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OPERATOR & Parts Manual

**Automatic Scrubber**



**i20B**

8038002  
REV.03(03-2015)

**INTERNATIONAL CLEANING EQUIPMENT**



## 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 serial 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.



### 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.**

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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 should 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 and standing water.

### 2. Before operating machine:

- Make sure all safety devices are in place and operating properly.

### 3. When using machine:

- Go slow on inclines and slippery surfaces.
- Follow all safety guidelines.
- Report and fix any damage to machine prior to operating it.
- Never allow children to play on or around the machine.
- Do not operate on inclines that exceed 2%(3°).

### 4. Before leaving or servicing machine:

- Stop on level surface.
- Turn off machine.

### 5. When servicing machine:

- Read operator's 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.
- Wear gloves when handling batteries or battery cables.
- Avoid any contact with battery acid.
- Avoid moving parts. Do not wear loose fitting clothing while servicing machine.



**WARNING: Batteries may emit hydrogen gas. Explosion or fire can result from hydrogen gas. Keep sparks and open flames away! Keep battery compartment open when charging.**



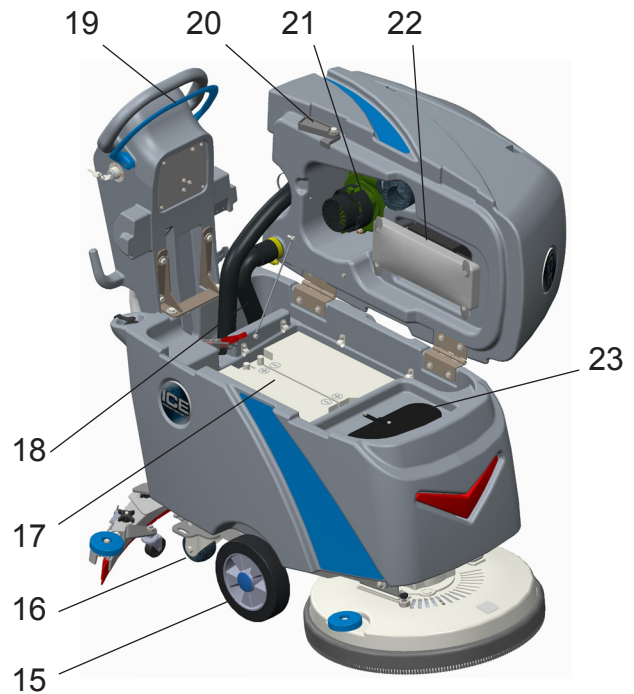
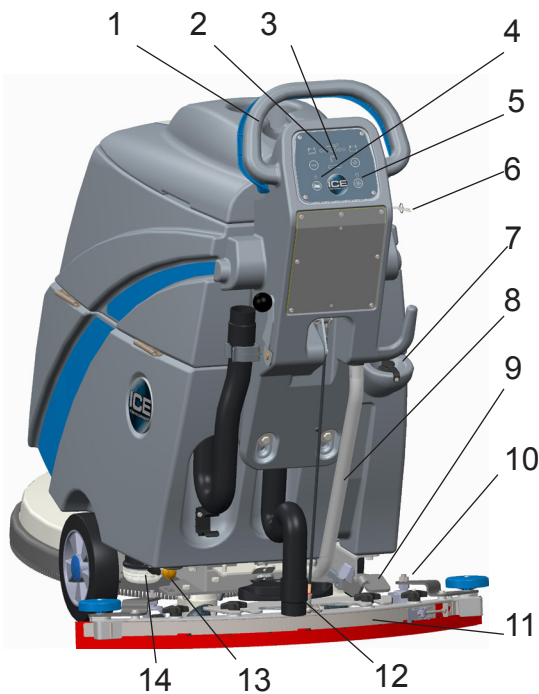
**WARNING: Flammable materials can cause an explosion or fire. Do not use flammable materials in tanks.**



**WARNING: Flammable materials or reactive materials can cause explosion or fire. Do not pick them up.**

## MACHINE COMPONENTS

- |   |                                     |                                 |
|---|-------------------------------------|---------------------------------|
| 1. Operating Handle                                     | 9. Scrub Head Lifting Pedal         | 22. On-board Charger (Optional) |
| 2. Battery Meter  | 10. Squeegee Blade Adjusting Castor | 23. Bucket Filling Port         |
| 3. Solution Flow Control<br>Switches & Indicating Light | 11. Squeegee Assembly               | 24. Cup Holder                  |
| + Flow Increase Switch                                  | 12. Squeegee Vacuum Hose            | 25. Cover Tank                  |
| - Flow Decrease Switch                                  | 13. Ball Valve                      | 26. Squeegee Lifting Level      |
| 4. Brush Motor Indicating<br>Light                      | 14. Filter Assembly                 | 27. Recovery Tank               |
| 5. Vacuum Motor Switch &<br>Indicating Light            | 15. 8 Inch Wheels                   | 28. ICE Logo                    |
| 6. Main Power Key Switch                                | 16. 3 Inch Castors                  | 29. Solution Tank               |
| 7. Hose Filling Port                                    | 17. Batteries                       | 30. Scrub Head Assembly         |
| 8. Solution Tank Level / Drain Hose                     | 18. Recovery Tank Drain Hose        | 31. Scrub Head Skirt            |
|   | 19. Control Handle for Brush Motor  | 32. Brush Motor 24V DC          |
|   | 20. Recovery Tank Support Stand     | 33. Motor Hub Locking Pin       |
|   | 21. Vacuum Motor 24V DC             | 34. Warning LED Lights          |



## MACHINE SET UP & INSTALLATION

### UNPACK MACHINE

Be sure and check packing carton for any damage. Immediately report any damage to carrier. Be careful not to let machine vibrate while carrying, Check contents of package to ensure that the following items are included:

- Machine
- Squeegee assembly
- Brush and pad driver
- Battery charger
- 2-12V Batteries

### INSTALLING BATTERIES

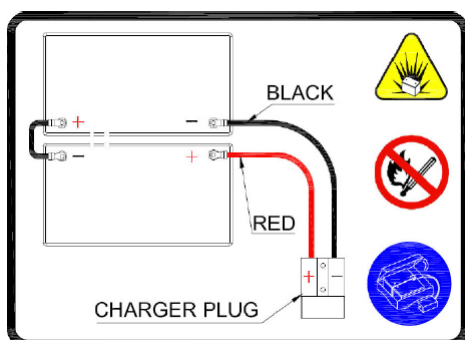
You will need to connect the cables to the battery posts before operating the machine.



**WARNING: Batteries may emit hydrogen gas. Explosion or fire can result from hydrogen gas. Keep sparks and open flames away! Keep battery compartment open when charging.**

1. Turn the main power key switch off.
2. Open recovery tank to gain access to battery compartment.
3. Carefully place the two batteries into the compartment as shown in figure below. Place the battery brace to the rear of the two batteries. **DO NOT DROP BATTERIES INTO THE COMPARTMENT DIRECTLY.**
4. Connect battery cables to posts in numbered order as shown in drawing below.

**RED to POSITIVE, BLACK to NEGATIVE**



### MACHINE SET UP

#### PRE-OPERATION CHECKS

1. Sweep the outside of the machine.
2. Check battery meter to make sure batteries are fully charged. (See BATTERY CHARGING)
3. Make sure the squeegee is properly installed.
4. Check that brush / pad driver is properly installed.

#### INSTALLING BRUSH OR PAD DRIVER

1. Ensure that the machine is turned off.
2. Step on the scrub head lifting pedal (see machine components, item #9) to raise the scrub head off the floor.
3. If using a pad driver, attach the appropriate pad to the pad driver surface first.
4. Turn the brush motor hub until the slot with the spring clip is visible through the scrub head window.
5. Mount the pad drive or brush to the brush motor hub by lining up the three studs with the three holes in the hub. Once in the holes, rotate the brush / pad driver toward the spring clip to lock the pad driver into place.

NOTE: If necessary, press down the motor hub locking pin (see machine components, item #33) to lock motor hub in place.


#### INSTALLING SQUEEGEE ASSEMBLY

1. Lift the squeegee lifting level (see machine components, item #26) to the upward position.
2. Mount the squeegee assembly 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 hose filling port (see machine components, item #7) at the rear of the machine, and a bucket filling port (see machine components, item #23) located under the recovery tank. Before accessing the bucket filling port make sure that the recovery tank is empty.

**NOTE:** When filling the solution tank with a bucket, make sure that the bucket and water is clean.

 **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 janitorial supply distributor for recommendations on proper chemicals.

## MACHINE OPERATION

 **WARNING:** Do not operate machine unless you have read and understand this manual.

1. Lower squeegee assembly to the floor by lowering the squeegee lifting level (see machine components, item #26).
2. Lower the scrub head to the floor by step on the scrub head lifting pedal (see machine components, item #9).
3. Turn the main power key (see machine components, item #6) to the on (I) position.
4. Check the battery level meter (see machine components, item #2), if the red light is on, DO NOT continue to operate the machine and charge the batteries immediately.
5. Check the solution flow indicator (see machine components, item #3), adjust the solution flow control switch to a desired flow rate.

**NOTE:** Solution will not begin to flow until the control handle is pulled.

6. Pull the control handle (see machine components, item #19) to start scrubbing by moving the machine forward.


**NOTE:** 45-60 meters (150-200 ft) per minute is the recommended scrubbing speed.

7. Turn the main power key (see machine components, item #6) to the on (I) position.
8. To stop scrubbing, release the control handle, raise the scrub head and the squeegee assembly.


## WHILE OPERATING 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 the pad / brush spinning, keep the machine moving to prevent damage to the floor.
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 recommended defoamer into the recovery tank if excessive foam appears.

 **WARNING:** Foam must not enter the float shut-off screen, or damage can occur to the vacuum motor. Foam will not activate the machine's float shut-off device.

- Occasionally check the battery meter (see machine components, item #2) . When meter is in the red, stop scrubbing and recharge the batteries.

 **WARNING: When battery meter is in the red, do not continue to operate the machine. Battery damage may result.**

- When the solution tank runs empty, turn off the brush switch, solution switch and raise the scrub 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

- Turn the machine off.
- With the squeegee and scrub head in their "UP" position, transport the machine to an approved area for draining tanks.

#### DRAINING THE RECOVERY TANK

**NOTE:** Any time scrubbing is completed, or when refilling solution tank, the recovery tank should be drained and cleaned.

 **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.**


- While holding the drain hose (see machine components, item #18) upward, remove the cap and lower hose to drain.
- Open the cover tank and rinse out the tank. Use a rag to remove any excess dirt.
- Clean the float shut-off screen located in the recovery tank.

#### DRAINING THE SOLUTION TANK

**NOTE:** Any time scrubbing is completed, the solution tank should be drained and cleaned.

- Pull down on the clear tube (back left of the machine, see machine components, item #8) to remove it from the hose barb. This will allow the solution to flow freely into a bucket or floor drain.
- Rinse the solution tank with clean water after every use. This will help prevent chemical buildup and clogging of the solution lines.
- Once tank is rinsed, flushed and drained, reconnect the clear tube to the hose barb. Be sure the tube is pushed all the way up on the hose barb.
- Screw off the cover of the water filter(see machine components, item #14) to completely exhaust the tank and check the filter screen, clean it up if necessary.
- Screw up the cover of the water filter, be sure to install the screen and the "O" ring in the correct position.

### BATTERY CHARGING

 **WARNING: Fire or explosion hazard. Batteries may emit hydrogen gas. Keep sparks and open flame away. Keep battery compartment open when charging.**

**NOTE:** Use only approved chargers with the following specifications:

- Automatic shut off circuit.
- Deep cycle charging.
- Output current of 10-20 Amps.
- Output voltage of 24 volts.



1. Place charger and machine in 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. Connect the charger's DC cord into the machine's battery receptacle at the rear of the machine.
  6. Prop up the recovery tank by the support stand (see machine components, item #20) for ventilation when charging.
  7. The charger will automatically begin to charge and will automatically shut off once the batteries are fully charged.
  8. Upon completion of charging, disconnect the AC power supply cord first, and then disconnect the charger from the machine.
6. Recharge the batteries.
  7. Check the condition of the squeegee blade wiping edge, rotate blade or replace it 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 local ICE Distributor for any motor maintenance.
2. Check the motor brushes every 250 hours, Replace the brushes when they are worn to a length of 10mm or less.


### BATTERY MAINTENANCE


## PREVENTIVE 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 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. Don't spray water to clean the outside of machine to avoid damage to motor and wiring.

 **WARNING:** Batteries may 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 charged at all times. Do not let them sit in a discharged condition.

1. Always follow the battery charging direction 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 them if necessary.

### **MACHINE STORAGE**

1. Always store the machine indoors and in its upright position.
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 brush / pad driver raised off the floor.
5. Always store the machine with the squeegee assembly raised off the floor.
6. If storing in an area which may reach freezing temperatures, be sure to drain all fluids from the machine prior to storage(include the filter). Any damage caused by freezing temperatures will not be covered by the warranty.
7. Drain the recovery tank and keep the cover tank open so that it can "breathe" during storage.
8. Drain the solution tank of all fluid.

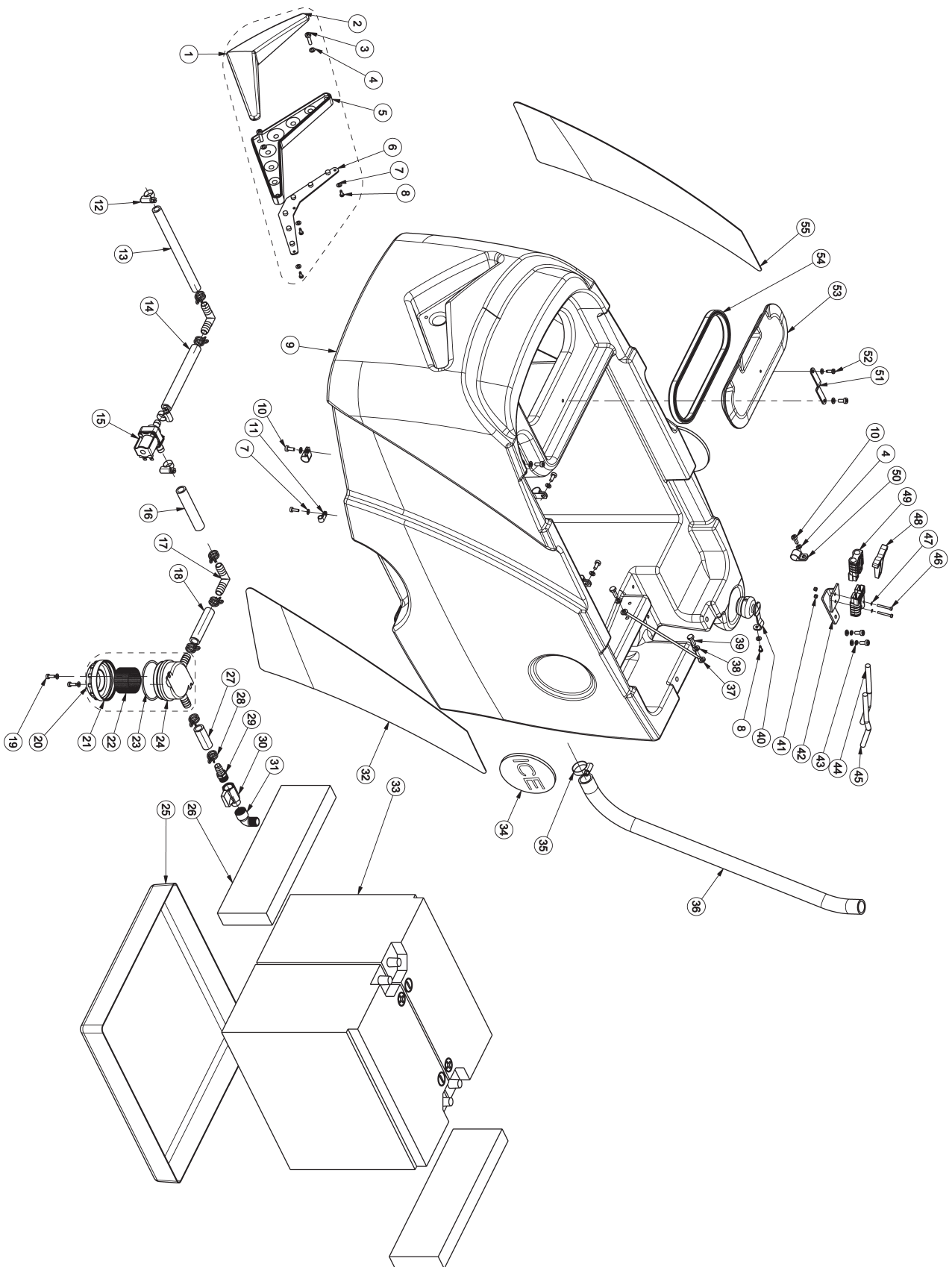
**BASIC TROUBLESHOOTING**

<b>PROBLEM</b>	<b>CAUSE</b>	<b>SOLUTION</b>
No power	Batteries need to be charged	Charge batteries
	Bad batteries	Replace batteries
	Loose battery cable	Tighten loose cable
	Malfunctioning controller	Contact ICE Distributor
	Faulty key switch	Contact ICE Distributor
Brush motor will not run	Battery meter lockout activated	Recharge batteries
	Faulty control handle bail switch	Contact ICE Distributor
	Faulty brush motor or wiring	Contact ICE Distributor
	Worn motor carbon brushes	Contact ICE Distributor
	Faulty controller	Contact ICE Distributor
Vacuum motor does not run	The wiring not connected correctly or bad wiring	Check the wiring or contact ICE Distributor
	Bad vacuum motor	Contact ICE Distributor
	Faulty controller	Contact ICE Distributor
	Carbon brushes worn out	Contact ICE Distributor
Little or no solution flow	Bad ball valve	Contact ICE Distributor
	Clogged solution filter or hose	Clean hose or filter
	Bad solution valve	Contact ICE Distributor
	Ball valve position in need of adjustment	When ball valve is in horizontal position, the amount of solution flow is maximum.
Poor water pick up	Squeegee clogged	Clean debris off squeegee with a damp towel
	Squeegee blades worn	Install new squeegee blades
	Squeegee not mounted correctly	Confirm that the squeegee assembly is securely fastened to the machine
	Vacuum hoses have a hole or are loose	Check hose connections and make sure they are firm. Replace hose if damaged.
	Vacuum hose may be clogged	Check hose for debris and remove any clog
	Drain hose stopper is loose	Tighten drain plug
	Vacuum motor is loose	Tighten vac motor mounting screws. Do not over tighten or damage will occur.
	cover tank is loose	Confirm the cover tank is securely in it's place
	Batteries are over-discharged	Recharge batteries
	Recovery tank is full	Drain recovery tank
Float shut off is clogged	Remove float shut off from inside recovery tank and remove any debris	
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**

ITEM	UNITS	DATA
		i20B
Dimension (Length × Width × Height)	mm	1270×575×1100
Weight	Kg	78
Weight with batteies	Kg	172
Solution tank capacity	Litre	50
Recovery tank capacity	Litre	60
squeegee width	mm / inch	762 / 30
cleaning path width	mm / inch	500 / 20
productivity rate	m <sup>2</sup> / hour	1800
minimum aisle turn	mm	1600
brush pad pressure	Kg	30
brush motor speed	RPM	200
solution flow rate	LPM	0-1.4
bush motor voltage and power	V / W	24 / 550
vacuum motor voltage and power	V / W	24 / 500
batteries	Ah @ 20hr	130
working vacuum	mbar	155
Max Gradient	%	3
Noise level	dB	68

**SOLUTION TANK ASSEMBLY**



## PARTS LIST

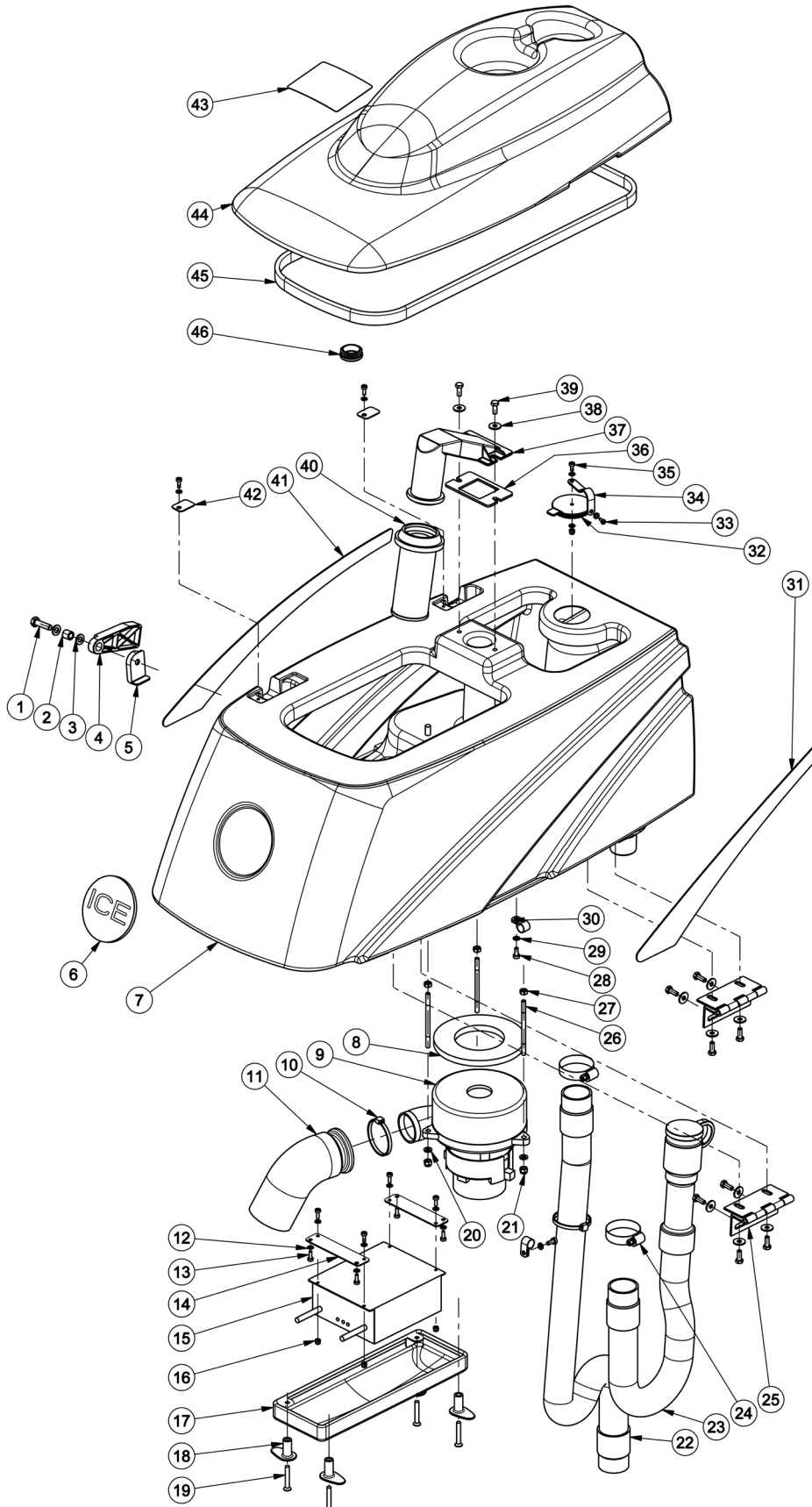
**SOLUTION TANK ASSEMBLY**

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	8133600	LED LIGHT ASSEMBLY	1
2	8133602	LED LIGHT COVER	1
3	1221520	PH SCREW M5×20 SS	3
4	1421510	PLAIN WASHER 5×10×1 SS	12
5	8133601	LED LIGHT HOUSING	1
6	8133603	LED LIGHT	1
7	1421409	PLAIN WASHER 4×9×0.8 SS	8
8	1321110	PH AUTO-TAPPING SCREW ST3.5×10	4
9	8031001	SOLUTION TANK	1
10	1221512	PH SCREW M5×12 SS	9
11	2320236	CABLE CLIP	1
12	1962016	HOSE CLAMP 10-16mm	3
13	8031015	SOLUTION HOSE	1
14	8031014	SOLUTION HOSE	1
15	8119003	SOLENOID VALVE	1
16	8031013	SOLUTION HOSE	1
17	8119002	ELBOW	2
18	8031012	SOLUTION HOSE	1
19	1221412	PH SCREW M4×12 SS	3
20	8119100	SOLUTION FILTER	1
21	8119102	FILTER COVER	1
22	8119103	FILTER SCREEN	1
23	1622765	O RING	1
24	8119101	FILTER HOUSING	1
25	8113012	BATTERY TRAY	1
26	8113013	FOAMED RUBBER	2
27	8031011	SOLUTION HOSE	1
28	8119006	HOSE CLAMP	7
29	8013007	STRAIGHT JOINT	1
30	8018006	MICRO BALL VALVE	1
31	8013006	ELBOW	1
32	8031005	DECAL	1
33	8113011	BATTERY 12V 130AH	2
34	4010316	"ICE" LOGO	2
35	1962025	HOSE CLAMP 16-25mm	1
36	8031006	SOLUTION DISPLAYER	1
37	8131020	RECOVERY TANK STAY CORD	1
38	1421612	PLAIN WASHER 6×12×1.6 SS	2
39	1021616	HEX HEAD BOLT M6×16	2
40	8133002	PLUG	1
41	1113305	SELF-LOCKING NUT M3	2
42	8113010	BRACKET	1
43	1422513	SPRING WASHER 5 SS	2
44	8113017	CONNECTING CABLE BLACK	1

**SOLUTION TANK ASSEMBLY**

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
45	8113018	CONNECTING CABLE RED	1
46	1211325	PH SCREW M3×25	2
47	1434300	TOOTHED LOCK WASHER M3	2
48	8113021	CONNECTOR HANDLE	1
49	8113020	CONNECTOR	2
50	8113009	CABLE CLIP	6
51	8113007	RUBBER STRIP	1
52	1321213	PH AUTO-TAPPING SCREW ST4.2×13	1
53	8113002	COVER	1
54	8113030	SEAL	1
55	8031004	DECAL	1

**RECOVERY TANK ASSEMBLY**

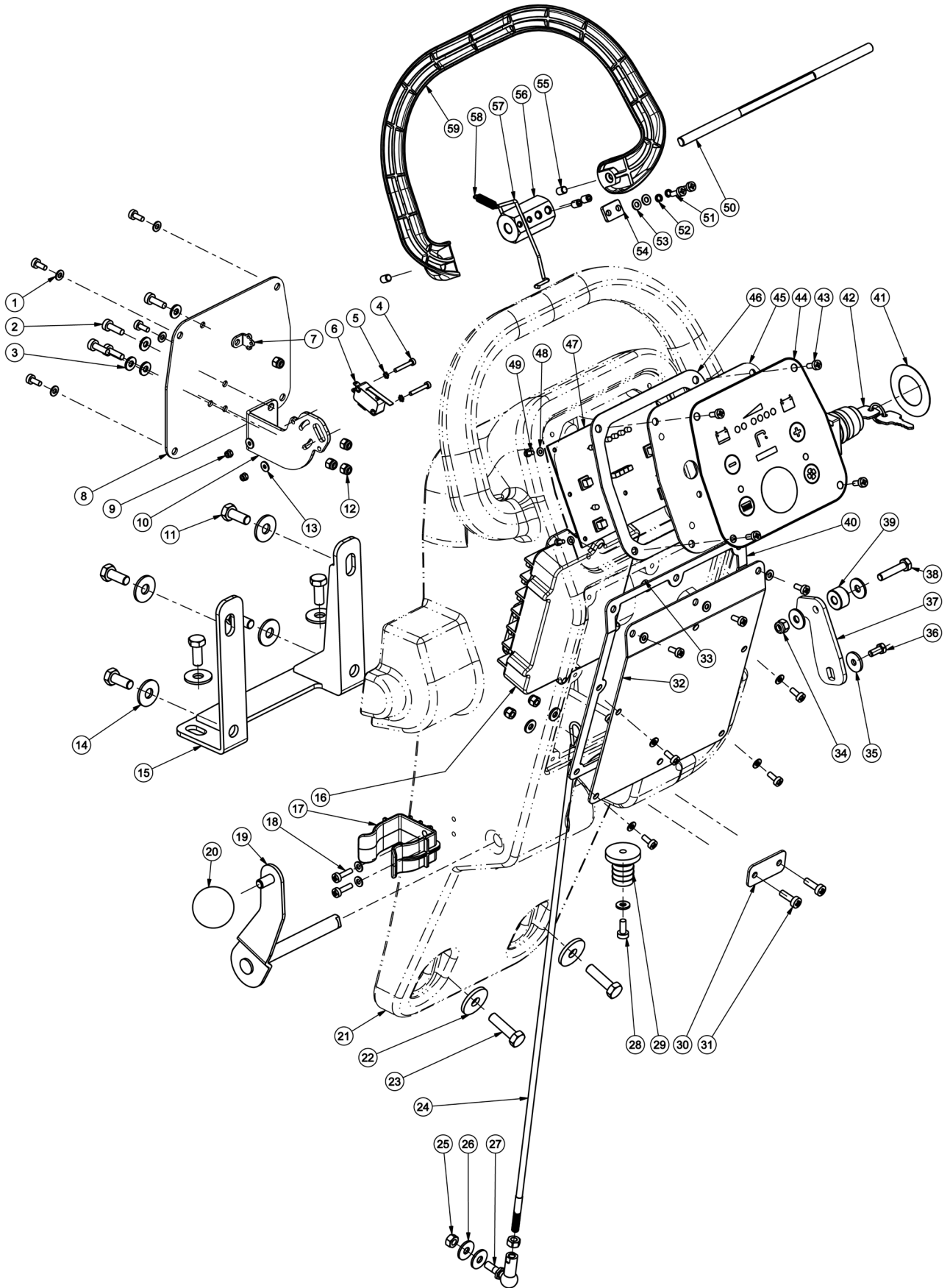




**RECOVERY TANK ASSEMBLY**

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	1021830	HEX HEAD BOLT M8×30 SS	1
2	8115404	BUSHING	1
3	1421816	PLAIN WASHER 8×16×1.6 SS	2
4	8111007	BRACKET FOR RECOVERY TANK	1
5	8111008	STOPPER	1
6	4010316	ICE LOGO	1
7	8032001	RECOVERY TANK	1
8	8112005	SEALING GASKET	1
9	8116500	VACUUM MOTOR 24V 500W	1
10	1914300	CABLE TIE	2
11	8132007	MUFFLER	1
12	1421409	PLAIN WASHER 4×9×0.8 SS	13
13	1221412	PAN HEAD SCREW M4×12 SS	10
14	8032006	CHARGER FIXER	2
15	8132010	ON BOARD CHARGER	1
16	1123406	SELF-LOCKING NUT M4	5
17	8032003	CABLE STRING BAG	1
18	8210112	CABLE REEL	4
19	1222641	SUNK HEAD SCREW M6×40 SS	4
20	1411612	PLAIN WASHER 6×12×1.6 SS	3
21	1113608	SELF-LOCKING NUT M6	3
22	8118006	VACUUM HOSE	1
23	8131010	DRAIN HOSE	1
24	1962050	HOSE CLAMP 27-51mm	2
25	8111300	HINGE SS	2
26	8112006	BOLT	3
27	1111605	HEX NUT M6	3
28	1221512	PAN HEAD SCREW M5×12 SS	2
29	1421510	PLAIN WASHER 5×10×1 SS	2
30	8113009	CABLE CLIP	2
31	8032005	DECAL	1
32	8131003	CAP	1
33	1321110	PH AUTO-TAPPING SCREW ST3.5×10	1
34	8113007	RUBBER STRIP	1
35	1221410	PAN HEAD SCREW M4×10	1
36	8111001	SEALING GASKET	1
37	8111014	FILTER COUPLING	1
38	1421618	PLAIN WASHER 6×18×1.6 SS	10
39	1021616	HEX HEAD BOLT M6×16 SS	10
40	8111015	FLOAT CAGE	1
41	8032004	DECAL	1
42	8011009	PLATE	2
43	8111022	WARNING DECAL	1
44	8033001	COVER TANK	1
45	8033002	SEALING STRIP	1
46	8011005	CAP	1

**CONTROL BOX ASSEMBLY**



**CONTROL BOX ASSEMBLY**

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	1421409	PLAIN WASHER 4×9×0.8 SS	15
2	1211516	PAN HEAD SCREW M5×16	4
3	1421512	PLAIN WASHER 5×12×1.5 SS	7
4	1211320	PAN HEAD SCREW M3×20	2
5	1434300	TOOTHED LOCK WASHER	2
6	8114712	MICRO SWITCH	1
7	8014034	BRACKET	1
8	8014002	REAR PANEL	1
9	1113305	SELF-LOCKING NUTS M3	2
10	8014061	BRACKET FOR SWITCH	1
11	1021820	HEX HEAD BOLT M8×20 SS	6
12	1113507	SELF-LOCKING NUTS M5	6
13	1411309	PLAIN WASHER 3×9×0.8	2
14	1411824	PLAIN WASHER 8×24×2	6
15	8114030	BRACKET FOR CONTROL BOX	1
16	8034007	CONTROLLER	1
17	6210111	HOSE CLIP	1
18	1221416	PAN HEAD SCREW M4×16	2
19	8014010	SQUEEGEE LIFTING LEVEL	1
20	8113104	HANDLE	1
21	8034001	CONTROL BOX	1
22	1421828	PLAIN WASHER 8×28×3 SS	2
23	1021830	HEX HEAD BOLT M8×30 SS	2
24	8034008	LIFTING CORD	1
25	1121605	HEX NUT M6 SS	2
26	1421618	PLAIN WASHER 6×18×1.6 SS	4
27	8114511	JOINT BEARING	1
28	1221512	PAN HEAD SCREW M5×12 SS	1
29	8114005	PIPE COUPLING	1
30	8014044	STOPPER	1
31	1221516	PAN HEAD SCREW M5×16 SS	2
32	8034002	BOTTOM PANEL	1
33	1123406	SELF-LOCKING NUT M4 SS	2
34	1123608	SELF-LOCKING NUT M6 SS	1
35	1421518	PLAIN WASHER 5×18×2 SS	1
36	1021512	HEX HEAD BOLT M5×12	1
37	8014012	BAFFLE	1
38	1021630	HEX HEAD BOLT M6×30 SS	1
39	8014101	SPACER	1
40	8014038	SEALING GASKET	1
41	8034006	DECAL	1
42	8114709	KEY SWITCH	1
43	1221410	PAN HEAD SCREW M4×10 SS	15
44	8034004	PANEL DECAL	1

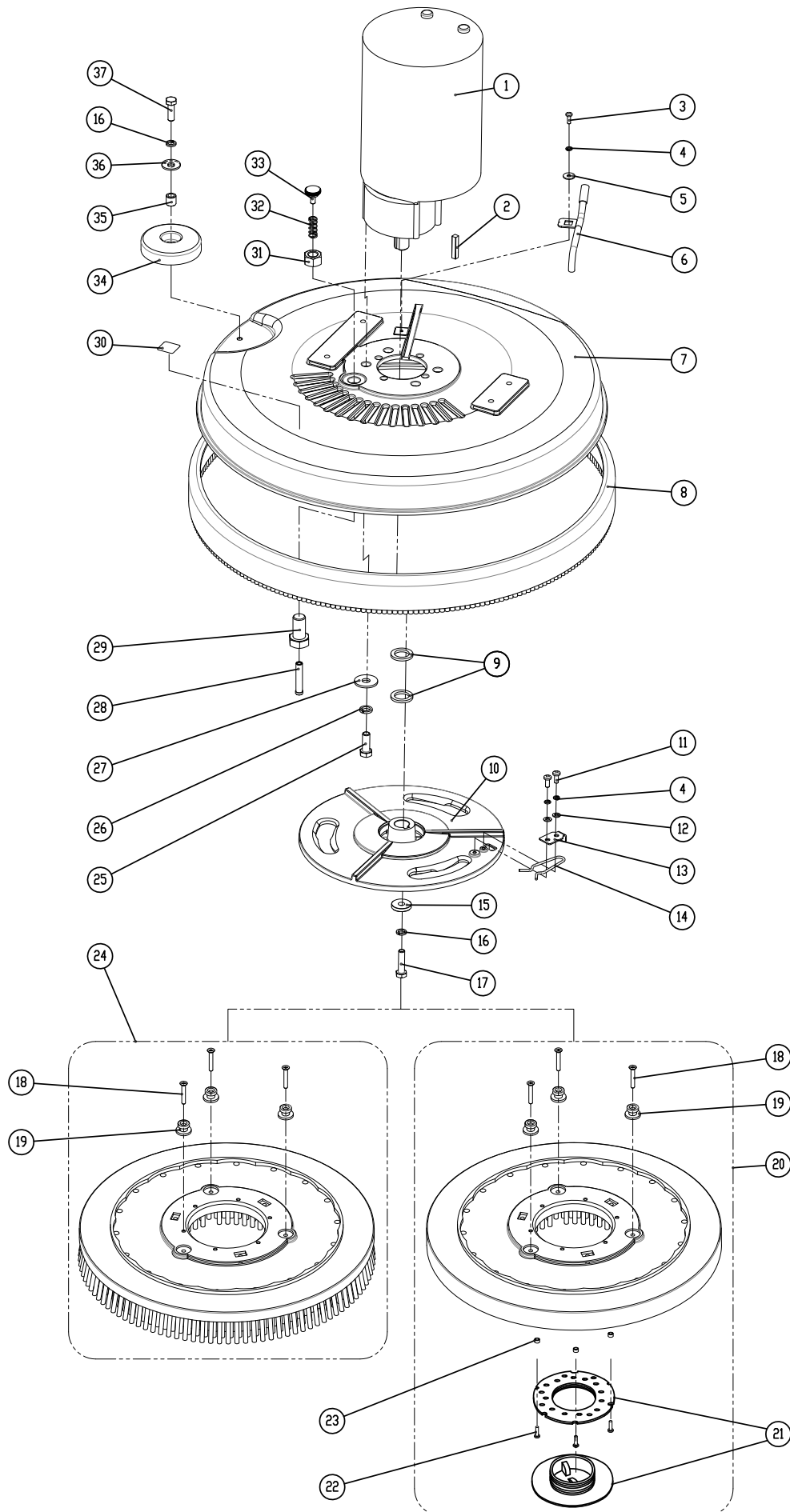
# PARTS LIST

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## CONTROL BOX ASSEMBLY

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
45	8034003	FRONT PANEL	1
46	8014004	SEALING GASKET	1
47	8034009	ELECTRONIC BOARD	1
48	1421307	PLAIN WASHER 3×7×0.5 SS	5
49	1221306	PAN HEAD SCREW M3×6 SS	5
50	8114101	SHAFT	1
51	1221412	PAN HEAD SCREW M4×12 SS	2
52	1422411	SPRING WASHER 4 SS	2
53	1411409	PLAIN WASHER 4×9×0.8	2
54	8014033	PLATE	1
55	1534608	SET SCREW M6×8	4
56	8014031	HEX BUSHING	1
57	8014032	SPRING ROD	1
58	8014035	SPRING	1
59	8014022	CONTROL HANDLE	1

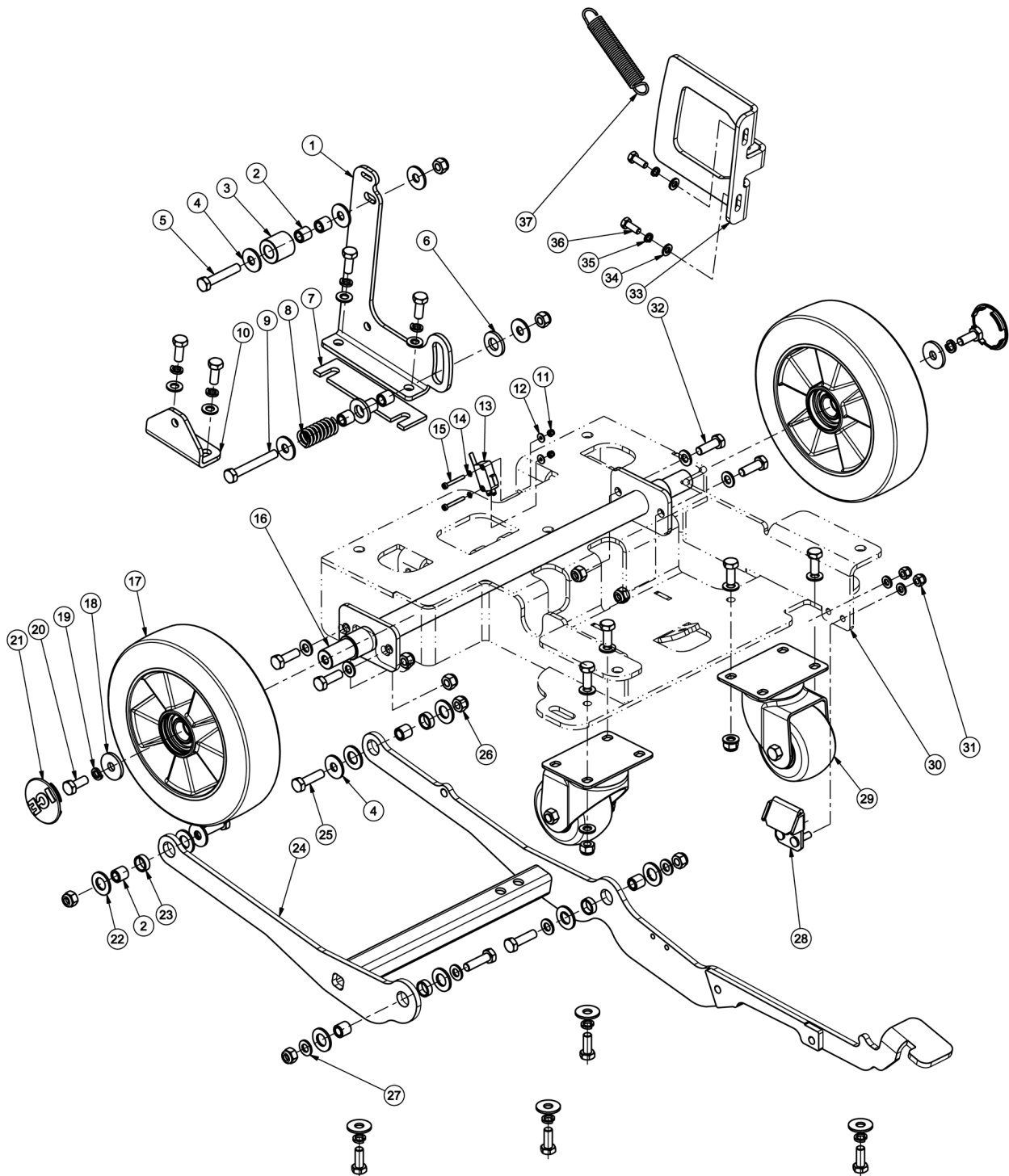
**i20B BRUSH ASSEMBLY**



# PARTS LIST

## i20B BRUSH ASSEMBLY

DIA NO.	PART NUMBER	DESCRIPTION	NO REQ'D
1	8116005	BRUSH MOTOR, 24VDC 1.0HP	1
2	1656432	KEY	1
3	1221412	SCREW M4×12	1
4	1422513	LOCK WASHER M5	3
5	1421518	FLAT WASHER M5× $\phi$ 18×2	1
6	8116100	WATER SUPPLY TUBE	1
7	8116006	SCRUB HEAD HOUSING	1
8	8116020	BUMPER, SCRUB HEAD	1
9	8116001	SPACER	2
10	8116008	HUB, DRIVE, 3 LUG	1
11	1221512	SCREW M5×12	2
12	1421510	FLAT WASHER M5× $\phi$ 10×1	2
13	8116002	BRUSH CLAMP PLATE	1
14	8116003	SPRING CLIP	1
15	8116010	FLAT WASHER $\phi$ 8.5× $\phi$ 25.4×4.5	1
16	1422821	LOCK WASHER M8	2
17	1023815	HEX BOLT 5/16-18 ×1.5" UNC	1
18	1222635	SCREW, M6X35	6
19	8116030	STUD	6
20	9040019	19" PAD DRIVER	1
	9040019K	19" PAD DRIVER (OPTIONAL)	1
21	9000001	BIG MOUTH	1
	9000003	CENTER-LOK 3 (OPTIONAL)	1
22	1321325	SELF-TAPPING SCREW, ST4.8X25	3
23	8116040	SPACER	3
24	9050020	20" BRUSH, 0.7mm PP BRISTLE	1
	9050020E	20" BRUSH, 0.5mm PP BRISTLE (OPTIOAL)	1
25	1023010	HEX BOLT 3/8-16 ×1" UNC	4
26	1422026	LOCK WASHER M10	4
27	1421030	FLAT WASHER M10× $\phi$ 30×2.5	4
28	8116202	PIN	1
29	8116205	SCREW M14 × 20	1
30	8111023	WARNING LABEL	1
31	1121913	HEX NUT M14	1
32	8116204	SRPING	1
33	8116210	KNOB M6	1
34	8116009	PROTECTIVE WHEEL	1
35	8115404	SLEEVE, P/M	1
36	1421824	FLAT WASHER M8× $\phi$ 24×2.0	1
37	1021825	HEX BOLT M8×25	1

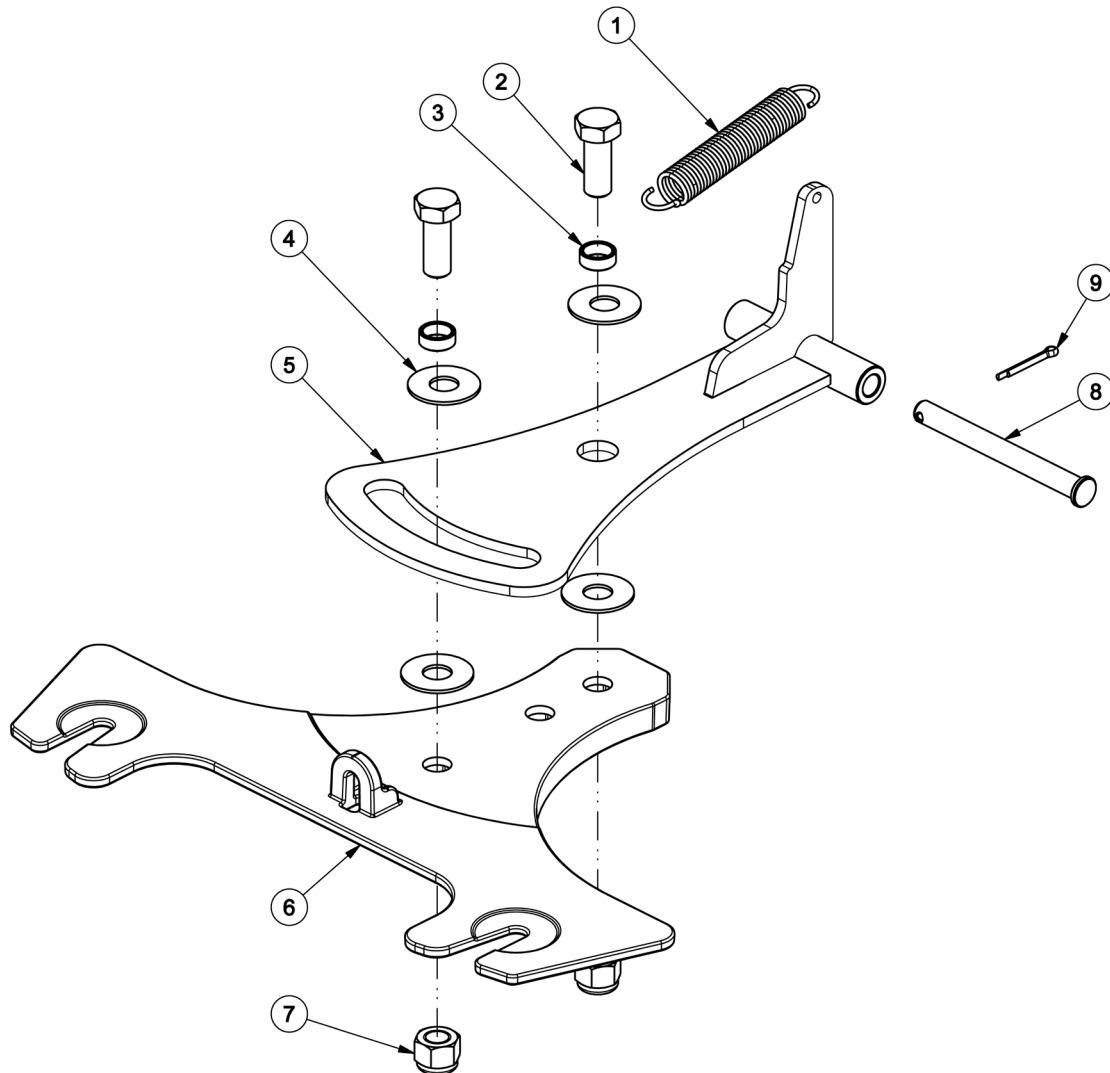
**CHASSIS ASSEMBLY**

## PARTS LIST

CHASSIS ASSEMBLY

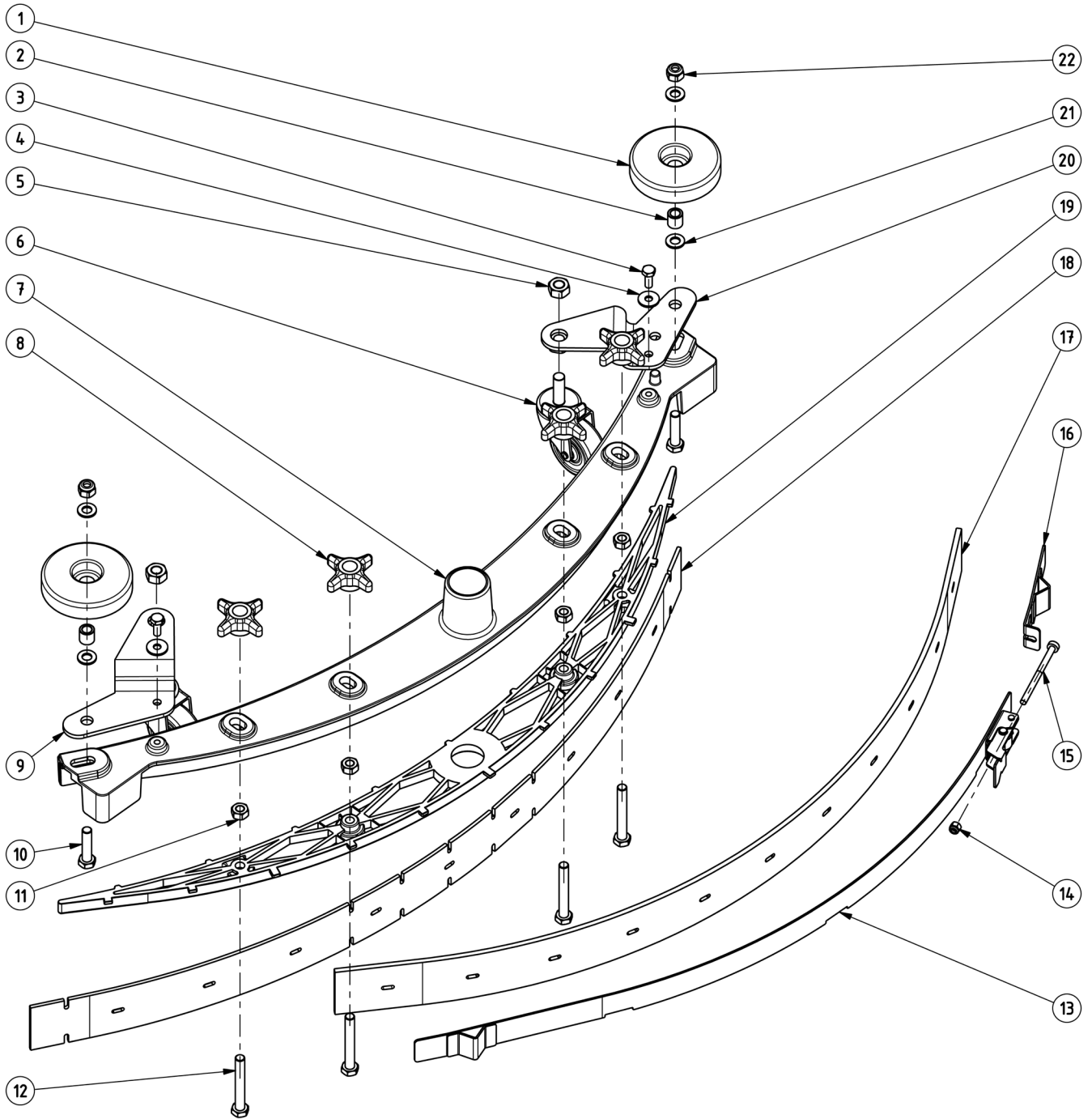
<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	8117003	RIGHT BRACKET	1
2	8115404	BUSHING	9
3	8117004	ROLLER	1
4	1421824	PLAIN WASHER 8×24×2 SS	12
5	1022845	HEX HEAD SCREW M8×45	1
6	8113109	BUSHING	2
7	8117005	PLATE	1
8	8117008	SPRING	1
9	1022860	HEX HEAD SCREW M8×60 SS	1
10	8117002	LEFT BRACKET	1
11	1113305	SELF-LOCKING NUT M3	2
12	1411309	PLAIN WASHER 3×9×0.8	2
13	8114712	MICRO SWITCH	1
14	1434300	TOOTHED LOCK WASHER	2
15	1221325	PAN HEAD SCREW M3×25 SS	2
16	8036003	WHEEL SHAFT	1
17	8115200	8" WHEEL	2
18	1421828	PLAIN WASHER 8×28×3 SS	2
19	1422821	SPRING WASHER 8	11
20	1021820	HEX HEAD BOLT M8×20 SS	15
21	8115203	WHEEL CAP	2
22	8117007	NYLON WASHER	8
23	8115405	BUSHING	4
24	8036002	BRUSH LIFING LEVER	1
25	1021830	HEX HEAD BOLT M8×30 SS	4
26	1123810	SELF-LOCKING NUT M8 SS	14
27	1421816	PLAIN WASHER 8×16×1.6 SS	20
28	8115300	LEVER LOCK	1
29	8031002	3" CASTOR	2
30	8036010	CHASSIS	1
31	1123608	SELF-LOCKING NUT M6 SS	2
32	1021825	HEX HEAD BOLT M8×25 SS	4
33	8036006	BRUSH GUIDING BRACKET	1
34	1421612	PLAIN WASHER 6×12×1.6 SS	4
35	1422616	SPRING WASHER 6 SS	2
36	1021616	HEX HEAD BOLT M6×16 SS	2
37	8117009	SPRING	1



**SQUEEGEE HOLDER ASSEMBLY**

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8115004	SPRING	1
2	1021230	HEX HEAD BOLT M12×30	2
3	8115405	BUSHING	2
4	1421132	PLAIN WASHER 13×32×1.5	4
5	8037002	SQUEEGEE BRACKET	1
6	8115001	SQUEEGEE SUPPORT	1
7	1123115	SELF-LOCKING NUT M12	2
8	8115003	PIN	1
9	1645324	COTTER PIN 3.2×24	1

**SQUEEGEE ASSEMBLY**



**SQUEEGEE ASSEMBLY**

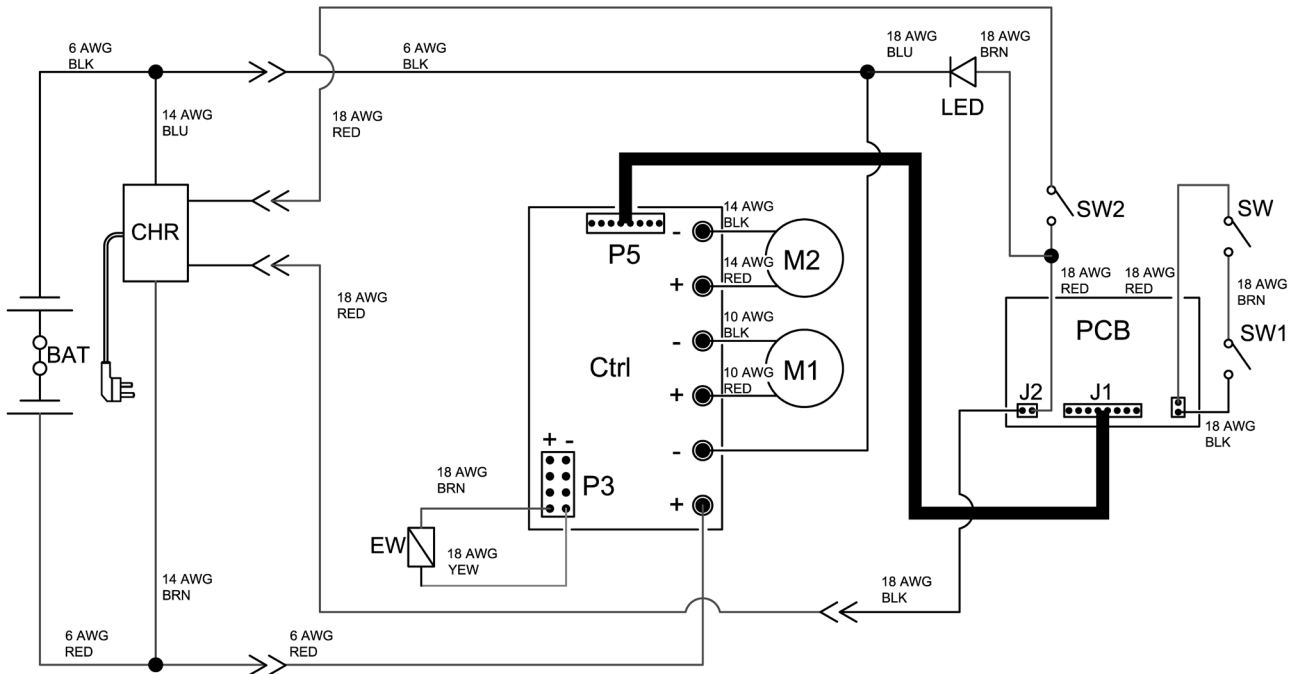
<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	8116009	BUMPING WHEEL	2
2	8115404	SPACER	2
3	1021616	HEX HEAD BOLT M6×16,SS	2
4	1421618	PLAIN WASHER 6×18×1.6,SS	2
5	1111008	HEX NUT M10	2
6	8118400	2" CASTER	2
7	8118004	SQUEEGEE BRACKET	1
8	8118003	HANDLE	4
9	8118300	BRACKET,RIGHT	1
10	1021835	HEX HEAD BOLT M8×35,SS	2
11	1121807	HEX NUT M8,SS	4
12	1021860	HEX HEAD BOLT M8×60	4
13	8118600	CLAMP ASSEMBLY	1
14	1123507	SELFLOCKING NUT M5	1
15	1221570	PH SCREW M5×70	1
16	8118610	CLAMP ASSEMBLY	1
17	8118022	REAR SQUEEGEE LINATEX	1
	8118002	REAR SQUEEGEE PU(OPTIONAL)	1
18	8118021	FRONT SQUEEGEELINATEX	1
	8118001	FRONT SQUEEGEE PU (OPTIONAL)	1
19	8118005	SQUEEGEE HOLDER	1
20	8118200	BRACKET,LEFT	1
21	1421816	PLAIN WASHER 8×16×1.6,SS	4
22	1123810	SELFLOCKING NUT M8	2

WEAR & TEAR PARTS LIST

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	8115200	8" WHEEL	2
	1612604	6004RS BEARING	4
2	8116009	BUMPER WHEEL	3
3	8118021	FRONT SQUEEGEELINATEX	1
4	8118022	REAR SQUEEGEE LINATEX	1
5	9050020	20" BRUSH(FOR i20B)	1
6	9040019	19" PAD DRIVER(FOR i20B)	1

**WIRING DIAGRAM**

i20B



- BAT: 2-12V BATTERY**
- CHR: ON BOARD CHARGER**
- SW: CONTROL HANDLE SWITCH**
- SW1: BRUSH MOTOR SWITCH**
- SW2: KEY SWITCH**
- CTRL: SCRUBBER CONTROLLER**
- PCB: ELECTRONIC BOARD**
- LED: LED INDICATOR LIGHT**
- EW: SOLUTION SOLENOID VALVE**
- M1: BRUSH MOTOR**
- M2: VACUUM MOTOR**

- BLK: BLACK**
- BLU: BLUE**
- BRN: BROWN**
- GRN: GREEN**
- RED: RED**
- WHT: WHITE**
- YEW: YELLOW**