

Minuteman[®] ***PowerBoss***[®]

OWNER'S MANUAL
4000 Sweeper/Scrubber[™]



Minuteman PowerBoss, Inc.

175 Anderson Street

Aberdeen, North Carolina USA 28315

(910) 944-2105 / FAX (910) 944-7409

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4000 Sweeper Scrubber[™]



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Aberdeen, North Carolina USA 28315
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The Model and Serial Numbers of your machine are shown on the nameplate mounted on the machine. This information is needed when contacting Technical Support or ordering parts. For your convenience, use the space below to record the Model and Serial Numbers of your machine and the date it was placed into service.

MODEL NUMBER: _____

SERIAL NUMBER: _____

DATE PLACED INTO SERVICE: _____

All information contained in this manual is current at the time of printing. However, due to constant updates and improvements, we reserve the right to make changes at any time without notice.

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4000 Sweeper Scrubber[™]

(LIMITED) PRODUCT WARRANTY

Minuteman PowerBoss, Inc. (hereafter known as PowerBoss) warrants that the 4000 Sweeper Scrubber[™] will be free from defects in material and workmanship for a period of 24 months or 1,200 operating hours from date of installation, whichever comes first. Written notice of any claimed defect must be given to PowerBoss within the warranty period and within thirty (30) days after such defect is discovered. Liability under this warranty is limited to either replacing or repairing, at PowerBoss's election, any part or parts deemed defective after examination by PowerBoss or an Authorized Service Representative. The PowerBoss machine or any of its parts returned by customer to PowerBoss or an Authorized Service Representative via prepaid transportation and which is found to be defective, will be repaired or replaced and returned to customer via prepaid surface transportation within the Continental US. On the other hand, should a part be found not defective, inspection and handling charges may be charged to the customer by PowerBoss or an Authorized Service Representative.

For one hundred eighty (180) days from date of installation, PowerBoss will provide repair labor, at no charge, solely through an Authorized Service Representative. Thereafter, labor will be charged.

This warranty does not extend to the PowerBoss machine, or its parts, that have been subject to misuse, accident or improper handling, installation, maintenance or application, nor does it extend to PowerBoss machine and/or parts which have been repaired or altered outside PowerBoss's plant or the facility of Authorized Service Representative.

This warranty does not apply to routine wearable parts of the PowerBoss machine such as brushes, flaps, filters, seals, hoses or similar items. Moreover, this warranty does not extend to the PowerBoss machine or part replaced or repaired under this warranty.

Only replacement parts supplied by PowerBoss are warranted for 30 days after installation.

THE WARRANTY SET FORTH HEREIN IS IN LIEU OF AND EXCLUDES ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND CUSTOMER WAIVES ANY OBLIGATION OR LIABILITY OF POWERBOSS ARISING IN TORT OR STRICT LIABILITY IN TORT, OR FOR LOSS OR USE, REVENUE OR PROFIT WITH RESPECT TO POWERBOSS MACHINE AND/OR PARTS FOR ANY LIABILITY OF CUSTOMER TO ANY THIRD PARTY, OR FOR OTHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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SAFETY SYMBOLS



DANGER: To warn of immediate hazards which will result in severe personal injury or death



WARNING: To warn of hazards or unsafe practices which could result in severe personal injury or death.



CATUION: To warn of hazards or unsafe practices which could result in minor personal injury.



ATTENTION!: To warn of practices which could result in extensive equipment damage.



NOTE: To direct your attention to important equipment information or special instructions for preventing damage to equipment

BASIC PowerBoss[®] SAFETY

This PowerBoss[®] 4000 Sweeper / Scrubber should never be operated unless: 1. The operator is trained and authorized to operate the equipment and, 2. The equipment is free of malfunctions. Malfunctioning equipment should be removed from service.



1. ***Charging batteries generate explosive gases. DO NOT CHARGE BATTERIES WHEN OPEN FLAMES OR SPARKS ARE PRESENT. DO NOT SMOKE. Make sure the charger is turned off before disconnecting it from the machine. Charge the batteries in a well ventilated area with the battery cover removed completely.***
2. ***Electrical motors and components can cause an explosion when operated near explosive materials or vapors. Do not operate this machine near flammable materials such as solvents, thinners, fuels, brain gust and etc.***



1. ***Before operating the machine, make sure that:***
 - ***All covers and doors are closed.***
 - ***You are securely seated in the operator's seat.***
 - ***The parking brake is locked.***
 - ***The directional control pedal is in neutral.***
2. ***During operation:***
 - ***Keep your hands and body clear of moving parts.***
 - ***Make sure others in the area stay clear of the equipment and moving parts.***
 - ***Loose objects on the floor can become dangerous projectiles if struck by the high-speed pad. Special attention should be paid in removing or avoiding loose floor tile, electrical cables, telephone connection boxes, and etc..***
 - ***These machines are designed for level floor operation only. DO NOT OPERATE ON RAMPS OR INCLINES.***
 - ***This machine is not suitable for picking up hazardous dust.***

BASIC PowerBoss[®] SAFETY (Continued)**3. During cleaning and maintenance:**

- *Maintenance and repairs must be performed by authorized personnel.*
- *Make sure the red Emergency Disconnect Button is pressed and the battery connector is unplugged from the machine before performing any service or maintenance procedures.*
- *Disconnect the power to the machine by disconnecting the battery connector located at the batteries when charging the batteries or during installation or removal of pads.*
- *Do not clean this machine with a pressure washer.*
- *Battery acid can cause burns. When working on or around batteries, wear protective clothing and safety glasses. Remove metal jewelry. Do not lay tools or metal objects on top of the batteries.*
- *Store or park this machine on a level surface only, with the parking brake engaged. To prevent unauthorized use, this machine should be stored with the key removed.*

BASIC OPERATING CONTROLS

- INSPECTION** Carefully unpack and inspect your 4000 Sweeper / Scrubber for shipping damage. Each unit is tested and thoroughly inspected before shipment; any damage is the responsibility of the delivery carrier who should be notified immediately.
- ELECTRICAL** This machine is battery operated and designed to operate on either: six (6) 6-volt OR one (1) 36 volt industrial battery no larger than (L x W x H) = 31.19" x 19.50" x 22.75" (792.2 mm x 495.3 mm x 577.9 mm).
- BATTERIES** The recommended batteries are either: six (6) 370Ah 6-volt (PowerBoss P/N 956715) OR one (1) 450Ah 36-volt (PowerBoss P/N 3323375) OR one (1) 660Ah 36-volt (PowerBoss P/N 3347323), depending on how the machine is factory equipped.
- OPERATION** Before starting, familiarize yourself with the machine and its controls.
- KEY SWITCH** "I" turns power to the machine **ON**. "O" turns power to the machine **OFF**. (When the switch is on, a green light will be lit.)
NOTE: Timed filter shaker will automatically shake when the power is turned to the **ON** position.
- EMERGENCY DISCONNECT** When the large red button is pressed, the batteries will be electrically isolated from the rest of the machine. Use this button in case of a machine emergency. The same red button is raised in order to operate the machine.
- HORN** Depressing the horn button will activate the horn.

BASIC OPERATING CONTROLS (Continued)

HOUR METER / BATTERY FUEL GAUGE

This meter has two functions:

1. It tells the operator the number of hours that the machine has been operated and
 2. It indicates the state of charge on the batteries.
- The hour meter will track time whenever the machine moves. This information is useful for maintenance purposes. The battery fuel gauge shows the actual amount of charge left in the batteries. When the battery is completely charged, the green light segment all the way to the right will be illuminated, As the battery begins to discharge, the light segment that is illuminated will slowly move to the left. When the battery gets below half charge, the light segment that is illuminated will be yellow in color. When the battery gets to be significantly discharged, the light segment will be red in color and flash.

When the fuel gauge is yellow, the operator should begin to prepare to recharge. When the fuel gauge is red, the battery is dangerously low and needs to be recharged IMMEDIATELY.

Permanent battery damage can happen from a deep discharge.

CIRCUIT BREAKER PANEL

The circuit breaker panel is located on the left side of the operator and contains the circuit breakers for the entire machine. The following circuits are protected:

- | | |
|---|---------------------------------|
| 1. Drive Motor (90 amp) | 7. Scrub Brush Motor 1 (50 amp) |
| 2. Squeegee Vacuum (50 amp) | 8. Scrub Brush Motor 2 (50 amp) |
| 3. Water Flow / Brush Pressure (30 amp) | 9. Scrub Brush Motor 3 (50 amp) |
| 4. Brooms (30 amp) | 10. Power Steering (40 amp) |
| 5. Main Power (18 amp) | |
| 6. Hopper Dust Control (30 amp) | |

BASIC OPERATING CONTROLS (Continued)

ACCELERATOR / DIRECTIONAL CONTROL PEDAL

Located on the right side of the operator compartment on the floor is the accelerator / directional control pedal. When the right side of the pedal is pressed, the machine will move forward. The further the pedal is pressed the faster the machine will move. When the left side of the pedal is pressed, the machine will move backwards. The further the pedal is pressed, the faster the machine will move backwards. The accelerator pedal is interlocked with a seat switch, making machine propulsion not possible without the operator sitting on the seat.

HOPPER DUMPING

After sweeping, the hopper should be dumped. First, close the hopper door by depressing the top of the hopper door switch until the actuator ratchets and the red light is lit. Next push the top of the hopper raise switch until the actuator ratchets (approximately 25 seconds). Drive forward cautiously until the hopper is over the dumpster (60"). Open the dump door by pressing the bottom of the switch. The actuator will ratchet and the red light will be off. Back up cautiously from the dumpster and lower the hopper. You are now ready to sweep.

NOTE

The red light on the dash panel indicates that the dump door is closed and no debris can be swept into the hopper.

CAUTION

Permanent damage can occur to the lift actuator while operating the machine when the hopper is in the raised position. Use caution while dumping debris into dumpsters.

OPERATING INSTRUCTIONS

SCRUB FUNCTION KEYBOARD

FULL FUNCTION MODE: When this mode is chosen a green indicator light will illuminate within the full function icon. When the machine is running in this mode, all machine functions will be on. When the operator presses the accelerator forward, the solution pump will turn on, the brushes will turn on and be lowered to the floor, and the squeegee will be lowered to the floor as the vacuum motor turns on. While operating in this mode the solution will be dispensed above the brushes which will scrub the floor allowing the chemical in the solution to break down the dirt on the floor. As the machine continues to move forward, the vacuum motor will pull the dirty solution water from the squeegee to the recovery tank. If the operator stops moving forward and begins to move backward, the squeegee will raise up (protecting it from damage) and the vacuum motor will turn off after a few seconds. If the operator quits moving in either direction, the machine will automatically raise the squeegee, and turn off the brushes. Some of the functions take a little while longer to turn off than others.

DOUBLE SCRUB MODE: When this mode is chosen a green indicator light will illuminate within the double scrub icon. When the machine is running in this mode, the machine will perform all operations except dirty solution recovery. This mode can be used if the floor is heavily soiled and the chemical will need additional time to emulsify grease and oils that are on the floor. When the operator presses the accelerator forward, the solution pump will turn on, and the brushes will turn on and be lowered to the floor. While operating in this mode the solution is dispensed above the brushes which will scrub the floor allowing the chemical in the solution to break down the dirt on the floor. As the machine continues to move forward, the squeegee and vacuum system are not on, which will allow the solution to stay on the floor emulsifying the grease and oil. If the operator stops moving in either direction, the machine will automatically turn off the brushes. After double scrubbing, the operator should use the vacuum only mode to recover the dirty solution water from the floor.

VACUUM ONLY MODE: When this mode is chosen a green indicator light will illuminate within the vacuum only icon. When the machine is running in this mode, the machine will only lower the squeegee and turn on the vacuum system to recover the dirty solution from the floor. This mode is usually used after double scrubbing to recover the dirty solution but it also can be used to pick up spills. When the operator presses the accelerator forward the squeegee will be lowered to the floor as the vacuum motor turns on, pulling the dirty solution water from the squeegee to the recovery tank. If the operator stops moving forward and begins to move backward, the squeegee will retract (protecting it from damage) and the vacuum motor will turn off after a few seconds. If the operator quits moving in either direction, the machine will automatically raise the squeegee, and turn off the vacuum motor after a couple of seconds.

TRANSPORT MODE: When this mode is chosen a green indicator light will illuminate within the transport icon. When the machine is running in this mode, none of the cleaning functions of the machine will operate. This mode is only used to transport the machine from one location to another at a higher rate of speed.

OPERATING INSTRUCTIONS (Continued)

SCRUB FUNCTION KEYBOARD (CONTINUED)

PUMP FLOW ADJUSTMENT: These buttons are used to adjust the flow of solution to the brushes. The buttons can be used to select one of four solution flow rates: .3, .7, 1.1 or 1.5 gal/min. The volume is adjusted by either pressing the increase or decrease flow rate buttons. The number of lights that are illuminated under the pump icon represent the flow rate setting. Adjustments can be made in the full function and double scrub modes.

BRUSH PRESSURE ADJUSTMENT: These buttons are used to adjust the brush pressure. The buttons can be used to select one of three brush pressures: heavy, medium or light. The pressure is adjusted by either pressing the increase or decrease brush pressure buttons. The number of lights that are illuminated inside the weight icon represent the brush pressure setting. Adjustments can be made in the full function and double scrub modes.

RECOVERY TANK FULL INDICATOR LIGHT: The light inside this icon will be illuminated when the recovery tank is full. After the recovery tank is full for 10 seconds, the machine will automatically go into transport mode. This will turn off the vacuum motors, protecting them from being filled with water.

SOLUTION TANK EMPTY INDICATOR LIGHT: The light inside this icon will be illuminated when the solution tank is close to empty. When the light is on, there is approximately 5 gallons left of solution. This is to give the operator advance warning that the solution is about to run out.

DASH PANEL CONTROLS

HOPPER RAISE / LOWER SWITCH: To raise the hopper, push the top of the switch forward. It takes approximately 25 seconds, when the actuator ratchets it is fully raised. To lower the hopper, press the bottom of the switch until the actuator ratchets.

****WARNING****

NEVER DRIVE THE MACHINE WHILE THE HOPPER IS IN THE RAISED POSITION. PERMANENT ACTUATOR DAMAGE COULD OCCUR.

HOPPER DUMP DOOR SWITCH: To close the hopper dump door, push the top of the switch forward until the actuator ratchets. The red indicator light to the right of the switch will be lit when the door is closed. To open the door push the bottom of the switch until the actuator ratchets and the red light is off.

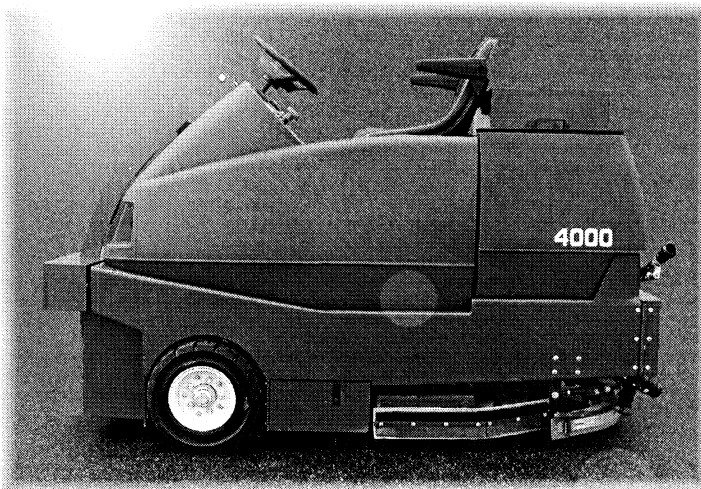
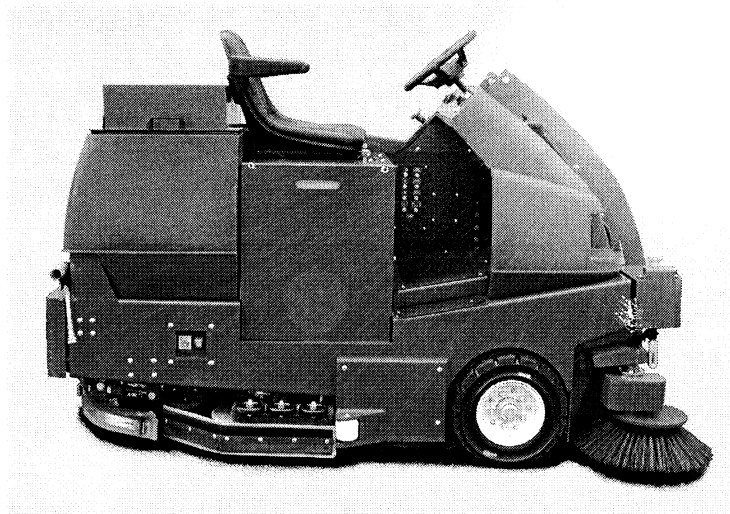
MAIN BROOM SWITCH: To turn the main broom on, push the top of the switch forward. The main broom drive motor will turn on and the broom will lower to the set sweep position. To turn off, push the bottom of the switch. The Main broom drive motor will turn off, the broom will raise and the timed automatic filter shaker will activate for approximately 15 seconds.

OPERATING INSTRUCTIONS (Continued)

DASH PANEL CONTROLS RIGHT SIDE (CONTINUED)

SIDE BROOM SWITCH: To turn on the side broom, push the top of the switch forward. The side broom will turn on and lower to the set sweeping position. To turn off, push the bottom of the switch. Side broom motor will turn off and raise to its up position.

DUST CONTROL (HOPPER) SWITCH: When sweeping in a dusty environment, this function should be used. To activate the dust motor push the top of the switch forward and the motor turns on. To turn off, push the bottom of the switch.



SERVICING / MAINTENANCE

BATTERY RECHARGING

The battery recharge port is located inside of the cowling on the right side. (gray 175 Anderson Connector) The charger used should have the same type 175 Anderson Connector. To recharge, turn off the key and plug the charger into the recharge port.

NOTE

The seat should be lifted to allow for proper venting of gases.

The recharge port is interlocked so that when the charger is plugged in, the machine can not be turned on. This system is designed to protect the operator and the equipment. When the battery is completely charged, disconnect the charger from the recharge port and lower the seat.

NOTE

The charger must be 36 V DC output with a gray 175 Anderson Connector.

OFF-AISLE CLEANING ATTACHMENT

One side of the recovery hose should be inserted into the recovery tank intake port and the other into the wand. To do this, disconnect the 2" hose from the main squeegee tool and connect the hose to the adapter on the wand hose. The high-pressure solution hose should be connected into the high-pressure hose on the wand and to the high-pressure attachment port on the side of the machine.

To energize the system, press the switch adjacent to the high-pressure attachment port on the right side of the machine. This will turn the pump ON to full pressure and turn ON the vacuum system. To dispense the solution, squeeze the trigger, which will dispense the cleaning solution from the spray jet on the nozzle onto the floor. Use the scrub brush on the nozzle to scrub the solution into the floor and break down the dirt. Then turn the nozzle over to the squeegee side and vacuum the dirty solution into the recovery tank.

To turn the system OFF, press the switch adjacent to the high-pressure attachment port.

HOPPER FILTER

Replace once a year or as needed.

SERVICING / MAINTENANCE (Continued)

SOLUTION TANK The solution tank is located on the right side of the machine. To fill, remove the top lid, add clean water and cleaning chemicals. To drain the solution, swing open the rear bumper, remove the hose on the right side from its cradle and remove the plug.

RECOVERY TANK The recovery tank is located on the left side of the machine. Dirty water is vacuumed through the squeegee and into the tank. As the dirty water level approaches the upper limit, a float switch will be activated and the vacuum motor will automatically turn off. To drain the tank, swing open the rear bumper, remove the hose on the left side from its cradle and remove the plug. If the recovery tank has a lot of sediment that needs to be removed, remove the plug from the inside of the recovery tank and rinse the tank with water. The recovery tank lid contains a mist filter (Minuteman P/N 3347300) that should be cleaned periodically and replaced as needed. If this filter is clogged, squeegee vacuum can suffer, leaving the floor wet.

SQUEEGEE ADJUSTMENT

Proper squeegee adjustment is required for effective drying of the floor. There are two parts to adjusting the squeegee. The first is pitch adjustment. This positions the rubber parts so that they are always parallel to the floor. The second is the caster adjustment which controls the height of the squeegee tool from the floor in order to maintain the correct amount of flair or deflection on the rear rubber blade. NOTE: The adjustments must be made on a level floor.

TO ADJUST THE PITCH

Open the rear access bumper and lower the squeegee to the floor. NOTE: Use the vacuum only mode and turn the key off while the squeegee is down. Then release the quick disconnect ball joint. It is best to raise the casters up to assure that they do not affect this part of the adjustment. Do this by rotating the knob at the rear of the tool clockwise 2 turns. Next, locate the self locking cotter pins in the upper trailing arm attached to each side of the tool. They are located where the arms attach to the machine frame. Remove the cotter pins and clevis pins from upper arms on each side. Now the rear squeegee rubber should make contact with the floor evenly from end to end. If not, push the tool down until it does. In this position the tool is parallel to the floor. Without disturbing the tool, gently try to replace the clevis pins into their original holes

SERVICING / MAINTENANCE (Continued)

SQUEEGEE ADJUSTMENT (CONTINUED)

(do not force the holes to line up). If the pins will not reinsert, lengthen or shorten the threaded clevis until they do. Be careful not to disturb the tool position. Reattach the cotter pins into each clevis pin and reconnect the lifting arm ball joint. Go to caster adjustment.

TO ADJUST THE CASTERS

With the squeegee lowered, drive the machine forward approximately two (2) feet to observe how much flair (bend) the rear squeegee rubber has. The casters act as stops for controlling the height of the tool and therefore the amount of flair. The objective is to cause the rubber to flair enough to allow the sharp leading edge of the rear rubber to point down toward the floor. This will provide the best water collection. Adjust the casters by turning the knob at the rear of the tool clockwise to create more flair, counterclockwise to create less flair. Check adjustment by driving the machine forward and observing flair.

AFTER USE

Turn the machine off by switching the key to the "O" (OFF) position on the dash panel. The machine can be cleaned with a mild detergent and a damp cloth.

BATTERY SERVICE AND INSTALLATION

Batteries should be charged after each use or when the battery condition meter shows a low charge. Once the meter on the battery charger reads 0 amps, the batteries are recharged. This should take approximately 6 to 8 hours if the batteries are completely discharged. (80%)

WARNING

Battery acid can cause burns. When working on or around batteries, wear protective clothing and safety glasses. Remove metal jewelry. Do not lay tools or metal objects on top of the batteries.

SERVICING / MAINTENANCE (Continued)

CHARGING OF BATTERIES

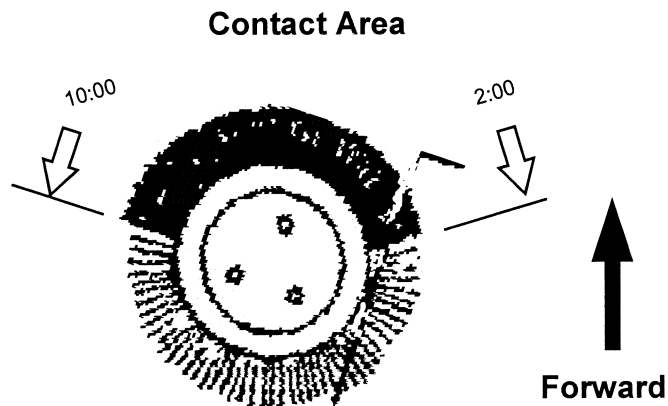
Charging batteries generates explosive gasses. **DO NOT CHARGE BATTERIES WHEN OPEN FLAMES OR SPARKS ARE PRESENT. DO NOT SMOKE.** Make sure the charger is turned off before disconnecting it from the batteries. Charge the batteries in a well-ventilated area. Electrolyte levels should be checked before and after charging and maintained at the proper levels. If low when discharged, add water until the metal plates are covered. Do not completely fill the cells of a discharged battery. This may result in overflow during charging. Top off cells after the battery is fully charged. If the machine is not used for extended periods of time, batteries should be kept full charged with a boost charge once a week.

CARBON BRUSH REPLACEMENT

The design life of carbon brushes is between 1800 and 2000 hours. Replace the brushes if worn to $\frac{3}{8}$ " or less, broken or chipped. All carbon brushes should be replaced when the motor is serviced.

SIDE BROOM ADJUSTMENT

To adjust the side broom, turn the knob on the right side of the front bumper to adjust. Turn the knob clockwise to lower or counter-clockwise to raise. The brush should contact the floor between the 10:00 o'clock and 2:00 o'clock positions as viewed from the operator's seat. See illustration.



SERVICING / MAINTENANCE (Continued)

MAIN BROOM ADJUSTMENT

To adjust the main broom, move the machine to a level surface. Turn on the main broom and let it run in place for about 30 seconds. Switch the broom off and move the machine backwards to look at the resulting pattern left on the floor. The pattern should be straight across approximately 2.0" wide.

1. To adjust the broom height up or down, open the broom chamber door located on the left side of the machine behind the front wheel. Loosen the jam nut on the hand knob that is located on the back side of the broom chamber. Turn the knob clockwise to raise the broom or counter-clockwise to lower the broom. When proper adjustment has been achieved, tighten the jam nut.

NOTE

This adjustment is not often needed.

1. To adjust for a cone shape pattern, open the broom chamber door on the left side of the machine behind the front wheel. Loosen the two nuts on the flange bearing and rotate the bearing up or down, which ever direction is needed to remove the cone shape. Tighten the nuts.

NOTE

IF THE BROOM IS BOUNCING, IT IS SET TOO DEEP.

SIDE BROOM REMOVAL

To remove the side broom:

1. Raise the hopper about halfway.
2. Remove the clevis pin from the bottom of the broom
3. Remove the broom
4. Replace the broom with Minuteman P/N 3347322, make sure the disc is placed on top of the broom before the clevis pin is inserted.
5. Lower the hopper.

MAIN BROOM REMOVAL

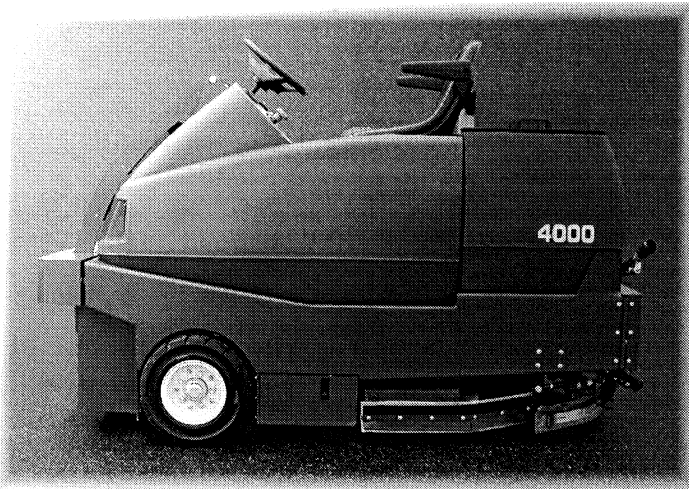
To remove the main broom

1. Open the broom chamber door on the left side of the machine behind the front tire.
2. Loosen the knob on the idler - 1.0" in diameter. Remove the idler.
3. Pull the broom out of the left side of the machine.
4. Replace the broom with Minuteman P/N 3347325.
5. Install the new broom from the left side of the machine, making sure that the notches in the broom lock on the driver.

SERVICING / MAINTENANCE (Continued)

SCRUB BRUSH REMOVAL

1. Remove the right and left side squeegees by removing the 1.0" diameter knobs.
2. Pinch the clips on top of the scrub brushes and pull straight down.
3. To reinstall, pinch the clip on top of the brush and push straight up to engage the driver.
4. Reinstall the side squeegee.



Feedback

Thank you for your purchase of the industry standard for sweepers and sweepers / scrubbers. PowerBoss takes great pride in offering the most dependable, reliable and value in industrial / commercial power sweepers and sweeper / scrubbers. *We set the standard.*

Our Publishing Department, International would like to hear from you. If you see any errors, omissions or something that just needs clarification in this manual and/or the parts section, please let us know. We are working hard toward perfection in our little corner of the process of bringing you the best you can buy. Please fill out the form below and comment on how you found our manuals.

Thank you.

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*Company Name: _____

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*Country: _____

Type of equipment or model number: _____

Comments:

*Information is optional.

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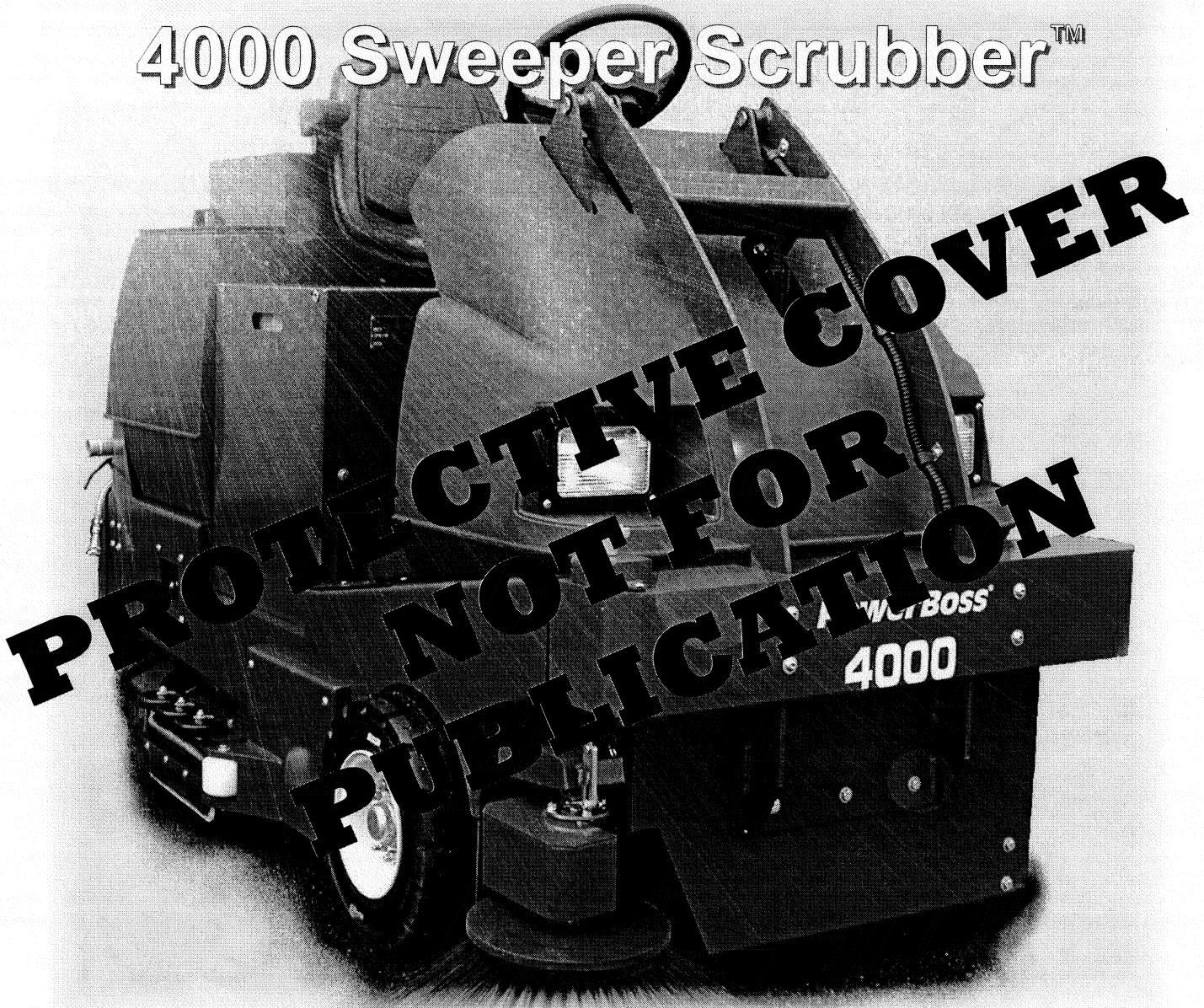
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Notes:

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