JOHN DEERE
WORLDWIDE COMMERCIAL & CONSUMER EQUIPMENT DIVISION

Z-TRAK®
F620, F680, and F687
TM1678 JUN02

TECHNICAL MANUAL



JOHN DEERE


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MX5946

Safety

Specifications and Information

Engine

Electrical

Hydrostatic Power Train

Brakes

Attachments

Miscellaneous M

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.

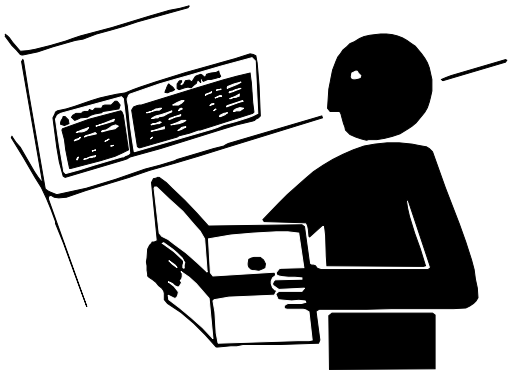
Follow recommended precautions and safe servicing practices.

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

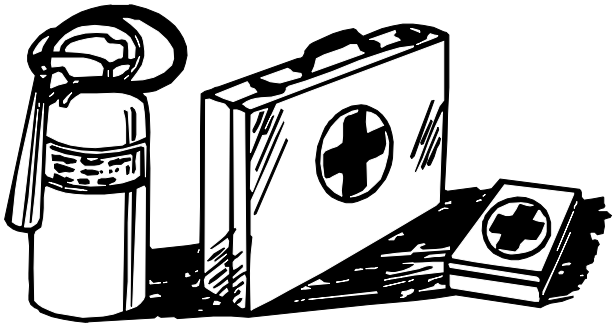


Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

HANDLE FLUIDS SAFELY—AVOID FIRES

Be Prepared for Emergencies





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.

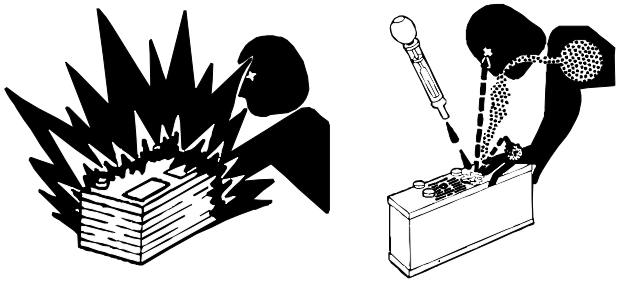
Do not store oily rags; they can ignite and burn spontaneously.

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.

USE CARE IN HANDLING AND SERVICING BATTERIES



Prevent Battery Explosions

- 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.

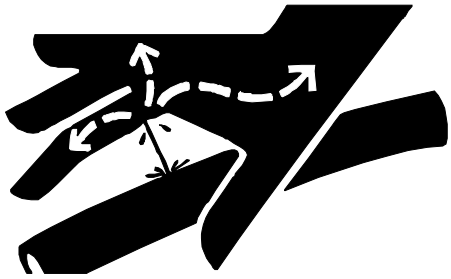
- **Avoid acid burns by:**
  1. Filling batteries in a well-ventilated area.
  2. Wearing eye protection and rubber gloves.
  3. Avoiding breathing fumes when electrolyte is added.
  4. Avoiding spilling or dripping electrolyte.
  5. Using proper jump start procedure.

- **If you spill acid on yourself:**
  1. Flush your skin with water.
  2. Apply baking soda or lime to help neutralize the acid.
  3. Flush your eyes with water for 10—15 minutes.
  4. Get medical attention immediately.

- **If acid is swallowed:**
  1. Drink large amounts of water or milk.
  2. Then drink milk of magnesia, beaten eggs, or vegetable oil.
  3. Get medical attention immediately.

USE CARE AROUND HIGH-PRESSURE FLUID LINES

Avoid High-Pressure Fluids



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.

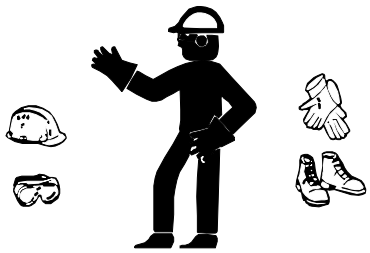
Avoid Heating Near Pressurized Fluid Lines



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.

USE SAFE SERVICE PROCEDURES

Wear Protective Clothing

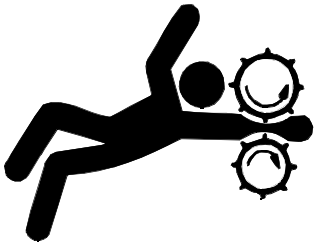


Wear close fitting clothing and safety equipment appropriate to the job.

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



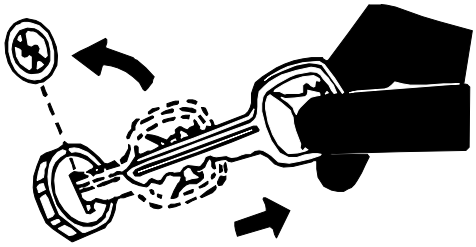
Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

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.

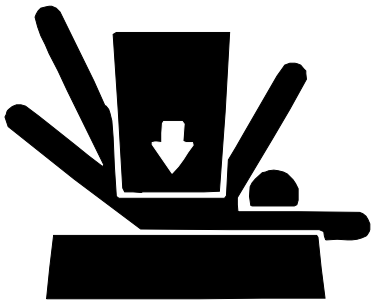
Park Machine Safely



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



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.

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.

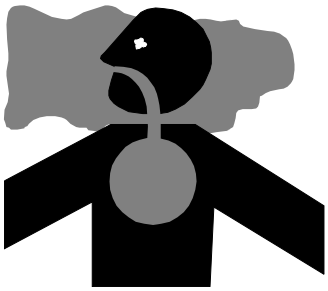
Using High-Pressure Washers

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



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

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

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



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 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.

CHECKS, TESTS AND ADJUSTMENTS

NEUTRAL (ZERO CREEP) CHECK AND ADJUSTMENT

Reason:

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

Check Procedure:

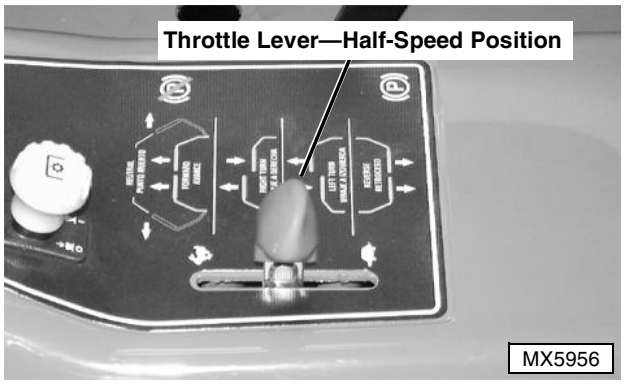
⚠ CAUTION

Engine exhaust fumes can cause sickness or death.

If it is necessary to run an engine in an enclosed area, use an exhaust pipe extension to remove the fumes.

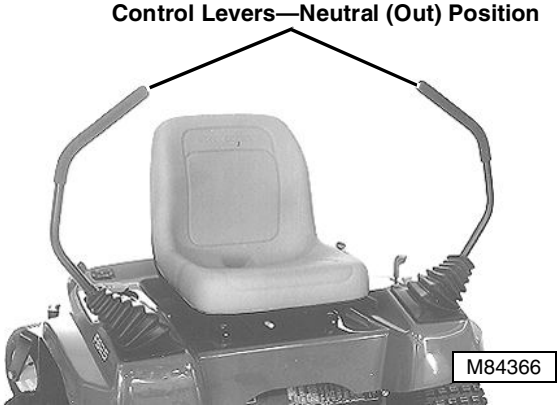
Always try to work in a well ventilated area.

1. Park machine on a level surface.
2. Move PTO switch to OFF position.
3. With the operator on the seat, start engine.



4. Move throttle lever to half-speed position.
5. Release park brake.

Control Levers—Neutral (Out) Position



6. Move control levers to NEUTRAL (out) position.
7. Check machine movement; the machine should not move.

Results:

- If movement is noted, perform Adjustment Procedure.

Adjustment Procedure:

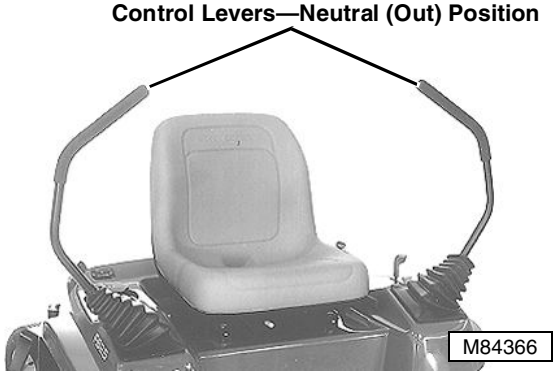
1. Stop engine.
2. Engage parking brake.
3. Remove mower deck. (See MOWER DECK ASSEMBLY—Removal/Installation in ATTACHMENTS section.)

IMPORTANT: DO NOT place jack below the wheel motors. Damage to hydraulic hoses could result.

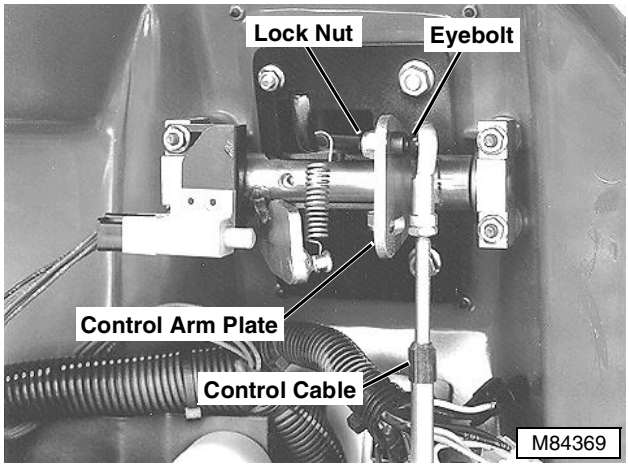
NOTE: The drive wheels must be able to rotate freely.

4. Use a safe lifting device to raise the machine high enough to remove weight from wheels. Place blocks or jackstand under machine frame.

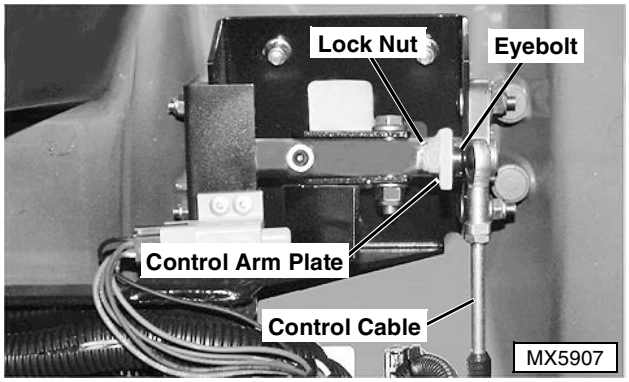
Control Levers—Neutral (Out) Position



5. Move control levers to NEUTRAL (out) position.
6. Raise and latch cowling.



Model F620 and Model F680 (S.N. —020000)



Model F680 (S.N. 020001—)

IMPORTANT: DO NOT loosen eyebolt jam nuts when left and right control cables are disconnected from the control arm plates. Control cable eyebolts MUST remain tightened in a fixed position to maintain an accurate adjustment.

NOTE: Disconnect control cables from both sides.

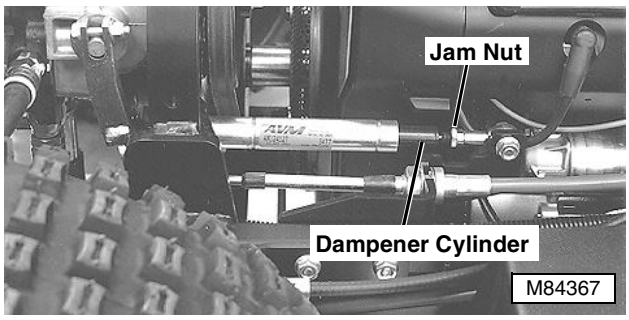
7. Remove lock nut from control cable eyebolt.
8. Remove control cable from control arm plate.
9. Depress the bottom of the seat to activate the seat safety switch, or use a jumper wire to bypass the seat switch circuit.
10. Start engine.
11. Release park brake.

⚠ CAUTION

Help prevent serious personal injury. Use caution when performing this service function near hot engine components.

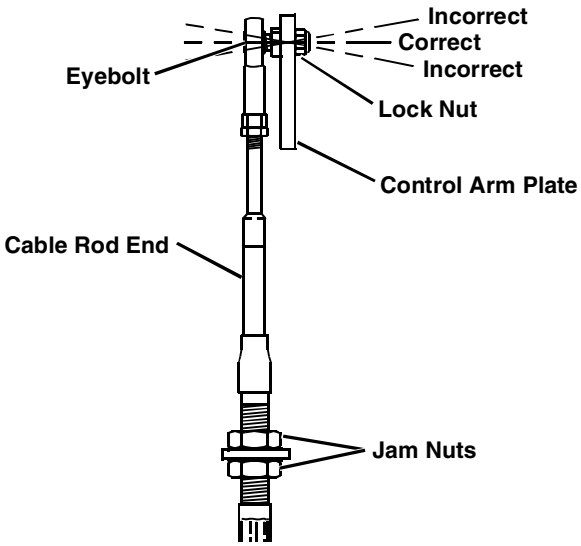
12. Observe for movement:
    - If any movement is noted, perform the Transmission Drive Pump Dampener Adjustment procedure.
    - If no movement is noted, proceed to the Control Cable Adjustment procedure.

Transmission Drive Pump Dampener Adjustment



1. Loosen jam nuts.
2. Rotate the dampener cylinder until creep is gone.
   To reduce forward movement: Turn shock clockwise.
   To reduce reverse movement: Turn shock counterclockwise.
3. Tighten jam nut.
4. Repeat steps 1—3 (as needed) for other side.

Control Cable Adjustment



5. Loosen control cable jam nuts.

NOTE: Eyebolts should be installed and tightened at the bottom of the slot in the control arm plate.

6. Adjust rod ends up or down until steering rod eyebolt can be inserted absolutely perpendicular to the control arm plate. This can be done by adjusting the cable jam nuts.
7. Tighten jam nuts.

Click on the image link below for the full version of the service manual

