

JOHN DEERE
WORLDWIDE COMMERCIAL & CONSUMER
EQUIPMENT DIVISION

21-Inch Walk Behind Rotary Mower
JA65

OMGC00516 J0
OPERATOR'S MANUAL



North American Version
Litho in U.S.A.



INTRODUCTION

Thank You for Purchasing a John Deere Product

We appreciate having you as a customer and wish you many years of safe and satisfied use of your machine.

Using Your Operator's Manual

This manual is an important part of your machine and should remain with the machine when you sell it.

Reading your operator's manual will help you and others avoid personal injury or damage to the machine. Information given in this manual will provide the operator with the safest and most effective use of the machine. Knowing how to operate this machine safely and correctly will allow you to train others who may operate this machine.

This manual and safety signs on your machine may also be available in other languages (see your John Deere dealer to order).

Sections in your operator's manual are placed in a specific order to help you understand all the safety messages and learn the controls so you can operate this machine safely. You can also use this manual to answer any specific operating or servicing questions. A convenient index located at the end of this book will help you to find needed information quickly.

The machine shown in this manual may differ slightly from your machine, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the machine will travel when going forward. When you see a broken line arrow (----->), the item referred to is hidden from view.

Before delivering this machine, your dealer performed a predelivery inspection to ensure best performance.

Special Messages

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

IMPORTANT: Avoid damage! This text is used to tell the operator of actions or conditions that might result in damage to the machine.

NOTE: General information is given throughout the manual that may help the operator in the operation or service of the machine.

CALIFORNIA Proposition 65 Warning

⚠ Warning: The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



CAUTION: Avoid injury! This symbol and text highlight potential hazards or death to the operator or bystanders that may occur if the hazards or procedures are ignored.

PRODUCT IDENTIFICATION

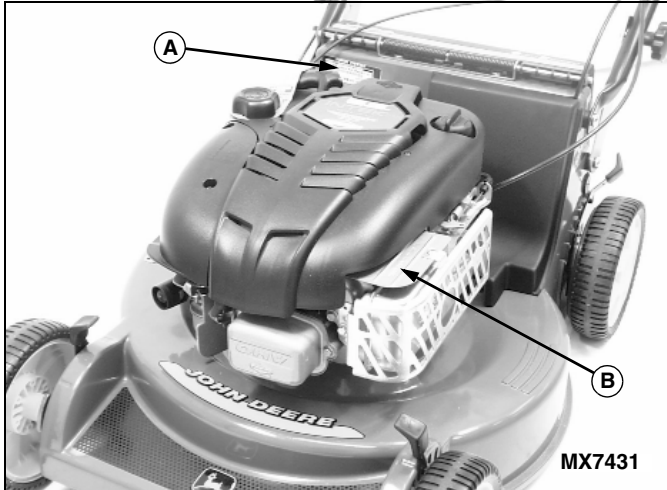
Record Identification Numbers

21-Inch Walk-Behind Rotary Mowers

JA65 PIN (100001-)

If you need to contact an Authorized Service Center for information on servicing, always provide the product model and serial number.

You will need to locate the model and serial number for the machine and for the engine of your machine and record the information in the spaces provided below.



DATE OF PURCHASE:

DEALER NAME:

DEALER PHONE:

PRODUCT IDENTIFICATION NUMBER (A):

ENGINE SERIAL NUMBER (B):

TABLE OF CONTENTS

Safety	1
Operating	6
Replacement Parts	12
Service Intervals	13
Service	14
Troubleshooting	23
Storing Machine.....	25
Assembly	27
Specifications	29
Warranty	31
Index.....	35

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

COPYRIGHT© 2000
Deere & Co.
John Deere Worldwide Commercial and
Consumer Equipment Division
Horicon, WI
All rights reserved
Previous Editions
COPYRIGHT© 1998, 1997

OMGC00516 J0 - English

SAFETY

Understanding The Machine Safety Labels

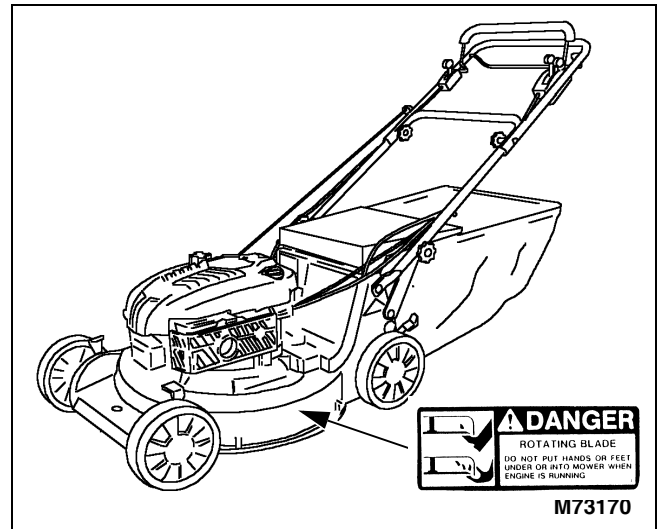


The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine safety labels, the words DANGER, WARNING, and CAUTION are used with this safety-alert symbol, (▲). DANGER identifies the most serious hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, CAUTION, and the safety-alert symbol, (▲).

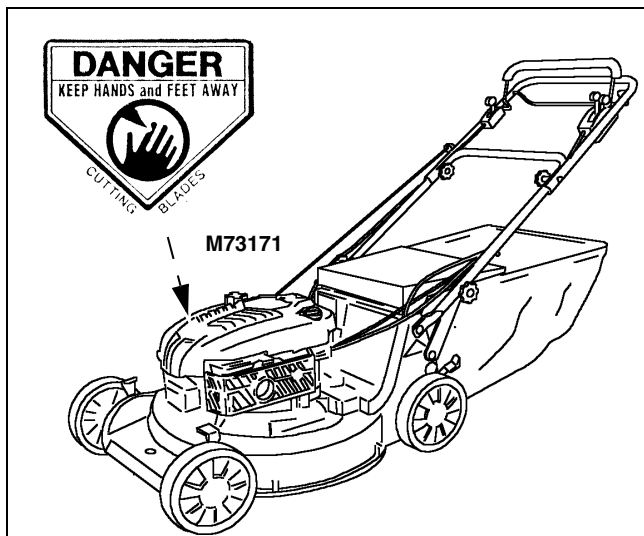
DANGER: ROTATING BLADE



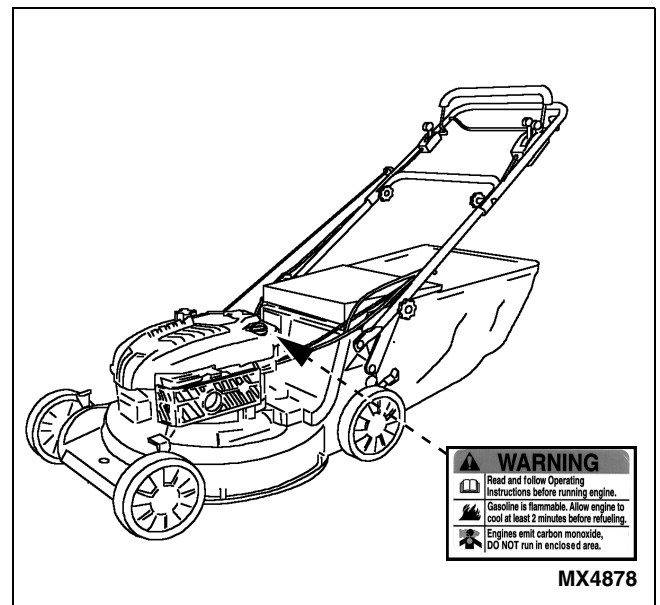
Do not put hands or feet under or into mower when engine is running.

WARNING

DANGER: KEEP HANDS AND FEET AWAY



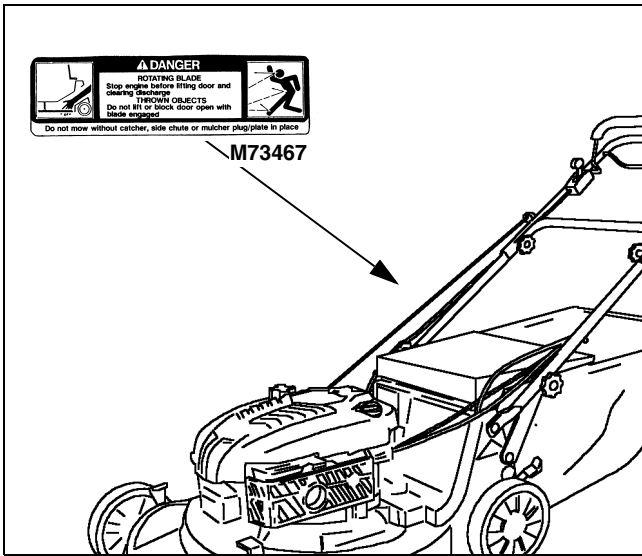
Cutting blades



- Read and follow Operating Instructions before running engine.
- Gasoline is flammable. Allow engine to cool at least 2 minutes before refueling.
- Engines emit carbon monoxide. Do not run in enclosed area.

SAFETY

DANGER



ROTATING BLADE

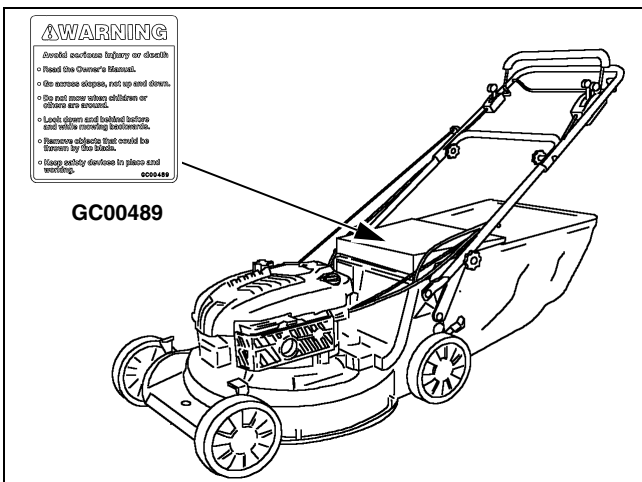
- Stop engine before lifting door and clearing discharge.

THROWN OBJECTS

- Do not lift or block door open with blade engaged.

Do not mow without catcher, side chute or mulcher plug/plate in place.

WARNING: AVOID SERIOUS INJURY OR DEATH

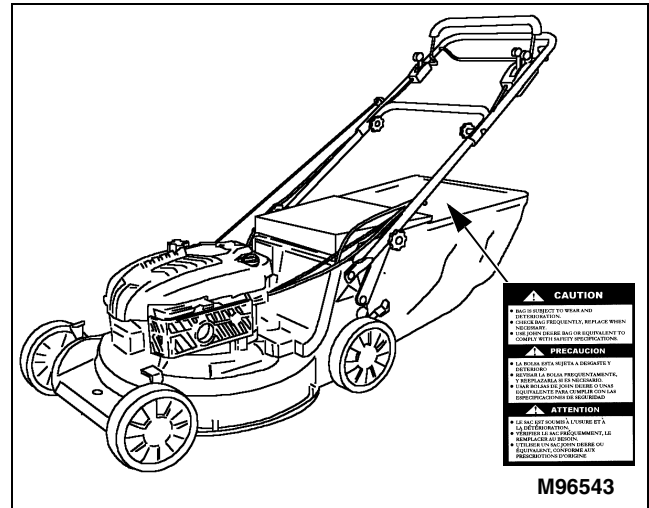


- Read the Owner's Manual.
- Go across slopes, not up and down.
- Do not mow when children or others are around.
- Look down and behind before and while mowing

backwards.

- Remove objects that could be thrown by the blade.
- Keep safety devices in place and working.

CAUTION



- Bag is subject to wear and deterioration.
- Check bag frequently. Replace when necessary.
- Use John Deere bag or equivalent to comply with safety specifications.

Certification Label

This OPEI label on your mower indicates that this model has been certified by an independent laboratory for compliance with American National Standard B-71.1, "Safety Specifications" for Power Lawn Mowers, Lawn and Garden Tractors, and Lawn Tractors.

Emission Control System Certification Label

NOTE: Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by EPA and/or CARB authorized service centers. Contact your John Deere Commercial and Consumer Equipment Retailer concerning emission controls and component questions.

The presence of an emissions label signifies that the engine has been certified with the United States Environmental Protection Agency (EPA) and/or California

SAFETY

Air Resources Board (CARB).

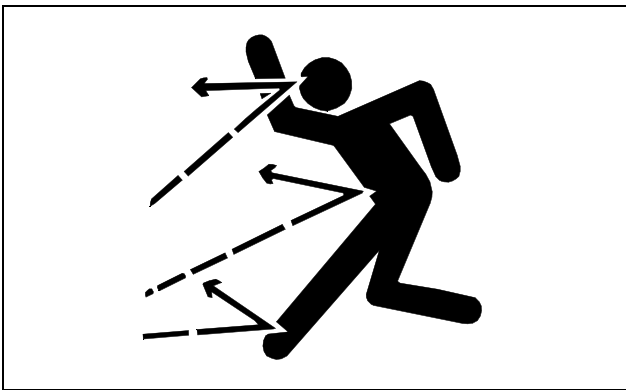
The emissions warranty applies only to those engines marketed by John Deere that have been certified by the EPA and/or CARB; and used in the United States and Canada in off-road mobile equipment.

Emission Compliance Period

If your engine has the emission compliance category listed on the emission control system certification or air index label, this indicates the number of operating hours for which the engine has been certified to meet EPA and/or CARB emission requirements. The following table provides the engine compliance period in hours associated with the category found on the certification label.

Agency	Category	Hours
EPA	C	250
EPA	B	500
EPA	A	1000
CARB	Moderate	125
CARB	Intermediate	250
CARB	Extended	500

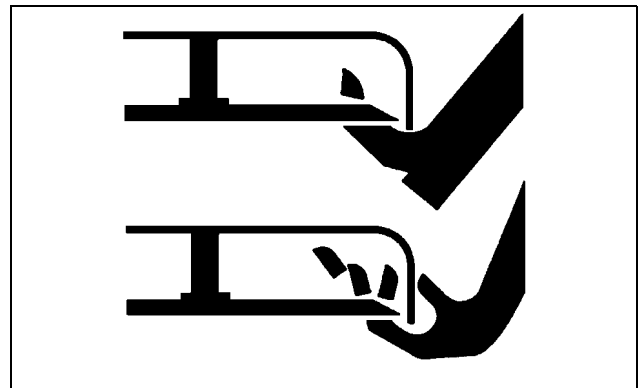
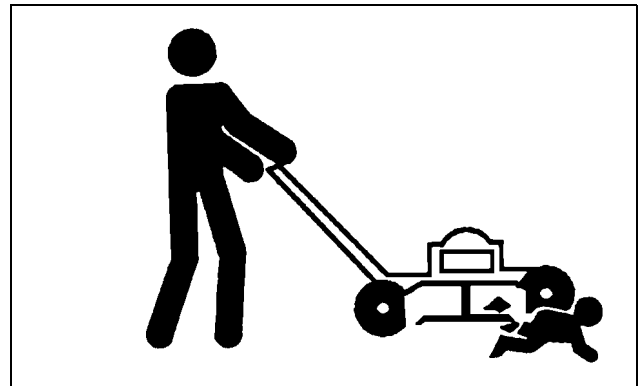
Operate Safely



- 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.
- 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.
- 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.

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.

SAFETY

- 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.
- Stop the blade when crossing gravel drives, walks, or roads.
- Shut off blades when you are not mowing.
- Keep hands, feet, and clothing away from rotating blades.

Wear Appropriate Clothing



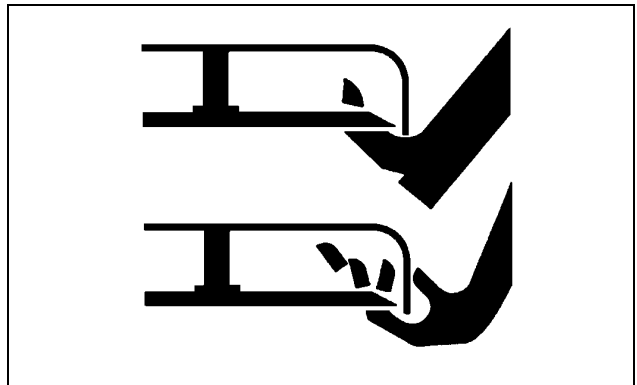
- Wear close fitting clothing and safety equipment appropriate for the job.
- Do not operate the equipment when barefoot or wearing open sandals. Always wear substantial footwear.
- Loud noise can cause impairment or loss of hearing, wear a suitable protective device such as earplugs.

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.

Avoid Injury from Contacting Blade



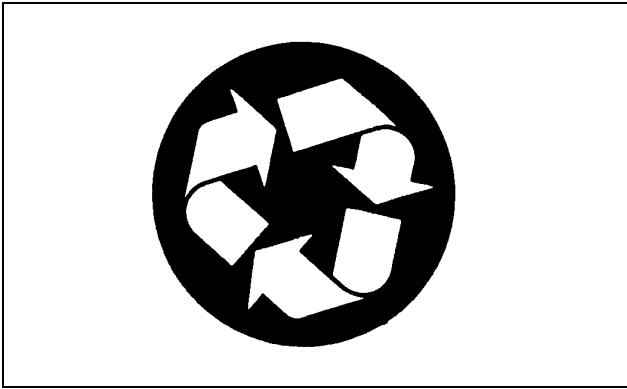
Before you unplug or adjust machine:

- Stop the engine.
- Wait for blade to stop.
- Keep hands, feet and clothing away from blade when

SAFETY

engine is running.

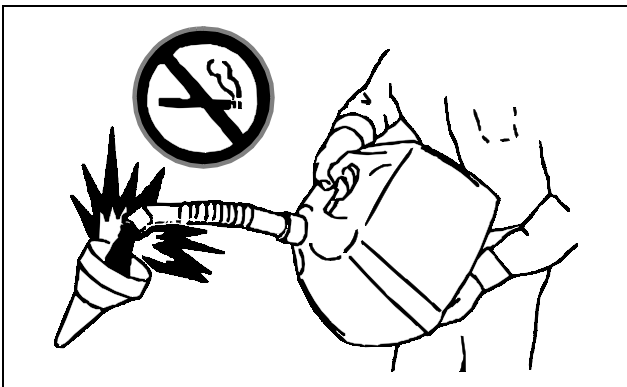
Handling Waste Products



- 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.
- A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. See your John Deere dealer for the MSDS on chemical products used with your machine.

Handling Fuel Safely

Fuel and fuel vapors are 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.
- Prevent fire and explosion caused by static electric discharge. Use only non-metal, portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials (ASTM). If using a funnel, make sure it is plastic and has no screen or filter.
- Static electric discharge can ignite gasoline vapors in an ungrounded fuel container. Remove the fuel container from the bed of a vehicle or the trunk of a car and place on the ground away from the vehicle before filling. Keep nozzle in contact with container opening while filling.



- When practical, remove equipment from trailers or truck beds and refuel them on the ground. If this is not possible, use a portable, plastic fuel container to refuel equipment on a truck bed or trailer.
- Do not use methanol gasoline. Methanol is harmful to the environment and to your health.

OPERATING

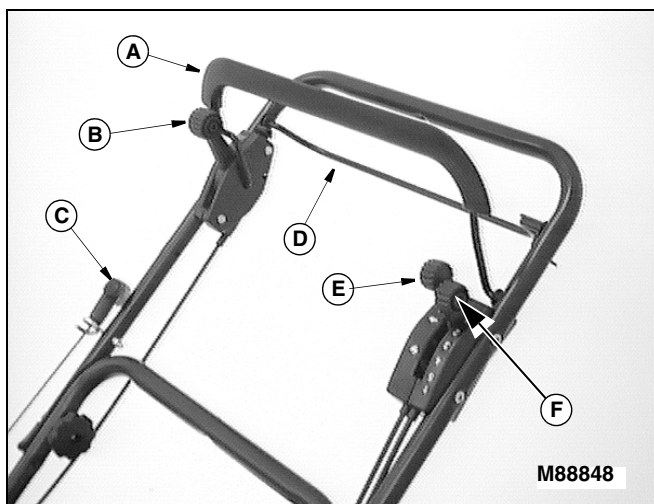
Daily Operating Checklist

- ☐ Test safety systems.
- ☐ Check fuel level.
- ☐ Check engine oil level.
- ☐ Remove grass and debris from machine.
- ☐ Check area below machine for leaks.

Avoid Damage to Plastic and Painted Surfaces

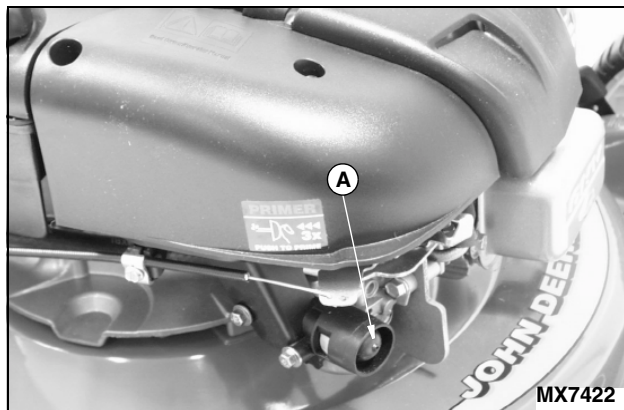
- Do not wipe plastic parts unless rinsed first.
- Insect repellent spray may damage plastic and painted surfaces. Do not spray insect repellent near machine.
- Be careful not to spill fuel on machine. Fuel may damage surface. Wipe up spilled fuel immediately.

Handle Controls



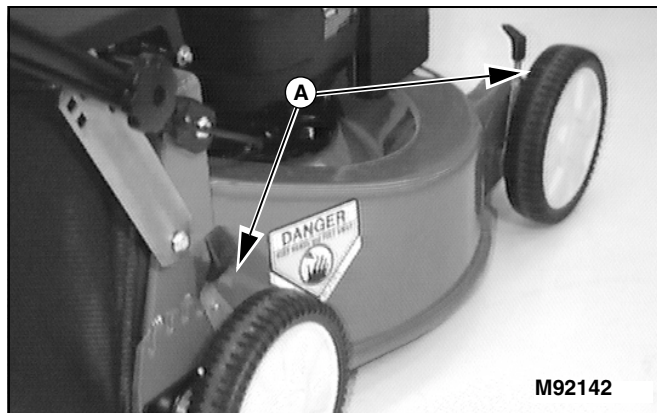
- A - Blade Control Lever
- B - Blade Engagement Lever
- C - Starter Handle
- D - Traction Clutch Lever
- E - Throttle Lever
- F - Gear Shift Lever

Engine Controls



A - Primer Bulb

Cutting Height Controls



A - Cutting Height Levers

Adjusting Cutting Height



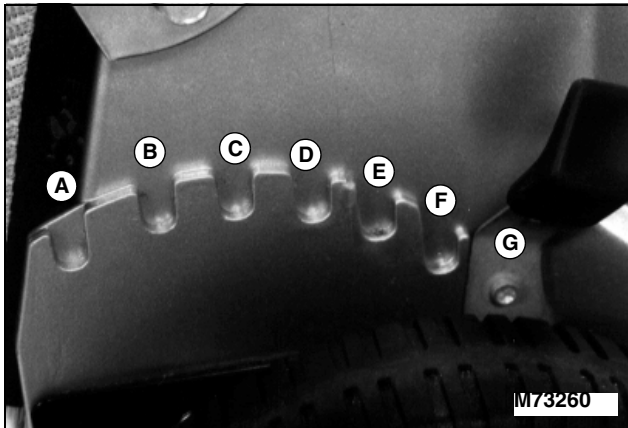
CAUTION: Avoid injury! Before adjusting mower cutting height:

- Stop engine.

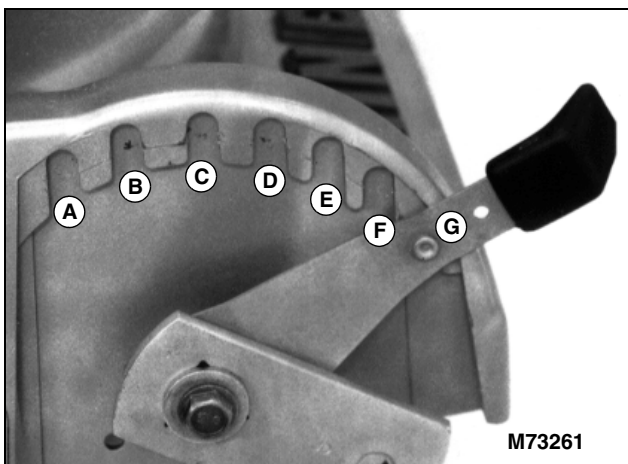
NOTE: Adjust both levers to same height except for lowest cutting height. This adjustment improves mulching performance at lowest cutting height:

- Put front wheel levers in the first rear notch: 13 mm (1/2 in.).
- Put rear wheel levers in the second rear notch: 25 mm (1 in.) notch.

OPERATING



Picture Note: Right rear shown above.



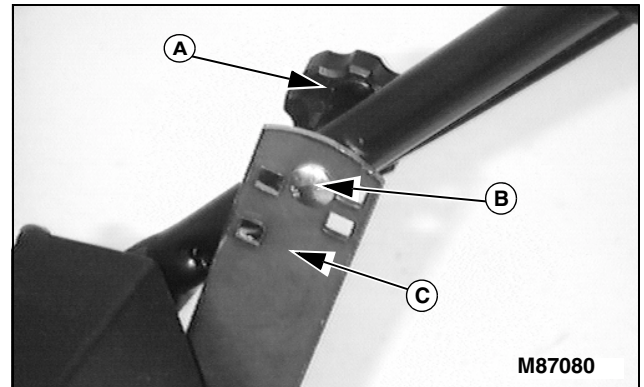
Picture Note: Right front shown above.

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

To help move rear wheel levers:

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

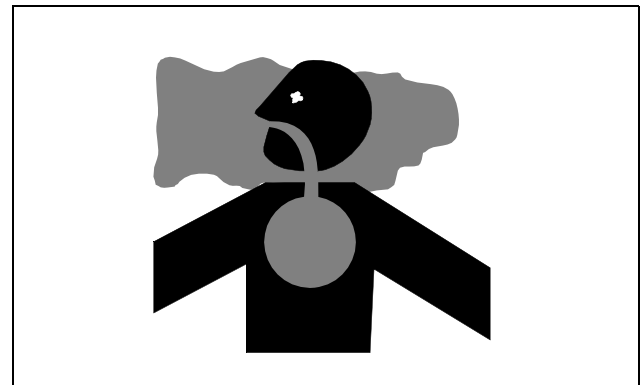
Adjusting Handle Height



Picture Note: Rear grass bag removed for photo clarity.

1. Remove knob (A) and bolt (B) from each side of mower.
2. Move handle to desired height.
3. Line up square hole in bracket (C) with hole in handle.
4. Install bolt through holes.
5. Install and tighten knob.

Testing Safety Systems



OPERATING



CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

Move the vehicle to an outside area before running the engine.

Do not run an engine in an enclosed area without adequate ventilation.

- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**



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

If you run engine in an enclosed area, remove exhaust with exhaust pipe extension, or open doors to bring in outside air.

IMPORTANT: Avoid damage! To help prevent damage to starter and band brake, do not start the engine:

- **when blade is under load, such as in heavy grass, or**
- **when blade control lever is released.**

Use the following checkout procedure to check for normal operation of machine.

If there is a malfunction during one of these procedures, do not operate machine. **See your John Deere dealer for service.**

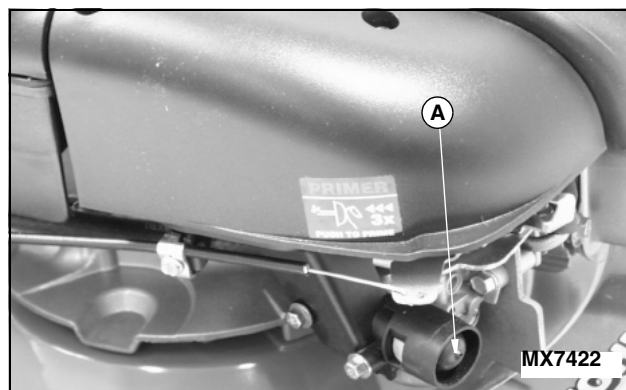
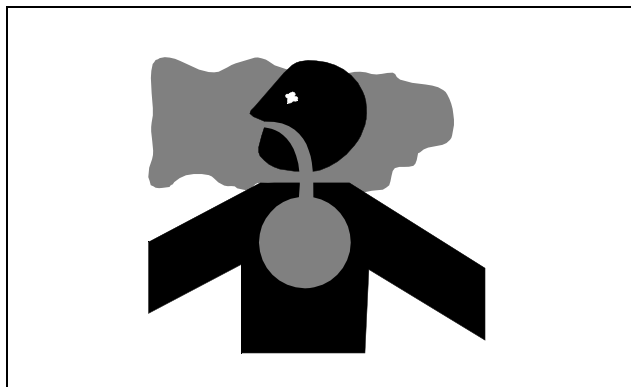
Perform these tests in a clear open area. Keep bystanders away.

Testing Blade Control Lever

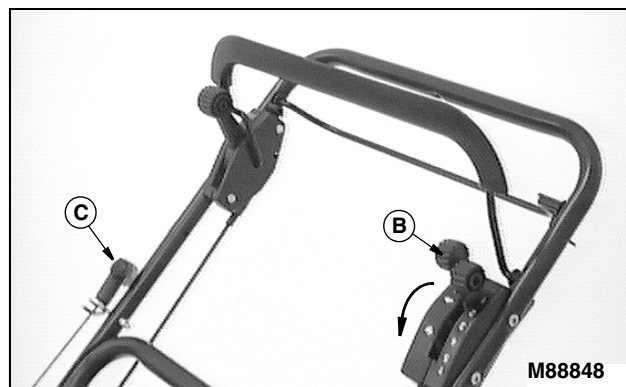
1. Start engine.
2. Engage blade.
3. Release blade control lever.
4. Listen for blade to stop. Do not look under mower to check blade.

Result: Blade should stop within three seconds. If blade does not stop within three seconds, there is a problem with your safety interlock circuit.

Starting Engine



1. Prime engine by pressing primer bulb (A) three times.



2. Push throttle lever (B) to fast  position.
3. Pull starter handle (C) until you feel resistance. Then pull fast and steady until engine starts.
4. Return handle slowly to bracket.
5. Mow with throttle lever in fast  position.

OPERATING

Blade Operation

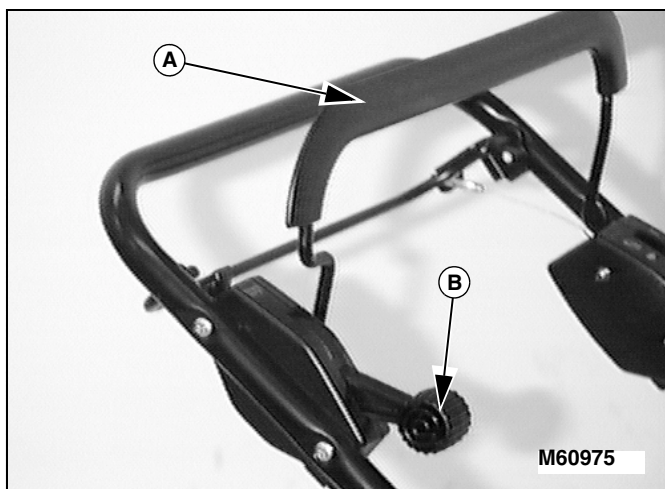


CAUTION: Avoid injury! Keep hands, feet and clothing away from blade when engine is running. If blade does not stop within 3 seconds after you release blade control lever, see your John Deere dealer.

NOTE: Do not engage blade in heavy grass or engine may stop.

To Engage Blade

1. Stand behind the mower.



2. Pull and hold blade control lever (A) against handle.
3. Push blade engagement lever (B) forward until it latches.



CAUTION: Avoid injury! Blade stop lever must be able to release to stop blade in case of an emergency.

If lever (B) does not latch, do not secure it or hold it in the latch position. See your John Deere dealer.

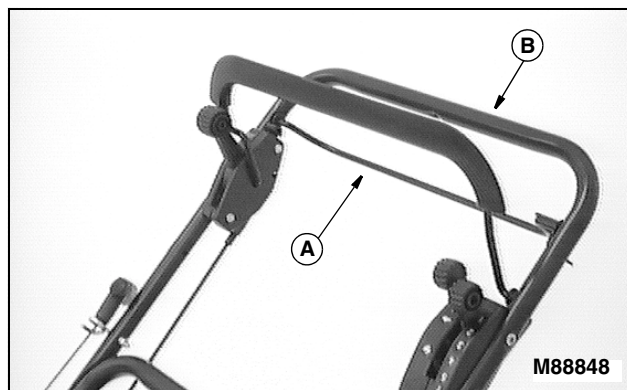
Do not secure lever (A) to handle.

To Disengage Blade

- Release blade control lever (A).

Forward Travel

To Travel Forward



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

To Stop Forward Travel

Release lever (A). Release lever before you turn.

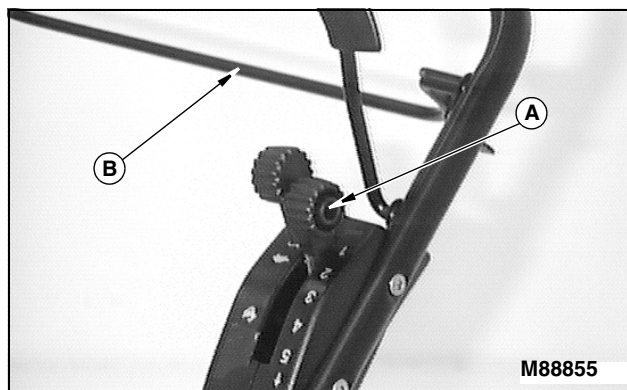
NOTE: Rear wheels should make a clicking noise when you push mower forward. This means drive train is operating correctly.

Travel Speeds

- 1st Gear: 1.9 km/h (1.2 mph)
- 2nd Gear: 2.9 km/h (1.8 mph)
- 3rd Gear: 3.9 km/h (2.4 mph)
- 4th Gear: 4.8 km/h (3.0 mph)
- 5th Gear: 6.6 km/h (4.1 mph)

To Change Travel Speed:

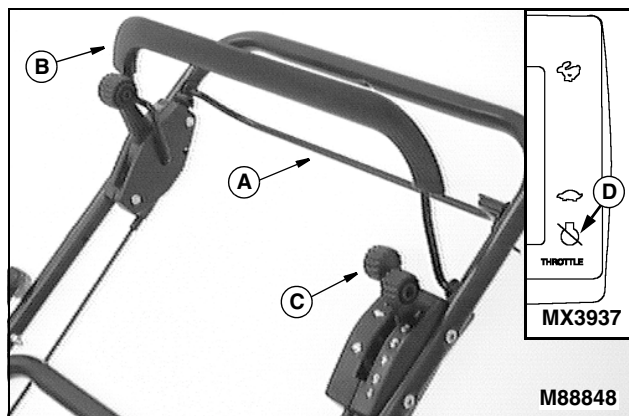
1. Stop.



2. Move gear lever (A) to desired position.
3. Engage traction clutch lever (B).

OPERATING

Stopping Engine

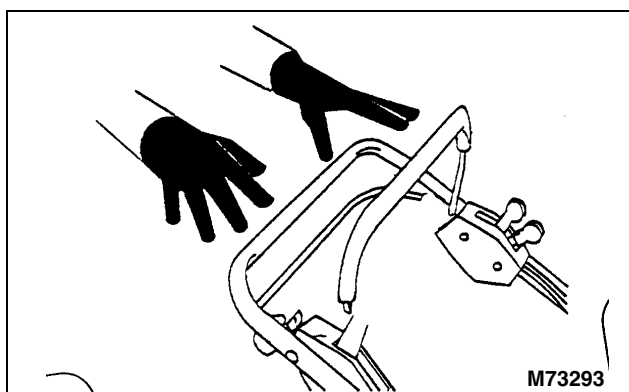


1. Release traction clutch lever (A).
2. Release blade control lever (B).
3. Pull throttle lever (C) all the way back to stop position (D).



CAUTION: Avoid injury! If mower blade does not stop within 3 seconds after you release blade stop lever, see your John Deere dealer.

Emergency Stopping



Release handle and levers:

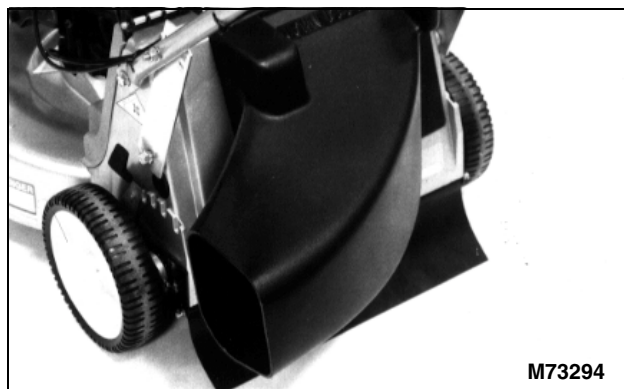
- Mower travel will stop.
- Blade will stop.

Using Discharge Chute (Optional)



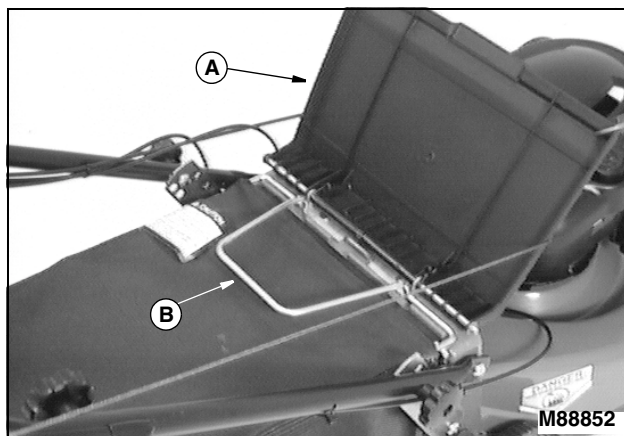
CAUTION: Avoid injury! Do not operate mower unless grass bag, chute, or mulch plug is held in place by door. Before you empty bag, stop mower, blade and engine.

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. Gently lower door.

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

Using Mulch Plug (Optional)

See your John Deere dealer for Mulch Plug.

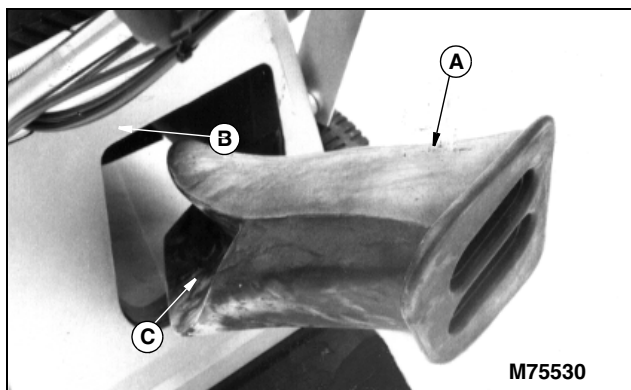
OPERATING

Mulch blade is standard equipment on the mower and works equally well with mulch plug, chute, or bag. You do not need to change the blade when you change attachment.



CAUTION: Avoid injury! 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 counterclockwise until it is seated.
4. Lower door.

Using High Lift Blade (Optional)

High lift blade is recommended for the most favorable bagging performance. See your John Deere dealer for high lift blades.



CAUTION: Avoid injury! Service mower safely:

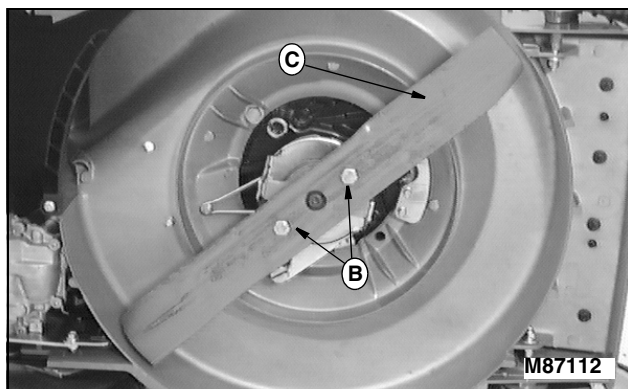
- Remove blade when fuel tank is almost empty.
- Stop engine. Let it cool.
- Disconnect spark plug wire.
- Wear gloves or wrap blade with rag.



1. Disconnect spark plug wire (A).

IMPORTANT: Avoid damage! To help prevent air cleaner damage and hard starting, turn mower on its left side.

2. Turn mower on its left side.



3. Remove bolts (B) and blade (C).
4. Install blade with wings pointing upward.
5. Tighten bolts to 75 N•m (55 lb-ft).
6. Lower mower to the floor.
7. Connect spark plug wire.

REPLACEMENT PARTS

Service Literature

If you would like a copy of the Parts Catalog or Technical Manual for this machine call:

- **U.S. & Canada:** 1-800-522-7448.
- **All Other Regions:** Your John Deere dealer.

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 and engine serial number. These are the numbers that you recorded in the Product Identification section of this manual.

Part Number

ITEM	PART NUMBER
Air Cleaner	
• Foam Pre-cleaner	GC00440
• Paper Element	GC00441
Traction Drive Belt	See your John Deere dealer for service
Mulch Blade (Standard)	M125413
High Lift Blade (Optional)	M77178
Spark Plug	Champion RC12YC

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

SERVICE INTERVALS

Servicing Your Machine

IMPORTANT: Avoid damage! Operating in extreme conditions may require more frequent service intervals.

- Engine components may become dirty or plugged when operating in extreme heat, dust or other severe conditions.
- Engine oil and spark plugs may lose efficiency if machine is operated constantly at slow or low engine speeds or run for short periods of time.

Please use the following timetables to perform routine maintenance on your machine.

Before Each Use

- Check oil level.

After Each Use

- Clean the mower.

Break In - After First 5 Hours of Operation

- Change engine oil.

Every 25 Hours

- Change engine oil. (Minimum once a season)
- Clean air cleaner element
- Tighten blade bolt.
- Lubricate rear axle bushings.
- Clean and gap spark plug.
- Clean belt and transmission area.

Every 100 Hours

- Adjust blade brake clutch cable.

SERVICE

Engine Warranty Maintenance Statement

Maintenance, repair, or replacement of the emission control devices and systems on this engine, which are being done at the customers expense, may be performed by any nonroad engine repair establishment or individual. Warranty repairs must be performed by an authorized John Deere dealer.

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 transmission 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.

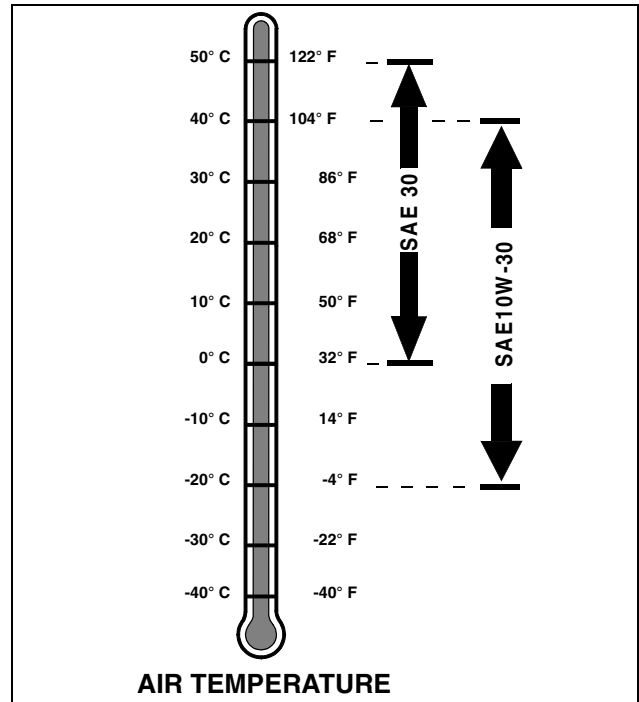
Avoid Fumes



CAUTION: Avoid injury! 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 John Deere oils are preferred:

- TORQ-GARD SUPREME® (SAE 30)

The following John Deere oils are also recommended, based on their specified temperature range:

- TURF-GARD® (SAE 10W-30)
- PLUS-4® (SAE 10W-30)

Other oils may be used if above John Deere oil is not available, provided they meet one of the following specifications:

- SAE 10W-30—API Service Classification SG or higher
- SAE 30—API Service Classification SC or higher

Checking Engine Oil Level



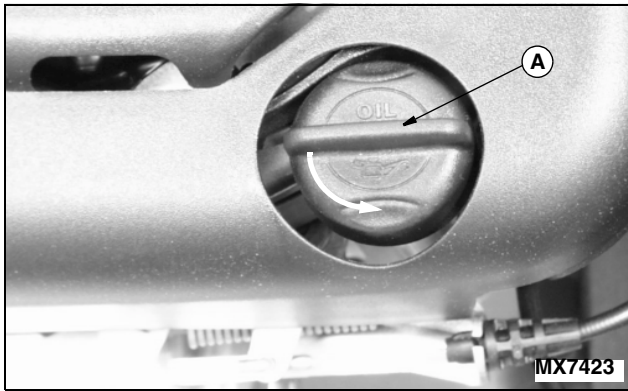
CAUTION: Avoid injury! Before you check or add oil:

- Stop engine. Let it cool.

IMPORTANT: Avoid damage! Change oil after first 5 hours of operation.

1. Stop engine. Put mower on level surface.

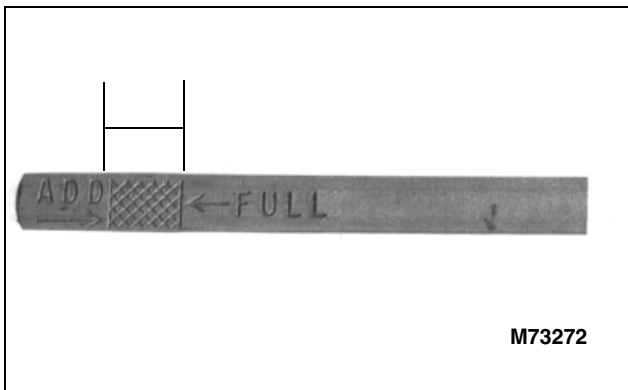
SERVICE



2. Turn oil dipstick (A) 1/4 turn counterclockwise and remove from the filler tube.
3. Wipe dipstick off with a clean cloth.

IMPORTANT: Avoid damage! If oil level is below ADD mark, do not run engine.

4. Install dipstick.



5. Remove dipstick. Check oil level. Oil should be between ADD and FULL marks shown on dipstick, not above FULL mark.
6. Add oil, if necessary.
7. Install and tighten dipstick.

Changing Engine Oil



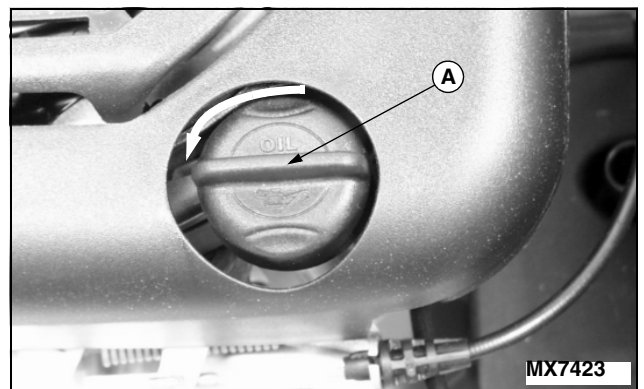
CAUTION: Avoid injury!

- Used oil may harm 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.
- Engine may be hot. Use caution to avoid burns to the hands.
- Fuel is highly flammable. To prevent fuel spillage from occurring, drain fuel from tank before tipping mower to drain oil.

IMPORTANT: Avoid damage!

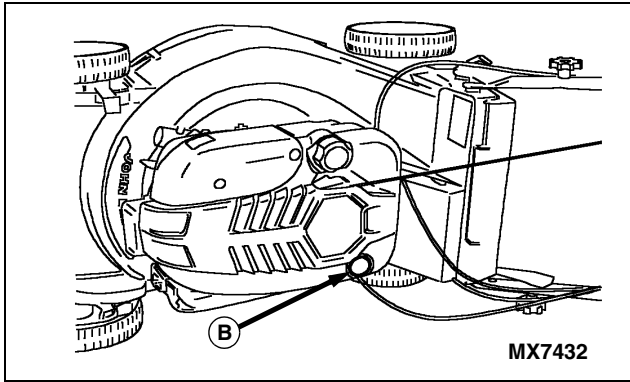
- Change oil after first 5 hours of operation.
- Change oil while engine is warm.
- If mower is not operated 25 hours during the mowing season, change oil before storing mower.
- Help prevent air cleaner damage and hard starting. Turn mower onto its left side when servicing.

1. Park mower on a level surface.
2. Drain fuel from tank or run engine until fuel tank is empty or near empty.
3. Stop engine and disconnect spark plug wire.



4. Turn oil dipstick (A) 1/4 turn counterclockwise and remove from the oil filler tube.

SERVICE



5. Insert a plastic drain tube firmly inside oil filler tube opening (B).
6. Place a drain pan on the left side of the mower.
7. Turn mower onto its left side.
8. Allow engine oil to drain from the dipstick filler tube location into the drain pan.
9. After oil has drained, return mower to an upright position.
10. Remove plastic drain tube. Clean area around filler tube.
11. Add 0.47 L (16 oz) oil through dipstick filler tube.
12. Install dipstick. Turn dipstick 1/4 turn clockwise to tighten.
13. Remove dipstick. Check oil level. Add oil to FULL mark if necessary.
14. Install and tighten dipstick.
15. Connect spark plug wire.

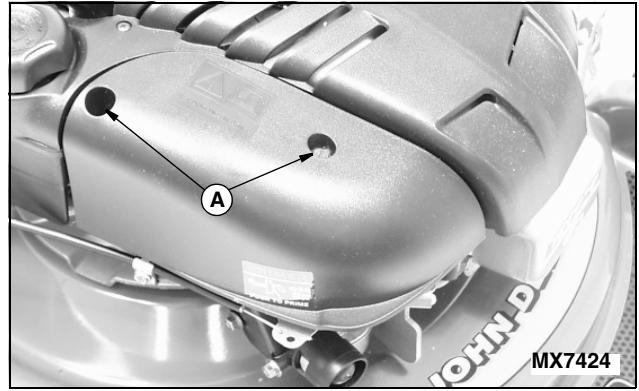
Checking and Cleaning Air Cleaner Element

1. Park machine safely. (See Parking Safely in the Safety Section.)

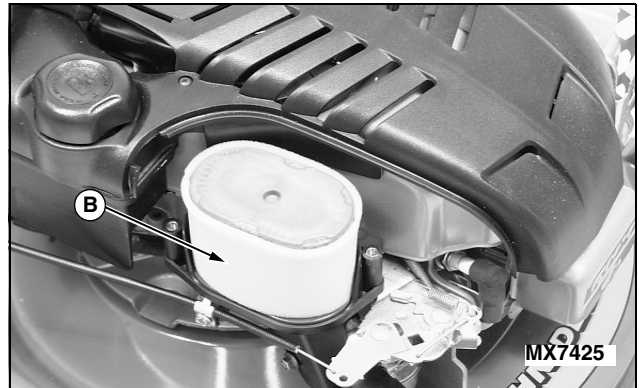


CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine and components will be hot if the engine has been running. Allow the engine to cool before servicing.

2. Let engine cool.
3. Disconnect spark plug wire.
4. Clean dirt and debris from the air cleaner cover.



5. Loosen screws (A), and remove cover.



6. Inspect the foam pre-cleaner (B) without removing it. If the foam pre-cleaner is dirty:
 - a. Remove it from the filter carefully, leaving the paper element in the air cleaner housing.
 - b. Wash pre-cleaner in a solution of warm water and liquid detergent.
 - c. Rinse pre-cleaner thoroughly. Squeeze out excess water in a dry cloth until pre-cleaner is completely dry.

IMPORTANT: Avoid damage! Dirt and debris can enter the engine through a damaged filter element.

- Do not wash paper element.
- Do not attempt to clean paper element by tapping against another object.
- Do not use pressurized air to clean element.
- Replace element only if it is very dirty, damaged or the seal is cracked.

7. Inspect the paper element without removing it. If the paper element is damaged or dirty, remove and replace it with a new element.
8. Clean air cleaner base carefully, preventing any dirt from falling into carburetor.
9. Install foam pre-cleaner onto paper element and install into air cleaner base.

SERVICE

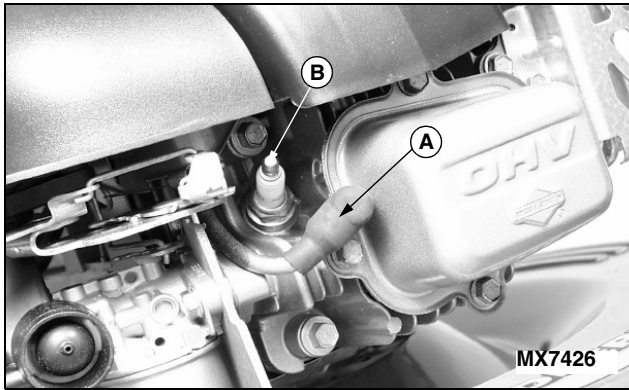
10. Close cover and tighten screws. Do not overtighten.

Cleaning and Gapping Spark Plug



CAUTION: Avoid injury! Before you remove spark plug:

- Stop engine. Let engine cool.



1. Disconnect spark plug wire (A). Remove spark plug (B).
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: 0.51 mm (0.02 in.).
5. Install and tighten plug to 20 N•m (15 lb-ft).
6. Connect wire.

Cleaning Engine Cooling Fins



CAUTION: Avoid injury! Before you clean fins:

- Stop engine.
- Let it cool.
- Wear eye protection to guard against flying debris.

IMPORTANT: Avoid damage! Keep fins clean or engine may overheat.



1. Clean fins with brush, rag, or compressed air.
2. Blow compressed air under shroud.

Adjusting Throttle Cable

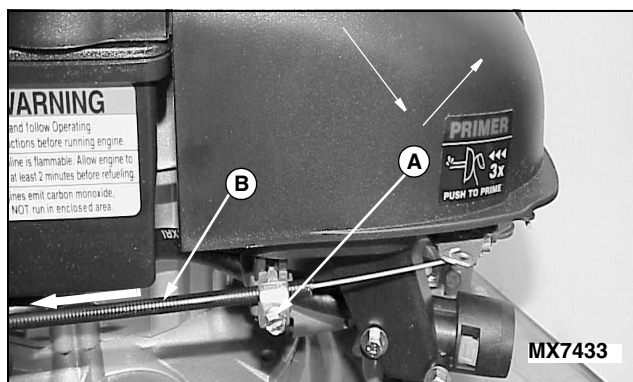


CAUTION: Avoid injury! Before you adjust cable:

- Stop engine. Let engine cool.

1. Push throttle lever to fast  position.

SERVICE



2. Loosen screw (A) until cable sheath (B) moves freely.
3. Grasp cable sheath (B) and pull toward rear of machine until cable sheath stops moving.
4. Tighten screw (A).

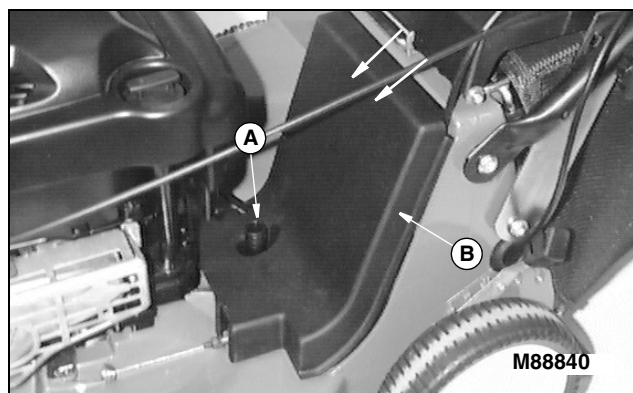
Adjusting Traction Cable



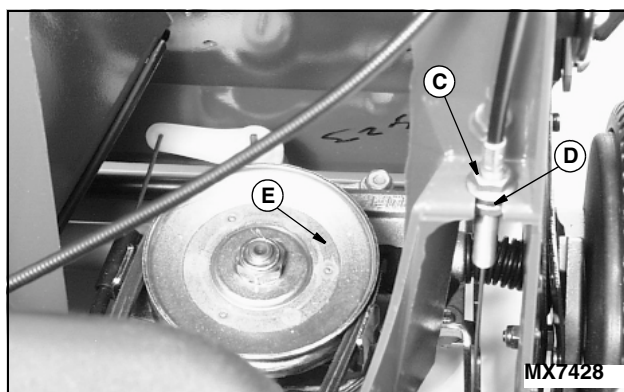
CAUTION: Avoid injury! Do not operate mower without belt shield. Before you adjust clutch:

- 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: Adjust clutch if mower slows as it goes uphill.



1. Unscrew and remove knob (A).
2. Apply slight pressure to the top of protective shield (B) to release tabs securing shield to the mower deck.
3. Remove shield.



4. Loosen nut (C). Turn nut (D) down 6 mm (1/4 in.).
5. Tighten nut (C).
6. Start engine.
7. Engage traction clutch lever to check clutch action.
8. If clutch needs more tension, repeat Steps 4 and 5.

NOTE: Pulley (E) should not turn when engine is running and clutch lever is disengaged. If pulley turns when engine is running, traction clutch cable is adjusted too tight.

9. Stop engine.
10. Install shield and knob.

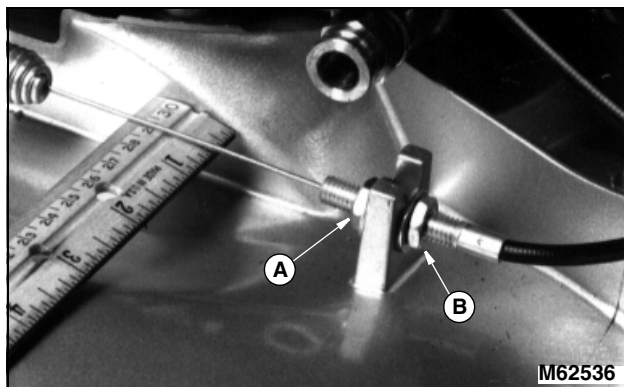
Adjusting Blade Brake Clutch



CAUTION: Avoid injury! Do not operate mower unless belt shield is in place.

NOTE: Blade should stop within 3 seconds after you release blade stop lever. If not, adjust clutch.

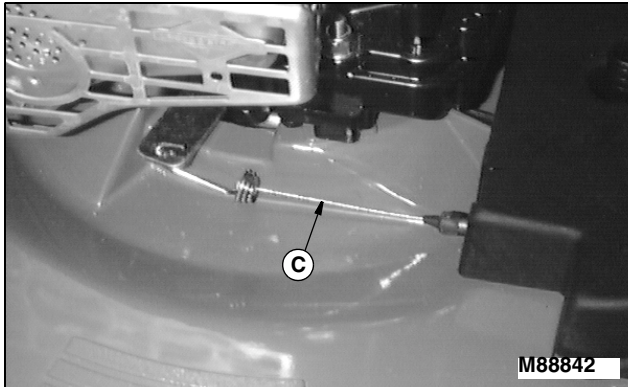
1. Put blade engagement lever on handlebar all the way to the rear.
2. Remove knob and protective belt shield.



3. Loosen nut (A).

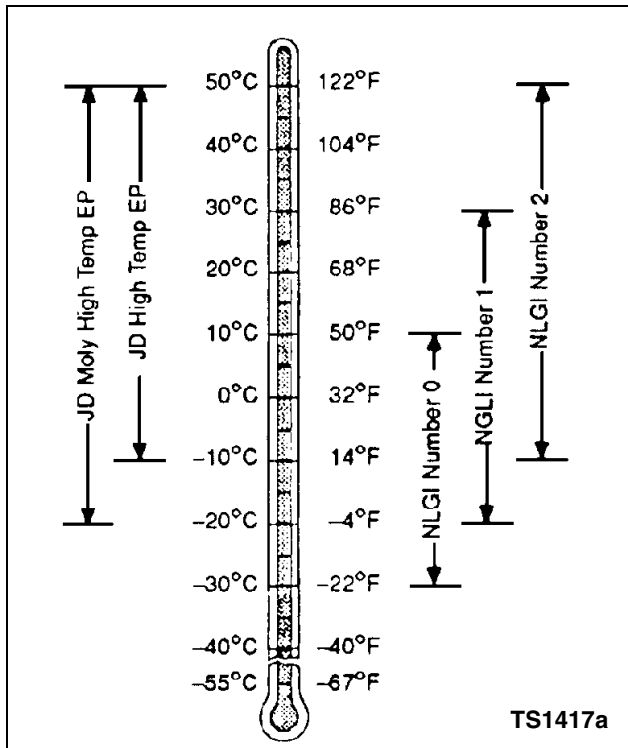
SERVICE

4. Pull threaded fitting to rear to remove all cable slack.
5. Turn nut (B) against deck fork.
6. Tighten nut (A).



7. Make sure there is tension on cable (C), but that it is not too loose or too tight. This will give maximum blade brake clutch engagement.
8. Install shield and knob.

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
- John Deere GREASE-GARD™

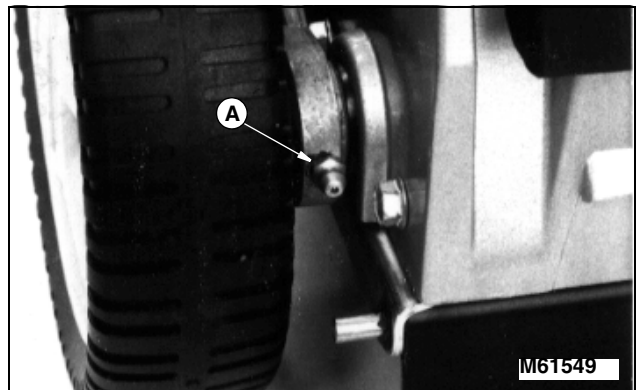
Other greases may be used if they meet one of the following:

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

Lubricating Rear Axle Bushings

NOTE: Adjust mower height indicator until zerk is easy to get grease gun on.

1. Wipe grease fittings clean.



2. Lubricate bushing (A) on each side of mower with one shot of grease.

Cleaning Mower



CAUTION: Avoid injury! Before you clean mower:

- Stop engine. Let engine cool.
- Disconnect spark plug wire.
- Turn mower onto its left side to clean under the deck.

SERVICE

IMPORTANT: Avoid damage!

- Do not use high pressure spray when cleaning under the deck. High pressure spray may cause damage to clutch and transmission parts.
- 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 grass clippings that may build up between the wheels and the mower deck.
- 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.
- See other Service sections for additional, specific cleaning information.

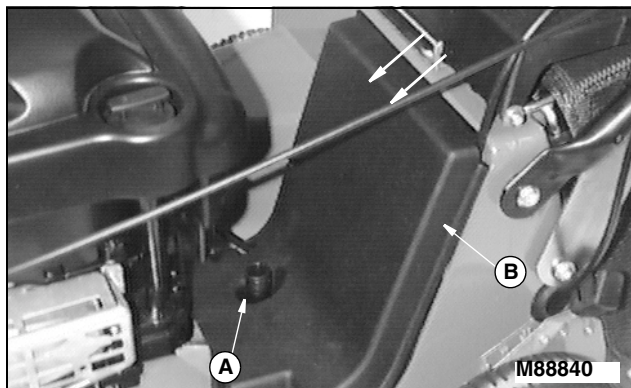
Cleaning Belt and Transmission Area



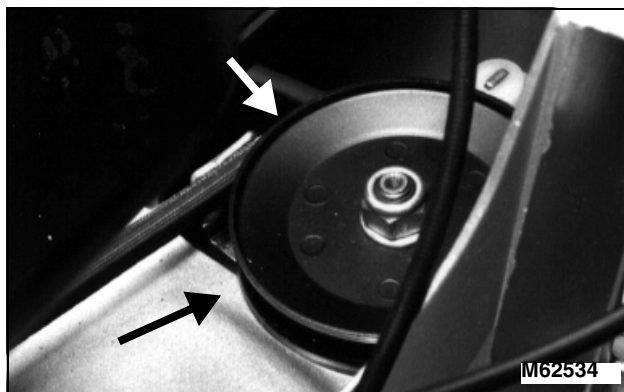
CAUTION: Avoid injury! Before you remove shield:

- Stop engine. Let it cool.
- Do not operate mower without belt shield.

IMPORTANT: Avoid damage! Do not use water when cleaning the belt and transmission areas.



1. Unscrew and remove knob (A).
2. Apply slight pressure to the top of protective shield (B) to release tabs securing shield to the mower deck. Remove shield.



3. Remove clippings or debris from belt area and top of transmission using a brush or compressed air.
4. Install shield and knob.

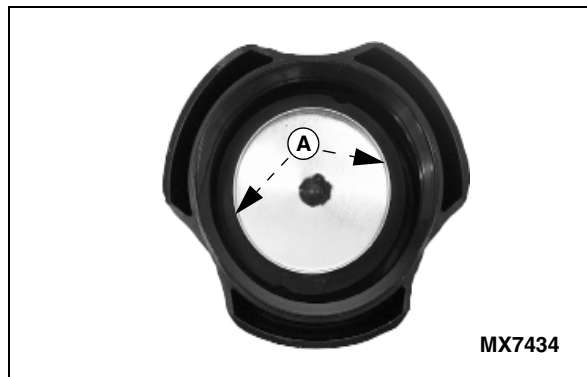
Cleaning Fuel Cap Vents



CAUTION: Avoid injury! Before you remove cap:

- Stop engine. Let it cool.
- Do not smoke.

1. Remove fuel cap.



2. Check two vents (A) under metal ring and vent in top, center of cap.
3. Clean cap and vents in nonflammable solvent. Let cap dry.
4. Install cap.

SERVICE

Checking Blade



CAUTION: Avoid injury! Service blade safely:

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

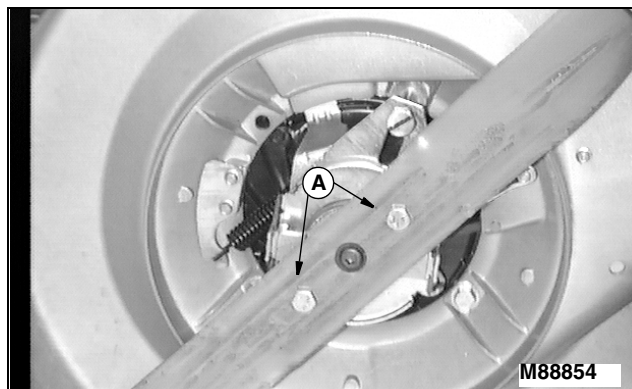
IMPORTANT: Avoid damage! To help prevent air cleaner damage and hard starting:

- Turn mower on its left side.

NOTE: Sharpened edges on blade tips must face upward when installing blade.

Checking Blade:

- Replace damaged blade.



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

Removing Blade:

- Remove bolts (A) and blade.

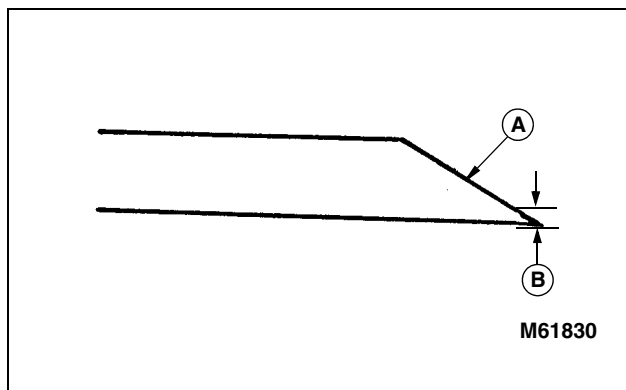
NOTE: Make sure blade tip wing points up and washer cup is against blade.

Sharpening Blade



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

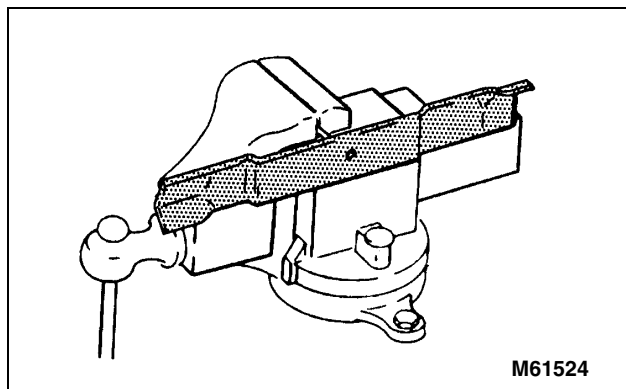
- Sharpen blade with grinder, hand file or electric blade sharpener.



- Keep original bevel (A) when you grind.
- Blade should have 0.40 mm (1/64 in.) cutting edge (B).

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

Balancing and Installing 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).

Filling Fuel Tank

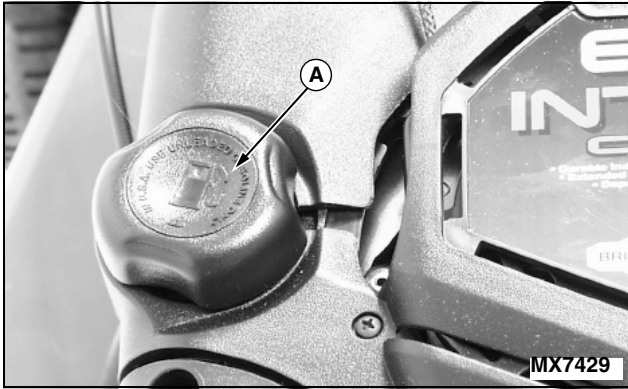
IMPORTANT: Avoid damage! Avoid spilling fuel. Fuel can damage plastic and painted surfaces.

Do not mix oil with gasoline. Unleaded gasoline with an octane rating of 87 or higher is recommended.

Fuel tank capacity is 1.5 L (1.6 qt).

SERVICE

1. Stop engine. If engine is hot let it cool several minutes before you add fuel.
2. Remove grass clippings and other trash from tank area.



3. Remove fuel cap (A).
4. Fill tank with fresh fuel only to bottom of filler neck.
5. Install fuel cap.

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	Failure to prime engine if the engine is cold. Fuel tank is empty. Stale or dirty fuel. Disconnected or dirty spark plug.
Engine Starts Hard Or Loses Power	Dirty fuel tank cap vents. Stale or dirty fuel. Dirty air cleaner element. Disconnected or dirty spark plug. Failure to prime engine if the engine is cold.
Engine Runs Rough	Carburetor needs to be cleaned. Disconnected or dirty spark plug. Throttle lever not in fast position. Dirty air cleaner element.
Engine Overheats	Dirty blower housing and cooling fins. Oil level too low.
Engine Vibrates Too Much	Loose blade bolt. Blade dull or not balanced.
Mower Pushes Or Pulls Hard	Rear axle not lubricated. Traction clutch needs adjustment.
Mower Mows Unevenly	Pushing mower too fast. 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 fast throttle position.

TROUBLESHOOTING

IF	CHECK
Mower Jerks Or Will Not Self-propel	Traction belt broken. Traction clutch not adjusted. Dirty transmission. Gear shift lever not in gear.
Mulched Grass Appearance Is Poor: Clumps, Excessive Clippings, Rough Cut, Etc.	Grass not dry. Mowing too fast. Engine not in fast throttle position. Blade dull or not balanced. Cutting height set too low.

STORING MACHINE

Storing Safety



CAUTION: Avoid injury! 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.

Preparing Machine for Storage

1. Repair any worn or damaged parts. Replace parts if necessary. Tighten loose hardware.
2. Remove belt shield. Clean belt and transmission area. DO NOT use water to clean this area. Install shield.

IMPORTANT: Avoid damage! To help extend clutch life, wait at least 30 minutes after mowing before cleaning under the deck with water.

Do not use high pressure spray when cleaning under the deck. High pressure spray may cause damage to clutch and transmission parts.

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.

3. Clean under the deck.
4. Sharpen mower blade.
5. Paint scratched or chipped metal surfaces to prevent rust.
6. Apply light coat of engine oil to pivot and wear points to prevent rust.
7. Lubricate grease points.

Preparing Fuel and Engine For Storage

Fuel:

If you have been using “Stabilized Fuel,” add stabilized fuel to tank until the tank is full.

NOTE: Filling the fuel tank reduces the amount of air in the fuel tank and helps reduce deterioration of fuel.

If you are not using “Stabilized Fuel”:

1. Park mower in a well-ventilated area.

NOTE: Try to anticipate the last time the mower will be used for the season so very little fuel is left in the fuel tank.

2. Start mower and allow to run until it runs out of fuel.

IMPORTANT: Avoid damage! Stale fuel can produce varnish and plug carburetor components and affect engine performance.

- Add fuel conditioner or stabilizer to fresh fuel before filling tank.

3. Mix fresh fuel and fuel stabilizer in separate container. Follow stabilizer instructions for mixing.

4. Fill fuel tank with stabilized fuel.

5. Run engine for a few minutes to allow fuel mixture to circulate through carburetor.

Engine:

Engine storage procedure should be used when machine is not to be used for longer than 60 days.

1. Change engine oil and filter while engine is warm.
2. Service air filter if necessary.
3. Clean debris from engine air intake.
4. Remove spark plug. Put 30 mL (1 oz.) of clean engine oil in cylinders.
5. Install spark plug, but do not connect spark plug wire.
6. Start the engine and run for approximately five seconds to allow oil to be distributed.
7. Clean the engine and engine compartment.

IMPORTANT: Avoid damage! Store the mower in a place where the temperature does not exceed the following range: -15°C - 40°C (5°F - 104°F) to prevent battery damage.

8. Store the mower in a dry, protected place. If vehicle is stored outside, put a waterproof cover over it.

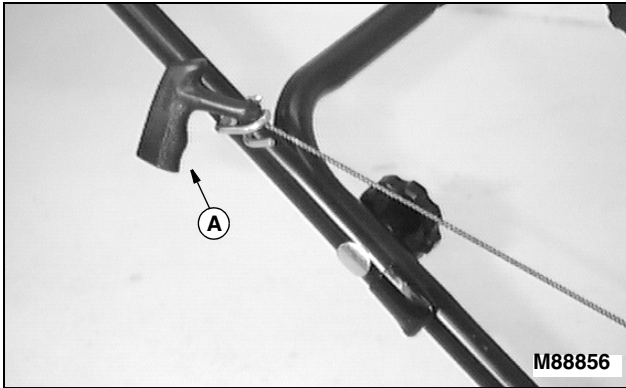
Folding Handles

IMPORTANT: Avoid damage! to mower control cables:

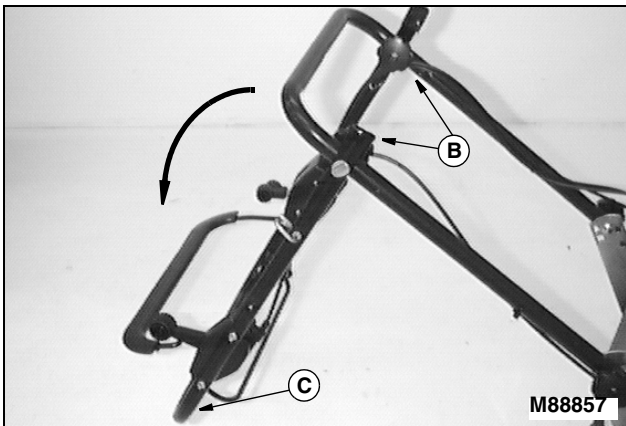
- Do not crimp cables when folding handle bars.
- Do not attempt to fold upper mower handle upward.

STORING MACHINE

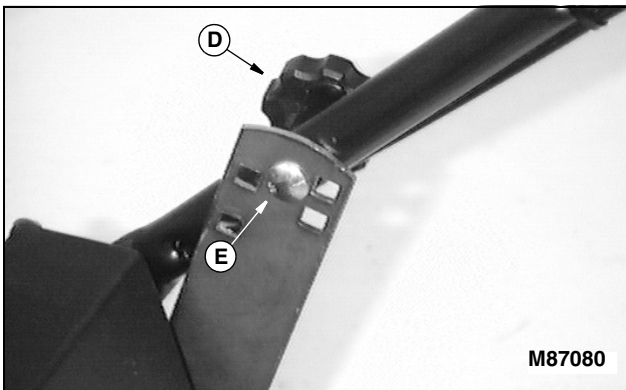
1. Remove grass bag.



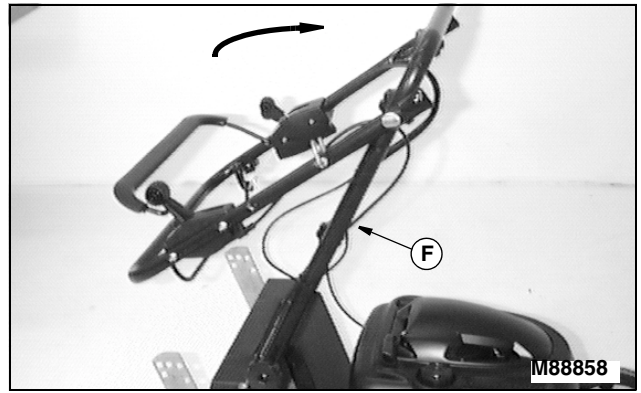
2. Remove starter handle (A) from rope guide.



3. Loosen knob (B) 25 mm (1 in.) on each side. Carefully pivot upper handle (C) down. Leave bolt heads against handle.



4. Remove knob (D) and carriage bolt (E) from each side.



5. Carefully fold lower handle (F) forward. Guide cables inside lower handle. Do not crimp cables.
6. Install carriage bolts and knobs in handle.

Removing Mower From Storage

1. Unfold handles. Tighten knobs. Do not crimp cables.
2. Check engine oil level.
3. Connect wire to spark plug.
4. Inspect shields, safety devices and hardware.
5. Lubricate rear axle bushings.
6. Push primer bulb three times to prime engine.
7. Push throttle to fast  position.

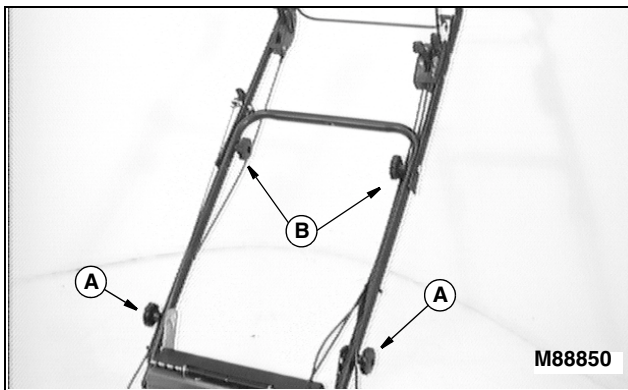
ASSEMBLY

Unfold Handles

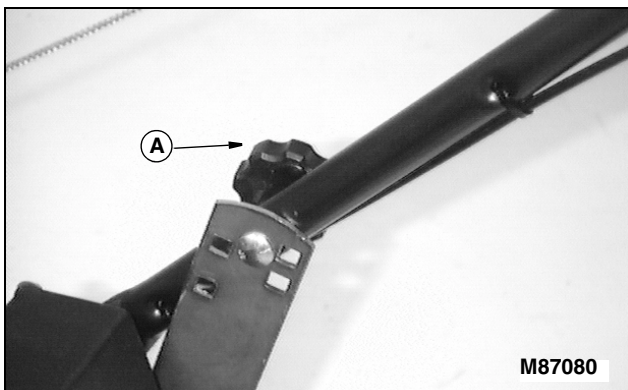
IMPORTANT: Avoid damage! Do not crimp or damage control cables.



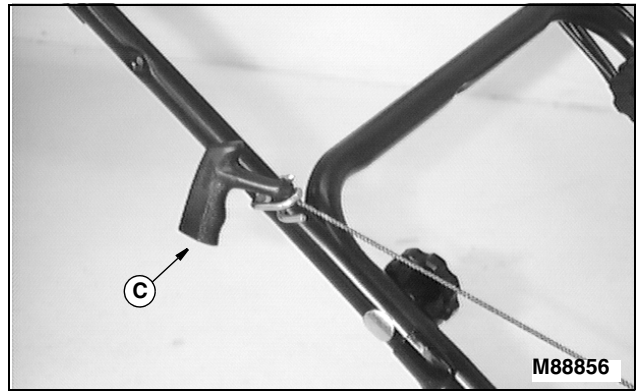
1. Remove knob (A) and bolt from each side.
2. Carefully unfold handlebar assembly. Do not crimp or damage control cables.



3. Straighten upper handle and tighten knob (B) on each side.



4. Line up lower handle hole with square hole in bracket. Install bolt and tighten knobs (A) on each side.



5. Slowly pull starter handle (C) and install into rope guide.
6. Check cables for kinks or damage.

Add Engine Oil

IMPORTANT: Avoid damage! Engine is shipped without oil.

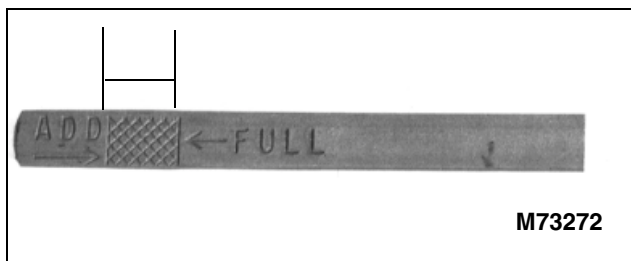
You must add oil before running the engine. See Service section for correct oil application.

1. Park mower on a level surface and clean area around oil dipstick.



2. Turn oil dipstick (A) 1/4 turn counterclockwise. Remove dipstick.
3. Add 0.47 L (16 oz.) oil through dipstick tube.
4. Check oil level:
 - Install dipstick, turn it clockwise 1/4 turn and tighten it.
 - Remove dipstick.

ASSEMBLY



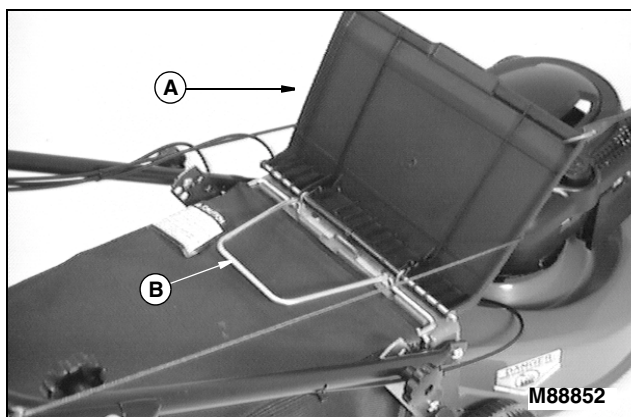
- Check oil level: Oil should be between ADD and FULL marks on dipstick. Close to FULL mark. If not, add oil.

5. Install and tighten dipstick.
6. Remove "No Oil" tag from top of engine.

Install Grass Bag

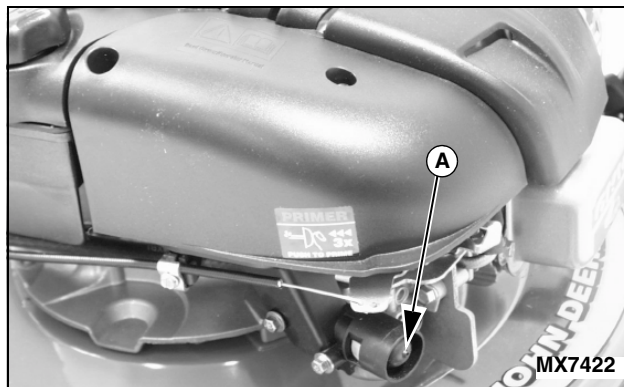


CAUTION: Avoid injury! Do not operate mower unless grass bag, chute (optional), or mulch plug (optional) is held in place by door.

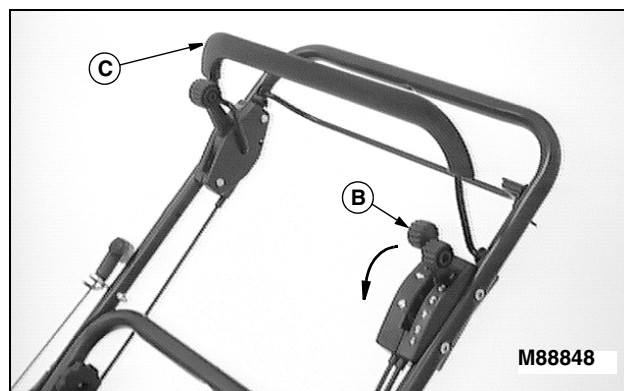


1. Lift and hold door (A) up.
2. Grasp handle (B). Install bag.
3. Lower door to hold bag in place.

Test Mower Operation



1. Put enough fuel in fuel tank to test mower operation.
2. Connect spark plug wire to spark plug.
3. Press primer bulb (A) three times to start engine.



4. Push throttle lever (B) to fast  position.
5. Hold blade control lever (C) against handle.
6. Start engine and check mower operation. (See Operating section).

SPECIFICATIONS

Engine

Manufacturer	Briggs & Stratton
Model Series	121602
Horsepower	4.8 kW (6.5 hp)
Cycle	4
Valve Type	Over Head Valve (OHV)
Choke	Primer Bulb
Displacement	190 cc (11.59 cu in.)
Bore & Stroke	68 x 52 mm (2.64 x 2.04 in.)
Operating Range	2900-3100 rpm
Spark Plug	Champion RC12YC
Spark Plug Gap	0.51 mm (0.02 in.)
Spark Plug Torque	20 N•m (15 lb-ft)
Starter	Recoil
Air Cleaner	Paper Element with Foam Pre-Cleaner

Capacities

Fuel Tank	1.5 L (1.6 qt)
Engine Oil	0.47 L (16 oz)
Rear Grass Bag	74 L (2.5 bu)

Machine Specifications

Deck Material	Cast Aluminum
Adjustable Handle	Standard
Blade Hardware Torque	75 N•m (55 lb-ft)
Rear Grass Bag	Standard
Side Discharge Chute	Optional
Mulching Plug	Optional
Cutting Height Range	13-90 mm (.5-3.5in)
Number of Cutting Heights in 1/2 in. (13 mm) Steps	7
Wheel Diameter	200 mm (8 in.)
Cutting Width	53.3 cm (21 in)
Safety System	Blade Brake Clutch (BBC)
Weight (Approximate)	44.5 kg (98 lb)

Drive System

Manufacturer	Kanzaki
--------------------	---------

SPECIFICATIONS

Type	Gear Transmission
Number of Travel Speeds.	5
Travel Speed Range	
1st Gear	1.9 km/h (1.2 mph)
2nd Gear	2.9 km/h (1.8 mph)
3rd Gear	3.9 km/h (2.4 mph)
4th Gear	4.8 km/h (3.0 mph)
5th Gear	6.6 km/h (4.1 mph)

Recommended Lubricants

Engine Oil	TORQ-GARD SUPREME® (SAE 30)
Grease	John Deere MOLY HIGH TEMPERATURE EP GREASE
.....	John Deere HIGH TEMPERATURE EP GREASE
.....	John Deere GREASE GARD™

(Specifications and design subject to change without notice)

WARRANTY

Product Warranty

Product warranty is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual.

Engine related warranties stated in this manual refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately as the "Limited Warranty for New John Deere Commercial & Consumer Equipment".

Limited Warranty For New John Deere Commercial & Consumer Equipment

(U.S. Only)

A. GENERAL PROVISIONS - The warranties described below are provided by John Deere Company ("John Deere") to the original purchasers of new Commercial & Consumer Equipment from John Deere or authorized John Deere dealers. Under these warranties, John Deere will repair or replace, at its option, any covered part which is found to be defective in material or workmanship during the applicable warranty term. Warranty service must be performed by a dealer or service center authorized by John Deere to sell and/or service the type of product involved, which will use only new or remanufactured parts or components furnished by John Deere. Warranty service will be performed without charge to the purchaser for parts or labor. The purchaser will be responsible, however, for any service call and/or transportation of product to and from the dealer's or service center's place of business, for any premium charged for overtime labor requested by the purchaser, and for any service and/or maintenance not directly related to any defect covered under the warranties below.

B. WHAT IS WARRANTED - All parts of any new John Deere product, except tires, radios, and batteries, are warranted for the number of months or operating hours specified below. John Deere Hand Held-Portable products are covered by a separate warranty. Warranty statements required by law covering engine emission-related parts and components are found in the Operator's Manual delivered with the machine.

COMMERCIAL & CONSUMER EQUIPMENT	WARRANTY TERM
1) IN RESIDENTIAL (Private Homeowner) APPLICATION	24 Months
2) IN ANY OTHER APPLICATION	12 Months Sabre by John Deere products-90 Days
3) Regardless of Application: COMPACT UTILITY TRACTORS, WIDE AREA MOWERS, 7-IRON MOWER DECKS, FRONT MOWER TRACTION UNITS (With diesel or 21 HP and above engines). Other mower decks, attachments, and F700 Series are warranted per 1 & 2 above.	24 Months
4) Regardless of Application: Skid Steers and approved John Deere Skid Steer attachments	12 Months

COMMERCIAL & CONSUMER EQUIPMENT	WARRANTY TERM
5) Regardless of Application: COMPACT EXCAVATORS, UTILITY VEHICLES, Z-TRAK MOWERS, FLAIL & SICKLE MOWERS, ROTARY CUTTERS, POST HOLE DIGGERS, REAR BLADES, ROTARY DISK MOWERS, LOADERS AND BACKHOES.	12 Months or 1,000 Hours Whichever Comes First

Each warranty term begins on the date of product delivery to the purchaser.

C. WHAT IS NOT WARRANTED - JOHN DEERE IS NOT RESPONSIBLE FOR THE FOLLOWING: (1) Used Products: (2) Any product that has been altered or modified in ways not approved by John Deere, including, but not limited to, setting injection pump fuel delivery above John Deere specifications; (3) Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, lack of proper protection during storage, or accident; (4) Normal maintenance parts and service.

D. SECURING WARRANTY SERVICE - To secure warranty service, the purchaser must (1) report the product defect to an authorized dealer and request repair within the applicable warranty term, (2) present evidence of the warranty start date, and (3) make the product available to the dealer or service center within a reasonable period of time.

E. LIMITATION OF IMPLIED WARRANTIES AND OTHER REMEDIES - COMMERCIAL & CONSUMER EQUIPMENT - To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations or promises as to the quality, performance or freedom from defect of the Commercial & Consumer Equipment covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE PERIOD OF WARRANTY SET FORTH ON THIS PAGE. THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON THE JOHN DEERE COMMERCIAL & CONSUMER EQUIPMENT ARE THOSE SET FORTH ON THIS PAGE. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages so the above limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

F. NO DEALER WARRANTY - THE SELLING DEALER MAKES NO WARRANTY OF ITS OWN AND THE DEALER HAS NO AUTHORITY TO MAKE ANY REPRESENTATION OR PROMISE ON BEHALF OF JOHN DEERE, OR TO MODIFY THE TERMS OR LIMITATIONS OF THIS WARRANTY IN ANY WAY.

G. If further information is desired, contact your selling dealer.

Limited Warranty For New John Deere Commercial & Consumer Equipment

(Canada Only)

A. GENERAL PROVISIONS - The warranties described below are provided by John Deere Limited, 295 Hunter Road, P.O. Box 1000, Grimsby, Ontario, L3M 4H5 ("John Deere") to the original purchasers of new Commercial & Consumer Equipment ("Equipment") purchased from John Deere or authorized John Deere dealers. Under these warranties, John Deere will, unless otherwise required by law, repair or replace, at its

WARRANTY

option, any part covered under these warranties which is found to be defective in material or workmanship during the applicable warranty term. Warranty service must be performed by a dealer or sales service centre authorized by John Deere to sell and/or service the Equipment involved (the "authorized dealer"). The authorized dealer will use only new or remanufactured parts or components furnished or approved by John Deere. Warranty service will be performed without charge to the purchaser for parts or labour. However the purchaser will be responsible for any service call and/or transportation of Equipment to and from the authorized dealer's place of business, except where prohibited by law, and for any premium charged for overtime labour requested by the purchaser, and for any service and/or maintenance not directly related to any defect covered under these warranties. These warranties are transferable, provided the purchaser trades the Equipment to an authorized dealer and John Deere approves the warranty transfer.

B. WHAT IS WARRANTED - Subject to paragraph C, all parts of any new John Deere Equipment, except tires, radios, and batteries (which are warranted under separate warranty documents provided with each product), are warranted for the number of months or operating hours specified below. John Deere Hand Held-Portable products are covered by a separate warranty. Warranty statements covering engine emission-related parts and components are found in the Operator's Manual delivered with the Equipment.

COMMERCIAL & CONSUMER EQUIPMENT	WARRANTY TERM
1) IN RESIDENTIAL (Private Homeowner) APPLICATION	24 Months
2) IN ANY OTHER APPLICATION	12 Months
3) Regardless of Application: COMPACT UTILITY TRACTORS, WIDE AREA MOWERS, 7-IRON MOWER DECKS, FRONT MOWER TRACTION UNITS (With diesel or 21 HP and above engines). Other mower decks, attachments, and F700 Series are warranted per 1 & 2 above.	24 Months
4) Regardless of Application: SKID STEERS AND APPROVED JOHN DEERE SKID STEER ATTACHMENTS	12 Months
5) Regardless of Application: COMPACT EXCAVATORS, UTILITY VEHICLES, Z-TRAK MOWERS, FLAIL & SICKLE MOWERS, ROTARY CUTTERS, POST HOLE DIGGERS, REAR BLADES, ROTARY DISK MOWERS, LOADERS AND BACKHOES.	12 Months or 1,000 Hours Whichever Comes First
6) SABRE by JOHN DEERE PRODUCTS	Residential (Private Homeowner) application - 24 months. In any other application - 90 Days

Each warranty term begins on the date of delivery of the Equipment to the Purchaser.

C. WHAT IS NOT WARRANTED - Pursuant to the terms of these warranties, JOHN DEERE IS NOT RESPONSIBLE FOR THE FOLLOWING: (1) Used Equipment (unless it is specifically covered by separate warranty documents); (2) Any Equipment that has been altered or modified in ways not approved by John Deere, including, but not limited

to, setting injection pump fuel delivery above John Deere specifications; (3) Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, lack of proper protection during storage, vandalism, the elements or collision or accident; (4) Normal maintenance parts or service; (5) Batteries, radios and tires.

D. SECURING WARRANTY SERVICE - To secure warranty service the purchaser must, (1) report the Equipment defect to an authorized dealer and request repair or replacement within the applicable warranty term; (2) present evidence of the warranty start date; and, (3) make the Equipment available to the authorized dealer within a reasonable period of time.

E. REPRESENTATION, CONDITION AND IMPLIED WARRANTY EXCLUSION - THERE ARE NO REPRESENTATIONS, CONDITIONS OR WARRANTIES OTHER THAN THOSE LISTED ABOVE. THIS EXCLUSION INCLUDES FUNDAMENTAL TERMS, REPRESENTATIONS, CONDITIONS AND WARRANTIES WHICH MAY BE EXPRESSED OR IMPLIED, VERBAL OR OTHERWISE, INCLUDING IMPLIED OR STATUTORY CONDITIONS OR WARRANTIES OF MERCHANTABILITY AND FITNESS, WHETHER PURSUANT TO THE SALE OF GOODS ACT OR ANY OTHER STATUTE OF ANY PROVINCE OR OTHERWISE, EXCEPT WHERE SUCH IMPLIED OR STATUTORY CONDITIONS OR WARRANTIES MAY NOT BE EXCLUDED BY LAW.

F. REMEDIES EXCLUSIVE - THE ONLY REMEDIES THE PURCHASER HAS IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON THE EQUIPMENT ARE THOSE SET FORTH IN THIS WARRANTY, EXCEPT FOR THOSE REMEDIES PROVIDED BY LAW WHICH MAY NOT BE EXCLUDED. IN NO EVENT WILL AN AUTHORIZED DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR INJURIES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, RENTAL OF SUBSTITUTE EQUIPMENT, OTHER COMMERCIAL LOSS, OR BE LIABLE FOR DAMAGES SUFFERED BY THE PURCHASER AS A RESULT OF FUNDAMENTAL BREACHES OF CONTRACT OR BREACHES OF FUNDAMENTAL TERMS. THE LIMITATION OF LIABILITY CONTAINED IN THIS PARAGRAPH SHALL ONLY BE EFFECTIVE TO THE EXTENT PERMITTED BY LAW.

G. PURCHASE ORDER REQUIRED - John Deere shall have no obligation under these warranties unless a Purchase Order has been signed by both the purchaser and an authorized dealer. In addition, a Product Warranty Registration must be on file at John Deere and include:

1. the purchaser's complete name and address;
2. a full description of the Equipment, including the complete product identification number; and,
3. date of delivery of the Equipment to the purchaser.

H. NO DEALER WARRANTY - Except for conditions or warranties which may not be excluded by law, the selling Dealer makes no warranty of its own on any item warranted by John Deere, and makes no warranty on other items unless it delivers to the purchaser a separate written warranty document specifically warranting the item. THE SELLING DEALER HAS NO AUTHORITY TO MAKE ANY REPRESENTATION OR PROMISE ON BEHALF OF JOHN DEERE OR TO MODIFY THE TERMS OR LIMITATIONS OF THIS WARRANTY IN ANY WAY.

John Deere, Federal and California Emission Control System Warranty (Small Off-Road Gas Engines)

Your Warranty Rights and Obligations

The United States Environmental Protection Agency (EPA), the California Air Resources Board (CARB) and John Deere are pleased to explain the emission control system warranty on your 1995 or later small off-road

WARRANTY

equipment engine. In California, 1995 and later small off-road equipment engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In other states, 1997 and later model year equipment engines must be designed, built and equipped to meet the U.S. EPA regulations for small non-road, spark ignition engines. John Deere must warrant the emission control system on your small off-road equipment engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road equipment engine.

Your emission control system may include parts such as the carburetor, fuel-injection system and ignition system. Also included may be connectors and other emission related assemblies.

Where a warrantable condition exists, John Deere will repair your small off-road equipment engine at no cost to you including diagnosis, parts and labor.

John Deere Emission Control System Warranty Coverage

In California, 1995 and later small off-road equipment engines are warranted relative to emission control parts for two years. In other states, 1997 and later model year equipment engines are warranted relative to emission control parts for two years. If any emission related part on your engine is defective, the part will be repaired or replaced by John Deere.

Owner's Warranty Responsibilities

As the small off-road equipment engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. John Deere recommends that you retain all receipts covering maintenance on your small off-road equipment engine, but John Deere cannot deny warranty solely for lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road equipment engine owner, you should however be aware that John Deere may deny you warranty coverage if your small off-road equipment engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road equipment engine to an authorized John Deere Commercial and Consumer Equipment Retailer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact your John Deere Commercial and Consumer Equipment Retailer, or the John Deere Customer Communications Center at 1-800-537-8233.

Length Of Warranty Coverage

John Deere warrants to the initial owner and each subsequent purchaser that the small off-road equipment engine is:

- Designed, built and equipped so as to conform with all applicable regulations adopted by the California Air Resources Board (CARB) for 1995 and later equipment engines, and all applicable regulations of the United States Environmental Protection Agency (EPA) for 1997 and later equipment engines; and
- Free from defects in materials and workmanship which can cause the failure of an emission warranted part for a period of two years after the engine is delivered to the initial retail purchaser. John Deere is liable for damages to other engine components caused by the failure of a warranted part during the warranty period. If any emission related part on your engine is defective, the part will be repaired or replaced by John Deere.

Warranted Parts

Coverage under this warranty extends only to the parts listed below (the emission control system parts) to the extent these parts were present on the engine purchased.

Fuel Metering System:

- Carburetor and internal parts (or fuel injection system).
- Air/fuel ratio feedback and control system.
- Cold start enrichment system.

Air Induction System:

- Air Cleaner
- Intake manifold.

Ignition System:

- Spark plugs.
- Magneto or electronic ignition system.
- Spark advance/retard system.

Catalyst System:

- Exhaust manifold.

Miscellaneous Items Used in Above Systems

- Vacuum and temperature switches.
- Electronic controls.
- Hoses, belts, connectors and assemblies.

Since emission related parts may vary slightly from model to model, certain models may not contain all of these parts and certain models may contain functionally equivalent parts.

Warranty Service And Charges

Warranty service shall be provided during customary business hours at any authorized John Deere Commercial and Consumer Equipment Retailer located within the United States of America. Repair or replacement of any warranted part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an authorized John Deere Commercial and Consumer Equipment Retailer. Any parts replaced under this warranty shall become the property of John Deere.

Maintenance Warranty Coverage

a) Any warranted part that is not scheduled for replacement as required maintenance must be warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

b) Any warranted part that is scheduled only for regular inspection to the effect of "repair or replace as necessary" must be warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

c) Any warranted part which is scheduled for replacement as required maintenance must be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any such part repaired or replaced under the warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for that part.

d) Normal maintenance, replacement or repair of emission control devices and systems, which are being done at the customers expense, may be performed by any repair establishment or individual; however, warranty repairs must be performed by an authorized John Deere Commercial and Consumer Equipment Retailer.

e) Any replacement part that is equivalent in performance and durability may be used in the performance of any non-warranty maintenance or repairs, and shall not reduce the warranty obligations of John Deere.

Consequential Warranty Coverage

Warranty coverage shall extend to the failure of any engine components caused by the failure of any warranted part still under warranty.

WARRANTY

Limitations

This Emission Control System Warranty shall NOT cover any of the following:

- a) Repair or replacement required as a result of (i) misuse or neglect, (ii) improper maintenance or unapproved modifications, (iii) repairs improperly performed or replacements improperly installed, (iv) use of replacement parts or accessories not conforming to John Deere specifications which adversely affect performance and/or durability, (v) alterations or modifications not recommended or approved in writing by John Deere.
- b) Replacement parts, other services and adjustments necessary for normal maintenance.
- c) Transportation to and from the John Deere Commercial and Consumer Equipment Retailer, or service calls made by the Retailer.

Limited Liability

- a) The liability of John Deere under this Emission Control System Warranty is limited solely to the remedying of defects in materials or workmanship. This warranty does not cover inconvenience or loss of use of the small off-road equipment engine or transportation of the engine to or from the John Deere Commercial And Consumer Equipment Retailer. JOHN DEERE SHALL NOT BE LIABLE FOR ANY OTHER EXPENSE, LOSS, OR DAMAGE, WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL (EXCEPT AS LISTED ABOVE UNDER "COVERAGE") OR EXEMPLARY ARISING IN CONNECTION WITH THE SALE OR USE OF OR INABILITY TO USE THE SMALL OFF-ROAD EQUIPMENT ENGINE FOR ANY OTHER PURPOSE.
- b) NO EXPRESS EMISSION CONTROL SYSTEM WARRANTY IS GIVEN BY JOHN DEERE WITH RESPECT TO THE ENGINE EXCEPT AS SPECIFICALLY SET FORTH IN THIS DOCUMENT. ANY EMISSION CONTROL SYSTEM WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE EMISSION CONTROL SYSTEM WARRANTY TERMS SET FORTH IN THIS DOCUMENT.
- c) No dealer is authorized to modify this Federal, California and John Deere Emission Control System Warranty.

INDEX

A

Adjusting Traction Clutch	18
Air Cleaner Element, Checking and Cleaning	16

B

Belt and Transmission Area, Cleaning	20
Blade Brake Clutch, Adjusting	18
Blade Operation	9
Blade, Balancing and Installing	21
Blade, Check	21
Blade, Sharpening	21
Blade, Using High Lift	11
Blade/Engine Control Lever, Testing	8
Bushings, Lubricate Rear Axle	19

C

Capacities, Specifications	29
Carburetor, Adjusting	14
Certification Label	2
Chart, Service Interval	13
Clutch, Adjusting Blade Brake	18
Clutch, Adjusting Traction	18
Controls, Engine	6
Controls, Handle	6
Controls, Handle and Cutting Height	6
Customer Service	36
Cutting Height, Adjust	6

D

Discharge Chute, Using	10
Drive System, Specifications	29

E

Emergency Stopping	10
Emission Compliance Period	3
Emission Control System Certification Label	2
Engine Cooling Fins, Cleaning	17
Engine Oil	14
Engine Warranty Maintenance Statement	14
Engine, Add Oil	27
Engine, Specifications	29
Engine, Stopping	10

F

Fuel Cap Vent, Cleaning	20
Fuel Tank, Filling	21
Fuel and Engine Storage, Preparing for	25

G

Grass Bag, Install	28
Grass Bag, Using	10
Grease	19

H

Handle Height, Adjust	7
-----------------------------	---

High Lift Blade, Using	11
------------------------------	----

L

Labels, Safety	1
Literature, Service	12
Lubricants	30
Lubricate Rear Axle Bushings	19

M

Machine, Specifications	29
Mower, Cleaning	19
Mulch Plug, Using	10

O

Oil Level, Checking Engine	14
Oil, Add Engine	27
Oil, Engine	14
Operating Checklist, Daily	6

P

Parts Catalog	12
Parts, Replacement	12
Plastic And Painted Surfaces, Avoid Damage To	6

S

Safety Systems, Testing	7
Safety, Maintenance	4
Safety, Operating	3
Safety-Alert Symbol	1
Service Interval Chart	13
Service Literature	12
Spark Plug, Cleaning and Gapping	17
Specifications	29
Specifications, Engine	29
Speeds, Travel	9
Starting, Engine	8
Stopping, Emergency	10

T

Technical Manual	12
Travel, Forward	9
Troubleshooting Chart	23
Troubleshooting Chart, Using	23

W

Warranty Maintenance Statement, Engine	14
Waste Products, Handling	5

JOHN DEERE QUALITY STATEMENT

John Deere Quality



John Deere equipment is more than just a purchase, it's an investment in quality. That quality goes beyond our equipment to your John Deere dealer's parts and service support. This support is needed to keep you a satisfied customer.

That's why John Deere has initiated a process to handle your questions or problems, should they arise. The following three steps will help guide you through the process.

Step 1

Refer to your operator's manual

- A. It has many illustrations and detailed information on the safe and proper operation of your equipment.
- B. It gives troubleshooting procedures, and specification information.
- C. It gives ordering information for parts catalogs, service and technical manuals.
- D. If your questions are not answered in the operator's manual, then go to Step 2.

Step 2

Contact your dealer (Call 1-800-537-8233 to locate your nearest John Deere dealer)

- A. Your John Deere dealer has the responsibility, authority, and ability to answer questions, resolve problems, and fulfill your parts and service needs.
- B. First, discuss your questions or problems with your dealer's trained parts and service staff.
- C. If the parts and service people are unable to resolve your problem, see the dealership manager or owner.
- D. If your questions or problems are not resolved by the dealer, then go to Step 3.

Step 3

Call the John Deere Customer Communications Center

- A. Your John Deere dealer is the most efficient source in addressing any concern, but if you are not able to resolve your problem after checking your operator's manual and contacting your dealer, call the Customer Communications Center.
- B. For prompt, effective service, please have the following ready before you call:
 - The name of the dealer with whom you've been working.
 - Your equipment model number.
 - Number of hours on machine (if applicable).
 - Your 13-digit serial number which you recorded on the inside front cover of this manual.
 - If the problem is with an attachment, your attachment identification number.
- C. Then call 1-800-537-8233 and our advisor will work with your dealer to investigate your concern.