



**Suggested Specifications For**  
**Clarke®**  
**BATTERY POWERED AUTOMATIC SCRUBBER**  
**MODEL FOCUS II 28 CYLINDRICAL**

**GENERAL**

The machine shall be capable of scrubbing a swath 28" (71.1 cm) wide by means of a 2 counters rotating cylindrical brushes that are power driven, and provide wet sweeping in one pass. The machine shall have a vacuum fan for picking up the dirty water from the swath by means of a squeegee. The machine shall be battery powered, with motors to drive self-propelled traverse, scrub brush agitation, and vacuuming dirty cleaning solution from the floor. Tanks for storing scrubbing solution and recovered dirty water shall be carried on the machine.

**BATTERIES**

The machine shall carry four, six volt storage batteries, connected in series circuit providing a 24 volt system. Batteries shall be either 250 or 330 amp hour capacity wet lead acid as measured by the SAE 20 hour rate. Maintenance free, Absorbed Glass Mat (AGM) batteries shall also be available in 260 or 312 amp hour capacity. The batteries shall be carried in a compartment integral with the solution tank which will contain any spillage, and be positioned to provide a low center of gravity for stability and safety. A quick disconnect shall be furnished to permit the operator to disconnect the battery pack from the machine control system in the case of an emergency.

**BATTERY CHARGER**

The machine shall be equipped with an on-board battery charger integral to the machine, rated at 110 to 230 volt, 50/60 cycles AC input., and 24 volt DC, 25 amp charging output. The charger shall have a 7' (2.1 meter) AC power cord that permanently affixed and stored on the machine. The charger shall have built-in over current protection for safety.

**SCRUB BRUSH POWER**

The machine shall be equipped with two .81 HP (.6 kW), permanent magnet, DC motors, each powering a cylindrical brush drive shaft by means of a poly-v belt and pulleys. Each of the two brushes shall be 5.75" (14.5 cm) diameter and be driven at 613 rpm counter rotating in direction to each other. The brushes shall be removable and replaceable by the operator without tools. The brush motors and solution flow must stop when the machine is left in the neutral position. The brush drive mechanism shall be designed to elevate off of the floor by means of an electro mechanical actuator that is controlled by push button on the operator control panel. This mechanism shall also be capable of lowering to the floor and applying 80 (36 kg) of brush pressure.

**WET SWEEP**

The machine shall be capable of wet sweeping the floor by the action of the two counter rotating brushes that sweep debris up between the brushes and overthrow it into a debris collection pan located at the rear of the brush head. The debris pan shall be a one piece and be made of polyethylene for durability and corrosion resistance.

**SELF PROPELLED TRACTION DRIVE**

The machine shall be self-propelled, forward and reverse via a battery powered transaxle drive unit having a low-speed, high torque, permanent magnet traction motor with permanently lubricated bearings. The traction motor shall develop .44 hp (.33 kW). The machine shall have variable speeds, adjustable by an electronic potentiometer conveniently located on the control handle in such a position that the operator does not have to look away from the traverse path to adjust the traverse speed. The machine shall be capable of traversing at speeds variable from 0 to 260 feet per minute (79 m/min).

**TRACTION WHEELS**

The machine shall be equipped with two traction drive wheels, each being 10.2" (26 cm) in diameter. The traction drive wheels shall be gray, and be made of non-marking Neoprene.

**CASTER WHEEL**

The machine shall be equipped with a dual polyurethane, non-marking caster with anti-friction bearings.

**TANKS**

The machine shall be equipped with a 23 gallon (87 liters) solution tank and a 23 gallon (87 liters) recovery tank. The tanks shall be constructed of tough Polydur™ which will not rust or corrode. The recovery tank shall be equipped with a 1 1/2" (3.8 cm) drain hose that is positioned to allow complete draining into toilets or high deep sinks. The recovery tank shall have a lid which will provide a large access for easy and thorough cleaning and sanitation of the recovery tank. The recovery tank lid shall have a sealing gasket that is easily removable and replaceable by the operator without tools or glue, so that it may be routinely removed and sanitized. A float shutoff switch shall be provided in the recovery tank to shut off the vacuum motor when the recovery tank is full to prevent liquid from entering and damaging the vacuum motor. The solution tank shall have a fill port at the rear of the machine so that the machine can be filled at the same time that the recovery tank is being emptied.

therefore saving operator time. The fill port shall be designed such that the tank may be filled by bucket or hose. The solution tank shall have a clear level indicator hose that is marked with graduations indicating the tanks solution level. This indicator hose will provide means to drain the solution tank.

### **SOLUTION DELIVERY SYSTEM**

Solution shall be gravity fed from the solution tank through a screen filter which may be easily removed and cleaned by the operator even with a full tank of solution with a petcock valve to accommodate shutting off the solution while the removal and cleaning is being performed. An electronic control will pulse a solution solenoid to allow precise delivery of solution to the center of the scrubbing brush or pad driver. This electronic control shall have a means for the operator to control the rate of solution delivery by means of a touch control on the operator control panel.

### **VACUUM FAN**

The machine shall be equipped with a vacuum fan. The vacuum fan should be located in a patented acoustically confined space within the underside of the recovery tank. The vacuum fan shall be driven by 24-volts, and be a ¾ hp (.55 kW) continuous duty, series wound, ball bearing, universal type motor. The vacuum motor shall be a 3 stage tangential discharge type to provide increased efficiency with unrestricted airflow.

### **SQUEEGEE**

The squeegee shall be a double bladed parabolic unit, and have Polyurethane front and rear blades for maximum chemical resist, maximum wear resistance, and low noise. The squeegee shall be swing mounted so it follows the scrubbing path to pick up water on the inside areas of turns, and have down pressure applied by two torsion springs. The squeegee shall be affix to the machine in a break-away design so that upon accidental impact it will disengage from its mounting without damage to the squeegee or the machine. The squeegee shall be easily removed for servicing with two knobs. The squeegee shall be raised and lowered by means of a hand lever.

### **FRAME**

The machine frame shall be constructed of fabricated 10-gauge steel and shall be powder coated.

### **CONTROLS**

All operator controls will be located on the operator control panel at the rear of the machine. The control panel shall be in full view of the operator and shall provide easily read and understood graphics with international symbols. Control switch and indicator functions will be on an easy to clean tactile touch control panel.

### **SOUND LEVEL**

The machine shall be acoustically engineer to produce no greater than 71 dB(A) at the operators ears, per ISO 11201 testing standard.

### **AGENCY APPROVAL**

For safety, the total machine shall possess *cETLus* agency approval.

### **ACCESSORIES AND OPTIONS**

#### **Brushes**

Optional equipment shall include poly, nylon, and grit brushes for scrubbing.

#### **Chemical Mixing System**

A Chemical Mixing System shall be available which will allow any concentrated chemical in a standard gallon jug to be placed in a storage area on-board the machine. A pump shall be provided in the system to regulate the precise mixture of chemical into the water flow from the solution tank to the scrub deck. The Chemical Mixing System shall have an easy to set potentiometer on the operator control panel to allow the operator to set the correct proportion to mix.

#### **Hour Meter**

An hour meter kit shall be available for easy installation which will indicate the accumulative hours of operation for tracking routine maintenance and productivity.

#### **CBMS (Clarke Battery Maintenance System)**

A battery maintenance system shall be available which is installed on the battery pack to condition the plates of the batteries by cleaning the sulfate crystals which accumulate during the charge and discharge cycles on all batteries. Installation of this option doubles the battery warranty to 36 months pro-rated with an unconditional 6 months full replacement.

### **DIMENSIONS AND WEIGHT**

The machine shall be 61 (155 cm) long, 23.5" (60 cm) wide body, and 44" (112 cm) high, 35" (89 cm) squeegee width, and maximum weight of 792 lbs. (359.3 kg) with 250 ah batteries and full solution

### **WARRANTY**

The machine shall be warranted by the manufacturer, except for normal wear parts such as carbon motor brushes, floor brushes or pads, and squeegee blades for a period of three year on parts, and a period of one year on labor from date of purchase, with no limit to hour of use. Solution and recovery tanks shall be warranted for eight years from the date of purchase. Batteries shall be prorated for 18 months from date of purchase with an unconditional warranty for the first ninety days.

### **MODEL DESIGNATION**

The machine shall be a Clarke® model Focus II Cylindrical 28, or equal.