

## **SPECIFICATIONS FOR A 26 INCH (660 mm) BATTERY-POWERED RIDER FLOOR SCRUBBER**

***INTENT:*** The intent of these specifications are to describe a battery-powered riding floor scrubber capable of scrubbing hard floor surfaces such as concrete, tile, marble, or terrazzo flooring.

In order to increase productivity, reduce labor costs, reduce detergent costs, and reduce environmental impact, the capacities and specifications of this machine are critical.

All exceptions to the Specifications must be clearly identified and submitted, in writing, on a separate sheet of paper marked "Exceptions". Bidders who fail to submit their exceptions will not be considered.

***POWER SOURCES:*** Machine shall be powered by four 6 Volt batteries in a 24 Volt system. Rated battery capacities acceptable are 242 Ah (wet acid) or 255 Ah AGM. A 24 Volt onboard charger that is fixed to the machine to allow the machine to be charged at any AC outlet is required for security and safety.

Unit must be equipped with a low voltage shutdown system to protect the batteries from damage. The scrub function shall automatically shut off at 80% discharge for wet acid batteries and 70% for AGM batteries.

***SCRUBBING SYSTEM:*** Machine shall use two 13 inch (33 cm) pad drivers and have a scrub path no less than 26 inches (660 mm) for productivity or greater for maneuverability and to clean in congested areas. A maximum of two 0.54 hp (400 Watts) brush drive motors shall be used to drive the pad drivers and achieve the required run time.

Machine shall have a moving deck system (SafetyGlide) that moves out from under the machine to the right when the machine turns right and moves to the left when the machine turns left. The deck shall move to place it in-line with the path of the rear squeegee to pick up all the water thereby increasing floor safety by reducing slip and fall hazards.

The deck shall be spring loaded and be able to move underneath the machine if it contacts an object while scrubbing to protect both the facility and the deck from costly damage.

The scrub deck shall have no side skirts on the deck that touch the floor during scrubbing.

Whenever the scrub function is activated, brush rotation shall begin automatically whenever the machine is propelled in either forward or reverse direction. Solution flow and detergent dispensing (EcoFlex) are automatically initiated only when propelling forward. Machine must protect the floor surface from damage by stopping the brush rotation whenever the machine is stationary as well as stop all solution flow to prevent slippery water and minimize water and detergent waste.

**VACUUM SYSTEM:** Machine shall be equipped with a maximum 0.56 hp (420 Watts) motor to achieve the required run time and conserve energy. A ball float shut off valve shall be used to protect the vacuum motor from ingesting water thereby extending its life. The vacuum fan shall continue to operate for 10 seconds after the squeegee is lifted from the floor to clear the vacuum hose of excess dirty slippery water so it does not drip back down on the floor creating an unsafe floor condition.

**SOUND LEVEL:** Machine shall have two vacuum power setting and corresponding sound levels that are user selectable via a switch on the dash board. The high power setting shall result in a machine sound level not to exceed 65 dBs when measured in accordance with EN ISO 11201. The low power setting shall result in a machine sound level not to exceed 61 dBs so it can be operated in noise sensitive environments such as when building occupants are present and for energy conservation.

**SQUEEGEE DESIGN:** The rear squeegee shall not exceed 35 inches (89 cm) making it possible to scrub through doorways and in tight areas. Squeegee shall be equipped with highly abrasion and oil/grease resistant urethane blades for long life and low cost of operation. Squeegee pitch adjustment and blade replacement shall be done without the use of tools for maximum performance.

**SOLUTION / RECOVERY TANKS:** The machine shall be equipped with 21 gallons (80 L) solution and recovery tanks. Machine shall be capable of handling solution up to 130° Fahrenheit and be constructed from roto molded polyethylene or equivalent. Both the solution fill and the recovery draining system shall be located at the rear of the machine to increase worker productivity.

Machine shall indicate to the operator how much clean water solution remains in the tank via a graphical display on the steering wheel mounted control panel. The machine shall display the level of the solution tank in increments of 10% from 100% to 0%.

**DETERGENT SYSTEM:** Machine shall have an onboard detergent system (EcoFlex) that increases productivity and saves time, reduces operating costs and helps protect the environment. The system shall consist of a 1.25 gallon (4.75 L) refillable cartridge stored on the machine with the ability to fill with any autoscrubber approved detergent. The machine shall be capable of operating in three distinct detergent strength modes:

- 1) Chemical-free cleaning mode where no chemical is used
- 2) A weak detergent strength mode where detergent is dispensed at a ratio of 400:1
- 3) A user programmed detergent strength mode

All three modes shall be user selected from the control panel and can be changed at any time while scrubbing.

In addition the machine shall be equipped with a burst of power switch that temporarily increases cleaning power for 60 seconds by simultaneously increasing the chemical strength, brush pressure and the solution flow rate with the press of a single button for spot cleaning dirtier and difficult to clean areas. When cleaning in the chemical-free or low strength detergent mode, engaging the burst of power switch shall change the detergent strength to full strength for 60 seconds only and then automatically revert back to the previous detergent strength setting.

**DRIVE SYSTEM:** Shall have a drive motor not to exceed 0.54 hp (400 Watts) to achieve the desired run time and conserve energy. The drive motor shall be capable of propelling the machine up to 3.7 MPH (6 KM/H) for high productivity. The machine shall be equipped with a single direction foot pedal for safety and reverse shall be engaged via a dash board mounted switch. Machine shall be equipped with an accelerometer that slows the machine down automatically when an unsafe operating condition is detected thereby preventing the machine from tipping and ensuring the safety of the operator.

**DIMENSIONS:** For optimal maneuverability the overall maximum machine body dimensions shall not exceed the following: Length = 53.5 (136 cm), Width = 26.4 (67 cm), Height = 47.3 (120 cm)

**TIRES:** Shall be made of solid high traction, non-marking polyurethane to protect the floor surface and facility from damage.

**MINIMUM AISLE U-TURN:** The machine shall be able to turn 180 degrees in a 59 inch (150 cm) aisle for maneuverability and cleaning in obstacle intensive environments.

**CONTROLS:** The primary machine controls shall be located inside the perimeter of the steering wheel for safety and worker ergonomics. In addition, the machine shall have two or more fingertip control paddles located just underneath the steering wheel for ease of use by the operator and safety.

The following controls are required for easy and consistent training and machine operation:

- Graphical display that indicates:
  - The hours of the brush motors for machine maintenance
  - The level of the solution tank for increased productivity
  - The detergent strength or dilution ratio of the detergent used for environmental impact notification
- Master key switch for safety and preventing unauthorized use
- One-Touch™ scrub switch to start and stop the scrubbing function
- Extra pressure switch to increase brush pressure and cleaning power
- Battery level indicator for productivity
- Solution increase and decrease switches for cleaning performance
- Vacuum on/off switch for application flexibility
- Sound level switch for noise sensitive environments
- A burst of power fingertip controlled paddle switch that temporarily increases the brush pressure, solution flow rate and detergent strength
- A fingertip controlled paddle switch that change the direction of travel
- Backup alarm with automatic activation for safety

**APPROVALS:** Shall have certification from ETL and CSA with clearly displayed labels showing as such.

**WARRANTY:** The warranty must provide the following minimum coverage:  
3 years parts, 2 years labor, 6 months travel, 8 years roto molded components.