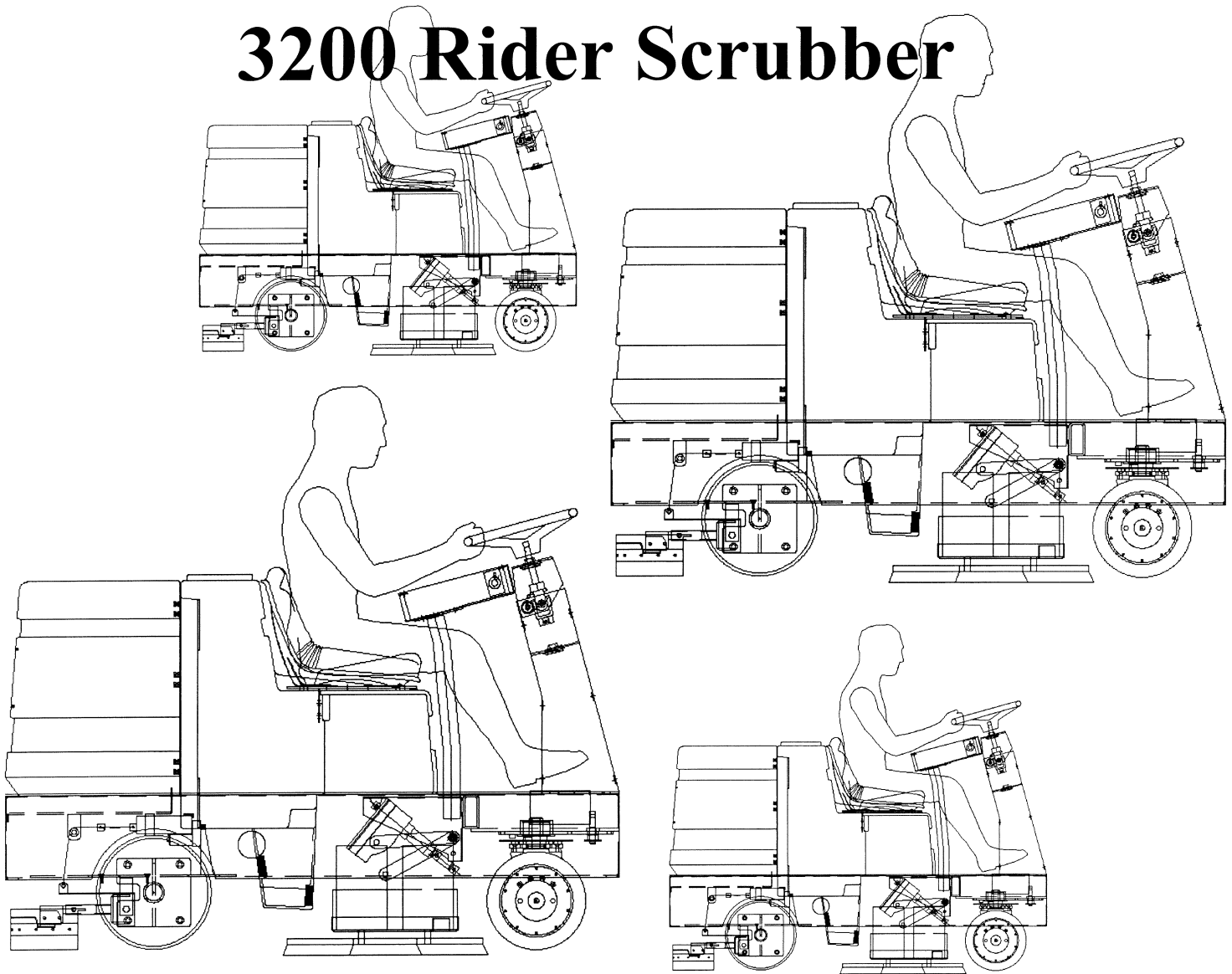


Minuteman[®]

OPERATION, MAINTENANCE & TROUBLESHOOTING AND PARTS SECTION

3200 Rider Scrubber



Minuteman International, Inc.

111 South Rohlwing Road

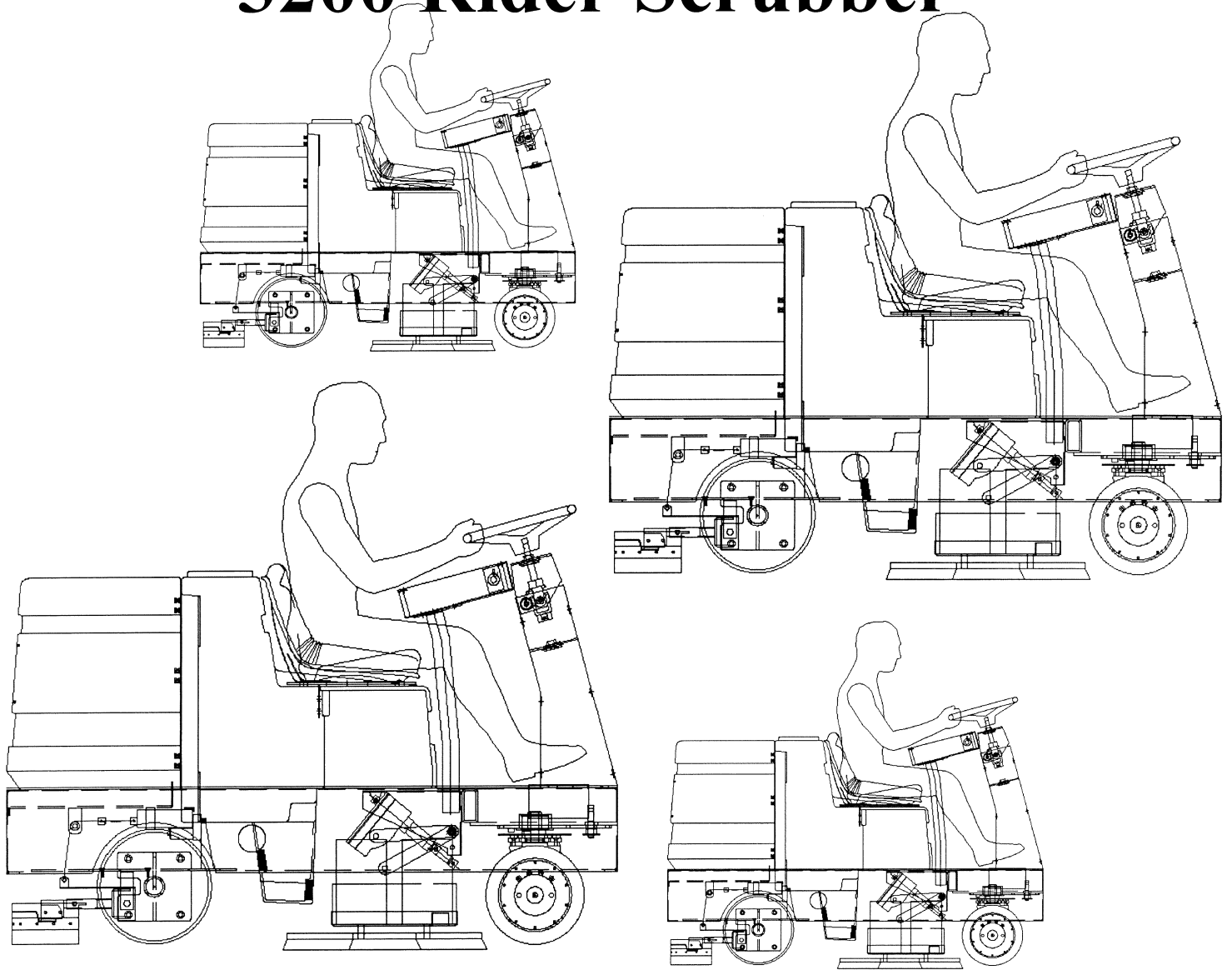
Addison, IL 60101 USA

(630) 627-6900 / FAX (630) 627-1130

Minuteman[®]

OPERATION, MAINTENANCE & TROUBLESHOOTING

3200 Rider Scrubber



Minuteman International, Inc.

111 South Rohlwing Road

Addison, IL 60101 USA

(630) 627-6900 / FAX (630) 627-1130

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.

© Copyright 2000, Minuteman International, Inc.

All rights reserved. This manual may not be copied or reproduced in any form, without the written permission of Minuteman International, Inc.

3200 Rider Scrubber

(LIMITED) PRODUCT WARRANTY

Minuteman International, Inc. (hereafter known as Minuteman) warrants that the Minuteman 3200 Rider 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 Minuteman 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 Minuteman's election, any part or parts deemed defective after examination by Minuteman or an Authorized Service Representative. The Minuteman machine or any of its parts returned by customer to Minuteman 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 Minuteman or an Authorized Service Representative.

For one hundred eighty (180) days from date of installation, Minuteman 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 Minuteman machine, or its parts, that have been subject to misuse, accident or improper handling, installation, maintenance or application, nor does it extend to Minuteman machine and/or parts which have been repaired or altered outside Minuteman's plant or the facility of Authorized Service Representative.

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

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

The warranty for optional engines shall be limited to the warranty extended to Minuteman by the supplier.

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 MINUTEMAN ARISING IN TORT OR STRICT LIABILITY IN TORT, OR FOR LOSS OR USE, REVENUE OR PROFIT WITH RESPECT TO MINUTEMAN MACHINE AND/OR PARTS FOR ANY LIABILITY OF CUSTOMER TO ANY THIRD PARTY, OR FOR OTHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Notes

Minuteman[®]

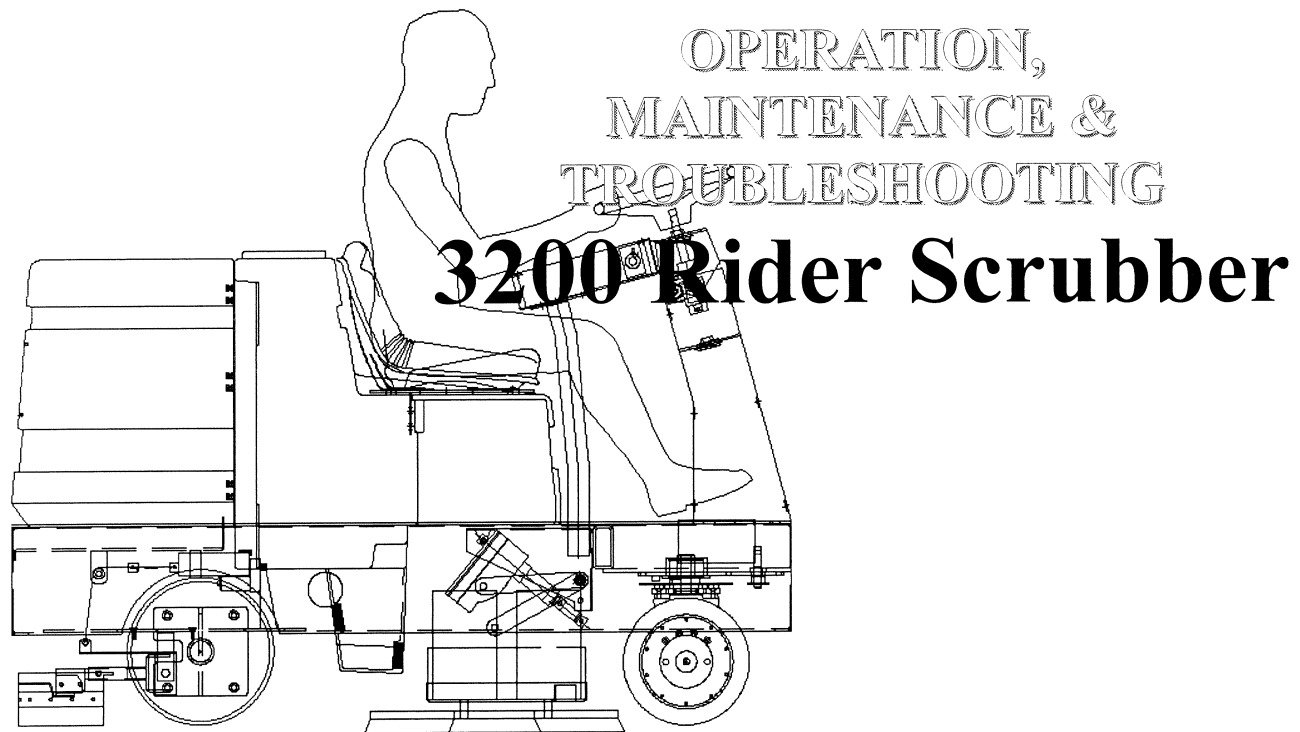


TABLE OF CONTENTS

Serial Number Entry Form	i
Warranty.....	ii
TABLE OF CONTENTS	1
SAFETY	
Safety Symbols.....	3
Basic Minuteman [®] Safety	4
BASIC OPERATING CONTROLS	
Inspection.....	6
Electrical.....	6
Batteries.....	6
Operation	6
CONTROL PANEL	
Key Switch	7
Scrub Switch.....	7
Scrub Pressure Switch	7
Squeegee / Vacuum Switch.....	7

TABLE OF CONTENTS (Continued)

CONTROL PANEL (Continued)

Emergency Disconnect..... 7

Horn..... 7

Hour Meter / Battery Fuel Gauge 7

Circuit Breaker Panel 8

OPERATION CONTROLS

Accelerator / Directional Control Pedal 9

Steering Wheel 9

SERVICING / MAINTENANCE

Battery Recharging 10

Off-Aisle Cleaning Attachment (Optional) 10

Solution Tank..... 11

Recovery Tank..... 11

Squeegee Adjustment..... 11

After Use 12

Battery Service and Installation..... 12

Charging of Batteries 12

Carbon Brush Replacement..... 12

YOUR PAGE 13

SAFETY SYMBOLS

Five symbols are used throughout this manual to emphasize various levels of safety information. These symbols and the meaning of each are listed below.



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

Symbols at the top of the list are the strongest warnings. However, all symbols represent important information which should be observed to protect you and others from harm and injury, and to prevent damage to the equipment.

BASIC Minuteman® SAFETY

This Minuteman® 3200 Rider 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 generates 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, grain dust, 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 connectino 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 Minuteman® 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.*
- * Use caution when moving this machine into areas that are below freezing. Any water in the tanks or hoses can cause damage.*
- * 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 3200 Rider 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) 36-volt DC 6-volt OR three (3) 12-volt batteries. |
| BATTERIES | The recommended batteries are either: six (6) 370Ah 6-volt (Minuteman P/N 956715) OR three (3) 210Ah 12-volt (Minuteman P/N 956210) batteries, depending on how the machine is factory equipped. |
| OPERATION | Before starting, familiarize yourself with the machine and its controls. |

CONTROL PANEL

KEY SWITCH

“I” Turns power to the machine **ON**. “O” Turns power to the machine **OFF**.

SCRUB SWITCH

This switch turns the scrub motors **ON / OFF**. The Scrub Switch must be **ON** to operate scrub down pressure.

SCRUB PRESSURE SWITCH

This switch controls the amount of pressure applied to the floor when scrubbing.

NOTE

There are three pre-set positions on this switch: Low, Medium and High. The onboard computer that controls this function automatically adjusts itself to allow for brush wear.

SQUEEGEE / VACUUM SWITCH

This switch turns on the vacuum motor and directs power to the squeegee actuator. The squeegee will automatically lower when the machine moves forward and will raise in reverse. When power is turned **OFF**, the squeegee will raise to the **NORMAL** position and the vacuum motor will continue to run for 30 seconds before turning itself **OFF**.

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 twisted and raised in order to operate the machine.

HORN

Depressing the horn button will activate the horn.

HOURLY 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.

CONTROL PANEL (CONTINUED)

HOURLY METER / BATTERY FUEL GAUGE (CONTINUED)

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.

NOTE

Permanent battery damage can happen from a deep discharge.

CIRCUIT BREAKER PANEL

The circuit breaker panel, located on the steering pod, contains the circuit breakers for the entire machine. The following circuits are protected:

1. Vacuum Motors (50 amp)
2. Brush Motors (70 amp)
3. Drive Motor (50 amp)
4. Control Circuits (18 amp)

OPERATION CONTROLS

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.

STEERING WHEEL

The steering wheel is adjustable for operator comfort by pulling the adjustment pin out and raising the wheel up or down. There are three possible positions.

SERVICING / MAINTENANCE

BATTERY RECHARGING

Open the doors at the rear of the machine. Disconnect the batteries from the machine by unplugging the Anderson Connector (gray). Connect the batteries cord to the charger.

NOTE

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

Recommended Chargers:

- * For 3-12 Volt batteries: Minuteman P/N 957727 - 36V 20A, 115V 60Mz automatic
- * For 6 - 6 Volt batteries: Minuteman P/N 957740 - 36V 40A, 115V automatic

The solution flow valve is opened by raising the actuator to the **UP** position and closed by returning it to the **DOWN** position. Solution flow can be set anywhere between the **OPEN (UP)** and **DOWN (CLOSED)** position.

OFF-AISLE CLEANING ATTACHMENT (OPTIONAL)

One side of the recovery hose should be inserted into the recovery tank intake port and the other into the wand. 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 back of the machine.

To energize the system, press the switch adjacent to the high-pressure attachment port on the back 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.

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, open the valve beside the drain hose underneath the machine.

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, move to the right side of the machine and pull the drain hose through the frame and remove the plug. If the recovery tank has a lot of sediment that need to be removed, remove the plug from the front/bottom of the recovery tank and rinse the tank with water. Do not over tighten the drain plug when reinstalling. The threads inside the tank can be damaged.

SQUEEGEE ADJUSTMENT

The squeegee set-up is pre-adjusted at the factory. Adjustments may be required to get optimum performance for different floor types and conditions.

Pitch Control Adjustment:

1. Ensure that the scrubber is on a relatively flat surface. Turn on the main power switch and select "Vacuum Only" mode.
2. Move the scrubber forward slowly while someone behind the machine checks the squeegee blade for uniform deflection.
3. If uneven deflection or lay is evident, minor adjustments may be necessary to avoid streaking and uneven wear on the blade.

To correct this, pitch adjustment is necessary.

1. Loosen the pivot screw and the pitch screw.
2. Move the machine forward and allow the squeegee to level itself or adjust the angular position accordingly to achieve a uniform blade deflection.
3. Re-tighten the screws.

In certain applications where a different blade setup is required, the reinforcement blade may be turned upside-down. The notch, which is normally on the bottom, will now be located on the top. This adjustment allows the rear squeegee blade a larger deflection than normal.

SERVICING / MAINTENANCE (CONTINUED)

AFTER USE

Turn the machine off by switching the key to the “O” (OFF) position on the control panel. The machine can be cleaned with a mild detergent and a damp cloth. Batteries should be charged after each use or when the battery condition meter shows a low charge. The procedure to recharge the batteries can be found on page X. 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.

⚠ WARNING

BATTERY SERVICE AND INSTALLATION.

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.

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. Fluid levels should be checked before and after charging and maintained at the proper levels. If low, add water until the metal plates are covered. 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 brushes is worn to 3/8” or less, broken or chipped. All carbon brushes should be replaced when the motor is serviced.

Your Page

Thank you for your purchase of the now industry standard for sweepers. Minuteman® 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.

*Name _____

*Title: _____

*Company Name: _____

*Address: _____

*Country: _____

Type of equipment or model number: _____

Comments:

*Information is optional.

Please return to:

Manager, Publishing Department, International
Minuteman International, Inc.
175 Anderson Street
Aberdeen, North Carolina 28315 USA

Notes:

Notes:

