

ICE COBOTICS

Auto
Scrubber
Operator Manual



i15B



PROTECT THE ENVIRONMENT

Please dispose of packaging materials, old machine components such as batteries, hazardous fluids, including antifreeze and oil, in an environmentally safe way according to local waste disposal regulations.



Always remember to recycle.

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Specifications and parts are subject to change without notice.

READ OPERATOR MANUAL CAREFULLY!

IMPORTANT: To ensure full warranty protection, please fill out & return your warranty card.

Please fill out at time of installation for future reference.

Model No. _____

Serial No. _____

Machine Options _____

Sales Rep. _____

Sales Rep. Phone No. _____

Customer ID Number _____

Installation Date _____

HOW TO ORDER PARTS

Only use ICE Company supplied or equivalent parts. Parts and supplies may be ordered online, by phone, by fax or by mail.

1. Identify the machine model.
2. Identify the machine serial number from the data label.
3. Ensure the proper part number is used from the parts list.
4. Identify the part number and quantity.
Do not order by page or reference numbers.
5. Provide your name, company name, customer ID number, billing and shipping address, phone number and purchase order number.

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SAFETY PRECAUTIONS

This machine is intended for commercial use. It is designed exclusively to scrub hard floors in an indoor environment and is not constructed for any other use. Only use recommended accessories.

All operators shall read, understand and exercise the following safety precautions:

- 1. Do not operate machine:**
 - Unless trained and authorized.
 - Unless you have read and understood the operator's manual.
 - In flammable or explosive areas.
 - If not in proper operating condition.
 - In outdoor areas.
- 2. Before starting machine:**
 - Make sure all safety devices are in place and operate properly.
- 3. When using machine:**
 - Go slow on inclines and slippery surfaces.
 - Follow all safety guidelines.
 - Be very careful when using the machine in reverse.
 - Reduce speed when turning.
 - Report and fix any damage to machine prior to operating it.
 - Never allow children to play on or around.
 - Do not operate on inclines that exceed 5% (3°).
- 4. Before leaving or servicing machine:**
 - Stop on level surface.
 - Turn off machine.
- 5. When servicing machine:**
 - Read operators manual thoroughly prior to operating or servicing this machine.
 - Use manufacturer supplied or approved replacement parts.
 - Secure machine with wheel blocks prior to jacking the machine up.
 - Use approved jack or hoist to safely elevate the machine.
 - Disconnect batteries prior to working on machine.
 - Avoid moving parts. Do not wear loose fitting clothing while servicing machine.



WARNING:

Flammable materials can cause an explosion or fire.
Do not use flammable materials in tanks.



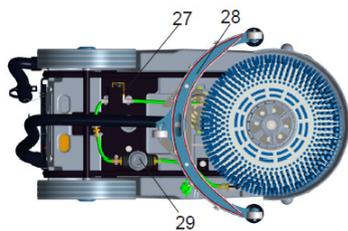
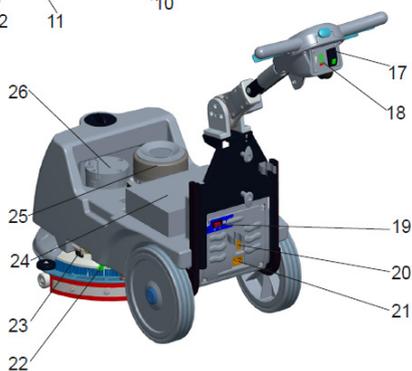
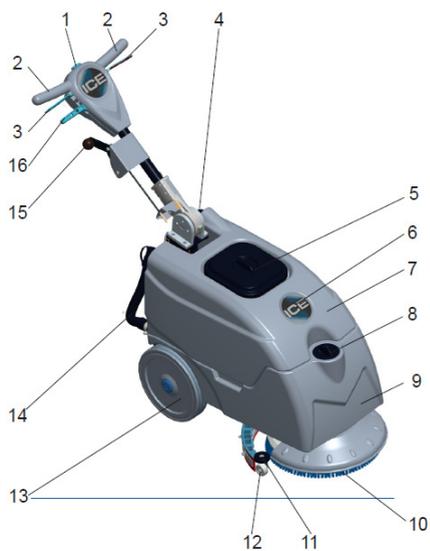
WARNING:

Flammable materials or reactive metals can cause explosion or fire.
Do not pick up.



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Do not pick up.



MACHINE COMPONENTS

Machine Components

1. Safety Lock-Out Switch
2. Control Handle
3. Trigger
4. Squeegee Vacuum Hose
5. Recovery Tank Cover
6. ICE Logo
7. Recovery Tank
8. Bucket Fill Port/ Clean-Out Port
9. Solution Tank
10. Scrub head
11. Bumper Rollers
12. Caster, 1.5in Squeegee Blade Adjustment
13. 10in wheels
14. Recovery Tank Drain Hose
15. Squeegee Lift Lever
16. Leveling Rod
17. Main Power ON/OFF Switch
18. Battery Discharge Indicator
19. Vacuum Power ON/OFF Switch
20. Clear Cover, Battery Charger
21. Connector, On-Board Battery Charger
22. Clean Water Tank Drain Cover
23. Ball Valve
24. Battery
25. Vacuum Motor, 24VDC
26. Brush Motor, 24VDC
27. Solenoid, 24VDC
28. Squeegee Assembly
29. Filter Assembly

MACHINE SET UP & INSTALLATION

Unpack Machine

Be sure and check packing carton for any damage. Immediately report any damage to carrier. Check the contents of package to ensure that the following items are included:

- Machine,
- Squeegee assembly.
- 2-12V Batteries
- Battery Charger
- Brush
- Pad Driver

Installing Batteries



WARNING:

Fire or explosion hazard. Batteries may emit hydrogen gas.

Keep sparks and open flame away.

Keep battery compartment open when charging.

The batteries are already in the machine upon delivery. However you will need to connect the cables to the battery posts.

NOTE:

Use only approved chargers with the following specifications:

1. Turn off the machine.
2. Lift the Recovery tank (see machine components, item #2) to access the battery compartment.
3. Carefully place the two batteries into the compartment as shown in figure below.
DO NOT DROP BATTERIES INTO COMPARTMENT!

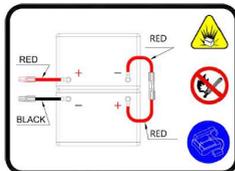


Figure 1

4. Connect battery cables to posts as shown in drawing below.
RED to POSITIVE and BLACK to NEGATIVE.

(See Fig 1)

Battery Charging

**WARNING:**

Fire Or explosion hazard.

Batteries emit hydrogen gas. Keep sparks and open flame away. Keep battery compartment propped open when charging.

1. Transport the machine to a well ventilated area.
2. Turn the machine off.
3. If charging wet, lead acid, batteries check the fluid level before charging.
4. Connect the charger's AC power supply cord to a properly grounded receptacle.
5. The charger will automatically begin to charge, you can watch the charging status on the window (machine components, item #9), once the charging cycle begins, the indicator lights will progress from **red, yellow to green**. When the green indicator light comes on, the charging cycle is done. Unplug the charger cord.

NOTE:

The machine will not operate while charging.

Mounting the Squeegee assembly

1. Lift the Squeegee lift lever to the upward position.
2. Mount the Squeegee assembly (see machine components, item #28) to the squeegee pivot bracket. make sure the knobs are completely seated into the slots before securing knobs.
3. Connect the vacuum hose to the squeegee assembly. Loop the hose by using the hose clip provided.
4. Check the squeegee blades for proper adjustment.

Filling the Solution Tank

The machine is equipped with a Solution fill-port (see machine components, item #8) at the front of the Solution tank, you can fill the solution tank by using a hose or a bucket.

When using the bucket, stop filling when the level reaches the bottom edge of the fill-port. (See Fig. 2)

NOTE:

When filling the solution tank with a bucket, make sure that the bucket is clean. Do not use the same bucket for filling and draining the machine.



WARNING:

Do not put any flammable materials into solution tank. This can cause an explosion or a fire. Only use recommended cleaning chemicals. Contact your ICE service dealer for recommendations on proper chemicals.



Figure 1

MACHINE OPERATION

Pre-Operation



FOR SAFETY:

Do not operate machine unless operator manual is read and understood.

1. **IMPORTANT:** To prevent vacuum system from clogging, sweep and dust-mop floor.
Make sure the battery is charged.
2. Check that the brush and squeegee blades are installed.
3. Check that the brush and squeegee blades are installed.

Pre-Operation Checks

1. Sweep or dust mop the surface to be cleaned.
2. Check battery meter to make sure batteries are fully charged. (See BATTERY CHARGING)
3. Check that squeegee is properly installed.
4. Check that brush / pad is properly installed.

Scrubbing Floors

1. Pull the handle adjustment lever and adjust the handle to a comfortable operating height. Release the lever to lock the position. (See Fig. 3)
2. Press the main power switch to the on (I) position. (See Fig. 4)
3. Press the vacuum switch to the on (I) position. (See Fig. 5)



Figure 3



Figure 4

4. To begin scrubbing, press the safety switch (1) first, then pull the start triggers (2) and push or pull the machine in either direction.
(See Fig. 6)
5. For heavily soiled areas, use the double scrub method. First scrub the soiled area with the vacuum switch turned off and then scrub the area a second time with the vacuum switch turned on.
(See Fig. 5r)



Figure 5l.

Figure 5r.



Figure 6

WHILE OPERATING THE MACHINE



WARNING:

Fire or explosion hazard. Do not pick up flammable materials or reactive metals.

1. Go slow on inclines and slippery surfaces. Do not operate the machine on inclines that exceed 5% (3°).
2. Do not keep the machine in the same position with pad / brush spinning, keep the machine moving to prevent damage to floor finish.
3. If the squeegee assembly leaves streaks on the floor, raise the squeegee off the floor and wipe the blades down with a damp cloth. Pre-sweep the area to prevent leaving streaks on the floor.
4. Pour a recommended defoamer into the recovery tank if excessive foam appears.



WARNING:

Do not allow foam to enter the float shut-off screen, vacuum motor damage will result. Foam will not activate the float shut-off screen.

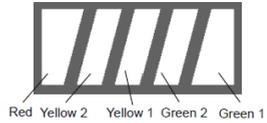
5. Occasionally check the Battery meter, the indicator displays the level of the batteries. When meter is in the red, stop scrubbing and recharge the batteries.

All **green lights** on: 100% level.

Yellow lights on, green lights off: 50% level.

Red light on, other lights off: 20% level, the machine should be stopped and the batteries should be recharged.

Red light flash: the batteries have already been discharged deeply.



6. When the solution tank runs empty, turn off the brush motor switch and lift the brush head.
Keep the squeegee down and continue to vacuum until all the dirty water is picked up.

NOTE:

See **TANK DRAINING** section to learn how to drain recovery and solution tanks.

TANK DRAINING

1. Turn off the machine.
2. With the squeegee and scrub head in their "up" position, transport machine to approved area for draining tank(s).

Draining The Recovery Tank



WARNING:

If the recovery tank is not drained when the solution tank has been refilled, foam or water may enter the float shut-off mechanism and cause damage to the vacuum motor.

1. While holding the drain hose (see machine components, item #10) upward, remove the cap and lower hose to drain.
2. Open the recovery tank cover and rinse out the tank. Use a rag to remove any excess dirt. Clean the float shut-off screen and debris tray located in the recovery tank.

Draining The Solution Tank

Any time scrubbing operation is completed, the solution tank should be drained and cleaned.

1. Pull the solution clear tube (see machine components, item #11) off the hose fitting, this will allow the solution to flow freely into a bucket or floor drain.
2. Remove the cover of the filter assembly to drain the solution tank, check the filter screen and clean up if necessary.
3. Rinse the solution tank with clean water after every use. This will help prevent chemical buildup and clogging of the solution lines.
4. After rinsing out the tank, securely reconnect the tank level hose to the hose fitting, replace the filter assembly cover and be sure the filter screen and the "O" ring is in the correct position.

PREVENTIVE MAINTANANCE

Daily maintenance



WARNING:

Before performing any maintenance on the machine, be sure that the power is turned off, or the batteries are disconnected!



WARNING:

Repairs are to be completed by authorized service centers only. Any repairs completed by unauthorized persons will void the warranty.

1. Remove pad driver/ brush and clean with approved cleaner.
2. Drain recovery and solution tanks completely and rinse out with clean water. Visually check the recovery tank for debris and clean out as necessary.
3. Raise the squeegee assembly off floor and wipe it down with a damp towel. Be sure to store the squeegee in the up position.
4. Remove the float shut-off assembly and rinse it out with clean water.
5. Clean machine with an approved cleaner and a damp towel.
6. Recharge the batteries.
7. Check the condition of the squeegee blade wiping edge, rotate blade if worn.

Monthly maintenance

1. Clean the battery tops to prevent corrosion.
2. Check for loose battery cable connections.
3. Inspect and clean the recovery tank cover seal. Replace it if damaged.
4. Lubricate all grease points and pivot points with silicon spray and approved grease.
5. Check the machine for loose nuts and bolts.
6. Check the machine for leaks.

Motor Maintenance

1. Contact your ICE Service dealer for any motor maintenance.
2. Motor should have the brushes checked every 250 hours. Brushes should be replaced when they are worn to a length of 10 mm or less.

Machine Storage

1. Always store the machine in doors.
2. Always store the machine in a dry area.
3. Always store the machine in its upright position.
4. Always store the machine with the pad driver/ brush raised off the floor.
5. If storing in an area which may reach freezing temperatures, be sure to drain all fluids from the machine prior to storage. Any damage caused by freezing temperatures will not be covered by the warranty.
6. Drain the recovery tank.
7. Drain the solution tank of all fluid.

Battery Maintenance



WARNING:

Batteries emit hydrogen gas and an explosion or fire can result. Keep sparks and fire away from batteries at all times.



WARNING:

Whenever servicing batteries, be sure to wear protective gloves. Avoid contact with battery acid at all times.

NOTE:

For the best machine performance, keep batteries properly charged at all times. Do not let them sit in a discharged condition.

1. Always follow the battery charging directions as outlined in the BATTERY CHARGING section of this manual.
2. Keep battery tops and terminals free from corrosion.
A strong solution of baking soda and water is the best way to keep the batteries corrosion free.
DO NOT ALLOW THE BAKING SODA / WATER SOLUTION TO ENTER THE BATTERY CELLS.
3. Use a wire brush with the baking soda solution to properly clean the battery posts and connections.
4. Check battery connections for wear and loose terminals.
Replace if necessary.

BASIC TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Machine will not operate	Batteries need to be charged	Charge batteries
	Bad battery(s)	Replace battery(s)
	Loose battery cable	Tighten loose cable
Brush motor will not operate	Control handle trigger not pulled	Pull control handle trigger
	Tripped brush motor blown fuses	Replace fuse
	Bad brush motor switch	Replace brush motor switch
	Bad brush motor solenoid	Replace brush motor solenoid
	Faulty brush motor or wiring	Contact ICE service Dealer
	Worn motor carbon brushes	Contact ICE service Dealer
Little or no solution flow	Bad vacuum motor switch	Replace vacuum motor switch
	Bad vacuum motor relay	Replace vacuum motor relay
	Faulty vacuum motor or wiring	Contact ICE service Dealer
	Worn motor carbon brush	Contact ICE service Dealer
Little or no solution flow	Bad valve is shut off	Turn on the ball valve
	Clogged solution tank filter or solution hose	Clean solution tank filter or flush out solution hose
	Clogged solution solenoid valve	Remove valve and clean

PROBLEM	CAUSE	SOLUTION
Poor water pick up	Recovery tank is full	Drain recovery tank
	Loose drain hose cap	Tighten cap
	Clogged float shut-off screen located in recovery tank	Clean screen
	Clogged squeegee assembly	Clean squeegee assembly
	Worn squeegee blades	Replace or rotate squeegee blades
	Incorrect squeegee blade deflection	Adjust squeegee blade height
	Loose vacuum hose connections	Secure hose connections
	Clogged vacuum hose	Remove clogged debris
	Damaged vacuum hose	Replace vacuum hose
	Recovery tank lid not in place	Properly position cover
	Damaged recovery tank cover seal	Replace seal
	Faulty vacuum motor	Contact ICE service Dealer
	Low battery charge	Recharge batteries
Short runtime	Low battery charge	Fully recharge batteries
	Defective batteries	Replace batteries
	Batteries need maintenance	See BATTERY MAINTENANCE
	Faulty battery charger	Repair or replace battery charger

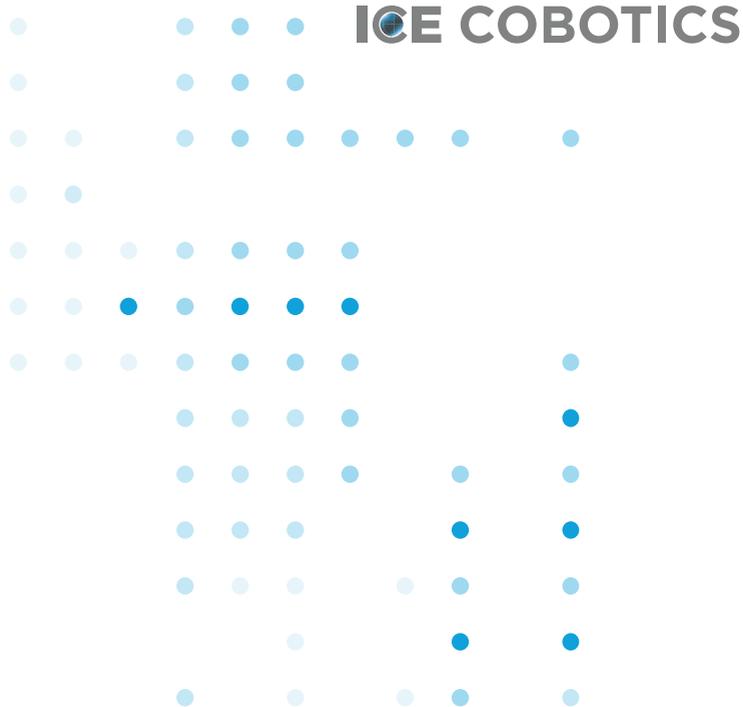
TECHNICAL SPECIFICATIONS

MODEL	i15B Brush Assist
DIMENSIONS L	31 in / 790mm
DIMENSIONS W	18.5in / 468mm
DIMENSIONS H	27 in / 690mm
WEIGHT	93.7lbs / 42.5kg
WEIGHT WITH BATTERIES	140lbs /63.5kg
RECOVERY TANK CAPACITY	5 Gal / 19 L
SOLUTION TANK CAPACITY	4 Gal / 18 L
SQUEEGEE WIDTH	18 in / 450mm
CLEANING PATH WIDTH	15 in / 381 mm (Disk)
DRIVE SYSTEM	Brush Assisted
BRUSH MOTOR	0.27 hp / 0.2KW 140 RPM
VACUUM MOTOR	0.54 hp / 0.4KW
WATER LIFT - AIR FLOW	45 in / 1,143 mm
BATTERIES	2-12, 33Ah @ 20 hr
RUN TIME PER CHARGE	1.2 Hours
VOLTAGE DC	24 V
DECIBEL RATE AT OPERATOR'S EAR, INDOOR	78 dB(A)
GRADE LEVEL, MAX	5% (3°)

WEAR AND TEAR PARTS LIST

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8401108	WHEEL, 10INCH, WITH BEARINGS	2
2	8411607	BUMPER WHEEL	2
3	8401518	SQUEEGEE WHEEL	3
4	8401502	FRONT SQUEEGEE BLADE, LINATEX	1
5	8401503	REAR SQUEEGEE BLADE, LINATEX	1
6	9040015	PAD HOLDER, 15 INCH	1
7	9050015	BRUSH, 15 INCH	1

CE APPROVAL



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