



Parks and Open Space Management

*Saskatchewan Parks and
Recreation Association Inc.*

Rototilling Handbook





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February 2005



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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.

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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.

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Rototilling Introduction

Growing up you spent a lot of time on your grandparent's farm. While your grandfather spent hours in the fields, your grandmother spent most of her day looking after their huge yard and garden area that surrounded the farmhouse. You fondly remember her putting on a large sunhat, applying mosquito repellent before stepping off of the back



stoop on her way to the utility shed to prepare for her day outdoors tending her garden and shrub beds — you were never far behind her.

One hot summer day as she was tilling the soil around the shrubs in the far north shrub bed, you asked her what she was doing. She stopped the tiller, wiped her brow and smiled. “You know how I hate weeds – well by tilling the soil I’m controlling the weeds that are trying their best to take over my garden. “

She asks if you'd be interested in learning how to use the rototiller. You eagerly nod your head yes! You learn a great deal from her.

At the time, you certainly never dreamed that you'd be working for your community and using their rototillers to maintain the shrub beds in the community parks.





Rototilling Overview

Weeds thrive in open soil and rototilling is an effective way of controlling weeds in our community's tree and shrub beds. Typically it takes 2 to 4 tillings a year to effectively control weeds. If you rototill more than 4 times a year you run the risk of destroying the soils texture and structure by turning it into a fine soil.



There are two types of rototillers used in parks and open spaces. The walk behind model is used in the smaller areas and the riding model with the rototiller attachment is used in the larger areas.



You've learned that it's important that when you are rototilling you don't let the blades dig too deep. When you dig too deeply you risk damaging the roots of the plants in the bed. As a rule, you shouldn't dig any deeper than 2" to 4".





Your Day Begins...





Safety Equipment Overview

The first day you're on the job you're told about the importance of wearing the correct safety gear – no matter what job you're doing..

Safety Gear



Hard Hat - Required *(never worn backwards or over another hat)*



Safety Vest - Required *(wear on all roadways)*



CSA Approved Safety Boots - Required



Safety Glasses - Required



Work Gloves - Recommended



Ear Plugs - Recommended

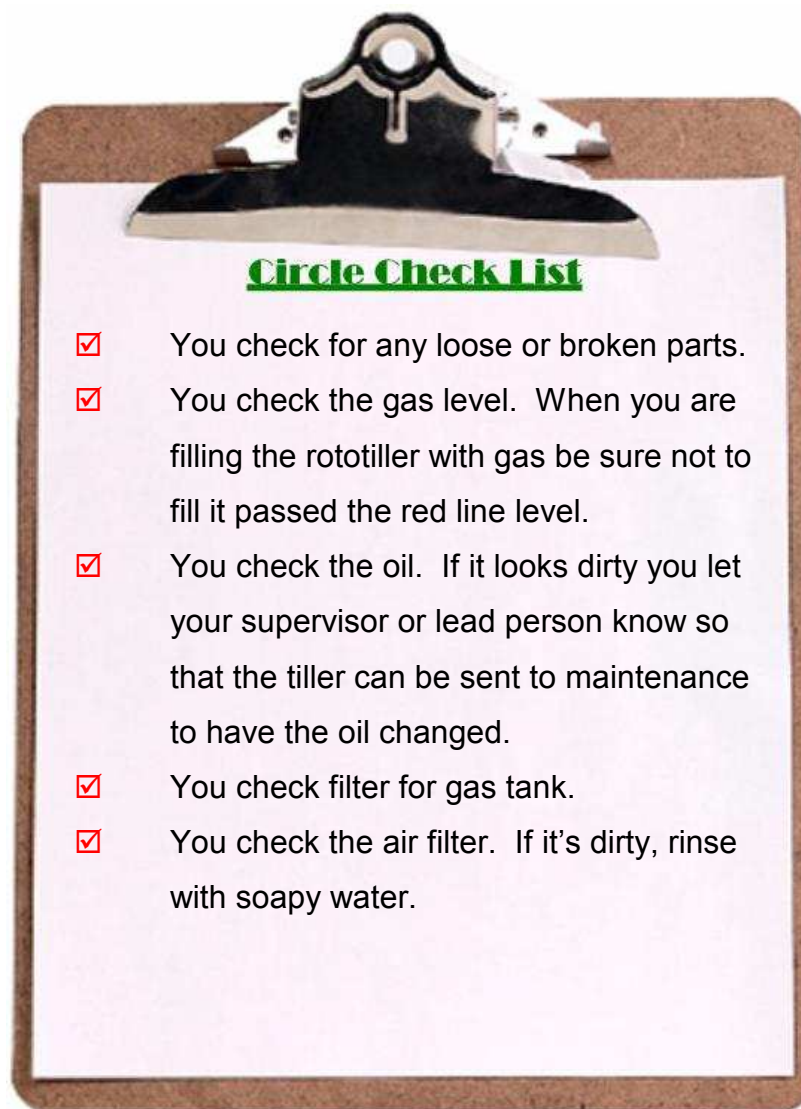




The Walk Behind Rototiller

Circle Check

Before you load your equipment for the day, perform a circle check on the rototiller.





Transporting The Walk Behind Rototiller

When loading or unloading the walk behind style of rototiller follow these easy to remember steps:

1. You, along with another member from your crew can lift the rototiller into or out of the box of the truck, remembering to bend at your knees as you lift.
2. Before transporting, when you are loading and unloading the rototiller you always make sure the machine is safely secure by strapping it down securely to the box of the truck. Use four tie down straps to secure the rototiller to the truck ensuring it can't move around in the back while you are transporting it.



Safety First!

Be extra careful when loading and unloading the rototillers. They are very heavy and awkward.



Fuel Valve

Be sure to switch the gas to the OFF position when transporting the rototillers. Fuel vapors or spilled fuel can ignite.

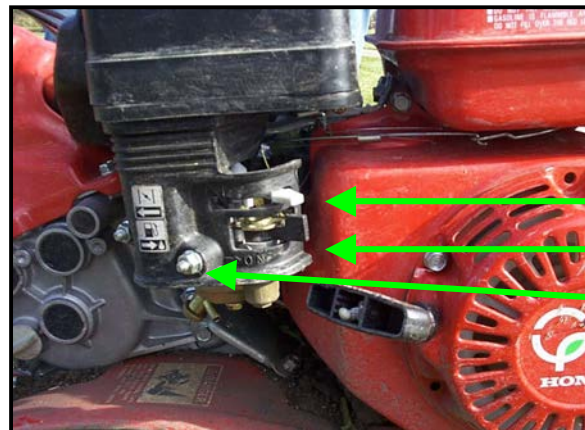


Starting The Walk Behind Rototiller

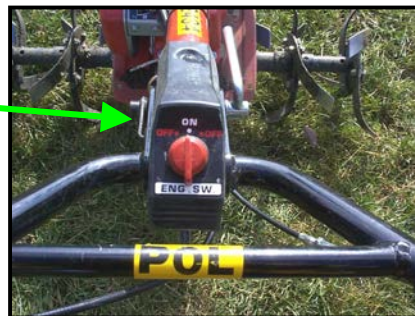
In some instances you may arrive at a site to find that the tree and shrub bed has lots of larger weeds. In this situation, you should ensure the bed is string trimmed prior to rototilling it. This prevents the weeds from wrapping around the tines of the tiller. It's a good idea to take a quick walk through the area that you plan on rototilling to take a look for any debris, rocks, branches, cans or bottles that may cause damage to your equipment. These will have to be removed from the tree and shrub bed before you begin rototilling. As well, look for irrigation heads in the bed so that you know where they all are. They should be marked, but if you find one that isn't – mark it with spray paint.

The following are steps that you complete when starting the walk behind style of rototiller.

1. You turn the fuel valve to the ON position and check to make sure the drain knob is tight.
2. Turn the choke ON. If the outside temperature and the engine of the rototiller are warm, you can skip this step.
3. You turn the engine switch ON.



Choke Lever
Fuel Valve
Drain Knob



Starting The Walk Behind Rototiller Continued...

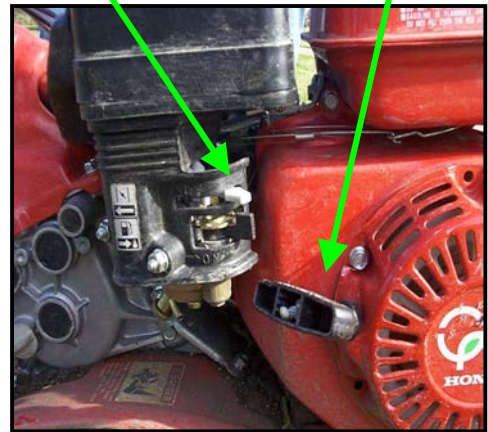


4. You throttle up the machine.

5. You pull the starter grip lightly until you feel some resistance, and then pull it briskly. Do not abruptly let go of the starter grip causing it to snap back against the rototiller. Instead, gently guide the starter grip back into its casing. As the engine warms up, gradually turn the choke OFF.

Choke Lever

Starter Grip



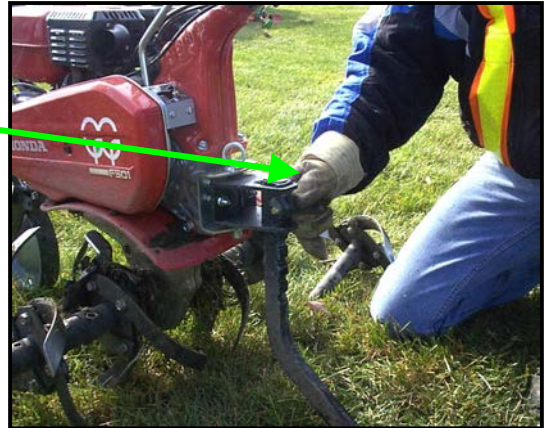
6. Now that the rototiller is running you can adjust the handle bar height by loosening the adjuster, selecting the appropriate hole and then tightening the adjuster back up.



Starting The Walk Behind Rototiller Continued...

7. You can adjust the tilling depth by removing the retainer and sliding the drag bar up or down.

8. Your front wheel must be in the upright position to begin rototilling. You can do this by removing the lock pin, pushing the wheel upward and inserting the lock pin again.



9. The clutch controls the power from the engine to the transmission. When you squeeze the clutch the tines will turn. When you release the clutch the tines will stop turning.



To shift gears:

- ☒ You release the clutch lever to disengage the clutch.
- ☒ You begin by throttling the engine down.
- ☒ You move the gearshift to the desired gear position.
- ☒ You squeeze the clutch lever to engage the clutch to start tilling again.





Removing the Tines

The outside tines of the rototiller can be removed. This enables you to clean any weeds and roots that get tangled in the tines or make the machine smaller allowing you to till in small areas in and between the trees and shrubs.



To remove the outside tines from the rototiller you simply pull the pin, and with a firm pull remove the tine.



Safety First!

Make sure that you are wearing your gloves. These tines are sharp! Be careful not to cause injury to yourself when handling them.





Handling Tips for the Walk Behind Rototiller

- ☑ The model may be self-propelled which means that it uses its tines to crawl forward and backwards. You are the operator and it is your job to guide the machine in the direction you want it to go.
- ☑ If the machine jerks forward while tilling, press down on the handlebars.
- ☑ If the machine will not move forward, rock the handlebars back and forth and/or from side to side.
- ☑ The proper method of making a turn is to lower the handlebars to bring the weight toward the back of the machine, lift the tines out of the soil and then make the turn.
- ☑ The rototiller works best when the handlebars are lowered slightly so that the front of the rototiller is sitting straight and facing straight ahead, not downward towards the soil.

When you are moving the rototiller from bed to bed to rototill, there may be excessive soil that falls off on the grass or sidewalks. This needs to be either swept or raked up so that we can keep it looking neat and tidy.

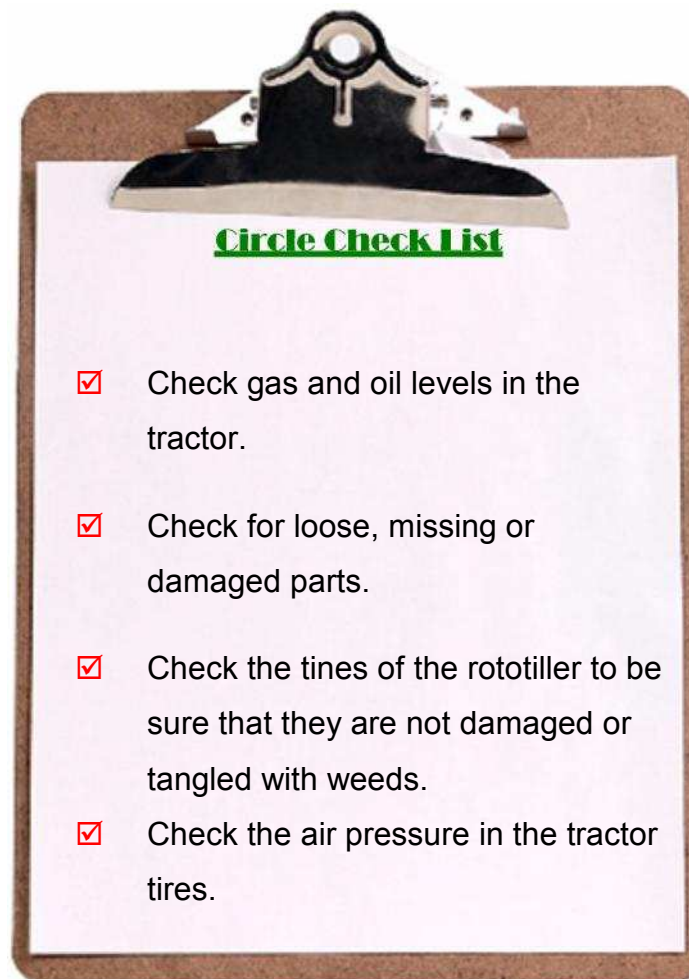




The Tractor Rototiller

Circle Check

Before leaving the depot to use the riding tiller for a day of rototilling, you perform a circle check. Your department may use a daily log book for any vehicle that you “ride in” or “ride on”. Before leaving the depot at the beginning of your shift you should complete the circle check provided in the Operators Daily Log book.

A clipboard with a black clip at the top holding a white sheet of paper titled 'Circle Check List'. The list contains four items, each preceded by a red checkmark in a box.

Circle Check List

- ☒ Check gas and oil levels in the tractor.
- ☒ Check for loose, missing or damaged parts.
- ☒ Check the tines of the rototiller to be sure that they are not damaged or tangled with weeds.
- ☒ Check the air pressure in the tractor tires.





Transporting the Tractor Rototiller

Here are some of the steps you follow when loading and unloading the riding tiller.



1. Be sure to have the crew truck and trailer parked on level ground.

2. The ramps on the back of the trailer are then unhooked and lowered to ground level. Undo the four tie down straps used to secure the rototiller to the trailer, which ensures that it can't move around in the back while you are transporting it.



3. Start the tractor and slowly back the tractor off the trailer.



4. Adjust the feet of the tiller so that you are only rototilling about the top 3" of soil.

Remember if you till too deep you will cause damage to the roots of the plants in the tree and shrub bed.





Using the Tractor Rototiller

From your past experience, you know that there is more to rototilling than just sitting on the tractor and driving. You have to think about your safety and the safety of others as you're working in the tree and shrub beds. Again, remember that if the tree and shrub bed has lots of tall weeds, it should be string trimmed prior to rototilling. This will help prevent the weeds from wrapping around the tines of the rototiller. As a rule you should stay about one foot away from the base of the trees and shrubs, especially spruce trees.



Safety First!

Take a quick walk through the area that you plan on rototilling looking for any debris, rocks, branches, cans or bottles that may cause damage to your equipment. These will have to be removed from the tree and shrub bed before you begin rototilling.

Check for any irrigation heads that may be in the bed and make sure that they are properly marked so that you do not till over them.





Handling Tips for the Tractor Rototiller

- ☑ Stay alert for holes and other hidden objects.
- ☑ Slow down before you make a sharp turn or operate on a slope.
- ☑ Drive up and down a hill – not across.
- ☑ Make sure you shut off and raise the rototiller attachment when before driving out of a tree and shrub bed.
- ☑ Remember to work at a safe, constant pace. If you get stuck, raise the tiller and when you begin moving again, lower the tiller and continue rototilling.



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At The End Of The Day

At the end of your workday, you reflect on all the safety rules, procedures, and tips you followed to make sure your job was done properly and safely. Because of your commitment to safety, your community benefits from a safe work environment; because of your commitment to maintenance, the vehicles are kept in fine working condition and will provide you with long use; and because of your hard work, the community has beautiful parks everyone can all enjoy.

Not everyone may see all the work and care you put into keeping the parks and lawns healthy, but what inspires you isn't the recognition from the public, it's watching them enjoy that natural beauty the community has to offer.





Rototilling – Job Aid The Walk Behind Rototiller

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Circle Check

- ☑ You check for any loose or broken parts.
- ☑ You check the gas level. When you are filling the rototiller with gas, be sure not to fill it passed the red line level.
- ☑ You check the oil. If it looks dirty you let your supervisor or lead person know so that the tiller can be sent to maintenance to have the oil changed.
- ☑ You check the filter for the gas tank.
- ☑ You check the air filter. If it's dirty, rinse with soapy water.



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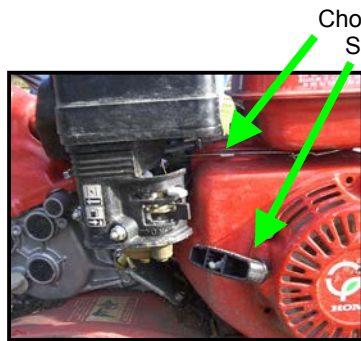
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Choke Lever
Starter Grip

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Rototilling – Job Aid

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