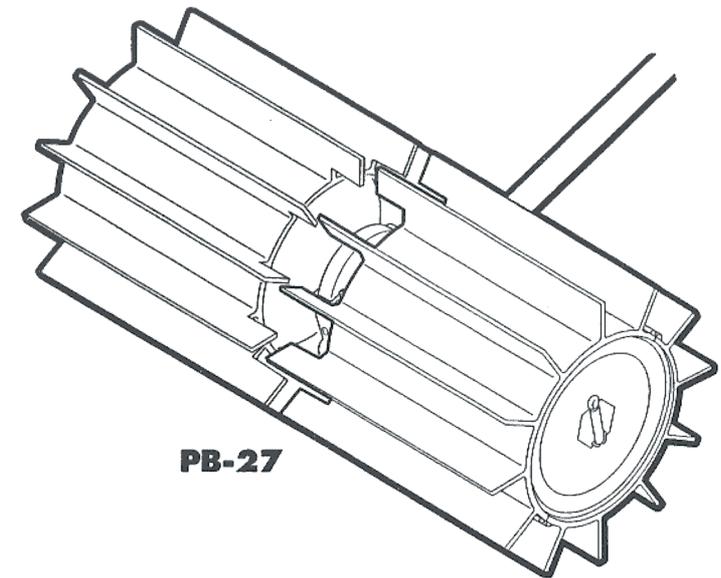


**SHINDAIWA OWNER'S MANUAL**

***PowerBroom™***



**PB-27**

**shindaiwa**

Shindaiwa Inc.  
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Shindaiwa PowerBroom is a trademark,  
and Shindaiwa is a registered trademark  
of Shindaiwa, Inc.

**shindaiwa**



**WARNING!**

Always wear eye and ear protection when operating this machine. Minimize the risk of injury to yourself and others; read this manual and the T/C-27 Operating Instructions and familiarize yourself with their contents!

## INTRODUCING THE REVOLUTIONARY NEW

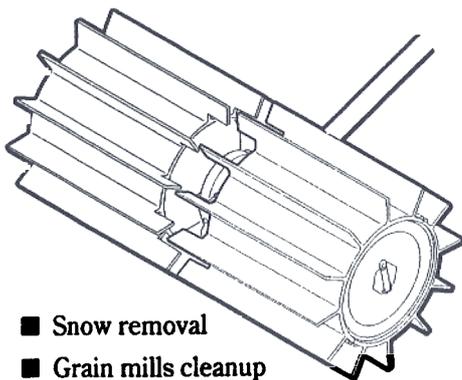
# PowerBroom™

### Congratulations!

You have purchased one of the most innovative and useful new power tools to come along in decades.

The PowerBroom was designed to make a wide variety of tasks easier and faster. Here are just some of the places where the PowerBroom has shown its versatility.

- Lawn debris and leaf removal
- Lawn thatch removal
- Break-up of matted grass
- Airport tarmac sweeping
- Barn and stall cleanup
- Parking lot cleanup
- Stadiums and arenas
- Sawdust/chip cleanup
- Industrial plant sweeping
- Golf green aeration cleanup
- Removal of sand from grass
- Snow removal
- Grain mills cleanup
- Squeegee wet surfaces
- Tennis court cleanup
- Fire/disaster cleanup
- Chemical spill cleanup
- Farm chemical cleanup
- Roofing debris cleanup
- Truck van clean-out
- Bark chips/mulch spreading
- Construction debris cleanup



1. Lay the PowerBroom flat on the floor. The drum must be positioned with one row of belt clips facing up.
2. Using a screwdriver or similar tool, pry off one set of belt clips and remove the belt assembly from the drum.
3. Butt-fit two new belt halves flat on the floor and assemble them by crimping in place three new belt clips using a strapping crimper or locking pliers.

#### IMPORTANT!

The end of each belt half has recesses to receive the clips. **Prior to crimping the clips, make sure the clip recesses match!**

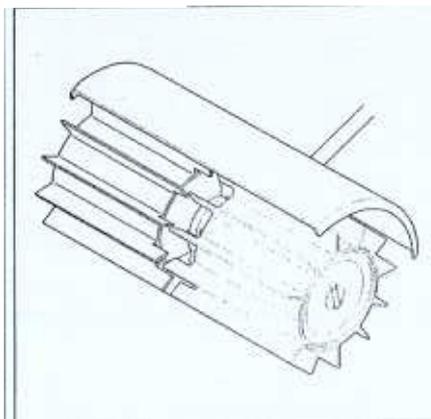
4. Wrap the belt assembly around the drum.

#### IMPORTANT!

The side of the belt assembly with extending blades must face toward the gearcase. The other side must be flush with the edge of the drum.

5. Secure the belt assembly to the drum by crimping three new belt clips in the appropriate recesses.
6. To replace the belts on the other drum, repeat Steps 1 through 5.

## DEBRIS SHIELD



A plastic debris shield (Part Number 99909-33021) is available from your Shindaiwa dealer as a useful option to your PowerBroom. The shield helps prevent broadcasting debris when large volumes of material are forced over the top of the drum during operation.



READ AND FOLLOW THE OPERATOR'S MANUAL. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY.



WEAR EYE AND EAR PROTECTION AT ALL TIMES DURING THE OPERATION OF THIS MACHINE



BEWARE OF THROWN OBJECTS. KEEP BYSTANDERS AT LEAST 50 FEET (15 M) AWAY DURING OPERATION.



DO NOT OPERATE THIS TOOL IF YOU ARE TIRED, ILL OR UNDER THE INFLUENCE OF ALCOHOL, DRUGS, OR MEDICATION.

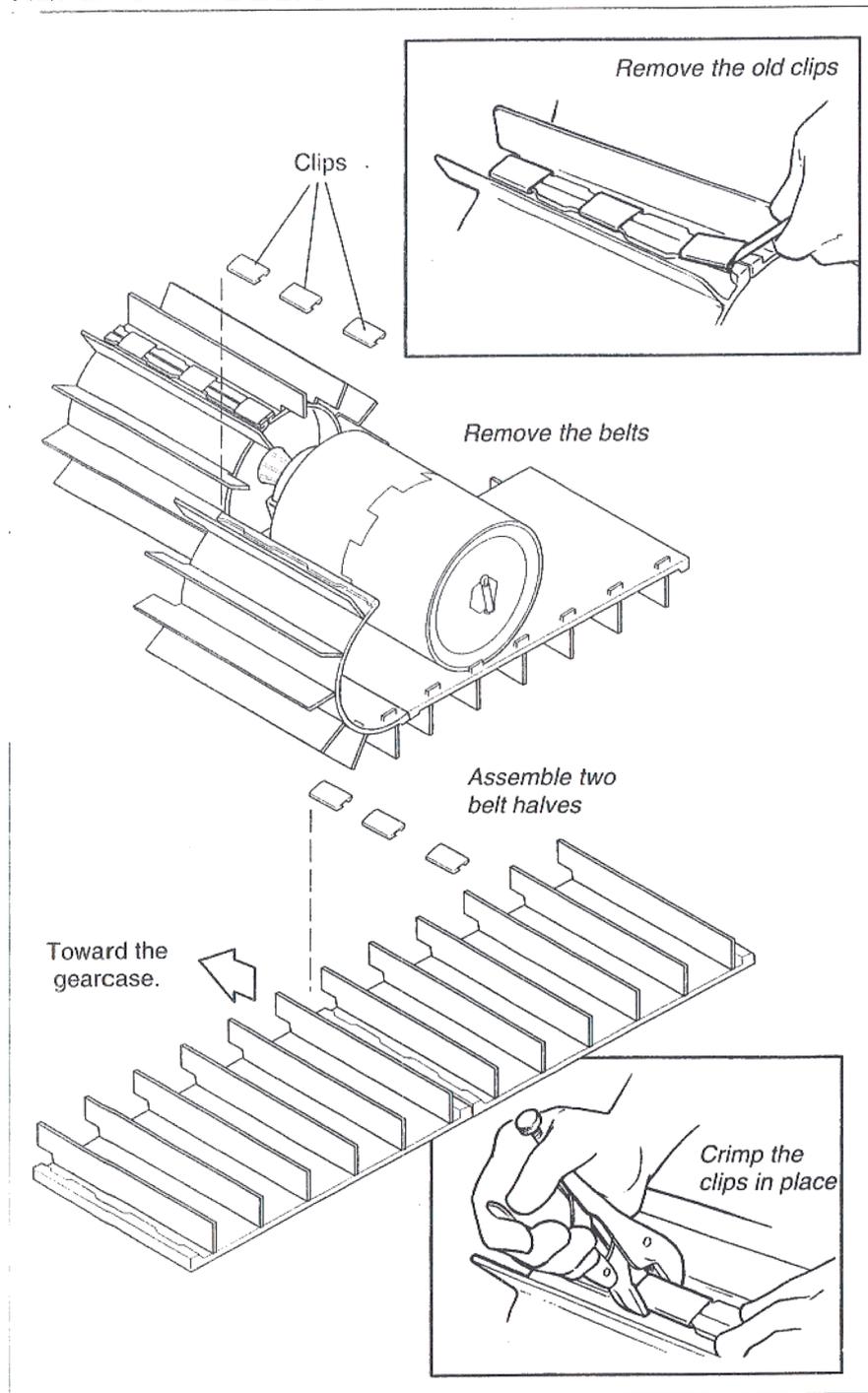
Shindaiwa is very interested in how the PowerBroom works for you. Please send us your comments about how you use the PowerBroom and any ideas on how it might be improved to be an even better product

# shindaiwa

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The Shindaiwa PowerBroom is manufactured under U.S. Patent Nos. 5161318 and 5269082. Foreign patents pending.

## REPLACING BELTS



## INTRODUCTION

This manual contains assembly, operating, safety, and maintenance instructions for using the Shindaiwa PowerBroom.

For your own safety, and for maximum performance from your PowerBroom, do not operate the unit until you have read both this manual and the T/C-27 Operating Instructions supplied with the powerhead. If there is any portion of either manual that you do not understand, or if you require additional manuals, please contact your Shindaiwa dealer or distributor.

For the name of the Shindaiwa representative in your area, please call **503-692-3070** between the hours of 8AM and 5PM Pacific Standard Time.

- Read and follow the Operating Instructions. Failure to do so could result in serious injury and/or equipment damage.
- Wear eye and hearing protection at all times while operating this unit.
- Beware of thrown objects. Keep bystanders at least 50 feet (15 meters) away while the PowerBroom is operating.
- Do not operate the PowerBroom if you are tired, ill, or under the influence of alcohol, drugs, or medication.

## ATTENTION STATEMENTS

Throughout this manual are special "attention statements" surrounded by boxes and preceded by the triangular Attention Symbol.



### WARNING!

A statement preceded by the word "WARNING" contains information that should be acted upon to prevent serious bodily injury.



### CAUTION!

A statement preceded by the word "CAUTION" contains information that should be acted upon to avoid damaging your PowerBroom.

Additional attention statements that are not preceded by the Attention Symbol are:

### IMPORTANT!

A statement preceded by the word "IMPORTANT" is one that possesses special significance.

### NOTE:

A statement preceded by the word "NOTE" contains information that is handy to know and may make your job easier.

## PRIOR TO ASSEMBLY

### IMPORTANT!

The operational procedures described in this manual are intended to help you get the most from your machine as well as to protect you and others from harm. These procedures are guidelines for safe operation under most conditions, and are not intended to replace any safety rules and/or laws that may be in force in your area.

If you have questions regarding your PowerBroom, or if you do not understand something in this manual, your Shindaiwa dealer will be glad to assist you.

You may also contact Shindaiwa, Inc. at the address printed on the back of this Manual.



#### WARNING!

Do not make unauthorized modifications or alterations to this unit or its components.

The PowerBroom is shipped disassembled in three separate packages including powerhead, tube and gearcase assembly, and the PowerBroom drum assembly.

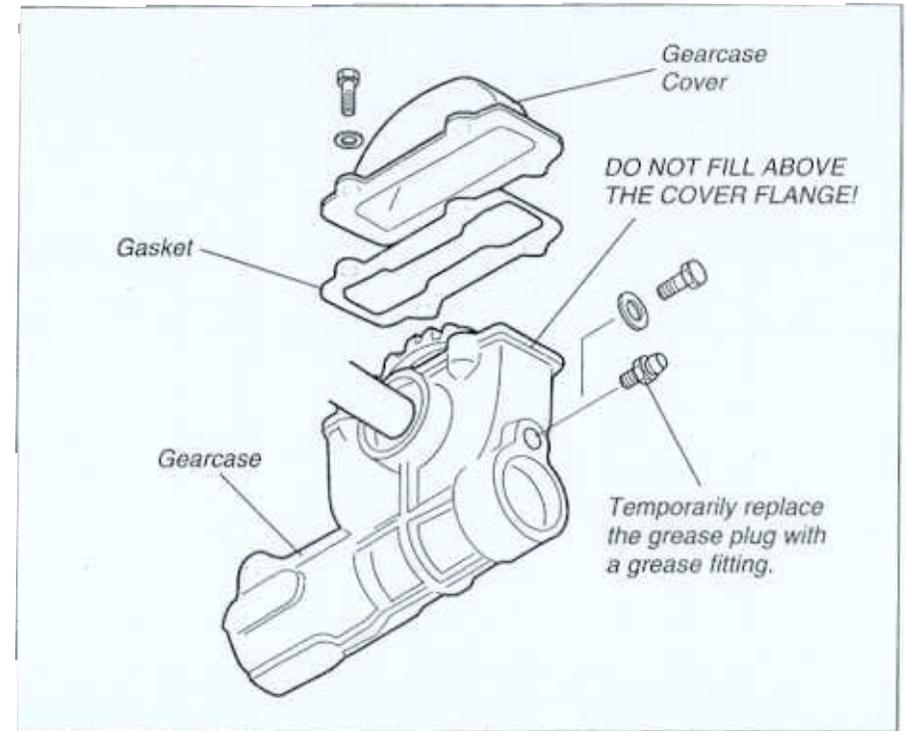
Instructions for assembling the powerhead and tube assembly are provided in the T/C-27 Operating Instructions supplied with the powerhead. Instructions for assembling the PowerBroom assembly are provided with this manual.

Before assembling the PowerBroom, familiarize yourself with the unit and its components (use the illustration and parts list on the next page as a reference). Inspect all components for correct quantity and condition.

Understanding your machine helps ensure safer operation, maximum performance, and longest possible service life.

#### Tools required for assembling the PowerBroom

- 5 mm allen wrench (from the T/C-27 tool kit)
- 4 mm allen wrench (from the T/C-27 tool kit)
- Locking pliers
- This manual



6. Use a scraper or shop rag to remove all excess grease from above the level of the gearcase cover flange.



#### CAUTION! DO NOT OVERGREASE!

Filling above the cover flange may cause the PowerBroom gearcase to overheat.

- Inspect the shaft tube protector for wear, and replace if necessary.
- Inspect the sweeper belts, belt clips, and drums for signs of excessive wear or damage, and replace as necessary.

Individual belts may be replaced without disassembling the PowerBroom. Instructions for belt installation are on the pages 14-15.

7. Replace the cover gasket and cover, and then install and firmly tighten the four gearcase cover screws.
8. Remove the grease fitting installed in Step 4, and then replace and firmly tighten the grease plug.

## PERIODIC MAINTENANCE

Your PowerBroom's performance and durability will be determined largely by the degree of attention and care it receives.

Basic powerhead maintenance and adjustment procedures are covered in the Shindaiwa T/C-27 owners manual.

Additional maintenance requirements to the PowerBroom include:

### DAILY MAINTENANCE

- Inspect and service the T/C-27 air cleaner element. Check the engine cylinder fins and cooling system for clogging, and clean as required.
- Remove any accumulations of dirt and debris from the PowerBroom drive assembly. Any build-up in this area can lead to engine overheating and/or premature equipment wear.
- Carefully check the entire machine for loose components or fasteners. Check all cables and controls for full travel and smooth operation.
- Inspect the gearcase for signs of damage or grease leakage. If evident, return to your Shindaiwa dealer for service or repair.

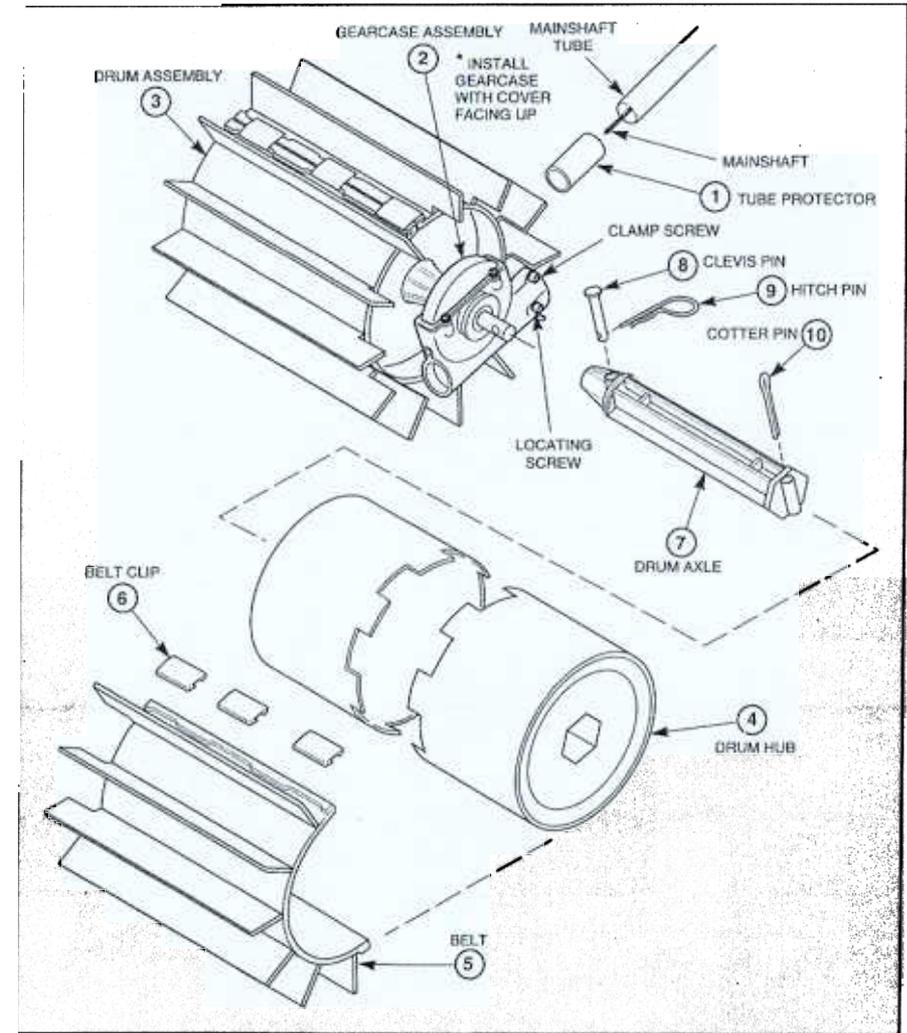
### 40-HOUR MAINTENANCE

#### NOTE:

PowerBroom gearcase lubrication requires a high-pressure lever-action grease gun capable of dispensing a standard 14.5-oz tube of grease. If you are not equipped to perform this operation, see your Shindaiwa dealer.

1. Place the assembled PowerBroom upright on a level work surface and wipe all dirt and old grease from the gearcase cover and housing
2. Remove the four gearcase cover retaining screws, and then lift off the gearcase cover and gasket.
3. Using a wooden spatula or small screwdriver, scrape all old lubricant from inside the gearcase and gearcase cover, and from around the worm wheel.
4. Temporarily replace the grease plug with a 6 mm grease fitting as shown.
5. Connect a high-pressure lever action grease gun to the grease fitting installed above and add **Shindaiwa High Temperature Gearcase Lube** until all old grease has been forced from the gearcase.

## ASSEMBLY PARTS



INDEX	ITEM	QUANTITY	PART NUMBER
2	Gearcase Assembly	1	72953-33000
3	Drum Assembly	2	99909-33002
4	Drum Hub (2 per ass'y)	4	99909-33004
5	Belt (2 per ass'y)	4	99909-33005
6	Belt Clip (6 per ass'y)	12	99909-33007
7	Drum Axle	2	99909-33016
8	Clevis Pin	2	99909-33017
9	Hitch Pin	2	99909-33008
10			

## ASSEMBLING THE PB-27 (refer to the diagram on page 3)

Before the PB-27 components can be assembled, the PowerBroom gearcase must be temporarily removed from the mainshaft to allow installation of the mainshaft tube protector.

### IMPORTANT!

The tube protector protects the mainshaft tube from abrasion, and should be replaced whenever measurable wear is observed.

### Installing the Shaft Tube Protector

1. Use the 4 mm allen wrench to remove the locating screw from the side of the gearcase housing.
2. Use the 5 mm allen wrench to loosen the clamp screw at the input end of the gearcase housing.
3. While holding the mainshaft tube firmly with one hand, remove the gearcase assembly from the mainshaft tube and mainshaft.
4. Force the black vinyl tube protector over the end of the mainshaft tube, and then position it about 1-1/2 inches up from the end of the tube. If installation is difficult, apply a few drops of liquid soap or silicone grease to the end of the shaft tube.
5. Hold the mainshaft tube firmly in one hand, and reinstall the gearcase over the mainshaft splines and onto the shaft tube assembly. If necessary, rotate the gearcase on the shaft tube until the splines engage.

6. Rotate the gearcase on the shaft tube until the hole in the wall of the shaft tube aligns with the locating hole in the gearcase, and then install and tighten the locating screw in the reverse order of disassembly.

7. Firmly tighten the clamp screw at the input side of the gearcase housing.

8. Slide the tube protector to butt against the gearcase.

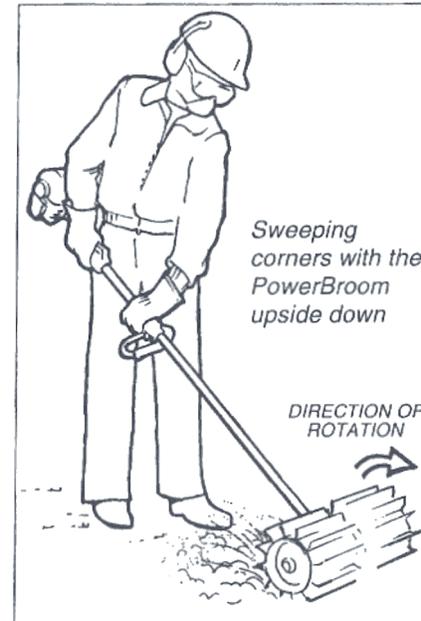
### Install the Axles and Drum Assemblies

1. Push one of the drum axles onto either of the two gearcase output shafts, and then secure the axle with a clevis pin and clip. Repeat the procedure for the other axle.
2. Firmly push one drum assembly over one of the drum axles. Use a cotter pin to lock the drum in place. Repeat the procedure for the other drum.

### IMPORTANT!

The two drum assemblies are identical, but each drum must be installed with its recessed end facing toward the gearcase. The cotter pins are designed to fit tightly against the outboard ends of the drums, so you may need to compress the drum faces slightly during installation.

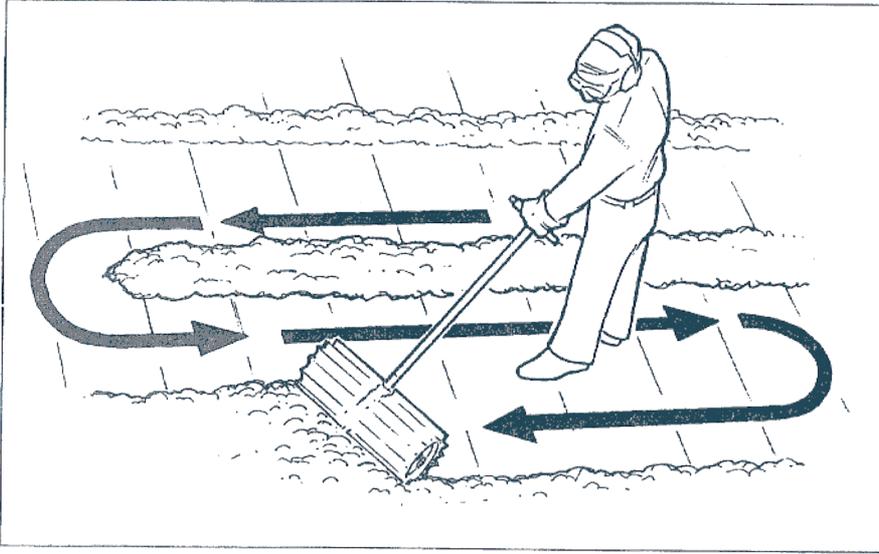
The PB-27 should now be completely assembled.



### WARNING!

Reversing the PowerBroom will cause debris to be thrown back toward the operator. When reversing the PowerBroom, use lower throttle settings and beware that thrown debris may also affect your footing!

## OPERATING TECHNIQUES



Operate the PowerBroom at or near full throttle with its sweeper fins resting on the work surface. It is both tiring and unnecessary to lift or hold the fins from the work surface during sweeping.

When sweeping narrow areas such as sidewalks, the PowerBroom can be used to throw material directly ahead of the operator. Clearing wider areas may require sweeping at an angle to create windrows to one side of the path being cleared.

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

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

## CONVERTING A T/C-27

A PowerBroom attachment is available to convert an existing T/C-27 grass trimmer or brushcutter.

Component installation is similar to the assembly process described on page 4 (opposite), except that the end of the T/C-27 shaft tube must first be drilled to accommodate the 5 mm locating screw on the PowerBroom gearcase.

Use the following procedure to mark and drill the locating screw hole:

1. Remove the T/C-27 gearcase and debris shield.
2. Place the T/C-27 on the floor, resting on its tank stand, and temporarily install the PowerBroom gearcase on the shaft tube.
3. Rotate the gearcase on the shaft tube so that its output shafts are parallel to the floor and its grease cover is facing up.



### CAUTION!

The PowerBroom gearcase must be installed with its grease cover facing up during normal operation!

4. Install the 5 mm locating screw, and then tighten the screw only enough to mark the drilling location on the shaft tube.
5. Remove the locating screw, and then remove the gearcase.
6. At the exact site determined in Step 4, drill a 5.56 mm (7/32 inch) hole in the shaft tube.



### CAUTION!

Remove the mainshaft before drilling the shaft tube! Collect and discard all metal chips and other drilling debris!

## BREAK-IN AND OPERATION

**ALWAYS** wear hearing protective devices.



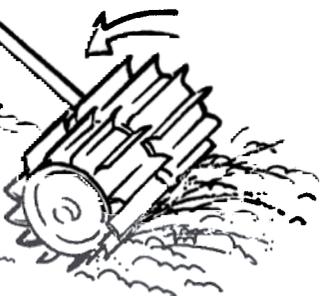
### The Properly Dressed Operator

**ALWAYS** wear eye protection such as goggles or safety glasses.

**ALWAYS** wear a mask to protect against dust or other airborne particles.

**ALWAYS** wear close-fitting clothes. Gloves offer added protection and are strongly recommended. Do not wear clothing or jewelry that could get caught in machinery.

DIRECTION OF ROTATION



**ALWAYS** wear leather or heavy-rubber shoes.

The PowerBroom works best when its rubber fins can quickly slide or "skim" over the surface being swept.

New or replacement sweeper belts tend to grip or drag on hard surfaces, and should be thoroughly broken in or "scuffed" before the broom is actually put to work.

Break-in is easily accomplished by operating the PowerBroom at full throttle for 3 to 5 minutes in loose

gravel or similar abrasive material. Once broken in, a PowerBroom will effortlessly move an amazing variety of materials, ranging from snow or standing water to heavier objects such as gravel or wood chips.

Experience will help you understand the operating principles of the Power-Broom, but safe operation must be practiced from the start.

## OPERATING THE POWERBROOM



Maintain a shallow working angle.



A steep working angle risks loss of control!



**WARNING!** MAINTAIN A SHALLOW ANGLE TO THE WORK SURFACE WHENEVER THE DRUMS ARE ROTATING! A high angle of operation tends to propel the broom toward you, risking the loss of machine control.



**WARNING!** THE SWEEPER DRUMS MAY ROTATE WHEN THE POWERBROOM IS STARTED. When starting the PowerBroom, maintain a firm grip on its handle and control lever. Beware of objects that may become entangled in or be thrown by the rotating drums.



**CAUTION!** For maximum safety and product performance, every PowerBroom operator must read and understand this manual as well as the owners manual for the T/C-27.



**WARNING!** The PowerBroom is designed to operate by vigorously pushing objects ahead of itself. Although the PowerBroom's flexible rubber fins are less forceful than a lawnmower blade, avoid any operation where thrown objects could pose a threat to persons or property!



**CAUTION!** Refer to your T/C-27 owners manual for proper fueling and starting procedures. Before starting the PowerBroom, verify that all fastenings are tight and that controls are properly adjusted and working freely.