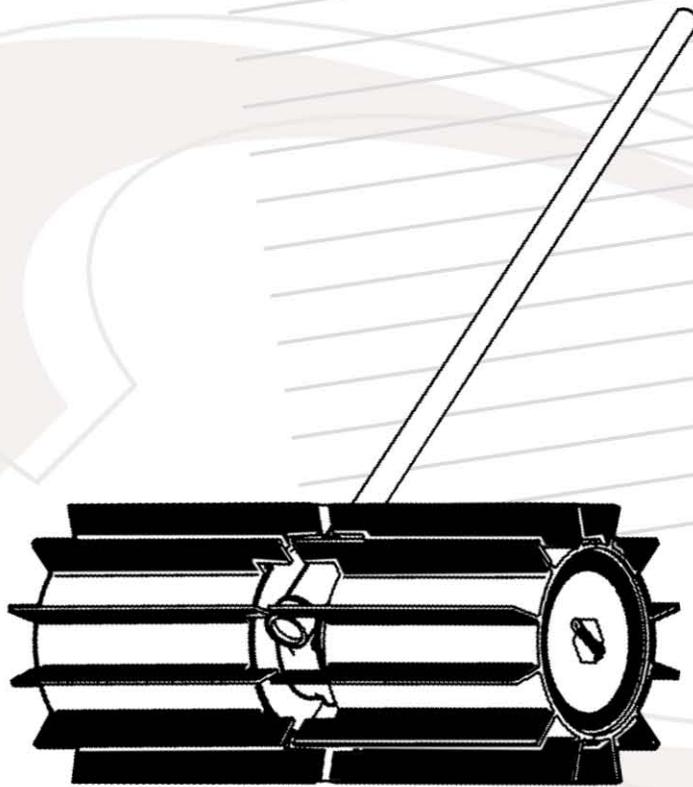


MARUYAMA

OPERATOR'S MANUAL

**MC-LS LANDSCAPE SWEEPER
ATTACHMENT**



Premium Outdoor Power Equipment

 **maruyama.**
Extraordinary.

Completely read and understand this manual prior to using this product.

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FOREWORD

This Owner's/Operator's Manual is designed to familiarize the operator with the various features and component parts of the equipment and to assist with the assembly, operation and maintenance of the product.

It is essential that any operator of this product reads and understands the contents of this manual before using the product.

Important safety instructions will be identified by the following safety symbol:

Failure to comply with the instructions in this manual may result in serious injury or death. For additional assistance, contact any local authorized Maruyama dealer or Maruyama U.S., Inc., 301 - 30th Street NE, Suite 118, Auburn, WA 98002, U.S.A.

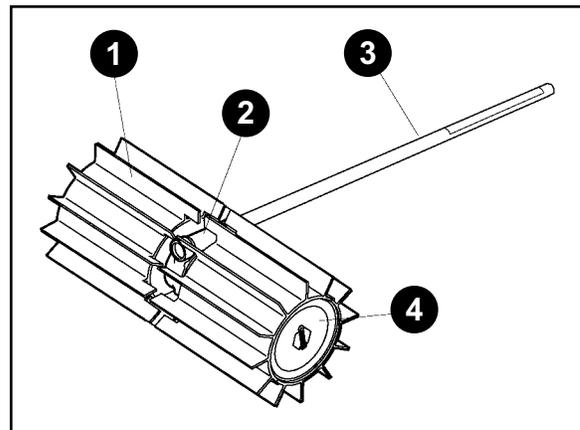
MANUAL SAFETY SYMBOLS

Throughout this manual and on the product itself, you will find safety alerts and helpful information messages preceded by symbols or key words. The following is an explanation of those symbols and key words and what they mean to you.

| | |
|---|---|
|  | <p>This symbol accompanied by the words WARNING and DANGER calls attention to an act or condition that can lead to serious personal injury to the operator or bystanders.</p> |
|---|---|

PRODUCT DESCRIPTION

1. Sweeper Belt
2. Gearcase
3. Outer Tube
4. Sweeper Drum



SAFETY INSTRUCTIONS

PRODUCT SAFETY

1. Read and understand this Owner's/Operator's Manual before using this product. Be thoroughly familiar with the proper use of this equipment.
2. Make sure the product is correctly assembled and installed prior to use.
3. Never allow children to operate the product. Never allow adults to operate the unit without first reading the Owner's/Operator's Manual.
4. Never operate this product without proper guards or other protective safety devices in place.
5. Before each use, inspect the product. Replace damaged parts. Make sure all fasteners are in place and tightened securely.
6. If running problems or excessive vibration occur, stop immediately and inspect the unit for the cause. If the cause cannot be determined, or is beyond your ability to correct, return the product to your servicing dealer for repair.
7. Do not use this product for any job except that for which it is intended.



OPERATOR SAFETY

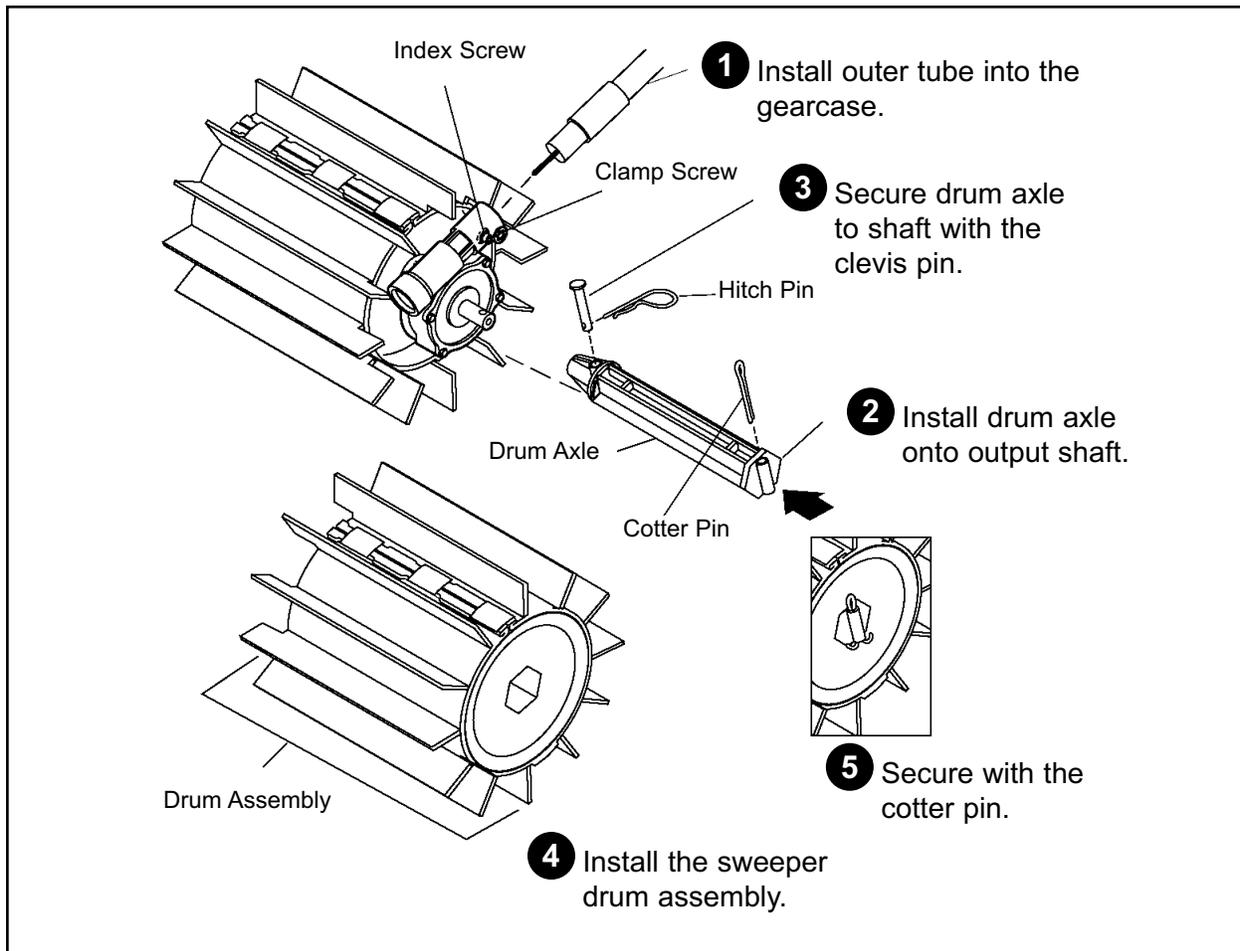
1. Never operate this product when you are tired, ill, or while under the influence of alcohol, drugs or medication.
2. Always wear eye protection that complies with ANSI (American National Standards Institute) Z87-1.
3. Wear hearing protection.
4. Always wear heavy, long pants, boots and gloves. Do not wear loose clothing, jewelry, short pants, sandals or go barefoot. Secure hair so it is above shoulder length.
5. To reduce risk of injury associated with inhalation of dust wear a face filter mask in dusty conditions.
6. Always operate with both hands firmly gripping the product.
7. Keep clear of the rotating belts and paddles at all times.
8. Never raise a moving attachment above waist level.
9. Do not put hands or feet near or under rotating parts. Keep clear at all times.
10. To reduce risk of injury associated with contact with a rotating part, stop engine before installing or removing attachments.

SAFETY INSTRUCTIONS

AWARENESS OF WORK ENVIRONMENT

1. Inspect your work area before you begin. Remove objects such as broken glass, nails, wire and rocks which can become dangerous projectiles if thrown. Remove string, rope or similar materials which can become entangled in the rotating drum.
2. Maintain a firm footing and balance while operating the product. Do not overreach.
3. Keep children, bystanders and animals outside a 50ft. (15m) radius surrounding the area of operation.
4. Use the product only in daylight or adequate artificial lighting.
5. Avoid prolonged operation in very hot or very cold conditions.
6. If contact is made with a hard object, stop the engine and inspect the sweepers and drums for damage.

ASSEMBLY INSTRUCTIONS



INSTALLING THE GEARBOX SWEEPING ATTACHMENT

1. Make sure all the components are included in the box. The box should contain:
 - a. Gearbox (1)
 - b. Drum Assemblies (2)
 - c. Drum Axle (2)
 - d. Clevis Pin (2)
 - e. Hitch Pin (2)
 - f. Cotter Pin (2)
 - g. Shaft Protector (2)
 - h. Gearcase Spacer (1)
2. Mounting of the gearcase to the drive shaft housing requires the drilling of a 15/64" hole in the drive shaft housing. Use the gearcase spacer to mark the drive shaft housing for the correct position of the hole. Observe the location of the positioning screw before you drill.
3. Slide the drive shaft housing protector onto the drive shaft housing. This can be slid up the drive shaft housing during installation, but should be slid down to rest on top of the gearcase before use.
4. Insert the end of the drive shaft housing into the gearcase and push it until it bottoms. The drive shaft tube should go into the gearcase about 1 - 1.5 inches. If the drive shaft housing stops before bottoming, rotate it until you feel the inner drive shaft splines engage the gearcase. Then push the drive shaft all of the way in.
5. Rotate the gearcase assembly so that the positioning screw aligns with the drilled hole (refer to step 2).
6. Use a 4mm hex (Allen) wrench to tighten the gearcase positioning screw first, then the gearcase clamp screw.
7. Push one of the drum axles onto either of the two gearcase output shafts. If necessary, rotate the drum axle until the clevis pin hole in the axle aligns with the matching hole in the gearcase output shafts.
8. Use a clevis pin and hitch pin to secure the drum axle to the shaft.
9. Slide the recessed end of a sweeper drum assembly over the installed axle, and then push the drum down the axle until the cotter pin hole in the axle extends above the drum surface.



Important Note: The two drum assemblies are identical, but each drum must be installed with the recessed end facing toward the gearcase.

10. Use a cotter pin to secure the drum assembly on the axle. The cotter pin is designed to fit tightly against the outboard end of the drum, so you may need to compress the drum face slightly during installation. Spread the ends of the cotter pin to secure.
11. Repeat steps 7 - 10 to install the remaining axle and drum assembly.

OPERATING INSTRUCTIONS

BREAK-IN

The Landscape Sweeper operates best when the fins quickly slide or skim the surface being swept.

New or replacement sweeper belts will tend to grip or drag on hard surfaces, and should be fully broken in prior to actual operation. Break in is accomplished by operating the product at full throttle for 3 - 5 minutes in loose gravel or similar abrasive material.

⚠ Important Note: It is tiring and unnecessary to lift or hold the fins from the work surface during operation.

⚠ Warning: Burn Danger. The gearcase will become very hot during normal operation.

OPERATING TECHNIQUES

Operate the product at or near full throttle with the sweeper fins resting on the work surface.

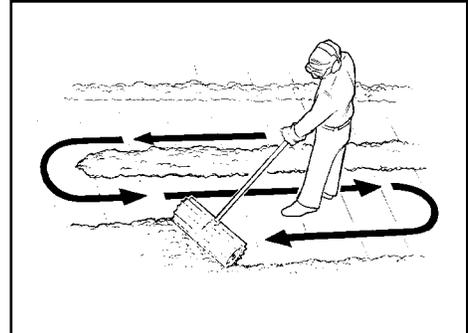
CLEARING NARROW AREAS

When sweeping narrow areas such as sidewalks, the Landscape Sweeper can be used to throw material directly ahead of the operator.

CLEARING WIDER AREAS

Clearing wider areas may require sweeping at an angle to create windrows to one side of the path being cleared.

Windrows of lighter materials can be combined into one main row or pile for eventual pick up, while heavy or bulky material may need to be collected row by row.



CLEARING CORNERS

To pull debris from corners, reverse the sweeper drum rotation by turning the powerhead over (throttle facing up).

⚠ Warning: Use lower throttle settings when reversing the Sweeper to sweep corners as debris will be thrown toward the operator in this position. Also be aware that thrown debris may affect footing.



MAINTENANCE - 300 HOURS

GEARCASE LUBRICATION

The gearcase should be filled with 60cc (2.0 fl.oz.) of Mobil SHC634 Synthetic Gear Oil. A maximum of 75 - 80cc can be used, but never exceed 80cc. Operation with excessive oil level will result in high operating temperatures. **Do not overfill.**

REPLACING THE GEARCASE OIL

 **Warning: Burn Danger. The gearcase will be extremely hot after use.**

1. Disconnect the spark plug wire at the engine.
2. Remove the left hand drum and axle assembly (as viewed from the operating position). Wipe the sideplate clean and remove four screws (it is not necessary to remove the gearcase from the outer tube).

3. Turn gearcase side plate to break the seal and lift the plate from the gearcase.

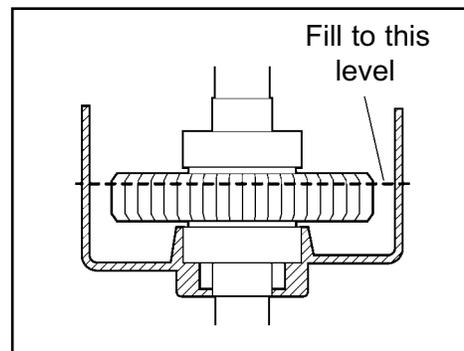
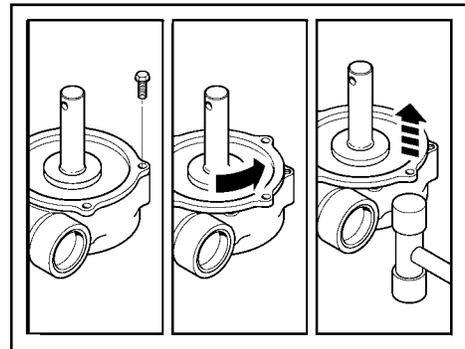
Note: It may be necessary to use a heat gun to soften the sealer material.

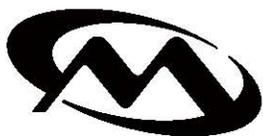
4. Turn the gearcase to the left hand side and allow all used gearcase oil to drain into a small container.
5. Place the gearcase on the right hand side and support so the outer tube is parallel to the ground. Refill the gearcase with 60cc (2.0 fl.oz.) of Mobil SHC634 Synthetic Gear Oil to the bottom of the chamfer on the output gear. The correct oil depth is 5/8 inch (15.5mm). **Do not over fill.**

6. Inspect the sideplate for damage and clean off all remaining liquid gasket material with brake cleaner or acetone. Coat the outer sealing flange of the sideplate with Loctite Ultragrey silicon sealant or Threebond No. 1104 Liquid gasket.

7. Replace the cover and install the four sideplate screws. Tighten securely.

8. Reinstall the drum and axle assembly per the Assembly Instructions on page 4.





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