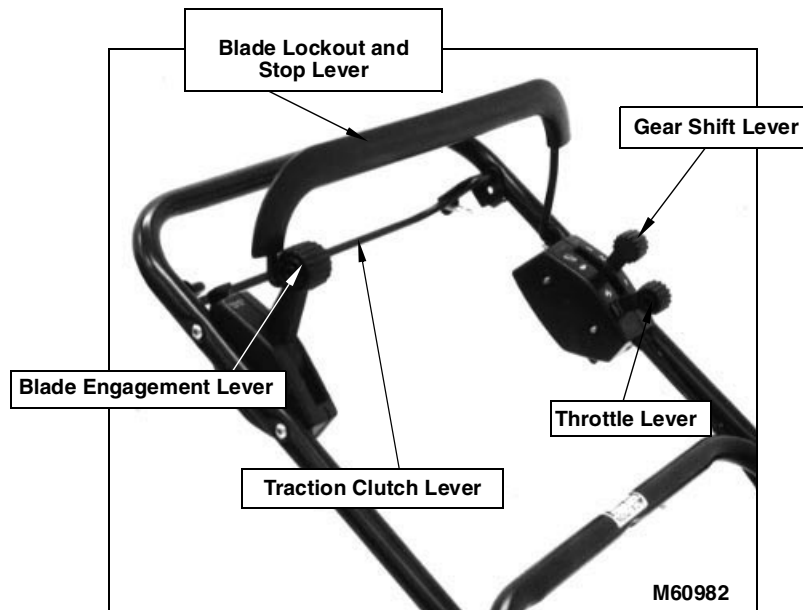


CONTROLS

Engine Controls

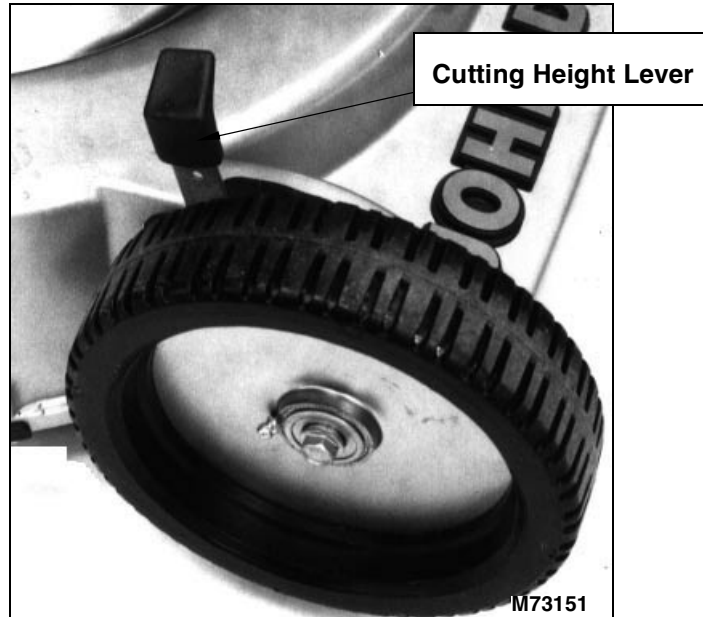


Handle Controls



CONTROLS

Cutting Height Controls



OPERATING

SAFETY

Operate Safely



- Inspect machine before you operate. Be sure hardware is tight. Repair or replace damaged, badly worn, or missing parts. Be sure proper guards, plates, grass catcher, or other safety protective devices are in good condition and fastened in place. Make any necessary adjustments before you operate.
- Clear work area of objects that might be thrown. Keep people and pets out of the work area. Stop machine if anyone enters the area.
- If you hit an object, stop the machine and inspect it. Make repairs before you operate. Keep machine properly maintained and in good working order. Keep all guards, plates, grass catcher, or other safety devices in place.
- DO NOT leave machine unattended when it is running.
- Only operate during daylight or with good artificial light.
- Be sure of footing. Be especially careful when you pull machine backwards with the engine running.
- Mow across a hill - not up and down. Be careful when you change direction on a slope. DO NOT mow excessively steep slopes.
- DO NOT mow wet grass. Reduced traction could cause you to slip.
- Stop the blade when crossing gravel drives, walks, or roads.
- Keep a firm hold on the machine handle.
- DO NOT wear radio or music headphones while operating the machine. Safe operation requires your full attention.
- DO NOT operate mower if you are under the influence of drugs or alcohol.

OPERATING

Rotating Blades are Dangerous - Protect Children and Prevent Accidents



PROTECT CHILDREN:

- Never assume that children will remain where you last saw them. Children are attracted to mowing activity, stay alert to the presence of children.
- Keep children in the house when you are operating the machine.
- Turn machine off if a child enters the area.
- Use extra care when you come to blind corners, shrubs, trees, or other objects that may block your vision.
- DO NOT let children or an untrained person operate the machine.

HELP PREVENT SERIOUS OR FATAL ACCIDENTS:

- Be alert at all times, people ESPECIALLY CHILDREN can move quickly into the area before you know it.
- Shut off blades when you are not mowing.
- Keep hands, feet, and clothing away from rotating blades.

Wear Appropriate Clothing



- Wear close fitting clothing and safety equipment appropriate for the job.
- DO NOT operate the equipment when barefoot or wearing open sandals. Always wear substantial footwear.
- Loud noise can cause impairment or loss of hearing, wear a suitable protective device such as earplugs.

OPERATING

Adjusting Cutting Height



CAUTION: Before you adjust cutting height:
• STOP ENGINE.

IMPORTANT: Adjust all levers to the same height except when you mow in the **LOWEST 13 mm (1/2 in.) position.**

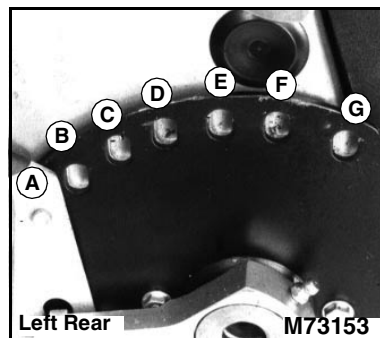
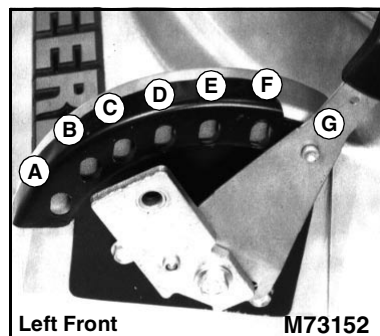
TO HELP MOVE REAR WHEEL LEVERS:

- Lift lower handlebar slightly with one hand to take some weight off wheel.
- Move height adjustment lever to desired position with other hand.

TO USE THE LOWEST CUTTING HEIGHT POSITION:

- Put front wheel levers in 13 mm (1/2-in.) notch (G): First rear notch.
- Put rear wheel levers in 25 mm (1-in.) notch (F): Second rear notch.

Cutting Height Adjustments In MM (Inches)
(A) 90 mm (3-1/2 in.)
(B) 75 mm (3 in.)
(C) 64 mm (2-1/2 in.)
(D) 50 mm (2 in.)
(E) 38 mm (1-1/2 in.)
(F) 25 mm (1 in.)
(G) 13 mm (1/2 in.)

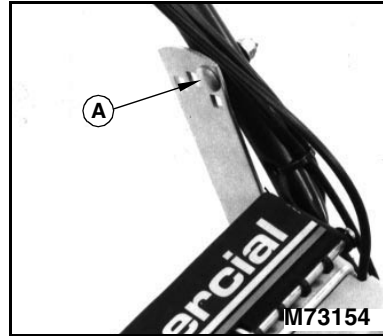


OPERATING

Adjusting Handle Height

NOTE: Handle height may be adjusted to four positions.

1. Remove bolt (A) and lock nut from each side of handle.
2. Install bolt in desired hole in bracket and through holes in handle.
3. Install lock nut.



Starting Engine



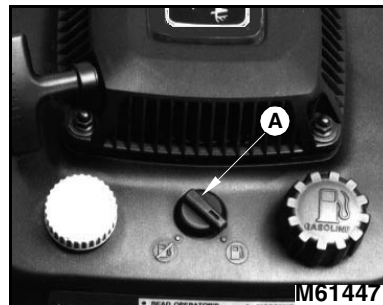
CAUTION: Engine exhaust fumes can cause sickness or death.
Run engine only in a ventilated area.



IMPORTANT: To help prevent damage to recoil starter and/or blade brake clutch, do not start engine:

- When blade is under load, such as, in heavy grass.

1. Turn fuel shutoff knob (A) to the OPEN position.



OPERATING

2. Move throttle lever (B):

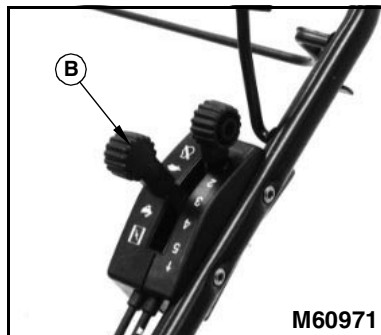
- **COLD ENGINE:** Push lever forward to the **CHOKE**  position.
- **WARM ENGINE:** Move lever to the **FAST**  position.

3. Put your foot on foot pad on top, left side of deck.

4. Pull starter handle until you feel resistance. Then pull fast and steady.

5. When engine starts:

- Return rope slowly. Do not let rope snap back.
- Pull throttle lever back to the **HALF-THROTTLE** position.
- Mow with throttle lever in the **FAST**  position.



Blade Operation



CAUTION:



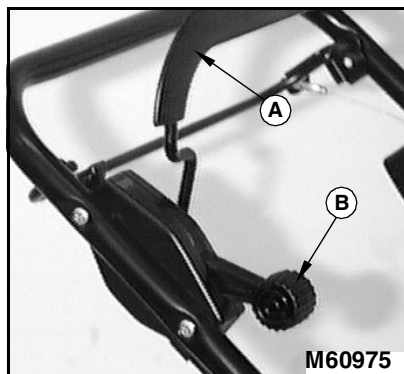
Keep hands, feet and clothing away from blade when engine is running. If blade does not stop within 3 seconds after you release blade stop lever, see your John Deere dealer.

NOTE: DO NOT ENGAGE blade in heavy grass or engine may STOP.

To **ENGAGE** blade:

- Pull and hold lever (A) against handle.
- Push lever (B) forward until it latches.

To **DISENGAGE** blade:
Release lever (A).



OPERATING

Forward Travel

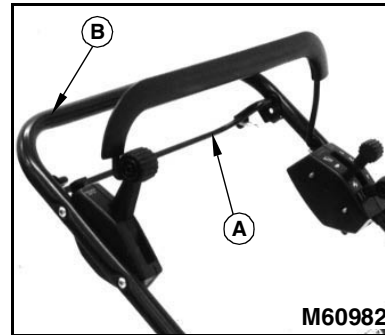
TO TRAVEL FORWARD:

- Pull up and hold traction clutch lever (A) against handle (B).

TO STOP FORWARD TRAVEL:

- Release lever (A).

NOTE: Rear wheels will make a clicking noise when you push mower forward. This means drive train is operating correctly.



Travel Speeds

To change travel speed:

- STOP FORWARD TRAVEL.
- Move gear lever (A) to desired position.
- ENGAGE traction clutch lever.

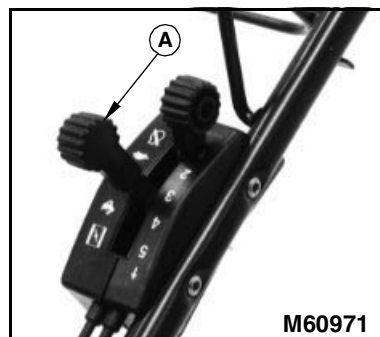
Gear	Travel Speed kmh (mph)
1	2.0 (1.3)
2	3.2 (2.0)
3	3.9 (2.6)
4	4.9 (3.1)
5	7.0 (4.4)



OPERATING

Stopping Engine

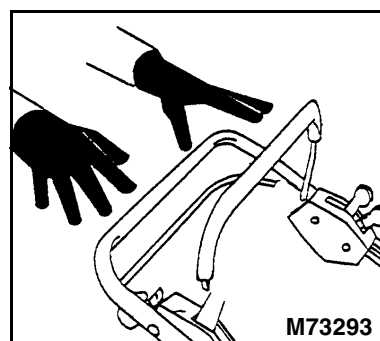
1. Pull throttle lever (A) back to the STOP position.
2. Turn fuel shutoff knob to the CLOSED position when you are done mowing.



Emergency Stopping

Release handle and levers:

- Mower will stop.
- Blade will stop.



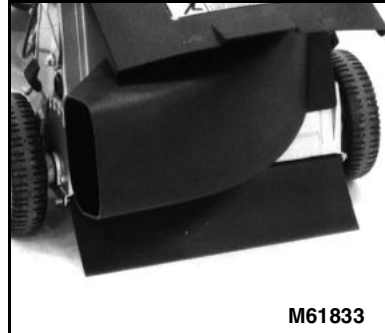
OPERATING

Using Discharge Chute (Optional)



CAUTION: DO NOT operate mower unless grass bag, chute (optional), or mulch plug (optional) is held in place by door.

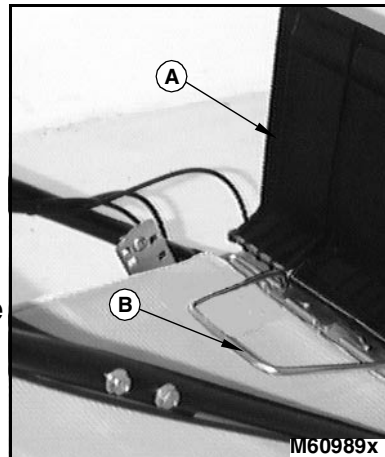
1. Stop engine. Lift and hold door.
2. Remove grass bag.
3. Install chute. Lower door to hold chute in place.



Using Grass Bag

1. Lift and hold door (A).
2. Grasp handle (B). Lift bag on or off mower.
3. RELEASE door.

NOTE: Bag may wear and deteriorate. Check condition of bag often. Use a John Deere bag or equivalent to comply with safety specifications.



OPERATING

Using Mulch Blade (Optional)

See your John Deere dealer for Mulch Plug Kit. The kit includes plug, blade, decal, and instructions.

Mulch blade works equally well with mulch plug, chute, or bag. There is no need to change blade when you change attachment.

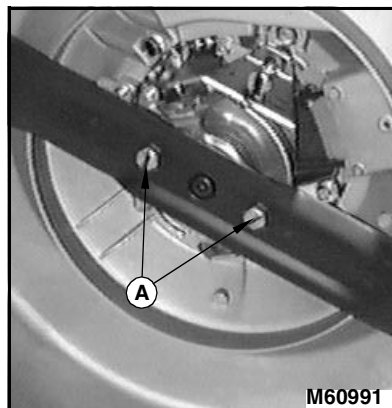


CAUTION: Service mower safely:

- Remove blade when fuel tank is almost empty.
- STOP engine. Let it cool.
- Disconnect spark plug wire.
- Wear gloves or wrap blade with rag.

IMPORTANT: To help prevent air cleaner damage and hard starting, turn mower on its **RIGHT SIDE**.

1. Disconnect spark plug wire.
2. Turn fuel shutoff knob to the CLOSED position.
3. Turn mower on its **RIGHT SIDE**.
4. Remove bolts (A).
5. Install mulch blade with wings pointing upward.
6. Tighten bolts to 75 N•m (55 lb-ft).



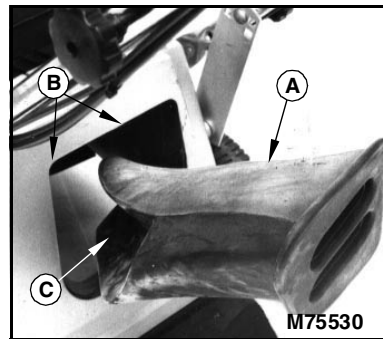
OPERATING

Using Mulch Plug (Optional)



CAUTION: Do not operate mower unless grass bag, chute, or plug is held in place by door. Before you unplug mower or remove mulch plug, STOP engine.

1. Lift and hold door.
2. Install plug (A) in opening (B) with (C) facing left.
3. Push and turn plug to the left until it is seated. Lower door.



Transporting Mower

IMPORTANT: Turn fuel shutoff knob to the **CLOSED** position.

To help prevent fuel from flowing into the engine when transporting the mower, turn the fuel shutoff knob to the **CLOSED** position.

LAWN CARE

Mowing Tips

Before mowing, be sure deck is leveled and mower wheels are in the proper position.

When you mow an area for the first time, travel SLOW and cut HIGH so you can:

- Learn the terrain.
- Learn the best mowing pattern.
- Help prevent hitting objects hidden in the grass.

Mow grass only when it is dry: Wet grass may plug mower and leave a trail of grass clumps.

Mow grass often: Short grass clippings will decay quickly.

Mow at full throttle for best performance.

Use a travel speed that fits the conditions:

- Travel SLOW when you mow thick, tall grass.
- FAST travel or sharp turns may produce stripes or uneven cut. Slow down. Short, fast turns may scuff ground and pull grass out by the roots.
- Travel at MODERATE speed when you mow a thin stand of grass.

Mow often enough so you cut only 1/3 of grass blade in one mowing. Cutting grass too short may kill grass and let weeds grow easily.

See your John Deere dealer for blades that will best fit your mowing conditions.

Aerate lawn to help stimulate soil organisms and root growth.

LAWN CARE

To Avoid Scalping

- If mower scalps easily, cutting height may be too low for ground conditions - especially on lawns with many small mounds and ridges.
- Gauge wheels must be adjusted correctly.
- Mow over ridges and through shallow ditches straight-on, not at an angle.

Keep blade sharp: A dull blade will tear grass; tips of grass will then turn brown.

Bagging Tips

For best performance, bagger needs good airflow. To help increase airflow:

- Keep underside of deck and chute clean.
- Cut grass high.
- Mow at full throttle.
- Clean bag often with water from garden hose, from outside to inside of bag. Let bag dry before use.

IMPORTANT: DO NOT leave clippings in bag: • Moisture may damage bag. • Damp clippings are a fire hazard.
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Check level of clippings in bag often. When bag is full:

- Mower may leave a trail of clippings.
- Clippings may blow to side.
- Top of bag will deflate.

LAWN CARE

Bagging and Composting

Many communities will no longer haul lawn clippings and leaves to landfills. Bagging and composting clippings and leaves is one way to solve this problem.

Clippings from grass bag may also be used as mulch, or sheet compost, between garden rows and around trees and shrubs. This mulch will:

- Keep weeds from growing.
- Help soil keep moisture.
- Add nutrients to soil as it decays.
- Help keep soil temperature down during hot weather.

You may compost clippings and leaves in various ways. See garden magazines or clubs for information, or go to your local library for help.

Finished compost is crumbly. It is rich in soil nutrients, and can be spread on your lawn. Compost may also be worked into soil. It adds humus to soil and improves soil texture, making soil looser and easier to work.

LAWN CARE

Mulching Tips

Advantages:

- You do not have to rake or bag grass or leaves.
- Lawn holds moisture better during dry weather.
- Soil temperatures stay down during hot weather.
- Mulch adds nutrients to soil, and reduces need for fertilizer.

Mulching does not make thatch. Frequent shallow watering and fertilizer application produce thatch from roots that grow close to surface.

Be careful when you mulch leaves in Fall. Grass needs sunlight in Fall to help store food for Winter. A thick layer of mulched leaves can prevent sunlight from getting to grass and smother it. You may have to mow with grass bag to remove this layer.

Mulch only when the grass and leaves are dry.

Mulching wet or damp grass or leaves may cause problems:

- Clippings and leaves may build up on the underside of the mower deck.
- Cut grass and leaves may form clumps.
- Clippings and leaves may not be cut into small bits.
- Engine may work harder and use more fuel.

Cut only top 1/3 of grass at a time.

Use a different mowing pattern each time you mow. Overlap mowing paths 50-100 mm (2-4 in.).

Slow down. Mulching takes more power.

Keep blades sharp. Check them often.

LAWN CARE

After Mowing

- STOP engine. Let it cool. This will help prevent starting a fire when you store the mower.
- CLOSE fuel shutoff valve.
- Remove and shake bag to remove all clippings. This will help to prevent deterioration of bag and starting a fire.
- Clean top of deck, engine, and chute with brush or compressed air, if possible. This will help to prevent buildup and starting a fire.

IMPORTANT: To help extend clutch life, wait at least 30 minutes after mowing before cleaning under the deck with water. After cleaning with water, start the engine and engage the blade for about 15 seconds to “spin dry” the clutch. If you need to clean under the deck immediately after mowing use a scraper, NOT water.

- Spray under deck with water under pressure to remove corrosive lawn chemicals and buildup. (See IMPORTANT information above.)
- Install bag. Put mower in safe storage.

REPLACEMENT PARTS

WE RECOMMEND JOHN DEERE quality parts and lubricants, available at your John Deere dealer.

PART NUMBERS MAY CHANGE, use part numbers listed below when you order. If a number changes, your dealer will have the latest number.

WHEN YOU ORDER PARTS, your John Deere dealer needs your machine serial number. This is the number you have recorded on the inside front cover of this manual.

ITEM	PART NUMBER
Air Cleaner Paper Element	AM116236
Belt	M77167
Standard (High Lift) Blade	M77178
Mulch Blade	M125413
Spark Plug	Champion RN11YC or NGK-BP5ES
Oil Filter	AM107423

(Part numbers are subject to change without notice. Part Numbers may be different outside the U.S.A.)

SERVICE MACHINE SAFELY

Practice Safe Maintenance



- Understand service procedure before doing work. Keep area clean and dry.
- Never lubricate, service, or adjust machine while it is moving. Keep safety devices in place and in working condition. Keep hardware tight.
- To prevent them from getting caught, keep hands, feet, clothing, jewelry, and long hair away from any moving parts.
- Before servicing machine, disengage all power and stop the engine. Let engine cool.
- Securely support any machine elements that must be raised for service work.
- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.
- Unauthorized modifications to the machine may impair its function and safety.

Wear Appropriate Clothing



- Wear close fitting clothing and safety equipment appropriate for the job.
- Loud noise can cause impairment or loss of hearing, wear a suitable protective device such as earplugs.
- Do not wear radio or music headphones while servicing the machine. Safe service requires your full attention.

SERVICE MACHINE SAFELY

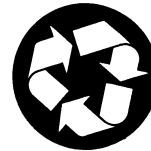
Avoid Injury From Contacting Blades



Before you unplug or adjust machine:

- STOP the engine.
- Wait for blades to STOP.
- Keep hands, feet and clothing away from blades when engine is running.

Handling Waste Products



- Waste products, such as, used oil, fuel, and batteries, can harm the environment and people.
- DO NOT use beverage containers for waste fluids - someone may drink from them.
- See your local Recycling Center or John Deere dealer to learn how to recycle or get rid of waste products.

SERVICE

Service Intervals

BEFORE EACH USE	• Check oil level. • Lubricate rear axle bushings.
AFTER EACH USE	• Clean the mower.
FIRST 5 HOURS	• Change engine oil and filter.
25 HOURS	• Clean air cleaner foam element. • Tighten blade bolts. • Clean and gap spark plug. • Clean belt and transmission area.
50 HOURS	• Change engine oil.
100 HOURS	• Replace air cleaner paper element. • Change oil filter.
400 HOURS	• Clean and lubricate rear axle key.

Service Record

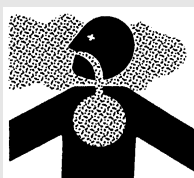
DATE	SERVICE PERFORMED

SERVICE

Avoid Fumes



CAUTION: Engine exhaust fumes can cause sickness or death:



- If it is necessary to run an engine in an enclosed area, use an exhaust pipe extension to remove the fumes.
- Always try to work in a well ventilated area.

Engine Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

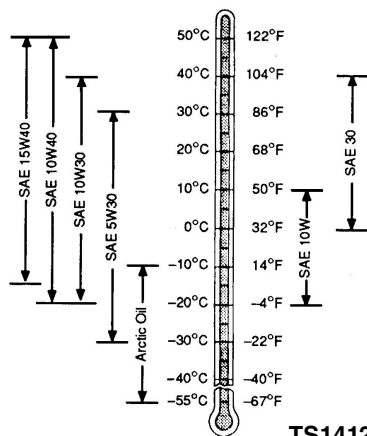
The following oil is preferred:

- John Deere PLUS-4®

Other oils may be used if they meet one of the following:

- API Service Classification
SG and SH

Oils meeting Military Specification MIL-L-46167B may be used as arctic oils.



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SERVICE

Checking Engine Oil Level

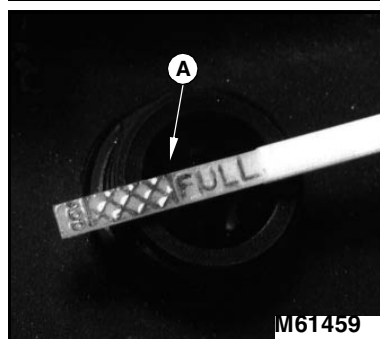


CAUTION: Before you check or add oil:

- STOP engine.
- Let it cool.

IMPORTANT: Change oil and filter after first 5 hours of operation.

1. Stop engine. Put mower on a level surface.
2. Remove dipstick. Wipe it.
3. Install dipstick.
 - DO NOT TIGHTEN IT.
 - LET THREADS REST ON TOP OF TUBE.
4. Add oil to bring level to FULL mark (A).
5. Install and tighten dipstick.



SERVICE

Changing Engine Oil

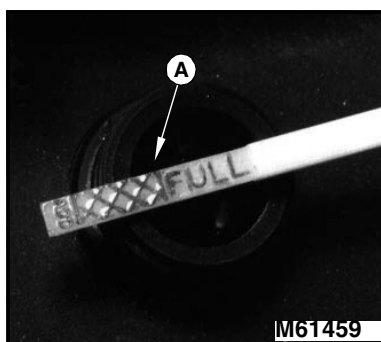


CAUTION: Used oil may harm the environment and people if it is dumped on the ground or into a drain or a body of water.

Call your local Recycling Center or John Deere dealer to learn how to recycle used oil.

- IMPORTANT:**
- Change oil and filter after first 5 hours of operation.
 - Do not overtighten drain fitting or you may damage it.

1. Install drain hose (included with mower) on oil drain fitting.
2. Turn fitting to the left to open drain. Drain oil into a container.
3. Tighten fitting. Remove hose.
4. Pour 0.6 L (20 oz) oil into dipstick tube.
5. Install dipstick.
 - DO NOT TIGHTEN IT.
 - LET THREADS REST ON TOP OF TUBE.
6. Check oil level. If necessary, add oil to bring level to the FULL MARK (A).
7. Install and tighten dipstick.



SERVICE

Changing Oil Filter



CAUTION: A used oil filter may harm the environment and people if it is dumped on the ground or into a drain or a body of water.

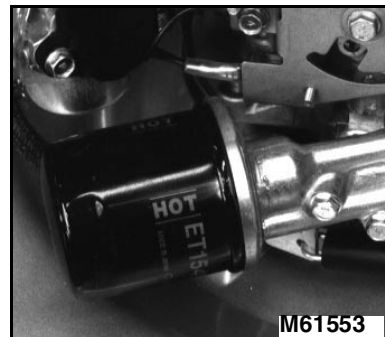
Call your local Recycling Center or John Deere dealer to learn how to dispose of a used oil filter.

Before you remove filter:

- STOP engine. Let it cool

IMPORTANT: Change oil and filter after first 5 hours of operation.

1. Drain oil.
2. Remove filter by turning it to the left.
3. Apply a film of clean engine oil to new filter gasket.
4. Install filter:
 - Turn filter to the right until gasket contacts filter base.
 - Tighten filter by hand 3/4 turn more.
5. Pour new oil into dipstick tube.
6. Run engine and check for leaks around filter.
7. STOP engine. Check oil level.
8. Install and tighten dipstick.



SERVICE

Cleaning Air Cleaner Foam Element



CAUTION: Before you remove elements, STOP engine. Let it cool.

IMPORTANT:

- If you operate the mower in dusty conditions, check and clean foam element at the end of each day's operation. Also check condition of paper element.
- Do not run engine without elements. If foam or paper element is damaged, replace it.
- Do not wash paper element.

1. Clean cover and area around it. Remove cover (A).

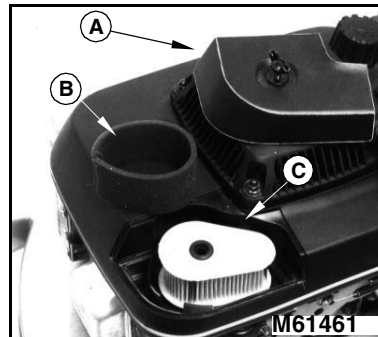
2. Remove foam element (B) from paper element (C).

3. Wash foam element in non flammable solvent or warm water-detergent solution.

4. Rinse element. Let it dry.

5. Put 10–15 drops of clean engine oil on element. Squeeze element to distribute oil.

6. Inspect paper element. Install elements and cover.



SERVICE

Replacing Paper Element



CAUTION: Before you work on engine:
• STOP engine. Let it cool.

IMPORTANT: Under normal operating conditions, replace paper element every 100 hours.

- If you operate mower in very dusty conditions, check elements at end of each day's operation.
- Replace paper element when engine starts hard, begins to lose power, or runs rough. Check condition of element carefully.
- Paper element **MUST BE** in good condition. Cleaning paper element could damage element.
- Do not use a damaged element or engine could be seriously damaged.

1. Clean cover and area around it.
Remove cover (A).

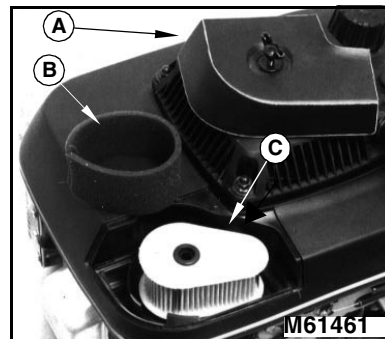
2. Remove foam element (B) from
paper element (C).

3. Inspect paper element.

4. Replace an element:

- That is oily or sooty.
- With a break, hole, or damaged seal.
- If engine performance is poor.

5. Install elements and cover.



SERVICE

Cleaning and Gap Spark Plug



CAUTION: Before you remove plug:
• STOP engine. Let it cool.

1. Disconnect spark plug wire.
Remove plug.
2. Carefully wire brush carbon from plug. Do not clean it with abrasives in a machine.
3. Inspect plug for damage. Replace damaged plug.
4. Adjust gap to 0.76 mm (0.030 in.).
5. Install and tighten plug to 20 N•m (15 lb-ft).
6. Connect wire.



Cleaning Cooling Fins

IMPORTANT: Keep fins clean or engine may overheat.

Clean fins with a brush, rag, or compressed air. Also, blow compressed air under the shroud.



SERVICE

Adjusting Carburetor

NOTE: Carburetor is calibrated by the engine manufacturer and should not require any adjustments.

If engine is operated at altitudes above 1829 m (6,000 ft), some carburetors may require a special high altitude main jet. See your John Deere dealer.

Possible engine surging will occur at high rpm when the machine is in neutral ("N") and the blades are disengaged. This is a normal condition due to the emission control system.

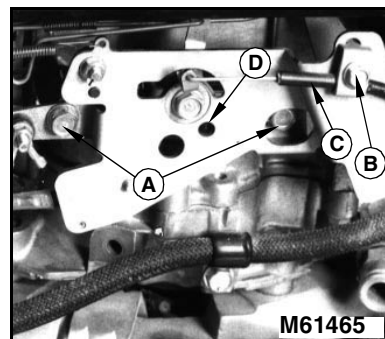
If engine is hard to start or runs rough, check the TROUBLESHOOTING section of this manual.

After performing the checks in the troubleshooting section and your engine is still not performing correctly, contact your John Deere dealer.

Adjusting Throttle Cable

IMPORTANT: Do not loosen screws (A) or you will change governor adjustment.

1. Push throttle lever to the FAST position.
2. If hole (D) in lever is not in line with hole in bracket, loosen screw (B).
3. Move cable cover (C) to line up holes. Tighten screw.

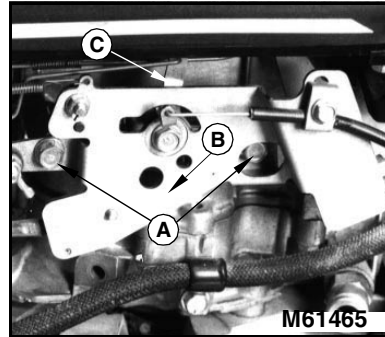


SERVICE

Adjusting Choke

IMPORTANT: Do not loosen screws (A) or you will change governor adjustment.

1. Adjust throttle cable.
2. Turn screw (B) clockwise until lever (C) begins to move. If lever moves when you first turn screw, back off screw and start Step 2 again.
3. Push throttle lever to the CHOKE position.
4. Move lever (C). There should be no free play.
5. If necessary, Repeat Step 2.



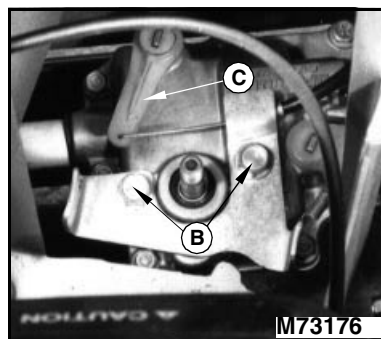
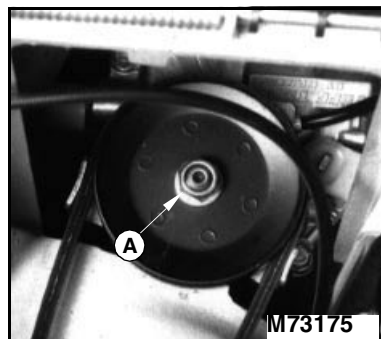
SERVICE

Adjusting Speed Select Cable

NOTE: Adjust cable:

- When gear(s) do not ENGAGE.
- When travel speed slows in a gear.

1. Remove belt shield.
2. Move shift lever to 5th GEAR.
3. Remove nut (A), washer, and pulley.
4. Loosen cable clamp cap screws (B).
5. Move and hold arm (C) as far away from clamp as possible.
6. Tighten clamp.
7. Install pulley and belt. Belt must be inside both guides.
8. Install washer and nut. Tighten nut to 30 N•m (22 ft-lb).
9. Install shield and knob.



SERVICE

Adjusting Traction Clutch

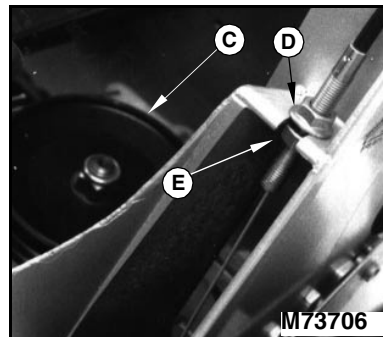
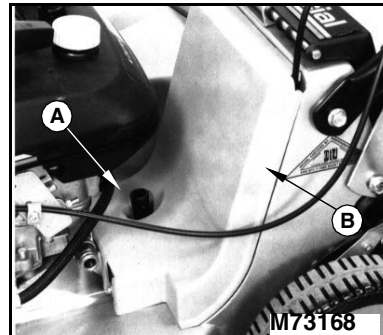


CAUTION: Do not operate mower without belt shield. Before you adjust clutch:

- STOP engine. Let it cool.
- Keep people and pets away from mower.
- Keep hands and tools away from belt area when engine is running.

NOTE: When mower slows as it goes uphill, clutch needs adjustment.

1. Remove knob (A) and shield (B).
2. Loosen nut (D).
3. Turn nut (E) DOWN 3 mm (1/8 in.).
4. Tighten nut (D).
5. Check clutch action:
 - Put mower on a hard surface with front wheels against a wall or curb.
 - Start engine.
 - ENGAGE traction clutch lever. Rear wheels should spin. If not, repeat Steps 2–5 until wheels spin.
6. If pulley (C) turns when engine is running and clutch lever is DISENGAGED:
 - Stop engine.
 - Turn nut (D) UP.
 - Tighten nut (E).
 - Repeat this procedure until pulley does not turn.
7. Install shield and knob.



SERVICE

Grease

Use grease based on the expected air temperature range during the service interval.

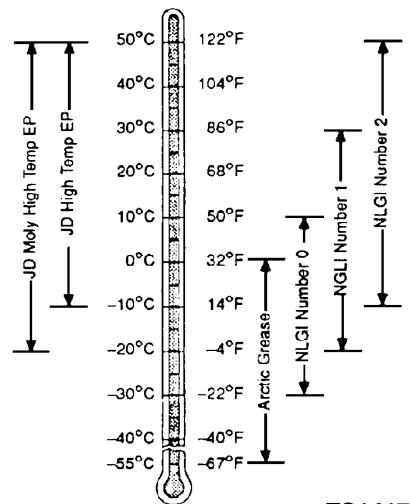
The following greases are preferred:

- John Deere MOLY HIGH TEMPERATURE EP GREASE
- John Deere HIGH TEMPERATURE EP GREASE

Other greases may be used if they meet one of the following:

- SAE Multipurpose EP Grease with a maximum of 5% molybdenum disulfide.
- SAE Multipurpose EP Grease

Greases meeting Military Specification MIL-G-10924F may be used as arctic grease.



TS1417

SERVICE

Gear Oil

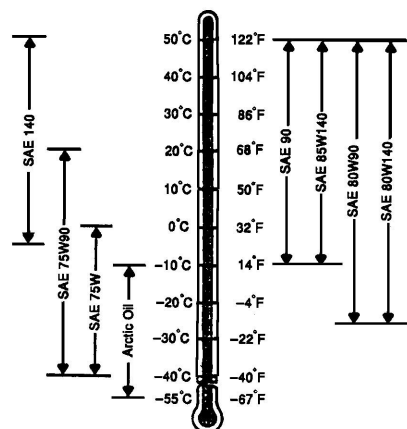
Use oil viscosity based on the expected air temperature range during the period between oil changes.

John Deere GL-5 Gear Lubricant is recommended.

Other oils may be used if they meet one or more of the following:

- API Service Classification GL-5.
- Military Specification MIL-L-2105D.
- Military Specification MIL-L-2105C.
- Military Specification MIL-L-2105B.

Oils meeting Military Specification MIL-L-10324A may be used as arctic oils.

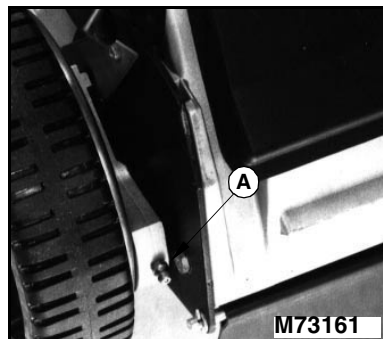


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SERVICE

Lubricate Rear Axle Bushings

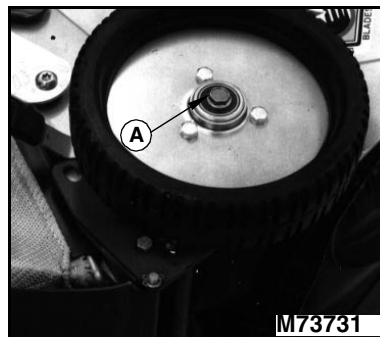
1. Wipe grease fittings clean.
2. Lubricate bearing (A) on each side with one shot of John Deere Multipurpose Grease or an equivalent.



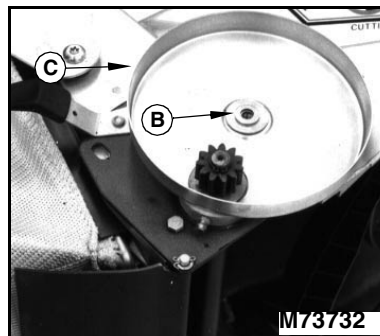
Clean and Lubricate Rear Axle Key

NOTE: Clean key when mower will not self-propel.

1. Lift and block rear of mower.
2. Remove bolt (A) and wheel from each side.



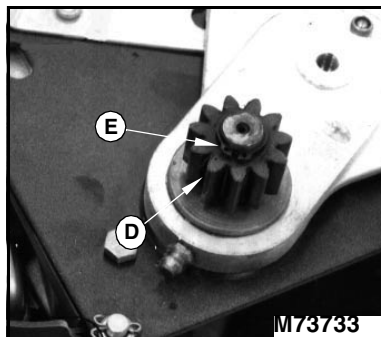
3. Remove two washers (B) and housing (C).



SERVICE

4. Remove snap ring (D) from right side:

- On left side, remove snap ring and spacer.
- On right side (shown), spacer is inside of gear.

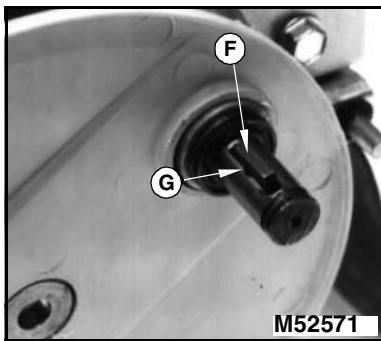


5. Turn gear (E) so it ratchets and pull it from shaft.

6. Remove key (F) and spring (G).

7. Clean debris from key and keyway.

8. Lubricate key, keyway, and inside of gear with John Deere multipurpose grease or an equivalent.



9. Install spring and key.

10. Install gear and spacer:

- Left Side: Install gear, flat side first, then install spacer and snap ring.
- Right Side: Install spacer, then install gear with flat side out. Fasten gear with snap ring.

11. Turn each gear. They must ratchet freely.

12. Install housing and washers. Install wheel and bolt on each side.

13. Remove blocks and lower mower.

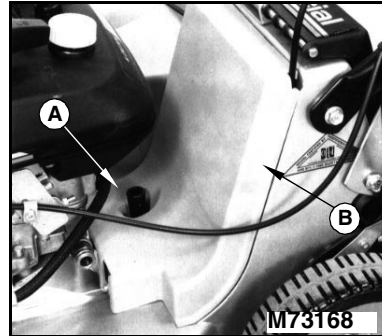
SERVICE

Cleaning Belt and Transmission Area



CAUTION: Before you remove shield:
• STOP engine. Let it cool.

1. Remove knob (A) and shield (B).



2. Remove clippings from belt area and top of transmission.



3. Install shield.

SERVICE

Cleaning Mower



CAUTION: Before you clean mower:

- **STOP** engine. Let engine cool.
- **Disconnect** spark plug wire.
- **Turn** mower onto its **RIGHT** side.

IMPORTANT: To help extend clutch life, wait at least 30 minutes after mowing before cleaning under the deck with water. After cleaning with water, start the engine and engage the blade for about 15 seconds to “spin dry” the clutch. If you need to clean under the deck immediately after mowing use a scraper, **NOT** water.

Clean engine and top of the deck.

Check and clean cooling fins, if necessary.

Grass clippings can build up in belt and transmission area. If necessary, remove belt shield and clean this area. (See Clean Belt and Transmission Area in this section.)

If you operate the mower in dusty conditions, clean air cleaner foam element.

Remove mulch plug. Spray under the deck with water under pressure to remove corrosive lawn chemicals and grass buildup. (See IMPORTANT information above.)

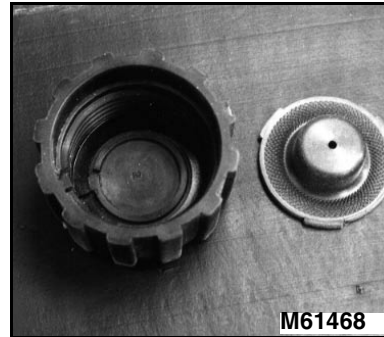
Remove and shake bag to remove clippings.

If bag is caked with grass on the inside, use water under pressure to clean bag. Direct water from outside to inside of bag.

SERVICE

Cleaning Fuel Cap Vent

1. Remove cap.
2. Remove rubber vent from cap.
3. Clean cap and vent in an nonflammable solvent.
4. Install vent and cap.



Check Blade



CAUTION: Service blade safely:

- STOP engine. Let it cool.
- Disconnect spark plug wire.
- Wear gloves or wrap blade with rag.

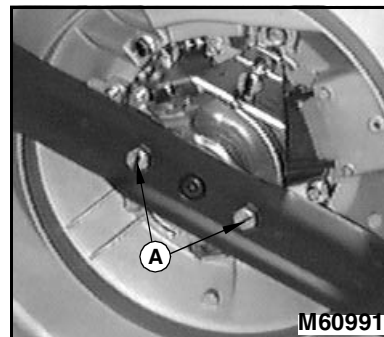
IMPORTANT: To help prevent air cleaner damage and hard starting:

- Turn mower on RIGHT SIDE.

NOTE: Make sure blade tip wing points up and washer cup is against blade.

CHECK BLADE:

- Replace damaged blade.
- Tighten bolts (A) to 75 N•m (55 lb-ft).
- Sharpen dull blade. (See Sharpening Blade in this section.)



TO REMOVE BLADE:

- Remove bolts (A) and blade.

SERVICE

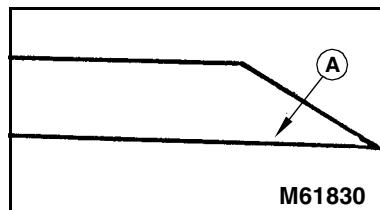
Sharpen Blade



CAUTION: Wear gloves and goggles when sharpening, balancing or installing blade.

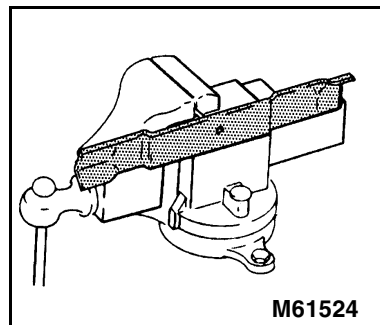
IMPORTANT: Balance blade after you sharpen it. An unbalanced blade may cause excessive vibration.

Sharpen blade: Keep original bevel (A).



Balance and Install Blade

1. Clean blade. Put it on a nail in vise or on a wall. Heavy end of blade will drop. Grind bevel of heavy end. Do not change bevel.
2. Install blade, washers (cup-side against blade), and bolts.
3. Tighten bolts to 75 N•m (55 lb-ft).

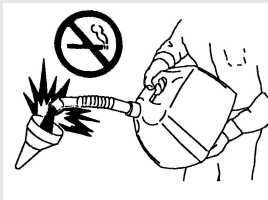


SERVICE

Handle Fuel Safely



CAUTION: Handle fuel with care, it is highly flammable:



- DO NOT refuel machine while you smoke, when machine is near an open flame or sparks, or when engine is running. STOP engine.
- Fill fuel tank outdoors.
- Prevent fires: clean oil, grease and dirt from machine. Clean up spilled fuel immediately.
- Do not store machine with fuel in tank in a building where fumes may reach an open flame or spark.
- To prevent fire and explosion caused by static electric discharge, while you fill tank, use a non-metal fuel container. If you use a funnel, MAKE SURE it is PLASTIC. Avoid using a funnel which has a metal screen or filter.
- Use only clean oil and fuel and clean approved containers and funnels.
- Store oil and fuel in an area protected from dust, moisture and other contamination.

SERVICE

Filling Fuel Tank

IMPORTANT: Avoid spilling fuel. Fuel can damage plastic and painted surfaces.
DO NOT mix oil with gasoline. Only use unleaded gasoline with an octane rating of 87 or higher.
Fuel tank capacity is 1.4 L (1.5 qt).

- Remove any trash from top of fuel tank drain area.
- Use summer blended fuel for warm weather operation and winter blended fuel for cold weather.
- Never use fuel that is stale or has been stored for a long period of time:

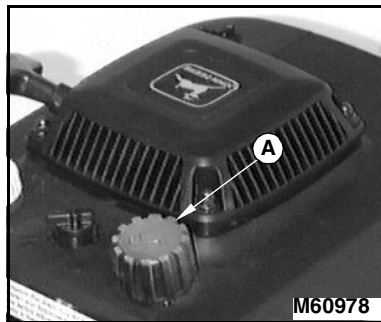
Warm Weather - Maximum 60 days.

Cold Weather - Maximum of 90 days.

- Fill fuel tank at the end of each day's operation. This helps to keep condensation out of fuel tank.

NOTE: Fuel tank capacity is 1.4 L (1.5 qt).

1. Remove fuel cap (A).
2. DO NOT fill tank to top; fuel can expand.
3. Fasten fuel cap.
4. Wipe off any spilled fuel.



TROUBLESHOOTING

Using Troubleshooting Chart

If you are experiencing a problem that is not listed in this chart, see your John Deere dealer for service.

When you have checked all the possible causes listed and you are still experiencing the problem, see your John Deere dealer.

IF	CHECK
Engine Will Not Start	Fuel shutoff knob not in OPEN position.
	Fuel tank is empty.
	Stale or dirty fuel.
	Disconnected or dirty spark plug.
	Throttle lever not in correct position.
Engine Starts Hard Or Loses Power	Dirty fuel tank cap vents.
	Stale or dirty fuel.
	Dirty air cleaner foam or paper element.
	Disconnected or dirty spark plug.
Engine Runs Rough	Carburetor needs to be cleaned.
	Disconnected or dirty spark plug.
	Throttle lever not in fast position.
	Dirty cooling fins.
	Dirty air cleaner paper or foam element.

TROUBLESHOOTING

IF	CHECK
Engine Overheats	Dirty blower housing and cooling fins.
	Oil level too low.
Engine Vibrates Too Much	Loose blade bolt.
	Blade dull or not balanced.
	Blade brake clutch bolt not tight.
Mower Pushes Or Pulls Hard	Rear axle not lubricated.
	Traction clutch needs adjustment.
Mower Mows Unevenly	Pushing mower too fast.
	Mowing too fast around corners and mowing pattern not changed.
	Wheel levers not adjusted in the same position.
	Blade dull or not balanced.
Discharge Chute Plugs	Grass not dry.
	Cutting height not raised high enough.
	Dirty or full grass bag.
	Mowing too fast.
	Engine not in full throttle position.
Mower Jerks Or Will Not Self-propel	Traction belt broken.
	Traction clutch not adjusted.
	Dirty transmission.
	Gear shift lever not in gear.

TROUBLESHOOTING

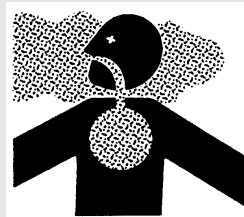
IF	CHECK
Mulched Grass Appearance Is Poor: Clumps, Excessive Clippings, Rough Cut, Etc:	Grass not dry.
	Mowing too fast.
	Engine not in full throttle position.
	Blade dull or not balanced.
	Cutting height set too low.

STORING MACHINE

Storing Mower Safely



CAUTION: Engine exhaust fumes can cause sickness or death.



- If it is necessary to run an engine in an enclosed area, use an exhaust pipe extension to remove the fumes. Always try to work in a well ventilated area.
- DO NOT store mower with fuel in the tank inside a building where fumes may reach an open flame or spark.
- Allow engine to cool before storing in any enclosure.

Storing Mower

IMPORTANT: Use gasoline stabilizer: It helps prevent varnishing and plugging of carburetor jets. Either of these could cause engine to run lean, and result in piston seizure and engine failure. Follow directions on stabilizer can.

1. Clean engine and top of deck.
2. Remove belt shield.
3. Clean belt and transmission area. Install shield.
4. Disconnect spark plug wire. Turn mower onto its RIGHT SIDE.

STORING MACHINE

IMPORTANT: To help extend clutch life, wait at least 30 minutes after mowing before cleaning under the deck with water. After cleaning with water, start the engine and engage the blade for about 15 seconds to “spin dry” the clutch. If you need to clean under the deck immediately after mowing use a scraper, NOT water.

5. Remove mulch plug. Clean underside of deck with water pressure to remove grass buildup, lawn chemicals, and fertilizer. (See IMPORTANT information above.)
6. Lower mower to the ground.
7. Use John Deere Gasoline Storage Stabilizer or an equivalent. Follow directions on can.
8. Lubricate rear axle bushings.
9. Turn fuel shutoff knob to the CLOSED position.
10. Remove bolts and fold handles down, if desired. Do not crimp cables.
11. Do not store mower with fuel in tank in a building where fumes may reach an open flame or spark.

Remove Mower from Storage

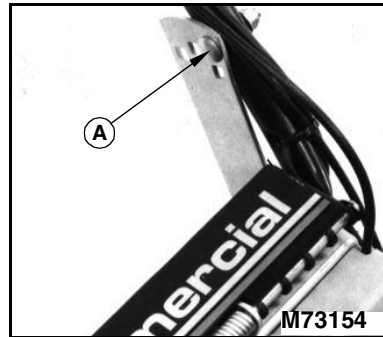
1. Unfold handles. Do not crimp cables.
2. Fill fuel tank with fresh gasoline.
3. Check engine oil level.
4. Connect wire to spark plug.
5. Inspect shields, safety devices and hardware.
6. Lubricate rear axle bushings.
7. Turn fuel shutoff knob to the OPEN position.
8. Run engine at the HALF-THROTTLE position briefly.

ASSEMBLY

Fasten Lower Handle to Bracket

IMPORTANT: DO NOT crimp cables.

1. Put four-hole bracket (arrow) **INSIDE** handle on each side.
2. Install M8 x 40 round-head bolt (A) through desired square hole in bracket and through the handle on each side. Use same square hole on each side.
3. Install lock nut on each bolt.



Fasten Upper Handle to Lower Handle

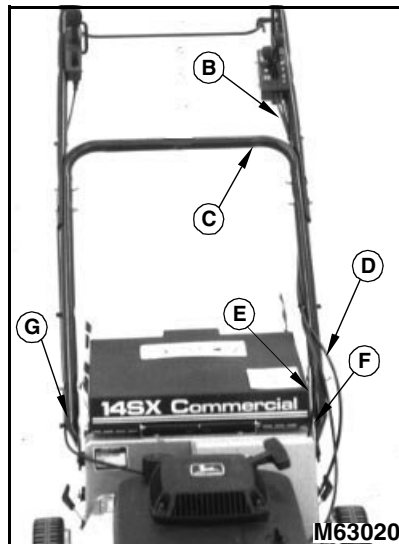
1. Pivot upper handle to the straight position.
2. Hold handle and install M8 x 40 hex-head bolt and lock nut (A) on each side.



ASSEMBLY

3. Check cable routing:

- Cables (B) MUST BE under cross bar (C).
- Cables (D) MUST BE on top of handle and outside bracket (E).
- Install tie strap (F) through hole in handle, then around handle and two cables.
- Install tie strap (G) through hole in handle, around cable and lower half of handle.



Add Engine Oil

IMPORTANT: Engine is shipped without oil. You must add oil before you run engine.

1. Remove dipstick.
2. Add 0.8 L (1-3/4 pt) oil through dipstick tube.
3. Check oil level. Install dipstick. DO NOT TIGHTEN IT: LET THREADS REST ON TOP OF TUBE.
4. Check oil on dipstick: Oil should be to the FULL mark (A).
5. Install and tighten dipstick. Remove the "No Oil" tag.



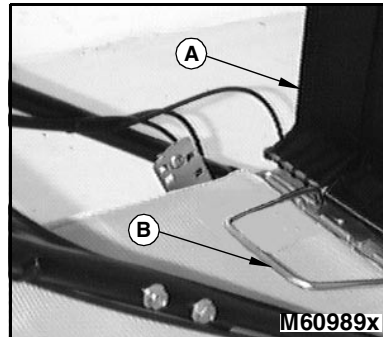
ASSEMBLY

Install Grass Bag



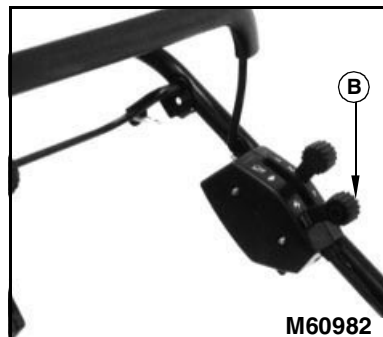
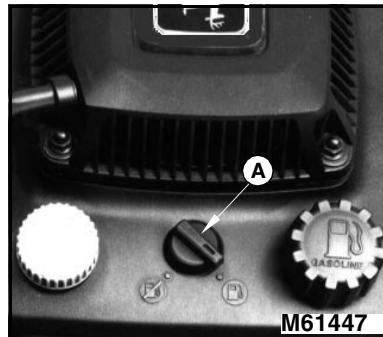
CAUTION: Do not operate mower without grass bag, chute, or mulch plug held in place by door.

1. Pivot door (A) forward.
2. Grasp handle (B).
3. Install bag.



Test Mower Operation

1. Put enough fuel in fuel tank to test mower operation.
2. Turn fuel shutoff knob (A) to the OPEN position.
3. Move throttle lever (B) to the FAST  position.
4. Start engine and check mower operation. (See Operating section).
5. STOP engine and turn fuel shutoff valve to the CLOSED position.



SPECIFICATIONS

Engine

Model	"K" Series
Engine Power/ECE-R85	2.6 kW (5.5 hp)
Cycle	4
Slow Idle Speed	1550 rpm
Operating Range	3000–3200 rpm
Fuel Tank Capacity	1.4 L (1.5 qt)
Engine Oil Capacity Without Filter	0.6 L (20 oz)
Spark Plug	RN11YC or NGK-BP5ES
Spark Plug Gap	0.76 mm (0.030 in.)
Spark Plug Torque	20 N•m (15 lb-ft)
Air Cleaner	Dual element

Machine Specifications

Cutting Height Range	13–90 mm (1/2–3-1/2 in.)
Number of Cutting Heights in 1/2 in. (13 mm) Steps	7
Blade Hardware Torque	75 N•m (55 lb-ft)
Travel Speed Range	2–7 kmh (1.3–4.4 mph)
Number of Travel Speeds	5
Drive	V-Belt Off Engine
Safety System	Blade-Brake Clutch
Wheel Diameter	200 mm (8 in.)

SPECIFICATIONS

Bag Capacity	74 L (2.5 bu)
Weight (Approximate)	54 kg (120 lb)

Vibration

Hand/arm measured per ISO5349	
Maximum weighted acceleration M/s²	7.6

Recommended Lubricants

Fuel	Unleaded Gasoline
Engine Oil	John Deere PLUS-4®
Grease	John Deere MOLY HIGH TEMPERATURE EP GREASE John Deere HIGH TEMPERATURE EP GREASE

(Specifications and design subject to change without notice)

SPECIFICATIONS

CERTIFICATE OF CONFORMITY

John Deere Horicon Works
Horicon, Wisconsin 53032, USA

declares that the lawn mower

Type	SX14	Cutting unit type	Rotary
Serial No. Range	GX14SXB	Cutting width	53 cm
Engine	Gasoline, 4-stroke	Measured sound power level	100 dBa
Manufacturer	Kawasaki		
Engine type	FC150V-FS07	Tested by	LNE, Paris, France
		Test No.	4100213
Engine test speed	3098	Date	10 October 1994

complies with the provisions contained in Directive 84/538/EEC

Horicon, (29 Nov 94)



GARY L. DAVIS
MANAGER
POWER PRODUCTS

SPECIFICATIONS

DECLARATION OF CONFORMITY

**DEERE & COMPANY
JOHN DEERE ROAD
MOLINE, ILL 61265-8098 USA**

**I, THE UNDERSIGNED:
DECLARE THAT THESE MACHINES**

**TYPE14 SX
SERIAL NUMBER14SXB _ _ _ _ _**

COMPLY WITH THE APPLICABLE REQUIREMENTS OF:

**MACHINE DIRECTIVE89/392/EEC
EMC DIRECTIVE89/336/EEC**

**DONE AT:
JOHN DEERE HORICON WORKS..... 1 JULY 1994**



**GARY L. DAVIS
MANAGER
POWER PRODUCTS**

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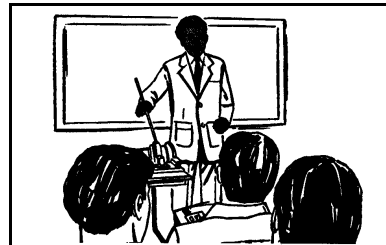


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