

North Dakota State University

Grounds Maintenance Equipment

I. Introduction

Grounds maintenance equipment is an important part of the work activities on NDSU campus. They can make grounds maintenance jobs easier to perform although they may be hazardous when used improperly. By outlining and following the recommended safe operating procedures, we learn to prevent injury and safeguard ourselves and our co-workers against a job related injury or death.

II. Purpose

To reduce the risk of a work related injury or death by maximizing personal safety during grounds maintenance operations.

III. Goals

To ensure all employees know and understand the safe operating procedures involved with grounds maintenance equipment.

IV. Procedures

Follow the safe operating procedures that are equipment specific and if available, comply with the procedures as outlined in the Owner's Manual for the equipment.

****REMINDER:** Report any incident or damage of property to the Safety Office within 24 hours.

A. Edge Trimmer

1. Supervisors will identify authorized operators and supply training.
2. Personal Protective Equipment is **mandatory** and is as follows:
 - Boots or safety shoes - Long pants - Gloves
 - Hearing protection - Safety goggles
3. General safety rules:
 - a. Children should not be allowed to operate this unit.
 - b. Keep pets and children away from the work area.
 - c. Do not operate the unit when you are fatigued, ill, or if you are under the influence of alcohol, drugs, or medication.
 - d. Eliminate all sources of sparks, open flames, or work that could cause sparks in the areas where fuel is mixed, poured, or stored. Do not smoke!
4. Operation and Maintenance:
 - a. Prior to use, inspect the entire unit for worn, loose, or damaged parts.
 - b. Do not use unit unless it is in proper working condition.
 - c. Make sure that the blade guard is properly attached and in place.
 - d. Keep the handles dry and free of oil and dirt.
 - e. Never start or run the engine inside a closed room or building. (Exhaust gases contain dangerous carbon monoxide.)
 - f. **(Burn Hazard)** - Do not touch the muffler tail pipe during or immediately

after operation.

- g. Stop the engine while repairing, refueling, inspecting, and transporting.
 - h. When leaving an area where there is a slope, ensure the unit is resting on its handlebars to prevent it from moving.
 - i. Only use dealer authorized accessories and attachments.
 - j. Drain the fuel tank for long term storage.
 - k. When unit is stored or left unattended, disconnect the spark plug.
 - l. Clean outer surface after use.
 - m. Store in designated area.
 - n. Do not alter equipment from the manufacturer's intended use.
4. Fueling:
- a. Mix, pour, and store fuel in an approved, marked container.
 - b. Store fuel in a well-ventilated area.
 - c. Select bare ground for refueling. (Concrete recommended.)
 - d. Wipe up all spills before starting the engine.
 - e. Before starting the engine, move at least 10 feet away from the fuel and fueling site.

B. Grass/Brush Trimmer

- 1. Supervisor will identify authorized operators and supply training.
- 2. Personal Protective Equipment is **mandatory** and is as follows:
 - Boots or safety shoes - Long pants - Hearing protection
 - Safety goggles - Gloves
- 3. General safety rules:
 - a. Keep people and pets away from operating area.
 - b. Do not operate when fatigued, ill, under the influence of alcohol or drugs.
 - c. Do not leave trimmer unattended during operation.
 - d. Do not transfer trimmer to another person while the engine is running.
 - e. Prior to starting work, clear the area of objects that might be thrown.
- 4. Operation:
 - a. Inspect for loose or worn parts before use.
 - b. Start trimmer and use on flat, level ground.
 - c. Keep hand grips clean and dry.
 - d. Hold trimmer firmly with both hands during operation.
 - e. Walk behind the trimmer; trim from left to right in a sweeping motion.
 - f. Do not reach to make a cut.
 - g. Stop engine before you remove debris from cutting head.
 - h. Do not operate trimmer without the proper guard/shield.
 - i. Do not edge with metal blade.
 - j. To avoid kick out, use the proper blade for the cutting job
- 5. Fueling:
 - a. Always stop engine and let it cool before refueling machine.
 - b. Fuel outdoors. Always clean up spilled fuel.
 - c. Before storing or moving the trimmer, drain the fuel.
 - d. Be prepared if a fire starts.

- e. Do not alter equipment from the manufacturer's intended use.

C. Hedge Clipper

1. Supervisor will identify authorized operators and supply training.
2. Personal Protective Equipment is **mandatory** and is as follows:
 - Boots or safety shoes - Long pants - Hearing protection
 - Safety goggles - Gloves
3. General safety practices:
 - a. Keep people and pets away from operating area.
 - b. Do not operate when fatigued, ill, or under the influence of alcohol or drugs.
 - c. Never leave clipper unattended during operation.
 - d. Do not transfer clipper to another person while engine is running.
4. Operation and Maintenance:
 - a. Inspect for wear, loose or worn parts and make adjustments prior to use.
 - b. Keep hand grips clean and dry.
 - c. Hold firmly with one hand on each handle.
 - d. Safety shield and handle must be in good condition and fastened in place.
 - e. Blades must be aligned and move freely.
 - f. Maintain stable footing.
 - g. Work slowly, plan your moves.
 - h. Move clipper in a sweeping motion away from your body.
 - i. Do not over extend to make a cut.
 - j. If blades jam, stop the engine before removing obstruction.
 - k. Use gloves when handling blades.
 - l. Do not touch blades to ground, this may cause debris to be thrown, as well as damage the blades.
 - m. Prior to starting work, clear the area of objects that might be thrown.
5. Fueling:
 - a. Do not run engine in an enclosed area.
 - b. Always stop engine and let it cool before refueling machine.
 - c. Fuel outdoors.
 - d. Always clean up spilled fuel.
 - e. Drain fuel before storing and moving clipper.
6. Clean outer surface of hedge clipper after use.
7. Store in designated area.
8. Do not alter equipment from the manufacturer's intended use.

D. Rotary Tiller

1. Supervisor will identify authorized operators and supply training.
2. Personal Protective Equipment is **mandatory** and is as follows:
 - Boots or safety shoes - Long pants - Hearing protection
 - Eye/face protection - Gloves
3. General Safety:
 - a. Keep people and pets away from the operating area.
 - b. Do not operate when fatigued, ill, or under the influence of alcohol or drugs.
 - c. Do not transfer the machine to another person while the engine is running.

4. Operation and Maintenance:
 - a. Keep the machine and work area clear of objects.
 - b. Inspect rotary tiller for loose or worn parts.
 - c. When replacing worn or damaged parts, use *dealer authorized* parts only.
 - d. Guards and shields must be in place.
 - e. Start the engine and tines only when you are ready to start tilling.
 - f. Disengage the clutch before starting the engine.
 - g. Do not operate tiller while smoking, when near an open flame or sparks.
 - h. Give complete and undivided attention to the work you are doing.
 - i. Keep hands, feet and clothing clear of the power driven parts.
 - j. Stop the engine whenever you leave the tiller unattended.
 - k. Stop rotary tiller and engine in an emergency.
 - l. Disengage tine rotation and stop engine before cleaning, removing debris, or making adjustments.
 - m. Do not alter equipment from the manufacturer's intended use.
5. Fueling:
 - a. Stop and cool engine before refueling.
 - b. Fill gas tank outdoors. *Fill on flat surface.*
 - c. Clean machine after use and after fuel spills - prior to storage.

E. Walking Mowers

1. Personal Protective Equipment is **mandatory** and is as follows:
 - Boots or safety shoes - Long pants - Hearing protection
 - Eye/face protection - Gloves
2. Inspection:
 - a. Check for loose or worn parts before each use and replace worn or damaged parts immediately.
 - b. Ensure cooling fans are clear of grass and debris.
 - c. Grass catcher must be in good condition, in place, and working properly.
3. Protect from thrown objects:
 - a. Before you mow, clear mowing area of objects that might be thrown.
 - b. Discharge clippings away from people.
 - c. Do not lift or block grass catcher door open when blade is engaged.
4. Operate as follows:
 - a. Keep people and pets out of mowing area.
 - b. Do not run engine indoors.
 - c. Do not use mower for anything other than its original design.
 - d. Mow across face of slopes and use caution when changing directions.
 - e. Release handles lever to stop the engine and blade during shutdown and emergency situations.
 - f. If an object is hit, stop mower and fix damage before continuing.
 - g. Never leave mower unattended when engine is running.
 - h. Stay away from mower deck and discharge chute when blade is turning.
 - i. Stop engine to make adjustments.
 - j. Stop mower blade:

- i. When moving between jobs.
 - ii. Before crossing a gravel road, path, or sidewalk.
 - iii. Before opening grass catcher door.
- 5. Servicing:
 - a. Place mower on hard level surface when servicing.
 - b. Stop engine and let it cool.
 - c. Disconnect spark plug wire.
 - d. Lift the mower on its side.
 - e. Wear gloves when you service the blade.
 - f. Clean outer surface
- 6. Fueling:
 - a. Do not refuel the machine while smoking or when near open flames or sparks.
 - b. Fill fuel tank outdoors.
 - c. Clean up spills.
 - d. Empty gas tank prior to storage.
- 7. Slow down and be aware of surroundings at all times.
- 8. Store in designated area.
- 9. Do not alter equipment from the manufacturer's intended use.

F. Riding Mowers

1. Personal Protective Equipment is **mandatory** and is as follows:
 - Boots or safety shoes - Long pants - Hearing protection
 - Eye/face protection - Gloves
2. Inspection:

ENGINE MUST BE SHUT OFF WHILE INSPECTING

 - a. Check for loose or worn parts. Replace worn or damaged parts immediately.
 - b. Inspect hydraulic line connectors and hoses for leaks before applying pressure to the system. Use paper or cardboard, not hands, to search for leaks.
3. Operation:
 - a. Only trained personnel may operate the mower.
 - b. Keep people and pets out of mowing area.
 - c. Never operate the machine when under the influence of drugs or alcohol.
 - d. Maximum seating capacity is one person
 - e. Before mowing, clear the area of objects.
 - f. Discharge clippings away from people.
 - g. Keep all shields and safety devices in place. Grass deflectors must be installed in the lowest position on side discharge units.
 - h. Before starting the engine:
 - i. Engage parking brake.
 - ii. Ensure the traction pedal is released; transmission is neutral, and PTO off.

- iii. After the engine has started, release parking brake and take foot off traction pedal.
- iv. Machine must not move. If movement is evident, the neutral return mechanism is adjusted incorrectly. Therefore, shut engine off and adjust until machine does not move when the traction pedal is released.
- i. Keep hands, feet, and clothing away from mower deck when blade is turning.
- j. Do not make adjustments or refuel while engine is running. Stop and cool the machine prior to any work.
- k. **Disengage PTO when:**
 - i. Moving between jobs.
 - ii. Before crossing a gravel road, path, or sidewalk.
 - iii. Making adjustments.
- l. Wear gloves when servicing the blade
- m. Be careful when changing directions on a slope.
- n. If an object is hit, stop mower and fix damage before continuing.
- o. Slow down and be aware of surroundings at all times.
- p. Shut down as follows:
 - i. Release traction pedal, place transmission in the neutral position.
 - ii. Set the parking brake and disengage the PTO.
 - iii. Lower the cutting unit or attached implements to the ground.
 - iv. Wait for all movement to stop before getting off the seat.
- q. If major repairs are needed, contact an authorized dealer/distributor for assistance.
- r. To reduce potential fire hazards, keep the engine free of excessive grease, grass, leaves, and dirt.
- s. Do not alter equipment from the manufacturer's intended use.

THE ASBESTOS BRAKE LININGS CONTAIN ASBESTOS FIBERS. BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH. PERSONAL PROTECTIVE EQUIPMENT IS MANDATORY.

- Follow OSHA standards for proper protective devices to be used when working with asbestos materials. Refer to *NDSU Safe Operating Procedure – Asbestos Safety*