



**FAST  
CLEAN**

# OWNER'S MANUAL



## **Challenger RSS35**

**Battery Powered Automatic  
Rider Scrubber & Sweeper**

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### **FAST CLEAN, INC.**

210 Southwest Ave. Tallmadge OH 44278

(833) 801-2358

sales@fastclean.com www.fastclean.com

Before operation or use of this machine, please carefully read this manual.

When ordering the replacement parts, please refer to the spare and accessory parts manual attached to the machine. Before matching parts or accessories, please first determine your machine model and serial number. You can order parts and accessories from any authorized service center or dealer. This machine can provide excellent service. Please follow the instructions in the manual.

- Follow manufacturer’s instructions for operating the machine.
- Perform maintenance according to the maintenance instructions provided in the operation manual.
- Use the OE or same-grade parts for maintenance.

	Please dispose of old machine components such as packaging material, battery, etc. and toxic liquid such as anti-freeze and oil according to your local regulations on waste disposal and on environmental safety.

**Machine Information** (Please fill in for future reference.)

Model number-

Machine number-

Machine option-

Sales representative-

Tel. of sales representative-

Customer ID-

Installation date-

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## Precautions

This machine is intended for indoor hard floors only. Please use the suggested scrubbing pads and brushes as well as the manufacturer recommended cleaning chemicals recommended for this machine.

All operators should read, understand, and observe the following safety precautions.

Please observe safety warnings and guidelines in this manual.

### Warning! Fire or explosion hazard:

The batteries release hydrogen. Please keep away from spark or open flame. The battery compartment should be kept open when charging.

Do not use flammable liquid in the machine. Do not operate the machine where there are flammable liquids, vapors or dust.

This machine is not equipped with an explosion-proof motor. If it is used where there is flammable vapor, liquid, or dust, the electric motor may generate a while starting machine. This may cause flash fire or explosion.

This machine is not recommended to clean up flammable materials, reactive metals or corrosive liquids.

**Warning!** To avoid injury, turn off the power before performing routine maintenance on the machine. It is also recommended to disconnect the battery wiring before performing any electrical maintenance.

## Basic Safety Instructions

1. Before starting the machine please ensure that all safety guards are in place and operating correctly.
2. Proceed slowly when operating on a slope or slippery surface, or when turning the machine.
3. Please discontinue use and have machine serviced if it is damaged or not operating properly.
4. Follow the chemical manufacturer's mixing ratio and instructions. Use only low foam detergents in the machine.
5. Do not leave machine unattended without first turning off the power.
6. Do not leave machine unattended on a sloping surface. Park machine on level ground and engage parking brake.
7. Do not allow children on or around the machine
8. Always pay attention to your surroundings while operating the machine. Be aware of the location of other workers around you at all times.

## Basic Maintenance Instructions

All maintenance should be carried out by trained, qualified personnel.

Do not change the original design of the machine without consulting the manufacturer.

Use replacement parts provided or recognized by the manufacturer or local dealer.

Turn off machine and disconnect battery wiring before performing maintenance. Avoid moving parts. Do not wear loose clothing that may catch in the machine.

If performing maintenance on batteries, wear appropriate safety gear such as gloves, apron and safety glasses.

Avoid contact with battery acid as it is extremely corrosive. If you come in contact with battery acid, wash immediately with soap and water.

Do not use a pressure washer or steam cleaner to clean the machine.

## Transporting the Machine

1. Please turn off the power before moving the machine.
2. Lift the brush head and squeegee to transport position.
3. Use a ramp when loading or unloading the machine.
4. When the machine is in place, lower the brush head, engage parking brake (if equipped), and make sure the key is in the off position.
5. Place blocks behind the wheels to keep the machine from moving during transportation, and/or tie machine down with bungees or straps.
6. For safety: when transporting the machine, we recommend using a ramp when loading or unloading the machine from truck or trailer.

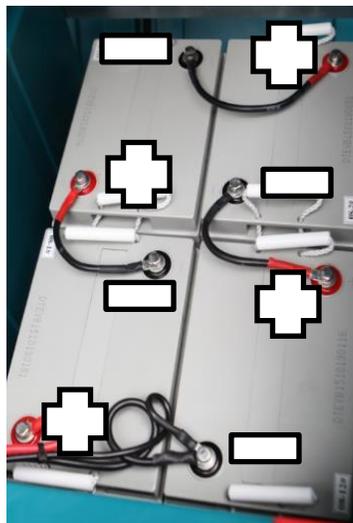
## Unpacking the Machine

- Carefully check to see if the machine or packaging is damaged. If there has been damage incurred in shipping, please notify your carrier immediately.
- Check the list of freight contents. If there is any missing item, please contact your distributor. Your crate should contain:
  - Main unit: 1 Challenger RSS35 scrubber
  - 6V batteries: 4 wet, maintenance free batteries
  - 24V/25A battery charger: 1 unit
  - Squeegee: 1 unit
  - Cylindrical scrub brushes: 2 brushes
  - Optional other accessories- purchased additionally
- Before unpacking the machine, please remove all straps and ropes that attach the machine to the pallet.
- Carefully remove the machine from the pallet with the assistance of others. **Warning! Do not directly drive the machine off the pallet without using a ramp.** This could damage your machine.

## Install the Batteries

**Note:** Please install the batteries after unloading the machine from the pallet. (See following).

**Warning:** Fire or explosion hazard. The batteries release hydrogen. Please keep away from spark or open flame. The battery compartment should be kept open when charging.



For safety: Please wear appropriate protective gear: safety glasses, apron and gloves when performing battery maintenance or wiring. Avoid contact with battery acid. If you come in contact with battery acid, wash immediately with soap & water.

Park the machine on level ground and take out the start key.

Lift up the recovery tank to access the battery compartment.

Place batteries in the battery compartment and connect the battery wiring according to the photo at bottom left. **Important:** Make sure the poles are properly connected!

**Note:** Place batteries carefully into compartment in order to avoid damaging the batteries and the machine.

Before connecting the batteries, please ensure whether the electrodes and terminals are clean. Use terminal cleaning fluid and wire brush as required.

Paint a thin layer of metal-free lubricating oil or protective spray on the connected wiring to avoid battery corrosion.

After the batteries are installed, please check the power gauge. If all the indicator lights are lit, batteries are fully charged. If only some or none of the indicator lights are lit, batteries need to be charged.

**Warning!** Do not place tools, metal shavings or other metal instruments on batteries as this could cause an electrical arc.

## Battery Charging

Do not keep the batteries in an uncharged state for a long time. Letting the batteries run completely down may damage them. The following instructions apply to the specific charger for this machine. Be sure to use the proper charger for this machine in order to avoid damaging the batteries.

Specification of battery charger:

- Type of charger: for lead-acid maintenance-free batteries
- Output voltage - 24V
- Output current - 25A
- Intended for deep cycle battery charging

**Warning:** Danger of fire or explosion. The batteries release hydrogen. Keep away from spark or open flame. Keep the battery compartment open when charging. **Do not** put metal tools, shavings or debris on batteries as this could cause an electrical arc.

When servicing the machine, wear appropriate safety gear such as gloves, apron and goggles.

- Move the machine to well-ventilated area for charging.
- Park the machine on level ground and turn the key to the OFF position. Engage parking brake (if equipped).
- Before charging, check the electrolyte level of each battery unit (if using non-standard non-maintenance-free batteries.)
- When charging, leave the battery compartment open for ventilation

5. Insert the AC power cord of the charger into outlet or other power source.

6. Insert the DC cable of the charger into the battery charging socket on the rear panel of the recovery tank.

7. The charger will automatically begin charging, and will automatically turn off when batteries are fully charged.

**Note:** The machine will not be operable when the charger is connected. Note: If you must discontinue charging before the charging is completed, do not unplug the DC cable of the charger from the socket first. To avoid electric arc discharge, please unplug the AC power cord first.

8. After charging, check the electrolyte level of batteries again (if using non-standard non-maintenance-free wet batteries).

brushes. Bristles must meet the floor. If not, adjust the position of the brush closer to the ground.



### Install the Squeegee Assembly

1. Park the machine on level ground, engage parking brake (if equipped), and take out the key.

2. Install the squeegee rubber on the installation bracket as shown in the photo below. Be sure that the fastening knobs are properly inserted into the sockets and then tighten the knobs (see arrows in photo below).



3. Connect the vacuum hose with the squeegee assembly. (see circled area in photo.)

4. Check that the squeegee is securely fastened and meets the floor properly. Adjust if necessary.

### Install the Sweeper Brush

1. Park the machine on level ground, engage parking brake, (if equipped) and take out the key.

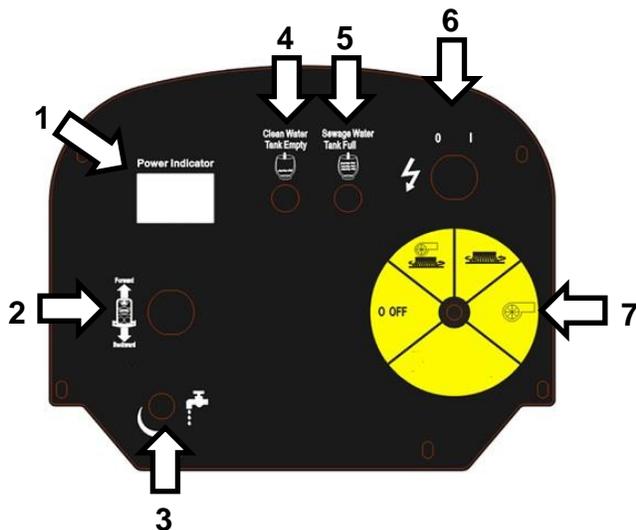
2. Open the brush cab and install the cylindrical brush as shown in the photo: (We recommend mid grit cylindrical

Machine Diagram



1. Warning Beacon
2. Recovery Tank Lid
3. Recovery Tank
4. Solution Tank
5. Squeegee Assembly
6. Side Skirt
7. Battery Compartment Access
8. Steering Wheel
9. Control Panel (see below)
10. Battery Cabin (under seat)
11. Accelerator
12. Front Wheel
13. Cylindrical Sweep & Scrub Brush Housing
14. (On other side of machine - not shown) Solution Tank Fill Port

## Control Panel Operations



1. Battery Power Gauge
2. Forward/Reverse Drive
3. Solution Flow Control
4. Solution Tank Empty Light
5. Recovery Tank Full Light
6. Power On/Off Key Switch
7. Vac & Brush Controls (Clockwise from left: All Off, Vac & Brushes On, Brushes On, Vac On)

### Checklist Before Starting the Machine

- Check the battery power. Charge batteries if power is below 80%. Brand new batteries should take about 8 hours to charge.
- Check the condition of the main scrub brushes. Replace if they are worn out.
- Check the condition of the rear squeegee and reposition or replace if it is worn. Always make sure squeegee is clean before starting.
- Check the condition of the rubber skirt on the side of the scrub deck. Reposition or replace as needed.
- Check that the recovery tank is empty and that floating filter screen is clean.

## Starting the machine

1. Turn the main power key to the ON position.
2. Turn on solution flow (See #3 on Control Panel).
3. Turn on the brushes, then turn on vacuum. (See #7 on Control Panel).
4. Turn on forward drive. (See #2 on Control Panel).
5. Push accelerator pedal to drive the scrubber forward or backward. (Warning light and horn will activate when scrubber is in reverse).
6. Push the brake pedal to stop the machine.

**Note:** It is recommended to keep driving speed between 1.5 to 2 miles per hour.

## Operating the machine

**Warning:** Danger of fire or explosion. Do not use this machine to pick up flammable or corrosive materials, or reactive metals.

1. Overlap each scrub pass 3”.
2. Keep the machine continuously moving, or if you must stop, turn off brushes, solution flow and vacuum. Otherwise scrubber may abrade the floor.
3. Squeegee assembly automatically raises when backing up.
4. If squeegee leaves drag marks on the floor behind the scrubber, wipe the squeegee to remove dirt. If squeegee still leaves drag marks, it may need to be replaced. Check the condition of the squeegee. If the leading edge is not square and meeting the ground firmly, it will need to be repositioned or replaced.
5. Do not operate the machine on inclined surface with slope exceeding 5% (3°).
6. Please slow down when operating on slopes and slippery floors, or when turning.
7. If the foam is excessive, add a manufacturer-recommended de-foaming agent into the recovery tank. Follow the chemical manufacturer-recommended mixing instructions. Using the wrong chemical or too high a concentration may cause excessive foam.

**Note:** Do not allow foam to enter the filter screen as this could damage the vacuum motor. The foam may also cause the filter screen switch to malfunction.

8. On especially dirty floors we recommend a two-pass system. Turn off vac system for the first pass. Deposit detergent and let sit for 3-5 min. Then lower the squeegee, turn on the vac and run the second pass.
9. Keep an eye on the power consumption of the batteries. Scrubber should run continuously for five hours with new batteries before needing recharged.
10. Check the remaining amount of cleaning solution through the hose on the side of the tank. The control panel will indicate when the solution tank is empty. (For conventional scrubbing, the consumption is about .26 gallons per minute.)
11. When the solution tank is empty, drain the recovery tank before refilling solution tank.
12. If the machine will be left unattended,: turn off all operations, park the machine on level ground, engage parking brake (if equipped), turn off power, and take out the key.
13. Follow daily maintenance procedures after cleaning (See "Daily Maintenance").

### Battery Power Gauge

**If equipped with digital % gauge:** the battery power gauge displays the remaining charge of the batteries (0-100%). To extend the battery life, it is best to recharge the batteries when the power gauge is less than 50%. Do not let batteries run completely out of charge.

**If equipped with lights or digital bar gauge:** the battery power gauge displays the remaining charge of the batteries. When the battery is fully charged, all indicators are on. As power is consumed, the indicator lights go out from right to left. To extend the battery life, it is best to recharge the batteries as soon as all the indicator lights have gone out.

**Note:** To extend battery life, do not charge the batteries until the machine has been run for 30min.

### Machine maintenance

Your machine can be kept in prime working condition if the recommended daily, weekly, and monthly maintenance procedures are followed.

**Warning:** Risk of electric shock. Disconnect the battery cables before performing any electrical maintenance.

### Cleaning the Recovery Tank

1. Drive the scrubber over to the maintenance area, engage parking brake (if equipped), and turn off the power.
2. Turn the recovery tank hose drain cover counter-clockwise and remove it. Direct drain hose on back of recovery tank to drainage area and allow the recovery tank to completely drain.

**Note:** We advise wearing gloves during this procedure in order to avoid contact with dirty water and cleaning chemicals that will be drained from the recovery tank.

3. Once recovery tank has drained, flush with warm water (no hotter than 60°C or 140°F) to remove residues. Allow to completely drain and air dry.
4. Disassemble and wash the floating filter screen in the recovery tank. Allow to dry before replacing.
5. Leave tank open to air dry completely before storing the machine.

### Daily Maintenance

1. Drive the scrubber over to the maintenance area, engage parking brake (if equipped), and turn off the power.
2. Drain and clean the recovery tank. Allow to air dry.
3. Disassemble and clean the floating filter screen in the recovery tank. Allow to dry before replacing.
4. Drain the solution tank and flush with hot water (no hotter than 60°C or 140°F) if necessary. Check parts for corrosion or wear.
5. Remove the scrub brush and clean. Check for foreign objects entangled in the bristles and remove. Inspect for wear, and replace if bristles are worn out.
6. Raise squeegee assembly. Wipe the squeegee and inspect for wear. Lower squeegee assembly and check to see that leading edge of squeegee is square and meets the ground properly. Adjust or replace squeegee as needed.

**Note:** Squeegees have four useable edges. Once an edge has worn down, squeegee may be flipped over and reused until it is completely worn out.

- Wipe the machine with multipurpose cleaning agent and wet cloth.

**Do not use steam cleaner or pressure washer to clean the machine as this may damage electrical components.**

- Check the condition of side skirts and replace if necessary.
- Charge the batteries. To prolong the life of the batteries and ensure best performance of the machine, do not charge the batteries until the machine has run for at least 30 minutes.

**Important:** Do not store machine with uncharged batteries. If machine is going to be stored unused for long periods, it is advisable to routinely charge the batteries, as batteries will slowly lose their charge over time even when not in use. Allowing batteries to run completely out of charge may damage them and shorten their life span.

#### Monthly Maintenance (or after 80 hours)

- Drain the solution tank and dry. Remove the solution tank filter from the machine and wash the filter screen.
- Clean the top of the batteries to prevent corrosion of the terminals (refer to "Battery Maintenance").
- Check battery wiring for proper connection and tighten if necessary.
- Check and clean the seal of the recovery tank lid. Inspect for wear or corrosion, and replace if necessary.
- Spray silicone dry lubricant on all pivots and rollers and cover with one layer of water-proof lubricating oil to keep the axle operating smoothly.
- Check whether the nuts and bolts on the machine are loose.
- Check whether the machine leaks.

#### Quarterly Maintenance (or after 250 hours)

Check the carbon brush wear of the drive motor (drive model), vacuum motor, and brush motor. When the length of the carbon brush is work for less than 10mm (3/8"), the carbon brush needs to be replaced. Contact your local authorized service center.

#### Before Storing the Machine

- Charge the batteries before storing.
- Thoroughly clean and dry the solution and recovery tanks.
- Store the machine in a dry place. Do not store the machine outside.
- Open the recovery tank lid for ventilation.
- If the machine will be stored in a cold environment, be sure to drain out all the liquid from the machine or use antifreeze.

#### Machine Specifications

Specification	Unit	Challenger RSS35
Voltage	V	24 (4 x 6V)
Battery Capacity	AH	200
Run Time	hrs	5 (approx.)
Cleaning Efficiency	ft <sup>2</sup> /hr	59,200
Maximum Floor Grade	%	5
Scrubbing Path	in	35
Vacuuming Path	in	43
Drive Motor	hp	.67
Brush Motors	hp	.75 (x 2)
Vac Motor	hp	.67
Lift Motor	hp	.13 (x 2)
Solution Tank Capacity	gal	34
Recovery Tank Capacity	gal	37
Machine Weight (w/batteries)	lbs	772
Machine Dimensions	in	65 x 36 x 51

### Troubleshooting

<b>The machine will not operate.</b>	Batteries have no power.	Charge batteries.
	Batteries will not charge.	Replace batteries
	Battery wiring is not connected.	Check battery wiring for loose connection. Tighten if needed.
	Fuse has blown.	Replace the fuse.
<b>Brush motor will not work.</b>	Foreign objects have become entangled in the main brush.	Inspect brushes and remove entangling objects.
	Batteries have run down.	Charge batteries.
	Breaker has been tripped.	Reset brush circuit breaker with button on column.
	Brush switch is faulty.	Please contact service center.
	Carbon brush on motor is worn out.	Please contact service center.
<b>Vac motor will not work.</b>	Batteries have run down.	Charge batteries.
	Vac motor fuse has blown.	Replace vac fuse.
	Vac motor or vac motor wiring has failed.	Please contact service center.
	Carbon brush on vac motor is worn out.	Please contact service center.
<b>Little or no cleaning solution flows out of machine.</b>	The solution tank filter or hose is blocked.	Inspect filter and hoses and clean them.
	Flow control is set too low	Adjust flow control on panel. There is also a valve under the machine.
	Solution tank is empty. (Warning light on the control panel will be lit).	Drain recovery tank completely, then refill solution tank
<b>Machine is leaving too much waste water on the floor.</b>	The recovery tank is full. (Warning light on the control panel will be lit.)	Drain the recovery tank.
	The squeegee is worn or damaged.	Reposition or replace the squeegee.
	The vac hose is blocked.	Inspect vac hose and remove clogs.
	Vac motor has failed.	Please contact service center.
<b>Run time has shortened.</b>	Batteries have worn out.	Replace batteries.
	Battery charger has failed.	Replace charger or contact service center.

**Warranty Card**

(please fill out and return to dealer)

**Name** \_\_\_\_\_ **Phone #** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_ **State** \_\_\_\_\_ **Zip** \_\_\_\_\_

**Purchase Date** \_\_\_\_\_ **Invoice #** \_\_\_\_\_

**Model #** \_\_\_\_\_ **Serial #** \_\_\_\_\_

**Local Dealer** \_\_\_\_\_ **Local Dealer City/State** \_\_\_\_\_

Warranty provided with purchase invoice.