



Saskatchewan Parks and
Recreation Association Inc.

Parks and Open Space Management

String Trimming Handbook





Produced by:

The Saskatchewan Parks and Recreation Association
The Parkway Building
#210 – 3303 Hillsdale Street
Regina, Saskatchewan
S4S 6W9

Telephone: 1-306-780-9231 or 1-800-563-2555
Fax: 1-306-780-9257

Developed and Copyright by:

City of Regina
Parks & Open Space Management – Community Services Department
Queen Elizabeth II Court, Box 1790
Regina, Saskatchewan
S4P 3C8

AHz Learning Technologies Inc.
2152 Scarth Street
Regina, Saskatchewan
S4P 2H6

April 2004



AHz Learning Technologies Inc.





Introduction and Disclaimer of Liability for Use of the Document

This Parks and Open Space Management Handbook, provides a description of procedures associated with maintenance activities performed within park settings.

The concept of maintenance standards requires the application of best practices within the local operation system. To assist with the establishment of such standards, this resource provides guidelines to aid staff in addressing their daily management operations. There are, however, situations where the standards outlined may require revision by those staff implementing the procedure, to best meet their needs. Specific site conditions, operating budgets, available human resources, and capacity to offer training associated with the practices outlined in this document may warrant alterations to the procedures.

Anyone making use of this document is advised that the Saskatchewan Parks and Recreation Association and those contributing to its development disclaim liability for any claims, actions, demands or suits which may arise by reason of any reason of any person relying on the information contained in this document.

Acknowledgments

This resource was produced and developed by AHZ Learning Technologies Inc. in consultation with the City of Regina. These organizations have generously provided Saskatchewan Parks and Recreation Association the rights to modify and distribute this material to its members.

For customization or development of specific modules for your organization contact:
AHZ Learning Technologies Inc.
2152 Scarth Street
Regina, Saskatchewan
S4P 2H6
Telephone: 1-306-543-7445
Email: ahz@ahzlearning.com





String Trimming Introduction

You have been a member of the community Parks and Open Space Management Division for a couple of years now.



You think back to the orientation session you attended during your first year with the community. As the community grew, planners made certain that parkland continued to have a significant focus. Having been raised on a farm, you understand the work involved in planting and maintaining lively, healthy growth – whether it be cereal crops for harvest or landscaping around the home quarter – and know it takes a great deal of effort and attention to detail to keep everything so green and beautiful.





You take a great deal of pride in your job as a *String Trimmer* and understand that your work makes the difference between a good-looking park and a great-looking park. This year, when new employees join the team, they often look to you as an example of how to do the job right, so you are sure to keep in mind the basics while also sharing some of the procedures you have learned over the past couple of years.





String Trimming Overview

Your job is to trim areas not reachable by larger mowers while maintaining an even appearance (trimming to the same height as the mowed grass). When you are done you shouldn't be able to tell the difference between areas that have been mowed and those that have been trimmed, so it's important that you remember the different maintenance classes and trimming heights. You'll find the Maintenance Class chart to be a handy reminder (shown below).

CLASS	Description
	<ul style="list-style-type: none"> High-use areas and parks requiring a great deal of attention May have annual flowerbeds, planter boxes and perennial flowerbeds. All are kept as weed free as possible. Turf maintained at 3" height and cut twice a week. Irrigated areas watered by community workers once a week (1½" of water). Inspect and litter pick-up: April – September, 7 days per week. Off-season 5 days per week (Mon – Fri).
	<ul style="list-style-type: none"> Less used neighbourhood parks and areas requiring less attention. May have perennial flowerbeds — no annual flowerbeds or planter boxes. Turf maintained at 3" height and cut once a week. Irrigated areas watered by community workers once a week (1" of water). Litter pick up once a week during April – September only.
	<ul style="list-style-type: none"> Non-irrigated. Receives less maintenance. Turf maintained at 5" height. Litter pick up once every 2 weeks during April – September only.
	<ul style="list-style-type: none"> Non-irrigated. Maintained as coarse grass turf in a naturalized state (year round). Grass cut to 8-10" height once per year (mid-summer). Litter pick up once every 2 weeks during April – September only.





Safety Equipment Overview

From your experience you know the importance of wearing the correct clothing (long pants and a shirt with sleeves) and safety equipment. You recall the other standard safety gear used by Parks and Open Space Management workers.



As well, you have learned the importance of using a well-adjusted harness.

The Harness



You complete your circle check and grab your harness. You've been using the same one since you've started string trimming. You remember back to your first day on the job and how you wondered why anyone would need a harness for string trimming. The trimmer you occasionally used on the farm didn't have one, so what was the big deal? But your supervisor insisted you wear one and showed you how to adjust it to fit your body.





Adjusting the Harness

This pouch or plate should sit comfortably on your right hip.



The shoulder straps should be adjusted to a comfortable length. You find that the shorter the strap, the greater the weight placed on your right shoulder.

This hook is used to attach the trimmer to the harness.

It took some trial and error practise to get all the straps and clips adjusted right.



Once you have the harness adjusted just right, notice how your arms are at a 40-degree angle where your hands gripped the trimmer's handlebars.

At this angle your harness became your new best friend.





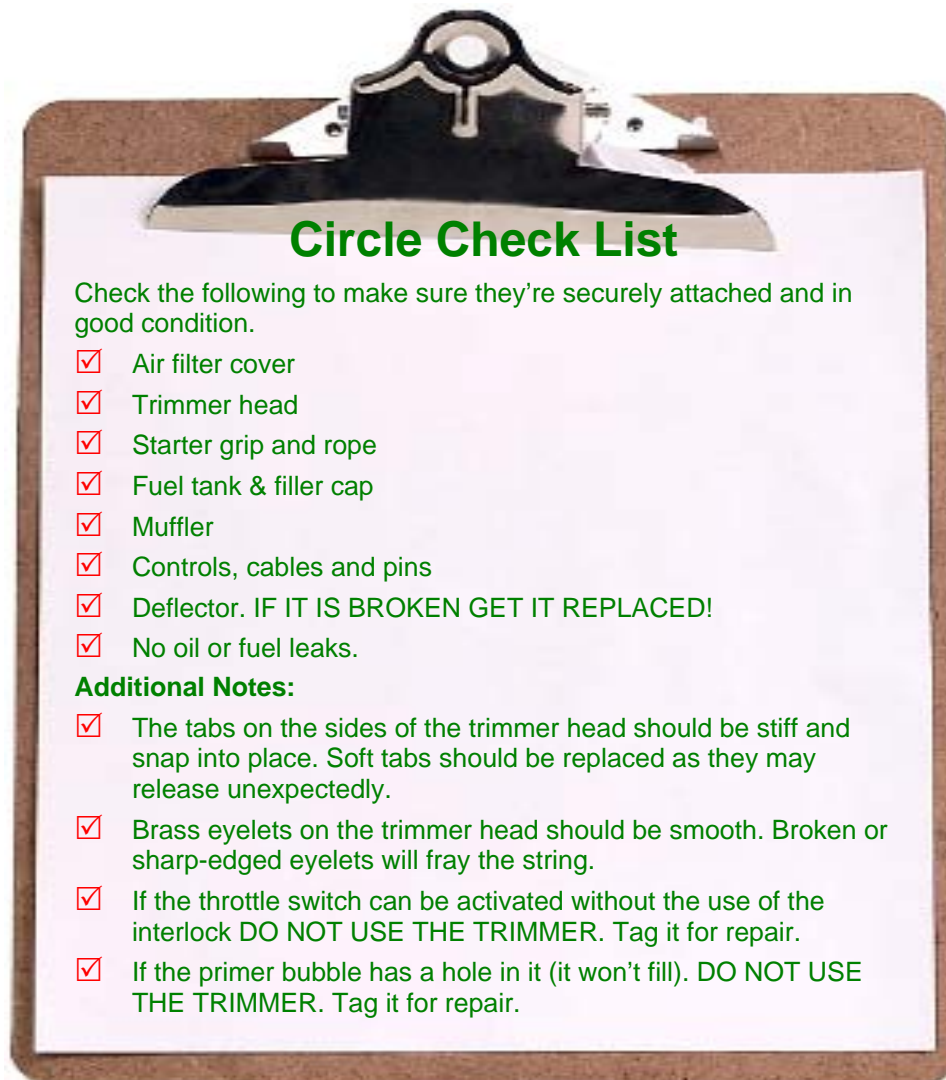
Your Day Begins...





String Trimmer Circle Check

After years of experience, your daily tasks come almost automatically. Upon arriving, you breeze through your morning routine, starting with a 'circle check' of your String Trimmer to look for loose, broken, worn or damaged parts.



Remembering that a full tank of fuel will last about 1½ - 2 hours, you take an extra container of pre-mixed fuel along to the work site.





Maintaining the String Trimmer

Keeping the String Trimmer in good running condition means performing some regular maintenance tasks.



Maintenance Check List

Check All String Trimmers Weekly

- ☒ Remove the air cleaner. Wash it with soap and water. Dry and replace it in the machine.
- ☒ Frequently check the Cooling System Intake Fins and clean them with compressed air and/or a brush.

The Green Machine:

- ☒ This machine has grease fittings that need to be greased every 2nd day.
- ☒ Clean the gear housing. There are sealed bearings inside that will wear out if they aren't properly greased. After removing the cover, take out the steel cogs and clean any dirt or debris. When it's clean, replace the cogs, and then replace the cover.
- ☒ The fuel filter inside the gas tank may clog. If the engine is sputtering, this could be the cause. To replace the filter: open the fuel tank, then open the rubber plug next to the fuel tank. Pull out the rubber line to find the fuel filter attached. If the filter is speckled, it needs replacing. Speckles are built up dirt and dust that prevent the fuel from getting through.





String Trimming

As you arrive at your first location, you can easily see the work ahead of you. The mowers have recently been through the park and the areas they couldn't reach are obvious to your trained eye. You see a one or two foot wide strip around tree groves, shrubs and flowerbeds where the grass is noticeably higher than the larger, mown areas. You also spot weeds growing along the fence and around some of the park benches. Today you and your String Trimmer will provide the finishing touches to this park.

Protecting the Trees

You turn to get your String Trimmer out of the truck, but something catches your eye. You walk over to a Green Ash planted just a few feet from the curb and notice damaged bark at the base of the tree. You can hardly believe that someone would be so careless as to get too close to a tree trunk with a mower or string trimmer. You shake your head and turn back to the truck, disappointed in knowing the young tree will die. We often put tree guards around the base of a new tree, which helps avoid this problem.





Safety First

T

The trunk of a tree is composed of several basic parts. The bark of the tree is the outer covering that protects the tree.

Immediately inside the bark you'll find two thin layers of living cells that transport food, nutrients and water up the tree. These areas can be easily damaged. When this happens, the food, water and nutrients can't travel up the tree, often resulting in a dead tree.

This picture shows a tree trunk that has been damaged by a String Trimmer. This damage could eventually kill the tree!

**NEVER ALLOW THE TRIMMER
STRING TO TOUCH A TREE!!!**





Transporting the Trimmers

Transporting the trimmers safely is a very important aspect of maintaining the equipment. Always use the racks located on Roving Crew trucks and on some of the turf vehicles. These racks protect the string trimmer from bending. If there are no racks provided for the String Trimmer, secure the machines ensuring they won't roll around in the back of the truck.

Getting Started

As you lift the String Trimmer from the rack on the side of the truck, be careful to keep the machine close to your body, with your spine straight, and using your leg muscles for the lift. You remember a time on the farm when you turned at the waist while lifting a bale and strained your back. That painful memory is enough to keep you focused on injury prevention!

You often use the truck's tailgate to steady the trimmer while starting the engine, but today you see a raised flowerbed with low, concrete walls that will work just fine. Check to make sure the cutting tool is off the ground and away from any obstacles.

Be sure to keep the String Trimmer head raised when starting the engine, and never put your foot on the shaft to hold the machine steady, as the shaft will bend.





Starting the String Trimmer

Start the unit by following these steps:

1. Move the ignition switch to the on position (indicated by a straight line).
2. Press the safety switch.
3. Press the throttle.
4. Press the throttle trigger interlock.
5. Press the primer bulb about 3 times until it gets hard.
6. Put the choke on.



You press the primer bulb, found under the carburetor, about 3 times or until the bubble gets hard.

7. With your left hand get a good grip on the trimmer's shaft, holding it near the motor, and pull the starter cord with your right hand. It's important that you don't wrap the cord around your hand.
8. As soon as the engine starts, release the starter rope and move the choke down and then up again, repeat until the motor runs well.
9. When the trimmer is warmed up, press the throttle trigger interlock again to turn off the engine until you're ready to begin trimming.

Never let the trimmer hit garbage. It's a lot easier to pick up one piece of paper or candy wrapper, than having to pick up hundreds of little pieces of paper that have been shredded by a trimmer!





Using the String Trimmer Safely

Once you have the String Trimmer running, attach it to the hook on your harness. Now you're ready to begin!

Wrap your fingers tightly around the handles, keeping the handles cradled between your thumb and forefinger. Always hold the Trimmer firmly with both hands and on the right side of your body.

In the beginning, using the trimmer effectively took some practice but before long you find it quite easy to use. The technique you use is:

- ☑ Hold the trimmer so that the rotary head is at approximately a 30-degree angle from the ground.
- ☑ Allow the very tip of the line to do the cutting.
- ☑ Cut from left to right with the engine at full throttle so that clippings will be thrown away from you.



Note: As the cutting line wears down, the engine speed (RPM) will increase. Allowing the engine to run at a high RPM (3" cutting line or less) for a prolonged period will shorten the engine life.





Using the String Trimmer Safely Continued...

Because the trimmer head turns counter-clockwise, clippings and debris are thrown to your right side. You discover that when you trimmed to your left, clippings and debris are thrown in your direction. You learn to go slowly if you have to trim from your left.



Safety First

Always start the trimmer outdoors — never inside of a building.

Before refuelling allow the trimmer to cool in a shady place for at least 5 minutes. If you refuel when the engine is hot, the tank could explode or burst into flames.

Never refuel while the trimmer is on grass; spilled fuel will kill the grass.

Avoid spraying clippings onto hard surfaces such as streets, walks and patios.





Using the Trimmer Safely Continued...

When cutting tall grass use a shorter string and make sure the trimmer is kept at a high rev. It doesn't take you long to discover that long string binds up in the tall grass. Remember that the string, which extends from the trimmer, should be no less than 3" and no more than 6" in length.

Walk forward when cutting long grass areas. It's difficult to trim grass that's lying flat because it's been walked on.



Be very aware of making sure the string doesn't come in contact with any trees or other objects like fences, benches, posts or garbage cans. Slow down when using the trimmer around any of these items.



Safety First

Always be on the look out for pedestrians, pets and traffic. Do not operate the trimmer when humans or pets are within 50 feet of you. Stop working immediately and don't continue until they are at a safe distance. Flying debris can cause damage and serious injury.





Replacing the String

You know that the length of the string should be no less than 3" and no more than 6". As you use the trimmer during the day, notice that the trimmer string wore away. To lengthen the string, tap the trimmer head on the ground while the engine is running. With every tap on the ground 1.5" of string is released. The higher the engine revs, the lighter you have to tap the trimmer head. If the string is too long then you rev the engine, allowing the string to hit the concrete thereby wearing away the extra length of string.



After lengthening the string a number of times you have to replace the string. It takes some practice, but before long you'll get pretty good at it.

Steps to follow when replacing the string

1. Turn the motor off.
2. Lay the trimmer upside down on the ground.
3. Push in the locking tabs on the sides of the trimmer head and pull on the string head cap to remove the spool.
4. Clean any dirt, dust, and grass out of the string head, spool and head cap.
5. Cut a 50-foot length of string.
6. Loop the string through the anchor holes in the spool. Make sure both lines are even.
7. Feed the string neatly by rotating the spool counterclockwise. Make sure the strings don't overlap one another. Do not wind the string — rotate the spool.

Locking Tabs



String Head





Steps to follow when replacing the string continued...



8. Once the string is on the spool, insert the string ends in their respective line-savers and place the spool back into the string head. Pull on the ends of both lines at the same time, to release them from the slots. Be certain that the lines do not become trapped under the spool.



9. Re-install the string head cap by aligning the locking tabs with their notches, pushing the cap down until both locking tabs are securely locked.



10. Before operating the unit, check it by advancing the line manually, making sure the lines are not trapped, and that the string head is assembled correctly. The trimmer will have cooled down while you were changing the string so this would be a good time to check the fuel level and to add some if necessary.

Remember to pick up your clippings from highly visible areas.





At The End of The Day

Well the day is done and you have just finished string trimming at the park. You take great pride in your work because you know that this is the park your nephew plays soccer at. In fact, this weekend you will be back here with your lawn chair and bag of sunflower seeds in hand to watch the game.

Last weekend you sat beside one of the proud soccer moms and overheard a conversation she was having with another mother. She commented on how beautiful the park looked. You couldn't help feeling gratification because you know that you have helped to make this a great place for kids and families. You take great pride in your work as a caretaker of your community.





String Trimming

18

Task: To trim plants and grass to a standard height in areas not cut by larger mowers.

- ☐ Athletic Turf 1½"
- ☐ Irrigated 3"
- ☐ Naturalized 8"

Tools and Equipment:

- ☐ String trimmer
- ☐ Shoulder harness
- ☐ Extra nylon string for trimmer
- ☐ Container of pre-mixed gas/oil

Additional Safety Equipment Required:

- ☐ Face shield or safety glasses
- ☐ Gloves
- ☐ Ear protection (plugs and/or muffler)

Expected Results:

The string-trimmed areas should look the same as the mowed areas, so the public cannot tell which is which. All areas should look neat and tidy, with few clippings in sight. There should be no un-trimmed areas, no litter, and no damaged trees, nests or objects.

Operating Tips:

- ☐ Wear a harness and be sure it is adjusted properly. This will take the pressure off of your arms, back and shoulders, supporting the weight of the trimmer for hours of easy operation.
- ☐ Keep string length to about 6 inches.
- ☐ Trim to the same height as the mowed areas around where you are working.
- ☐ *Do not* touch bark of trees with the string as it will damage the trees.
- ☐ Be careful not to damage posts, signs, etc.
- ☐ *Never* trim while close to people or animals. The trimmer can throw small objects like pebbles at great speed and cause injury.





String Trimming

19

Operating Tips Continued...

- ☐ Be careful around cars (parked or driving by) as objects flying from the trimmer can damage paint and glass.
- ☐ Avoid spraying clippings onto hard surfaces like streets, sidewalks and patios.
- ☐ Clean up clippings to keep public areas neat and tidy. Hover the trimmer over the area to use it as a blower to clean clippings.
- ☐ *Never* refuel while the engine is hot.
- ☐ Be sure to clean & grease trimmer daily, according to manufacturer's instructions.
- ☐ If you are caught outside during a storm, seek shelter in a low area away from trees and other structures. If lightening is close, return to depot or call for pickup.
- ☐ Report any damage or deficiencies to supervisor





String Trimmer Circle Check

20

Circle Check List

- ☐ Damage to the Air Filter Cover and that it's attached securely.
- ☐ The condition of the Trimmer Head or Blade and that it's attached securely.
- ☐ The condition of the Muffler.
- ☐ The condition of the Starter Grip and that it's attached securely.
- ☐ The condition of the Fuel Tank and that the Filler Cap is attached securely.
- ☐ Oil or fuel leaks.
- ☐ Cracks and wear of any plastic parts.
- ☐ Loose or missing fasteners.
- ☐ Controls, cables and pins
- ☐ All Safety/Warning decals are in place and readable.
- ☐ The tabs on the sides of the trimmer head should be stiff and snap into place. Soft tabs should be replaced as they may release unexpectedly.
- ☐ Brass eyelets on the trimmer head should be smooth. Broken or sharp-edged eyelets will fray the string.
- ☐ If the throttle switch can be activated without the use of the interlock **DO NOT USE THE TRIMMER.** Tag it for repair.
- ☐ Check the deflector. **IF IT IS BROKEN GET IT REPLACED!**
- ☐ If the primer bubble has a hole in it (it won't fill). **DO NOT USE THE TRIMMER.** Tag it for repair.
- ☐ Starter rope and grip.





String Trimmer Maintenance Check

21

Check Weekly

- ☐ Remove the air cleaner. Wash it with soap and water. Dry and replace it in the machine.
- ☐ Clean the gear housing. There are sealed bearings inside that will wear out if they aren't properly greased. After removing the cover, take out the steel cogs and clean any dirt or debris. When it's clean, replace the cogs, and then replace the cover.
- ☐ Frequently check the Cooling System Intake Fins and clean them with compressed air and/or a brush.

Note

The fuel filter inside the gas tank may clog. If the engine is sputtering this could be the cause. To replace the filter: open the fuel tank, then open rubber plug next to the fuel tank. Pull out the rubber line to find the fuel filter attached. If the filter is speckled, it needs replacing. Speckles are built up dirt and dust that prevent the fuel from getting through.





Replacing String Trimmer String and Checking the Oil Level

22

Task: Replacing the string on the String Trimmer and checking the oil level.

1. Turn the motor off.
2. Lay the trimmer on the ground, upside down.
3. Push in the locking tabs on the sides of the trimmer head and pull on the string head cap to remove the spool.
4. Clean any dirt, dust, and grass out of the string head, spool and head cap.
5. Cut a 20-foot length of string (or use the one you're carrying in your hardhat).
6. Loop the string through the anchor holes in the spool. Make sure both lines are even.
7. Feed the string neatly by rotating the spool counterclockwise. Make sure the string doesn't overlap one another. Do not wind the string — rotate the spool.
8. Once the string is on the spool, insert the string in their respective line-savers and place the spool back into the string head.
9. Pull on the ends of both lines at the same time, to release them from the slots. Be certain that the lines do not become trapped under the spool.
10. Re-install the string head cap by aligning the locking tabs with their notches and pushing the cap down until both locking tabs are securely locked.
11. Before operating the unit, check by advancing the line manually, making sure lines are not trapped, and string head is assembled correctly.



Checking the Oil Level

1. Start and run the engine briefly.
2. Stop the engine.
3. Clean the plug area on the Trimmer Head.
4. Remove the plug. Lubricant should be present on the inside end of the plug.
5. Replace the plug.

