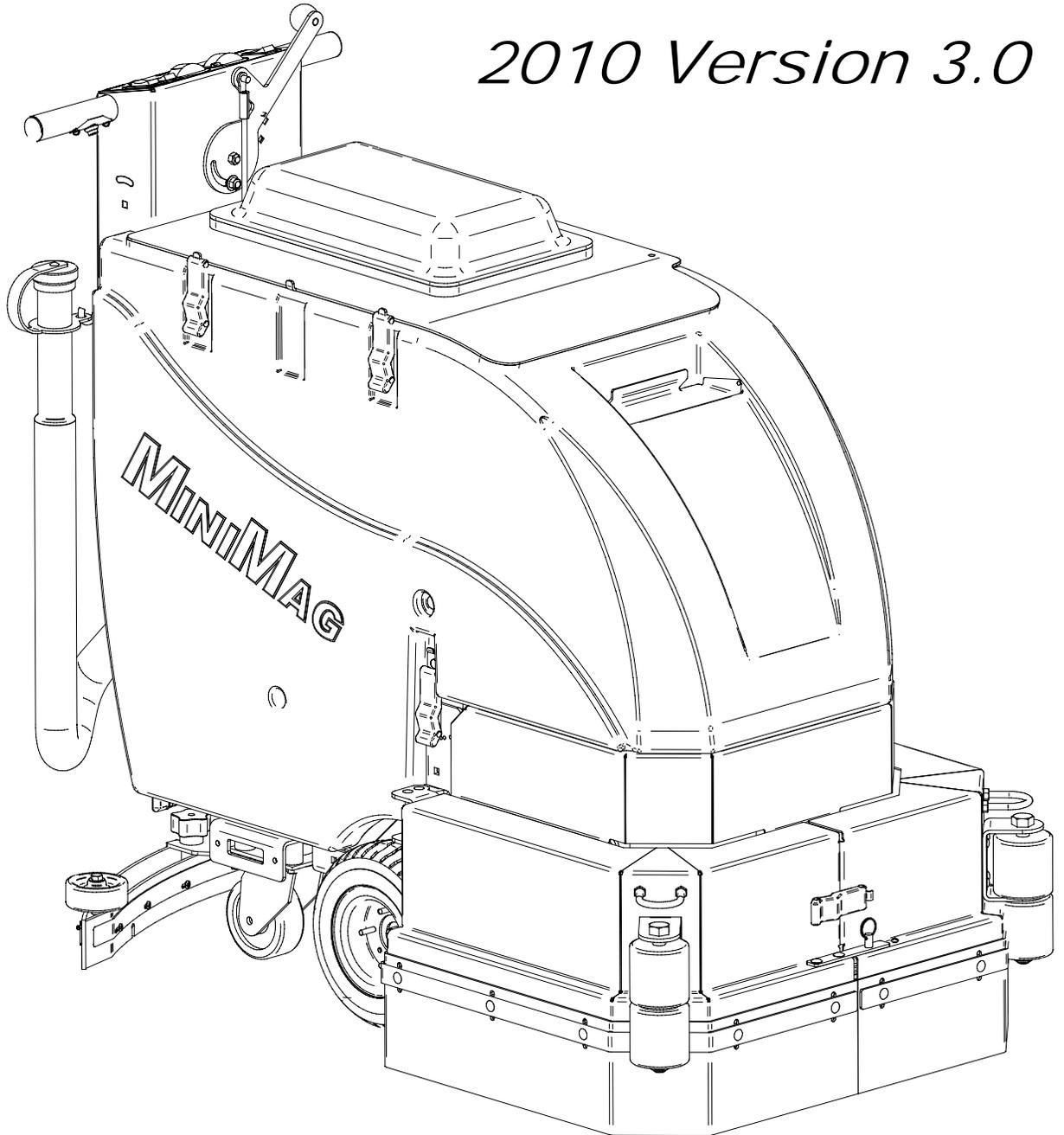


MINI-MAG SERIES

MINI-MAG

Operator Manual

2010 Version 3.0



R.P.S. Corporation
P.O. Box 241
Racine, Wisconsin 53401

Phone: 1-800-450-9824
Fax: 1-866-632-6961

How to use this manual

This manual contains the following sections

Table of contents: Tells you where to look in manual.

Machine delivery form: Should be filled out upon machine installation and faxed to 1-866-632-6961 or online at WWW.factorycat.com

Warranty policy: Tells you coverage, exclusions and limitations to warranty.

Safety: Section contains important information regarding hazard or unsafe practices of the machine. Levels of hazards are identified that could result in product or personal injury, or severe injury resulting in death.

Machine Setup: Tells you how to setup machine from uncrating to installing squeegee and brushes.

Machine controls: Shows you the different machine controls and features.

Operations: section is to familiarize the operator with the operation and function of the machine.

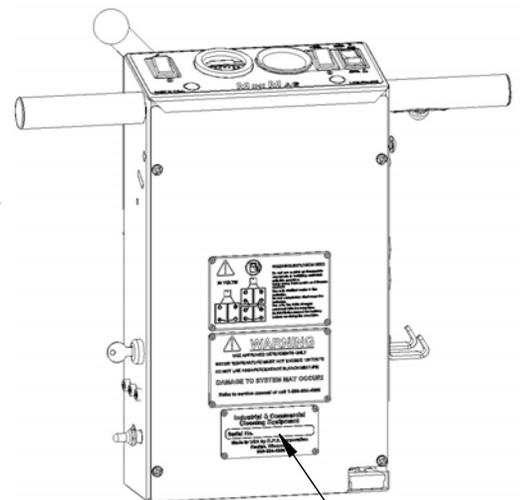
Battery charging: Shows you how to charge the batteries (on-board and off board charging)

Maintenance: This section contains preventative maintenance to keep the machine and its components in good working condition. They are listed in this general order:

- Batteries
- Scrub Brushes
- Adjusting Squeegee
- Service Schedule
- Machine Trouble Shooting

Troubleshooting: A list of common problems that may occur.

Note: The serial number of your machine is located on the lower half of the control panel of the machine. *(see picture to the right)*



* **As our policy is one of constant improvement, all information and specifications are subject to change without notice.** *

Serial Number

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Installing Dealer: _____ Installed By: _____

Location: (City, State): _____ Install Date: _____

End-User Company Name _____ End-User Contact: _____

Address: _____ City/State: _____ Zip _____

Phone: _____ Fax: _____ Email: _____

Model: _____ Serial #: _____ Hour Meter: _____

BUYER'S REPRESENTATIVE HAS RECEIVED INSTRUCTION IN PROPER OPERATION OF THE FOLLOWING CONTROLS AND FEATURES:

SCRUBBERS

- Filling solution tank, Solution tank sight tube, Solution drain hose or valve for flushing and freezing conditions
- Adjusting controls & operation, Double scrubbing, Squeegee lift delay, vacuum switch (horn honking) and vacuum timer
- Recovery tank draining & cleaning, vacuum screen removal and cleaning, drain saver basket emptied.
- Shroud and pad/brush removal and installation
- Side Wiper and Curtain adjustment and maintenance for water control
- Solution valve and filter operation (removal and cleaning)
- LCD display operation, 4 hour meters (key switch, brush, traction drive, vacuum)
- Tank tilt back feature, only when both tanks are fully drained
- Squeegee hose removal and checking for clogs

BURNISHERS

- Train and have customer demonstrate proper removal and replacement of burnishing pad
- Pad pressure gauge and proper operating range to avoid tripping the circuit breaker

SWEEPERS

- Demonstrate proper removal and replacement of main broom and side brooms
- Method for cleaning the dust filter, emptying out the debris hopper and correct installation
- Correct operation of the main broom and side broom levers, and understands to park with brushes in UP position
- Trained on the "Wet-Sweep" bypass door and not to operate through standing water

ALL MACHINES

- Checking battery electrolyte level and confirm monthly check that battery terminals are tight
- Parking brake override
- Charging operation and customer understands batteries have limited "cycles" and recharging = 1 cycle
- Seat and steering wheel adjustment
- Customer has read and understands the list of WARNINGS in the Operator manual
- Battery and Machine Maintenance Guide posters hung up and reviewed
- Manufacturer's website is a good source of information and sign up for quarterly newsletters

In addition to the above items the buyers representative has received the operator's manual and been advised to read the manual before operating the machine.

Installed By (print) _____ Signature _____

Buyers Representative (print) _____ Signature _____

Buyer agrees to pay for any repairs, adjustments, or secondary training that manufacturer determines is excluded from the warranty.

COMPLETE AND FAX FORM TO 1-866-632-6961 or online www.factorycat.com

STANDARD WARRANTY POLICY (RPS Corporation)

RPS Corporation warrants its machines, parts and accessories to be free of manufacturer's defects for the periods specified below. Warranty will be granted at the sole discretion of RPS Corporation and is subject to final claim and parts review by R.P.S. Corporation and its vendors. This policy is effective January 1, 2010 and is subject to change on production units at a future date.

COVERAGE, EXCLUSIONS AND LIMITATIONS:

Coverage:	All Models sold (Sweepers, Scrubbers, Burnishers)
Parts:	36 months / 1,500 hours on "Power On" hour meter
Labor:	12 months
Travel:	3 months (150 mile maximum)
Poly Tanks:	7 Years (Water should not exceed 135°F/57°C)
OEM Parts:	3 months
Validity:	Fully completed Machine Delivery Form (online or fax) is on record at RPS.
Limitation:	Warranty will begin on date of machine installation to end-user or 6 months after shipment from RPS Corp to the distributor if unsold at that time.

This warranty includes all parts on the machine except normal wear parts. Some of these exceptions are:

- ❖ Squeegee Blades, Wiper Blades, Skirts and Curtains.
- ❖ Caster Wheels, Squeegee Wheels and Bumpers.
- ❖ Lights (Strobe, Headlights, or Bulbs).
- ❖ Chains and Belts.
- ❖ Filters, Screens, and Vacuum Bags.
- ❖ Motor Brushes and commutator wear.
- ❖ Brooms, Brushes, Pads and Pad Retainers.
- ❖ Hoses and Tubing.
- ❖ Drive Tires, Pneumatic Wheels and Tubes.
- ❖ Rubber Floor Seals and Gaskets.
- ❖ Vacuum motors with evidence of moisture or debris intrusion or > 400 hours.
- ❖ The Batteries (see below).
- ❖ **NOT COVERED:** Routine maintenance, adjustments or parts damaged from abuse, neglect, improper use of the machine, or lack of scheduled "daily, weekly, monthly" maintenance in accordance with our published PM Sheets.

POLY TANKS: 7 Years Coverage against leakage due to manufacturer's defect in materials or workmanship. Tank warranty void water used exceeds 135°F/57°C

NOTE: Freight coverage for 3-Years under the parts section of warranty.

BATTERIES: Warranted through battery manufacturer for **One (1) Year** (prorated) from the date of delivery. The battery manufacturer approves or denies the warranty coverage after analysis. We rely on solely on their review. **NOTE NOT COVERED:** Damage from water, failure to use OEM charger, or non-distilled water.

Battery terminals – Battery terminals and cable connections are covered for 30 days from the shipment of the machine. (Battery terminals should be maintained every 30 days.)

Safety

Safety messages

Your safety, and the safety of others, is very important, and operating this unit safely is an important responsibility.

To help you make informed decisions about safety, we have provided operating procedures and other safety information in the manual. This information informs you of potential hazards that could hurt you or others.

It is not practical or possible to warn you of all the hazards associated with operating this unit. You must use your own good judgment.

This machine is intended for commercial use. It is designed to be used on hard floors in an indoor environment, with the recommended pads or brushes.

1. DO NOT OPERATE UNIT:

- Unless trained and authorized.
- Unless operator manual is read and understood.
- If unit is not in proper operating condition.
- With water that exceeds 135F/57C.
- With high percentage bleach mixture.

2. WHEN OPERATING UNIT:

- Remove loose objects from the floor that may be projected from the revolving brushes.
- Keep hands and feet away from revolving brushes.
- Do not operate machine where flammable liquids are present.
- Use extreme caution when maneuvering.

3. BEFORE LEAVING:

- Drain Tanks
- Make sure machine is turned off.
- Stop on level surfaces.
- Disconnect batteries.

4. BEFORE SERVICING:

- Stop on level surface, and secure machine.
- Disconnect batteries.

!! Safety precautions!!

WARNING: Hazardous voltage. Shock, burns or electrocution can result. Always disconnect the batteries before servicing machine.

WARNING: Batteries emit hydrogen gases. Explosion or fire can result. Keep sparks and open flames away.

WARNING: Charge unit in a well ventilated area, and keep battery compartment open when charging. Explosion or fire could result.

WARNING: Battery acid can cause burns. Wear protective eye wear and gloves when servicing batteries.

WARNING: Do not store outdoors or pressure wash. Prevent electronic components from getting wet.

WARNING: The use of parts and solutions other than that recommended by the manufacturer may cause damage or endanger people.

WARNING: Dress safely. Do not wear rings or metal wrist watches while working on this machine. They can cause an electrical short, which, can cause serious burns. Do not work on this machine while wearing a tie, scarf or other loose, dangling neckware or clothing. These loose items can tangle in the rotating parts and cause serious injury or even death.

WARNING: Do not use the machine as a step ladder or chair.

WARNING: Only operate this machine from the operators position. It was not designed to carry passengers.

WARNING: Do not operate this machine on ramps or uneven surfaces. When climbing a ramp, always drive the machine in forward straight up or down the ramp. Never drive across the incline. Do not back down or turn on ramps!

WARNING: Do not use a high percentage bleach mixture

WARNING: Always use the charger provided by the manufacturer to charge the machine. It is an automatic charger, specifically designed to charge at the appropriate rate. If you must use a different charger, disconnect the batteries before charging. This will prevent damage to the electronic speed controller.

WARNING: Understand the dynamic braking system before you operate the machine on ramps. Machine may coast.

WARNING: Do not park the machine on ramps or slopes.

WARNING: Do not operate the machine if any parts have been removed or damaged.

WARNING: Do not remove, paint over, or destroy warning decals. If warning decals become damaged, they must be replaced.

WARNING: Do not operate machine in unsafe condition. If the machine is in need of repair or is in any way unsafe to operate, the matter should be reported immediately to the shift supervisor. Do not operate the machine until it is returned to proper operating condition.

WARNING: This machine must only be operated by trained operator. As part of his or her training, they must read this manual thoroughly. If extra copies are needed, contact your local dealer.

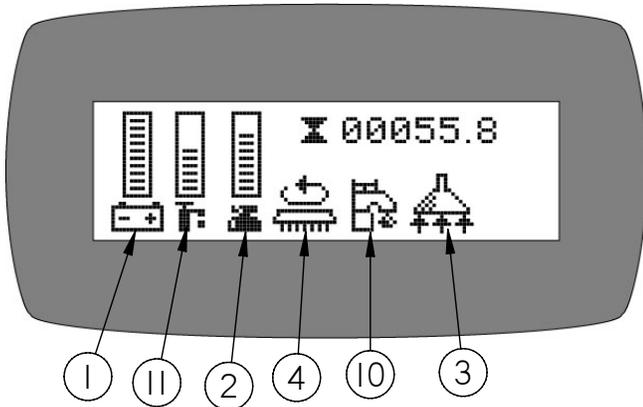
WARNING: Always turn off the machine, before leaving it unattended.

WARNING: Do not operate over electrical floor outlets. May result in serious injury.

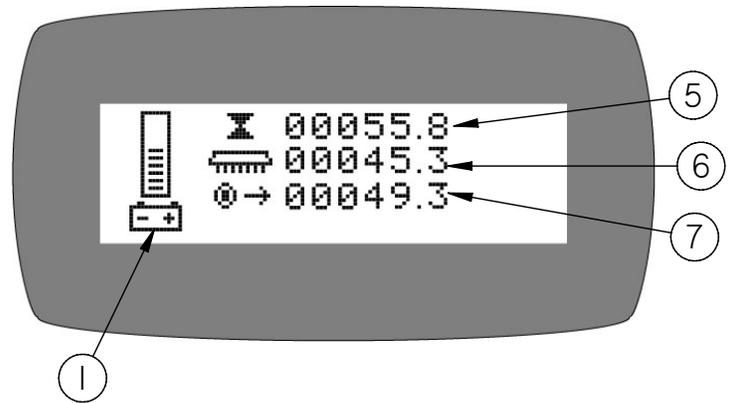
WARNING: Do not use water that exceeds 135F/57C may result in damage to tanks

LCD screen menu displays

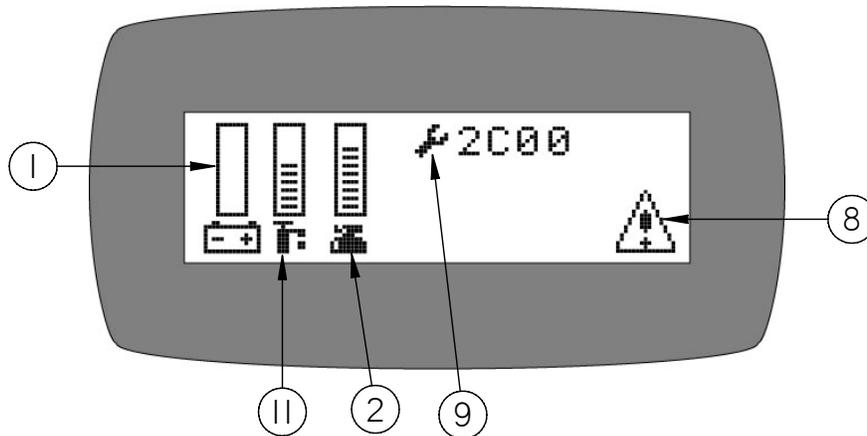
SCREEN # 1 (Operator)



SCREEN #3 (Maintenance)



SCREEN W/ERROR CODE



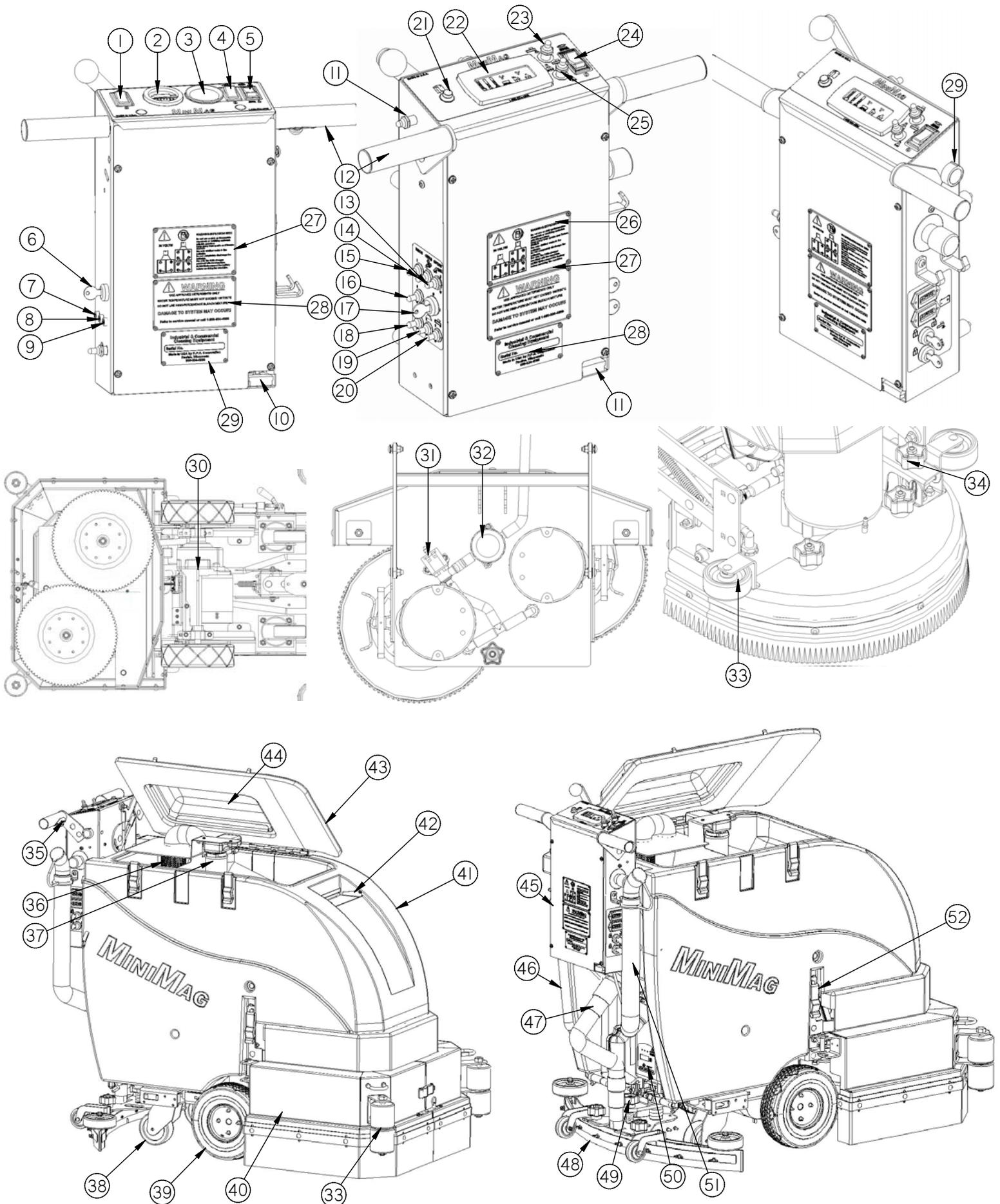
*****Use green menu selection button on control panel to change screens*****

1. **Battery level indicator** - Indicates the energy level remaining in the batteries. *(Shown on all menu displays)*
2. **Scrubdeck down pressure gauge** - Sets the down pressure on the brushes.
3. **Vacuum on** - Indicates the vacuum is "on".
4. **Scrub motors on** - Indicates the brush motors are "running".
5. **Key switch hour meter** - Tells you the total hours the machine has been on.
6. **Scrub brush hour meter** - Tells you the total hours the brush motors have been used.
7. **Transport hour meter** - Tells you the total hours the drive system has been used.
8. **Error warning symbol!** - Indicates when there has been a diagnostic code error.
9. **Diagnostic code** - When the machine has detected an error it will display the warning symbol and a diagnostic code which tells you what's wrong.
10. **Water on** - Indicates the solution flow is "on"
11. **Solution level** - Indicates the gallons per minute (G.P.M) 0 - 1.0 .

(For common error codes and descriptions see pages 27 & 28.)

Machine controls and features page 7

Machine controls and features



Machine controls and features

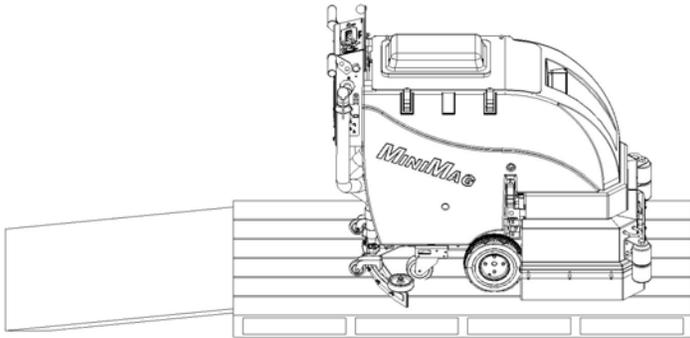
1. **MAIN POWER SWITCH:** Turns the machine on and off.
2. **BATTERY GUAGE/HOUR METER:** Indicates the amount of battery charge remaining.
3. **SCRUBDECK DOWN PRESSURE GUAGE:** Indicates the amount of down pressure being applied to scrubdeck.
4. **SOLUTION FLOW SWITCH:** Turns solution flow on.
5. **SCRUBDECK SWITCH:** Raises and lowers the scrubdeck and controls amount of down pressure being applied.
6. **KEY SWITCH:** Turns power on to the machine. (Standard on Traction Drive, Optional on Brush Drive.)
7. **CIRCUIT BREAKER:** 2 AMP resettable circuit breaker.
8. **CIRCUIT BREAKER:** 25 AMP resettable circuit breaker.
9. **CIRCUIT BREAKER:** 40 AMP resettable circuit breaker.
10. **CHARGER PORT:** Red 50 used to receive charger input for optional external charger.
11. **REVERSE SWITCH:** Pull back for reverse.
12. **HANDLE BAR:** Adjustable Handle Bar
13. **SPRAY JET (BLUE) (OPTIONAL):** Activates Spray Pump for remote Spray Wand.
14. **"ON BOARD" SOAP SYSTEM (GRAY) (OPTIONAL):** Dispenses soap into Solution Tank.
15. **ECON (GREEN) TOGGLE SWITCH (OPTIONAL):** Reduces power to give machine longer run time
16. **POWER (BLACK) TOGGLE SWITCH (OPTIONAL):** Turns power on and off
17. **KEY SWITCH:** Turns power on to the machine.
18. **OSCILLATING (ORANGE) TOGGLE SWITCH (OPTIONAL):** Engages different scrubhead parameters for increased stripping.
19. **SIDE BROOM (YELLOW) TOGGLE SWITCH (OPTIONAL):** Turns Side brooms on and off.
20. **WATER SHUTOFF (LIGHT BLUE) TOGGLE SWITCH (OPTIONAL):** Turns water on and off.
21. **MENU CONTROL:** Scrolls through different options on the LCD display, there are three different screens.
22. **LCD SCREEN:** Lists functions and settings of the machine.
23. **SOLUTION FLOW CONTROL (BLUE) TOGGLE:** **Push down** to reduce, and **push up** to increase solution flow.
24. **SCRUBDECK SWITCH:** Raises and lowers the scrubdeck.
25. **DOWN PRESSURE (BLACK) TOGGLE SWITCH:** Controls the pressure to the scrubdeck, push forward for more down pressure.
26. **WARNING PLATE:** Explosion warning.
27. **WARNING PLATE:** Detergent/Water warning.
28. **SERIAL NUMBER PLATE:** Machine identification.
29. **SPEED CONTROL KNOB:** Controls the speed of the Traction Drive. Turn counter-clockwise to reduce speed.
30. **TRACTION DRIVE:** Propels machine forward/backward.
31. **SOLUTION FLOW VALVE:** Controls solution flow rate.
32. **SOLUTION FILTER:** Filters water solution prior to scrubbing.
33. **WALL ROLLERS:** Helps protect machine when scrubbing near walls.
34. **"PAD ASSIST" DRIVE ADJUSTMENT KNOB:** Adjusts amount of offset being applied to brush.
35. **DRIVE BUTTON:** Depress to drive forward, release to stop. (starts & stops the drive motor)
36. **"DRAIN SAVER" STRAINER:** Helps prevent clogging of drain ports.
37. **VAC SCREEN:** Protects Vac Motor from debris.
38. **CASTER:** Twin casters for stability.
39. **MAIN TIRE:** Drive Tires.
40. **JAWS:** Protects Scrubdeck from collision damage.
41. **TANK-IN-TANK:** Solution/Recovery Tank (17 gallon capacity each).
42. **SOLUTION FILL LID:** Fill port for filling Solution Tank.
43. **RECOVERY LID:** Used for flushing out Recovery Tank area with fresh water.
44. **CLEAR COVER:** For viewing inside Recovery Tank area.
45. **CONTROL PANEL:** Machine controls and access to electrical components.
46. **SOLUTION LEVEL INDICATOR & DRAIN TUBE:** Shows precise level of cleaning solution in Tank & Drain Port.
47. **VACUUM HOSE:** Vacuumizes Squeegee. **NOTE:** Keep free and clear of blockage.
48. **SQUEEGEE BLADE:** Recovers dirty water from floor to be recovered by Vacuum Hose.
49. **SQUEEGEE PITCH ADJUSTMENT:** Adjusts pitch of Squeegee. Deflection should be even across entire blade.
50. **"ON BOARD" BATTERY CHARGER:** Recharges Batteries.
51. **RECOVERY DRAIN HOSE:** Allows for controlled draining of Recovery Tank.
52. **TANK LATCH:** Secures tank to frame.

Machine setup

Uncrating machine

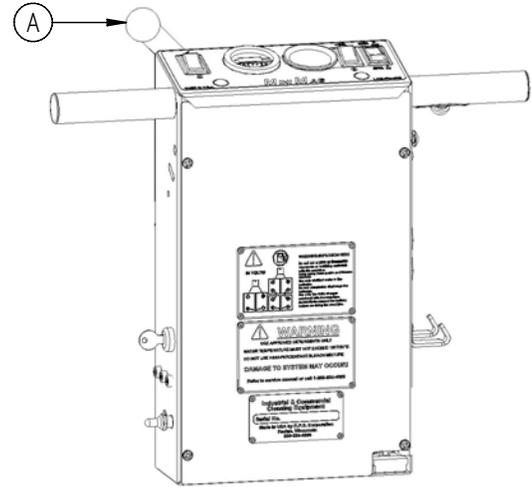
Carefully check the crate for any signs of Damage and that the batteries are in the unit.

To uncrate the machine, remove banding from Around the crate. Take off the top and sides And dispose of properly. Remove brackets (a) from machine wheels. Remove bolts (b) from pallet then remove board (c). Carefully roll the machine off of the base. Notify the carrier immediately if concealed damage is discovered.(see below)

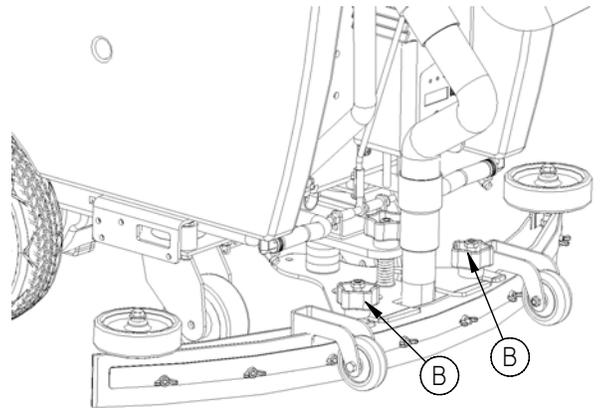


Attaching squeegee

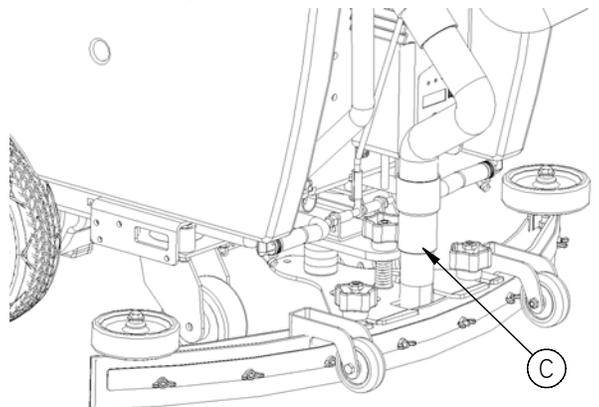
1. Lower the squeegee mounting plate by rotating the lift lever "A" clockwise. (SEE BELOW)



2. Loosen the two knobs "B" on the squeegee and slide them into the slots in the squeegee mounting plate. (SEE BELOW)



3. Tighten the two knobs, and connect the vacuum hose "C" from the machine to the squeegee. (SEE BELOW)



4. You may have to adjust the squeegee pitch. (SEE ADJUSTING SQUEEGEE ON NEXT PAGE.)

Connecting batteries

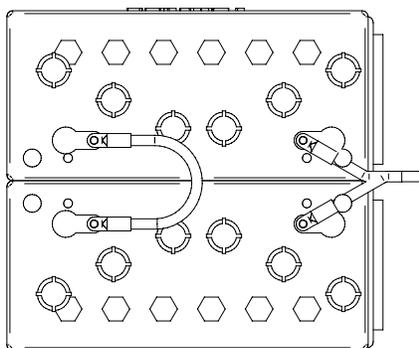
Your machine is equipped with (2) 12-volt/115 AH, or (2) 12-volt/165 AH, Deep Cycle, Batteries, which form a 24 volt system.

(SEE PICTURE BELOW FOR CORRECT CABLE CONNECTIONS.)

1. Turn all switches to the off position and remove key (if machine is equipped with optional key switch).
2. Turn on main power switch and check the battery condition meter to ensure correct installation. Charge batteries if needed. (SEE BATTERY CHARGING.)

WARNING! Batteries are a possible environmental hazard. Consult your battery supplier for safe disposal methods.

NOTE: Orientation of batteries is critical for cables to reach!

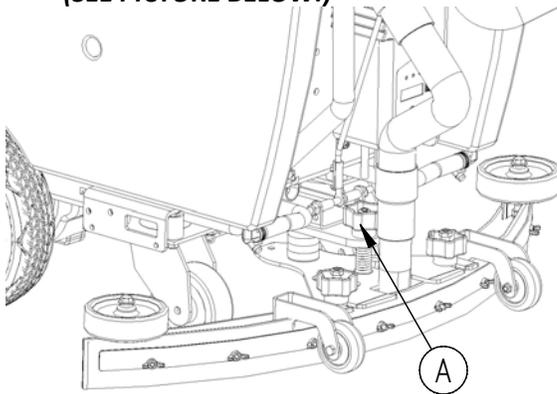


24-Volts

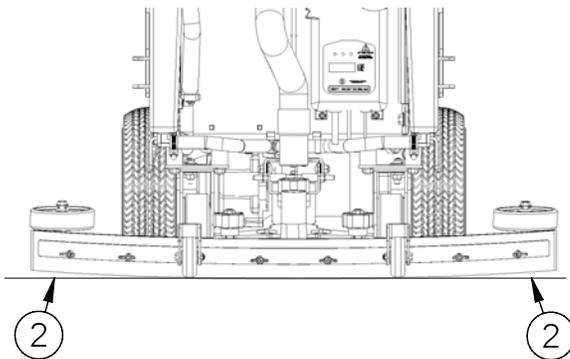
BATTERY CABLE CONNECTIONS

Adjusting squeegee

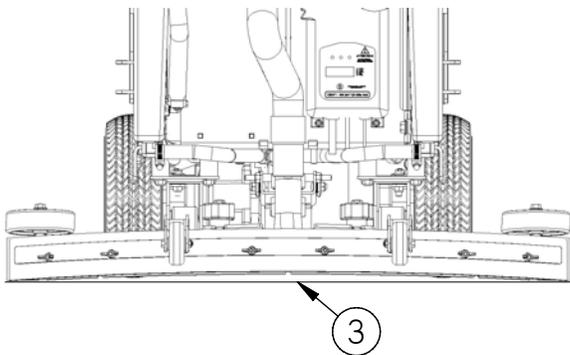
1. Turning adjustment knob "A" clock-wise (tightening) will lower tips & raise center. **(SEE PICTURE BELOW.)**



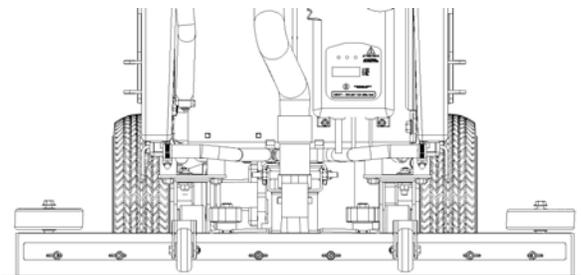
2. This squeegee is adjusted too far back and will not pick up on the corners. ***note tips off the floor*.** **(SEE BELOW)**



3. This squeegee is adjusted too far forward and will not pick up in the center. ***note center spaced off the floor*.** **(SEE BELOW)**

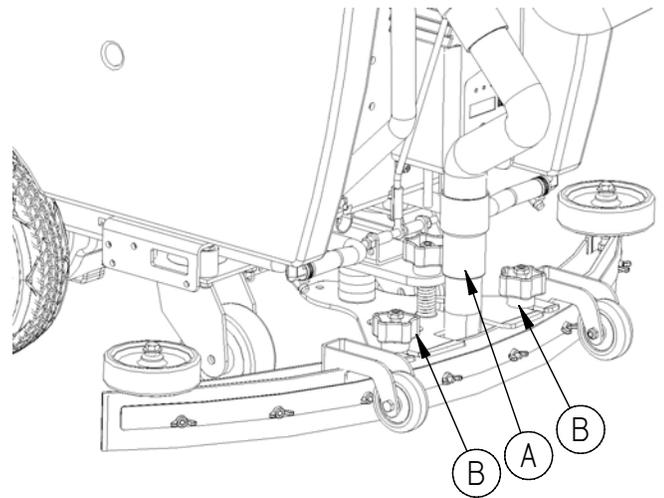


4. This squeegee is adjusted just right with good deflection across the entire rear blade. **(SEE BELOW)**



Removing squeegee

1. With the squeegee in the up position, turn machine power off.
2. Disconnect vacuum hose "A" from squeegee and loosen both knobs "B". (SEE BELOW)
3. Pull squeegee assembly rearward from the lifting carrier.
4. Inspect or repair as needed and reinstall.



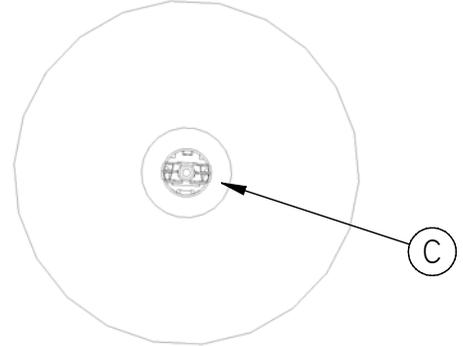
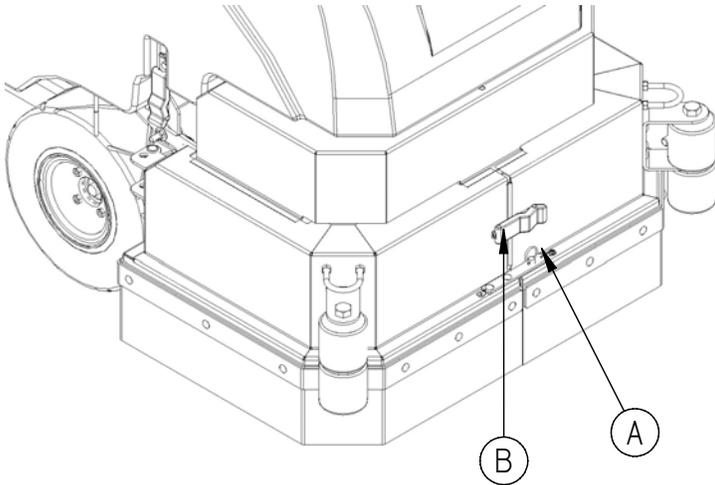
Replacing or rotating squeegee blades

FOR SAFETY: Before leaving or servicing machine stop on level surface, turn off machine and remove key.

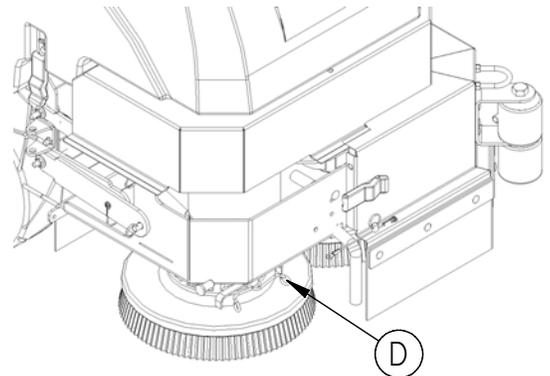
1. Remove the squeegee assembly from the machine. Remove blade retainer strap and remove squeegee blade.
2. Rotate the squeegee to new edge position or replace as required.
3. Install blade on the locating pins of squeegee assembly.
4. Install squeegee retainer strap.
5. Fasten and lock knobs.

Instaling disk pad driver or brush

1. Turn on machine power.
2. Raise the scrub deck by depressing the brush switch (O) to the up and off position and turn machine power back off.
3. The machine is equipped with jaws. Remove pin "A" and undo latch "B" on front of jaws to open them. **(SEE BELOW)**
4. Select the correct pads or brushes that best meet your cleaning application. Consult your local dealer for assistance.
5. Pad installation: attach pads to pad drivers before connecting drivers to motor hub. center clip "C" should click twice. **(SEE BELOW)**



6. Attach brushes or pads to motor hubs. Squeeze the scissor locking device and lift brush up on to the motor drive hub. Make sure the scissors close and lock once the brushes are on. **(SEE BELOW)**



7. With brushes locked in place, close jaws, secure latch and insert pin.

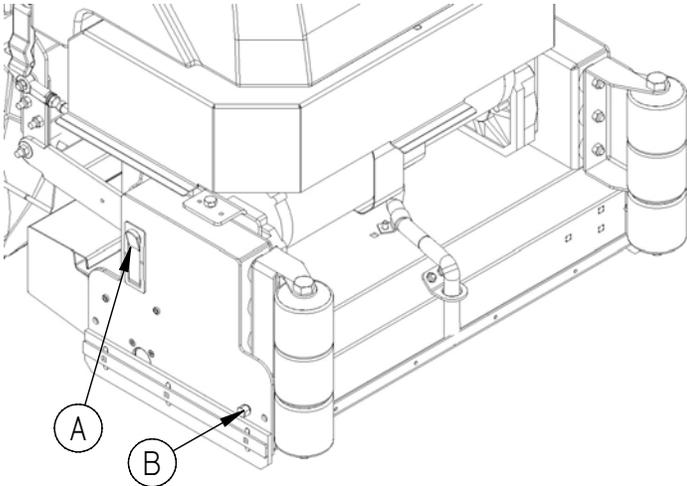
Scrub brushes

There are many different types of brushes available to cover applications from cleaning heavily soiled floors to polishing. A pad driver is also available to take advantage of the many cleaning pads on the market. Please refer to the "COMMON WEAR PARTS" page to assist in selecting the proper brush or pad for the work at hand.

*****FOR CORRECT PAD APPLICATION , CALL YOUR LOCAL DEALER*****

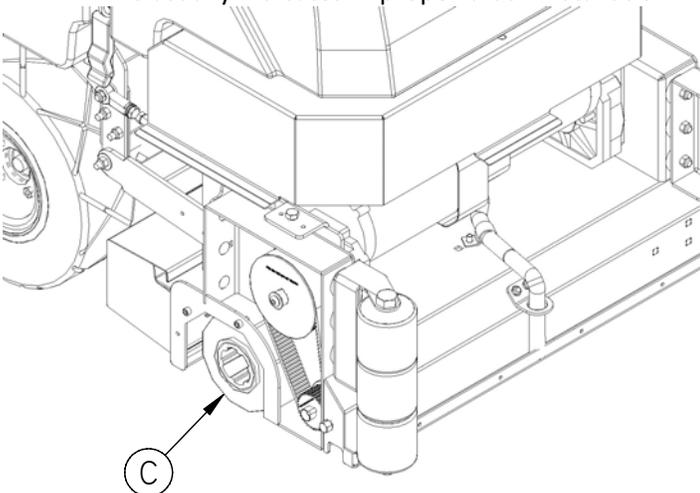
INSTALLING CYLINDRICAL BRUSHES

1. Turn on machine power.
2. Raise the scrub deck by depressing the brush switch (O) to the up and off position and turn machine power back off.
3. Disconnect batteries.
3. Remove side access door on each side of scrubdeck by depressing latch button "A" and unscrewing thumb screw "B". **(SEE BELOW)**

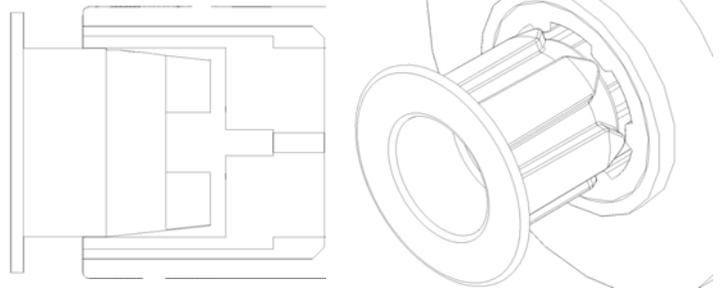


4. Slide brush "C" in onto brush driver on opposite side and spin until you feel it catch and drop in. **(SEE BELOW)**
5. When the brushes are engaged, replace the brush access door.
6. Lift up on the wipers first to close the side door and depress the latch until the door is secured.

NOTE: If the brushes are not fully engaged with the drivers the brushes will be damaged. Do not force the access door back on. This usually indicates improper brush installation.



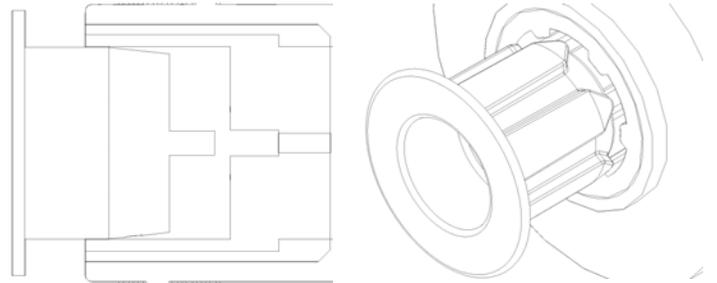
7. Brush driver shown misaligned. **(SEE BELOW)**



Old Style Driver

New Style Driver

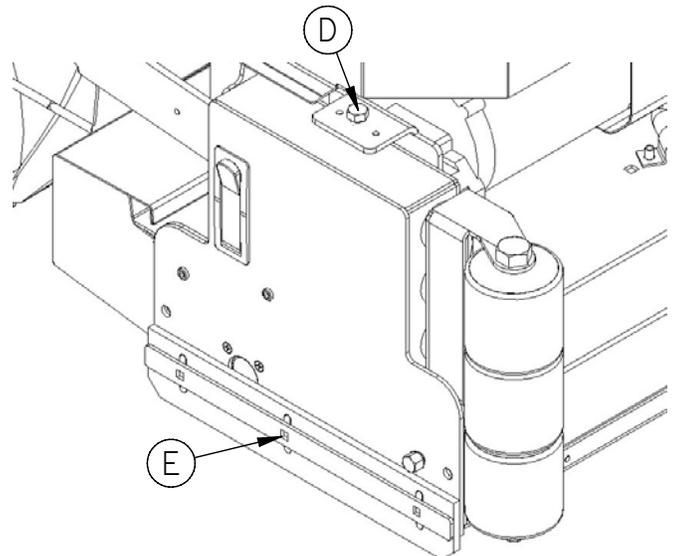
8. Brush driver shown properly aligned. **(SEE BELOW)**



Old Style Driver

New Style Driver

9. To adjust the tension of the belts turn adjustment screw "D" clock-wise to tighten, counter-clockwise to loosen. **(SEE BELOW)**
10. To adjust the height of the wipers loosen the 3 screws "E" and slide wiper blades up or down in the slots. **(SEE BELOW)**



Operation

PRE-CLEANING CHECK LIST

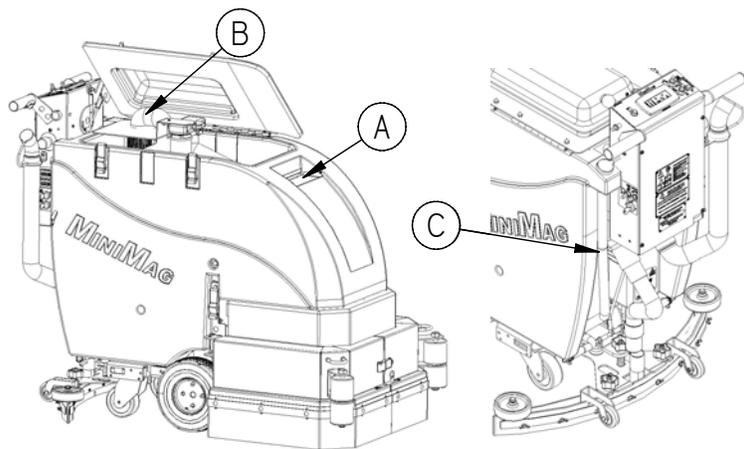
Read and understand the safety section on pages 5 and 6 before operating the machine.

1. Check battery condition gauge on the control panel. Make sure batteries are fully charged before using.
2. Check the condition of the pads or brushes.
3. Check the condition of the squeegee blades.
4. Transport the machine to the filling station. Raise the scrubhead and squeegee when transporting.
5. Turn machine off.
6. Fill the tank with up to 17 gallons of clean water either at front fill port "A" or rear fill port "B". Access rear fill port by raising the recovery tank lid. **Note water temprature must not exceed 135F/57C and do not use high percentage bleach mixture. (SEE BELOW)**

*The clear tube "C" at the rear of the machine indicates the amount of water in the tank. (SEE BELOW)

8. Add "approved" cleaning chemical. Use the proper dilution ratio indicated on the bottle. Call if unsure.

Note: Use only non-flammable commercial cleaning chemicals. Your authorized distributor can assist you in selecting a proper chemical.



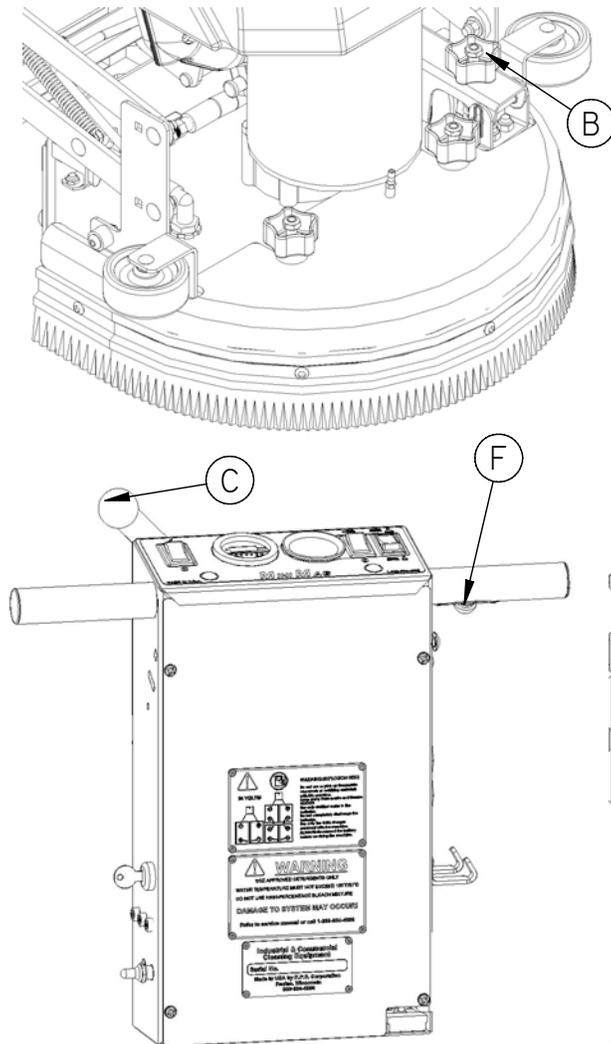
OPERATING HINTS

1. Observe the amount of solution the machine is dispensing on the floor and adjust to the desired flow. To increase the solution flow rate, rotate the solution control knob counter-clockwise. To shut the solution off completely, just release the drive button.
2. Keep an eye on the clear vacuum cover to make sure there is not any foamy buildup in the recovery tank. If excess foam begins to develop, pour a recommended foam control solution into the recovery tank. Foam is usually an indication of excessive soap.
3. Always operate at lower speeds when scrubbing around walls and objects. You should reduce the speed, to maintain control when turning.
4. If squeegee starts to streak, raise and wipe the blades with a clean cloth. If the problem continues, check the blades for wear or damage, and rotate if needed. You may need to presweep before scrubbing.
5. Change or turn over pads when dirty. Rotate the scrub brushes every week.
6. Stay clear of objects protruding from the floor, such as sockets, grates, for they will damage the pads and squeegee blades.
7. During brief stops you do not have to turn anything off, the brushes and solution will automatically stop when the drive button is released.
8. Always keep an eye on your gauges. They let you know the status of a particular system at a glance. If your battery gauge is reading low, you must stop immediately, and recharge. Running the batteries dead, will result in damage to the batteries.
9. When you run out of solution, raise the brushes, and continue to vacuum the remaining water until it is consumed. The solution sight hose is used to indicate the level of detergent remaining in the tank.
10. When you are ready to stop, pick up the brushes, turn off the solution switch, pick up the squeegee, and drive the machine back to the charging area. Be sure to drain both tanks before storing the machine.

ONE PASS SCRUBBING

BRUSH DRIVE MACHINES - (SEE BELOW)

1. Turn on machine power switch "A", make sure the "PAD ASSIST" adjustment knob "B" is at a low setting.
2. Lower squeegee by rotating the squeegee lift lever "C" all the way to the right (vac motor will turn on automatically.)
3. Lower scrub head to the floor, use the top half (+) of the brush switch "D".
4. Turn on the solution switch "E".
5. Begin scrubbing by depressing the green control button "F" on the handle bar. Adjust the "PAD ASSIST" adjustment knob "B" to the desired setting.
6. Once the machine begins to move, check the down pressure gauge "G". Start scrubbing at the middle. Do not scrub in the red, or the circuit breaker will blow.
7. To stop the machine, let go of the green control button "F".



SCRUB ONLY

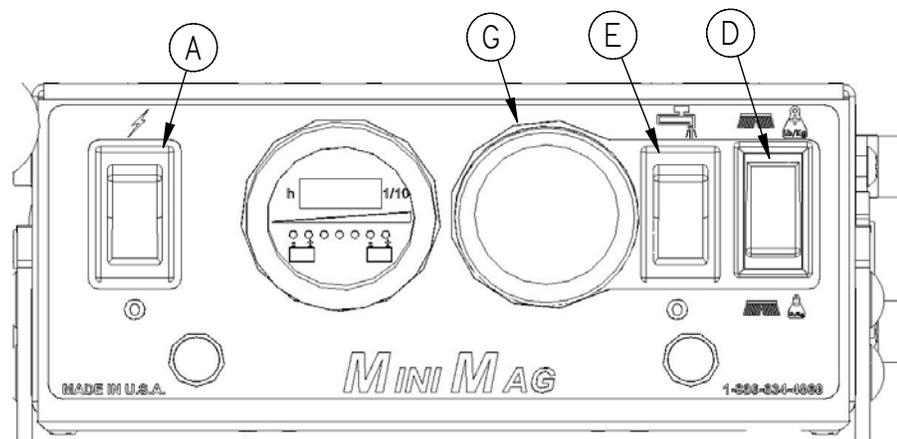
BRUSH DRIVE MACHINES - (SEE BELOW)

1. Turn on machine power switch "A", make sure the "PAD ASSIST" adjustment knob "B" is at a low setting.
2. Lower scrub head to the floor, use the top half of the brush switch "D".
4. Turn on the solution switch "E".
5. Begin scrubbing by depressing the green control button "F" on the handle bar. Adjust the "PAD ASSIST" adjustment knob "B" to the desired setting.
6. Once the machine begins to move, check the down pressure gauge "G". Start scrubbing at the middle. Do not scrub in the red, or the circuit breaker will blow.
7. To stop the machine, let go of the green control button "F".

VACUUM ONLY

BRUSH DRIVE MACHINES - (SEE BELOW)

1. Turn on machine power switch "A".
2. Lower squeegee by rotating the squeegee lift lever "C" all the way to the right (vac motor will turn on automatically.)
3. Push machine forward over solution.

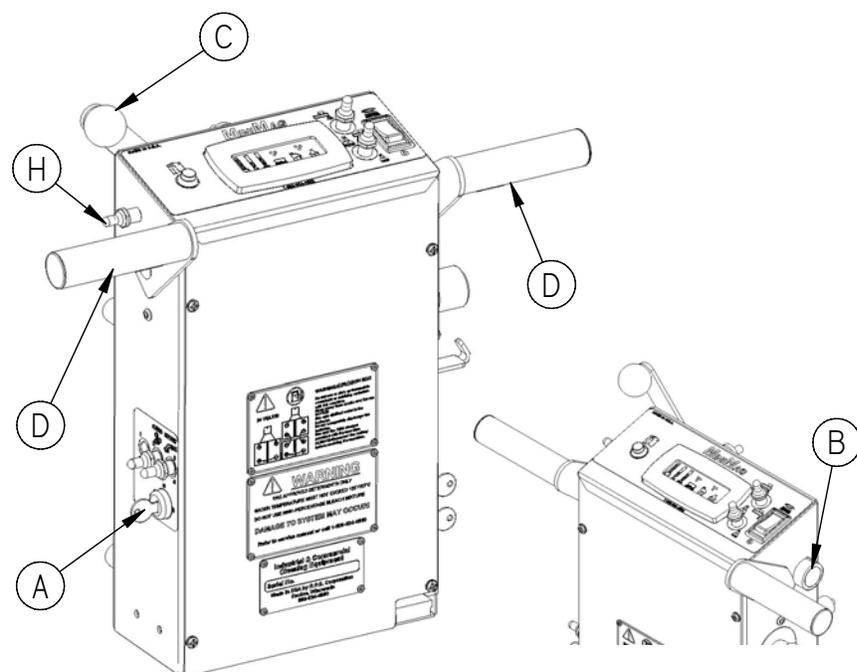


ONE PASS SCRUBBING

TRACTION DRIVE MACHINES - (SEE BELOW)

1. Turn on machine power switch "A", make sure the speed control knob "B" is at it's lowest setting.
2. Lower squeegee by rotating the squeegee lift lever "C" all the way to the right (vac motor will turn on automatically.)
3. Lower scrub head to the floor, use the top half (+) of the brush switch "D".
4. Turn the solution flow adjustment knob "E" to regulate the amount of solution flow.
5. Begin scrubbing by depressing one of the green control buttons "D" on the handle bar. Adjust the speed control knob "B" to the desired setting.
6. Once the machine begins to move, check the down pressure on the LCD screen "F". To adjust the down pressure, push toggle switch "G" forward to increase pressure backward to decrease pressure. Start scrubbing at the #1 or #2 marks. Do not use the #4 or #5 marks without management's approval.
7. To operate the machine in reverse, simply pull the forward/reverse switch "H" back towards the handle bar. The reverse speed is set to approximately 50% of the forward speed.

8. To stop the machine, let go of the green control button "D".



SCRUB ONLY

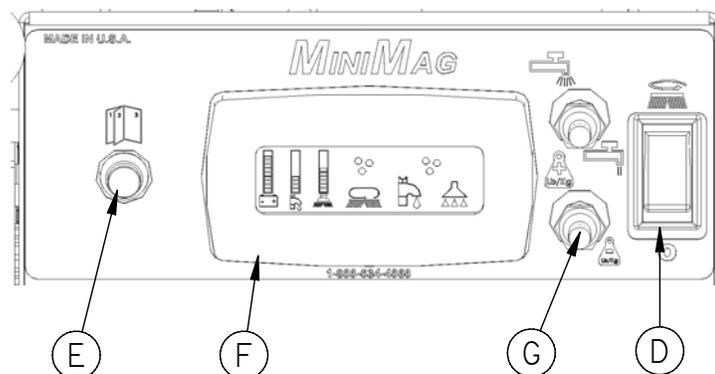
TRACTION DRIVE MACHINES - (SEE BELOW)

1. Turn on machine power switch "A" make sure the speed control knob "B" is at it's lowest setting.
2. Lower scrub head to the floor, use the top half of the brush switch "D".
4. Turn the solution flow adjustment knob "E" to regulate the amount of solution flow.
5. Begin scrubbing by depressing one of the green control buttons "D" on the handle bar. Adjust the speed control knob "B" to the desired setting.
6. Once the machine begins to move, check the down pressure on the LCD screen "F". To adjust the down pressure, push toggle switch "G" forward to increase pressure backward to decrease pressure. Start scrubbing at the #1 or #2 marks. Do not use the #4 or #5 marks without management's approval.
7. To operate the machine in reverse, simply pull the forward/reverse switch "H" back towards the handle bar. The reverse speed is set to approximately 50% of the forward speed.
8. To stop the machine, let go of the green control button "D".

VACUUM ONLY

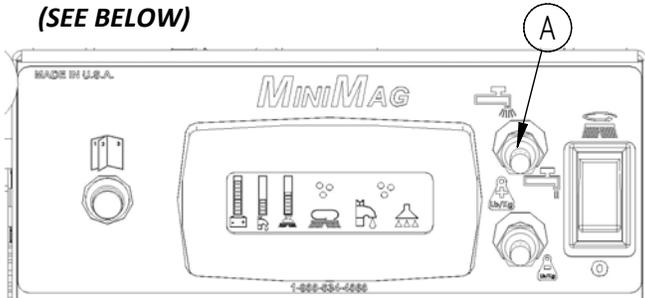
TRACTION DRIVE MACHINES - (SEE BELOW)

1. Turn on machine power switch "A", make sure the speed control knob "B" is at it's lowest setting.
2. Lower squeegee by rotating the squeegee lift lever "C" all the way to the right (vac motor will turn on automatically.)
3. Begin vacuuming by depressing one of the green control buttons "D" on the handle bar.



ADJUST SOLUTION FLOW

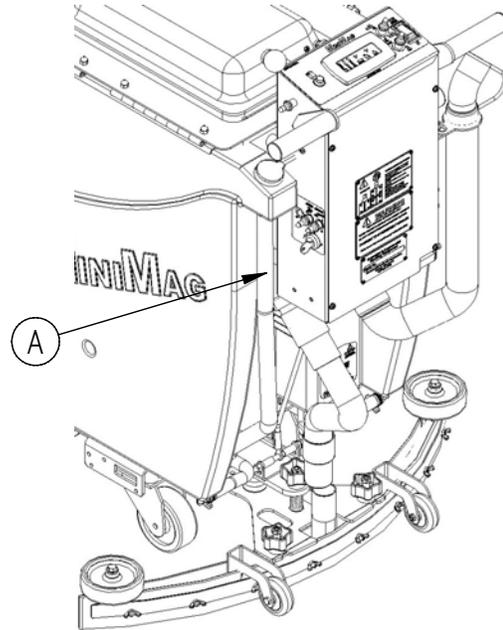
1. Push up on solution toggle "A" to increase solution flow and push down on the toggle to decrease solution flow. **(SEE BELOW)**



DRAINING SOLUTION TANK

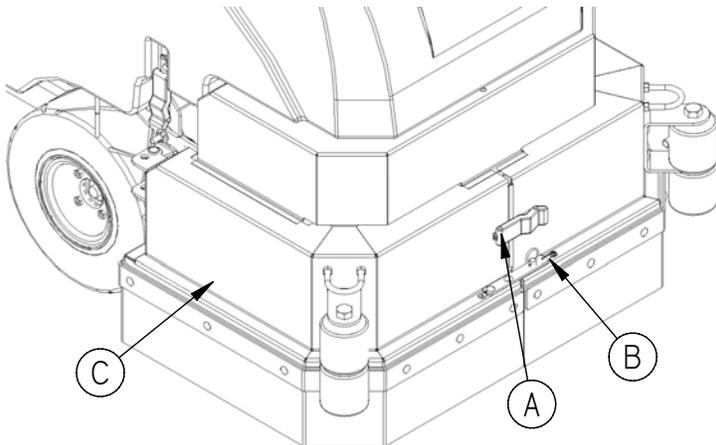
To drain unwanted cleaning solution from the solution tank, perform the following steps. **(SEE BELOW)**

1. Pull the clear sight tube/drain hose "A" off barbed fitting.
2. Rinse out tank and solution flow system with clean water.



ADJUST CURTAINS

1. For Jaw curtains release latch "A" and remove pin "B" on front of jaws to open jaws. **(SEE BELOW.)**
2. Loosen curtain band screws "C".
3. To adjust curtain to the desired height just slide the curtain up or down in the slots and tighten screws.
4. Close jaws, reconnect latch and reinsert pin.



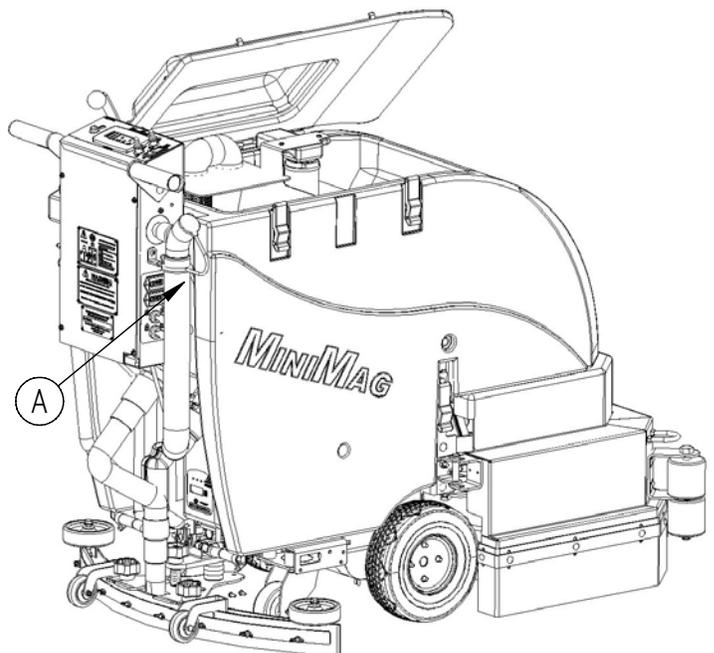
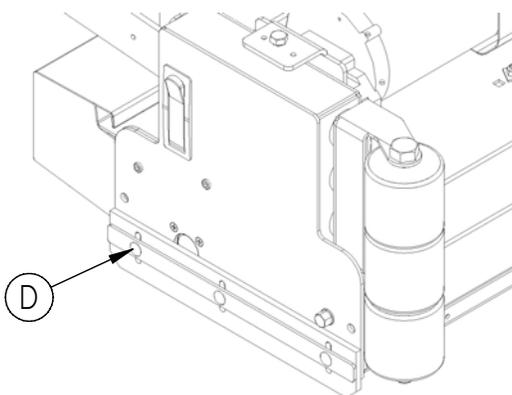
DRAINING RECOVERY TANK

Always empty recovery tank when refilling the solution tank. You can refill the solution tank while the recovery tank is draining. To drain the recovery tank, remove drain hose (A) from hook at rear of tank and unscrew cap. **(SEE BELOW)**

NOTE: LEAVE RECOVERY LID OPEN WHEN DRAINING TANK!

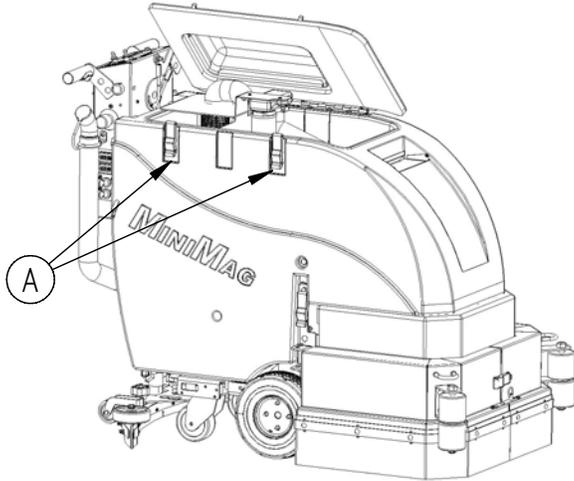
ADJUST WIPERS

1. For cylindrical side wipers loosen wiper band screws "D". **(SEE BELOW)**
2. To adjust wiper to the desired height just slide the wiper up or down in the slots and tighten screws.



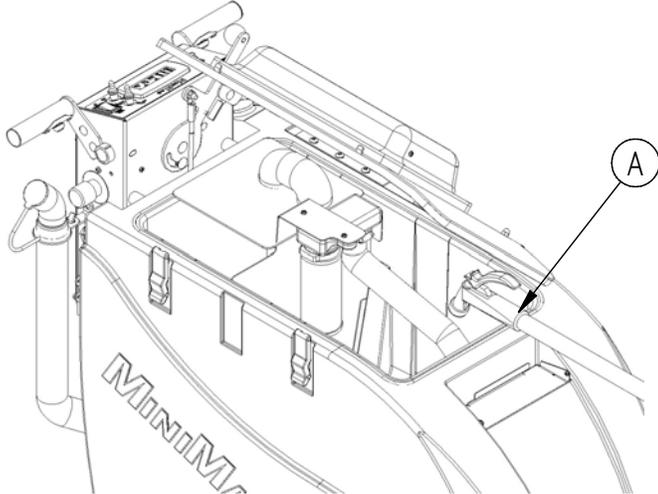
OPEN RECOVERY LID

1. Release both latches "A" on recovery tank lid.
(SEE BELOW)
2. Rotate lid fully open.

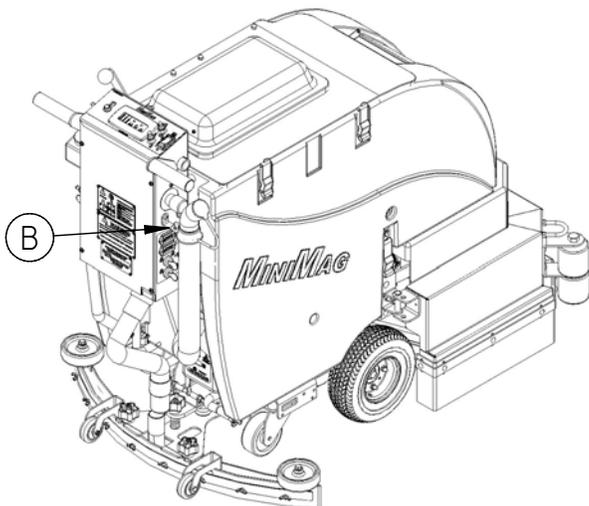


FLUSH RECOVERY TANK

1. Rinse the recovery tank after every use. This will prevent heavy buildup on the bottom of the tank, foul odors, and clogging of the drain hose.
(SEE BELOW "A")



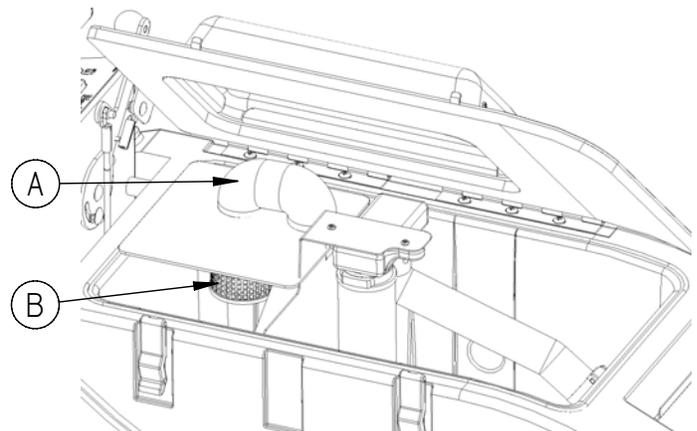
3. After rinsing, reattach drain hose "B" on hook.
(SEE BELOW)



CLEAN "DRAIN SAVER"

WITH RECOVERY LID OPEN & TANK FULLY DRAINED

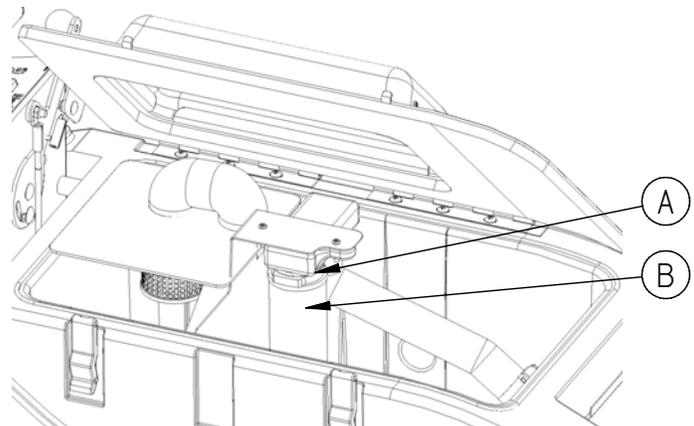
1. Remove 2" squeegee intake hose "A" from "Drain Saver" strainer "B". **(SEE BELOW)**
2. Remove stainless screen, dispose of debris.
3. Rinse screen with fresh water from the outside to the inside holding screen upside down. This will allow for better cleaning.
4. Replace the screen into the bracket.
5. Replace 2" squeegee intake hose.



CLEAN VAC SCREEN

WITH RECOVERY LID OPEN & TANK FULLY DRAINED

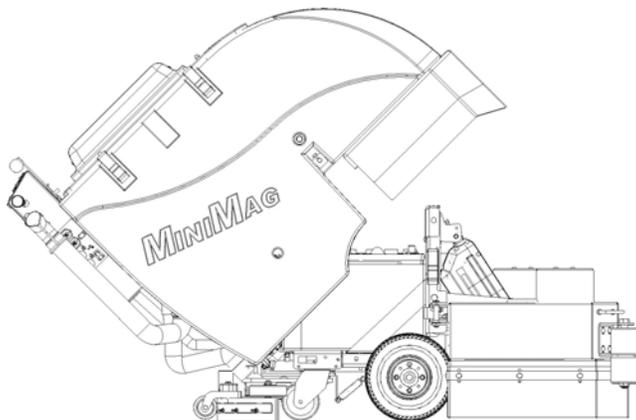
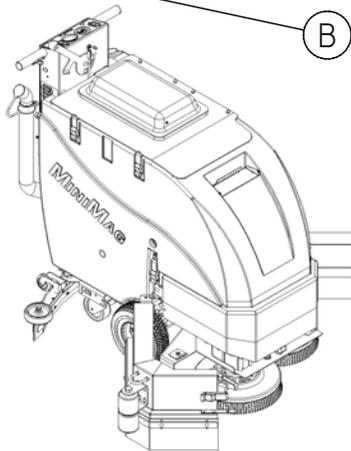
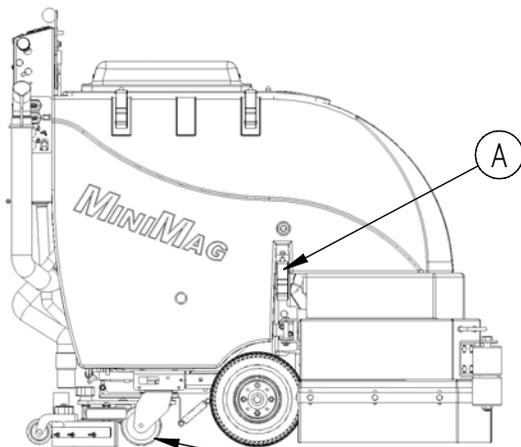
1. Remove vac screen retaining clip "A".
(SEE BELOW)
2. Pull vac screen and float ball assembly (B) off the vac box.
3. Rinse with hot water.
4. Dry thoroughly.
5. Replace vac screen onto box.
6. Replace and tighten retaining clip.



TIP TANK

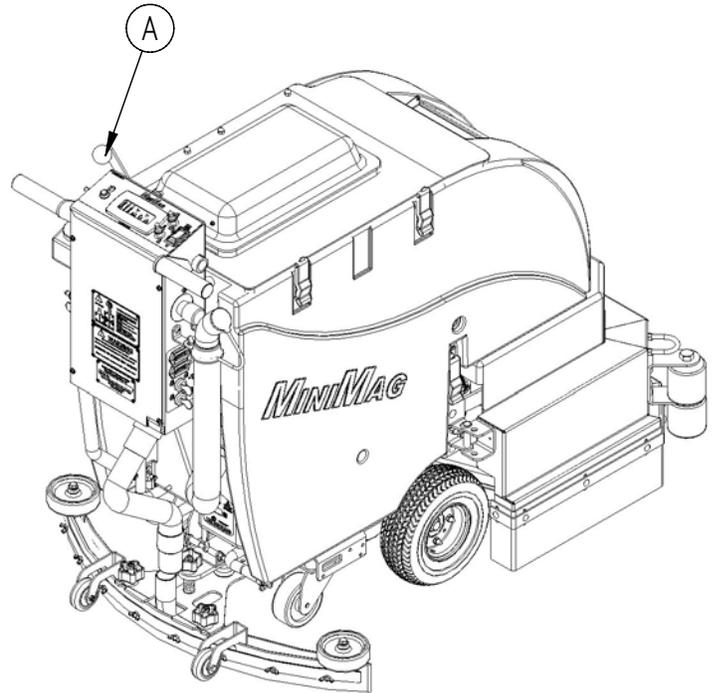
1. Fully drain solution tank.
2. Fully drain recovery tank.
3. Remove squeegee.
4. Unlatch tank latch "A" on each side of machine.
(SEE BELOW)
5. Open Jaws. **(SEE BELOW)**
6. Tip tank back carefully until supported by strap.
(strap not shown) **(SEE BELOW)**

* **CAUTION:** Casters need to be swiveled back (B) as shown, otherwise machine will tip.



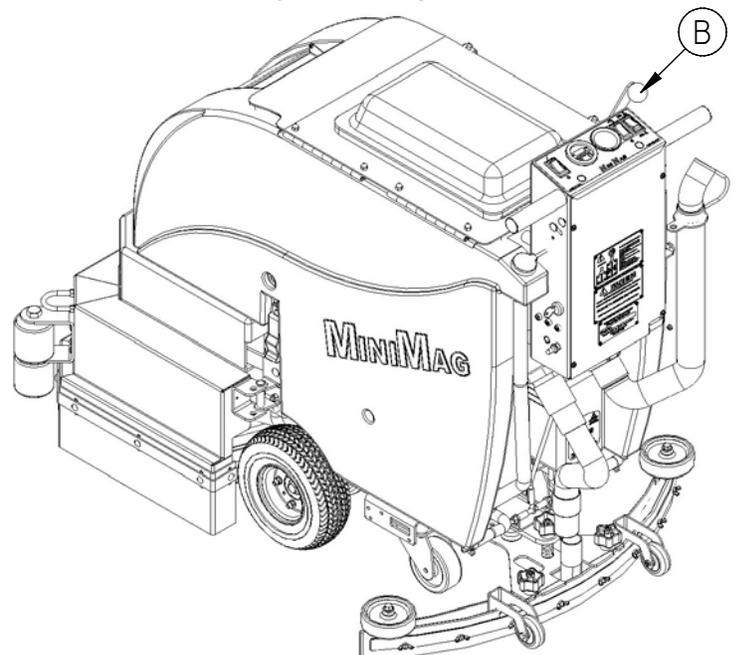
SQUEEGEE UP

1. To raise the squeegee off the floor rotate squeegee lift lever "A" counter-clock-wise all the way to the left. **(SEE BELOW)**



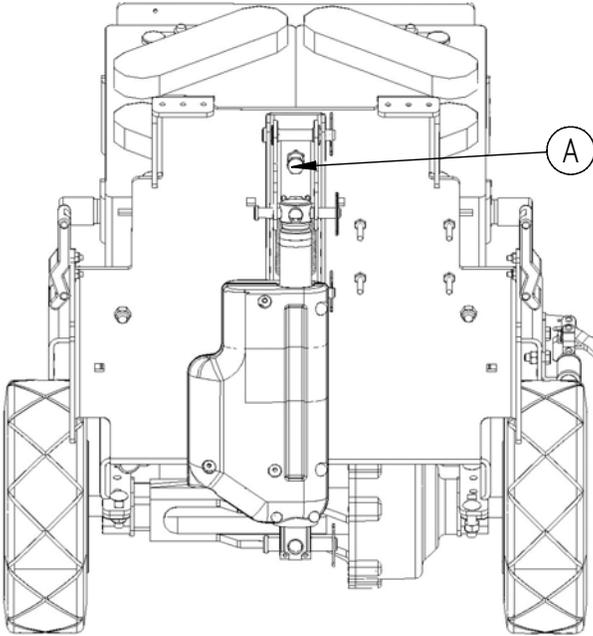
SQUEEGEE DOWN

1. To lower the squeegee to the floor rotate squeegee lift lever "B" clockwise all the way to the right. Vac motor will turn on automatically. Use with remote vac wand. **(SEE BELOW)**



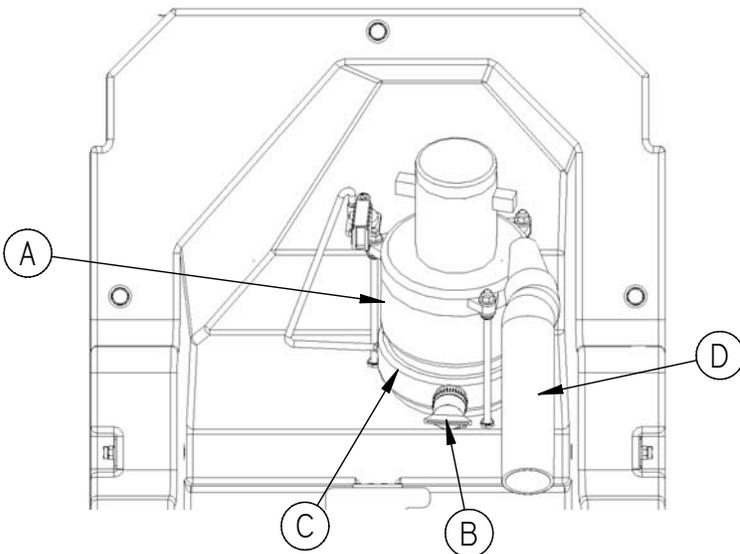
DECK HEIGHT ADJUSTMENT

1. To adjust deck height for brush clearance, loosen jam nut on adjustment bolt "A", turn adjustment bolt clock-wise to raise deck, counter-clockwise to lower deck. Retighten jam nut. *(SEE BELOW)*



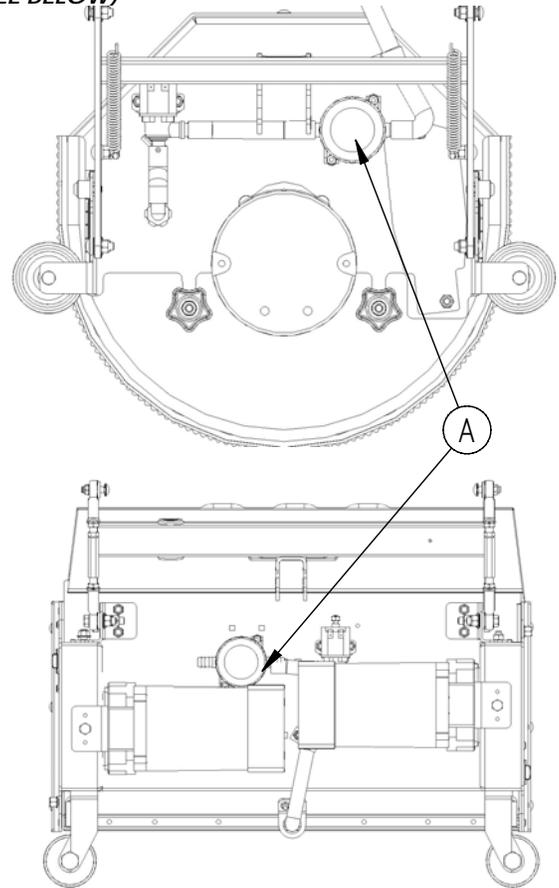
VAC MOTOR *(SEE BELOW)*

1. The machine is equipped with a 24 volt, 3/4 hp, vac motor "A".
2. If foam or water gets past the recovery tank's vac screen/ball system the "UNLOADER VALVE" "B" will drain it from the "VAC BOX" "C".
3. The vac motor has an "optional" "FOAM MUFFLER" "D" available for quiet machine operation.



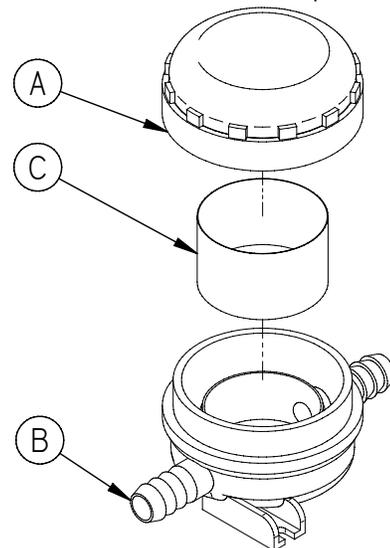
SOLUTION FILTER

1. The solution system has a "INLINE FILTER" "A" to filter out cleaning solution prior to scrubbing. *(SEE BELOW)*



CLEANING SOLUTION FILTER *(SEE BELOW)*

1. To clean the "SOLUTION FILTER" Unscrew the clear cap "A" from housing "B" and remove the "STAINLESS STEEL" screen "C".
2. Rinse any debris from the screen with clean water.
3. Reinstall screen and screw cap back on tightly.



Battery charging

EXTERNAL BATTERY CHARGING (OPTIONAL)

CAUTION: The following instructions are intended for the 24v charger supplied with the machine.

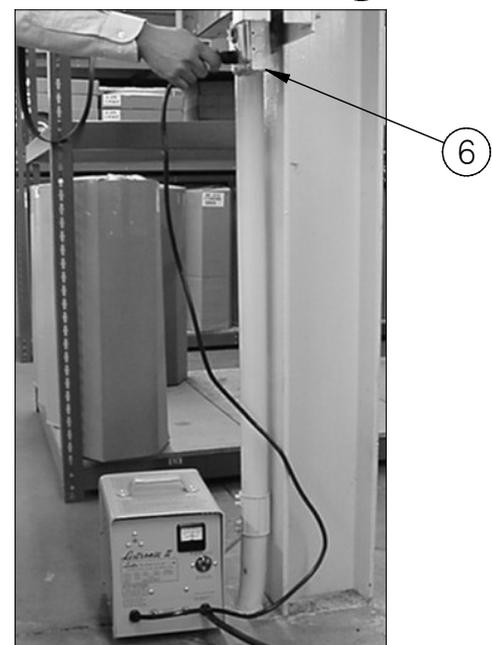
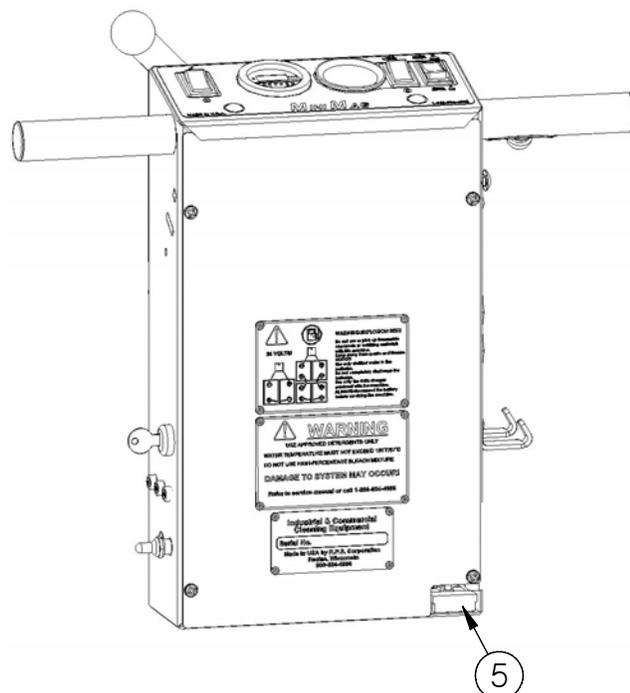
Do not use any other charger with this machine.

CHARGER SPECIFICATIONS

- * **OUTPUT VOLTAGE OF 24 VOLTS.**
- * **OUTPUT CURRENT OF 18 AMPS MAX (OPTIONAL).**
- * **INPUT VOLTAGE OF 110 VOLTS/60 HZ.**
- * **AUTOMATIC SHUT OFF CIRCUIT.**
- * **MADE FOR DEEP CYCLE BATTERIES.**

DANGER: Always charge batteries in a well ventilated area. Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and flame away. Shield eyes when servicing batteries and avoid contact with battery acid.

1. Transport machine to a well ventilated area for charging.
2. Turn the machine off.
3. **CAUTION ALWAYS WEAR EYE PROTECTION WHEN BATTERIES ARE EXPOSED.**
4. Check the water level through "pro-eye" window in each battery. **(SEE TOP PICTURE.)** Do not charge the machine unless the water is slightly higher than the plates. If needed, add enough **distilled** water to just slightly cover the plates. Be careful not to over fill. Batteries can overflow during charging. Replace caps before charging.
5. With the red 50 charger plug connected to the machine **"FIRST"** **(SEE MIDDLE PICTURE.)** plug the charger power cord into a grounded 110 volt standard wall outlet **"SECOND"**. **(SEE BOTTOM PICTURE.)**
6. The charger will automatically begin charging, and automatically shut off when fully charged. **(check gauge)**
7. After the charger has turned off, unplug the charger from the wall outlet **"FIRST"**, then unplug the red 50 charger plug from the machine **"SECOND"**.
8. Recheck the cell level after charging. If needed, add distilled water up to the correct level. Be certain to replace the caps securely and to wipe off the top of the batteries with a clean cloth.



ON-BOARD CHARGER

ON-BOARD BATTERY CHARGING (OPTIONAL)

CAUTION: *The following instructions are intended for the 24 charger supplied with the machine.*

Do not use any other charger with this machine.

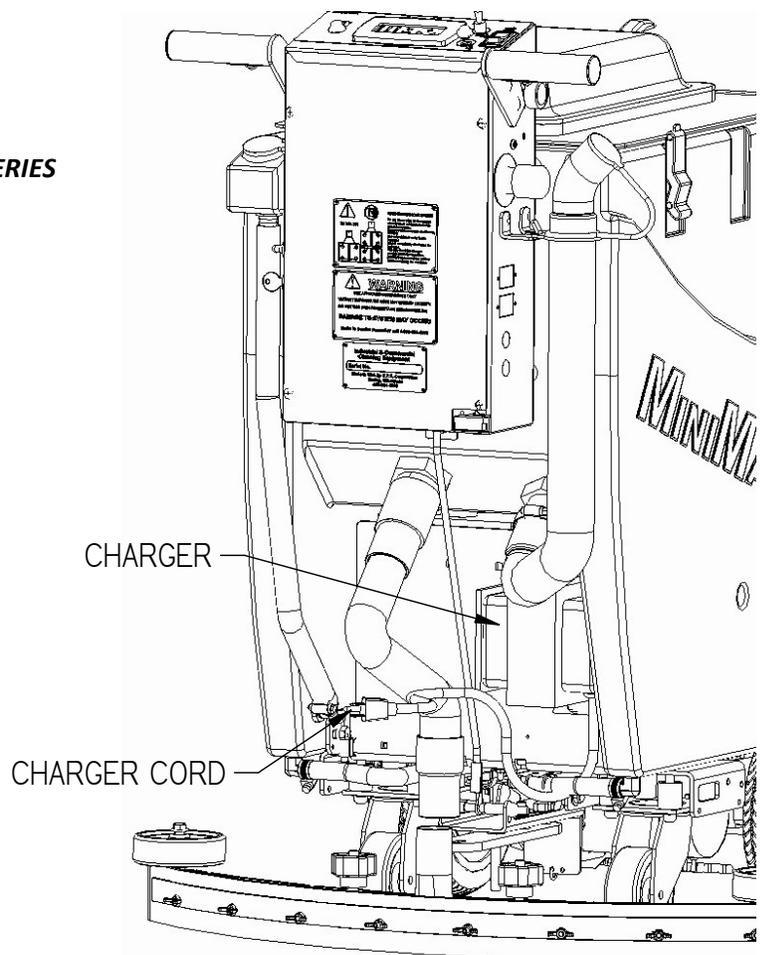
CHARGER SPECIFICATIONS

- * **OUTPUT VOLTAGE OF 24 VOLTS.**
- * **OUTPUT CURRENT OF 15 AMPS MAX (OPTIONAL).**
- * **INPUT VOLTAGE OF 110 VOLTS/60 HZ.**
- * **INPUT VOLTAGE OF 220 VOLTS/55 HZ. (OPTIONAL).**
- * **AUTOMATIC SHUT OFF CIRCUIT.**
- * **MADE FOR DEEP CYCLE BATTERIES.**

DANGER: Always charge batteries in a well ventilated area. Batteries emit hydrogen gas. Explosion or fire can result.

Keep sparks and flame away. Shield eyes when servicing batteries and avoid contact with battery acid.

1. Transport machine to a well ventilated area for charging.
2. Turn the machine off.
3. **CAUTION ALWAYS WEAR EYE PROTECTION WHEN BATTERIES ARE EXPOSED.**
4. Check the water level . Do not charge the machine unless the water is slightly higher than the plates. If needed, add enough **distilled** water to just slightly cover the plates. Be careful not to over fill. Batteries can overflow during charging. Replace caps before charging.
5. Plug the charger power cord into a grounded standard wall outlet . **(SEE PICTURE.)**
6. The charger will automatically begin charging, and automatically shut off when fully charged. **(check gauge)**
7. After the charger has turned off, unplug the charger from the wall outlet .
8. Recheck the cell level after charging. If needed, add distilled water up to the correct level. Be certain to replace the caps securely and to wipe off the top of the batteries with a clean cloth.



Maintenance

Daily Maintenance

1. Remove and clean pads or brushes. Never use soiled pads when cleaning. Replace pads when they become packed with residue.
2. Remove and clean debris from the float shut-off screen and drain saver located inside the recovery tank.
3. Drain and rinse tanks thoroughly
4. Inspect vacuum hose for any objects obstructing the air flow.
5. Raise squeegee and wipe blades with a clean cloth. Store squeegee in the raised position to prevent damage or setting of the blades.
6. Wipe down machine if needed. Use a nonabrasive, non solvent cleaner, or a clean damp cloth.
7. Recharge the batteries if needed.

Weekly Maintenance

1. Check battery water level in each cell of the batteries, and fill as needed. Always use distilled water to refill batteries. Batteries should be filled approximately 3/4" to 1" above the plates. Overfilling will cause the batteries to leak during charging. The charging process creates gas bubbles inside the battery, which effectively increases the volume of the electrolyte.
2. Clean battery tops to prevent corrosion.
3. Rotate brushes. Rotate the left to the right and right to left. On cylindrical models from front to back, or end to end if using different materials.
4. Drain and rinse tanks thoroughly. To thoroughly flush out any solution chemicals in solution line and valves, refill solution tank with a few gallons of warm clean water and run machine until tank is empty.

Monthly Maintenance

1. Check scrub head and squeegee lifting cables for wear and spring tension.
2. Check machine for water leaks and loose nuts and bolts.
3. Check to see if battery cables are tightened (Tighten if needed)
4. Check parking brake

Yearly Maintenance

1. Call your local dealer for yearly maintenance

Storing Machine

1. Be sure to flush the tanks out completely. To thoroughly flush out any solution chemicals in solution line and valves, refill solution tank with a few gallons of warm clean water and run machine until tank is empty.
2. Open the recovery tank lid to promote air circulation.
3. Raise brushes and squeegee.

Checking Battery Specific Gravity

Use a hydrometer to check the battery specific gravity.

Checking Gravity

A. Hydrometer

B. Battery

Note: do not take readings immediately after adding distilled water, if water and acid are not thoroughly mixed, the reading may not be accurate.

Check the hydrometer against this chart

SPECIFIC GRAVITY @ 80° F (27° C)	BATTERY CONDITION
1.265	100% CHARGED
1.225	75% CHARGED
1.190	50% CHARGED
1.155	25% CHARGED
1.120	DISCHARGED

Note: if the readings are taken when the battery electrolyte is any temperature other than 80° F (27° C), the reading must be temperature corrected.

To find the corrected specific gravity reading when the temperature of the battery electrolyte is other than 80° F (27° C): add (+) to the specific gravity reading 0.004 (4 points), for each 10° F (6° C) above 80° (27° C). subtract (-) from the specific reading 0.004 (4 points), for each 10° F (6° C) below 80° F (27° C).

Preventative maintenance records

CUSTOMER INFORMATION							
CUSTOMER							
ADDRESS							
CITY				STATE		ZIP CODE	
MACHINE INFORMATION							
MODEL #				SERIAL #			
WORK ORDER#				HOUR METER:			
BATTERY CONDITION		Cell #1	Cell #2	Cell #3	Cell #4	Cell #5	Cell #6
Battery #1 Hydrometer							
Battery #1 Water Condition							
Battery #2 Hydrometer							
Battery #2 Water condition							
Battery #3 Hydrometer							
Battery #3 Water Condition							
Battery #4 Hydrometer							
Battery #4 Water condition							
Clean Battery Tops. Check Battery Cable and Terminal Condition							
NOTES:							
BRUSH CONDITION							
Scrub Brush Fiber Length		Rotated Brushes					
Brush Drive Sockets		Good	Worn	Needs Replacement			
Drive Hubs		Good	Worn	Needs Replacement			
CHECK OPERATION AND CONDITION OF:	IN SPEC	REPAIR	PROBLEM				
Main Power Switch or Key Switch							
Handle Bar Switches							
Speed Potentiometer							
Reverse Switch							
LCD Display							
Page Switch							
Brush Pressure Switch							
Brush Pressure Managers Lock Out							
Reverse Switch							
Brush Switch							
Brush Deck Lift System							
Brush Motor							
Brush Drive Belt							
Solution Potentiometer							
Solution Solenoid							
Vacuum Switch							
Vacuum Motor Performance							
Vacuum Filter							
Recovery Drain Hose & Plug							
Squeegee Lift System							
Squeegee Adjustment							

continued on next page

Preventative maintenance records

CHECK OPERATION AND CONDITION OF:	IN SPEC	REPAIR	PROBLEM
Spray Jet Switch			
Spray Jet Pump, Hose & Nozzle			
Battery Charger Connectors			
Battery Charger			

CLEAN AND/OR LUBRICATE	IN SPEC	REPAIR	PROBLEM
Solution Filter			
Squeegee Pivot Points & Knobs			
Scrub Deck Linkage			
Caster grease fittings			
Squeegee Knob Threads			
Squeegee Pivot Points			
Brush Head Pivot Points			

VISUALLY INSPECT:	IN SPEC	REPAIR	PROBLEM
Solution Tank Condition			
Recovery Tank & Lid Condition			
Drain Saver			
Vacuum Float			
Vacuum Motor Brushes			
Vacuum Hoses			
Vacuum Filter			
Solution Hoses			
Squeegee Tool and Throat			
Squeegee Blades			
Blade retainers & Hardware			
Squeegee Wheels			
Brush Skirts			
Brush Motor Brushes			
Brush or Pad Driver Condition			
Drive Wheel Condition			
Caster Condition			

COMMENTS

Technician's Name _____

Technician's Signature _____ Date _____

Customer's Name: _____

Customer's Signature _____ Date _____

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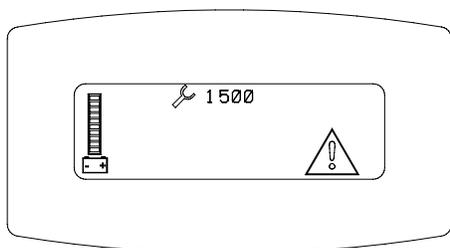
Troubleshooting

Troubleshooting central command

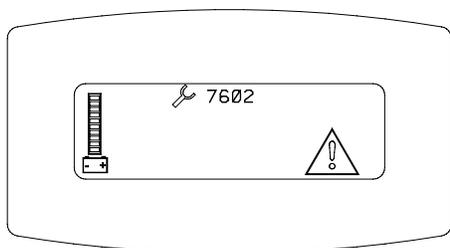
NOTE: This machine is operated by a sophisticated electronic "**CONTROLLER**" that has many fail-safes within it. The controller self-analyzes problems and flashes a four-digit numeric code of what is wrong in the LCD window.

Most of these codes require a technician's attention. You should not attempt repairs you are uncomfortable with, especially if you are not used to working on electronics.

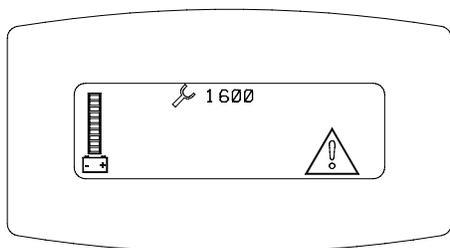
The complete list of codes is published in the simplified electronic troubleshooting manual, which is available to technical people. However, we have included the basic codes that you can usually resolve yourself.



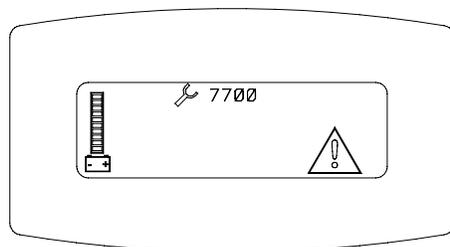
1. 1E03 AND 1E04 ERROR. Check the small safety switch next to the red plug below the dashboard. This switch will turn off the traction drive and brushes as a safety feature while the charger is plugged in. The switch may be stuck, or the plug twisted at an angle, engaging the switch. This code will also flash if the wiring becomes very wet. In this case, either wait until the wiring dries out, or call a technician.



2. 7601 AND 7602 ERROR. Pads or brushes current over load. This can occur when the pads/brushes hit a bump in the floor. To restart the pads, turn off the key and turn it on again. To avoid this error, either slow down on bumpy parts of the floor, or reduce downpressure on the pads or brushes.

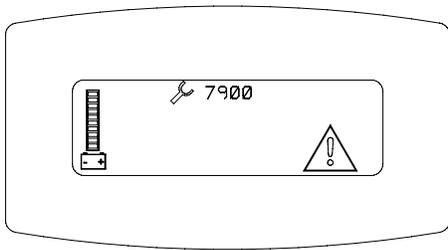


3. 1600 ERROR. Voltage exceeds the maximum. Either the batteries are mis-wired, or the charger is still plugged into the machine.

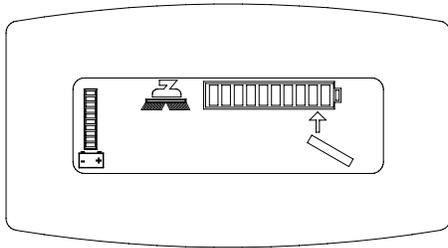


4. 7700, 7701, 7702, AND 7703 ERROR. The vacuum motor has exceeded its authorized power limit. Turn off main power switch and turn on again to clear.

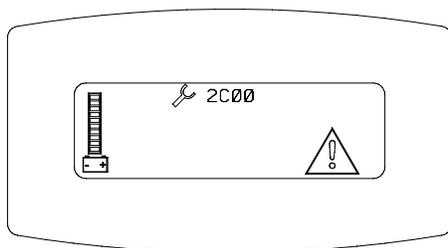
Troubleshooting central command



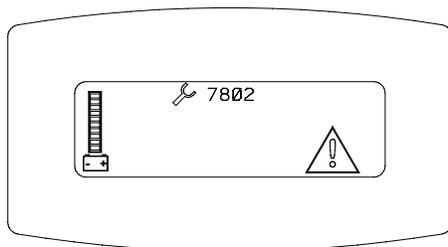
5. **7900 AND 7901 ERROR.** The emergency stop button is out.



6. **HIGH THROTTLE ERROR.** You pressed the drive button before turning on the key. Turn off the key, release the drive button and try again.



7. **2C00 AND 2C01 ERROR.** Low voltage warning. Voltage has dropped down below the minimum required to operate the machine. If you wait a few minutes, the batteries may coast up a bit in voltage, allowing you to drive very slowly to the recharge station.



8. **7802 ERROR.** The traction motor was used to climb a ramp, and was running up the ramp for more than the 60 seconds allowed for this. Turn off the key, turn on again, and continue. You should not use this machine to climb ramps so steep and so long that this code comes up repeatedly, or you could overheat and damage the traction motor.

9. All other error codes. Turn off the main power switch and disconnect the positive battery cable from the batteries for more than one minute (***the time is needed to drain the controller's on-board capacitor***). Reconnect the cables being sure they are tight; too loose will burn the batteries. If you overtighten the cables you can damage the battery's lead terminal. Try again.

10. If the problem cannot be solved by any of these remedies call your local dealer's service department.

Troubleshooting

Problem

Cause

Solution

No power, nothing operates

Faulty power switch
Batteries need charging
Faulty battery
Loose battery cable
Main circuit breaker tripped

Contact local servicing dealer
See charging batteries
Replace battery
Tighten loose cable
Wait 5 minutes for auto reset
Determine cause and correct

Brush motor does not operate

Green button is not depressed
Circuit breaker tripped

Carbon brushes worn
Faulty brush motor or wires

Depress button on handle bar
Reset & reduce pressure
Determine cause and correct
Contact local servicing dealer
Contact local servicing dealer

Vacuum motor does not operate

Faulty vacuum switch
Circuit breaker tripped

Faulty vacuum motor
Carbon brushes worn

Replace switch
Reset & check hose
Determine cause and correct
Contact local servicing dealer
Contact local servicing dealer

Insufficient solution flow

Solution tank low
Flow knob turned down
Solution filter clogged
Solution line clogged

Solution valve clogged

Refill solution tank
Turn knob more open
Remove cover and clean
Remove and blow out with
compressed air
Remove cover and clean

Troubleshooting

<u>Problem</u>	<u>Cause</u>	<u>Solution</u>
No solution flow	No solution in tank Solution switch off Solution screen clogged Faulty solution solenoid Faulty solution switch	Fill solution tank Turn solution switch on Remove and clean screen Contact local servicing dealer Contact local servicing dealer
Poor water recovery	Recovery tank is full Ball/screen is clogged Vacuum hose is clogged Squeegee is clogged Squeegee blade is worn Faulty vacuum hose Vacuum motor gasket torn Tank gasket faulty Drain plug loose Vac motor faulty Battery charge low	Empty recovery tank Remove screen and clean Remove debris Remove debris Rotate or replace blades Contact local servicing dealer Contact local servicing dealer Contact local servicing dealer Tighten plug Contact local servicing dealer Charge batteries overnight
Poor water recovery on turns	Wipers worn Wipers chatter Squeegee swing is binding Incorrect squeegee size	Replace wiper material Tighten pivot points Contact local servicing dealer Contact local servicing dealer
Tires noisy	Bearing dry Faulty hubs	Grease bearings Contact local servicing dealer
Poor traction	Excessive brush pressure Worn drive tire Heavy soap concentration	Reduce pressure with switch Replace tires Contact local servicing dealer
Short run time	Batteries run down Batteries still down Batteries low on water Batteries over cycled	Charge batteries twice Contact local servicing dealer Fill with distilled water to 3/4" above the lead plates Contact local servicing dealer

Common Wear Parts

Brushes	Model 17"-Disk	Model 20"-Disk	Model 23"-Disk	Model 26"-Disk	Model 28"-Disk
Super-Grit	17-42I SS	20-42I SS	23-42I SS	13-42I SS	14-42I SS
Tough-Grit	17-42I S	20-42I S	23-42I S	13-42I S	14-42I S
Midi-Grit	17-42I C	20-42I C	23-42I C	13-42I C	14-42I C
Light-Grit	17-42I PS	20-42I PS	23-42I PS	13-42I PS	14-42I PS
Poly (.028)	17-42I P	20-42I P	23-42I P	13-42I P	14-42I P
Nylon (.016)	17-42I N	20-42I N	23-42I N	13-42I N	14-42I N
Tampico	17-42I T	20-42I T	23-42I T	13-42I T	14-42I T
Pad Driver	17-42I D	20-42I D	23-42I D	13-42I D	14-42I D
Diamond Driver	17-42I DD	20-42I DD	N/A	N/A	N/A

NOTE: # In Disk Column Denotes Pad Size: 13,15, 17

Pads	Disk	Level	Color
Super-Black	##-422 BB	Very High	Black
Black	##-422 B	High	Black
Brown	##-422 BR	High	Brown
Green	##-422 G	Medium	Green
Blue	##-422 BL	Moderate	Blue
Red	##-422 R	Moderate	Red
White	##-422 W	Light	White

Extra pad driver retaining clip: 40-433

Brush repair kit: 40-423 Replacement locating clip for all brushes.

NEW STYLE CYL BRUSHES FOR MACHINE SERIAL #50000 & GREATER

Brushes	Model 24"-Cyl
Super-Grit	N/A
Tough-Grit	225-82IS
Midi-Grit	225-82IC
Light-Grit	225-82IPS
Poly (.028)	N/A
Nylon (.016)	225-82IN

OLD STYLE CYL BRUSHES FOR MACHINES PRIOR TO SERIAL #50000

Brushes	Model 24"-Cyl
Super-Grit	N/A
Tough-Grit	22-52I S
Midi-Grit	22-52I C
Light-Grit	22-52I PS
Poly (.028)	N/A
Nylon (.016)	22-52I N
Tampico	N/A

Squeegee blade kits & Complete Squeegee assemblies

Squeegee size	Model 17"-Disk	Model 20"-Disk	Model 23"-Disk	Model 26"-Disk	Model 24"-Cyl	Model 28"-Cyl	Gum Rubber blade kit	Linatex blade kit	Complete squeegee assemblies
32" squeegee	Standard	Standard	Standard	Standard	Standard	Optional	22-770 G	22-770 L	23-7180
35" squeegee	Optional	Optional	Optional	Optional	Optional	Standard	25-770 G	25-770 L	25-7180

NOTE: Squeegee blade kits include (1) Rear Blade, (1) Front Blade, and (2) Backup Wheels with hardware.

NOTE: Squeegee Assemblies (complete) listed above all come with Linatex blades.

NOTE: Size is stamped into the top of the painted steel squeegee body on all squeegee's.

NOTE: The 32" squeegee is designed for narrow isles and may not have the same water control around tight turns as the larger squeegees.

SOAP

Heavy Duty Degreaser

Citrus

Freezer

Tire Mark Remover

For more soap information call PowerCat 414-745-9337

www.powercatsolutions.com

Battery Maintenance Guide

SAFETY:

- Always wear protective clothing, gloves and goggles when handling batteries
- If acid contacts your skin or eyes, flush with water immediately
- Keep flames, sparks and metal objects away from batteries
- Charge batteries in a well-ventilated area
- To avoid short circuits do not lay objects on top of battery
- Check that all cable connections to the terminal are properly tightened; connections that are too tight or too loose could result in post breakage, meltdown or fire



INSPECTION & CLEANING:

- Keep batteries clean and dry from residue
- Check that all vent caps are tight
- Use a solution of baking soda and water to clean if there is acid residue on batteries or corrosion on the terminals
- Protective spray or petroleum jelly should be applied to terminals to reduce corrosion

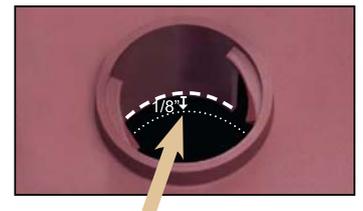
STORAGE:

- Batteries should be fully charged prior to and during storage
- Never store discharged batteries
- Store batteries in a cool, dry place
- Recharge batteries before putting them back into service

WATERING:

- **ADD WATER, NEVER ACID, TO CELLS** (distilled water recommended)
- **DO NOT OVERWATER**
- Before charging the batteries, **only add water if the plates are exposed..** Add just enough water to cover the plates, then charge the batteries. Once fully charged, add water to the proper level as indicated below
- For fully charged **standard deep cycle batteries**, add water to level of 1/8" (3 mm) below bottom of vent well (see diagram A)
- For fully charged **Plus Series** batteries, add water to the maximum water level indicator (see diagram B)
- After watering, secure vent caps back on batteries

Diagram A



Add water to 1/8" (3 mm) below bottom of the vent well.

Diagram B



Add water to the maximum water level indicator.

Maximum Battery Size for Replacement

Mini

MiniMag

Dimensions Inches (mm)			Dimensions Inches (mm)		
Length	Width	Height	Length	Width	Height
12.63"	6.75"	9.38"	13.63"	6.75"	12.25"
(321)	(171)	(238)	(346)	(171)	(311)

