

JOHN DEERE
WORLDWIDE COMMERCIAL & CONSUMER
EQUIPMENT DIVISION

Mid-Mount Z-Trak®
777 and 797

TM2077 FEB03

TECHNICAL MANUAL



JOHN DEERE

North American Version
Litho in U.S.A.

INTRODUCTION

Safety

Specifications and Information

Engine

Electrical

Hydrostatic Power Train

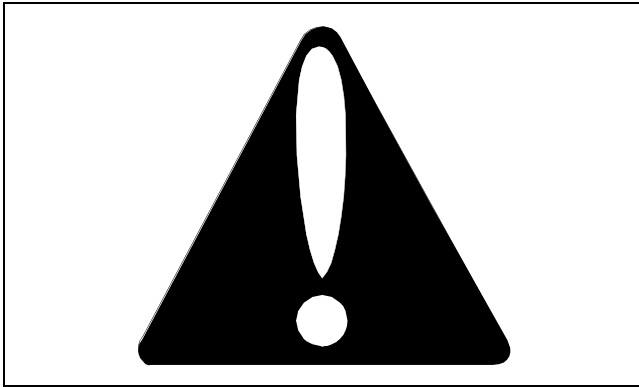
Brakes

Attachments

Miscellaneous

SAFETY

Recognize Safety Information



MIF

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.

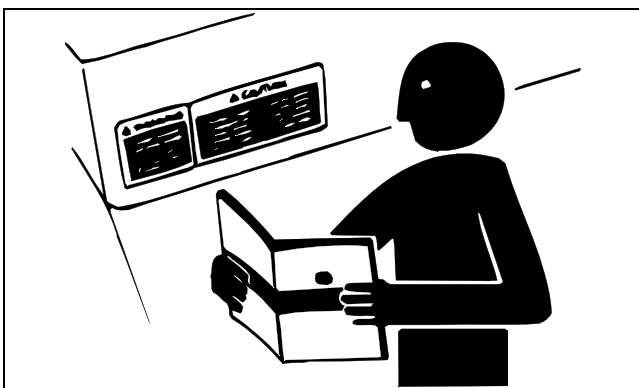
Follow recommended precautions and safe servicing practices.

Understand Signal Words

A signal word - DANGER, WARNING, or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

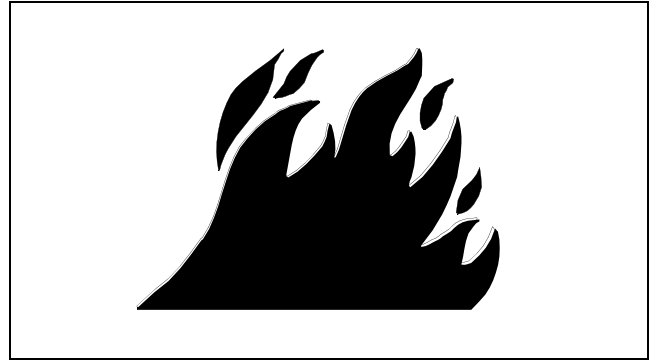
Replace Safety Signs



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Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

Be Prepared for Emergencies



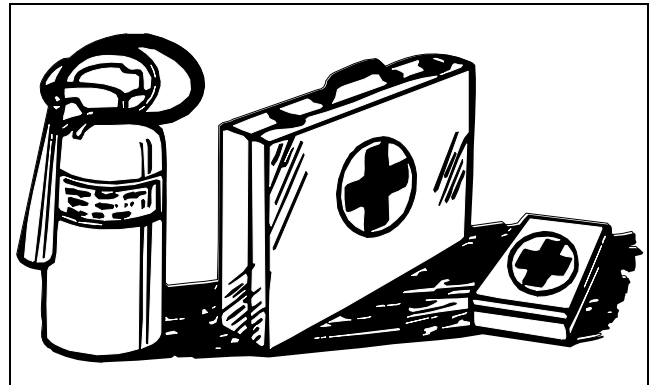
MIF

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.



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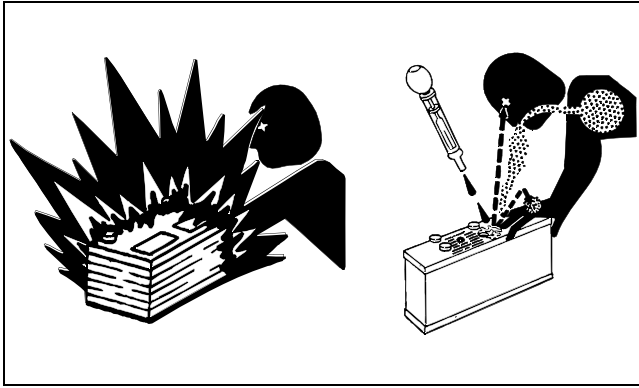
Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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

SAFETY

Prevent Battery Explosions



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- Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.
- Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.
- Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

Prevent Acid Burns

- Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.
- **Avoid acid burns by:**
 - a. Filling batteries in a well-ventilated area.
 - b. Wearing eye protection and rubber gloves.
 - c. Avoiding breathing fumes when electrolyte is added.
 - d. Avoiding spilling or dripping electrolyte.
 - e. Using proper jump start procedure.
- **If you spill acid on yourself:**
 - a. Flush your skin with water.
 - b. Apply baking soda or lime to help neutralize the acid.
 - c. Flush your eyes with water for 10-15 minutes.
 - d. Get medical attention immediately.
- **If acid is swallowed:**
 - a. Drink large amounts of water or milk.
 - b. Then drink milk of magnesia, beaten eggs, or vegetable oil.
 - c. Get medical attention immediately.

Avoid High-Pressure Fluids



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Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

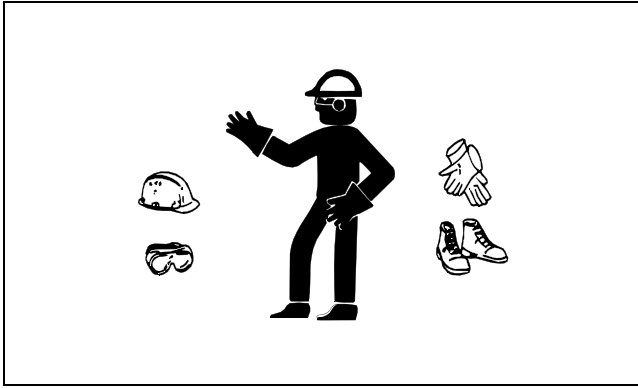
If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A. Information may be obtained in the United States and Canada only by calling 1-800-822-8262.

Avoid Heating Near Pressurized Fluid Lines

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.

SAFETY

Wear Protective Clothing



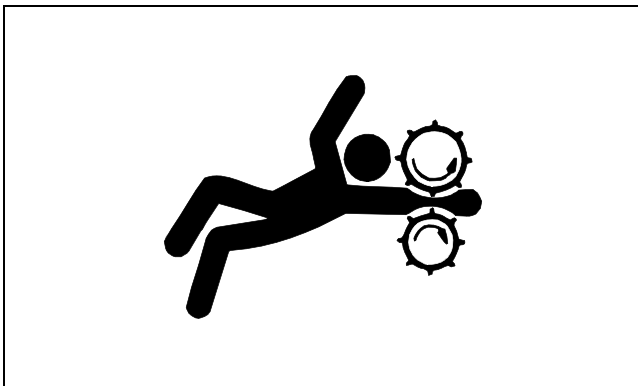
MIF

Wear close fitting clothing and safety equipment appropriate to the job.

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.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

Service Machines Safely



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Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

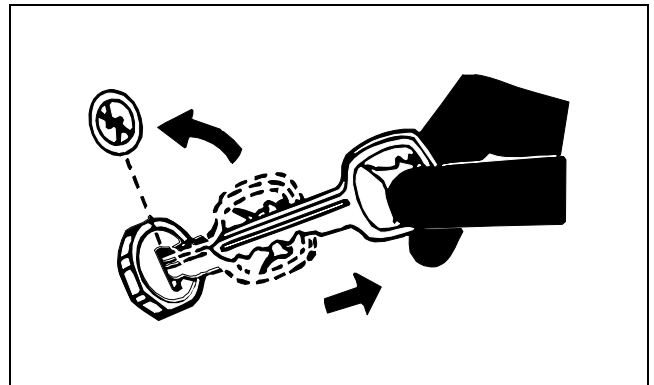
Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.

Use Proper Tools

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards. Use power tools only to loosen threaded parts and fasteners. For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners.

Avoid bodily injury caused by slipping wrenches. Use only service parts meeting John Deere specifications.

Park Machine Safely

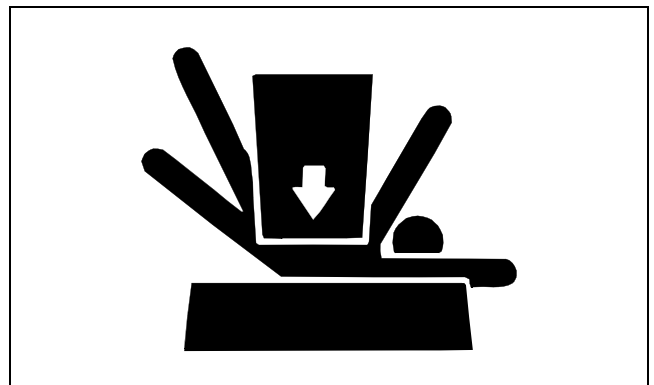


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Before working on the machine:

1. Lower all equipment to the ground.
2. Stop the engine and remove the key.
3. Disconnect the battery ground strap.
4. Hang a "DO NOT OPERATE" tag in operator station.

Support Machine Properly and Use Proper Lifting Equipment



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If you must work on a lifted machine or attachment, securely support the machine or attachment.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

Lifting heavy components incorrectly can cause severe injury or machine damage. Follow recommended procedure for removal and installation of components in the manual.

SAFETY

Work in Clean Area

Before starting a job:

1. Clean work area and machine.
2. Make sure you have all necessary tools to do your job.
3. Have the right parts on hand.
4. Read all instructions thoroughly; do not attempt shortcuts.

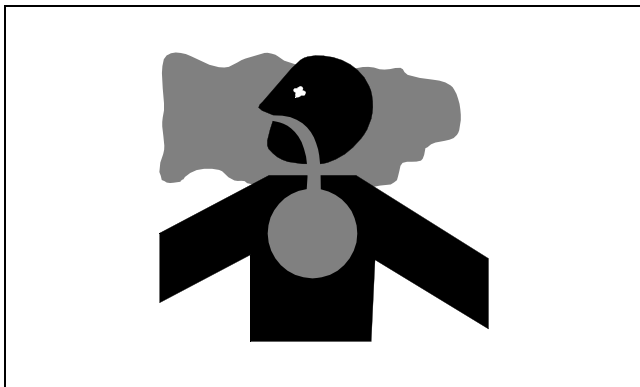
Using High-Pressure Washers

Directing pressurized water at electronic/electrical components or connectors, bearings, hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure and spray at a 45 to 90 degree angle.

Illuminate Work Area Safely

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

Work in Ventilated Area



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Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

WARNING: California Proposition 65 Warning

Gasoline engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Remove Paint before Welding or Heating

Avoid potentially toxic fumes and dust. Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch. Do all work outside or in a well-ventilated area. Dispose of paint and solvent properly. Remove paint before welding or heating. If you sand or grind paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Avoid Harmful Asbestos Dust

Avoid breathing dust that may be generated when handling components containing asbestos fibers. Inhaled asbestos fibers may cause lung cancer.

Components in products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates, and some gaskets. The asbestos used in these components is usually found in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust containing asbestos is not generated.

Avoid creating dust. Never use compressed air for cleaning. Avoid brushing or grinding material containing asbestos. When servicing, wear an approved respirator. A special vacuum cleaner is recommended to clean asbestos. If not available, apply a mist of oil or water on the material containing asbestos. Keep bystanders away from the area.

Service Tires Safely



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Explosive separation of a tire and rim parts can cause serious injury or death.

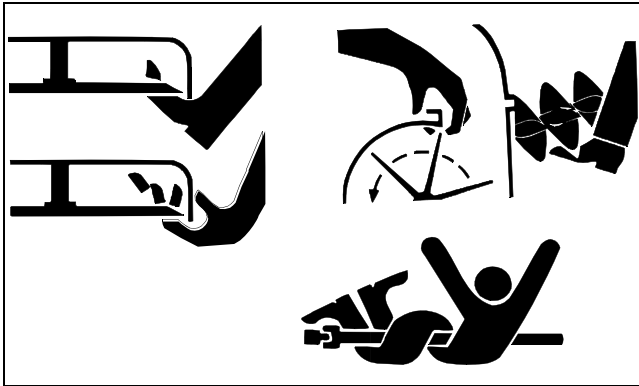
- Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.
- Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an

SAFETY

increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

Avoid Injury from Rotating Blades, Augers, and PTO Shafts



MIF

Keep hands and feet away while machine is running. Shut off power to service, lubricate, or remove mower blades, augers, or PTO shafts.

Handling Fuel Safely

Fuel and fuel vapors are highly flammable:



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- Do not refuel machine while you smoke, when machine is near an open flame or sparks, or when engine is running. Stop engine and allow to cool before filling.
- Never remove the fuel cap or add fuel with the engine running.
- Never fill fuel tank or drain fuel from a machine in an enclosed area. Fill fuel tank outdoors.

- Prevent fires. 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.

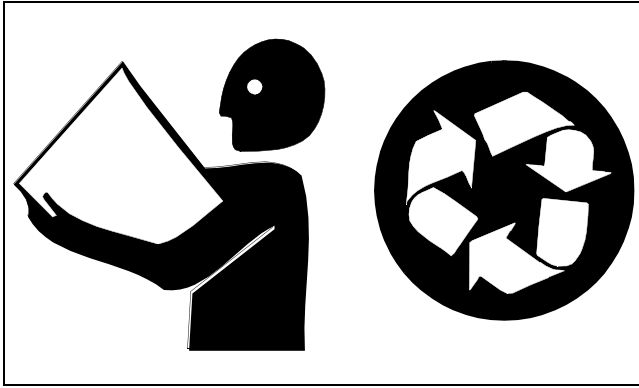


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- Static electric discharge can ignite gasoline vapors in an ungrounded fuel container. Remove the fuel container from the bed of a vehicle or the trunk of a car and place on the ground away from the vehicle before filling. Keep nozzle in contact with 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.
- For gasoline engines, do not use gas with methanol. Methanol is harmful to your health and to the environment.

SAFETY

Handle Chemical Products Safely



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Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

Dispose of Waste Properly

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment includes such items as oil, fuel, coolant, brake fluid, filters, and batteries. Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Do not pour waste onto the ground, down a drain, or into any water source. Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

Live with Safety



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Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

HYDROSTATIC POWER TRAIN TESTS AND ADJUSTMENTS

Symptom: Excessive Noise

(9) Are the wheel motors operating properly?

No - Inspect wheel motors. (See "Disassemble and Assemble Wheel Motor" on page 305.)

Tests and Adjustments

Bleed Hydraulic System

Reason

To ensure that air is purged from the hydraulic system after the hydraulic hoses have been disconnected.

Procedure

1. Park machine safely.
2. Check level of hydraulic oil. Add oil as needed. (See "Hydrostatic Transmission and Hydraulic Oil" on page 22.)

IMPORTANT: Avoid damage! To prevent damage to hydrostatic pumps, never bleed or purge a pump under load. Always bleed with drive wheels off the ground.

3. Use a safe lifting device to raise the drive wheels off the ground. Support with jack stands.
4. Open both bypass valves one full turn.



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 work in a well-ventilated area.

5. Start engine and run at 3/4 speed.
6. Push both control levers to full forward and hold for 5 seconds. Pull both control levers to full reverse and hold for 5 seconds. Repeat 2 additional times.
7. With engine running at 3/4 speed, close both bypass valves and tighten to specification. Tighten jam nuts to specification.
8. Push both control levers to full forward and hold for 5 seconds. Pull both control levers to full reverse and hold for 5 seconds. Repeat 2 additional times.

NOTE: It may be necessary to repeat steps 6-8 until all air has been purged from system.

9. Adjust neutral and tracking. (See "Checking and Adjusting Motion Control Linkages" on page 279.)

10. Turn key switch to STOP position.

11. Remove jack stands.

12. Check oil level at hydraulic oil reservoir. Add oil as needed.

Checking and Adjusting Motion Control Linkages

Reason

To ensure that the machine does not move when the control levers are in the NEUTRAL position while the engine is running.



CAUTION: Avoid injury! Do not attempt this adjustment unless you are a qualified and properly trained technician.

Checking Motion Control Linkages

NOTE: Check and adjust motion control linkages with the machine parked on a hard, level surface.



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.

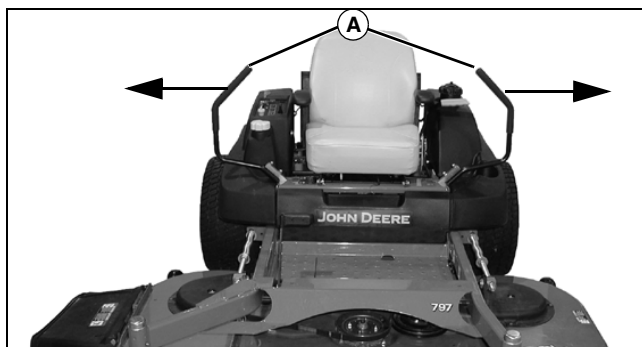
1. Start engine.
2. Set throttle lever to the fast position.
3. Unlock park brake.
4. If the rear drive wheels begin to creep, an adjustment is required.

HYDROSTATIC POWER TRAIN TESTS AND ADJUSTMENTS

Adjusting Motion Control Linkages

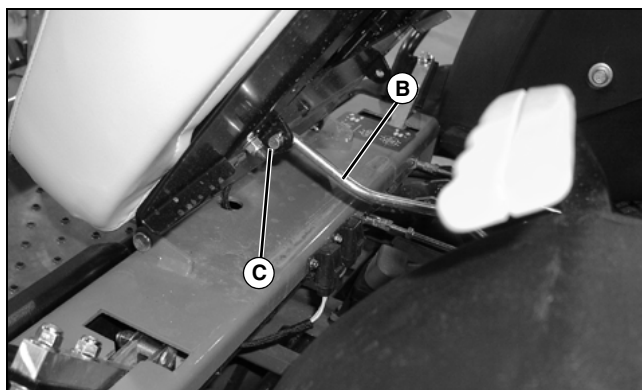
NOTE: Right and left control levers can be adjusted independently.

1. Stop engine and lock park brake.



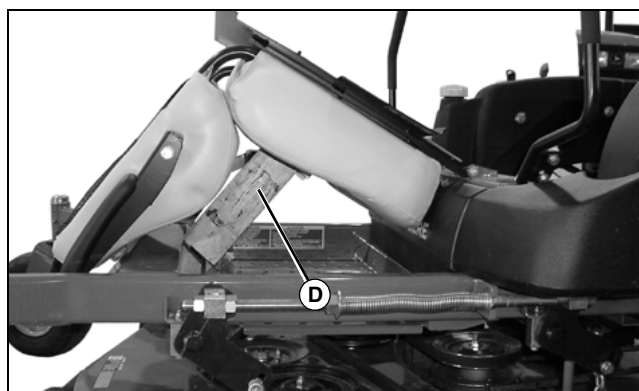
MX18041

2. Move both motion control levers (A) to the neutral lock position.
3. Adjust seat fully rearward.
4. Lift and secure operator seat in the raised position.



MX18076

5. Remove support rod (B) from side of seat frame.
 - Remove cotter pin and washer (C).
6. Tilt seat forward to rest on front frame.
7. Raise rear of machine with a safe lifting device.
 - Support with wood blocks or jackstands.
 - Rear drive wheels must have the ability to rotate freely.



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8. Activate operator seat safety switch.

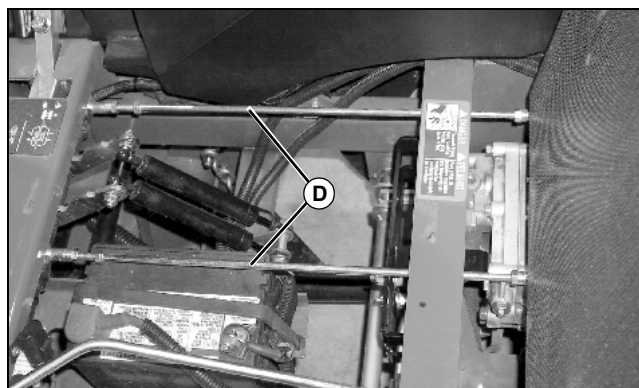
NOTE: To prevent damage to the bottom of the operator seat, cover end of wood block with a rag.

- Place a wood block (D) approximately 33-38 cm (13-15 in.) long between the foot plate and the center of the seat.

9. Start engine.
10. Set throttle to the fast position.

CAUTION: Avoid injury! Help prevent serious personal injury when performing this service procedure. Keep hands, feet and clothing away from rotating tires.

11. Unlock park brake.



MX18078

12. Locate left and right motion control linkages (D).
13. Be sure the right motion control lever is in the neutral lock position.
 - The right drive wheel must not turn. If it does turn, adjust the motion control linkage:



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