



**Suggested Specifications For**  
**Clarke®**  
**BATTERY POWERED AUTOMATIC SCRUBBER**  
**MODEL FOCUS II BOOST™ L20**

**GENERAL**

The machine shall be capable of scrubbing a swath 20" (50.8 cm), by means of one 14" (35.6 cm) X 20" (50.8 cm) rectangular pad/brush driver, which rotates ¼" (.64 cm) orbits at 2,250 rpm, powered by means of a single electric motor. Cleaning solution shall be applied in front of the pad/brush driver to allow efficient utilization, without slinging outward, of the solution as it travels under the high speed agitation of the pad/brush driver toward the rear of the machine where the now dirty water shall be picked up from the cleaning swath by means of a parabolic squeegee and a vacuum fan. The machine shall be self-propelled and powered by electric motors driven by lead-acid storage batteries carried in the machine. Tanks for storing the scrubbing solution and the recovered dirty water shall be carried on the machine. All machine controls shall be mounted on the control console within easy reach of the operator.

**APPLICATIONS**

The machine must be capable of performing light and heavy scrubbing of all surfaces that any disc or cylindrical machine could scrub. The machine must be capable of deep scrubbing floor finish on resilient floors, removing at least 1 to 2 coats of old finish in one pass at traverse speeds up to 150 feet (45 meter) per minute, using a maroon pad and only cold water for solution with no chemicals.

**BATTERIES**

The machine shall carry two, twelve volt storage batteries, connected in series circuit providing a 24 volt system. Batteries shall be either 130 amp hour capacity wet lead acid as measured by the SAE 20 hour rate, or 114 amp hour capacity maintenance free Absorbed Glass Mat (AGM) batteries. 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. The charger shall have a 10' (3 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 one, ¾ hp (.56 kw) permanent magnet direct drive DC motors for powering the pad/brush driver with high speed, 1/4" (.64 cm) orbits of 2250 rpm. The motor shall have an alloy steel shaft mounted in sealed, permanently lubricated ball bearings, with bearing protection from detergent penetration by a lip-seal on the shaft below the bearing. The motor shall automatically start when the machine is activated by the operator depressing the forward or reverse traverse control switches. The brush drive mechanism and pad driver / brush shall be designed to elevate off of the floor by means of a foot pedal lever controlled by the operator from the rear of the machine. This mechanism shall also be capable of lowering to the floor and applying 40 or 75 lbs. (18 or 34 kg) of pad / brush pressure.

**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 .27 (.2 kW) hp. 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 3.5 miles per hour (5.6 km/h).

**TRACTION WHEELS**

The machine shall be equipped with two traction drive wheels, each being 9.8" (24.9 cm) in diameter, and a tread width of 2 3/8" (6 cm). The traction drive wheels shall be gray, and be made of non-marking Neoprene.

**CASTER WHEEL**

The machine shall be equipped with one gray, non-marking caster with anti-friction bearings on wheel and stem.

## **TANKS**

The machine shall be equipped with a 14.5 gallon (55 liters) solution tank and a 14.5 gallon (55 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 1/4" (3.2 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 ball shall be provided in the recovery tank to shut off the air flow to the vacuum motor when the recovery tank is full to prevent liquid from entering and damaging the vacuum motor. This float shutoff ball shall be positioned at an angle in a cage that points toward the front of the tank to assure positive and quick air flow shutoff when the recovered solution sloshes in the tank. 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. It shall also have a fill port at the front of the machine for convenience and this port shall have a molded in funnel shape at its tank entrance to accommodate easy bucket filling. 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 front of the Boost™ scrub path by means of a distribution manifold with multiple outlets for even solution distribution. 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. The machines normal solution consumption shall be .1 gallons per minute (.25 liter/min), and have a maximum flow of .3 gallons per minute (.75 liter/min).

## **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 1/2 HP continuous duty, series wound, ball bearing, universal type motor. The vacuum motor shall be a 2 stage tangential discharge type to provide increased efficiency with unrestricted airflow.

## **SQUEEGEE**

The squeegee shall be a double bladed 29.9" (75.9 cm) wide 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 affixed 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 engineered to produce no greater than 65.8 dB(A) at the operators ears.

## **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 and stripping.

### **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**

The machine shall be 51 (129.5 cm) long, 20.8" (52.8 cm) wide, 29.9" (75.9 cm) squeegee width, and 42.8" (108.8 cm) high. The weight shall

not exceed 525 lbs. (238 kg) with batteries and full solution tank.

**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 Boost™ L20, or equal.



**Suggested Specifications For**  
**Clarke®**  
**BATTERY POWERED AUTOMATIC SCRUBBER**  
**MODEL FOCUS II L17**

**GENERAL**

The machine shall be capable of scrubbing a swath 17" (43 cm) wide by means of a single rotating power driven brush, and 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 two, twelve volt storage batteries, connected in series circuit providing a 24 volt system. Batteries shall be either 130 amp hour capacity wet lead acid as measured by the SAE 20 hour rate, or 114 amp hour capacity maintenance free Absorbed Glass Mat (AGM) batteries. 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. The charger shall have a 10' (3 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 a .7 HP (.56 kW), permanent magnet, DC motor mounted to a high torque gear box to drive the furnished pad driver or optional brush. The motor and gear box shall be mounted with the shaft in a vertical plane to assure symmetrical pressure is applied to the brush. The alloy steel motor shaft shall be mounted in sealed, permanently lubricated ball bearings. The pad driver / brush shall be driven at 153 rpm and shall be attached directly to the motor-gearbox shaft by means of a clutch plate adaptor. The brush drive mechanism and pad driver / brush shall be designed to elevate off of the floor by means of a foot pedal lever controlled by the operator from the rear of the machine. This mechanism shall also be capable of lowering to the floor and applying 45 or 90 lbs. (20 or 40.8 kg) of pad / brush pressure.

**PAD DRIVER / BRUSH REMOVAL & INSTALLATION**

To minimize operator handling and contamination, the machine shall have a touch control push button on the operator control panel which when depressed and the scrub deck is elevated, the pad driver / brush will automatically spin off and be removed from the machine. The machine shall facilitate automatic pad driver / brush installation by the operator maneuvering the machine scrub deck over the pad driver / brush and lowering the scrub deck onto the center of the pad driver / brush then momentarily depressing the same button used in removal to install the pad driver / brush onto the scrub deck.

**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 .27 (.2 kW) hp. 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 3.5 miles per hour (5.6 km/h).

**TRACTION WHEELS**

The machine shall be equipped with two traction drive wheels, each being 9.8" (24.9 cm) in diameter, and a tread width of 2 3/8" (6 cm). The traction drive wheels shall be gray, and be made of non-marking Neoprene.

**CASTER WHEEL**

The machine shall be equipped with one gray, non-marking caster with anti-friction bearings on wheel and stem.

## **TANKS**

The machine shall be equipped with a 14.5 gallon (55 liters) solution tank and a 14.5 gallon (55 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 1/4" (3.2 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 ball shall be provided in the recovery tank to shut off the air flow to the vacuum motor when the recovery tank is full to prevent liquid from entering and damaging the vacuum motor. This float shutoff ball shall be positioned at an angle in a cage that points toward the front of the tank to assure positive and quick air flow shutoff when the recovered solution sloshes in the tank. 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. It shall also have a fill port at the front of the machine for convenience and this port shall have a molded in funnel shape at its tank entrance to accommodate easy bucket filling. 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 1/2 HP continuous duty, series wound, ball bearing, universal type motor. The vacuum motor shall be a 2 stage tangential discharge type to provide increased efficiency with unrestricted airflow.

## **SQUEEGEE**

The squeegee shall be a double bladed 29.9" (75.9 cm) wide 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 affixed 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 engineered to produce no greater than 65.8 dB(A) at the operators ears.

## **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 and stripping.

### **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**

The machine shall be 52.1 (132.3 cm) long, 21.3" (54.1 cm) wide, 29.9" (75.9 cm) squeegee width, and 42.8" (108.8 cm) high. The weight shall

not exceed 528 lbs. (240 kg) with batteries and full solution tank.

**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 L17, or equal.



**Suggested Specifications For**  
**Clarke®**  
**BATTERY POWERED AUTOMATIC SCRUBBER**  
**MODEL FOCUS II L20**

**GENERAL**

The machine shall be capable of scrubbing a swath 20" (50.8 cm) wide by means of a single rotating power driven brush, and 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 two, twelve volt storage batteries, connected in series circuit providing a 24 volt system. Batteries shall be either 130 amp hour capacity wet lead acid as measured by the SAE 20 hour rate, or 114 amp hour capacity maintenance free Absorbed Glass Mat (AGM) batteries. 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. The charger shall have a 10' (3 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 a .7 HP (.56 kW), permanent magnet, DC motor mounted to a high torque gear box to drive the furnished pad driver or optional brush. The motor and gear box shall be mounted with the shaft in a vertical plane to assure symmetrical pressure is applied to the brush. The alloy steel motor shaft shall be mounted in sealed, permanently lubricated ball bearings. The pad driver / brush shall be driven at 153 rpm and shall be attached directly to the motor-gearbox shaft by means of a clutch plate adaptor. The brush drive mechanism and pad driver / brush shall be designed to elevate off of the floor by means of a foot pedal lever controlled by the operator from the rear of the machine. This mechanism shall also be capable of lowering to the floor and applying 45 or 90 lbs. (20 or 40.8 kg) of pad / brush pressure.

**PAD DRIVER / BRUSH REMOVAL & INSTALLATION**

To minimize operator handling and contamination, the machine shall have a touch control push button on the operator control panel which when depressed and the scrub deck is elevated, the pad driver / brush will automatically spin off and be removed from the machine. The machine shall facilitate automatic pad driver / brush installation by the operator maneuvering the machine scrub deck over the pad driver / brush and lowering the scrub deck onto the center of the pad driver / brush then momentarily depressing the same button used in removal to install the pad driver / brush onto the scrub deck.

**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 .27 (.2 kW) hp. 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 3.5 miles per hour (5.6 km/h).

**TRACTION WHEELS**

The machine shall be equipped with two traction drive wheels, each being 9.8" (24.9 cm) in diameter, and a tread width of 2 3/8" (6 cm). The traction drive wheels shall be gray, and be made of non-marking Neoprene.

**CASTER WHEEL**

The machine shall be equipped with one gray, non-marking caster with anti-friction bearings on wheel and stem.

## **TANKS**

The machine shall be equipped with a 14.5 gallon (55 liters) solution tank and a 14.5 gallon (55 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 1/4" (3.2 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 ball shall be provided in the recovery tank to shut off the air flow to the vacuum motor when the recovery tank is full to prevent liquid from entering and damaging the vacuum motor. This float shutoff ball shall be positioned at an angle in a cage that points toward the front of the tank to assure positive and quick air flow shutoff when the recovered solution sloshes in the tank. 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. It shall also have a fill port at the front of the machine for convenience and this port shall have a molded in funnel shape at its tank entrance to accommodate easy bucket filling. 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**

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## **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 1/2 HP continuous duty, series wound, ball bearing, universal type motor. The vacuum motor shall be a 2 stage tangential discharge type to provide increased efficiency with unrestricted airflow.

## **SQUEEGEE**

The squeegee shall be a double bladed 29.9" (75.9 cm) wide 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 affixed 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**

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## **SOUND LEVEL**

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## **AGENCY APPROVAL**

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## **ACCESSORIES AND OPTIONS**

### **Brushes**

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

### **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.

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**DIMENSIONS**

The machine shall be 52.1 (132.3 cm) long, 21.3" (54.1 cm) wide, 29.9" (75.9 cm) squeegee width, and 42.8" (108.8 cm) high. The weight shall not exceed 531.3 lbs. (241 kg) with batteries and full solution tank.

**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 L20, or equal.



**Suggested Specifications For**  
**Clarke®**  
**BATTERY POWERED AUTOMATIC SCRUBBER**  
**MODEL FOCUS II S20**

**GENERAL**

The machine shall be capable of scrubbing a swath 20" (50.8 cm) wide by means of a single rotating power driven brush, and 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 power 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 two, twelve volt storage batteries, connected in series circuit providing a 24 volt system. Batteries shall be either 130 amp hour capacity wet lead acid as measured by the SAE 20 hour rate, or 114 amp hour capacity maintenance free Absorbed Glass Mat (AGM) batteries. 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. The charger shall have a 10' (3 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 a .7 HP (.56 kW), permanent magnet, DC motor mounted to a high torque gear box to drive the furnished pad driver or optional brush. The motor and gear box shall be mounted with the shaft in a vertical plane to assure symmetrical pressure is applied to the brush. The alloy steel motor shaft shall be mounted in sealed, permanently lubricated ball bearings. The pad driver / brush shall be driven at 153 rpm and shall be attached directly to the motor-gearbox shaft by means of a clutch plate adaptor. The brush drive mechanism and pad driver / brush shall be designed to elevate off of the floor by means of a foot pedal lever controlled by the operator from the rear of the machine. This mechanism shall also be capable of lowering to the floor and applying 45 or 90 lbs. (20 or 40.8 kg) of pad / brush pressure.

**PAD DRIVER / BRUSH REMOVAL & INSTALLATION**

To minimize operator handling and contamination, the machine shall have a touch control push button on the operator control panel which when depressed and the scrub deck is elevated, the pad driver / brush will automatically spin off and be removed from the machine. The machine shall facilitate automatic pad driver / brush installation by the operator maneuvering the machine scrub deck over the pad driver / brush and lowering the scrub deck onto the center of the pad driver / brush then momentarily depressing the same button used in removal to install the pad driver / brush onto the scrub deck.

**PAD / BRUSH ASSIST DRIVE**

The machine shall be propelled forward with assistance of the pad / brush and minimal effort by the operator. The design of the brush pressure mechanism shall have an adjustable forward and side tilt which can be set for more or less forward traverse assist from the pad / brush.

**TRACTION WHEELS**

The machine shall be equipped with two traction drive wheels, each being 9.8" (24.9 cm) in diameter, and a tread width of 2 3/8" (6 cm). The traction drive wheels shall be gray, and be made of non-marking Neoprene.

**CASTER WHEEL**

The machine shall be equipped with one gray, non-marking caster with anti-friction bearings on wheel and stem.

**TANKS**

The machine shall be equipped with a 14.5 gallon (55 liters) solution tank and a 14.5 gallon (55 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 1/4" (3.2 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 ball shall be provided in the recovery tank to shut off the air flow to the vacuum motor when the recovery tank is full to prevent liquid from entering and damaging the vacuum motor. This float shutoff ball shall be positioned at an angle in a cage that points toward the front of the tank to assure positive and quick air flow shutoff when the recovered solution sloshes in the tank. 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. It shall also have a fill port at the front of the machine for convenience and this port shall have a molded in funnel shape at its tank entrance to accommodate easy bucket filling. 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 1/2 HP continuous duty, series wound, ball bearing, universal type motor. The vacuum motor shall be a 2 stage tangential discharge type to provide increased efficiency with unrestricted airflow.

## **SQUEEGEE**

The squeegee shall be a double bladed 29.9" (75.9 cm) wide 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 65.8 dB(A) at the operators ears.

## **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 and stripping.

### **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**

The machine shall be 52.1 (132.3 cm) long, 21.3" (54.1 cm) wide, 29.9" (75.9 cm) squeegee width, and 42.8" (108.8 cm) high. The weight shall not exceed 515.9 lbs. (234 kg) with batteries and full solution tank.

## **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 S20, or equal.



**Suggested Specifications For**  
**Clarke®**  
**BATTERY POWERED AUTOMATIC SCRUBBER**  
**MODEL FOCUS II L20 CYLINDRICAL**

**GENERAL**

The machine shall be capable of scrubbing a swath 20" (50.8 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 two, twelve volt storage batteries, connected in series circuit providing a 24 volt system. Batteries shall be either 130 amp hour capacity wet lead acid as measured by the SAE 20 hour rate, or 114 amp hour capacity maintenance free Absorbed Glass Mat (AGM) batteries. 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. The charger shall have a 10' (3 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 .4 HP (.3 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 4.3" (11 cm) diameter and be driven at 570 rpm counter rotating in direction to each other. The brushes shall be removable and replaceable by the operator without tools. The brush drive mechanism and brushes shall be designed to elevate off the floor by means of a foot pedal lever controlled by the operator from the rear of the machine. This mechanism shall also be capable of lowering to the floor and applying 58.4 pounds (26.5 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 .27 (.2 kW) hp. 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 3.5 miles per hour (5.6 km/h).

**TRACTION WHEELS**

The machine shall be equipped with two traction drive wheels, each being 9.8" (24.9 cm) in diameter, and a tread width of 2 3/8" (6 cm). The traction drive wheels shall be gray, and be made of non-marking Neoprene.

**CASTER WHEEL**

The machine shall be equipped with one gray, non-marking caster with anti-friction bearings on wheel and stem.

**TANKS**

The machine shall be equipped with a 14.5 gallon (55 liters) solution tank and a 14.5 gallon (55 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 1/4" (3.2 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 ball shall be provided in the recovery tank to shut off the air flow to the vacuum motor when the recovery tank is full to prevent liquid from entering and damaging the vacuum motor. This float shutoff ball shall be positioned at an angle in a cage that points toward the front of the tank to assure positive and quick air flow shutoff when the recovered solution sloshes in the tank. 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. It shall also have a fill port at the front of the machine for convenience and this port shall have a molded in funnel shape at its tank entrance to accommodate easy bucket filling. 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 a trough at the front of the scrub deck which distributes solution evenly across the scrub path. 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 1/2 HP continuous duty, series wound, ball bearing, universal type motor. The vacuum motor shall be a 2 stage tangential discharge type to provide increased efficiency with unrestricted airflow.

### **SQUEEGEE**

The squeegee shall be a double bladed 29.9" (75.9 cm) wide 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.

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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 65.8 dB(A) at the operators ears.

### **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 and stripping.

#### **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.

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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**

The machine shall be 49.3 (125.3 cm) long, 22.7" (576 cm) wide, 29.9" (75.9 cm) squeegee width, and 42.8" (108.8 cm) high. The weight shall not exceed 553 lbs. (251 kg) with batteries and full solution tank.

### **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 L20 Cylindrical, or equal.