
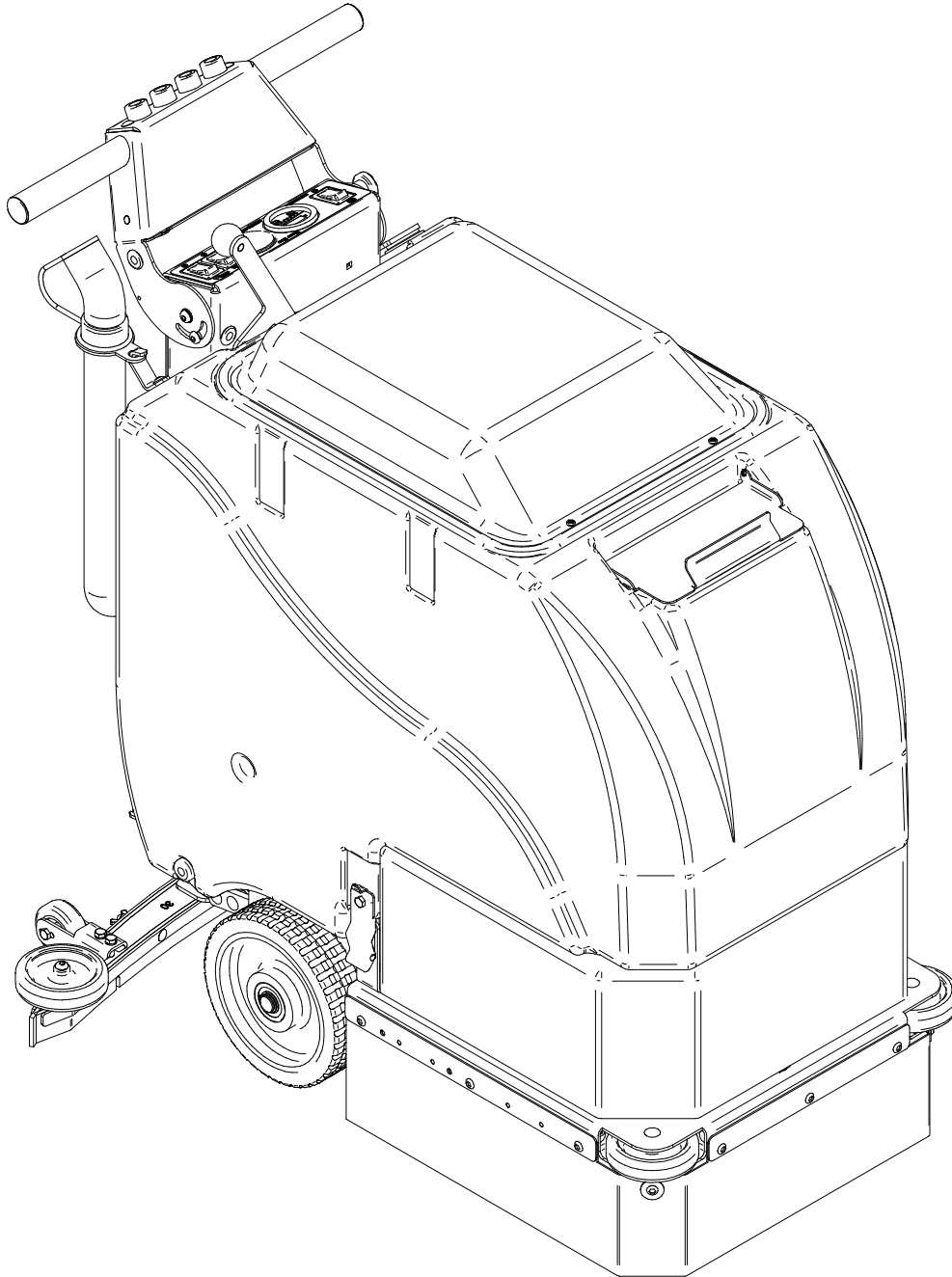


## Operating Instructions (EN)


**MODELS:**

*17" Disk Traction  
20" Disk Traction*

*17" Disk Pad Assist  
20" Disk Pad Assist*



Read the Operators Manual before using the machine.



Read the Safety Messages before servicing machine.



## INTRODUCTION

This manual is furnished with each new machine. This manual will allow the Operator to get the best performance out of your RPS manufactured Scrubber-Drier, Sweeper, Burnisher, or Orbital Scrubber. Read this manual thoroughly before operating or servicing the machine.

This machine will provide excellent performance, but the best results will be obtained at the most minimum costs if:

- The machine is regularly maintained - per the machine Preventative Maintenance instructions provided.
- The machine is operated with reasonable care and caution.
- The machine is maintained with manufacturer supplied parts.

## ABOUT THIS MANUAL

**TABLE OF CONTENTS:** Tells you where to look in the manual.

**SAFETY MESSAGES:** 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.

**OPERATION CONTROLS / MACHINE COMPONENTS:** Shows you the different machine controls and features.

**MACHINE SETUP:** Tells you how to setup machine from un-crating to installing Squeegee and Brushes.

**MACHINE OPERATION:** 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 it's components in good working condition. They are listed in this general order:

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

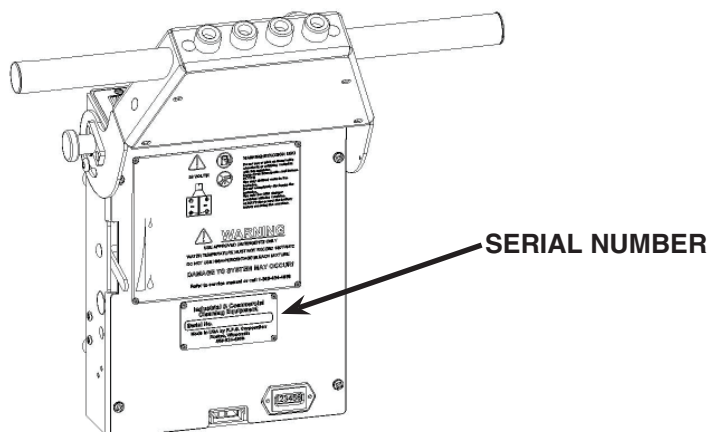
**TROUBLE SHOOTING:** A list of common problems that may occur.

**MACHINE SPECS:** Tells you Machine Specifications for the various parts of the machine.

**MACHINE INSTALL FORM:** Should be filled out upon machine installation and faxed to 1-866-632-6961 or on-line at [www.rpscoperation.com](http://www.rpscoperation.com).

**WARRANTY POLICY:** Tells you coverage, exclusions and limitations to Warranty.

**NOTE:** The Serial Number of your machine is located on the lower half of the Control Panel of the machine.



AS OUR POLICY IS ONE OF CONSTANT IMPROVEMENT - ALL INFORMATION AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

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## SAFETY MESSAGES

You will see four kinds of safety reminders in this manual:

<p><b>⚠ DANGER</b></p> <p>DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.</p>
<p><b>⚠ WARNING</b></p> <p>WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</p>
<p><b>⚠ CAUTION</b></p> <p>CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or damage to this machine or nearby objects. CAUTION also can be used to alert against unsafe practices.</p>
<p><b>NOTICE</b></p> <p>NOTICE indicates information considered important, but not hazard-related. This safety message may be related to property damage or warranty warnings.</p>

Your safety, and that of others, is very important. Operating this machine safely is an important responsibility.

### DO NOT OPERATE THIS MACHINE:

- Unless you are trained and authorized to do so
- Unless you have read and understood this Operator's Manual
- On surfaces with greater than a 2% grade unless this machine is equipped with a functional parking brake
- On surfaces with greater than an 8% grade at any time
- On Loading Docks

### WHEN OPERATING THIS MACHINE:

- Remove loose objects from the floor that could be projected from the rotating Brushes
- Keep your hands and feet away from the rotating Brushes
- Do not operate this machine where flammable liquids are present
- Use caution when maneuvering

### BEFORE LEAVING THE MACHINE:

- Park the machine on a level surface
- Turn the machine off

### BEFORE SERVICING THE MACHINE:

- Disconnect the Batteries

### ⚠ DANGER

Explosive hydrogen gas forms when Batteries are charging. An open flame or spark can cause this gas to explode. Serious personal injury or property damage could occur. Only charge the Batteries in this machine in a well ventilated area.

### ⚠ DANGER

Flammable materials can cause an explosion or fire. Do not use flammable materials in Tank or pick up.

## **WARNING**

The Batteries in this machine produce hazardous voltage which can cause electrical shock, burns and/or electrocution. Always disconnect batteries before servicing this machine.

## **WARNING**

When climbing or descending ramps, always drive machine forward. To avoid overturning the machine, Do not back down ramps. Do not drive across inclines. Do not turn while ascending or descending ramps. Overturning the machine can cause serious injury or death.

## **WARNING**

Do not use water that exceeds 135°F / 57°C. If water is above said temperature, this will void the Tank Warranty.

## **WARNING**

Do not park this machine on ramps or slopes. Always park this machine on a level, hard surface. Do not operate this machine outdoors or on uneven surfaces.

## **WARNING**

The Batteries in this machine contain sulfuric acid, which causes burns to skin. If battery acid contacts clothing or skin, rinse the effected area with cold water immediately. If battery acid gets on your face or in your eyes, flush the area immediately with cold water and seek medical attention.

## **WARNING**

To avoid electrical shock, do not operate this machine over electrical floor outlets.

## **CAUTION**

To avoid damage to this machine, use only cleaning solutions and replacement parts recommended by the manufacturer.

## **CAUTION**

Do not operate this machine if any parts have been damaged or removed.

## **WARNING**

Dress safely. Do not wear rings or metal wrist watches when servicing this machine, as they can cause an electrical short circuit which can cause serious burns.

## **WARNING**

Do not remove, paint over or destroy warning decals. If warning decals become damaged, call 1-262-681-3583 for free replacements.

## **WARNING**

Dress safely. Do not wear a neck tie, scarf, or any loose or dangling clothing while operating this machine. Loose or dangling clothing or neck-wear can tangle in rotating parts, causing serious injury or death.

## **WARNING**

Always turn off this machine before leaving it unattended. Do not allow untrained persons to operate this machine.

## **WARNING**

**NO RIDERS.** Do not carry passengers on this machine. Do not use this machine as a stepladder or work platform.

## **WARNING**

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

## **WARNING**

Before you service a Battery, always wear face protection, protective gloves and protective clothing. Battery acid or Battery explosion can cause serious injuries.

## **CAUTION**

Always use the automatic battery charger provided by the manufacturer of this machine to charge the Batteries of this machine. It is designed to charge the Batteries at the appropriate rate. If you must use a different charger, disconnect the Batteries before charging to avoid damage to the electronic speed controller.

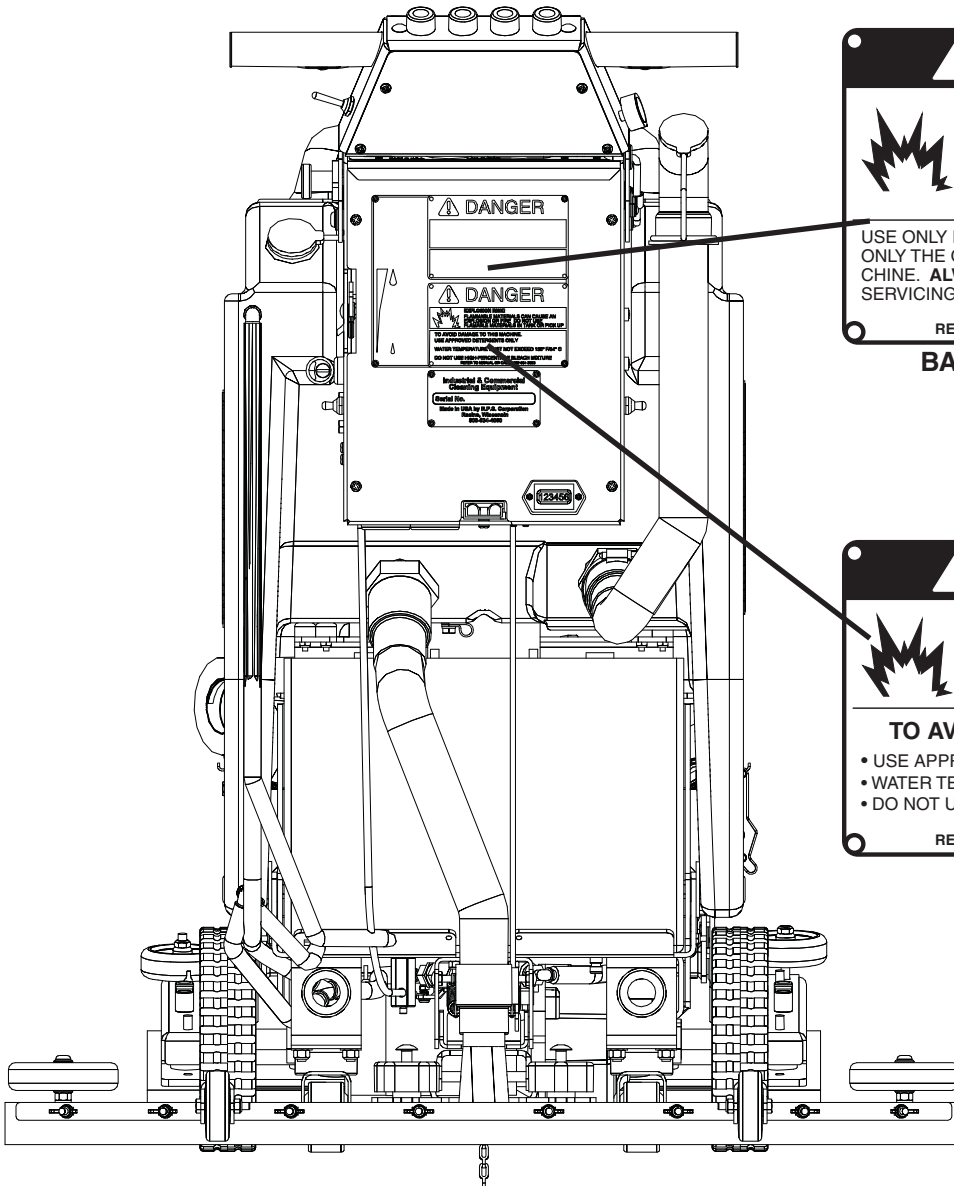
## **CAUTION**

To avoid damage to the electronic control components of this machine, Do not store this machine outdoors. Do not pressure wash this machine.

## SAFETY LABEL LOCATIONS

Read and obey all Safety Labels on your MICROMAG Floor Scrubber. If you have questions about these labels, ask your supervisor.

These images indicate where on the MICROMAG Safety Labels are located. If ever the labels become illegible, worn off, or torn, promptly report it to your supervisor and replace it.



**! DANGER**  
**EXPLOSION RISK!**  
EXPLOSIVE HYDROGEN GAS FORMS WHEN BATTERIES ARE CHARGING. AN OPEN FLAME OR SPARK CAN CAUSE THIS GAS TO EXPLODE. ONLY CHARGE THE BATTERIES IN THIS MACHINE IN A WELL VENTILATED AREA.

USE ONLY DISTILLED WATER IN THE BATTERIES. USE ONLY THE OEM CHARGER PROVIDED WITH THE MACHINE. ALWAYS DISCONNECT THE BATTERY BEFORE SERVICING THE MACHINE.

REFER TO MANUAL OR CALL +011-262-681-3583

**BATTERY CHARGING LABEL**  
PART #: 253-7280

**! DANGER**  
**EXPLOSION RISK!**  
FLAMMABLE MATERIALS CAN CAUSE AN EXPLOSION OR FIRE. DO NOT USE FLAMMABLE MATERIALS IN TANK OR PICK UP.

**TO AVOID DAMAGE TO THIS MACHINE:**

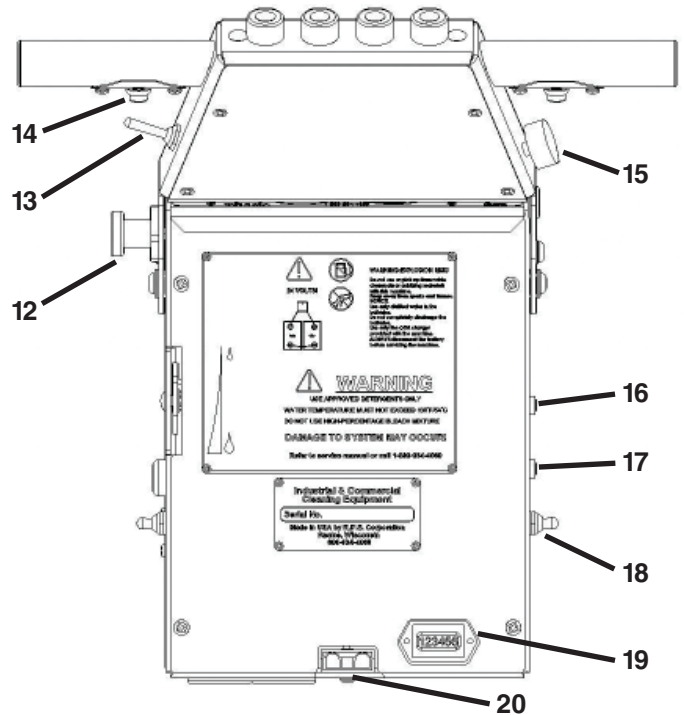
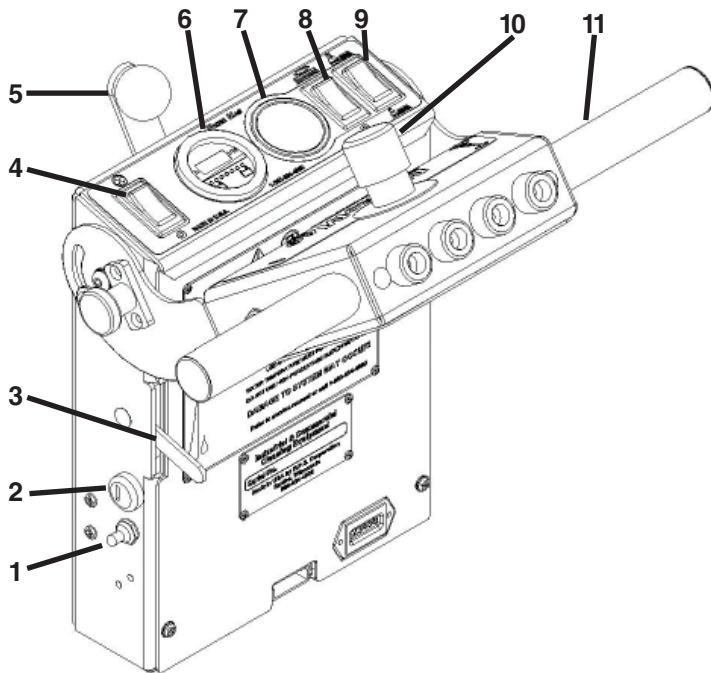
- USE APPROVED DETERGENTS ONLY
- WATER TEMPERATURE MUST NOT EXCEED 130°F/54°C
- DO NOT USE HIGH-PERCENTAGE BLEACH MIXTURE

REFER TO MANUAL OR CALL +011-262-681-3583

**TANK LABEL**  
PART #: 5-728

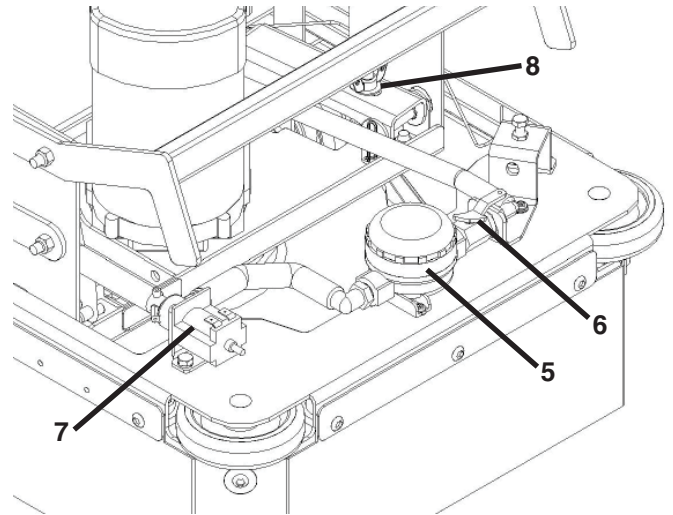
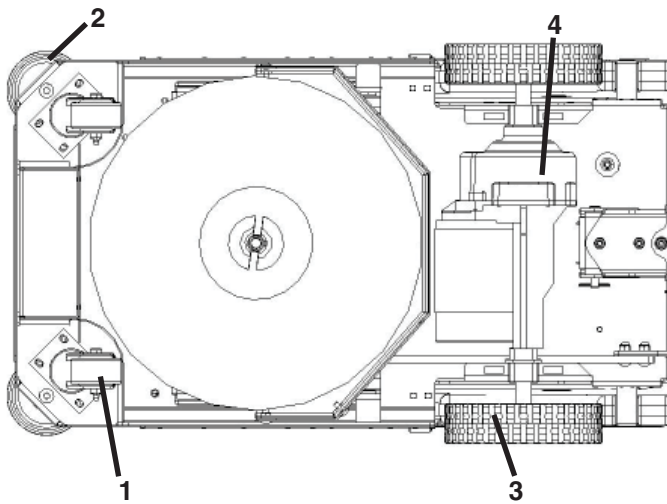


## OPERATION CONTROLS

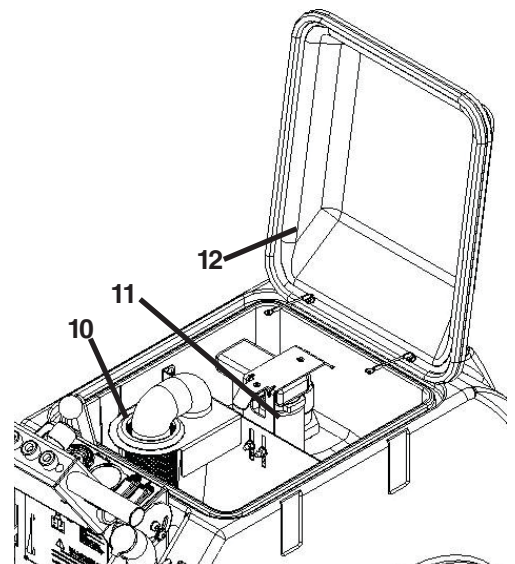
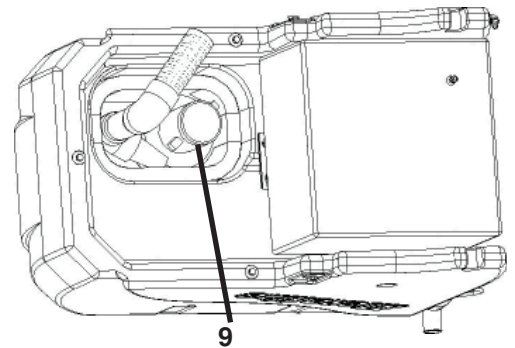


1. **MAIN POWER SWITCH (OPTIONAL):** Turns the machine *ON* and *OFF*
2. **KEY SWITCH:** Turns power on to the machine (Standard on Traction Drive, Optional on Pad Assist Drive)
3. **SOLUTION CONTROL LEVEL:** Controls solution flow (Up = *LESS*, Down = *MORE*)
4. **VACUUM SWITCH:** Turns the Squeegee Vacuum Motor *ON* and *OFF*
5. **SQUEEGEE LIFT LEVER:** Raises and lowers the Squeegee
6. **BATTERY GAUGE / HOUR METER:** Indicates the amount of Battery charge remaining
7. **SCRUBDECK DOWN PRESSURE GAUGE (OPTIONAL):** Shows the amount of down pressure applied to Scrubdeck
8. **SCRUBDECK SWITCH:** Turns the Scrubdeck *ON* or *OFF* and *UP* or *DOWN*
9. **SOLUTION FLOW SWITCH:** Turns Solution Flow *ON* or *OFF*
10. **EMERGENCY SHUT OFF SWITCH (OPTIONAL):** Shuts *OFF* the machine in case of emergency
11. **HANDLE BAR:** Adjustable Handlebar
12. **ADJUSTABLE HANDLE BAR LOCK:** Pull out to adjust Handlebar and release to lock the Handlebar in place
13. **REVERSE SWITCH:** Pull back for reverse
14. **DRIVE BUTTON:** Press to drive forward, release to stop
15. **SPEED CONTROL KNOB:** Controls the speed of the Traction Drive - Turn counter-clockwise to reduce speed
16. **CIRCUIT BREAKER:** 25 AMP resettable circuit breaker for Vacuum Motor
17. **CIRCUIT BREAKER:** 30 AMP resettable circuit breaker for Scrubdeck Motor (40 AMP for HD 1.2 HP motor option)
18. **SPRAY JET [BLUE BOOT] (OPTIONAL):** Activates Spray Pump for remote Spray Wand
19. **RECHARGE CYCLE METER:** Shows the amount of chargers on a machine
20. **CHARGER PORT:** Red 50 used to receive charger input for optional external charger - **24V ONLY!**

## MACHINE COMPONENTS

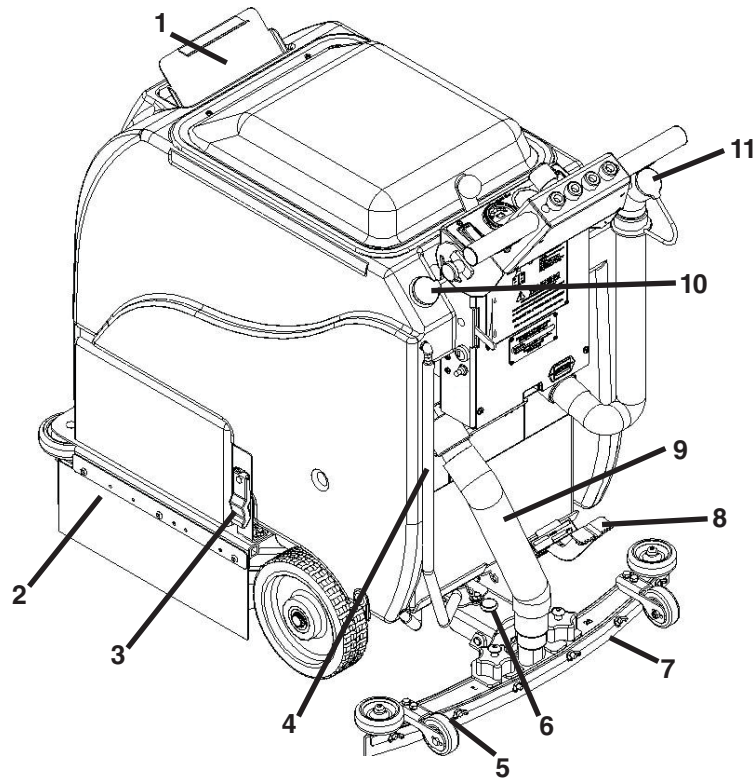


1. **CASTER:** Twin Casters for stability
2. **WALL ROLLERS:** Helps protect machine when scrubbing near walls
3. **MAIN TIRES:** Drive Tires
4. **TRACTION DRIVE:** Propels machine forward/reverse
5. **SOLUTION FILTER:** Filters water solution prior to scrubbing
6. **SOLUTION FLOW SHUT OFF VALVE:** Meters solution rate (GPM)
7. **SOLUTION FLOW VALVE:** Turns solution ON / OFF (Turns off when motor stops)
8. **“PAD ASSIST” DRIVE ADJUSTMENT KNOB:** Adjusts amount of offset being applied to Brush
9. **VACUUM MOTOR:** Creates vacuum for Tank / Squeegee
10. **“DRAIN SAVER” STRAINER:** Helps prevent clogging of Drain Ports
11. **VAC SCREEN:** Protects Vacuum Motor from debris
12. **RECOVERY LID:** Used for flushing out Recovery Tank area with fresh water





## MACHINE COMPONENTS



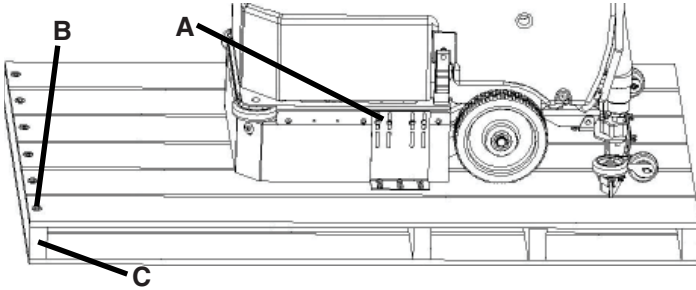
1. **FRONT SOLUTION FILL POINT/LID:** Front fill port for filling Solution Tank
2. **FRAME CURTAIN:** Helps control water from splashing.
3. **TANK LATCH:** Secures Tank to frame
4. **SOLUTION SIGHT TUBE AND DRAIN HOSE:** Displays how much clean water is in the Tank and drains clean water
5. **ADJUSTABLE SQUEEGEE HEIGHT WHEELS:** Height of wheels adjust to height of Squeegee
6. **SQUEEGEE PITCH ADJUSTMENT:** Adjusts pitch of Squeegee - Deflection should be even across entire blade
7. **SQUEEGEE BLADE:** Recovers dirty water from floor to be recovered by Vacuum Hose
8. **SCRUBDECK FOOTPEDAL (OPTIONAL):** Used to raise and lower the Scrubdeck
9. **VACUUM HOSE:** Creates vacuum for Squeegee (*NOTE: Keep free and clear of blockage*)
10. **REAR SOLUTION FILL POINT:** Rear fill port for filling Solution Tank
11. **RECOVERY DRAIN HOSE:** Allows for controlled draining of Recovery Tank

## MACHINE SETUP

### UN-CRATING MACHINE:

Carefully check the crate for any signs of damage and that the Batteries are in the unit.

To un-crate the machine, remove banding strips from around the crate. Take off the top and sides and dispose 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.



### CONNECTING BATTERIES:

Your machine is equipped with (2x) 12-Volt/ 85 AH, (2x) 12-Volt/ 130 AH, or (2x) 12-Volt/ 150 AH Wet Lead Acid, AGM, or Deep Cycle Batteries which form a 24 Volt system.

**(SEE PICTURE BELOW OR BATTERY DISCONNECT LABEL FOR CORRECT CABLE CONNECTIONS)**

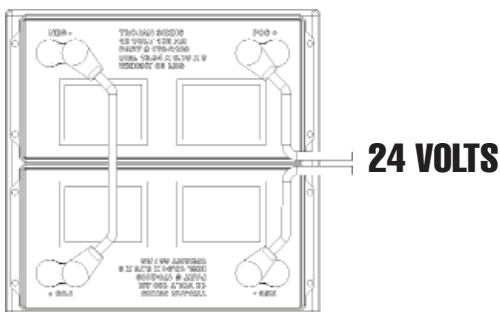
1. Turn all switches to the *OFF* position and remove Key (if machine is equipped with *Optional Key Switch*).
2. Attach all Battery Cables as shown below.
3. Turn *ON* main Key Switch and check the Battery Condition Meter to ensure correct installation. Charge Batteries if needed **(SEE BATTERY CHARGING)**.

## NOTICE

Batteries are a possible environmental hazard. Consult your Battery supplier for safe disposal methods.

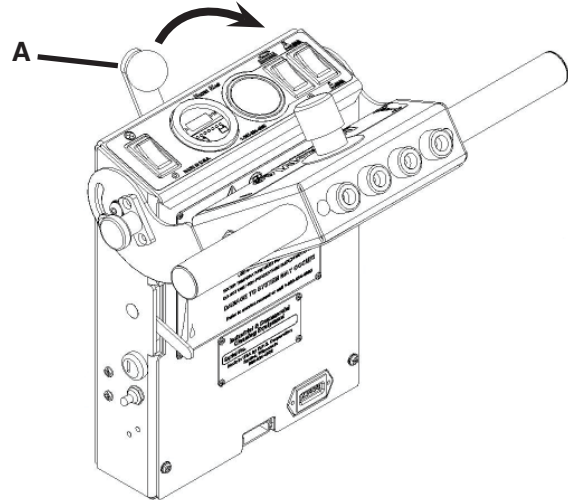
## NOTICE

Orientation of Batteries is critical for cables to reach.

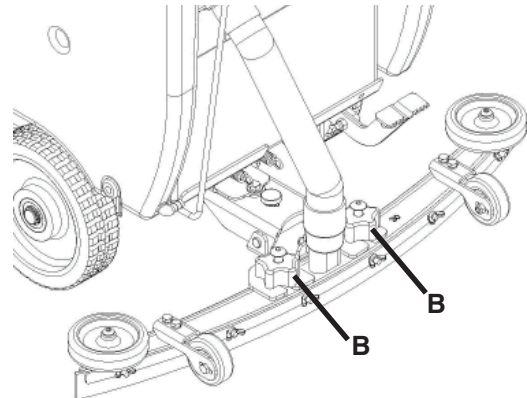


### ATTACHING SQUEEGEE:

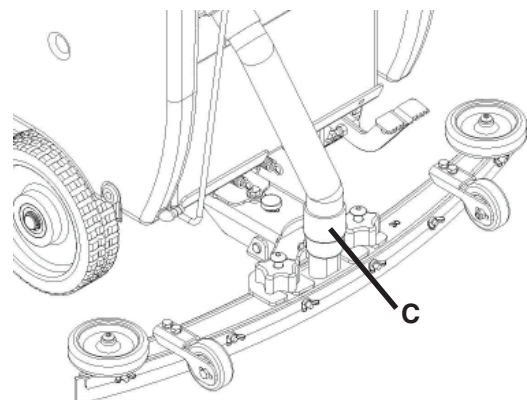
1. Lower the Squeegee Mounting Plate by rotating the Squeegee Lift Lever **(A)** in a clockwise motion **(SEE BELOW)**.



2. Loosen the two knobs **(B)** on the Squeegee and slide them into the slots in the Squeegee Mounting Plate **(SEE BELOW)**.



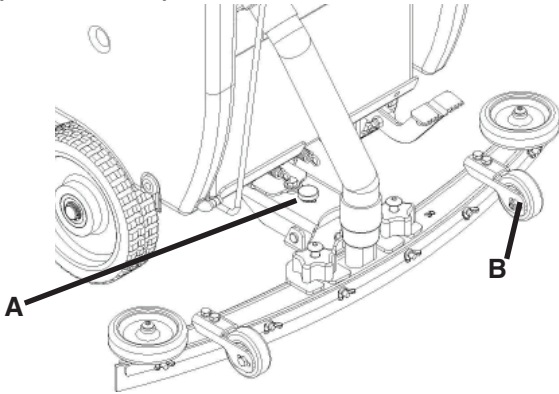
3. Tighten the two knobs and connect the Vacuum Hose **(C)** from the machine to the Squeegee **(SEE BELOW)**.



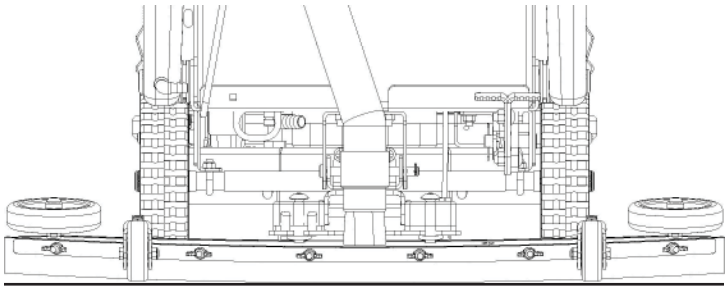
4. You may have to adjust the Squeegee Pitch **(SEE ADJUSTING SQUEEGEE ON THE NEXT PAGE)**.

### ADJUSTING SQUEEGEE:

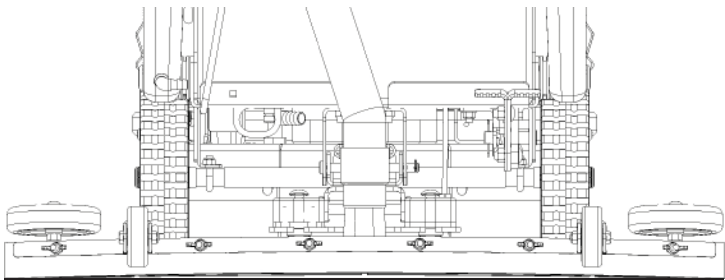
1. Turning Adjustment Knob **(A)** clockwise (*tightening*) will lower tips and raise the center of the Squeegee **(SEE BELOW)**.



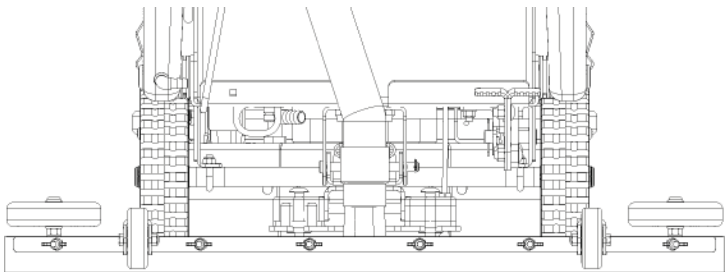
2. Adjustable Wheel **(B)** **(SEE ABOVE)** has 3 holes. The closer to the machine the wheel is, the further from the ground the wheel becomes. The farther from the machine the wheel is, the closer to the ground the wheel becomes.
3. This Squeegee is adjusted too far back and will not pick up on the corners **(SEE BELOW)**.  
*NOTE: Tips off of the floor.*



4. This Squeegee is adjusted too far forward and will not pick up in the center **(SEE BELOW)**.  
*NOTE: Center spaced off the floor.*

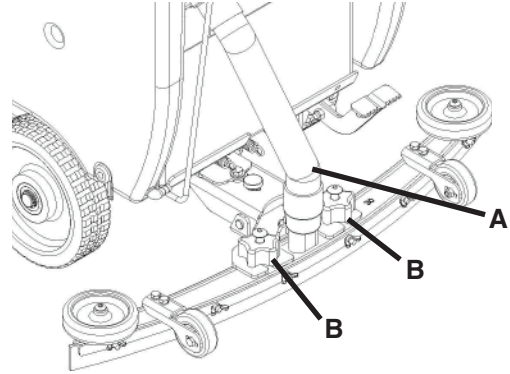


5. This Squeegee is adjusted just right with good deflection across the entire rear Blade **(SEE BELOW)**.



### 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 backward from the lifting carrier.
4. Inspect or repair as needed and reinstall.



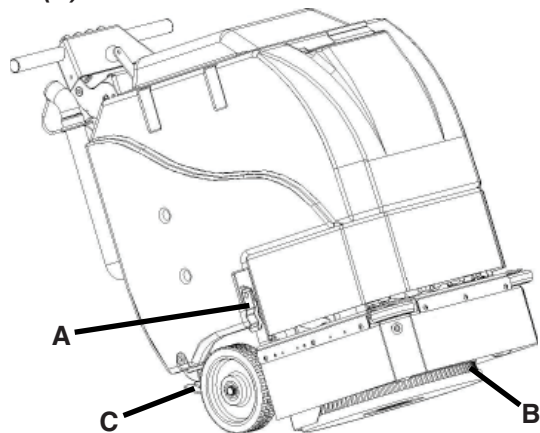
### REPLACING OR ROTATING SQUEEGEE BLADES:

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

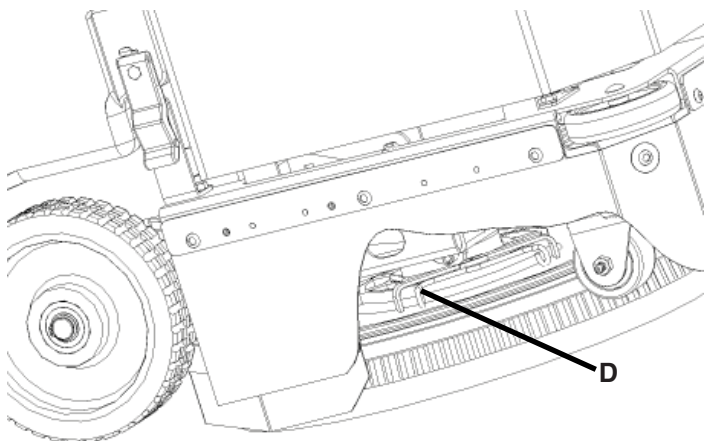
1. Remove the Squeegee Assembly from the machine. Remove Blade Retainer Strap and remove Squeegee Blade.
2. Rotate the Squeegee to new edge position or replace as required.
3. Install Blade on the locating pins of Squeegee Assembly.
4. Install Squeegee Retainer Strap.
5. Fasten and lock knobs, starting in the center and moving outwards.

### **INSTALLING DISK PAD DRIVER OR BRUSH:**

1. With empty Tanks, remove Squeegee and make sure the Tank latches (**A**) are locked on.
2. Lower the Scrubdeck by depressing the Scrubdeck Switch (**B**) on the Handlebars and turn *OFF* the machine (for machines with manual foot-pedal Scrubdeck lifting - lower manually). Remove Key if Option equipped.
3. Tip machine back by pulling back on Handlebar and allowing the machine to rest on the Triangle Squeegee Plate (**C**).



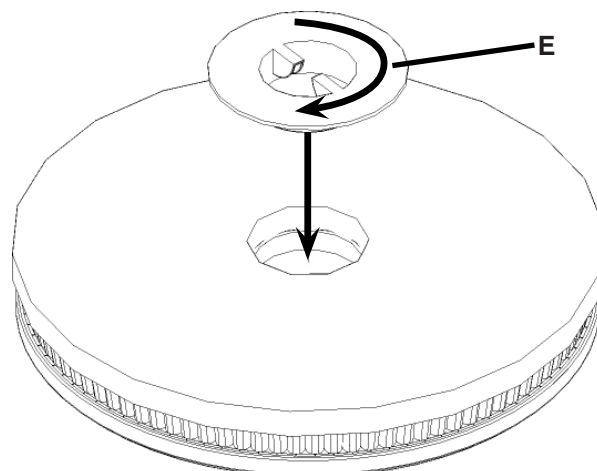
4. Attach brushes or pads to motor drives. Squeeze the scissor locking device and lift brush up on to the Motor Drive Hub. Make sure the scissors close and lock on to the Brushes (**SEE BELOW**).



5. With Brushes locked into place, tip machine back down to a level surface.

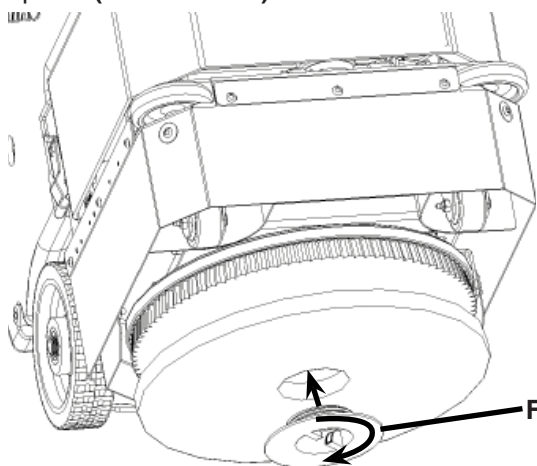
### **INSTALLING DRIVER PADS:**

1. Select the correct Pads that best meet your cleaning application needs. Consult your local dealer for assistance.
2. Pad Installation: Attach Pads to Pad Drivers before connecting Drivers to Motor Hub. Screw center clip (**E**) into place (**SEE BELOW**).



### **REPLACING DRIVER PADS ON MACHINE:**

1. Select the correct Pads or Brushes that best meet your cleaning application. Consult your local dealer for assistance.
2. With empty Tanks and Squeegee removed, tip machine back and rest on Triangle Plate.
3. Attach Pads to Pad drivers and screw center clip (**F**) into place (**SEE BELOW**).

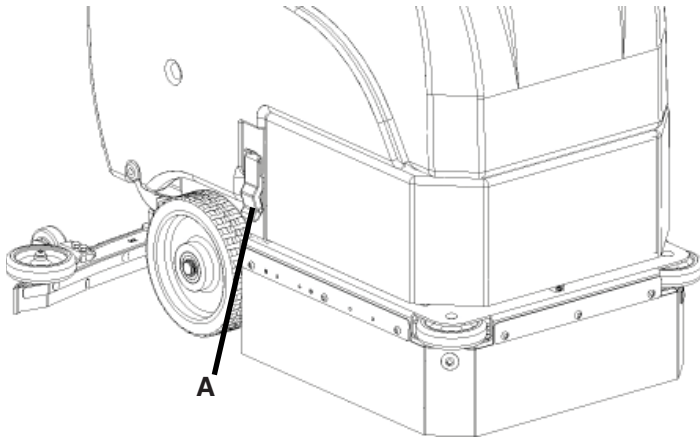


## **NOTICE**

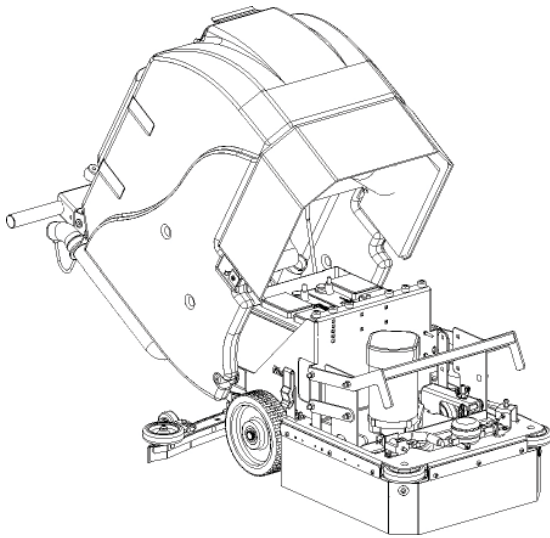
NEVER place aggressive Pads (Maroon Prep, Dominator HD Strip, etc.) directly onto the Grip Face. Always use Red or Blue Spacer pad to prevent Grip Face damage.

## **ADJUSTING PAD ASSIST BIAS:**

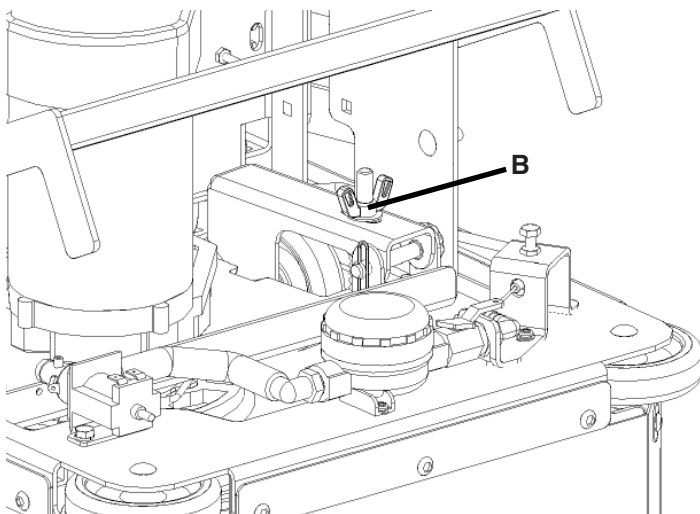
1. Release (2x) Tank latches (**A**) (**SEE BELOW**).



2. Tip Tank back (**SEE BELOW**).



3. Turn the Pad Assist Adjustment wing nut (**B**) to the right to increase bias and to the left to decrease (**SEE BELOW**).





## MACHINE OPERATION

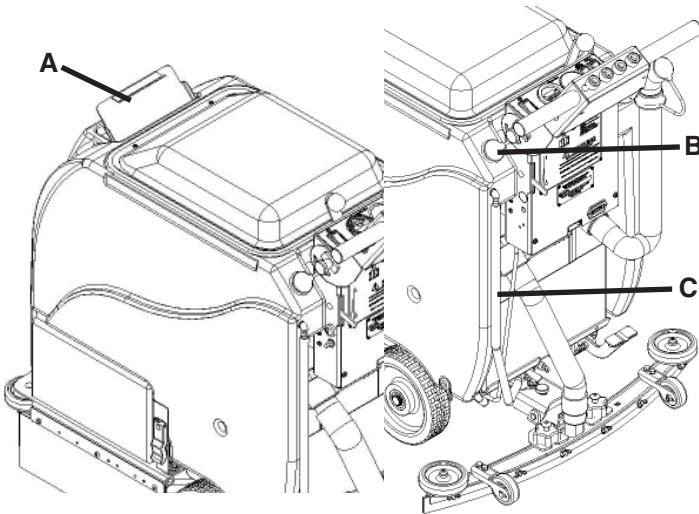
### PRE-CLEANING CHECKLIST:

Read and understand the Safety Messages section on Pages 3 and 4 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. Raise the Scrubdeck and Squeegee before transporting then transport the machine to the filling station.
5. Turn the machine *OFF*.
6. Fill the Tank with up to 10 gallons of clean water either at the front fill port **(A)** or rear fill port **(B)** (**SEE BELOW**).
7. Add **APPROVED** cleaning chemical to the Tank. Use the proper dilution ratio indicated on the bottle. Contact us at 1(800)-634-4060 or +011-262-681-3583 if unsure.

### NOTICE

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



### 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, pull the Solution Control Lever down. To shut the solution *OFF* completely, just release the Drive button, or use dash mounted switch.
2. Keep an eye on the clear Vacuum Cover to make sure that 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 Squeegee Blades for wear or damage and rotate if needed. You may need to pre-sweep before scrubbing. (**Only Use OEM Parts**)
5. Change or turn over Pads when dirty.
6. Stay clear of objects protruding from the floor such as sockets, grates, etc, for they will damage the Pads and Squeegee Blades.
7. 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.
8. When you run out of solution, raise the Scrubdeck and continue to vacuum the remaining water until it is all consumed. The Solution Sight Tube is used to indicate the level of detergent remaining in the Tank.
9. When you are ready to stop, raise the Scrubdeck, turn *OFF* the Solution Switch, raise the Squeegee and drive the machine back to the charging area. Be sure to drain both Tanks before storing the machine.

### DANGER

**EXPLOSION RISK!** Flammable materials can cause an explosion or fire. Do not use flammable materials in tank or pick up.

### CAUTION

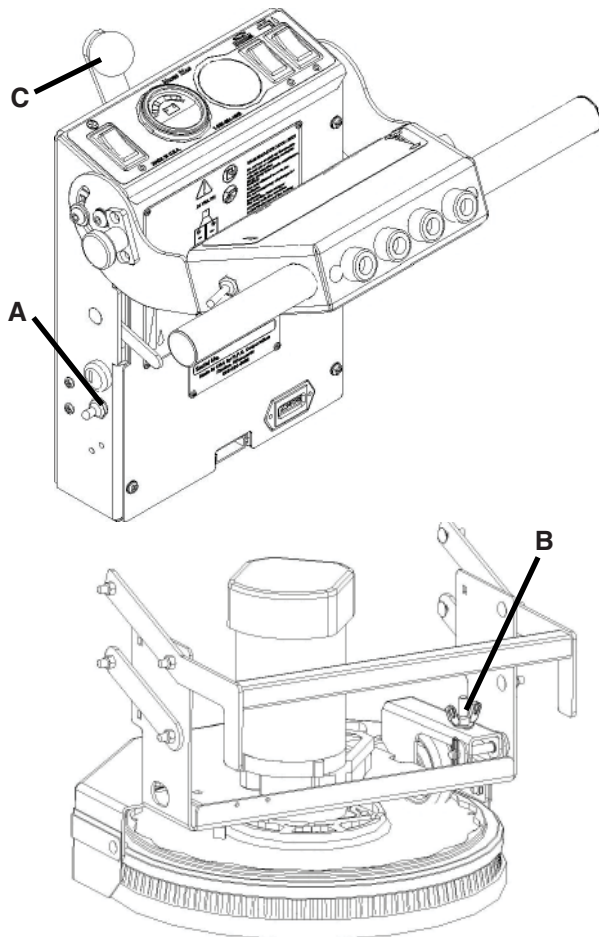
#### TO AVOID DAMAGE TO THIS MACHINE:

- Use approved detergents only
- Water temperature must not exceed 130°F/54°C
- Do not use high-percentage bleach mixture



### **ONE PASS SCRUBBING (PAD ASSIST):**

1. Turn on machine Power Switch **(A)** (if machine is equipped with Optional Key Switch), make sure the Speed Control Knob **(B)** is at a lower setting.
2. Lower the Squeegee by rotating the Squeegee Lift Lever **(C)** all the way to the right. Turn on Vacuum Motor with Vacuum Switch on Control Panel **(D)**.
3. Lower Scrubdeck head to the floor by pressing the Scrubdeck Switch on the Control Panel **(E)** (or by manually lowering the Scrubdeck with Foot Pedal option).
4. Move the Solution Flow Lever **(F)** to regulate the amount of solution flow.
5. Begin scrubbing by pressing the Scrubdeck switch button **(F)** on the dash board or use (optional) green Drive Control Buttons. Adjust the Pad Assist adjustment knob **(B)** to the desired setting.
6. Once the machine begins to move, check the Down Pressure Gauge **(G)** (Optional). Start scrubbing at the middle. Do not scrub in the red, or the Circuit Breaker will blow.
7. To operate the machine in reverse, simply pull the Reverse switch **(H)** back towards the Handlebar. The reverse speed is set to approximately 50% of the forward speed.
8. To stop the machine, shutoff Scrubdeck switch **(F)** and Vac Motor **(D)**.

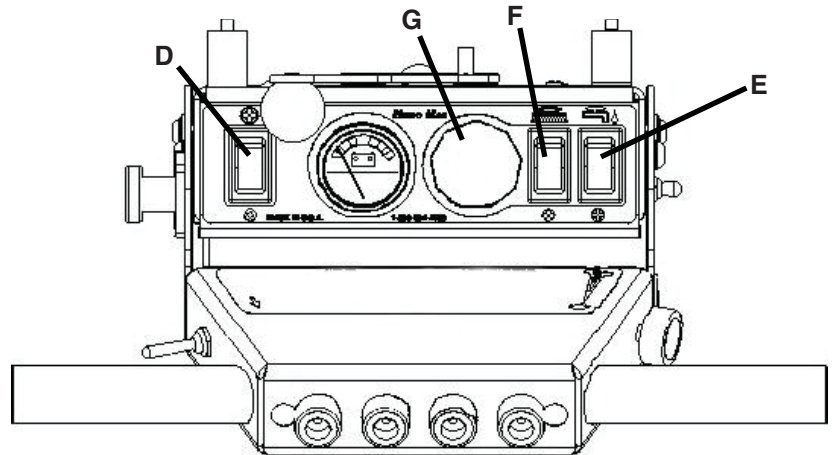


### **SCRUB ONLY:**

1. Turn on machine Power Switch **(A)** while making sure the Speed Control Knob **(B)** is at a lower setting.
2. Lower Scrubdeck head to the floor by pressing the Scrubdeck Switch on the Control Panel **(E)**.
3. Move the Solution Control Lever **(F)** to regulate the amount of solution flow.
4. Begin scrubbing by pressing one of the green Drive Buttons **(G)** on the Handlebars. Adjust the Speed Control Knob **(B)** to the desired setting.
5. To operate the machine in reverse, simply pull the Reverse Switch **(H)** back towards the Handlebar. The reverse speed is set to approximately 50% of the forward speed.
6. To stop the machine, let go of the Drive Buttons **(G)**.

### **VACUUM ONLY:**

1. Turn on machine Power Switch **(A)** while making sure the Speed Control Knob **(B)** is at a lower setting.
2. Lower the Squeegee by rotating the Squeegee Lift Lever **(C)** all the way to the right. Turn on Vacuum Motor with Vacuum Switch on Control Panel **(D)**.
3. Begin vacuuming by pressing one of the green Drive Buttons **(G)** on the Handlebars.



### ONE PASS SCRUBBING (TRACTION):

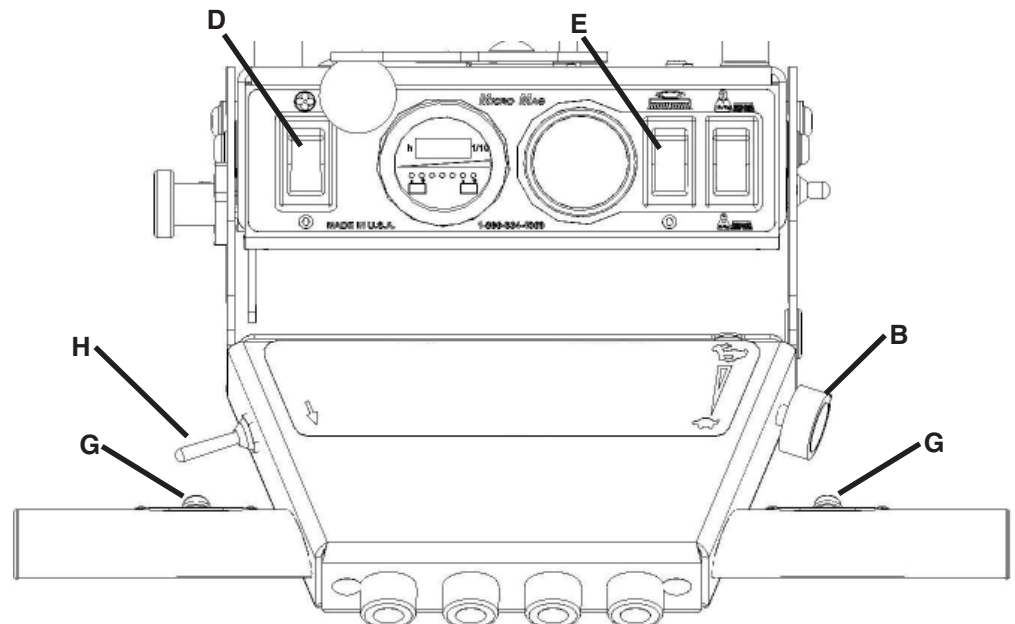
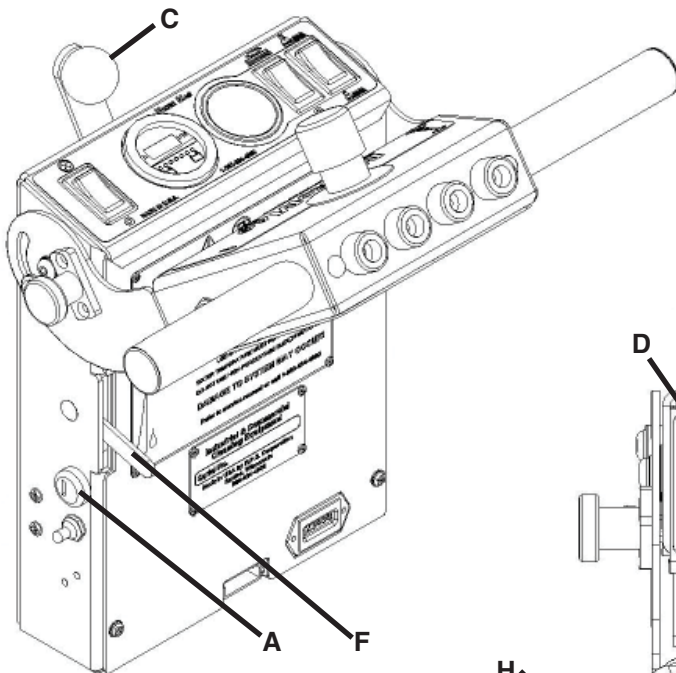
1. Turn on machine Power Switch **(A)**, make sure the Speed Control Knob **(B)** is at a lower setting.
2. Lower the Squeegee by rotating the Squeegee Lift Lever **(C)** all the way to the right. Turn on Vacuum Motor with Vacuum Switch on Control Panel **(D)**.
3. Lower Scrubdeck head to the floor by pressing the Scrubdeck Switch on the Control Panel **(E)**.
4. Move the Solution Flow Lever **(F)** to regulate the amount of solution flow.
5. Begin scrubbing by pressing one of the green Drive Buttons **(G)** on the Handlebars. Adjust the speed control knob **(B)** to the desired setting.
6. To operate the machine in reverse, simply pull the Reverse switch **(H)** back towards the Handlebar. The reverse speed is set to approximately 50% of the forward speed.
7. To stop the machine, let go of the Drive Buttons **(G)**.

### SCRUB ONLY:

1. Turn on machine Power Switch **(A)** while making sure the Speed Control Knob **(B)** is at a lower setting.
2. Lower Scrubdeck head to the floor by pressing the Scrubdeck Switch on the Control Panel **(E)**.
3. Move the Solution Control Lever **(F)** to regulate the amount of solution flow.
4. Begin scrubbing by pressing one of the green Drive Buttons **(G)** on the Handlebars. Adjust the Speed Control Knob **(B)** to the desired setting.
5. To operate the machine in reverse, simply pull the Reverse Switch **(H)** back towards the handle bar. The reverse speed is set to approximately 50% of the forward speed.
6. To stop the machine, let go of the Drive Buttons **(G)**.

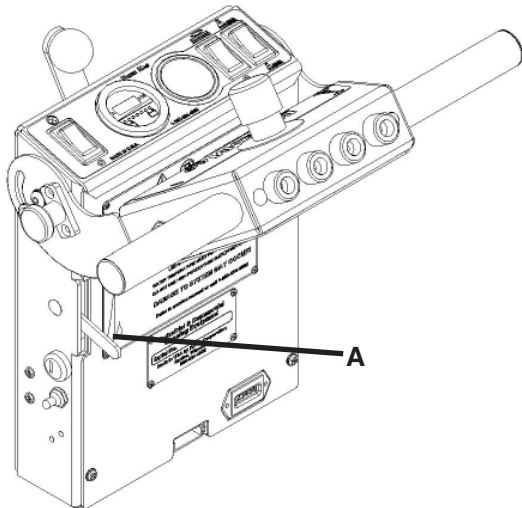
### VACUUM ONLY:

1. Turn on machine Power Switch **(A)** while making sure the Speed Control Knob **(B)** is at a lower setting.
2. Lower the Squeegee by rotating the Squeegee Lift Lever **(C)** all the way to the right. Turn on Vacuum Motor with Vacuum Switch on Control Panel **(D)**.
3. Begin vacuuming by pressing one of the green Drive Buttons **(G)** on the Handlebars.



### **ADJUST SOLUTION FLOW:**

1. Push down on the Solution Flow Lever (**A**) to increase the solution flow and push up on the lever to decrease solution flow (**SEE BELOW**).



### **DRAINING SOLUTION TANK:**

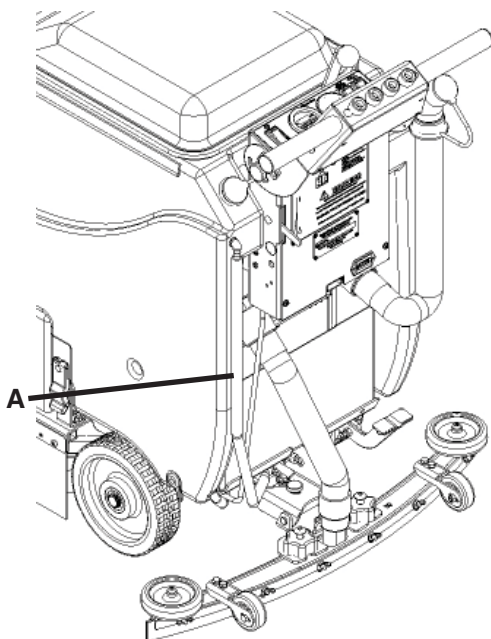
To drain unwanted cleaning solution from the Solution Tank, perform the following steps: (**SEE BELOW**)

1. Pull the clear Sight Tube/Drain Hose (**A**) off barbed fitting.

## **NOTICE**

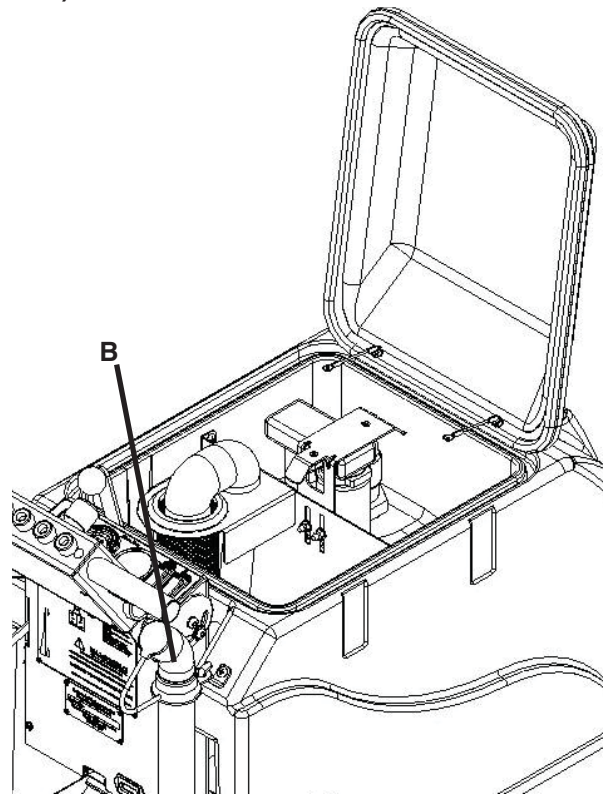
Get Supervisor APPROVAL first and drain at APPROVED locations only.

2. Rinse out Tank and Solution Flow system with clean water.



### **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 (**B**) from hook at rear of Tank and pop off cap (**SEE BELOW**). Rinse with fresh water.



## **NOTICE**

Leave Recovery Lid open while draining Tanks. Rinse thoroughly.

## **NOTICE**

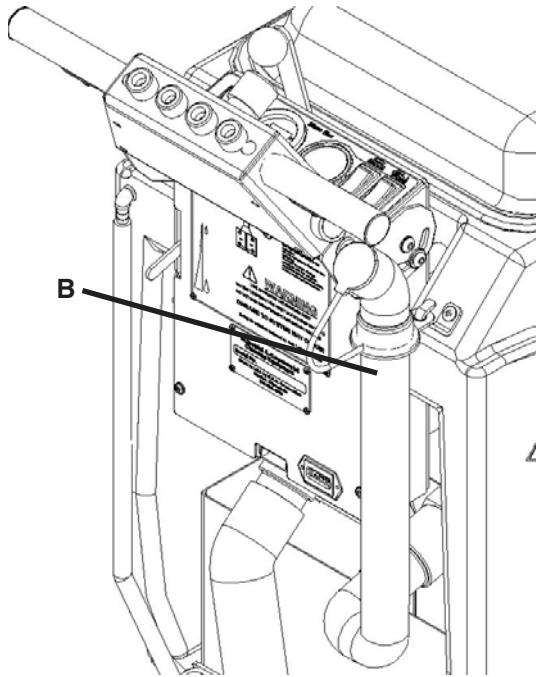
Get Supervisor APPROVAL first and drain at APPROVED locations only.

### **OPEN RECOVERY LID:**

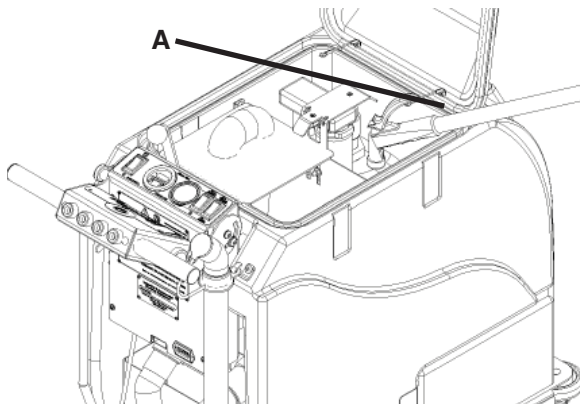
1. Rotate Tank Lid (**B**) forward and full open to rest in a tipped open position (**SEE ABOVE**).

### **FLUSH RECOVERY TANK:**

1. Rinse the Recovery Tank after every use **(A)**. This will prevent heavy build-up on the bottom of the tank, foul odors as well as clogging of the drain hose **(SEE BELOW)**.
2. Remove Drain Hose **(B)** and open to allow for drainage of the Recovery Tank **(SEE BELOW)**.



3. Flush Recovery Tank with water hose.



4. After rinsing, reattach the Drain Hose **(B)** on hook **(SEE ABOVE)**.

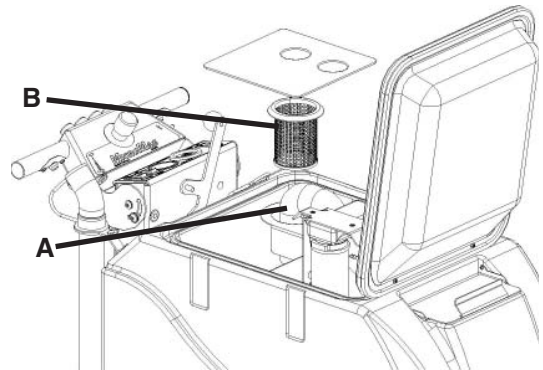
## **NOTICE**

Keep water off of Control Panel.

### **CLEAN "DRAIN SAVER":**

With Recovery Lid open and Tank fully drained:

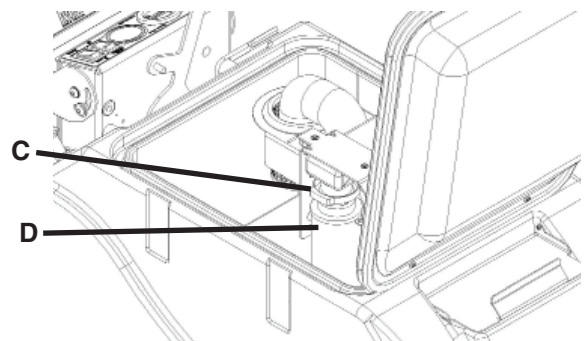
1. Remove 2" Squeegee Intake Hose **(A)** from "Drain Saver" strainer **(B)** **(SEE BELOW)**.
2. Remove stainless screen and dispose of debris.
3. Rinse screen with fresh water from the outside while holding the screen upside down. This will allow for better cleaning.
4. Replace the screen into the bracket.
5. Replace 2" Squeegee Intake Hose.



### **CLEAN VACUUM SCREEN:**

With Recovery Lid open and Tank fully drained:

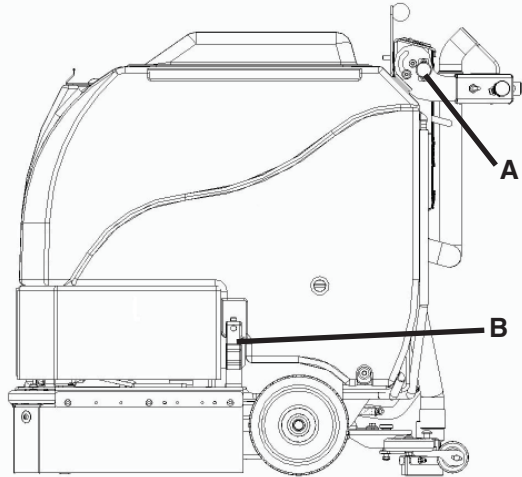
1. Remove Vacuum Screen retaining clip **(C)** **(SEE BELOW)**.
2. Pull Vacuum Screen and Float Ball Assembly **(D)** off of the Vacuum Box.
3. Rinse with hot water.
4. Dry thoroughly.
5. Replace the Vacuum Screen onto box.
6. Replace and tighten retaining clip.



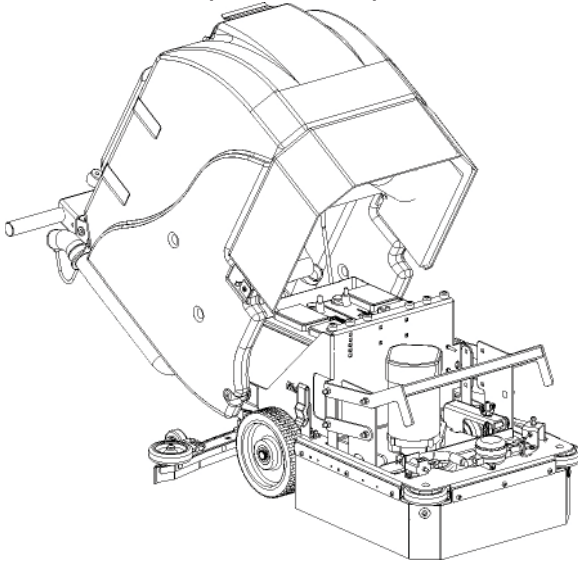


### **TIP TANK:**

1. Fully drain Solution Tank and the Recovery Tank.
2. Remove Squeegee or place in center.
3. Rotate Handlebar down 90° with the Handlebar Adjustment Knob **(A)**. Unlatch Tank Latch **(B)** on each side of the machine **(SEE BELOW)**.

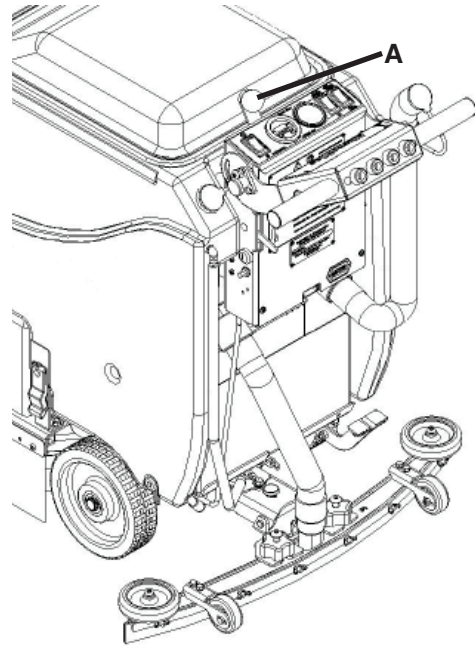


4. Tip Tank Back carefully until supported by strap as well as the Rubber Grommets on the Handlebar **(SEE BELOW)**.



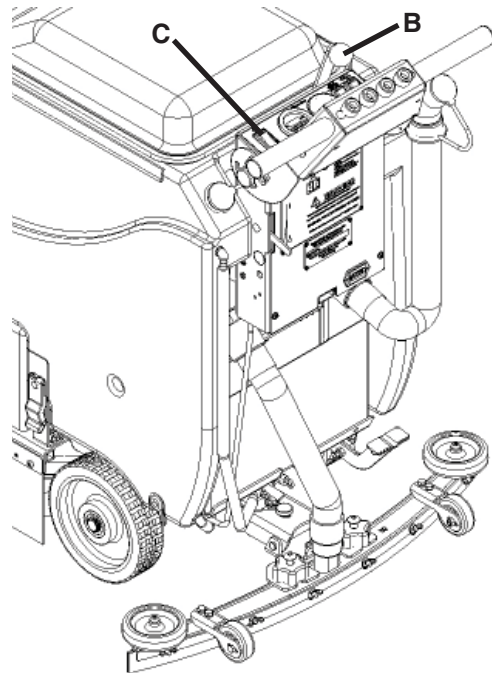
### **SQUEEGEE UP:**

1. To raise the Squeegee off the floor, rotate Squeegee Lift Lever **(A)** counter-clockwise all the way to the left **(SEE BELOW)**.



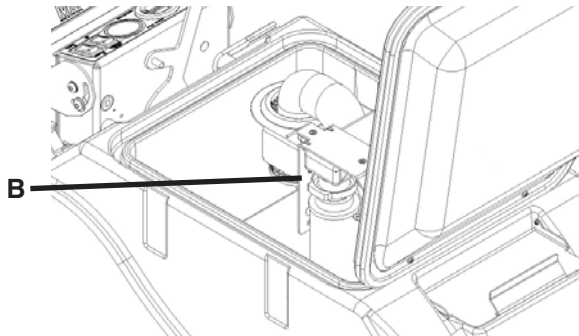
### **SQUEEGEE DOWN:**

1. To Lower the Squeegee to the floor, rotate Squeegee Lift Lever **(B)** clockwise all the way to the right. To turn on Vacuum Motor use the Vacuum Switch **(C)** on the Control Panel **(SEE BELOW)**.

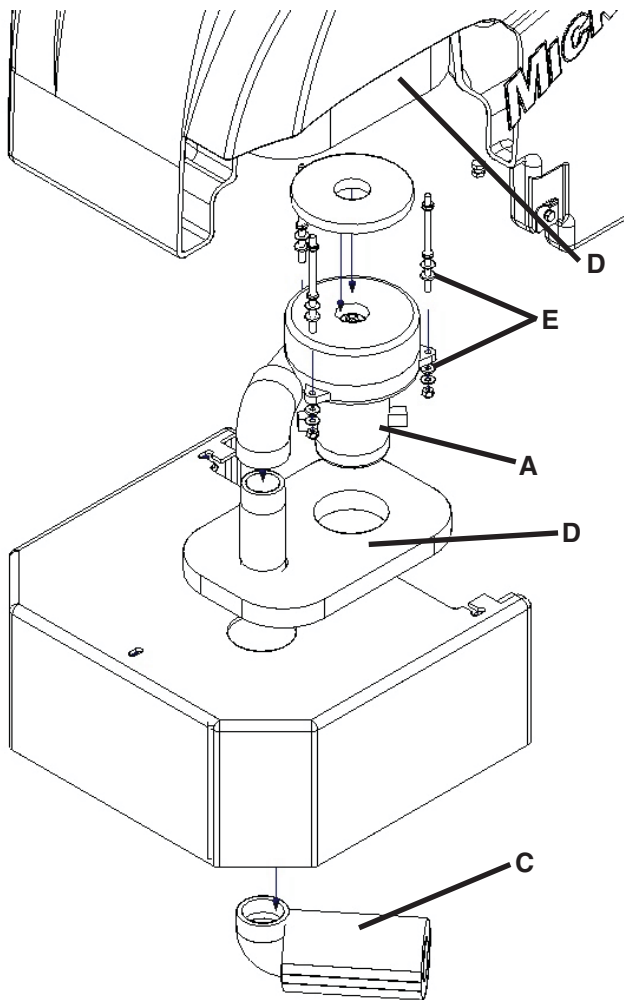


### **VACUUM MOTOR:**

1. The machine is equipped with a 24 volt, .75HP Vacuum Motor **(A)** (SEE BELOW).
2. If foam or water gets past the Recovery Tank's Vac Screen/Ball system, adjust the bracket **(B)** in the Tank upwards (SEE BELOW).



3. The Vacuum Motor has an (Optional) "Foam Muffler" **(C)**, sound reduction walls **(D)** and vibration dampeners **(E)** that are available to quiet machine operation.

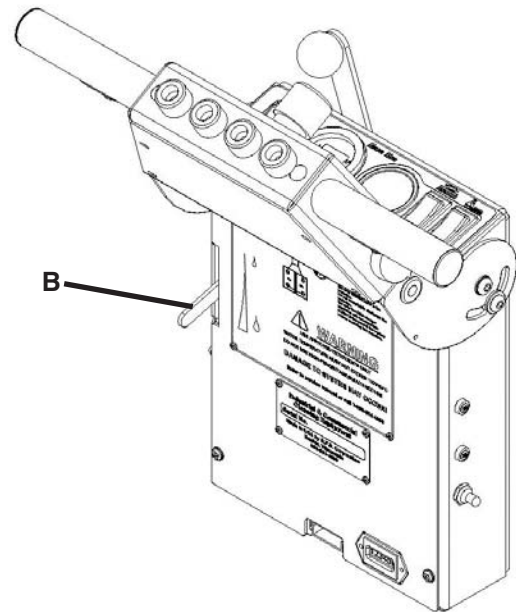
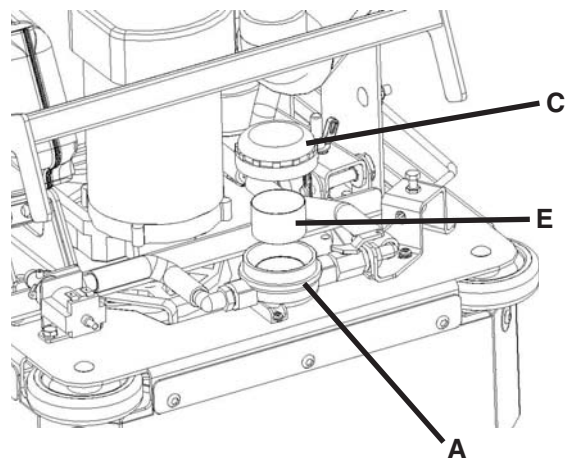


### **SOLUTION FILTER:**

The solution system has an "Inline Filter" **(A)** to filter out cleaning solution prior to scrubbing (SEE BELOW).

### **CLEANING SOLUTION FILTER:**

1. To clean the Solution Filter, first close Solution Flow Valve by moving lever **(B)** upwards. Then unscrew the clear cap **(C)** from house **(A)** and remove the stainless steel screen **(E)** (SEE BELOW).
2. Rinse any debris from the screen with clean water.
3. Reinstall screen and screw cap back on tightly.
4. Re-open valve.





## BATTERY CHARGING

### Charger Specifications

- Output voltage of 24 Volts
- Output current of 12 amps max
- Input voltage of 110 Volts/ 60 Hz  
(220V/50 Hz available)
- Automatic shut off circuit
- Made for Deep Cycle Batteries

### **! DANGER**

Explosive hydrogen gas forms when Batteries are charging. An open flame or spark can cause this gas to explode. Serious personal injury or property damage could occur. Only charge the Batteries in this machine in a well ventilated area.

### **! WARNING**

Before you service a Battery, always wear face protection, protective gloves and protective clothing. Battery acid or battery explosion can cause serious injuries.

### **! WARNING**

The Batteries in this machine contain sulfuric acid, which causes burns to skin. If battery acid contacts clothing or skin, rinse the effected area with cold water immediately. If battery acid gets on your face or in your eyes, flush the area immediately with cold water and seek medical attention.

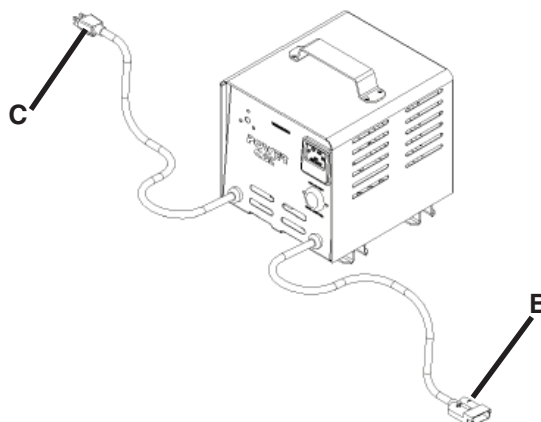
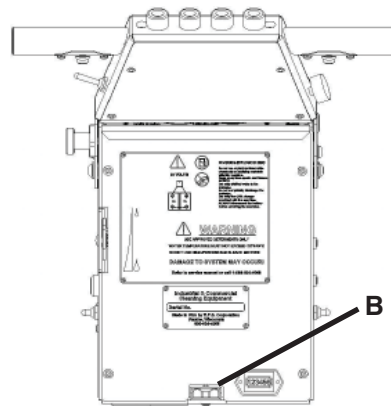
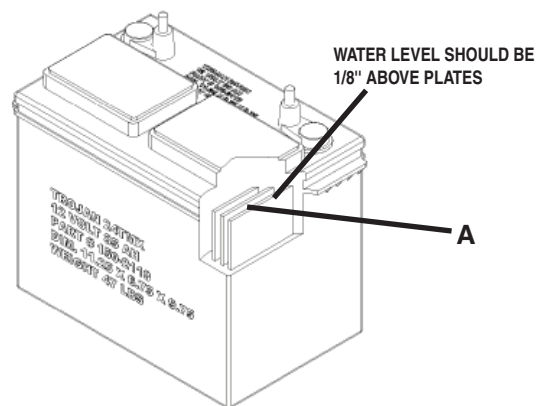
### **! CAUTION**

Always use the automatic battery charger provided by the manufacturer of this machine to charge the Batteries of this machine. It is designed to charge the Batteries at the appropriate rate. If you must use a different charger, disconnect the Batteries before charging to avoid damage to the electronic speed controller.

### **EXTERNAL BATTERY CHARGING:**

1. Transport machine to a well ventilated area for charging.
2. Turn the machine off. Tip back Tank.
3. Check the water in each Battery **(A)**. 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.

4. First, plug the red 50 Charger plug into the machine's Charger Port **(B)**. While the Charger plug is connected, plug the charger power cord into a grounded 110 Volt standard wall outlet **(C)**.
5. The Charger will automatically begin charging and automatically shut off when fully charged (*check Battery gauge*).
6. After the Charger has turned off - First, unplug the Charger from the wall outlet. Second, unplug the red 50 Charger plug from the machine.
7. 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

### Charger Specifications

- Output voltage of 24 Volts
- Output current of 12 amps max
- Input voltage of 110 Volts/ 60 Hz  
(220V/50 Hz available)
- Automatic shut off circuit
- Made for Deep Cycle Batteries

### **! DANGER**

Explosive hydrogen gas forms when Batteries are charging. An open flame or spark can cause this gas to explode. Serious personal injury or property damage could occur. Only charge the Batteries in this machine in a well ventilated area.

### **! WARNING**

Before you service a battery, always wear face protection, protective gloves and protective clothing. Battery acid or battery explosion can cause serious injuries.

### **! WARNING**

The batteries in this machine contain sulfuric acid, which causes burns to skin. If battery acid contacts clothing or skin, rinse the effected area with cold water immediately. If battery acid gets on your face or in your eyes, flush the area immediately with cold water and seek medical attention.

### **! CAUTION**

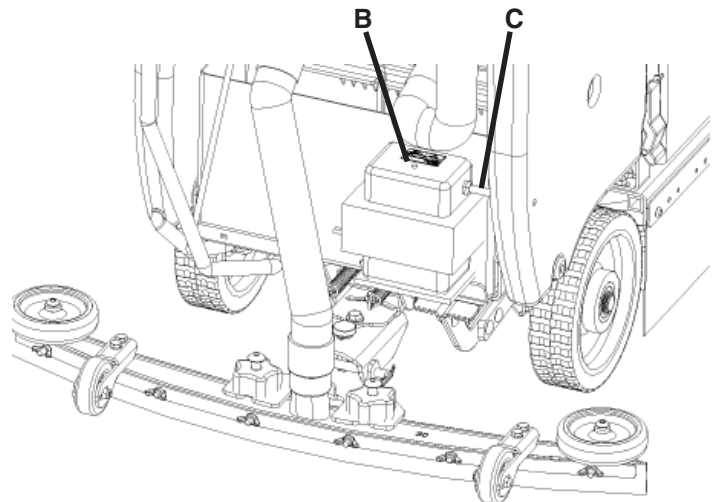
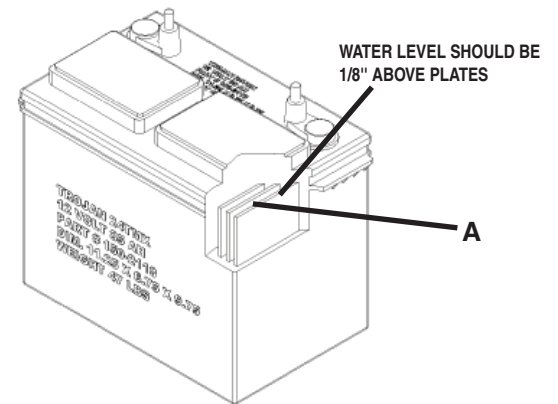
Always use the automatic battery charger provided by the manufacturer of this machine to charge the batteries of this machine. It is designed to charge the batteries at the appropriate rate. If you must use a different charger, disconnect the batteries before charging to avoid damage to the electronic speed controller.

### ON-BOARD BATTERY CHARGING (OPTIONAL):

1. Transport machine to a well ventilated area for charging.
2. Turn the machine off. Tip back tank.
3. Check the water in each battery **(A)**. 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.

4. Plug the Charger power cord into a grounded standard wall outlet **(B)**.
5. The green Indicator Light **(C)** will come on and the Charger will automatically begin charging. When finished, the Charger will automatically shut off as well as the green indicator light (check Battery gauge).
6. After the Charger has turned off, unplug the Charger from the wall outlet.
7. 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.



## BATTERY MAINTENANCE GUIDE

### SAFETY:

#### **⚠ DANGER**

Explosive hydrogen gas forms when Batteries are charging. An open flame or spark can cause this gas to explode. Serious personal injury or property damage could occur. Only charge the Batteries in this machine in a well ventilated area.

#### **⚠ WARNING**

Before you service a Battery, always wear face protection, protective gloves and protective clothing. Battery acid or battery explosion can cause serious injuries.

#### **⚠ WARNING**

The Batteries in this machine produce hazardous voltage which can cause electrical shock, burns and/or electrocution. Always disconnect Batteries before servicing this machine.

#### **⚠ WARNING**

The Batteries in this machine contain sulfuric acid, which causes burns to skin. If battery acid contacts clothing or skin, rinse the effected area with cold water immediately. If battery acid gets on your face or in your eyes, flush the area immediately with cold water and seek medical attention.

#### **⚠ WARNING**

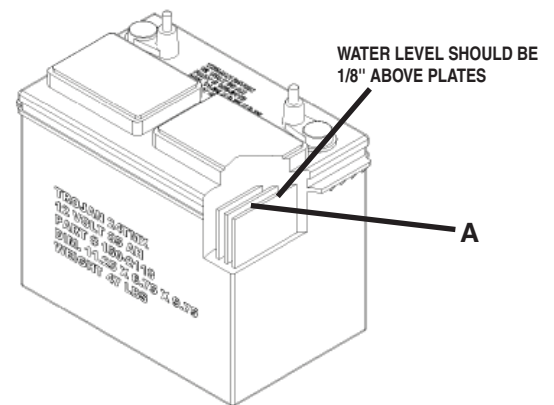
Dress safely. Do not wear rings or metal wrist watches when servicing this machine, as they can cause an electrical short circuit which can cause serious burns.

days

- Recharge Batteries before putting them back into service

### WATERING:

- Add water, NEVER ACID, to cells (*distilled water recommended*).
- Do not over water
- 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 full charge plus series Batteries add water to the maximum water level indicator (**A**).
- After watering, secure vent caps back on Batteries.



### INSPECTION AND 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 acid residue on Batteries or corrosion on the terminals
- Protective spray of 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 but never below freezing - Recharge in storage a minimum of every 30

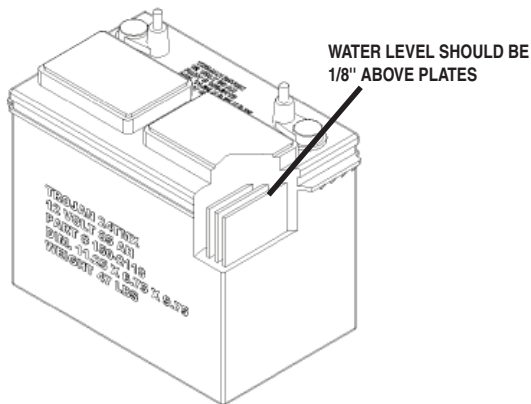
## MAINTENANCE

### DAILY MAINTENANCE:

1. Remove the 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 and flush out Solution Feed to deck.
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 raise position to prevent damage or setting of the Blades.
6. Wipe down machine if needed. Use a non-abrasive, 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  $\frac{3}{4}$ " 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. Flip Scrubdeck brushes / pads.
4. Drain and rinse Tanks thoroughly. To thoroughly flush out any solution chemicals in solution line valves, refill Solution Tank with a few gallons of warm, clean water and run the machine until Tank is empty.

### MONTHLY MAINTENANCE:

1. Check Scrubdeck 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, 8-10 ft/lb MAX.

4. Grease caster swivel and Squeegee pivot point.

### YEARLY MAINTENANCE:

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 Brush/Pad and Squeegee.

### CHECKING BATTERY SPECIFIC GRAVITY:

Use a hydrometer to check the Battery specific gravity.

Checking Gravity:

- Hydrometer
- Battery

## NOTICE

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

## NOTICE

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°F(27°C). Subtract (-) from the specific reading 0.004 (4 points), for each 10°F(6°C) below 80°F(27°C).

## MICROMAG PM RECORDS

### CUSTOMER INFORMATION

CUSTOMER		EMAIL	
ADDRESS			PHONE
CITY	STATE	ZIP	CONTACT

### MACHINE INFORMATION

MODEL #:	SERIAL #:
WORK ORDER#:	RE-CHARGE COUNTER:
CHASSIS HOUR METER:	ISOLATOR HOUR METER:
<b>NOTE:</b> Isolators need to be replaced on Scrubber Machines at 1000 Hours or Annually	

### BATTERY CONDITION

	CELL 1	CELL 2	CELL 3	CELL 4	CELL 5	CELL 6
BATTERY 1 HYDROMETER						
BATTERY 1 ELECTROLYTE CLARITY <i>(Clear, Cloudy, Particulate, Dark)</i>						
BATTERY 1 WATER LEVEL <i>(Overfilled, Full, Low, Dry)</i>						
BATTERY 2 HYDROMETER						
BATTERY 2 ELECTROLYTE CLARITY <i>(Clear, Cloudy, Particulate, Dark)</i>						
BATTERY 2 WATER LEVEL <i>(Overfilled, Full, Low, Dry)</i>						

CLEAN BATTERY TOPS. CHECK BATTERY CABLE AND TERMINAL CONDITION.

NOTES:

### PAD CONDITION

SCRUB BRUSH FIBER LENGTH	ROTATED BRUSHES		
DISK PAD DRIVER	GOOD	WORN	NEEDS REPLACEMENT
EDGE PAD GRIP FACE	GOOD	WORN	NEEDS REPLACEMENT

### CHECK OPERATION AND CONDITION OF:

	IN SPEC	REPAIR	PROBLEM
KEY SWITCH (OPTIONAL)			
BATTERY GAUGE			
BRUSH SWITCH ON / OFF			
REVERSE SWITCH (DRIVE ONLY)			
SOLUTION LEVER			
SOLUTION SOLENOID			
SCRUBDECK ACTUATOR			
BRUSH MOTOR			
VACUUM SWITCH			
VACUUM MOTOR PERFORMANCE			
SQUEEGEE LIFT SYSTEM			
SQUEEGEE ADJUSTMENT CABLE "HEIGHT"			
SQUEEGEE BLADES			
DRAIN HOSE AND PLUG			
SPRAY JET PUMP, HOSE & NOZZLE (OPTIONAL)			
BATTERY CHARGER CONNECTORS & FUNCTION			
PITCH OF SCRUB DECK (MUST BE LEVEL)			
PITCH OF EDGE DECK (MUST BE LEVEL)			

CLEAN AND / OR LUBRICATE	IN SPEC	REPAIR	PROBLEM
SOLUTION TANK CONDITION			
SQUEEGEE PIVOT POINTS & KNOBS			
SOLUTION FILTER CLEANING			
SCRUB DECK LINKAGE			

VISUALLY INSPECT	IN SPEC	REPAIR	PROBLEM
DRAIN SAVER			
VACUUM FLOATS & SCREENS			
VACUUM HOSES			
SOLUTION HOSES			
BLADE RETAINERS & HARDWARE			
SQUEEGEE WHEELS			
BRUSH SKIRTS			
CASTER CONDITION			
DRIVE WHEELS CONDITION			

**COMMENTS**

SERVICING DISTRIBUTOR: \_\_\_\_\_

TECHNICIAN'S NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_

CUSTOMER'S NAME: \_\_\_\_\_ DATE: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_



## COMMON WEAR PARTS

### ROUND DISK BRUSHES:

BRUSHES	MODEL 17" DISK	MODEL 20" DISK
Super Grit	17-421SS	20-421SS
Tough Grit	17-421S	20-421S
Midi Grit	17-421C	20-421C
Light Grit	17-421PS	20-421PS
Poly (.028)	17-421P	20-421P
Nylon (.016)	17-421N	20-421N
Tampico	17-421T	20-421T
Pad Driver	17-421D	20-421D
Diamond Driver	17-421DD	20-421DD
Pad Retainer #40-434		

### ROUND DISK PADS:

## NOTICE

The ## in Disk Column Denotes Desk Pad Size: 17" or 20"

DISK PADS	DISK	LEVEL	COLOR
Super Black	##-422BB	Very High	Black
Black	##-422B	High	Black
Brown	##-422BR	High	Brown
Green	##-422G	Medium	Green
Blue	##-422BL	Moderate	Blue
Red	##-422R	Moderate	Red
White	##-422W	Light	White

### SQUEEGEE BLADE KITS & SQUEEGEE ASSEMBLIES:

SQUEEGEE SIZE	17" DECKS	20" DECKS
26" Squeegee	Optional	Optional
30" Squeegee	Standard	Optional
34" Squeegee	Optional	Standard

SQUEEGEE SIZE	GUM RUBBER BLADE KIT	LINATEX BLADE KIT	URETHANE BLADE KIT	COMPLETE SQUEEGEE ASSEMBLIES
26" Squeegee	130-770G	130-770L	130-770U	130-7180
30" Squeegee	150-770G	150-770L	150-770U	150-7180
34" Squeegee	180-770G	180-770L	180-770U	180-7180

**NOTICE**

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

**NOTICE**

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

**NOTICE**

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

**NOTICE**

The 26" squeegee is designed for narrow aisles and may not have the same water control around tight turns as the large squeegees.

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