



PRO TURF RAKE

TRS-20H

(S.N. 1160000000 and Above)



MAN 4173239

Rev. B

Parts Manual 4173238



SCHILLER

GROUNDS
CARE

OPERATOR'S MANUAL

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.

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals, wiring insulation, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
WASH HANDS AFTER HANDLING.

PRE-DELIVERY CHECK LIST

Check the following before you deliver the Rake to the customer.

1. Guards and shields fastened in place.
2. Decals fastened and legible.
3. Weight bar installed.
4. Gas lever on engine turned on.
5. All lubrication points greased.
6. 6:1 gearbox oil level.
7. Engine oil level.
8. Air cleaner.
9. Touch up scratches.
10. Chain(s) tight.
11. Lowering handle working properly.
12. Control handle(s) working to tighten V-belt(s).
13. Add fuel, start engine, test run.

DATE SET UP _____/_____/_____

DELIVERY CHECK LIST

Review the operators manual with the customer.

1. Schiller Grounds Care, Inc. warranty.
2. Safe operation and service.
3. How to use controls.
4. Operating the machine correctly.
5. Transporting the Rake.
6. Correct fuel and lubricants.
7. Daily and periodic inspections.
8. Changing oil after break-in period.
9. Servicing the Rake regularly and correctly.
10. Schiller Grounds Care, Inc. parts and service.
11. Give the customer the operators manual and encourage customer to read it.

DATE DELIVERED ____/____/____

SIGNATURE _____

OWNER'S RECORD

DATE PURCHASED _____

RAKE MODEL NUMBER _____

RAKE SERIAL NUMBER _____

ENGINE MODEL NUMBER _____

ENGINE SERIAL NUMBER _____

TURF RAKE

IMPORTANT MESSAGE

Thank you for purchasing this Classen product. You have purchased a world class product, one of the best designed and built anywhere.

This product comes with Parts and Operator's Manuals. The useful life and good service you receive from this product depends to a large extent on how well you read and understand this manual. Treat this product properly and adjust it as instructed, and it will give you many years of reliable service.

See a Classen dealer for any service or parts needed. Classen service ensures that you continue to receive the best results possible from Classen products. You can trust Classen replacement parts because they are manufactured with the same high precision and quality as the original parts.

Classen designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this product only as directed in the manual, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Classen
1028 Street Road
Southampton, PA 18966

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NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Classen strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Classen Engineering Department. Any Classen product that is altered, modified or changed in any manner not specifically authorized after original manufacture—including the addition of “after-market” accessories or component parts not specifically approved by Classen—will result in the Classen Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Classen will be considered the responsibility of the individual(s) or company designing and/or making such changes. Classen will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This symbol means:
ATTENTION!
BECOME ALERT!

Your safety and the safety of others is involved.

Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Classen machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage

Schiller Grounds Care, Inc.

1028 Street Road
Southampton, PA 18966 U.S.A
Phone: 215-357-5110
Fax: 215-357-8045

MODEL NUMBER

SERIAL NUMBER

MODEL NUMBER: This number appears on sales literature, technical manuals and price lists.

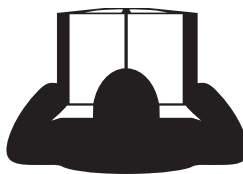
SERIAL NUMBER: This number appears only on your machine. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

TURF RAKE

Machine Preparation

Operator preparation and training

Read the Operation & Safety Manual



- If an operator or mechanic cannot read English, it is the owner's responsibility to explain this material to them. If any portion of this material is unclear, contact your factory representative for clarification.
- Become familiar with the safe operation of the equipment, operator controls and safety signs. Be prepared to stop the engine quickly in an emergency. Do not operate or allow another person to operate this machine if there are any questions about safety.
- All operators and mechanics should be trained. The owner is responsible for training the users.
- Wear appropriate clothing, including safety goggles or safety glasses with side shields when operating. Do not operate barefoot or wearing open sandals. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Wear hearing protection.
- Operate only in daylight or good artificial light.
- Wear safety glasses.
- Never allow underage children, unskilled or improperly trained people to operate this equipment. Local regulations can restrict the age of the operator.
- Keep warning labels and this operator's manual legible and intact. Replacement labels and manuals are available from the factory.
- Do not operate machine while under the influence of drugs or alcohol.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.
- Be sure you know how to stop the rake at a moments notice.

Site preparation and circumstances

- Evaluate the terrain to determine how to safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Clear the area to be raked of objects such as rocks, toys, wire or other debris that may be thrown or get tangled in the rake.
- Identify and mark objects to be avoided such as sprinkler heads, stakes, water valves, etc.
- Be sure the area is clear of pets and people, especially young children. Never assume they will remain where you last saw them. Stop the machine if any enter the area.
- Operate only in daylight or in good artificial light.

Machine Preparation

- Do not tamper with or defeat safety devices. Keep guards, shields and interlock safety devices in place and in proper working condition. They are for your protection.
- Keep all fasteners such as nuts, bolts and pins well secured.
- Visually inspect blades for wear or damage. Replace worn or damaged blades and bolts.
- Verify that machine and attachments, if any, are in good operating condition.
- Do not engage blades until ready to rake.

OPERATING SAFELY

In General

- Use extra care when loading or unloading the machine into a trailer or truck. Never pick up or carry the machine when the engine is running.
- Use caution when making turns and crossing roads and sidewalks. Stop blades when not raking.
- Do not run the engine in an enclosed area where dangerous carbon monoxide fumes can collect.
- Never leave a machine unattended. Always turn off blades and stop engine when leaving the operator position.
- Use extreme caution when reversing or pulling machine towards you.
- Clean/remove debris from mufflers and engine to help prevent fires.



Operating On Slopes

Use Extra Care When Working On Slopes

- Do not operate on slopes if uneasy or uncertain. Ultimate responsibility for safe operation on slopes rests with the operator.
- Do not operate on steep slopes.
- Keep all movement on slopes slow and gradual.
- Do not rake near drop-offs, ditches or embankments. The machine could suddenly turn over if a wheel runs over the edge or an edge caves in.
- Do not turn on slopes unless necessary, and then turn slowly and downhill when possible.
- Be sure of your footing on slopes.

Interrupting Operation

- Before leaving the operator's position:
 - Park on level ground.
 - Release bails.
 - Shut off the engine.
- Release bails:
 - when not raking;
 - for transport;
 - when crossing surfaces other than grass.
- Release bails, wait until blades stop moving and stop engine:
 - before refueling;
 - before making blades adjustment.
- Release bails, wait for blades to stop, stop the engine and disconnect spark plug wires:
 - before clearing blockages;
 - before checking, cleaning or working on the machine;
 - after striking a foreign object. Inspect the machine for damage and make repairs before restarting;
 - if the machine begins to vibrate abnormally: shut off machine immediately. Inspect and make repairs as needed before restarting;
 - except for repairs or adjustments as specifically noted, such as for carburetor adjustment, where the engine must be running. Keep hands and feet clear of moving parts in these circumstances.
- Allow the blades to come to a complete stop when stopping operation to clear blockages, unclog, inspect the machine, do maintenance or repair.
- Reduce the throttle setting during engine shut-down and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of operation.

MAINTENANCE SAFETY

In general

- Maintain machine according to manufacturer's schedule and instructions for maximum safety and best results.
- Park machine on level ground.
- Never allow untrained personnel to service machine.
- Guards should only be removed by qualified maintenance technician for maintenance/service. Replace when work is complete.
- Adjust or repair only after the engine has been stopped and the blades have stopped moving.
- Disconnect spark plug wire(s) before doing any maintenance.
- Replace parts if worn, damaged or faulty. For best results, always replace with parts recommended by the manufacturer.
- Do not dismantle the machine without releasing or restraining forces which may cause parts to move suddenly.
- Provide adequate support, e.g. jack stands for lifted machine or parts if working beneath.
- Do not put hands or feet near or under rotating parts.
- Clean up spilled oil or fuel thoroughly.
- Replace faulty mufflers.
- To reduce fire hazards, keep the engine, muffler, and fuel storage area free of grass, leaves, debris

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buildup or grease.

Blades

The rake blades are sharp and can cut. Use extra caution when handling. Remove obstructions with care. Wrap the blades or wear gloves.

- Only replace blades. Never straighten or weld.
- Keep other persons away from blades.



Fuel

- Petrol (gasoline) and diesel fuels are flammable; petrol (gasoline) vapors are explosive. Use extra care when handling.
 - Store only in containers specifically designed for fuel.
 - When refueling or checking fuel level:
 - Stop the engine and allow to cool;
 - Do not smoke;
 - Refuel outdoors only;
 - Use a funnel;
 - Do not overfill;
 - If fuel is spilled, do not attempt to start the engine until the spill is cleaned up and vapors have cleared.
 - Replace caps on fuel containers and tanks securely.

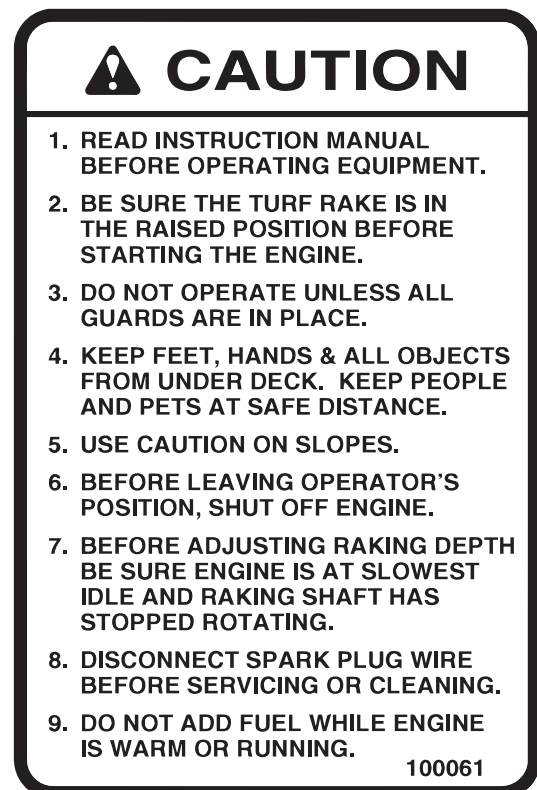
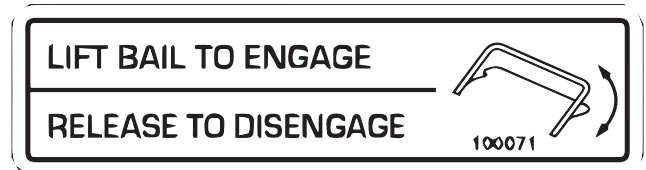
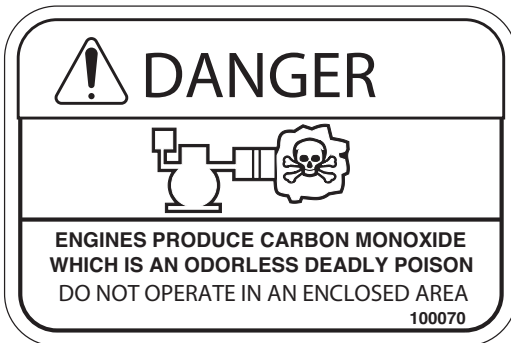


Storage Safety

- Stop the engine and allow to cool before storing.
- Drain the fuel tank outdoors only.
- Store fuel in an approved container in a cool, dry place.
- Keep the machine and fuel containers in a locked storage place to prevent tampering and to keep children from playing with them.
- Do not store the machine or fuel container near heating appliances with an open flame, such as a water heater, or an appliance with a pilot light.
- Keep gasoline storage area free of grass, leaves and excessive grease to reduce fire hazard.
- Clean grass and debris from cutting units, drives, mufflers and engine to help prevent fires.

Sparks from static electricity can start fires or cause explosions. Flowing fuel can generate static electricity. To prevent static electricity sparks:

- Keep fuel containers electrically grounded. Do not fill containers in a vehicle or on a truck or trailer bed with a plastic liner. Fill containers on the ground away from the vehicle.
- When practical, remove petrol (gas) powered equipment from the truck or trailer and refuel it on the ground. If equipment must be refueled on the truck or trailer, refuel from a portable container rather than a dispenser nozzle.
- Keep the dispenser nozzle in contact with the rim of the fuel tank or container opening until fueling is complete. Do not use a nozzle lock-open device.



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FUEL SHUT OFF (A) - Move to the "OFF" position to shut off the fuel whenever transporting the machine by trailer, truck or during storage. Move to the "ON" position before starting the engine.

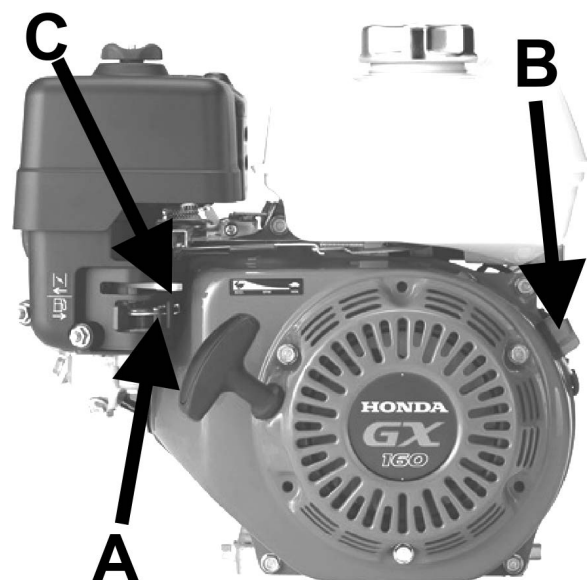
SWITCH (B) -
Move to the "OFF" position to stop the engine.
Move to the "ON" position before starting engine.

CHOKE (C) -
Move to the "CHOKE" position to apply the choke.
Move to the "RUN" position to remove the choke.

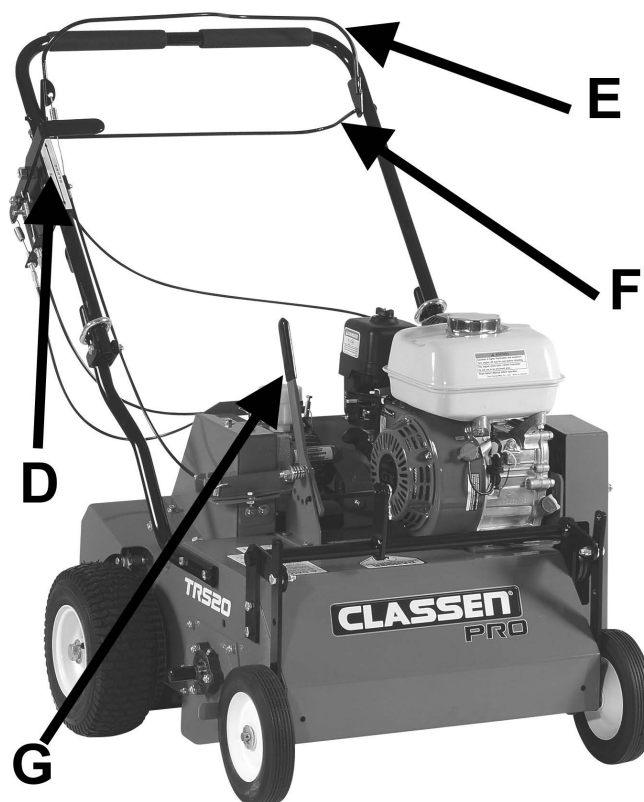
SPEED CONTROL (D) - Squeeze the throttle control to increase the engine rpm. Squeezing the throttle control to increase the engine rpm also engages the centrifugal clutch powering the blades and wheels when the blades and/or wheel drives are engaged.

TOP BAIL (E) -
Pull top bail towards handle to engage. Release bail to stop.

RAKE BAIL (F) - Pull up on bottom bail to engage the main shaft. Release bail to disengage.



HEIGHT ADJUSTMENT (G) - Place on lawn surface and adjust the wheel height up to lower the blades. Adjust wheel height down to raise blades.



PRE-OPERATION CHECK LIST (Operator's responsibility)

- Review and follow all safety rules and safety decal instructions.
- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check to make sure all shields and guards are properly installed and in good condition.
- Check that all hardware is properly installed and secured.
- Check to be sure engine is free of dirt and debris. Pay particular attention to the cooling fins, governor parts and muffler. Clean air intake screen. Check air cleaner; service is necessary.
- Inspect area. Remove stones or other hard objects that might cause damage.
- Check that there are no underground utilities and sprinkler heads in work area.
- Check all lubrication points and grease as instructed in manual.
- Perform a functional check of the safety interlock system each time you operate the unit. If it doesn't work, repair before using the machine.

READ SAFETY SIGNS



WARNING

**ALL GUARDS MUST
BE IN PLACE WHILE
MACHINE IS IN OP-
ERATION.**



WARNING

**KEEP HANDS AND
FEET AWAY FROM
MOVING PARTS.**

BEFORE STARTING THE ENGINE

1. Be familiar with the controls, how each functions, and what each operates.
2. Check engine oil level. Add oil if necessary, following the engine manufacturer's recommendations. Refer to engine manual supplied with machine.

Engine Oil Level Check

- a. BEFORE CHECKING ENGINE: make certain the engine is level the engine switch is in the OFF position.
- b. Remove the filler cap/dipstick and wipe it clean.
- c. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.

- d. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil. SAE 10W-30 is recommended for general use. Refer to engine oil recommendations in engine manual for other viscosities and information.

- e. Screw in the filler cap/dipstick securely.

3. If applicable, check engine crankcase and gear reduction case oil levels with the engine resting in a level position. Add oil if necessary. (Refer to engine manufacturers's manual for the correct type and amount of oil.
4. Open the fuel valve.
5. Fill the fuel tank with the amount and type of fuel recommended by the engine manufacturer.

Start Engine Safely

Make sure hands and feet are out of the way of moving parts when starting engine.

Starting Engine

1. Turn fuel cock to the "open" position.
2. Turn choke on (closed).
3. Turn ignition switch to "on".
4. Pull recoil starter rope until engine starts.
5. After engine is warm, turn off choke (open).
6. Allow engine to run one minute before raking.
7. Check engine rpm setting before operating. DO NOT exceed 3600 rpm.

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WARNING

Transporting Rake

1. Position height adjustment lever to the start/transport position. (Figure 1)
2. Start motor, run motor at one half throttle.
3. Engage top bail.
4. Select speed lever.
5. Lift bottom bail to engage the main shaft. (Figure 2)
6. Release bail to stop.

Operating Rake

1. Put speed lever in neutral position.
2. Start engine.
3. Engage top bail.
4. Select forward or reverse with the speed lever.
5. Drive rake to the area to be raked.
6. Move height adjustment lever to the appropriate setting for the shaft assembly being used. (See Shaft Assemblies section)
7. Lift bottom bail to engage the main shaft. (Figure 2)
8. Release bail to stop.

Stopping Engine

1. Release bail.
2. Turn off ignition switch.

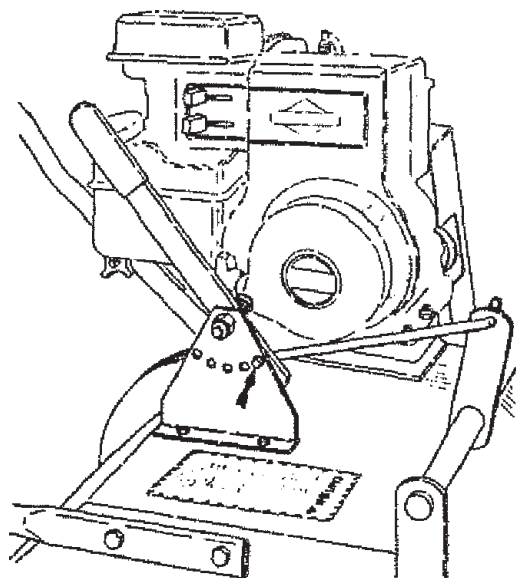


FIGURE 1

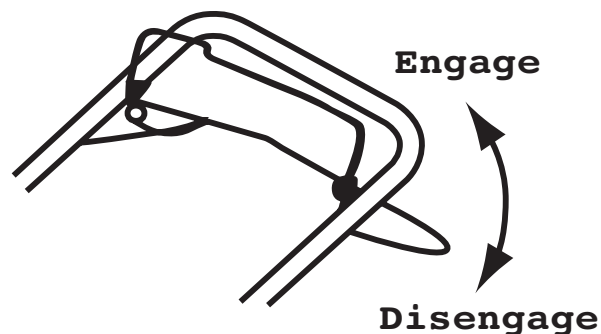


FIGURE 2

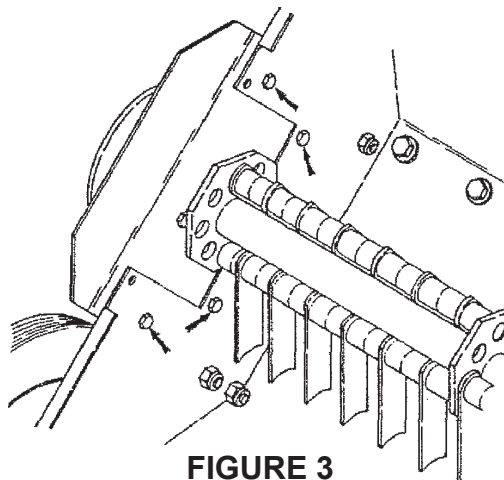
Changing Whole Blade Assemblies

Within minutes your machine can be converted to a turf rake, turf slicer, or spring tine reel by purchasing the optional blade assemblies available complete with side plates, bearings, and drive pulley. Changing the assembly can be done quickly.

1. Set unit up on block allowing enough distance between machine to change blade assembly.
2. After removing the belt shield, remove the ten nuts and bolts (4 on the belt shield side and 6 on the right side) which hold the blade assembly to the main body. Figure 3
3. Remove the belt from the large pulley a that is attached to the blade assembly. There is no need to loosen any set screws.
4. Install the optional blade assembly and fasten with six nuts and bolts on the right side and 4 bolts on the pulley side. Ensure the hardware is tightened on the end plates.
5. Route the belt behind the idler pulley and roll the belt onto the lower pulley. Install belt shield
6. When changing back to the original shaft it will not be necessary to loosen any set screws. Only the hardware in the belt shield and hardware holding the assembly will need to be removed.

Changing Shaft Assembly Only

1. Set unit up on block allowing enough distance between machine to change blade assembly.
2. After removing the belt shield, remove the ten nuts and bolts (4 on the belt shield side and 6 on the right side) which hold the blade assembly to the main body. Figure 3
3. Remove the belt from the large pulley a that is attached to the blade assembly. There is no need to loosen any set screws.
4. Remove the drive pulley and bearing plates from the main shaft (one on each side). Replace with new shaft assembly. Reinstall the bearing plates and drive pulley. Use Pro Lock medium strength on the shaft and the set screws. The pulley will be positioned on the shaft by a bolt, lock washer, and retaining washer.
5. Install the new blade assembly and fasten with six nuts and bolts on the right side and 4 bolts on the pulley side. Ensure the hardware is tightened on the end plates.
6. Route the belt behind the idler pulley and roll the belt onto the lower pulley. Install belt shield.



⚠ WARNING ⚠

CAUTION: BE CERTAIN THAT THE SET SCREWS ARE TIGHTENED PROPERLY IN BEARINGS AND PULLEY WHEN REASSEMBLING.

TURF RAKE

Height Adjustments

SEEDER/MULTIPURPOSE ASSEMBLY:

The seeding/multipurpose blades are used for cutting grooves for over-seeding and can also be used for verticutting grasses. To set the height properly place unit on the lawn surface and adjust the wheel height up. Figure 4. Adjusting the wheel height up lowers the blades.

For Seeding:

The proper height setting for over-seeding is approximately 1/4" into the ground. Adjust the wheel height up approximately one notch. If set deeper, grass seed being applied may not germinate.

For best results, over-seed in two passes of 1/2 application rate at right angles or in a crisscross pattern. Water heavily immediately after seeding then lightly for 10-14 days keeping soil moist.

For Slicing or Aerating:

The proper height setting for slicing or aerating is 1/2" to 3/4" into the ground. Adjust the wheel height up one or two notches.

For crawling grasses such as Zoysia, Bermuda, Bahia, etc. raise the wheels only one notch. Crawling grasses should not be slicing too deeply. For single strand grasses like Bluegrass or Rye, aerate in perpendicular directions for more even slicing. For example, slice in a North-South direction on the first pass, switching to an East-West direction on the second pass.

As the seeder/multipurpose blades wear they may be rotated to provide a new cutting edge. The wheels may be raised to allow the blades to penetrate deeper into the ground.

RAKE BLADE ASSEMBLY:

Normal height is set by placing the Turf rake on a hard surface making sure one satellite shaft is at dead bottom. Adjust the wheels so the raking fingers on the bottom shaft just touch the ground. DO NOT set the fingers so that they will penetrate the as this will counteract the centrifugal force of the fingers and prevent it from raking properly.

With repeated use, raking side of the fingers will begin to wear. To give the fingers a new square raking edge, remove the end plates (Changing Shaft Assembly) and turn the entire shaft assembly 180° and reattach.

NOTE: Use Pro-Lock (medium strength) on the 7" pulley on the main shaft.

To prolong the life of the main shaft, extra holes are provided. If the circular holes holding the satellite shafts become distorted, rotate all four satellite shafts to the next set of holes.

SLICING BLADE ASSEMBLY:

The slicer blade assembly is recommended for slicing, verticutting or aerating when a thinner blade is preferred. This is the commended blade for use on golf course greens. To set the height properly place unit on the lawn surface and adjust the wheel height up. Adjusting the wheel height up lowers the blades.

The proper height setting for slicing or aerating is 1/2" to 3/4" into the ground. Adjust the wheel height up one or two notches.

For crawling grasses such as Zoysia, Bermuda, Bahia, etc. raise the wheels only one notch. Crawling grasses should not be sliced too deeply. For single strand grasses like Bluegrass or Rye, aerate in perpendicular directions for more even slicing. For example, slice in a North-South direction on the first pass, switching to an East-West direction on the second pass.

As the slicer blades wear they may be rotated to provide a new cutting edge. The wheels may be raised to allow the blades to penetrate deeper into the ground.

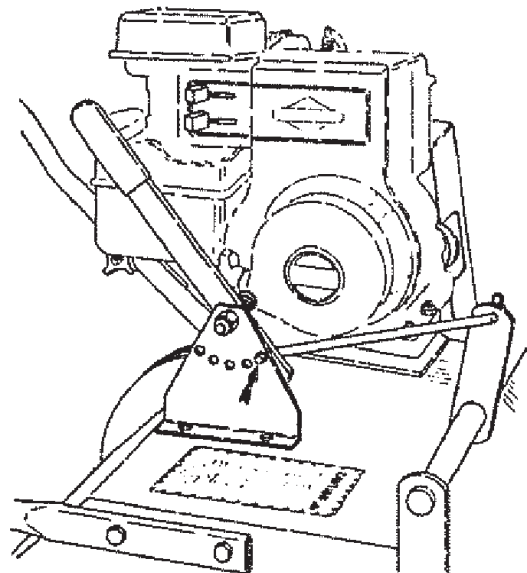


FIGURE 4

Practice Safe Maintenance

Keep all machine parts in good condition and fastened in place. Fix damages immediately. Replace worn or broken parts. Whenever you work on the machine, disconnect spark plug wire. When replacement parts are required, use genuine Schiller Grounds Care, Inc. parts or parts with equivalent characteristics, including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.

Carbon monoxide present in the exhaust is an odorless and deadly gas. Never start or run the engine inside where exhaust fumes can collect.

Provide enough fresh air to keep fumes from getting too strong. Replace any warning decal that becomes illegible immediately.

RAKE MAINTENANCE

TO KEEP THE RAKE IN GOOD OPERATING CONDITION, PERFORM THE FOLLOWING:

- When replacement parts are required, use genuine Classen parts or parts with equivalent characteristics including type, strength, and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.
- Any warning decal that becomes illegible should be replaced immediately.
- Do not operate equipment without shield(s) in place. Do not make any adjustments or perform any maintenance while the engine is running.
- Thoroughly clean all blades inside and out when raking is completed and apply a light coat of oil to prevent rust on blades.
- Always lubricate rake each time it is put into service. Wipe off lubrication fittings before and after each lubrication. The number of lubrication fittings vary depending on model of rake.
- Keep drive belt(s) free of oil and dirt.
- Check for worn or deterioration components that could create a hazard. When new components are installed, be sure that current safety decals are affixed to the replaced components.



WARNING



SAFETY WARNING: TO PREVENT POSSIBLE EXPLOSION OR IGNITION OF VAPORIZED FUEL, DO NOT STORE EQUIPMENT WITH FUEL IN TANK OR CARBURETOR OR NEAR OPEN FLAME (I.E. FURNACE, WATER HEATER, PILOT LIGHT).

STORAGE INSTRUCTIONS

Before the rake is put into storage for any period exceeding 30 days, the following steps should be taken:

1. Drain all fuel from fuel tank and fuel lines.
2. Start engine and run until all fuel is used from carburetor float bowl.
3. While engine is still warm, drain the crankcase oil and replace with the proper weight oil corresponding to the season the rake will next be used.
4. Remove the spark plug and squirt a small quantity of engine oil into the cylinder. Turn the engine over a few times to distribute that oil.
5. Lubricate all lubrication fittings.

To put rake into operation after an extended storage:

1. Check for loose parts and tighten if necessary.
2. Check for cracked or broken blades and replace.
3. Fill fuel tank.
4. Check engine and gear reduction case oil levels (with engine in a level position). (refer to Engine Manufacturer's Manual)
5. Start engine.
6. Check for fuel leaks.
7. Check operation of control handle(s) to make sure unit stops when lever is released..
8. Rake is equipped with fuel shut-off valve, close valve before transporting.

ENGINE MAINTENANCE

(Refer to engine manufacturer's owners manual) Check engine oil level with engine resting in a level position. Inspect air filter element and replace if necessary.

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HYDRAULIC SYSTEM

To keep the hydraulic system in working order, there are a few steps needed to take place. If synthetic oil were used we would suggest a full synthetic oil such as **Mobil 1 15W50, Quaker State Full Synthetic 5W50**, or a similar oil.

Oil viscosity is very important to transmission life. For optimum performance the oil viscosity should maintain a viscosity of 13 cSt [70 SUS]. The minimum oil viscosity to prevent component wear is 9 cSt [55 SUS]. These Viscosity requirements are for an oil temperature of 110 degrees Celsius [230 degrees Fahrenheit] Typically; standard SEA 20W-50 multi-viscosity motor oils will meet this requirement. If the operating temperature is elevated then synthetic oil with greater viscosity index, or more viscosity at elevated temperatures, may be needed to meet viscosity requirements.

System Start-up: (purging air from system). Factory Fills unit with SAE 20W-50 multi viscosity motor oil. This will need to be checked when setting up with instructions below.

At system start-up, several things need to be accomplished to ensure a properly running system.

1. Fill the BDU case and expansion level and ensure they do not empty during the following procedure.
2. Start engine and increase throttle to at least 2/3 speed.
3. Open bypass valve by depressing bypass plunger and holding.
4. Adjust control linkage such that transmission control is stroking full forward.
5. Move and hold control in forward for 3 seconds; repeat two additional times.
6. Close bypass valve by releasing bypass plunger.
7. With engine still at same speed, repeat step 5.
8. Move control to neutral.
9. Check engine speed. Adjust to recommended maximum engine speed.

10. Adjust neutral position.
11. Adjust forward control stop to recommended axle speed.
12. Adjust reverse control stop to recommended axle speed.
13. If axle speed is not achieved ensure linkage allows proper movement of transmission control.
14. If transmission control lever is rotating fully but recommended axle speed is not achieved, repeat start-up procedure.
15. Refill expansion tank oil to recommended level.

Classen Warranty Statement

2-Year Limited Warranty

This Classen Product is warranted against defects in materials and workmanship for a period of two (2) years from the date of purchase from an authorized dealer under the following terms and conditions. Schiller Grounds Care's responsibility under this limited warranty is restricted to repairing or replacing, at its option, any covered part found to be defective in material or workmanship during the warranty period. All parts replaced under warranty will be considered as part of the original product and any warranty on the replaced parts will expire coincidentally with the original product warranty.

SCHILLER GROUNDS CARE, INC. MAKES NO EXPRESS OR IMPLIED WARRANTIES, REPRESENTATIONS, OR PROMISES EXCEPT THOSE CONTAINED HEREIN. THERE ARE NO OTHER WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. ALL WARRANTIES OTHER THAN THE EXPRESS WARRANTY SET FORTH ABOVE ARE SPECIFICALLY DISCLAIMED. THE DURATION OF ANY IMPLIED WARRANTY, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY.

To Obtain Warranty Service - Warranty service must be performed by an authorized Classen dealer. To locate a dealer, please visit: www.classenturfcare.com and click on FIND A DEALER. For further assistance, write or email the Technical Services Department of Schiller Grounds Care

Schiller Grounds Care, Inc.
1028 Street Road
Southampton, PA 18966
techservicesupport@schillergc.com

ABOUT YOUR WARRANTY

The warranty period begins on the date of purchase by the original retail or commercial customer from an authorized Classen dealer and is not transferable. Warranty service must be performed by an authorized Classen dealer. If a warranty replacement becomes necessary, the authorized dealer must be prepared to provide the physical component for verification (freight prepaid) upon request from Schiller Grounds Care. Warranty service will be performed without charge to the original purchaser for parts and labor. The original purchaser is responsible for the expense of delivering the equipment, part, or accessory to and from an authorized dealer's service center. The purchaser is responsible for any premium charged for overtime labor requested by the purchaser and for any service and/or maintenance not directly related to any defect covered under this limited warranty. Proof of purchase will be required to substantiate any warranty claim. Without proof of the initial purchase date from an authorized dealer, the manufacturing date of the product will be used to establish the warranty period.

EXCLUSIONS

This warranty only covers defects in materials or workmanship.

Engines and Other Manufacturers - Schiller Grounds Care makes no warranty with respect to engines or engine parts such as spark plugs, lubricants, starters, and carburetors. The engine warranty is covered by the engine manufacturer. Consult the Operator's Manual for the engine provided with your product or ask an authorized dealer for the terms and conditions of these warranties. Schiller Grounds Care makes no warranty with respect to other parts not of its manufacture such as tires, batteries, gearboxes, or similar. These other parts may be covered by the warranties of their respective manufacturers.

Wear Items - This limited warranty does not cover damages or defects from normal wear and tear. This limited warranty does not include routine maintenance and normal maintenance parts, including but not limited to tires, batteries, transmissions, clutches, filters, gearboxes, blades, tines, belts, chains, cables, or bearings.

Negligence and Improper Maintenance or Repair - This limited warranty does not cover any equipment that has been subject to lack of reasonable and proper maintenance, misuse, lack of proper storage, or accidents. This limited warranty does not cover any damage to the equipment that is caused by a freight carrier or is the result of failure to follow the operating instructions within the Owner's Manual. This limited warranty does not cover any defects due to repairs, modifications, or alternations made to the product by anyone other than Schiller Grounds Care or its authorized dealers. In addition, this limited warranty does not cover repairs made necessary due to a lack of proper protection during storage. This limited warranty does not cover damage caused by the use of parts, supplies, or accessories, including, without limitation, filters, spark plugs, carburetors, ignition, drive belts, brakes, gasoline, fuel, oil, or lubricants, which in the reasonable judgment of Schiller Grounds Care, are either incompatible with the product, adversely affect its operation, performance, durability or are other than as recommended in the Operator's Manual or other operational instructions provided by Schiller Grounds Care.

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Improper Use - This limited warranty does not cover any Classen Product, part, or accessory that (i) has been subject to misuse, abuse, neglect, negligence, or accident, or that has not been assembled, operated, or maintained in accordance with the operating or maintenance instructions specified in the Operator's Manual; or (ii) has been altered or modified so as to adversely affect its operation, performance or durability, or that has been altered or modified in ways not approved by Schiller Grounds Care. To the extent permitted by law, neither Schiller Grounds Care nor any company affiliated with it makes any warranties, representations, or promises as to the quality, performance, or freedom from defect of the Classen Product, part, or accessory covered by this limited warranty. The authorized dealer makes no warranty of its own and such dealer has no authority to make any representation, warranty, or promise on behalf of Schiller Ground Care or to modify the terms or limitations of this limited warranty in any way.

Other Exclusions - This limited warranty does not include reconditioned, refurbished, used, or demonstration equipment. This limited warranty excludes failures due to acts of nature beyond the manufacturer's control.

Extended Warranty - Schiller Grounds Care disclaims responsibility for any separately purchased extended warranty. ALL WARRANTIES OTHER THAN THE EXPRESS WARRANTY SET FORTH ABOVE ARE SPECIFICALLY DISCLAIMED. THE DURATION OF ANY IMPLIED WARRANTY, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY.

Disclaimer of Consequential Damage - Schiller Grounds Care disclaims any responsibility for incidental or consequential damages including, but not limited to, the expense for gasoline, the expense of delivering the product to an authorized service dealer, the expense of returning the product to the purchaser, mechanic's travel time, telephone charges, rental of a like product during the repair timeframe, travel, loss of revenue, loss of time, or inconvenience. SCHILLER GROUNDS CARE, INC. DISCLAIMS ALL LIABILITY FOR INDIRECT, INCIDENTAL, AND/OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE CLASSEN PRODUCTS COVERED BY THIS LIMITED WARRANTY. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.