

JOHN DEERE
WORLDWIDE COMMERCIAL & CONSUMER
EQUIPMENT DIVISION

Power-Pak Engine

OMM154692 A6

OPERATOR'S MANUAL



JOHN DEERE

North American Version
Litho in U.S.A.



SELF



OMM154692

INTRODUCTION

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

California Proposition 65 Warning

Introduction

Using Your Operator's Manual

Read this entire operator's manual, especially the safety information, before operating.

This manual is an important part of your machine. Keep all manuals in a convenient location so they can be accessed easily.

Use the safety and operating information in the attachment operator's manual, along with the machine operator's manual, to operate and service the attachment safely and correctly.

If your attachment manual has a section called Preparing the Machine, it means that you will have to do something to your tractor or vehicle before you can install the attachment. The Assembly and Installation sections of this manual provide information to assemble and install the attachment to your tractor or vehicle. Use the Service section to make any needed adjustments and routine service to your attachment.

If you have any questions or concerns with the assembly, installation, or operation of this attachment, see your local John Deere dealer or call the John Deere Customer Contact Center at 1-800-537-8233 for assistance.

Warranty information on this John Deere attachment can be found in the warranty that came with your John Deere tractor or vehicle.

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.

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John Deere Worldwide Commercial and Consumer Equipment Division

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Previous Editions

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PRODUCT IDENTIFICATION

Product Identification

Record Identification Numbers

Power-Pak Engine

Serial No. (M0PPAKH010001-)

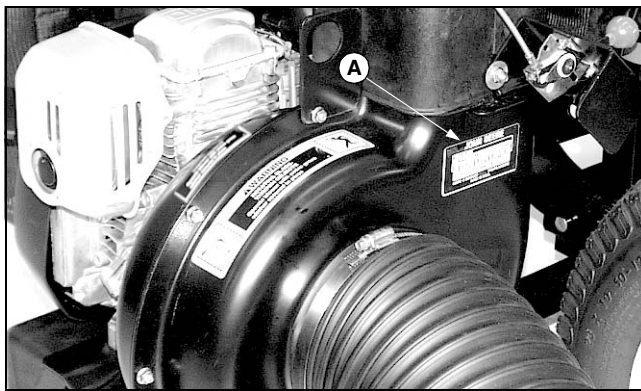
If you need to contact an Authorized Service Center for information on servicing, always provide the product model and serial number.

You will need to locate the serial number for the power-pak and the engine and record the information in the spaces provided below.

DATE OF PURCHASE:

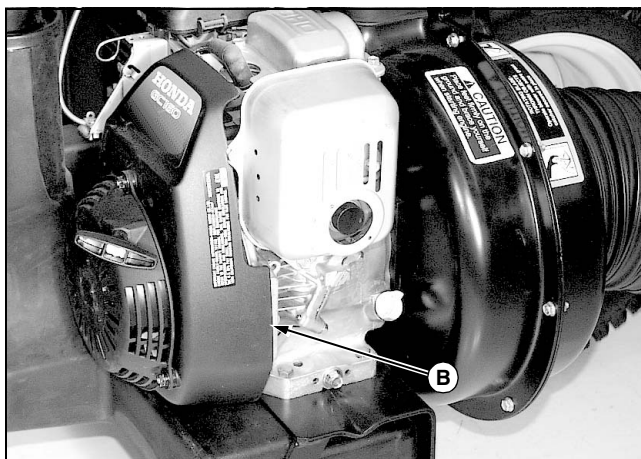
DEALER NAME:

DEALER PHONE:



MX3880

POWER-PAK SERIAL NUMBER (A):



MX3876

ENGINE SERIAL NUMBER (B):

Safety Labels

Understanding The Machine Safety Labels



Safety-Alert Symbol

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.

WARNING

ROTATING BLADE - THROWN OBJECTS

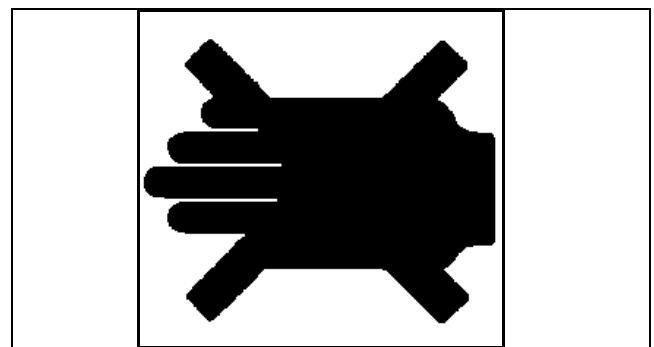


M118454

- Operate blower with entire grass catcher secured in place.

WARNING

HOT SURFACE



M60650

Picture Note: Decal is embossed on muffer shield.

- Do not touch muffer, it maybe hot.

SAFETY

Safety

Read the general safety operating precautions in your machine operator's manual for additional safety information.

Operating Safely

Read, understand and follow all instructions in this attachment manual, the machine operator's manual and safety signs on equipment before starting.

Use proper front ballast. Remove ballast when the material collection system is removed.

Hopper extends beyond machine. Be aware of surrounding objects when making short turns.

Do not operate material collection system unless entire grass catcher is fastened in place with hopper cover securely latched.

Do not let anyone ride on the mower or material collection system. Riders are subject to injury such as being struck by foreign objects or being thrown off. Riders may obstruct the operator's view and cause a collision.

Before bag removal or installation:

- Stop mower.
- Disengage mower or PTO.
- Stop engine and remove key.
- Wait for engine and all moving parts to stop before leaving the operator seat.

Before backing up machine:

- Stop machine.
- Look behind hopper for children.
- Keep bystanders away when unloading material collection system.

Operate safely on slopes:

- Empty bags when they are half full.
- Do not operate on steep slopes.
- Before turning, slow down.
- Avoid sudden starts and stops.
- Do not park machine with material collection system on slopes.

Bag Maintenance:

- Bag is subject to wear and deterioration.
- Check bag frequently; replace when necessary.
- Use John Deere bag or equivalent to comply with safety specifications.
- Do not leave clippings in bags overnight.

Parking Safely

1. Stop machine on a level surface, not on a slope.
2. Disengage mower blades or any other attachments.
3. Lower attachments to the ground.
4. Lock the park brake.
5. Stop the engine.
6. Remove the key.
7. Wait for engine and all moving parts to stop before you leave the

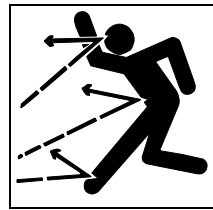
operator's seat.

8. Close fuel shut-off valve, if your machine is equipped.

9. Disconnect the negative battery cable or remove the spark plug wire (for gasoline engines) before servicing the machine.

Protect Children

- Tragic accidents can occur if the operator is not alert to the presence of children. Keep children indoors when the machine and attachment are operated and under the watchful care of another responsible adult.
- Never assume that children will remain where you last saw them. Stay alert to the presence of children. Turn the machine off if a child enters the work area.
- Do not let children or an untrained person operate the machine.
- Do not carry or let children ride on any attachment or machine even with the attachment off. Do not tow children in a cart or trailer.



Avoid Injury From Thrown Objects

- When operating the vehicle with the MCS attachment installed make sure all chutes and hoses are securely in place. Keep hopper closed or MCS in operating position.
- Stop the engine and wait for all moving parts to stop before removing or lifting any attachment components.
- Avoid injury from impeller blades and thrown objects. Remove attachment when operating vehicle in side discharge mode. Make sure deflector shield is in place on mower deck if attachment is removed.



Avoid Injury From Rotating Blades

- Keep hands and feet away from rotating blades and blower assembly when engine is running.
- Stop engine and wait for moving parts to stop before servicing components.
- Do not operate MCS or blower unless all attachment components are in place and latched.

Practice Safe Maintenance

- Only qualified, trained adults should service this machine.
- Understand service procedure before doing work. Keep area clean and dry.
- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- Never lubricate, service or adjust the machine or attachment while it is moving. Keep safety devices in place and in working condition. Keep hardware tight.
- Keep hands, feet, clothing, jewelry, and long hair away from any moving parts, to prevent them from getting caught.
- Lower any attachment completely to the ground or to an existing attachment mechanical stop before servicing the attachment. Disengage all power and stop the engine. Lock park brake and remove the key. Let machine cool.
- Disconnect battery or remove spark plug wire (for gasoline engines) before making any repairs.
- Before servicing machine or attachment, carefully release pressure from any components with stored energy, such as hydraulic components and

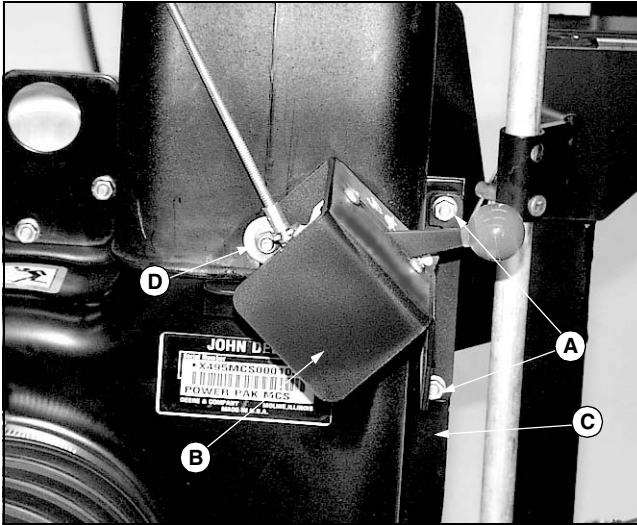
ASSEMBLY

springs.

- Release hydraulic pressure by lowering attachment or cutting units to the ground or to a mechanical stop and move hydraulic control levers.
- Securely support any machine or attachment elements that must be raised for service work. Use jack stands or lock service latches to support components when needed.
- Never run engine unless park brake is locked.
- Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Replace all worn or damaged safety and instruction decals.
- Check all hardware at frequent intervals to be sure the equipment is in safe working condition.
- Do not modify machine or safety devices. Unauthorized modifications to the machine or attachment may impair its function and safety.

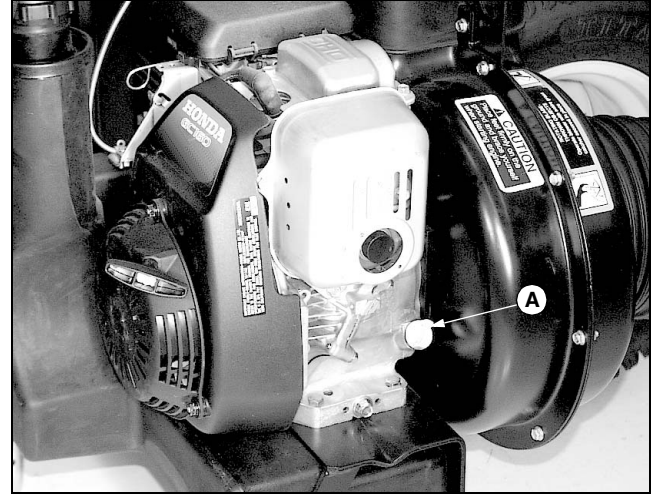
Assembly

Install Throttle Bracket



1. Remove two flanged nuts (A) and use them to install throttle bracket (B) to blower housing bracket (C). Do not tighten nuts.
2. Install M6 x 20 bolt, washer, and lock nut (D).
3. Tighten nuts.

Add Engine Oil



1. Remove dipstick (A).
2. Add oil.
3. Install and tighten dipstick.
4. Start and run engine at idle to check for leaks. Stop engine. Fix any leaks before operating.
5. Check oil level.
6. Add oil if required.

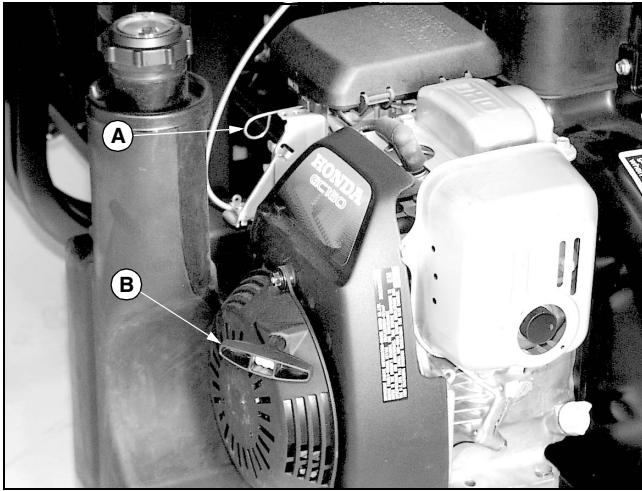
OPERATING

Operating

Daily Operating Checklist

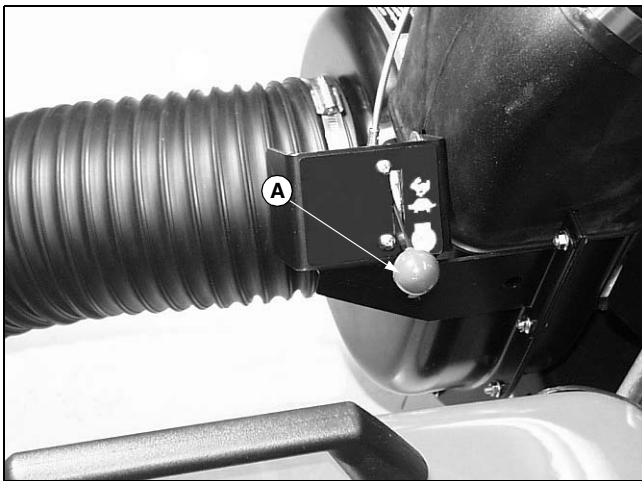
- ☐ Check fuel level.
- ☐ Check engine oil level.
- ☐ Clean air intake screen and air filter.
- ☐ Remove grass and debris from machine.
- ☐ Check area around and underneath engine for leaks.
- ☐ Check that all shields and covers are in place and hardware is tight.

Controls



MX4862

- A- Choke Lever**
B- Starter Handle



MX3878

- A- Throttle Lever**

Starting Engine



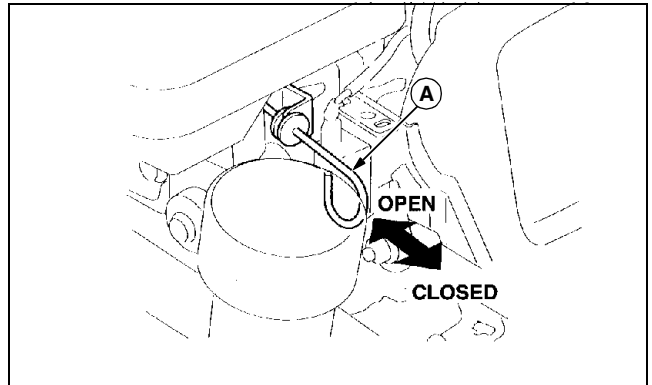
CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

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

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

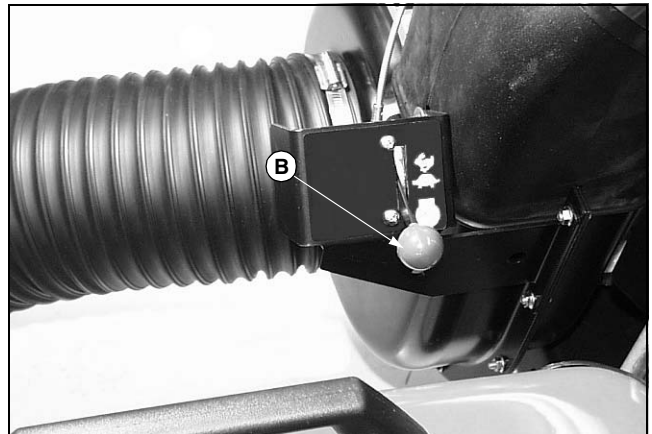
- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Check starting conditions:



MX3879

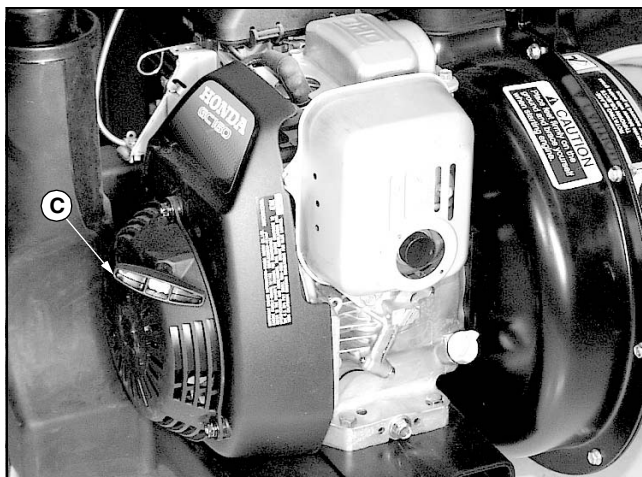
- If engine is cold:
Pull out choke rod (A) to the closed position.
- If engine is warm:
Leave choke rod (A) in the open position.



MX3878

3. Move throttle lever (B) to slow half-way position.

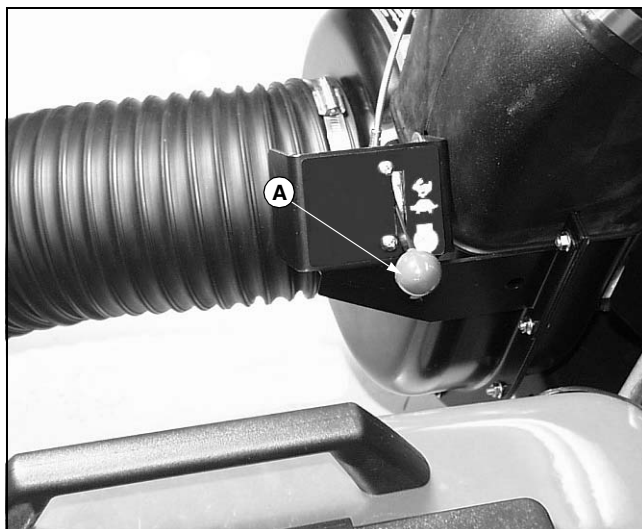
SERVICE INTERVALS



MX3876

4. Place feet firmly on the ground, brace yourself, and pull the starter handle (C) slowly until you feel resistance, then pull fast and steady. Return the rope slowly when engine starts.
5. Push choke rod in to the open position as soon as the engine starts and is running smoothly.
6. Let engine run at half-speed for a couple of minutes to warm-up before operating machine.

Stopping Engine



MX3878

Move throttle lever (A) down to the stop position.

Service Intervals

Service Intervals

Before Each Use

- Check engine oil level.
- Check air cleaner element.
- Check fuel level.

Break In - After First 5 Hours of Operation

- Change engine oil.

Every 25 Hours

- Check and clean air cleaner element, (service more frequently under dusty conditions).

Every 50 Hours

- Change engine oil, (service more frequently under dusty conditions).

Every 100 Hours

- Check and clean spark plug.
- Replace fuel filter.
- Clean engine fins.

Every 150 Hours

NOTE: See your John Deere dealer for these services.

- Check and adjust idle speed.
- Check and adjust valve clearance.

Every 200 Hours

- Replace air cleaner element.
- Replace spark plug.

Every 2 Years

NOTE: See your John Deere dealer for these services.

- Check fuel line, replace if necessary.

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 non-road engine repair establishment or individual. Warranty repairs must be performed by an authorized John Deere dealer.

Avoid Fumes



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

Move the machine 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.**

SERVICE

Filling Fuel Tank



CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

- Shut engine off before filling fuel tank.
- Do not smoke while handling fuel.
- Keep fuel away from flames or sparks.
- Fill fuel tank outdoors or in well ventilated area.
- Clean up spilled fuel immediately.
- Use clean approved non-metal container to prevent static electric discharge.
- Use clean approved plastic funnel without screen or filter to prevent static electric discharge.

IMPORTANT: Avoid damage! Dirt and water in fuel can cause engine damage:

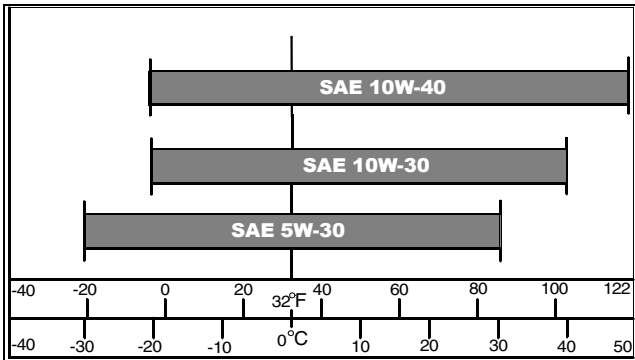
- Clean dirt and debris from the fuel tank opening.
- Use clean, fresh, stabilized fuel.
- Fill the fuel tank at the end of each day's operation to keep condensation out of the fuel tank.
- Use a non-metallic funnel with a plastic mesh strainer when filling the fuel tank or container.

Fill fuel tank at the end of each day's operation to prevent condensation and freezing during cold weather.

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Remove any trash from area around fuel tank cap.
4. Remove fuel tank cap slowly to allow any pressure built up in tank to escape.
5. Fill fuel tank only to bottom of filler neck.
6. Install fuel tank cap.

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:

- TURF-GARD™
- PLUS-4™

Other oils may be used if above John Deere oils are not available, provided they meet the following specification:

- API Service Classification SG or higher

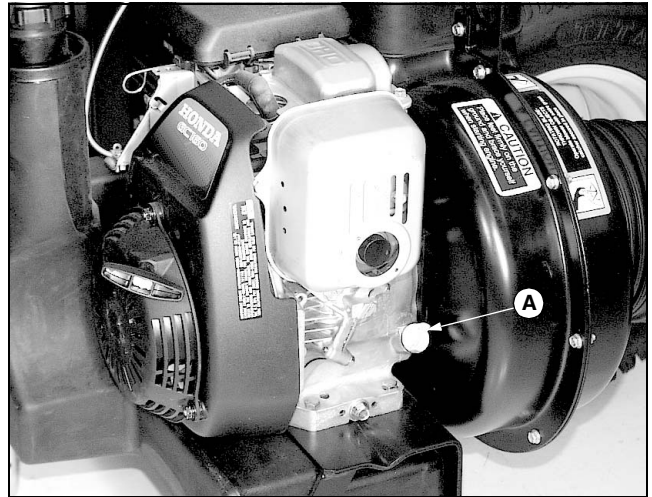
Checking Engine Oil Level

IMPORTANT: Avoid damage! Failure to check the oil level regularly could lead to serious engine problems if oil level is low:

- Check oil level before operating.
- Check oil level when the engine is cold and not running.
- Keep level between the FULL and the ADD marks.
- Shut off engine before adding oil.

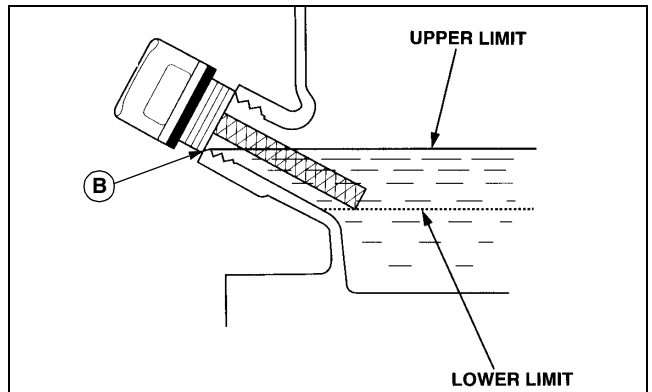
NOTE: Check oil twice a day if you run engine over 4 hours in a day.

1. Park machine safely. (See Parking Safely in the Safety Section.)
2. Stop power-pak engine.



MX3876

3. Remove dipstick (A). Wipe with clean cloth.
4. Install dipstick in tube, but do not tighten it. Let dipstick threads rest on top of tube.
5. Remove dipstick and check oil level.



MX3873

6. If oil level is low, add oil to the edge of the oil filler hole (B).
7. Install and tighten dipstick.

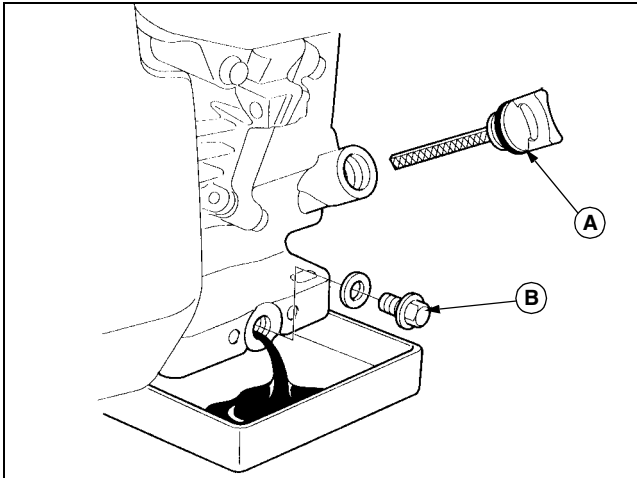
SERVICE

Changing Engine Oil



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

1. Park machine safely on a level surface. (See Parking Safely in the Safety Section.)
2. Run power-pak engine to warm oil.
3. Stop power-pak engine.
4. Put drain pan under drain valve.



MX3872

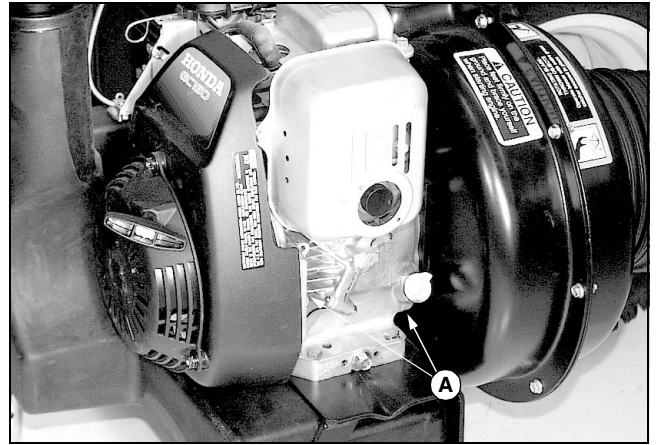
5. Open drain cap (B) and drain oil into pan.
6. Remove dipstick (A).
7. Close drain valve.
8. Add oil.
9. Install and tighten dipstick.
10. Start and run engine at idle to check for leaks. Stop engine. Fix any leaks before operating.
11. Check oil level.
12. Add oil if required.

Cleaning Engine Fins

IMPORTANT: Avoid damage! The engine is air-cooled and requires a large amount of air intake when running. Reduced air intake can cause overheating:

- Keep air intake screen and cooling fins clean.
- Keep covers and screens in place.

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



MX3876

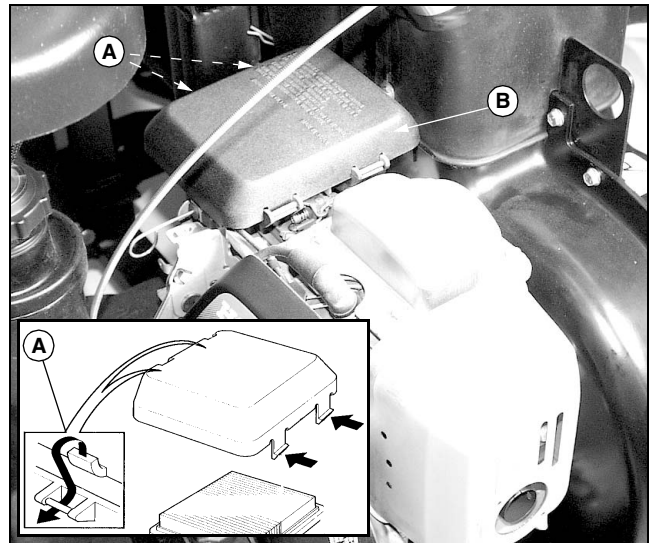
2. Clean cooling fins and external surfaces (A) with rag, brush, vacuum or compressed air.

Checking and Cleaning Air Cleaner Element



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

1. Park machine safely. (See Parking Safely in the Safety Section.)
2. Let power-pak engine cool.



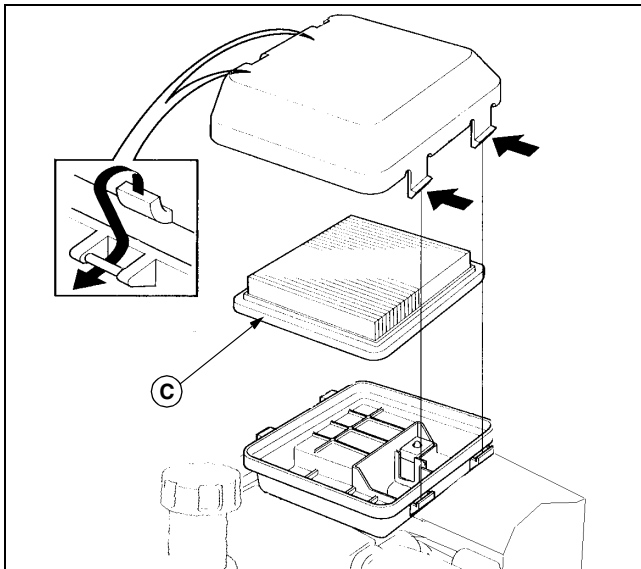
MX3874a, MX4861

3. Press the latch tabs (A) on the cover (B) and remove cover.

SERVICE

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.



MX3874

4. Inspect the air filter (C).

- If it is dirty, carefully remove filter and use compressed air under 210 kPa (30 psi) to remove dust.
- If damaged or very dirty, remove and replace filter element.

5. Replace cover and attach latches to body.

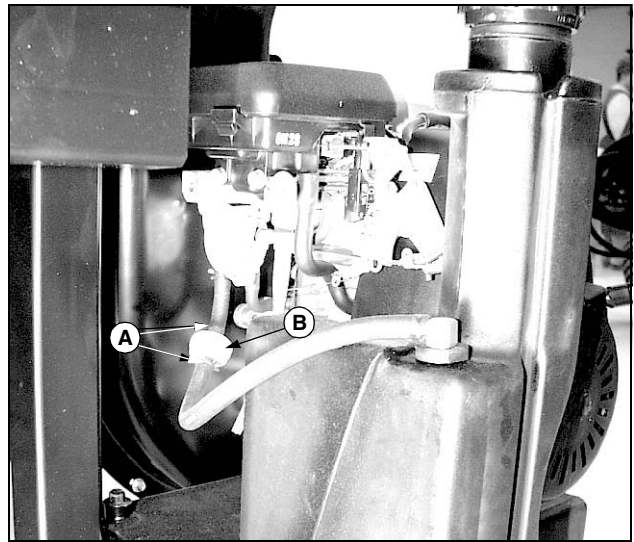
Replacing Fuel Filter

CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

- Do not smoke while handling fuel.
- Keep fuel away from flames or sparks.
- Shut off engine before servicing.
- Cool engine before servicing.
- Work in a well-ventilated area.
- Clean up spilled fuel immediately.

NOTE: Change filter when fuel is low.

1. Park machine safely. (See Parking Safely in the SAFETY Section.)
2. Let engine cool.
3. Put a drain pan under fuel filter.



MX4863

4. Slide hose clamps (A) away from fuel filter (B) using a pliers.

5. Disconnect hoses from filter.

IMPORTANT: Avoid damage! Incorrect installation of fuel filter may cause engine damage. Install the filter with the arrow pointing in the direction of fuel flow for proper operation.

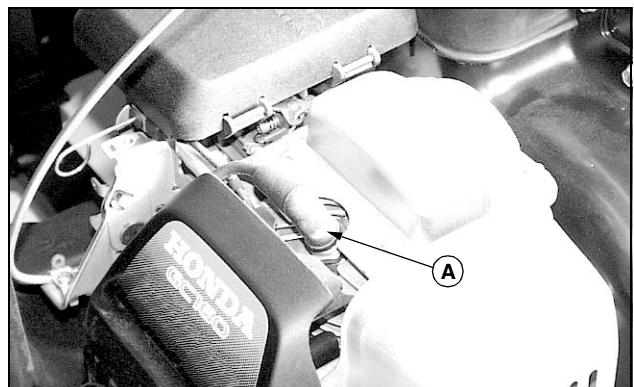
6. Connect hoses to new filter making sure the filter arrow is pointed in the direction of the fuel flow.

7. Install clamps and check for leaks.

Checking Spark Plug

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

1. Park machine safely. (See Parking Safely in the Safety Section.)
2. Let power-pak engine cool.



MX4861

3. Disconnect spark plug wire (A).

4. Remove spark plug.

5. Clean spark plug carefully with a wire brush.

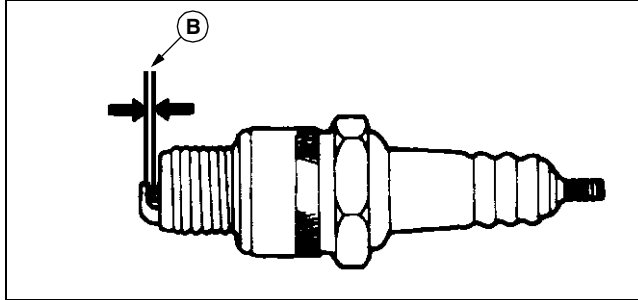
6. Inspect spark plug for:

TROUBLESHOOTING

- Cracked porcelain.
- Pitted or damaged electrodes.
- Other wear or damage.

NOTE: In Canada, replace spark plug with resistor plug only.

7. Replace spark plug as necessary.



MX3875

8. Check plug gap (B) with a wire feeler gauge.
- Gap must be 0.70 – 0.80 mm (0.028 – 0.031 in.)
9. Install and tighten spark plug to 20 N•m (15 lb-ft).
10. Connect the spark plug wire.

Adjusting Carburetor

NOTE: The 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.

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.

Troubleshooting

Using Troubleshooting Chart

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

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

Engine

IF	CHECK
Poor Engine Performance	Fuel: • Dirt in fuel system or fuel is old, obtain fresh fuel from another supplier before suspecting machine problems. Suppliers blend fuels differently and changing suppliers will generally solve any performance problems • Fuel blended with alcohol or ether may contribute to performance problems by causing gum and varnish deposits, especially if fuel is stored for several weeks or more. Obtain fresh fuel.

IF	CHECK
Engine Will Not Start	Choke adjusted incorrectly. Throttle lever not in slow or fast position. No fuel or improper fuel. Spark plug wire is loose or disconnected. Plugged fuel filter.
Engine Hard To Start	Stale or improper fuel. Faulty spark plug. Carburetor is not adjusted properly or dirty. Plugged fuel filter. Choke adjusted incorrectly.
Engine Runs Unevenly	Cooling fins plugged. Fuel line or fuel filter plugged. Stale or dirty fuel. Improper fuel. Air cleaner element plugged. Choke or throttle cable sticking.
Engine Misses Under Load	Faulty spark plug. Fuel line or fuel filter plugged. Stale or dirty fuel.
Engine Vapor Locks	Cooling fins plugged. Fuel line or fuel filter plugged.
Engine Overheats	Cooling fins plugged. Engine oil low or too high. Engine operated too long at a slow idle speed.

Storage

Storing Safety



CAUTION: Avoid injury! Fuel vapors are explosive and flammable. Engine exhaust fumes contain carbon monoxide and can cause serious illness or death:

- Run the engine only long enough to move the machine to or from storage.
- Do not store vehicle with fuel in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing the machine in any enclosure.

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 machine safely in a well-ventilated area. (See Parking Safely in the SAFETY section.)

SPECIFICATIONS

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

2. Start engine and allow to run until it runs out of fuel.
3. For machines equipped with a key switch, turn key to off position.

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

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

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

5. Fill fuel tank with stabilized fuel and 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, if equipped, while engine is warm.
2. Service air filter if necessary.
3. Clean debris from engine air intake screen.
4. On gas engines:
 - Remove spark plug(s). Put 30 mL (1 oz.) of clean engine oil in cylinders.
 - Install spark plug(s), but do not connect spark plug wire(s).
 - Crank the engine five or six times to allow oil to be distributed.
5. Clean the engine and engine compartment.
6. Close fuel shut-off valve, if your machine is equipped.
7. Store the machine in a dry, protected place. If machine is stored outside, put a waterproof cover over it.

Removing Machine From Storage

1. Check engine oil level.
2. Check spark plug gap. Install and tighten plugs to specified torque.
3. Lubricate all grease points.
4. Open fuel shut-off valve, if your machine is equipped.
5. Run the engine 5 minutes without the mower running to allow oil to be distributed throughout engine.
6. Be sure all shields and guards or deflectors are in place.

Fuel Tank Capacity 8 L (2.1 gal)
Engine Oil Capacity 0.58 L (0.61 qt)

Recommended Lubricants

Engine Oil TURF-GARD® OR PLUS-4®

(Specifications and design subject to change without notice.)

Specifications

Power-Pak Engine

Manufacturer Honda
Model GC160
Engine Type 4-stroke, overhead cam
Cylinders 1
Cooling System Forced Air
Idle Engine Speed 1,400 ± 150 rpm
Maximum Engine Speed 3600 rpm
Spark Plug Gap 0.70 – 0.80 mm (0.028 – 0.031 in)
Spark Plug Torque 20 N•m (15 lb-ft)

WARRANTY

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".

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

Your Warranty Rights and Obligations

California Air Resources Board (CARB), the United States Environmental Protection Agency (EPA), and John Deere are pleased to explain the emissions control system warranty on your small off-road engine and equipment. In California, 2006 and later small off-road engines and equipment 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 emissions control system on your small off-road engine and equipment for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your small off-road engine and equipment.

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

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

John Deere Emissions Control System Warranty Coverage

Small off-road engines and equipment are warranted relative to emissions control parts for two years. If any emissions related part on your engine or equipment is defective, the part will be repaired or replaced by John Deere.

Owner's Warranty Responsibilities

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

You are responsible for presenting your small off-road engine and equipment 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 Contact 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 engine and equipment is:

- Designed, built and equipped so as to conform with all applicable regulations adopted by the California Air Resources Board (CARB) for 2006 and later engines and equipment, 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 emissions warranted part for a period of two years after the engine and equipment 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 emissions related part on your engine or equipment 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 emissions control system parts) to the extent these parts were present on the engine and equipment purchased.

Fuel Metering System:

- Carburetor and internal parts (or fuel injection system).
- Air/fuel ratio feedback and control system.
- Cold start enrichment system.
- Fuel hose, line, fittings, clamps.
- Fuel pump.

Air Induction System:

- Air Cleaner
- Intake manifold.

Ignition System:

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

Exhaust System:

- Exhaust manifold.
- Catalyst.

Miscellaneous Items Used in Above Systems

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

Since emissions 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. 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 is warranted as to defects for the warranty period. Any such part repaired or replaced under the warranty is warranted for the remaining warranty period.

WARRANTY

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

c) Any warranted part which is scheduled for replacement as required maintenance is 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 is warranted for the remainder of the period prior to the first scheduled replacement point for that part.

d) Normal maintenance, replacement or repair of emissions control devices and systems, which are being done at the customer's 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.

Limitations

This Emissions 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 Emissions 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 engine and equipment or transportation of the equipment 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 ENGINE AND EQUIPMENT FOR ANY OTHER PURPOSE.

b) NO EXPRESS EMISSIONS CONTROL SYSTEM WARRANTY IS GIVEN BY JOHN DEERE WITH RESPECT TO THE ENGINE AND EQUIPMENT EXCEPT AS SPECIFICALLY SET FORTH IN THIS DOCUMENT. ANY EMISSIONS CONTROL SYSTEM WARRANTY IMPLIED BY LAW, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE EMISSIONS CONTROL SYSTEM WARRANTY TERMS SET FORTH IN THIS DOCUMENT.

c) No dealer is authorized to modify this Federal, California and John Deere Emissions Control System Warranty.

Tire Warranty

John Deere warranty applies for tires available through the John Deere parts system. For tires not available through the John Deere parts system, the tire manufacturer's warranty applicable to your machine may not apply outside the U.S. (See your John Deere dealer for specific information.)

Limited Battery Warranty

NOTE: Applicable in North America only. For complete machine warranty, reference a copy of the John Deere warranty statement. Contact your John Deere dealer to obtain a copy.

TO SECURE WARRANTY SERVICE

The purchaser must request warranty service from a John Deere dealer authorized to sell John Deere batteries, and present the battery to the dealer with the top cover plate codes intact.

FREE REPLACEMENT

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within 90 days of purchase will be replaced free of charge. Installation costs will be covered by warranty if (1) the unserviceable battery was installed by a John Deere factory or dealer, (2) failure occurs within 90 days of purchase, and (3) the replacement battery is installed by a John Deere dealer.

PRO RATA ADJUSTMENT

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship more than 90 days after purchase, but before the expiration of the applicable adjustment period, will be replaced upon payment of the battery's current list price less a pro rata credit for unused months of service. The applicable adjustment period is determined from the Warranty Code printed at the top of the battery and chart below. Installation costs are not covered by warranty after 90 days from the date of purchase.

THIS WARRANTY DOES NOT COVER

A. Breakage of the container, cover, or terminals.

B. Depreciation or damage caused by lack of reasonable and necessary maintenance or by improper maintenance.

C. Transportation, mailing, or service call charges for warranty service.

LIMITATION OF IMPLIED WARRANTIES AND PURCHASER'S REMEDIES

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 products 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 ADJUSTMENT PERIOD SET FORTH HERE. THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON JOHN DEERE BATTERIES ARE THOSE SET FORTH HERE. 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 these limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have some rights which vary from state to state.

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.

PRO RATA MONTHS OF ADJUSTMENT

NOTE: If your battery is not labeled with a warranty code, it is a warranty code “B”.

GETTING QUALITY SERVICE

Warranty Code	Warranty Period
A	40 Months
B	36 Months
C	24 Months

Getting Quality Service

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 the serial number or product identification number (PIN) for your machine or attachment. These are the numbers that you recorded in the Product Identification section of this manual.

Order Service Parts Online

Visit <http://JDParts.deere.com> for your Internet connection to parts ordering and information.

Part Numbers

ITEM	PART NUMBER
Air Cleaner Element	M143611
Spark Plug (BPR6ES)	M128206

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

John Deere Quality Continues with Quality Service

John Deere provides a process to handle your questions or problems, should they arise, to ensure that product quality continues with your John Deere dealer's parts and service support.

Follow the steps below to get answers to any questions you may have about your product.

1. Refer to your attachment and machine operator manuals.
2. Contact your John Deere dealer with unanswered questions.
3. In North America or Canada, call the John Deere Customer Contact Center.
 - Call 1-800-537-8233 and provide product serial number and model number.

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