



Mid-Size Mower Resource Guide



A Supplement to the ALCA Equipment Safety & Training Video Series

Developed by

**The Exterior Landscape Council
of the Associated Landscape Contractors of America**

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Introduction

Safe, Efficient Use of the Mid-Size Mower

An Efficient piece of equipment

The Mid-Size Mower is a heavy duty mower for use in large turf areas. It cuts a much wider swath than the Trim Mower.

The Mid-Size Mower, also referred to as the Mid-Mower or Walk-Behind Mower, combines power, maneuverability, simplicity, and high productivity. Mid-Size Mowers are available in two distinctively different styles: Hydrostatic Drive, and Belt Drive.

Because of its size, the Mid-Size Mower can access most sites. The Mid-Size Mower can be used as either a side discharge or mulching mower, or as a bagging mower with the proper attachments.

Read your Operator's Manual!

This resource guide and the video it accompanies are general use training tools, and are not intended in any way to replace the Operator's Manual.

There can be significant operator control differences between manufacturers' models. Therefore it is imperative that you read and understand your Operator's Manual prior to operation!

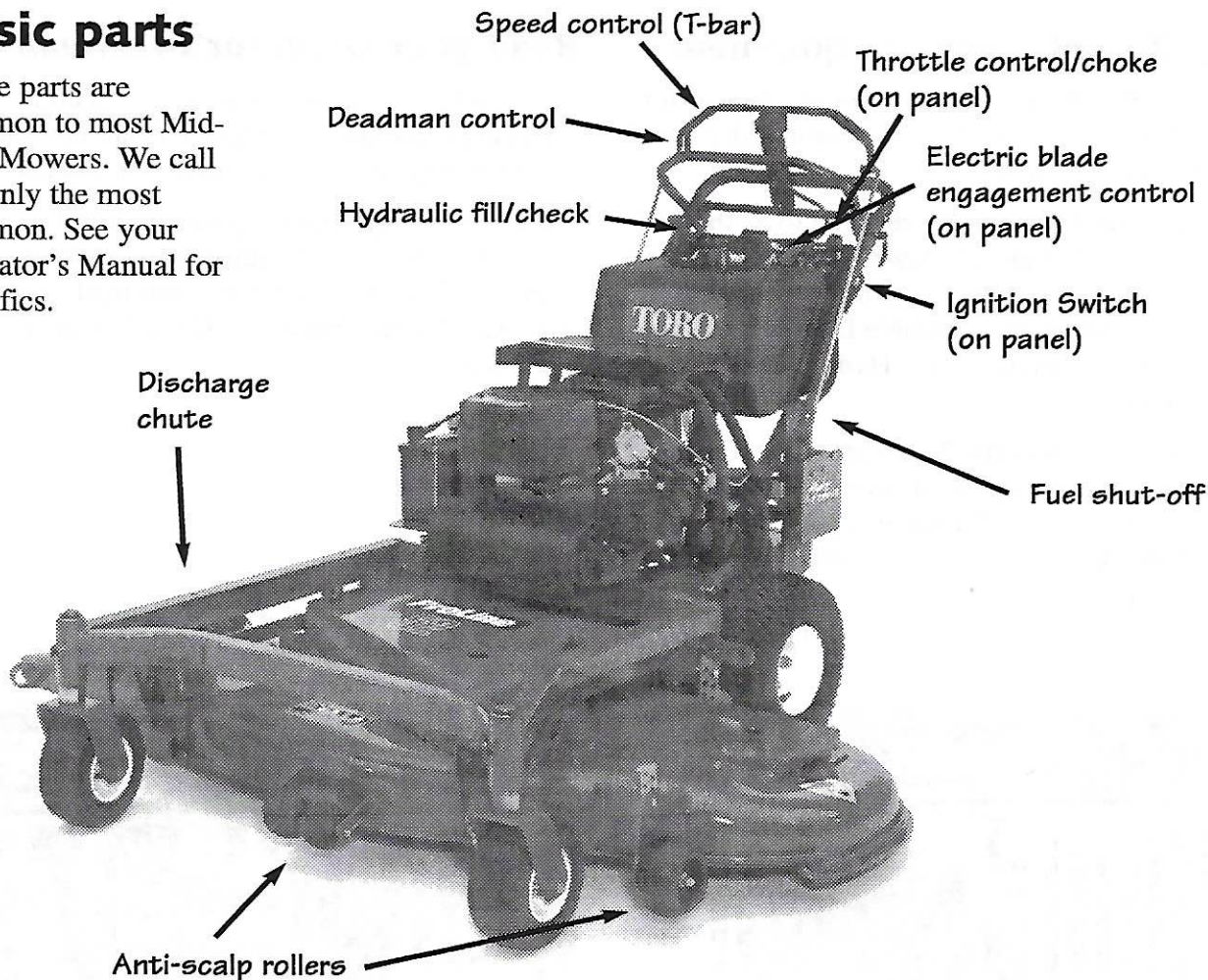


Equipment Components

Engine Parts & Controls/Safety Labels & Instructions

Basic parts

These parts are common to most Mid-Size Mowers. We call out only the most common. See your Operator's Manual for specifics.



Safety Labels & Instructions

Whenever and wherever you see the Safety-Alert Symbol, read the message with it carefully! On your equipment you may find safety labels titled DANGER, WARNING, and CAUTION.



The DANGER label indicates an extreme hazard where injury or death is likely if precautions are not taken. A WARNING label

denotes that a hazard exists and that an injury or

death could result if precautions are not taken. And the CAUTION label is placed to remind you to heed safety practices.

Take a moment to locate and read ALL labels marked with this symbol!

Safety labels will also warn you of hot surfaces, corrosive or poisonous substances, hazards related to fueling and refueling, and other dangers.

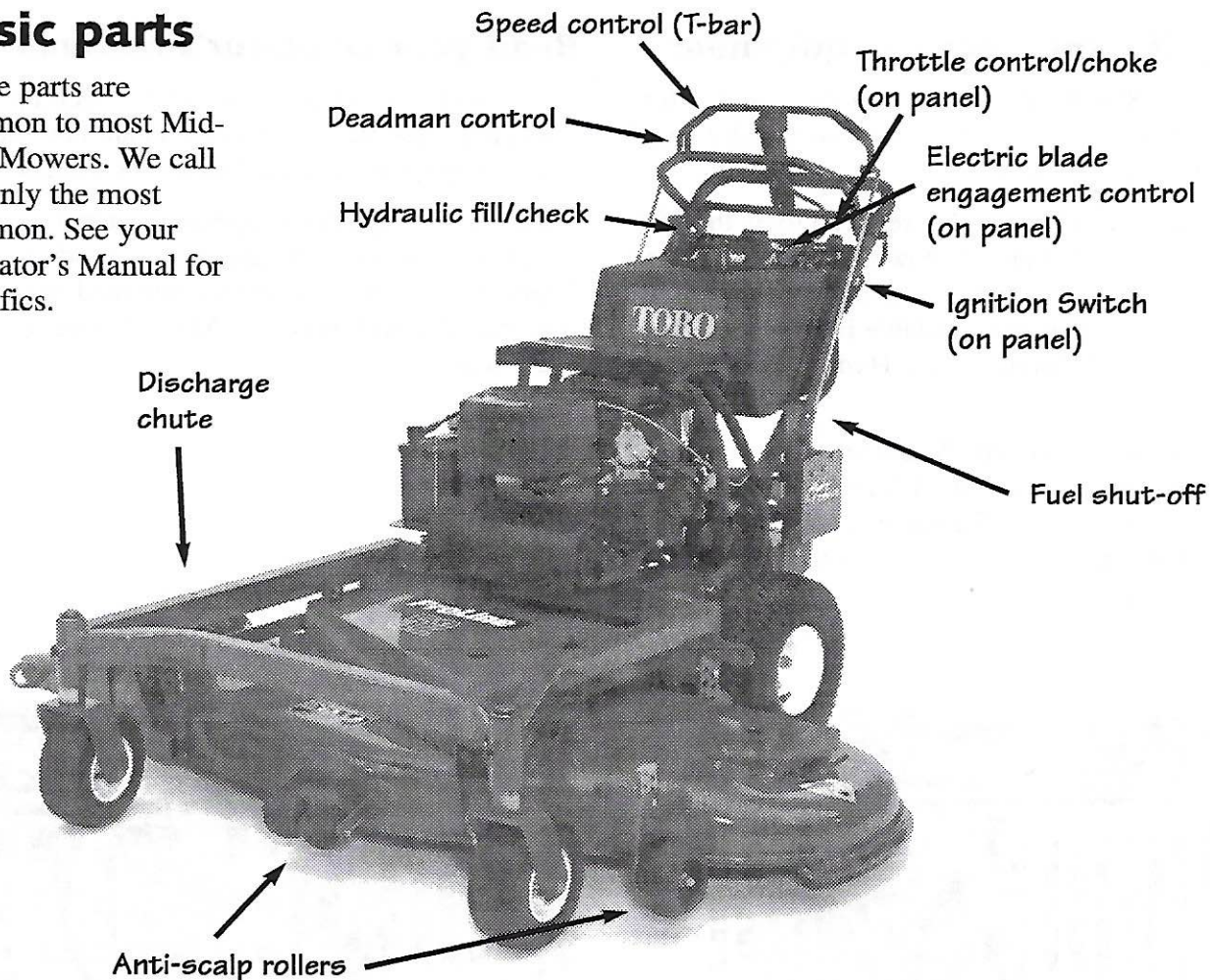
If labels have been worn, or are unreadable, inform your Supervisor, who can provide you with replacement labels.

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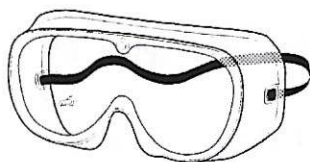
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Safety Basics

Clothing/Personal Protective Equipment

Protective Apparel

Appropriate clothing is vital to the safe, efficient operation of your equipment. You should wear close-fitting clothing, including long pants to protect your legs. You should also wear a reflective vest if you are working near roads.



Wear eye protection at all times. There are many different types of ANSI compliant protective glasses. You must always wear ANSI

approved protective glasses with side protectors.

In addition to eye protection, hearing protection is also required. A small foam type ear plug is commonly worn, as well as the ear muff style. Exposure to loud noise can cause impairment or loss of hearing.



Do not wear tape player, radio, or portable CD headphones while operating machinery. They do not substitute as hearing protection. Safe operation requires full attention.



Always have heavy-duty gloves on hand and always wear them when changing blades, or making other adjustments on the equipment.

Boots with good ankle support and soles that provide good traction are mandatory. Tennis shoes, low-tops, and soft-soled shoes are not adequate, and should not be worn.

A dust filter mask or respirator should be worn if working under dusty conditions.



Safety Basics

Common Injuries, etc. (continued)

Common Injuries and Their prevention

The Mid-Size Mower can be very dangerous if not used properly. The blades spin at very high speeds and can easily cause bodily harm if precautions are not followed.

But if you follow the right procedures, you can avoid injuries entirely! For example:

- Read the Operator's Manual prior to operation.
- Never operate the mower if any safety guard or device is not properly operational or in place.
- Always shut off mower when you leave it, or before you make any adjustments.
- Disconnect the spark plug wire before making blade or height adjustments, clearing the grass chute, or servicing any part of the mower.
- Never put your hands or feet anywhere near the grass chute or below mower deck.
- Never run over objects that could be hit by mower blades (rocks, stumps, etc.).
- The side discharge chute should never be removed, flipped up, or directed toward people or property during operation.
- The use of a mulching deck that does not employ a discharge chute is recommended to reduce the chance of thrown objects.

Common injuries associated with improperly handling the Mid-Size Mower include—

- Fingers cut or lost by contact with the blade (while cleaning the chute or changing the blade), or by failing to wear gloves while handling the blade.
- Eye injury from debris ejected by the blade.
- Burns from a hot muffler.

- Hearing loss caused by failure to wear hearing protection.
- Back strain from trying to lift the mower without help.
- Sprains, strains, broken bones caused by slipping or tripping on wet grass, soft turf, or hidden hazards.

DANGER: Be careful when unclogging the deflection chute

The deflection chute area (between the grass catcher and mower blade housing) can become clogged with grass clippings. This will be more frequent when the grass is wet or is being cut too short. If the chute is clogged, grass clippings will not be fed into the grass catcher, and this can cause the engine to stall.

To unclog the chute, follow this procedure:

- Stop the mower and shut off the engine.
- Disconnect the sparkplug wire and make sure that the blades are stopped.
- Wearing gloves, raise the deck and unclog the deck or chute.
- Pick up debris and reinstall the grass catcher.

Never operate the mower if any of the safety guards or devices are not properly installed or are not operating properly!



MR. TIPS

Safety Basics

Bystander Safety (continued)

No job is considered successful if an accident or injury occurs, especially if the injury is to a bystander or customer. There are protective measures that you can take to help ensure the safety of others!

Before start-up, make sure that the area is free of people or pets. If bystanders are present, delay your work until the area is clear. Never take chances!

- If someone approaches you while working, stop mowing and turn off the engine. Resume mowing when the area is clear.
- Position the side discharge chute away from people or property, including buildings, windows, cars, sidewalks, and signs.
- Use recycler mulching decks to prevent accidents caused by thrown debris.

Stay constantly aware of bystanders while operating equipment. If people approach the work area, throttle down until the coast is clear.



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Pre-Start Inspection

Loose & Damaged Parts/Safety Guards/Lubrication

Pre-start Inspection

ALWAYS conduct an inspection of the Mid-Size Mower before starting the engine. All inspections must be done on a hard surface, not on bed or turf areas. A pre-start inspection will help prevent a serious maintenance problem, and more importantly, it can prevent an accident or injury.

Always disconnect the spark plug wire before conducting the inspection! Then inspect the following:

- **Fuel:** Always start with a full tank. A partially full tank will only result in delay later while waiting for the engine to cool.
- **Fuel Filter:** Locate the fuel filter between the fuel tanks and the engine. Check and replace when necessary.
- **Crankcase Oil:** Position the machine on a level surface. Check the oil level and add oil as needed.
- **Hydraulic System Oil:** Position your machine on a level surface, unscrew the dipstick cap, and make sure the oil level is correct. Fill if necessary.
- **Air Cleaner:** Loosen the thumbscrew until the dust cap and baffle can be removed; separate the dust cap and baffle, clean them out, then re-assemble and reinstall both parts.
- **Belts, Pulleys, Catchers, and Guards:** Check all these parts to make sure they are in place, properly secured, and in good working order.
- **Lubrication:** Lubricate all the grease fittings based on your equipment's maintenance schedule.

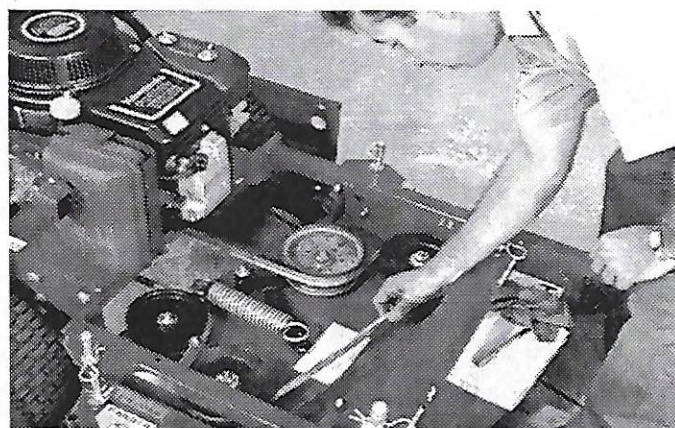
- **Cutting Height:** Cutting height is determined by the height of the wheel adjustment. Your Supervisor will determine the correct cutting height and advise you when to change it.
 - Cutting height should match other pieces of equipment.
 - Take care to avoid scalping.
 - To adjust cutting height, refer to your Operator's Manual.

IMPORTANT: Never adjust the height while the mower is running. Always disconnect the spark plug wire before making any adjustments. Always wear gloves when making adjustments!

- **Blade:** Wearing gloves, make sure blade bolts are wrench-tight and blades are sharp.
- **Mowing Attachments:** Make sure that the catcher, side discharge chute, or mulching attachment is properly attached. Do not start the mower without an attachment securely fastened.
- **Tire Pressure:** Check pressure in all tires and adjust as necessary.

Familiarize Yourself with All Controls!

- Read your Operator's Manual before you operate your mower!



Fuel

Fuel Types & Fueling Procedures/Spills/Safety Considerations

Use the Right Type of Fuel

Different pieces of equipment use different types of fuel. Make sure that you use the right fuel for your Mid-Size Mower. To help you distinguish between fuel types, it is recommended that you use different types of approved fuel containers.

Refueling

Always start the day with a full tank of fuel, then refuel as needed. Try to refuel between accounts to allow the engine to cool, and to refuel on the trailer. However, if you need to refuel in the middle of a job follow this fueling procedure:

- Shut the engine down and wait for the engine to cool.
- Place the mower on level concrete or other hard surface. **NEVER FUEL ON ASPHALT, TURF, OR BED AREAS!**
- Use a funnel and make frequent visual checks to prevent overfilling. Avoid spilling fuel on the concrete. If fuel is spilled, clean it up immediately.
- After fueling, to avoid a fire hazard, move at least ten feet away from the fueling point before starting your engine.

If you run out of fuel and cause the engine to stall and quit, it is extremely hard on the equipment.

Spills

Do your best to avoid spills! If you do spill fuel, clean it up immediately! You and your company are responsible for property damage. If damage does occur that you cannot correct immediately, notify your Supervisor, who will schedule repair or clean up.

Warning!

DO NOT REFUEL with the engine running.

DO NOT REFUEL a hot engine.

DO NOT SMOKE while fueling or operating a mower.

DO NOT SET FUEL CONTAINERS on turf or bed areas.

DO NOT REFUEL on turf or bed areas.

DO NOT STORE FUEL for extended periods of time. Keep your fuel fresh by replacing it every thirty days.

Use the right type of fuel in your Mid-Size Mower! To help you distinguish between fuel types, it's recommended that you use different types of approved fuel containers.



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Site Inspection

Debris/Hazards & Obstacles/Insects & Poisonous Plants

Inspect Work Area

Being aware of your surroundings while you work increases productivity and safety, and is the mark of a professional.

- Look for hidden hazards—rocks and stones and debris such as broken glass, bottles, wires, etc., can become flying projectiles when struck by the mower blade and can cause property damage or severe injuries to the operator or bystanders.
- Insects such as bees and ants, and plants such as poison ivy or poison oak can also be serious threats to your safety as well as the safety of your co-workers and bystanders.

Potential Hazards

Potential hazards arise when the operator is not aware of the conditions of the site, the way the equipment operates or when the operator is not paying attention. The Mid-Size Mower is capable of damaging trees or other landscape features—or throwing rocks and other debris with such force as to cause equipment, property, or personal injury—if not operated correctly. This means seeing an obstacle or problem beforehand and making adjustments to the mowing pattern or direction before a problem occurs.

Holes in the ground and uneven terrain increase risks for accidents such as sprained ankles. It can also be a dangerous situation should you slip and fall while operating the Mid-Size Mower.

Sprinkler heads or copper/PVC risers are often hidden from view by grass and shrubbery. These can become trip hazards, and if run over can cause property damage.

Stop mowing when people are around! Always clear the work area prior to beginning your work.



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You and your company are responsible for any damage to your customer's property. Should you accidentally cause property damage that you cannot correct immediately, report it to your Supervisor so that corrective actions can be taken!

If people or pets come into your work area, you must delay your start-up until the area is clear.

And, if at any time someone approaches you while working, shut down the equipment until the area is clear.

ALWAYS . . .

- Be alert for people approaching the immediate work area. Throttle down or shut off the mower until the area is clear.
- Shut the mower down when crossing graveled or rough areas.
- Keep the mower or tires from rubbing against buildings.

Starting & Stopping

Cold Start-up/Warm Start-up

Starting

Starting procedures for Mid-Size Mowers vary from model to model. **Do not operate without first reading and understanding your Operator's Manual.**

Cold Starting Procedures

- Make sure that the spark plug wire (or wires) is connected to the spark plug (or plugs) and the fuel valve is "OPEN."
- Move the choke control to the "CHOKE" position before starting a cold engine.
- Move the throttle control to the "FAST" position.
- Turn the ignition key to "START" to energize the starter.
- When the engine starts, release the key and move the choke control to the "RUN" position.

Important: Do not engage the starter for more than five to ten seconds at a time. If the engine fails to start, allow a thirty second cool-down period between attempts. Failure to do so can result in damage to the starter.

To prevent fuel leakage, make sure the fuel shut-off valve is closed before transporting or storing the Mid-Size Mower!



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Warm Starting Procedures

- Make sure that the spark plug wire (or wires) is connected to the spark plug (or plugs) and the fuel valve is "OPEN."
- A warm or hot engine may not require choking.
- Move the throttle to the "MEDIUM" position and turn the ignition key to "START."
- When the engine starts, release the key and move the choke control to the "RUN" position (if you have used the choke).

Shutting Down

- Move the throttle lever to "SLOW."
- Turn the ignition key to "OFF."
 - **NOTE:** if the engine has been working hard, or is hot, let the engine idle for a minute before turning the ignition key to "OFF." This helps cool the engine and extends engine life. In an emergency, stop the engine by turning the ignition key to "OFF."
- Pull the spark plug wire(s) to prevent accidental starting before transporting or storing the mower.
- Close the fuel shut-off valve, which is located under the fuel tank, before transporting or storing the mower.

The blade control switch (PTO), in conjunction with the blade control bail, engages and disengages the power to the electric clutch and mower blades. Refer to your Operator's Manual for specifics for your Mid-Size Mower. Also, you may find a safety interlock system on your Mid-Size Mower. This is designed to prevent the mower from starting unless the control bar is in the neutral position. The safety interlock system prevents the blades from rotating when the blade control is released.

Property Damage

Windows & Walls, Cars, Irrigation Systems, Signs, etc.

Protecting Property from Damage is Top Priority.

Avoid hitting or rubbing the mower or its tires on buildings, cars, signs, trees, or other types of landscape features or property. Serious tree or property damage could occur.

Rocks, stumps, or debris, like broken glass, bottles, or wire can be flung in any direction at speeds up to 200 mph! They can cause serious property damage, not to mention serious injury to you or a bystander.

To be on the safe side:

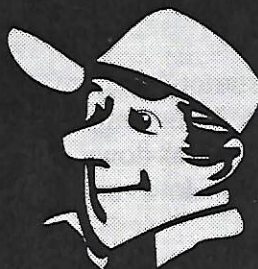
- Always direct side chute away from buildings, windows, cars, signs, etc.;
- Do not run over objects (cans, sprinkler heads, stumps, etc.);
- Watch steep or wet slopes to avoid turning a Mid-Size Mower into a runaway hazard;
- Wheel spins and too-quick turns are the mark of an amateur . . . and the scars and ripped-up turf can turn a good project into a job-killing fiasco!

The Bottom Line

Customers have different ideas as to what constitutes damage. For some, dust and debris left on the project site could be considered "damage."

Property damage is not only possible, it's almost inevitable when the operator is not paying attention; is not aware of site conditions; and isn't familiar with the equipment. The Mid-Size Mower can damage a tree or landscape feature in a split second . . . and there is usually no way to fix this kind of damage without expensive replacement.

ALWAYS keep any part of your mower . . . including tires . . . away from easily damaged objects such as buildings, walls, trees, etc. . . . unless you can afford to replace them out of your own pocket!



MR. TIPS

The Finished Product

Professional Look/Problems Resolved or Reported

Professional Finish— Quality Expectations

Professionals always strive to maintain their projects at the highest standards of quality. Here are some specific examples of the approaches they take to meet these high expectations.

- Never mow over debris in order to save time.
- Mow only when the conditions are right. A Mid-Size Mower is heavy enough to leave scars and ruts when the turf is overly saturated.
- Never mow areas that are too small, since repeated mowing in the same manner week after week will only destroy the turf, compact the soil, and leave ruts.
- Always aim the grass discharge chute away from bed areas, parking lots, and sidewalks.
- Keep a safe distance from trees and other landscape features.
- Create organized, neat, visually attractive mow patterns. Change cross-mow patterns periodically because it is good for the turf, and provides some change and excitement to the project.

Remember, a Mid-Size Mower with a grass catching attachment can also do an excellent job of removing clippings on projects that require disposal weekly or projects in which turf grows to rapidly between cuttings.

Mowing is grooming.

It is imperative to avoid scalping, clumping or clipping, or any practice that leaves an uneven cut. The project should look better when you leave than when you arrived.

Before leaving the job site, inspect the finished project. Make sure that dust and debris generated by the mower have been cleaned up. The quality of the finished project, and your customer's opinion of your work, depends on your attention to detail.



The Finished Product

Professional Tips & Techniques (continued)

Professional Techniques

For proper turf health, you should make a change in the mowing pattern each time you mow the property. This gives the turf a more aesthetic look and also reduces compacting the turf and soil into “wheel ruts.” A perimeter cut of two to three bands easily accommodates cross mowing. Tree rings and other landscape features should be circled by at least one band.

Here are some other professional tips that apply to the Mid-Size Mower.

- Keep BOTH hands on the mower at all times when it is running. NEVER leave the mower running unless you are directly at the controls. NEVER walk in front of the mower when it is running!
- Start by making a perimeter pass going from **left to right**—this keeps the grass catcher from hitting curbs, trees, bushes or other obstacles. The perimeter pass, especially along walks, allows you to make U-turns in the grass, avoiding tire and grass stains on the concrete.
- Always mow in straight lines, alternating directions, and changing the pattern every week.
- Always mow across on steep slopes or berms . . . NEVER up and down. Start at the top and work your way down. Be extremely cautious not to lose your footing. DO NOT operate the Mid-Size Mower on hillsides or slopes that exceed fifteen degrees. If your property has large hillsides, suggest planting ground cover. Never mow on steep slopes!
- Be alert for any damage you see that was caused earlier. Report it to your Supervisor immediately. Should you cause any damage, report that to your Supervisor as well.

- If you missed some debris in your initial inspection, pick it up. DO NOT mow debris. The mower will not pick it up—it will only create a mess.
- As you mow next to bed areas, watch for weeds. Pull them, throw them in front of the mower, and mow them.
- When bagging is not required, discharge clippings toward previously cut lawn areas. NEVER discharge clippings toward cars, sidewalks, or beds.
- Avoid hitting or rubbing your mower against cars when mowing near parking lots.
- Avoid aiming your discharge toward parked cars.

For the best quality cut, keep the blades sharp, and follow these tips—

- Run your engine at maximum speed.
- Cut only about 1/3 of the grass blade.
- If long grass has to be cut, use the highest height-of-cut setting for first mowing, then cut the grass again at a lower setting. (If long grass is cut too short, the mower may plug and that can cause the engine to stall.)



Security

Safeguarding Equipment and Tools

Security

Any mower is capable of disappearing from a work site fairly easily. Thieves work quickly, so even if you're going to be away for only a few minutes, and you're going to be out of sight of your machine, you must take positive steps to discourage theft.

Always shut down your Mid-Size Mower and remove the key when leaving the equipment, even if you're just going to be away for a short period of time. If you're going to be gone for a longer period of time, pull the ignition wire from the spark plug. You might also pull the distributor lead if your machine has that kind of ignition. Read your Operator's Manual for details.

After your project is finished, load your equipment on the trailer or put it in the shop as soon as possible.

It is best to have a designated place on your trailer to secure the Mid-Size Mower, as well as other pieces of equipment. This not only helps you prevent theft during the day, it also helps you avoid damage during transport to and from job sites.

Summary

The Mid-Size Mower makes quick work of large mowing jobs, but requires training and operational skill prior to use. Improper use can result in property or equipment damage or bodily harm. Use the Mid-Size Mower carefully under proper supervision.

If you leave your Mid-Size Mower, always shut it down and take the key with you, even if you're only going to be gone for a minute or two. Even something as large as a Mid-Size Mower can disappear in minutes!



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Preventive Maintenance

Secret to Superior Results

Check with your Supervisor and read your Operator's Manual to determine appropriate preventive maintenance tasks for your company and model.

Before performing any preventive maintenance procedure, move the Mid-Size Mower to a level concrete surface.

- Always disconnect the spark plug wire prior to servicing.
- Check oil level. Recheck every 4 hours of operation, and maintain oil at the proper level.
- Lubricate all grease fittings with appropriate grease (see Operator's Manual).
- Check to make sure that all safety guards and devices are in place and in proper working order.
- Check to make sure that all parts, bolts, etc. are in place and properly attached.
- Wearing gloves, check to make sure that the blades are sharp and blade bolts are tight. If you see any dents, cracks, or excess wear, replace the blade.
- Check the fuel level. Make sure you start each project with a full tank.
- Check the air filter. Often overlooked, this simple component can make a big difference in a machine's performance, economy, and engine life.
- Check the hydraulic oil, and maintain the proper level.
- Check the pressure in the Mid-Size Mower's back tires.



Clean Up

Clean and declog the mower after each use and after the engine has cooled. When cleaning, be sure to keep water out of the fuel cap, air filter, and upper cable ends to prevent corrosion. When you are finished washing the mower, run it briefly to remove any excess water.

Reporting

The key to the operation of any piece of equipment is proper reporting of any problems when they arise. Daily reporting can mean the difference between having or not having a mower the next few days. Daily reporting of even minor problems means that they can be corrected immediately saving time and money.

You should never attempt to operate equipment that is damaged. If there is a problem that you do not understand, talk to your Supervisor for guidance. Any equipment that is damaged or inoperative requires the attention of a Mechanic.

Damaged or Inoperative Equipment

If a problem occurs with the Mid-Size Mower that requires the attention of the Mechanic, follow this procedure.

- Clean the mower.
- Tag the mower with this information:
 - the date;
 - your Supervisor's name; and
 - the nature of the problem.
- Deliver the mower to the Mechanic for repair.