

Power-Pak Engine (Serial No. 595001-)



JOHN DEERE

OPERATORS MANUAL

**Power-Pak Engine
(Serial No. 595001-)**

OMM79592 F8 English

**John Deere
Lawn & Grounds Care Division
OMM79592 F8**

**LITHO IN U.S.A.
ENGLISH**



Introduction

Thank you for purchasing a John Deere product.

Read this manual carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

This manual should be considered a permanent part of your machine and should remain with the machine when you sell it.



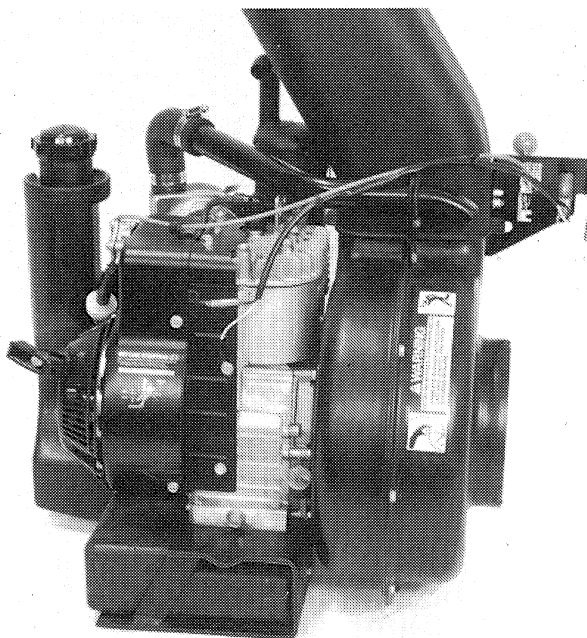
This machine is of metric design. Measurements in this manual are metric with the customary U.S. measurement following. Use only metric hardware and tools as specified.

Right-hand and left-hand sides are determined by facing in the direction of forward travel.

Write identification numbers in the Specifications section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. If this manual is kept on the machine, also file the identification numbers in a secure place off the machine.

Warranty is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.



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

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7A1;M61434 M23;;M79592-IFC 010788

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Specifications

SPECIFICATIONS

Manufacturer Kawasaki
Model FA210D
Carburetor Pulse pump, direct drive
Horsepower 4.5 kW (6 hp)
Cylinders 1
Engine Speeds
 Slow idle, no load 1800 rpm
 Fast idle, no load 4500 rpm

Spark Plug:
 Type Champion RCJ-8
 Gap 0.6 mm (0.025 in.)
 Part M71939
Fuel Tank 8 L (2.1 gal)
Engine Oil 0.6 L (20 oz or 0.6 qt)

(Specifications and design subject to change without notice.)

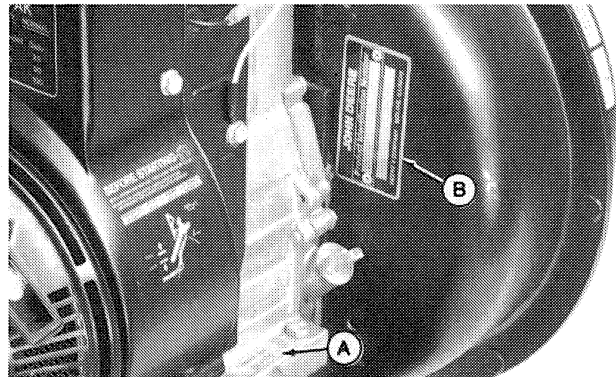
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MACHINE NUMBERS

Write machine numbers below. Your John Deere dealer needs these numbers when you order parts.

Engine serial number (A) _____

Power-Pak serial number (B) _____



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ARE WE MEETING YOUR NEEDS?

This operator's manual was written by the Service Publications Department at John Deere Horicon Works.

In our effort to meet customer needs, we invite you to mail comments on this manual to address at right.

Call your John Deere dealer or Sales Branch if you have problems or need service. See map on inside back cover.

**Meeting
Customer
Needs** 

**JOHN DEERE HORICON WORKS
400 N. VINE
HORICON, WI 53032-1291
ATTN: SERVICE PUBLICATIONS**

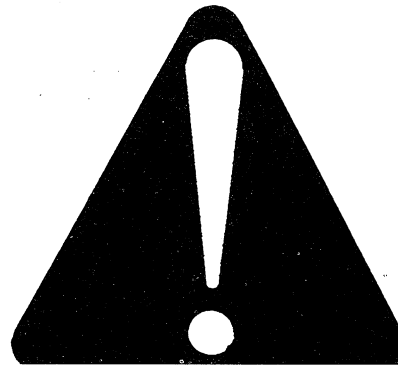
082;M41312 M23;;CNBS -D 050788

Safety

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



AB6;T81389 053;ALERT 160687

FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.



AB6;TS201 053;READ 230487

HANDLE FUEL SAFELY—AVOID FIRES

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.



AB6;TS202 053;FIRE1 230487

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



AB6;TS186 053;FIRE2 080785



SERVICE MCS SAFELY

Before you service engine:

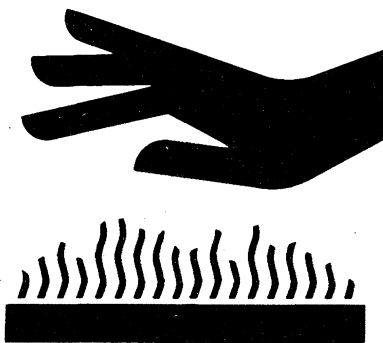
- Stop engine.
- Let it cool.

Stop engine before you make repairs or adjustments.

Do not change engine governor or overspeed engine.

Keep safety devices in place and in working condition.

Keep hardware tight.



AB6;TS271 M23;;SABH -A 040888

READ SAFETY SIGNS

Read and follow safety sign messages.

Keep signs in good condition. Replace damaged or missing signs.

This WARNING sign is near a specific hazard.



On top, front of blower housing

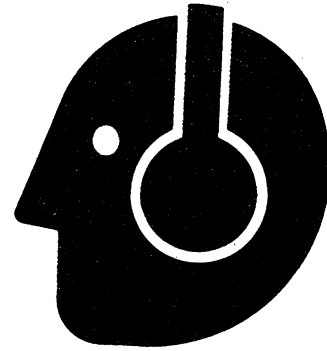
7A1;M43117 M23;;SABH -B 290788



PROTECT AGAINST NOISE

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

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

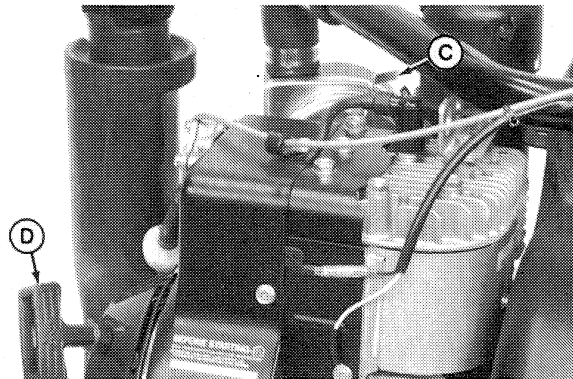
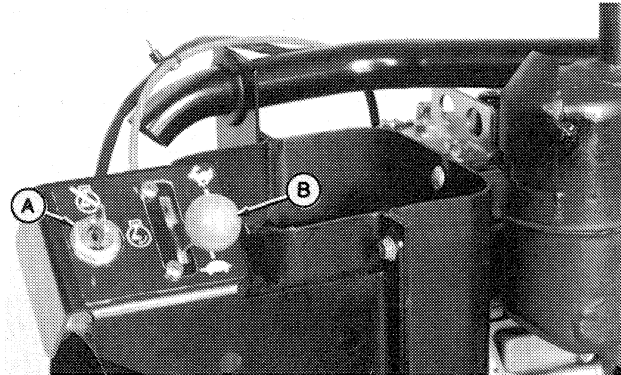


AB6;TS207 053;NOISE 230487

Operating Engine

LEARN CONTROLS

A—Key Switch
B—Throttle Lever
C—Choke Lever
D—Starter Handle



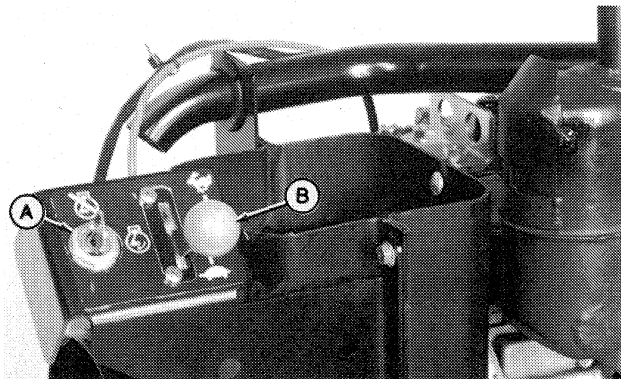
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STARTING ENGINE



CAUTION: Start engine **ONLY** outdoors or in a well-ventilated place. Exhaust fumes are dangerous.

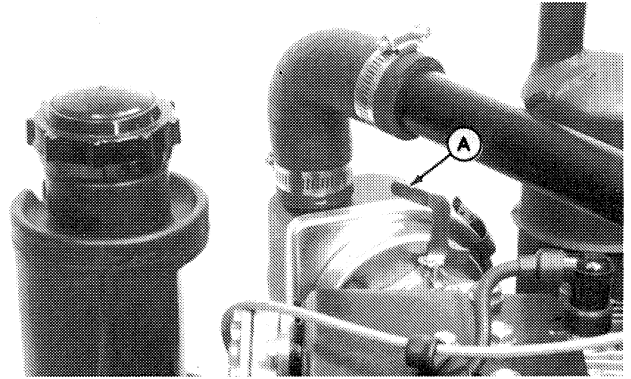
1. Fill fuel tank. Tank capacity is 2.1 gal (7.9 L).
2. Turn key switch (A) to ON position.
3. Move throttle lever (B) to half-throttle.



7A1;M61436 M23;;OEBH -G 010788

NOTE: A warm engine usually does not need choking.

4. Move choke lever (A) to CHOKE position, as shown.
5. Pull starter handle slowly until you feel resistance (engine compression). Then pull fast and steady. Return rope slowly when engine starts.
6. Move choke lever to halfway position. As engine warms, push choke lever to OPEN position.
7. Run engine at half speed for 2 to 3 minutes to warm engine.



7A1;M61440 M23;;OEBH -H 010788

ENGINE OPERATION

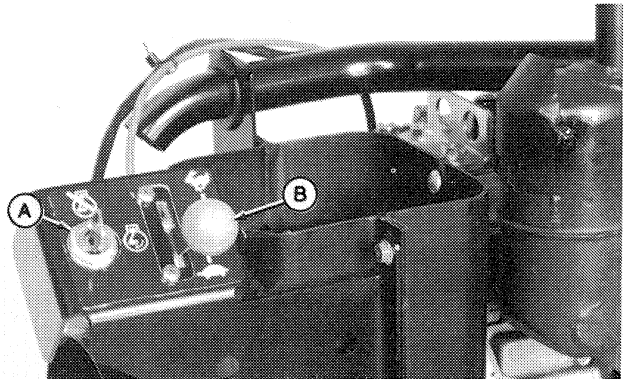
IMPORTANT: Do not operate Power-Pak engine more than 20 degrees from level: The engine will not get proper lubrication and will be damaged.

Move throttle lever (B) to desired operating speed, depending on cutting conditions:

- Use SLOW THROTTLE for short grass and dry conditions.
- Use HALF THROTTLE for medium grass.
- Use FULL THROTTLE for tall grass and wet conditions.

Stopping engine:

1. Move throttle lever to SLOW position.
2. Turn key switch (A) OFF.



7A1;M61436 M23;;OEBH -J 010788

Fuels and Lubricants

FUEL



CAUTION: Handle fuel carefully. Remember these safety points:

- Stop engine before you fill fuel tank.
- Let engine cool before you fill fuel tank.
- DO NOT smoke while you fill fuel tank.
- Fill fuel tank only to bottom of filler neck.
- Clean engine of trash, grease and fuel.
- DO NOT remove fuel cap when engine is running.
- DO NOT store engine in building where fumes may reach a spark.
- Allow engine to cool before you store in an enclosure.

IMPORTANT: DO NOT mix oil with gasoline.

Unleaded fuel is recommended. Regular leaded gasoline with anti-knock index of 87 or higher may be used. Avoid switching from unleaded to regular gasoline to prevent engine damage.

Use of gasohol is acceptable as long as ethyl alcohol blend does not exceed 10 percent. Unleaded gasohol is preferred over leaded gasohol.

Keep fuel cap vent open.

Do not pinch fuel lines.

M23;;FLBH -A 290788

STORING AND HANDLING FUEL

Use clean, high quality fuel.

IMPORTANT: Keep dirt, scale, water or other foreign material out of fuel.

Keep fuel in a clean container in a protected area away from buildings.

Drain water and sediment from storage tank regularly.

Keep storage tank on its side with plug up.

Help prevent water condensation and varnish in fuel by not storing fuel for long periods of time.

M23;;FLBA B 010886

ENGINE OIL/LUBRICANTS

John Deere TORQ-GARD SUPREME® engine oil is recommended. If other oils are used, they must be premium quality engine oils meeting performance requirements of:

—API Service Classification SD, SE, SE/CC or SF.

For warm weather use SAE 30 oil.

For cold weather use SAE 20 oil.

For all seasons use SAE 10W-30 oil.

Quality engine oils are blended, so additives are neither required nor recommended.

Certain areas outside United States and Canada may require different lubricants. See your John Deere dealer for alternative lubricant recommendations.

M23;;FLBA C 201186

Troubleshooting

Problem	Solution	Section
Engine will not start or is hard to start:	Fill fuel tank	Fuels and Lub
	Release pinched line(s)	Fuels and Lub
	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
Engine quits:	Fill fuel tank	Fuels and Lub
	Clean fuel cap vent	Fuels and Lub
	Release pinched fuel line(s)	Fuels and Lub
	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
Engine surges at high idle ONLY:	Clean or replace air cleaner elements	Service
	Tighten dipstick	Service
	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
Engine surges under load:	Clean fuel cap vent	Fuels and Lub
	Release pinched fuel line(s)	Fuels and Lub
	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
Engine misses:	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
Engine vapor locks:	Clean fuel cap vent	Fuels and Lub
Engine overheats:	Clean or replace air cleaner elements	Service
	Clean cooling fins	Service
	Add engine oil	Service
Engine backfires:	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
	Clean or replace air cleaner elements	Service
Engine knocks (pings):	Drain stale or low-octane fuel	Fuels and Lub
	Fill tank high-octane fuel	Fuels and Lub
	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
	Move throttle to FULL THROTTLE	Oper. Engine
	Reduce engine load	—

TROUBLESHOOTING (Cont.)

Problem	Solution	Section
Engine loses power:	Follow instructions for	
	Engine Overheats	Service
	Drain stale or low-octane fuel	Fuels and Lub
	Fill tank with high-octane fuel	Fuels and Lub
	Clean or replace air cleaner elements	Service
	Lubricate throttle cable and linkage	—
	Connect spark plug	Service
	Gap spark plug	Service
	Clean or replace spark plug	Service
	Tighten dipstick	Service
	Reduce engine load	—
	Clean cooling fins	Service
	Clean fuel cap vent	Fuels and Lub
	Release pinched fuel line(s)	Fuels and Lub

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Service

CHECKING OIL LEVEL—BEFORE USE

1. Park tractor on a level surface. Stop engine.

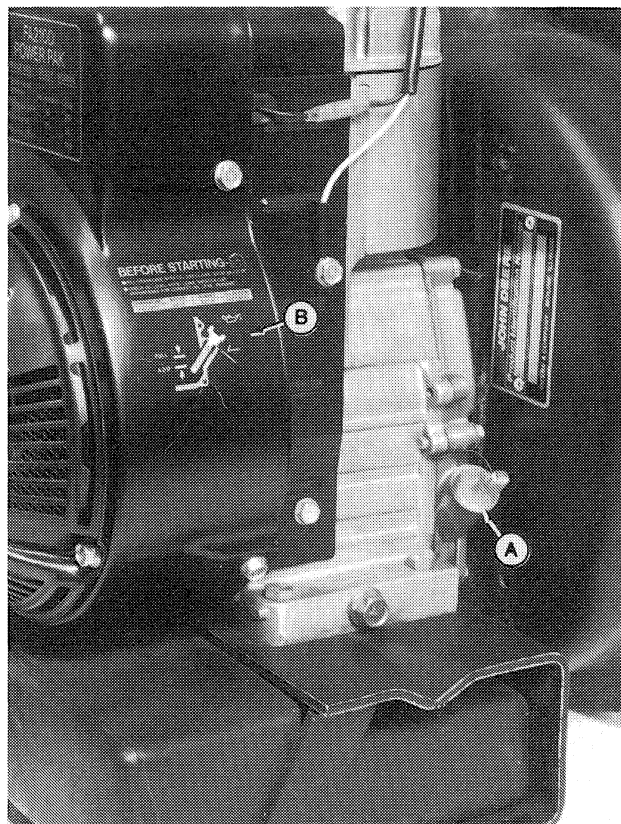
IMPORTANT: Stop Power-Pak engine.

2. Clean area around dipstick (A).
3. Remove dipstick. Wipe it with a clean rag.
4. Install dipstick, but DO NOT tighten it. Let dipstick threads rest on top of fill tube. See decal (B).
5. Remove dipstick. Check oil level on dipstick.
6. Oil must be between L and H marks. See decal.

IMPORTANT: If oil level is below L mark, DO NOT run the engine.

7. If oil is low, add oil to bring oil level no higher than H mark on dipstick. See ENGINE OIL in Fuels and Lubricants section for correct oil.

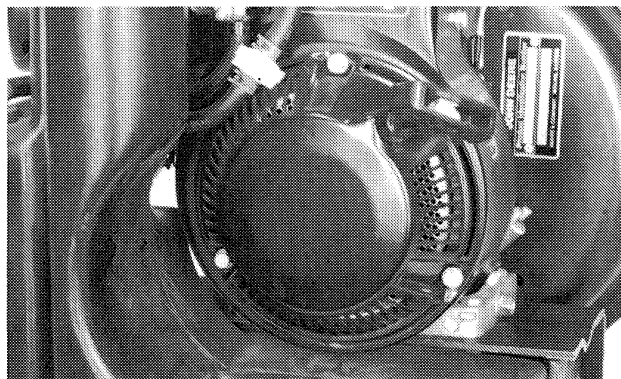
8. Install and tighten dipstick.



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CLEANING RECOIL SCREEN—BEFORE USE

Clean recoil screen (A) with brush, rag, or compressed air.

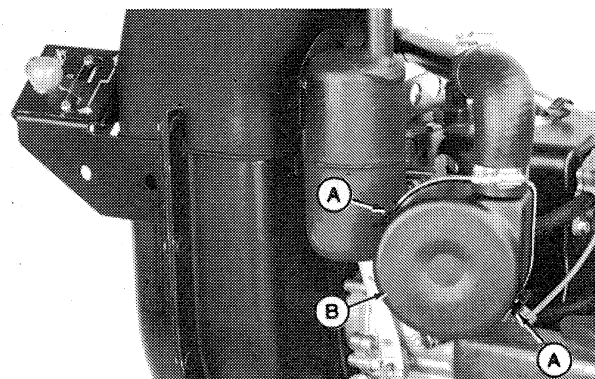


7A1;M61491 M23;;SEBH -AB 010788

CHECKING AND CLEANING PRECLEANER AND AIR CLEANER ELEMENTS—25 HOURS

NOTE: If you operate MCS in dusty conditions, check and clean both elements every 10 hours. Replace both elements every 100 hours.

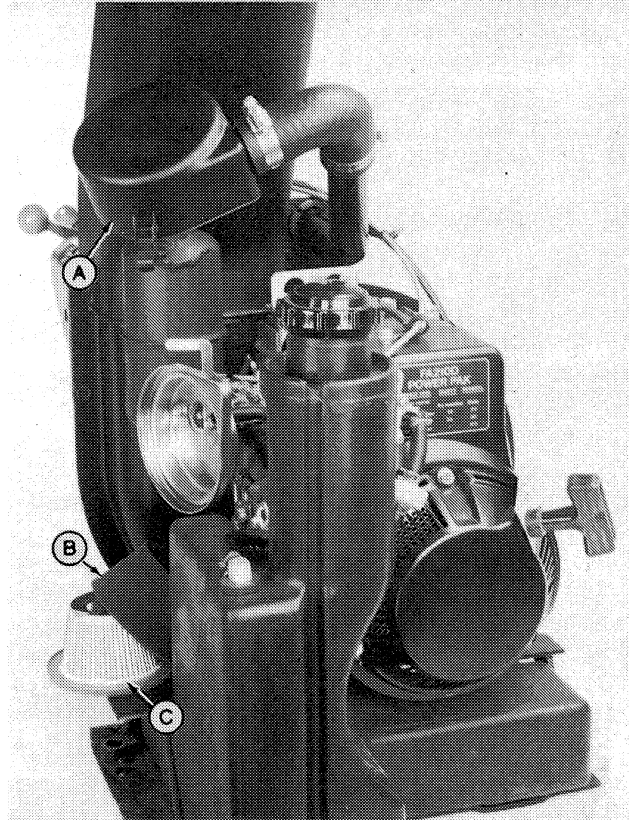
1. Release latches (A) to remove air cleaner cover (B).



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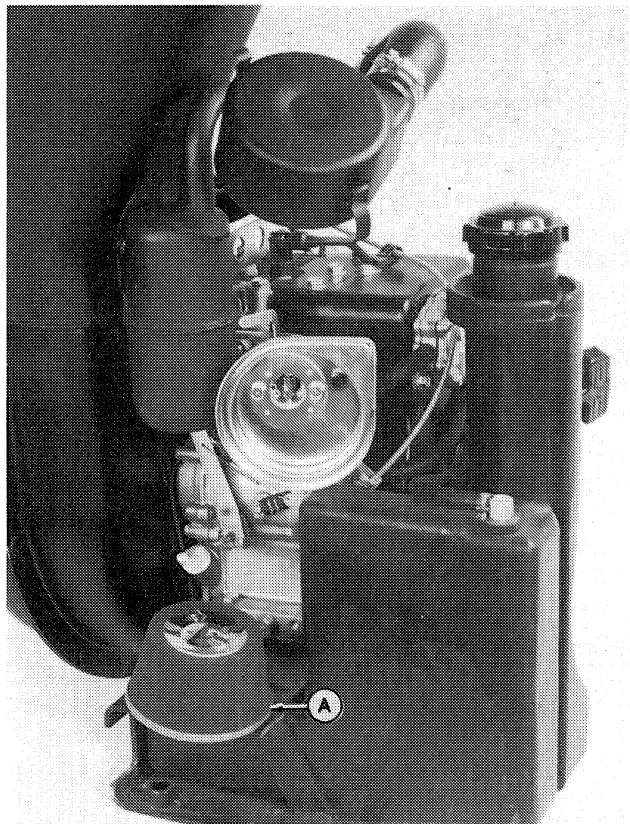
NOTE: If precleaner or paper element is damaged, replace it.

2. Pivot cover up (A).
3. CHECK: If precleaner (B) is dirty, remove it from paper element (C).
4. Use compressed air under 210 kPa (30 psi) to remove dust.
5. CHECK: If paper element is dirty, tap it gently on a hard surface to loosen dust. Use compressed air under 210 kPa (30 psi) to remove dust OR brush off dust. If element is very dirty, install new element.



7A1;M61486 M23;;SEBH -AD 010788

6. Install precleaner (A) on paper element.
7. Install elements in cover.
8. Fasten cover.

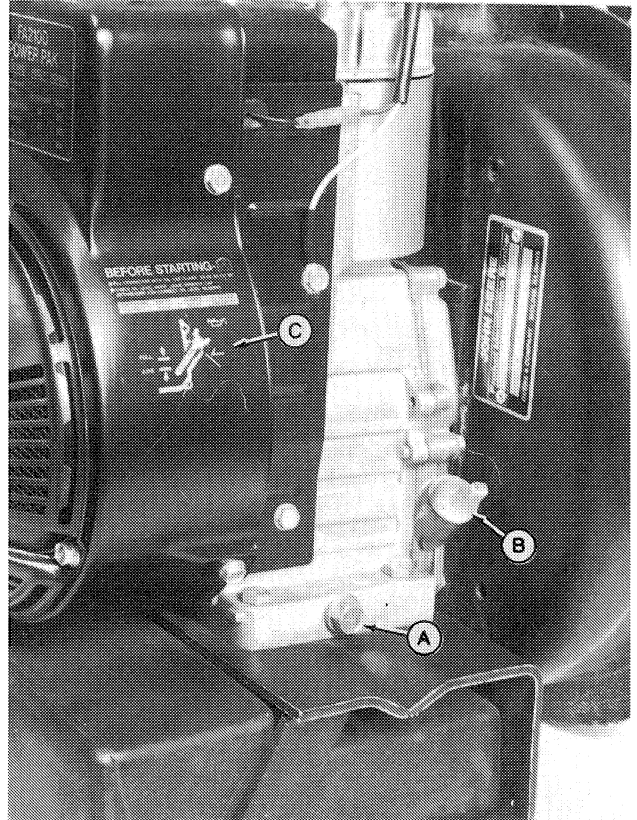


7A1;M61487 M23;;SEBH -AE 010788

CHANGING ENGINE OIL—50 HOURS

IMPORTANT: Change engine oil after first 5 hours of operation. After that, change oil every 50 hours under normal conditions, or every 25 hours under dusty conditions.

1. Park on level surface.
2. Run engine to warm oil. Stop engine.
3. Remove drain plug (A). Drain oil into container.
4. Install drain plug.
5. Remove dipstick (B). See decal (C).
6. Add 0.6 L (20 oz or 0.6 qt) of engine oil. See ENGINE OIL in Fuels and Lubricants section for correct oil.
7. Check oil level. See CHECKING OIL LEVEL in this section.
8. Install and tighten dipstick.



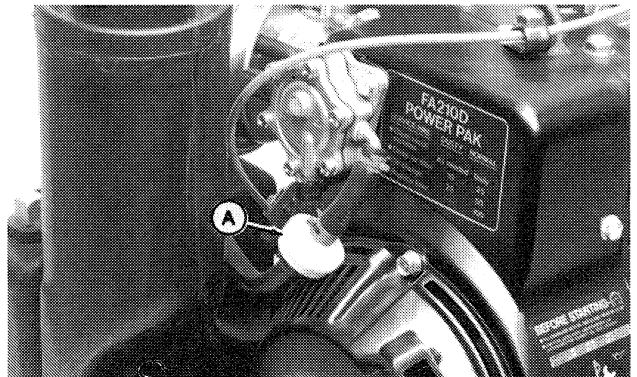
7A1;M61493 M23;;SEBH -AF 010788

REPLACING FUEL FILTER—100 HOURS



CAUTION: Keep cigarettes, sparks, and flames away from fuel system. Let engine cool. Use shop cloth to absorb spilled fuel.

1. Let engine cool.
2. Slide hose clamps away from filter (A). Disconnect hoses from filter.
3. Connect hoses to new filter. Install clamps.



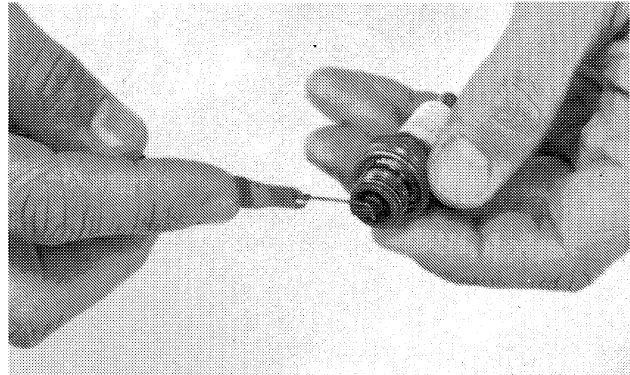
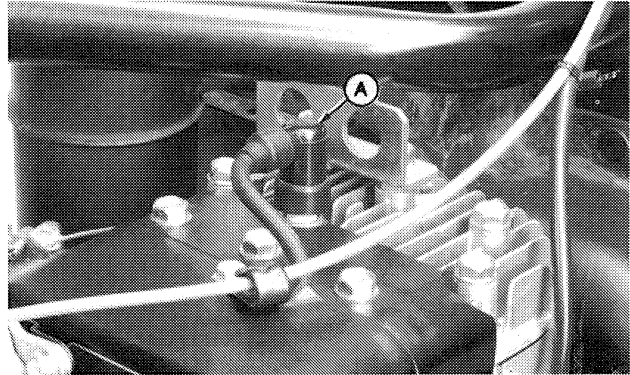
7A1;M61482 M23;;SEBH -AG 290788

CHECKING SPARK PLUG—100 HOURS



CAUTION: Before you remove spark plug: Stop engine. Let engine cool.

1. Disconnect spark plug wire (A).
2. Remove spark plug. Clean it carefully with wire brush.
3. Inspect spark plug for:
 - Cracked porcelain.
 - Pitted or damaged electrodes.
 - Other wear or damage.
4. Replace spark plug as necessary. In Canada, use resistor plug only.
5. Check plug gap with wire feeler gauge. Gap must be 0.64 mm (0.025 in.).
6. To change gap, move outer electrode.
7. Install and tighten spark plug to 20 N·m (15 lb-ft).
8. Connect spark plug wire.



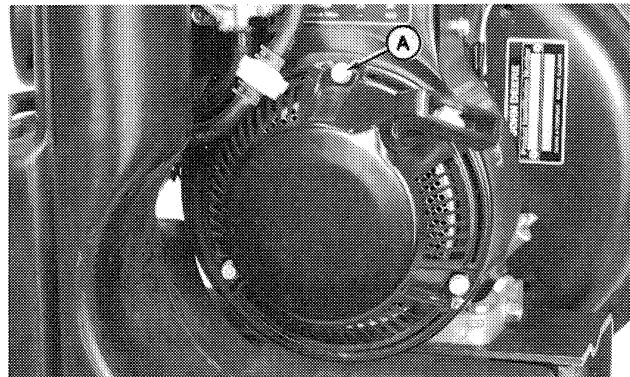
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CLEANING FLYWHEEL SCREEN—100 HOURS



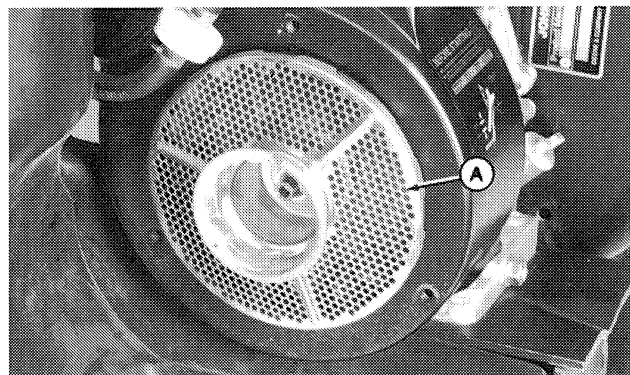
CAUTION: Stop engine before you remove re-coil screen.

1. Remove three cap screws (A) to remove cover.



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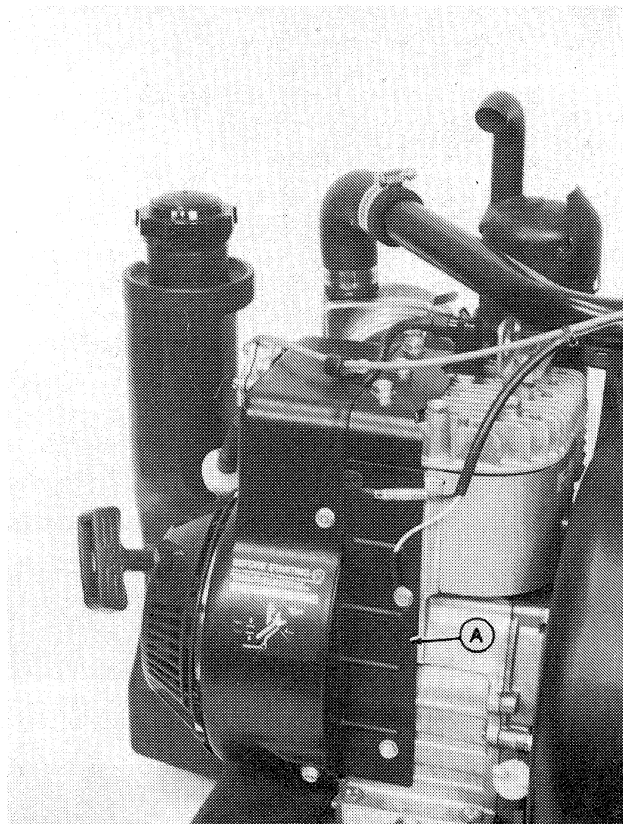
2. Clean flywheel screen (A) with a brush, rag, or compressed air.
3. Install cover. Tighten cap screws.



7A1;M61490 M23;;SEBH -AK 010788

CLEANING ENGINE FINS—100 HOURS

1. Remove four screws and cover (A). Note location of screws.
2. Use compressed air to clean dirt from fins.
3. Direct compressed air under covers and shrouds around all of engine.
4. Install cover and screws.



7A1;M61492 M23;;SEBH -AL 010788

Storage

STORING POWER-PAK



CAUTION: Fuel is highly flammable. Do not smoke while you service fuel system. Wipe up spilled fuel immediately.

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

1. Put John Deere Gasoline Storage Stabilizer or equivalent in fuel tank. Follow directions on can.
2. Fill engine oil level to H mark.
3. Drain fuel from fuel tank.
4. Start engine and run carburetor dry.
5. Remove spark plug. Squirt 10 mL (1/3 oz) of clean engine oil into cylinder.

6. Install plug.
7. Pull recoil starter several times to distribute oil.
8. Pull recoil starter until you feel piston is on its compression stroke. This closes both intake and exhaust valves to prevent cylinder from rusting.
9. Service air cleaner.
10. Clean engine and blower housing. Remove oil, grease, grass, and dirt.
11. Repair worn or damaged parts. Install new parts if necessary.
12. Apply paint to areas that need it to prevent rust.
13. Store Power-Pak in a dry, protected place. If you store Power-Pak outside, put waterproof cover over it.

M23;;STBH -C 290788

REMOVING POWER PAK FROM STORAGE

1. Remove spark plug. Check spark plug.
2. Pull starter rope several times.
3. Install spark plug. Connect spark plug wire.
4. Check engine oil.
5. Fill fuel tank.
6. Start engine. Run engine a few minutes without load before you operate MCS.

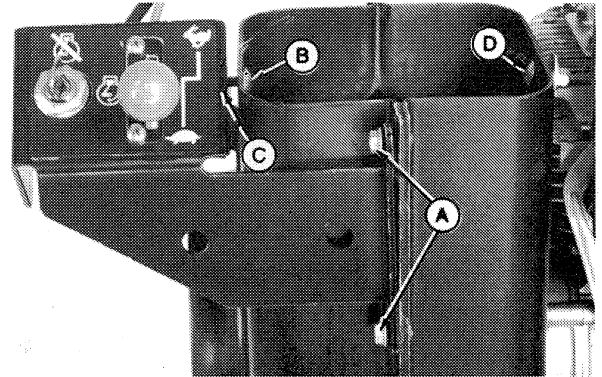
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Assembly

INSTALL THROTTLE BRACKET

1. Remove two flanged nuts (A).
2. Install throttle bracket with M6 x 20 round-head bolt (B) and flanged lock nut (C). DO NOT TIGHTEN.
3. Install flanged nuts (A). DO NOT TIGHTEN.
4. Install M6 x 20 round-head bolt, 9/32 x 1 x 0.06 in. washer, and flanged lock nut (D). DO NOT TIGHTEN.

A—Nut
B—Bolt
C—Lock Nut
D—Lock Nut

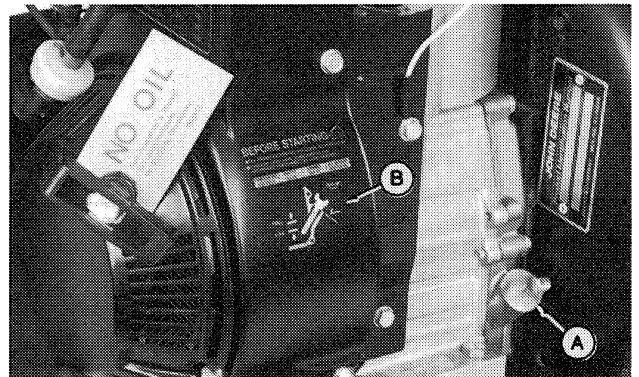


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ADD ENGINE OIL

IMPORTANT: The Power-Pak engine is shipped without oil.

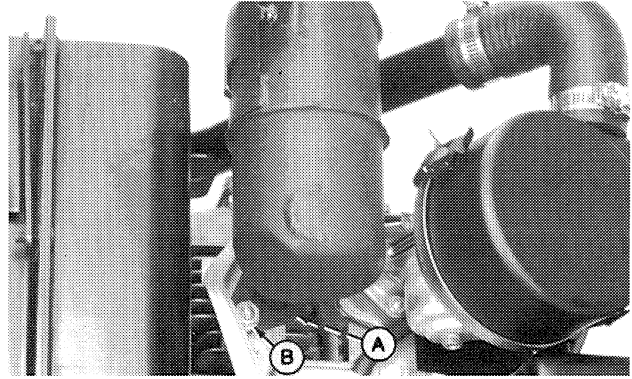
1. Remove and discard NO OIL tag.
2. Remove dipstick/fill plug (A).
3. Follow instructions on decal (B).
4. Add 0.6 L (20 oz or 0.63 qt) of engine oil. See ENGINE OIL in Fuels and Lubricants section for correct oil.
5. Install dipstick.



7A1;M61438 M23;;ASBH -B 010788

INSTALL MUFFLER

1. Remove plug from exhaust port.
2. Install metal exhaust gasket (A).
3. Install muffler.
4. Fasten it with lock washers and nuts (B).

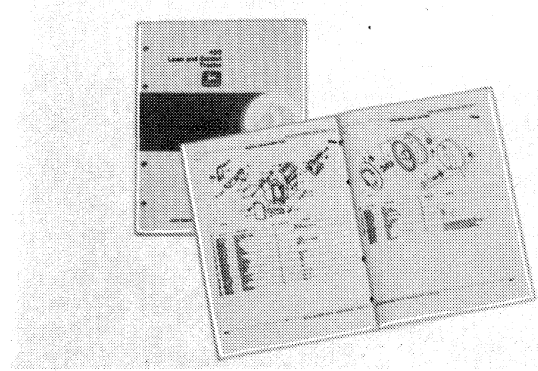


7A1;M61439 M23;;ASBH -C 290788

John Deere Service Literature Available

PARTS CATALOG

The parts catalog lists service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.

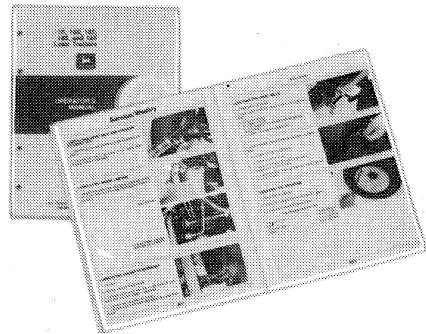


AB6;TS189 053;PARTS 271185

OPERATOR'S MANUAL

The operator's manual provides safety, operating, maintenance, and service information about John Deere machines.

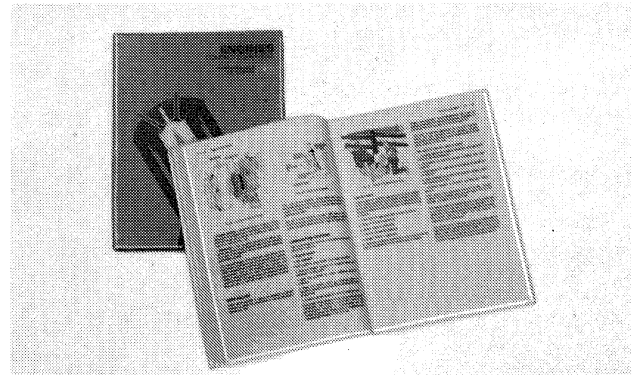
An extra copy of the operator's manual is important if the copy furnished with your machine is misplaced.



AB6;TS190 053;OM 271185

FUNDAMENTALS OF SERVICE MANUALS

These basic manuals cover most makes and types of machines. FOS manuals tell you how to *service* machines. Each manual starts with basic theory and is fully illustrated with colorful diagrams and photographs. Both the "whys" and "hows" of adjustments and repairs are covered in this reference library.



AB6;TS194 053;CPFOS 271185

John Deere Service Literature Available

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John Deere Distribution Service Center
Department S/P
P.O. Box 186, Moline, IL 61266-0186

Please send to . . .

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Name _____

Address _____

Town _____ State _____

Zip _____ Phone (____)_____

Title	Order Number	Price Each	x Quantity	= Total
Power-Pak Engine			x	=
Parts Catalog	PC-2112		x	=
Operator's Manual	OM-M79592		x	=
			x	=
			x	=
For current prices of John Deere Service Literature, please call 1-800-522-7448			x	=
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			x	=
			x	=
FOS Manual—Engines	FCP-80101B		x	=
FOS Manual—Electrical Systems	FCP-83101B		x	=
FOS Manual—Hydraulics	FCP-82101B		x	=
FOS Manual—Power Trains	FCP-81101B		x	=
Catalogs of Available Service Publications:				
Consumer Product Publications	CPC-1704			
Agricultural Product Publications	CPC-1703			
Industrial Product Publications	CPC-1852			

NOTE: If you want manuals or catalogs not shown on this list, list the model number, serial number and name of the product.

Subtotal

Illinois State Residents add 6%
for Retail Occupation Tax or
show tax exemption number

Check or money order in U.S.
Dollars enclosed. Total
(Do not send cash or stamps)

**For current prices of John Deere Service Literature,
please call 1-800-522-7448**
SP-317 Jan-88

M23::M79592-SLIT 290788



John Deere is at your service when you need it

John Deere takes pride in providing superior service. We'll be around when you need us. To help minimize downtime, we maintain a large and varied parts inventory. Precision tools and testing equipment enable our dealers to locate and correct troubles quickly. We hold regular training schools for dealer service

technicians so they know your equipment and how to maintain it. Our goal is to provide prompt, efficient service through competent dealers. To locate the dealer nearest you, contact the John Deere sales branch in the area in which you live. (See map below.)

Sales Branch

1. JOHN DEERE COMPANY
701 Georgeville Road
Columbus, OH 43228
614-275-1500

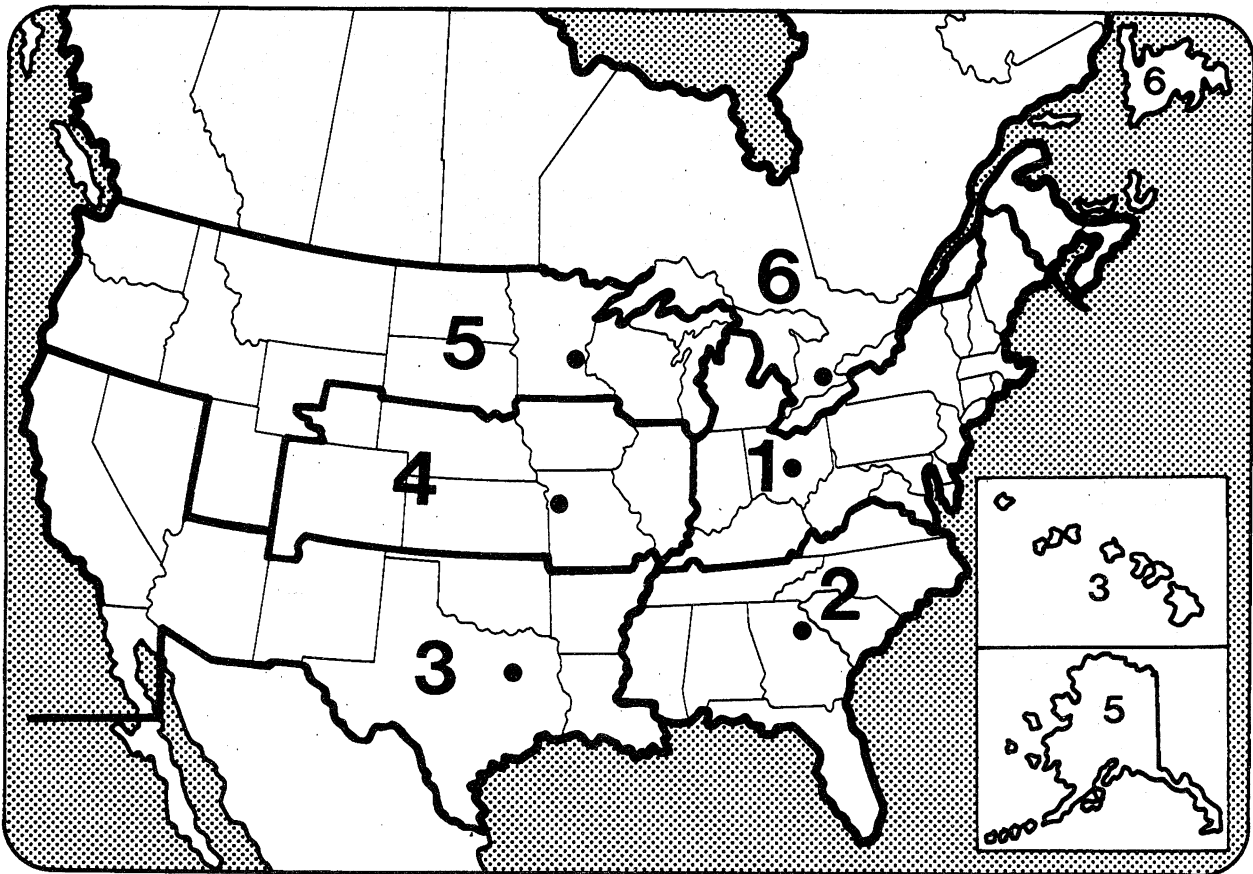
2. JOHN DEERE COMPANY
2001 Deere Dr.
Conyers, GA 30208
404-922-7040

3. JOHN DEERE COMPANY
10650 Hines Boulevard
Dallas, TX 75220-2635
214-352-1701

4. JOHN DEERE COMPANY
3210 East 85th Street
Southeast Station
Kansas City, MO 64132-2586
816-361-4000

5. JOHN DEERE COMPANY
2001 West 94th Street
Bloomington, MN 55431-2311
612-887-6200

6. JOHN DEERE COMPANY
South Service Road at Hunter
Grimsby, Ontario, Canada L3M 4H5
416-945-9281



SP-633 (Jun-87)

