



**Operator's Manual
C20SP Automatic
Floor Scrubber
Oct 2023 Version**



Please read this Operator's Manual carefully and make sure you fully understand it before using this machine.

Please keep this manual for future reference.

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Warranty

C20SP by **Crystal**

Crystal takes pride in producing high quality, durable products.

C20SP carries a limited one (1) year warranty against defects in workmanship and materials from the date of purchase under normal household/commercial use.

Warranty does not apply to defects due to direct or indirect abuse, negligence, misuse, accidents, repairs or alterations, and lack of maintenance.

Please keep your order confirmation as the proof of purchase.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state.

Safety Instructions

FOR COMMERCIAL USE

READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE

Use indoors only. Do not expose it to the rain.

Do not allow it to be used as a toy. Please use the machine with caution when operating it near children.

Use only in situations described in this manual.

Use only accessories recommended by the manufacturer.

Charge batteries in a well-ventilated room. Gasses produced during charging could be ignited in a confined space. To avoid an explosion, open the top cover and install battery caps while charging.

Disconnect all positive and negative battery terminals before performing any adjustment or maintenance. Traction drive, vacuum motors and components can cause injury if they accidentally start.

Battery acid can cause injury to the eyes or skin. Wear protective goggles, gloves and clothing BEFORE handling the batteries. If the charger is not working properly (due to it being dropped, damaged, left outdoors or exposed to water), please contact Crystal Floor Scrubber for help.

Do not handle the plug or machine with wet hands.

Do not put any objects into openings. Keep the openings unblocked.

Keep it away from dust, lint, hair and anything that may reduce air flow.

Keep hair, loose clothing, fingers and all body parts away from openings and moving parts.

Make sure the main power switch is OFF before removing or installing pads or brushes.

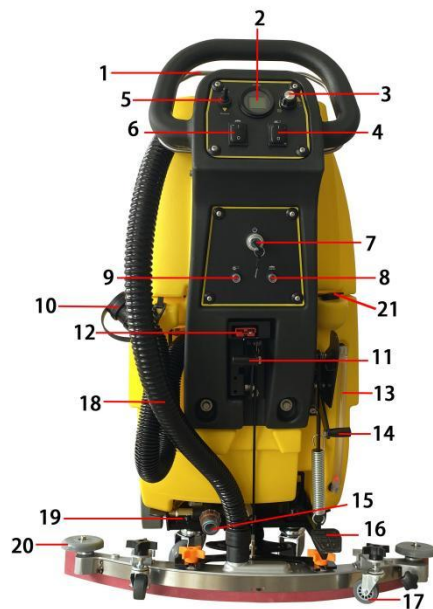
Never operate the machine if you are tired or under the influence of drugs and/or alcohol.

Always operate the machine while standing behind it.

Use with care when working on electrical terminals. Short circuits can cause burns.

Do not store the machine on inclines.

Machine Set-Up



1. Start level	8. Brush motor overload protector	15. Water filter
2. Power indicator	9. Suction motor overload protector	16. Brush lift pedal
3. Speed adjustment	10. Drain out hose assembly	17. Support wheel on squeegee
4. Suction button	11. Squeegee handle	18. Suction hose
5. Forward and reverse knob	12. Charge plug	19. Water valve
6. Brush button	13. Water level tube	20. Guide wheel
7. Power key	14. Brush Pressure Adjustment	21. Clean water tank inlet

Machine Specification

Model No.	C20SP
Brush Width (in)	20.5 in
Squeegee Width (in)	31 in
Solution Tank (Gal)	15 Gal
Recovery Tank (Gal)	16 Gal
Battery (Ah)	2*100 Ah
Voltage (V)	2*12 V
Vacuum Motor Power (Hp)	0.67 HP
Brush Motor Power (Hp)	0.73 HP
Traction Motor Power (Hp)	0.4 HP
Net weight (lbs)	341 lbs
Gross weight (lbs)	443 lbs
Machine size (in)	52*21*45 in (l*w*ht)
Package Size (in)	54*24*51 in (l*w*ht)

Daily Operation and Maintenance

How to Install Batteries



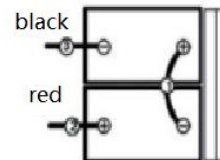
Caution: Batteries are heavy.

Install two 12-volt batteries. Please fully charge the new batteries before your first use. Please charge the batteries fully for 8 ~ 10 hours continuously, especially during the first 5 charges. If you keep on charging the batteries for shorter periods of time, the battery life will be shortened. When the power display/indicator shows that the battery power is low (only one level of power is left), please charge the batteries immediately to avoid deep discharging.

Make sure the recovery tank is empty before turning it sideways to deal with the batteries. Position them properly then connect all the cable terminals.



Caution: Make sure you connect RED (+) cable terminals to positive (+) posts and BLACK (-) cable terminals to negative (-) posts. Machine will not operate if it's connected improperly. Failure to do so will result in damage to batteries and possible explosion.



Spray each post with a protective lubricant. Place battery terminal protectors over all posts.

How to Charge the Batteries



Caution: Only use the battery charger designed for this machine. Failure to do so can result in damage to the batteries.

Plug the charger's plug into the machine's charging plug, it's located near the key switch. Connect the other side of the charger with a 110V wall outlet. The charger will automatically begin to charge the batteries.

How to Install the Squeegee

Put squeegee Release Handle (11) in the UP and locked position.

Position the squeegee blade assembly on the swing arm. Make sure the guide wheels face the rear of the squeegee.

Place the suction hose over the nozzle. Make sure it fits tightly.

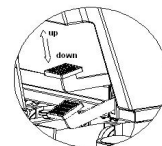
How to Install Pad Holder or Brush

Raise the brush/pad by stepping on Brush Lift Pedal (16) at the rear of the machine.

With the pad holder/brush in a lifted position,

- * Magnet type: To attach/install the brush/pad holder, align the center of the brush to its top part & lift it up to connect the magnets.

- * Metal nuts type: Align the 3 nuts on the brush/pad holder with the 3 holes on the plate under the machine. Turn the brush/pad holder clockwise quickly to lock it in.



How to Fill the Solution Tank

Fill the solution tank with clean water up to the desired level.

You can clean the floor with clean water. If the floor is greasy or sticky, you can add a small cup of neutral low foam/no foam solution to the solution tank (lower tank) while adding a small cup of defoamer/antifoam in the recovery tank (upper

tank) or the vacuum motor might be damaged by the bubbles created. For the solution and defoamer, we don't recommend any particular brand. The most common one for floor scrubbers will do.



Do not overfill.

How To Operate The Machine

To turn the power on, turn the power switch (7). The power/battery indicator (2) will light up.

When the power display/indicator shows that the battery power is low (only one level of power is left), please charge the batteries immediately to avoid deep discharging.

Release the brush pedal (16), turn on the brush motor (6), let the solution flow by turning the water-adjust valve (19).

Lay down the squeegee release handle (11), press suction button (4).

Move the forward and reverse knob (5) to the forward position, lift up the start level (1). This machine will move forward now.



Turn off the brush motor when the brush deck is in the up position.

How to Lower/Raise the Brush/Pad

To raise the brush/pad, step on the Brush Lift Pedal (16) and gently move it to the right.

To lower the brush/pad to start the cleaning job, slightly step on the Brush Lift Pedal (16) and move it to the left to unlock the pedal/pad, then raise up the pedal slowly to lower the brush/pad.



How to Set the Solution Flow

Adjust the water flow based on the floor conditions. Turn the water valve proportionally to adjust the water flow. When the valve is parallel to the pipe, the waterway is totally opened. When the valve is perpendicular to the pipe, the waterway is totally closed.

What to Do When You're Operating the Machine

Vacuumping Up Solution

Make sure the squeegee is in the down position.

As the machine moves forward and solution is dispensed, the squeegee will collect the dirty water while the vacuum motor sucks it up into the recovery tank.

For best suction result, adjust the height and angle of the squeegee assembly by turning the two black knobs on the squeegee assembly.

If there is excessive water on the floor, reduce the amount of solution flow and pull the machine back over the target area. You can go forward or backward and suck up the water on the floor.

How to Control Excessive Foam in the Recovery Tank

Watch the liquid as it accumulates in the recovery tank. If you notice there is excessive foam, stop the machine. Add the recommended amount of defoamer in the recovery tank or your vacuum motor might be damaged.

How to Empty the Recovery Tank

Open the drain hose cover and lower the drain hose (10) to empty the recovery tank. It's better to rinse the recovery tank with clean water after each use.

Maintenance

Daily

After you turn off the machine, please wait for 10+ seconds before you turn it on again. Turning the power on and off too fast and too frequently might damage the machine.

Empty and rinse the recovery tank with clean water. Leave the tank top cover open to air-dry.

Remove the squeegee assembly, rinse and wipe it clean. Check the squeegee inlet for clogs or debris.

Clean and wipe the tops of batteries with an ammoniated window cleaner.

Charge the batteries as described in this manual.

Weekly



Never test the strength of the battery unless it is fully charged and cool.

Check the battery cells with a hydrometer.

Monthly

Lubricate brush and squeegee lift mechanisms with light oil.

Clean the filters, wash them with water.

Check for wear or damage of clutch plate, brushes, pads or squeegee blades.

Clean all battery terminals.

Check all electrical connections and tighten them if any connection is loose.

Clean the entire machine with an all purpose cleaner.

The batteries need to be charged at least once a month to avoid deep discharging which would result in battery failure.

Troubleshooting

Problem	Symptom	Solution
No power	Battery cables/power cords are not connected	Connect the batteries
	No electricity	Charge/replace the batteries or charger
Motor Failure	Vacuum motor does not work	Check the related circuits, motor plugs & relays, or replace the vacuum motor
	Brush motor does not work	Check the related circuits, motor plugs & relays, or replace the brush motor
Little or no water out	The water valve is closed	Open water valve
	The filter is blocked	Clean the filter
	The water tank is empty	Put water in the tank
Bad suction	Suction hose or inlet blocked	Clean suction hose, clear the blockage/debris
	Rubber worn out	Replace the rubber strip
	Suction hose is not installed properly	Reinstall the suction hose
	Damaged or loose pipe	reinstall/replace the pipe or tighten it
	Suction pipe blocked	Check the pipe and clear the blockage
	The drain cover is loose	Tighten the drain cover
	The sewage tank cover is open	Make sure the sewage tank cover is closed and sealed
	Vacuum motor loose	Tighten the motor mounting screws (avoid over tightening them or the motor might be damaged)

Warranty Card

Property of:		Tel:	
Address:			
Date of purchase:		Delivery Date:	
Model#:			
Accessories to be replaced:			
Notes:			

