

**SPECIFICATIONS FOR A SELF-PROPELLED, WALK-BEHIND,
BATTERY-POWERED FLOOR SCRUBBER
WITH A 28 inch REV™ ORBITAL SCRUB PATH**

INTENT: The intent of these specifications are to describe a self-propelled, battery-powered, walk-behind machine capable of scrubbing surfaces such as VCT vinyl tile, grouted tile, marble, terrazzo and other resilient flooring.

In order to reduce labor costs and environmental impact and increase worker and facility safety, the technology, 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.

SCRUBBING SYSTEM: The scrub system shall be a dual random orbital scrubbing system that utilizes two 14 inch (25.5 cm) scrub pads. Each pad shall have two rotational speeds. The micro orbit speed shall be 2,250 RPM in ¼ inch (.64 cm) orbits. The macro orbit is the overall pad orbiting speed, and it shall be no greater than 10 RPMs. A minimum of two 0.74 hp (550 Watt) brush drive motors shall be used to drive the pad drivers.

Whenever the scrub function is activated and the machine is propelled forward or reverse, brush rotation shall begin automatically. Solution flow and detergent dispensing (EcoFlex™) is automatically initiated only when propelling forward. Machine must provide protection to floor by ceasing brush rotation whenever the machine is stationary, as well as stop all solution flow to preventing puddle and minimizing water/detergent waste.

ONBOARD DETERGENT SYSTEM (EcoFlex™): The machine shall be equipped with an onboard detergent system that provides increased productivity, labor savings, reduced environmental impact and detergent savings. The system shall include an onboard 1.25 gallon (4.75 L) refillable cartridge that is capable of containing and dispensing any liquid autoscrubber detergent on the market.

The system must have the ability to clean in four distinct modes:

- Chemical-free cleaning using plain water only
- Clean with an ultra-low detergent ratio (1:400)
- Clean with full detergent strength
- Clean with a 60 second burst of power

Changing from one mode to another shall be controlled through membrane switches on the control panel.

The default detergent dilution ratio shall be 1:400 for the lowest cost to clean with the least environmental impact and highest safety. The following alternate dilution ratios shall be programmable into the machine: 1:32, 1:50, 1:64, 1:100, 1:128, 1:150, 1:200, 1:256, 1:300, and 1:400). A single button (burst of power) shall be provided to allow a momentary 60 second increase in solution flow rate, brush pressure and detergent strength for powerful spot cleaning while minimizing environmental impacts and cost to clean.

System must be capable of purging all detergent from the supply line. Machine shall have the capabilities of rapid interchange of multiple detergent reservoirs for varied cleaning applications without the need for tools. Shall incorporate separate detergent pump for dispensing solution to the scrub brushes.

SOLUTION SYSTEM: The machine shall have three independent flow rates not to exceed the below specifications for greater productivity, cost savings and to reduce environmental impact:

0.10 gallons per minute (0.38 liters per minute)

0.25 gallons per minute (0.95 liters per minute)

0.50 gallons per minute (1.89 liters per minute)

Solution shall be controlled via a pulsating solenoid valve that provides a consistent flow rate and consistent cost to clean.

POWER SOURCES: Machine shall have Qty. (4) 6 Volt batteries in a 24 Volt system. Rated battery capacities are 242 Ah or 310 Ah (wet acid) or 312 Ah AGM. A 24 Volt 25 amp onboard charger for rapid charge cycles and battery protection is required.

Unit must be equipped with a low voltage shutdown system to protect batteries. The scrub system shall automatically be disabled when the battery reaches its low voltage cut off point to protect the batteries from damage and premature failure.

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 is automatically initiated only when propelling forward. Machine must cease brush rotation whenever the machine is stationary, as well as stop all solution flow to prevent damage to the floor, puddling of water and to minimize water/detergent waste.

VACUUM SYSTEM: Machine shall be equipped with a maximum of 0.66 hp (490 Watt) 3 stage vacuum motor to minimize noise making daytime cleaning in noise sensitive areas possible. The vacuum fan shall continue to operate for 10 seconds after scrub system is deactivated to clear the vacuum hose of excess dirty water so it does not drip back down on the clean floor and to reduce the risk of slip and falls.

SQUEEGEE DESIGN: Shall have a maximum width 35.5 inches (90 cm) with four-sided wiping blades, quick-release mechanism, and "break-away" design. Shall be constructed using corrosion resistant material and require no tools for adjustment or blade replacement.

SOLUTION / RECOVERY TANKS: The solution tank shall have a capacity not to exceed 21 gallons (80 L) so as to minimize the machine size and maintain maneuverability. It shall be capable of handling solution temperatures up to 140 degrees Fahrenheit (60 C.). The solution tank shall be refillable from the rear of the machine to save time and enhance productivity. The recovery tank shall come standard with a debris catch cage that helps prevent clogged drains and ball float valve to protect the vacuum motor. The tanks shall be constructed of roto molded polyethylene or equivalent.

DRIVE SYSTEM: Shall have a 0.74 hp (552 Watt) variable speed forward and reverse transaxle drive system. Max speed and gradeability as noted below.

Propel Speed:

- Transport: 3.6 mph (5.8 km/h)
- Scrubbing: 3.4 mph (5.5 km/h)

Gradeability:

- Scrubbing and Transport (Full): 8.5°/14.9%
- Trailer ramp (Empty): 10.0°/17.6%

SOUND LEVEL: Shall be maximum 61 dB A at the operator's position per IEC 60704-1

DIMENSIONS: For optimal maneuverability the overall maximum machine dimensions shall not exceed the following:

- Maximum length: 59.9 inches (152 cm)
- Maximum width without squeegee: 30.8 inches (78 cm)
- Maximum squeegee width: 35.5 inches (90 cm)
- Maximum height: 45.1 inches (115 cm)

TIRES: Shall be solid, high traction, non-marking polyurethane tires to prevent flats, provide high traction and safety and to protect the floor surface. Minimum 10 inches (25.4 cm) tire diameter for traversing rough or uneven surfaces.

MINIMUM AISLE U-TURN: Shall have minimum aisle U-turn left or right not to exceed 65 inches (1.65 m) for maneuverability and cleaning areas the machine is being specified for.

WHEEL PSI: Shall not exceed maximum wheel loading when fully loaded as noted

Scrubber Model	SC750™ 28R
Static Wheel Load	
Front (per wheel)	348 pounds (158 kg)
Rear (per wheel)	240 pounds (109 kg)
Static Wheel Load	
Front (per wheel)	60 psi (0.41 N/mm ²)
Rear (per wheel)	288 psi (1.98 N/mm ²)

OPERATING SYSTEM: Machine shall have integrated solution flow and scrub pressure, or one-touch pre-calibrated scrub settings. When in a scrub mode pressing either scrub up or scrub down shall also automatically change the flow rate to the corresponding setting. This is required for easy training and use of the machine.

OPERATOR CONTROLS: Machine shall have a safety paddle-style operator control interface allowing multiple hand/wrist locations during operation for worker safety. Control paddle shall provide proportional speed control based on hand pressure. There shall be a maximum speed limit dial that governs the maximum speed of the machine for increased safety and consistent performance. A simple membrane touch panel user interface shall be used for all other key functions.

Other controls and indicators required are:

- One touch scrub on/off switch
- Brush pressure increase/decrease switches
- Detergent on/off switch
- Burst of power switch
- Solution on/off switch
- Solution increase/decrease switches
- Master key switch
- Full recover tank indicator
- Solution tank level indicator
- Hour meter
- Battery level indicator
- Onboard diagnostics
- Vacuum on/off switch

PAD DRIVERS: The machine shall have two fixed pad drivers where the pad adheres to the machine without removing the pad drivers. The pad drivers shall have no center locking device to prevent loss and replacement, and to provide even scrubbing across the width of the pad. Machine must have the ability to pre-wet the pads prior to scrubbing to protect the floor from damage.

APPROVALS: Shall have certification from ETL and CE and clearly displayed labels showing as such. Machine shall be approved by NFSI (National Floor Safety Institute) that certifies the machine as high traction and it shall be equipped with a decal showing such approval.

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

**The machine shall be an Advance SC750™ 28R REV™
WITH ORBITAL SCRUBBING TECHNOLOGY**