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Operator & Parts Manual

**Automatic Scrubber**



**i20NB  
i20NBT  
i20NBT-OB  
i24BT**

8130050  
REV.06 (11-2018)

**INTELLIGENT 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.

**ICE Company Limited**

XiangShi Road LiaoBu DongGuan GuangDong China

Tel: 0769 - 81869000

Fax: 0769 - 81863000

**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 shall read, understand and exercise the following safety precautions:**

1. Do not operate machine:
  - Unless trained and authorized.
  - Unless you have read and understand the operators manual.
  - In flammable or explosive areas.
  - If not in proper operating condition.
  - In outdoors 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.
  - Wear gloves when handling batteries or battery cables.

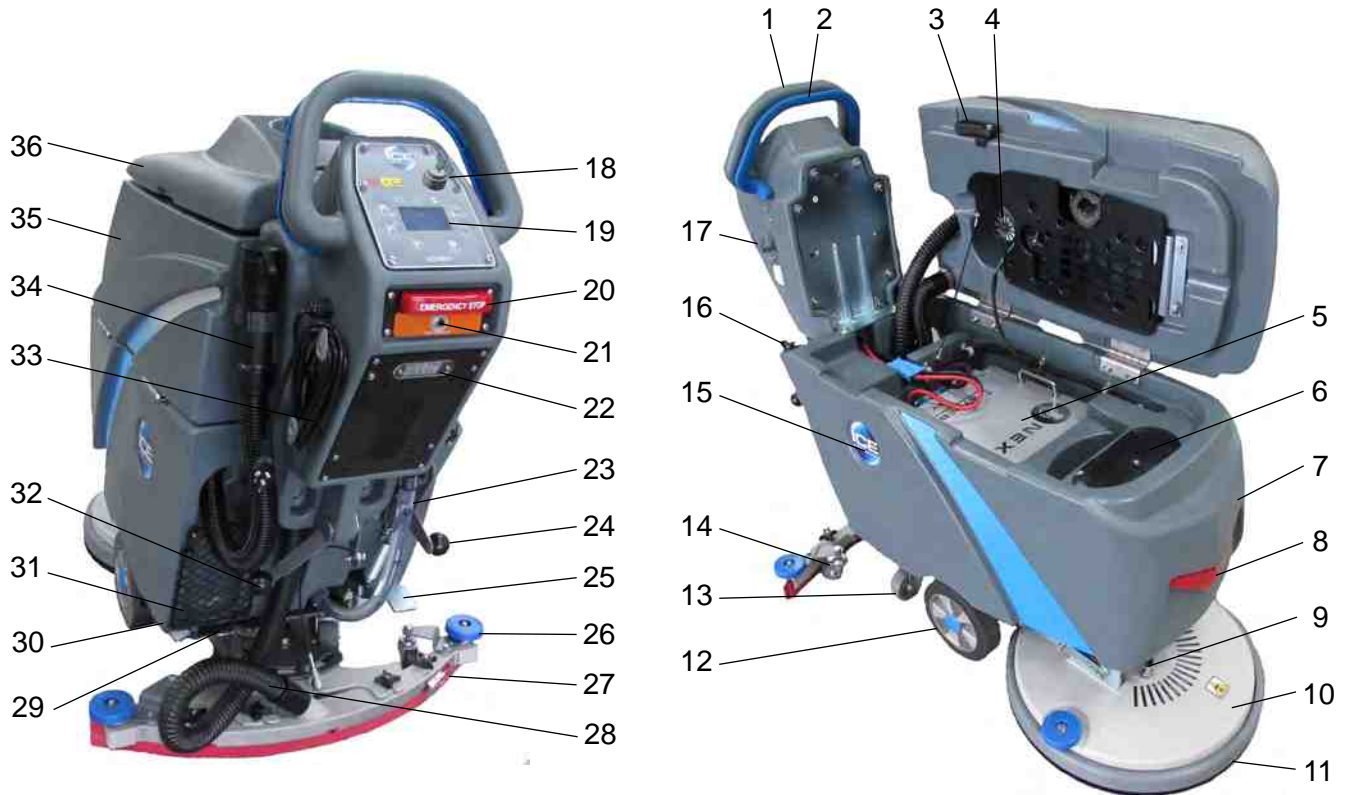
- Avoid any contact with battery acid
- Avoid moving parts. Do not wear loose fitting clothing while servicing machine.

 **WARNING: Batteries 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 metals can cause explosion or fire. Do not pick up.**

**MACHINE COMPONENTS**



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1. Control Handle</li> <li>2. Control Handle Start Bail</li> <li>3. Recovery Tank Support Stand</li> <li>4. Vacuum Motor, 24VDC</li> <li>5. Batteries</li> <li>6. Bucket Fill Port/ Clean-Out Port</li> <li>7. Solution Tank</li> <li>8. LED Light</li> <li>9. Motor Hub Lock Pin (Disk Models)</li> <li>10. Scrub Head Assembly</li> <li>11. Scrub Head Skirt</li> <li>12. Wheels, 8 Inch</li> <li>13. Caster, 3.15 Inch</li> <li>14. Caster, 2 Inch, Squeegee Blade Adjustment</li> <li>15. ICE Logo</li> <li>16. Hose Fill-Port</li> <li>17. Squeegee Storage Bracket</li> <li>18. Main Power Key Switch</li> </ul> | <ul style="list-style-type: none"> <li>19. Control panel (see Panel components)</li> <li>20. Emergency Stop Button (Drive Models)</li> <li>21. Main controller breaker</li> <li>22. On-board battery charger / Window</li> <li>23. Solution Tank Level / Drain Hose</li> <li>24. Heavy Down Pressure Lever</li> <li>25. Scrub Head Lift Pedal</li> <li>26. Bumper Rollers</li> <li>27. Squeegee Assembly</li> <li>28. Squeegee Vacuum Hose</li> <li>29. Filter Assembly</li> <li>30. Ball Valve</li> <li>31. Cargo Mesh Bag</li> <li>32. Squeegee Lift Lever</li> <li>33. Power cord, on-board Battery charger</li> <li>34. Recovery Tank Drain Hose</li> <li>35. Recovery Tank</li> <li>36. Recovery Tank Cover</li> </ul> |
|---|---|

PANEL COMPONENTS



- 1. Fault indicator
- 2. Battery meter
- 3. Brush motor indicator
- 4. LED display screen
- 5. Solution flow indicator
- 6. Solution flow control button (-)
- 7. Solution flow control button (+)
- 8. Fault message display area

- 9. Vacuum motor indicator
- 10. Vacuum motor switch
- 11. Fault code
- 12. Timer
- 13. Speed control button (-)
- 14. Speed indicator
- 15. Speed control button (+)

**MACHINE SET UP & INSTALLATION**

**UNCRATING 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
- 2-12V Batteries
- Squeegee assembly
- Battery Charger
- Pad Driver

**INSTALLING BATTERIES**

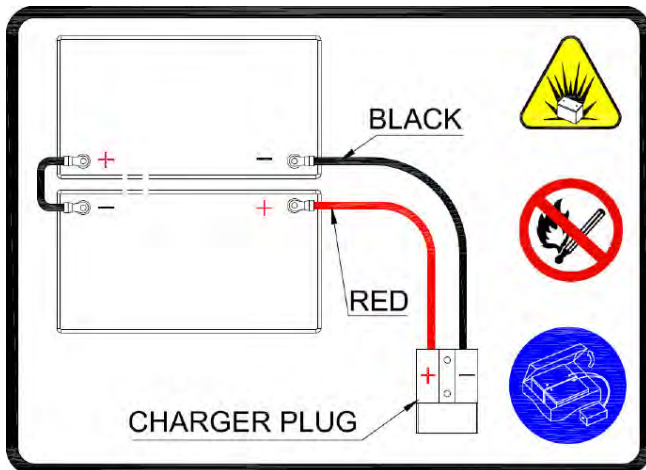
The batteries are already in the machine upon delivery; However you will need to connect the cables to the battery posts.

**⚠ WARNING: Batteries 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 at the rear of the two batteries.

**DO NOT DROP BATTERIES INTO COMPARTMENT!**

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



**MACHINE SET UP**

**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.

**INSTALLING PAD DRIVER OR BRUSH**

1. Ensure that the machine is turned off.
2. Step down on the scrub head lift pedal (see machine components, item #25) to raise the scrub head off the floor.
3. If using a Pad Driver, first attach the appropriate pad to the pad driver surface.
4. Turn the brush motor hub until the slot with the spring clip is visible through the scrub head window.
5. Mount the pad driver or brush to the brush motor hub by lining up the three studs with the three holes in the brush motor hub. Once in the holes, rotate the driver toward the spring clip to lock the pad driver into place.  
If necessary, press down on the motor hub lock pin (see machine componts, item # 9)to lock motor hub in place.
6. For Orbital head Model i20NBT-OB, you need to attach a rectangular, 20in(508mm)×14in(356mm) Pad to the Orbital Pad driver. align the pad to the Orbital pad driver, press from front-to-back and side to side to alignment.

**MOUNTING THE SQUEEGEE ASSEMBLY**

1. Lift the squeegee lift lever (see machine components, item #32)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 fill-port (see machine components, item #16) at the rear of the machine, and a bucket fill-port (see machine components, item #6) located under the recovery tank. Before accessing the bucket fill-port make sure that the recovery tank is empty.

Fill the solution tank to the "60L" level on the solution tank sight gauge. When using the bucket fill-port, stop filling when the level reaches the bottom edge of the fill-port.

**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 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 lift lever(see machine components, item #32).
2. Lower the scrub head to the floor by stepping on the scrub head lift pedal(see machine components, item #25).
3. Turn the main power key switch(see machine components, item #18) to the on (I) position.
4. Check the battery meter (see Panel components, item #2), if the battery is very low, there will be a Fault code & message on the LED display screen(see Fault code section), and the Fault indicator will blink continuously accompany an audible alarm. please DO NOT continue to operate the machine and recharge the batteries immediately.
5. Check the solution flow indicator (see Panel components, item #5), press the solution flow control button (see Panel components, item #6, 7) to a desired flow rate.  
**NOTE: Solution will not begin to flow until the control handle bail is pulled.**
6. Turn on the vacuum motor switch(see Panel components, item #10).
7. i20NB: Pull the control handle bail(see machine components, item #2) backwards to start scrubbing by moving the machine forward.

The drive model i20NBT / i24BT: Pull the control handle bail(see machine components, item #2) backwards to start scrubbing. The machine will automatically propel forward. To reverse the drive model, simply push the control handle bail forward. the speed can be adjusted, Adjust the speed control button (see Panel components, item #13,15) to a desired scrubbing speed.

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

8. When more brush pressure is needed for heavily soiled areas simply lift the down pressure lever(see machine components, item #24).
9. To stop scrubbing, release the control handle bail, 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 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(see Panel components, item #2). when the battery is very low, stop scrubbing and recharge the batteries.



**WARNING:** When battery is very low, do not continue to operate the machine. Battery damage may result.

6. When the solution tank runs empty, raise the brush head off the floor. 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.



## CIRCUIT BREAKER

The machine is equipped with a resettable circuit breaker(see machine components, item #21) to protect the Main controller. If the circuit breaker should trip, it can't be reset immediately. You must first determine what caused the breaker to trip, and allow the Controller to cool down and then you can manually reset the circuit breakers.

**NOTE:** Contact an Authorized Service center for machine repairs.

## HOUR METER

The hour meter (see Panel components, item #12) records the number of total hours the brush motor has been powered on. Use the hour meter to determine when to perform recommended maintenance procedures and to record service history.

## **TANK DRAINING**

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

### DRAINING THE RECOVERY TANK

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 screen and cause damage to the vacuum motor.**

1. While holding the drain hose (see machine components, item #25) 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.
3. 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 tank level hose(see machine components, item #23) 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(see machine components, item #29) to drain the

solution tank, check the filter screen and clean up it 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.

## **BATTERY CHARGING**

**⚠ WARNING: Fire Or Explosion Hazard. Batteries Emit Hydrogen Gas. Keep Sparks and Open Flame Away. Keep Battery Compartment Propped 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 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 (see machine components, item #33)to a properly grounded receptacle.
  5. Prop up the recovery tank by the support stand (see machine components, item #3) for ventilation when charging.
  6. The charger will automatically begin to charge and will automatically shut off once the batteries are fully charged.
  7. Upon completion of charging, disconnect the AC power supply cord.

## **PREVENTATIVE 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.**

## DAILY MAINTENANCE

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.

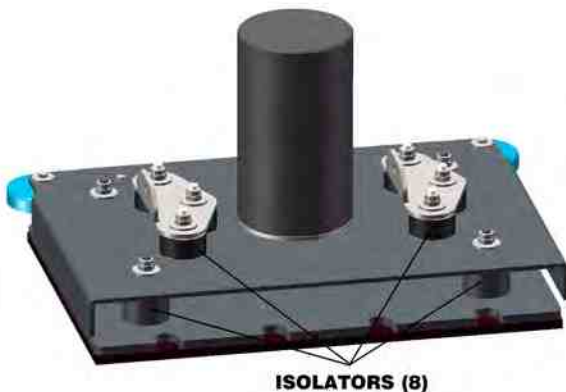
## MONTHLY MAINTENANCE

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.

## ORBITAL HEAD MAINTENANCE

For Orbital head, you should have checked the eight isolators located in the Orbital head every 300 hours.

1. Using a flashlight, do a visual inspection of the isolators by looking through the opening in the Orbital head and checking for wear or damage to four isolators in the front and four in the rear of the Orbital head. The locations of the isolators are shown below.



2. If any of the eight isolators show signs of wear, degradation or damage, contact your local distributor to replace all eight isolators.

## MOTOR MAINTENANCE

1. Contact your local Distributor 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.

## 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 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.

## MACHINE STORAGE

1. Always store the machine indoors.
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. 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. Any damage caused by freezing temperatures will not be covered by the warranty.
7. Drain the recovery tank.
8. Drain the solution tank of all fluid.

**FAULT CODE & SOLUTION**

The machine is equipped with a LED display screen (see Panel components, item # 4), the LED screen will display the operating hours (see Panel components, item # 12) and the battery level status (see Panel components, item # 2).

When the machine detects a fault, there will be a Fault code (see Panel components, item #11) & Fault message (see Panel components, item #8) display on the LED screen, and the Fault indicator (see Panel components, item #1) will flash continuously, accompany an audible alarm Occasionally.

Once fault occurring, please DO NOT continue operate the machine unless the fault are eliminated. Turn off the machine, then to solve the fault, the fault code & message will be eliminated when machine restart.

If the fault is occurred frequently, or the fault can't be eliminated, please contact ICE service center.

Please refer to the below table to determine the fault cause and the solution.

FAULT CODE	FAULT MESSAGE	MODEL		FAULT CAUSE	SOLUTION
		i20NB	i20NBT i24BT		
F01	Lower Brush Deck	●		Brush deck is off the floor	Release the control handle bail Or Lower the Brush deck
F04	Vac Mtr O.L. RE-START!	●	●	Vacuum motor overload	Turn off the machine,after a moment, RE-START machine
F06	Bru Mtr O.L. RE-START!	●	●	Brush motor overload	
F07	Propel Mtr O.L. RE-START!		●	Propel motor overload	
F08	RecTank Full	●	●	Recovery tank is full Or Bad Solution level sensor	Drain the Recovery tank/Replace the solution level sensor
F10	Batt Low Charge Batt	●	●	Battery is low	Charge the battery
F11	Batt Empty Charge Batt NOW	●	●	Battery is empty	Charge the battery NOW
F12	Brake Wiring Error		●	Bad Brake wiring Bad Brake	Check the brake wiring Replace the Brake assembly
F14	Replace Brake Assy		●	Bad Brake assembly	Replace the brake assembly
F16	Control Unit Overheat! Wait	●	●	Control Unit Overheat	Turn off the machine,after a moment, RE-START machine
F17	Replace Control Unit	●	●	Control Unit Fault	Replace the control unit
F21	Check Vac Mtr	●	●	Bad Vacuum motor or wiring	Check the vacuum motor / Wiring
F22	Check Soln Solenoid	●	●	Solution solenoid wiring fault	Check the wiring & Contactors
F23	Replace Soln solenoid	●	●	Bad Solution solenoid	Replace the solution solenoid
F24	Check Propel Motor		●	Bad propel motor	Check the propel motor / Wiring
F25	Check Brush Motor	●	●	Bad brush motor	Check the brush motor / Wiring
F40	Check Proximity Sw	●	●	Proximity switch fault	Check the Proximity switch
F41	Release Handle	●	●	Operation mistake	Release the control handle bail
F42	Replace Control Unit	●	●	Bad Control Unit	Replace the control unit
F43	Turn Dead Sw Off RE-START!		●	Emergency stop button activated.	Release emergency stop button and restart machine.
F44	Replace Control Unit	●	●	Bad Control Unit	Contact service center, Replace the Control Unit
F45	Return Control Unit	●	●		
F46	Return Control Unit	●	●		
F47	Return Control Unit	●	●		
F48	Return Control Unit	●	●		

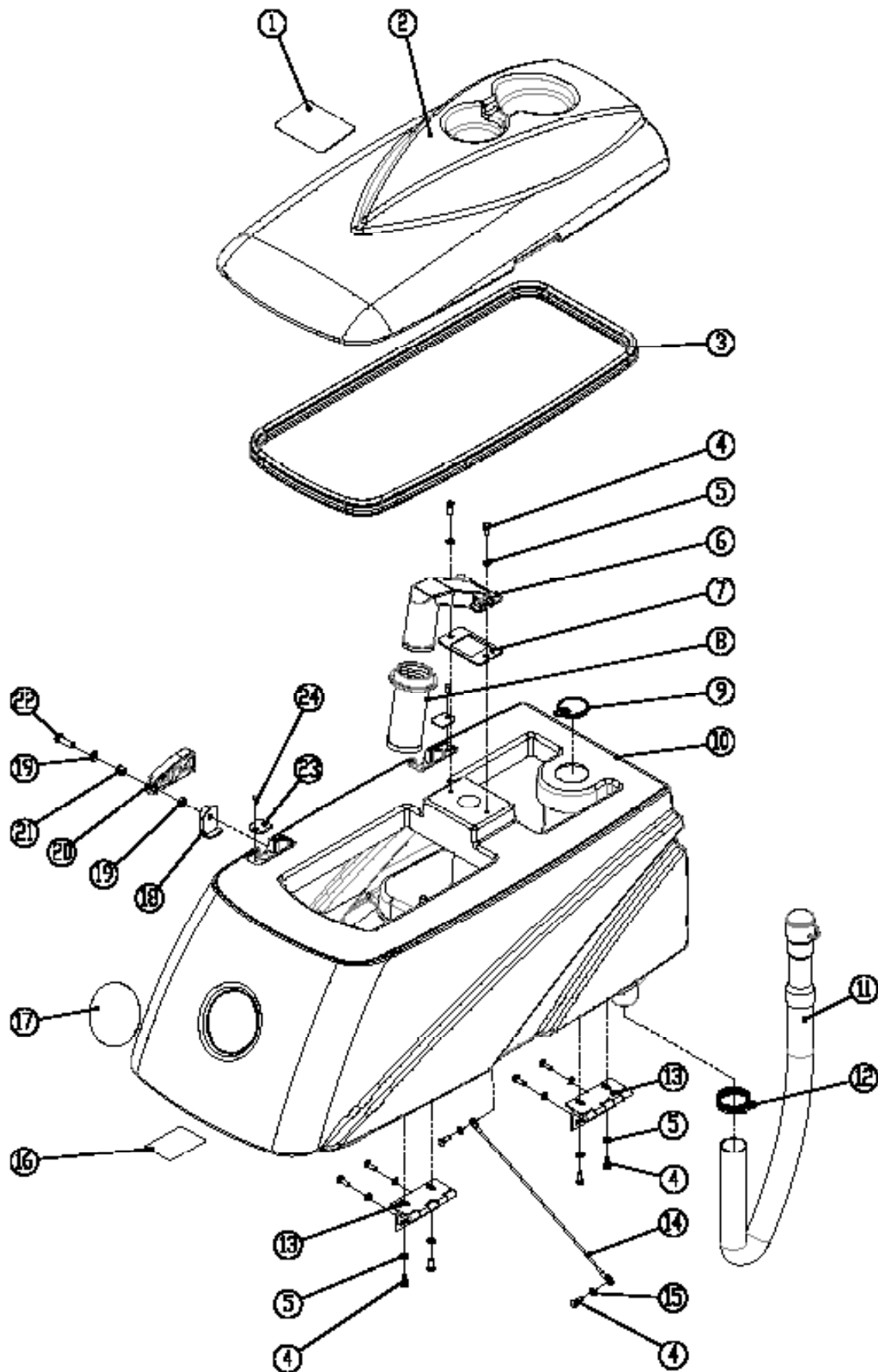
**BASIC TROUBLESHOOTING**

<b>PROBLEM</b>	<b>CAUSE</b>	<b>SOLUTION</b>
Machine will not operate	Control handle bail not pulled	Pull control handle bail
	Batteries need to be charged	Charge batteries
	Bad batteries	Replace batteries
	Loose batteries connection	Tighten the connector
	Main control unit circuit breaker tripped	Reset main control unit breaker
	Faulty key switch	Contact ICE service center
Brush motor will not operate	Scrub head is raised off floor	Lower scrub head
	Faulty scrub head (up/down)switch	Contact ICE service center
	Faulty control handle bail switch	Contact ICE service center
	Faulty brush motor or wiring	Contact ICE service center
	Worn Motor carbon brushes	Contact ICE service center
Machine does not propel (Drive model)	Faulty transaxle motor or wiring	Contact ICE service center
	Worn Motor carbon brushes	Contact ICE service center
Vacuum motor will not operate	Faulty vacuum motor or wiring	Contact ICE service center
	Worn Motor carbon brushes	Contact ICE service center
Little or no solution flow	Ball valve set too low or shut off	Turn on the ball valve
	Solution flow control knob set too low or shut off	Adjust solution control flow knob
	Clogged solution tank filter or solution hose	Clean solution tank filter or flush out solution hose
	Clogged solution Solenoid valve	Remove valve and clean
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 cover not in place	Properly position cover
	Damaged recovery tank cover seal	Replace seal
	Faulty vacuum motor	Contact ICE service center
	Low battery charge	Recharge batteries
Short run time	Low battery charge	Fully recharge batteries
	Defective batteries	Replace batteries
	Faulty battery charger	Repair or replace battery charger
	Down pressure lever is set for extra scrub head pressure	Lower down pressure lever

**TECHNICAL SPECIFICATIONS**

<b>MODEL</b>	<b>i20NB Brush Assist</b>	<b>i20NBT W/ Drive</b>	<b>i20NBT-OB Orbital head</b>	<b>i24BT Dual disk</b>
<b>DIMENSIONS L</b>	55.7 in / 1,415 mm		53.5 in / 1,360 mm	52.2 in / 1,325 mm
<b>DIMENSIONS W</b>	22 in / 560 mm		22 in / 560 mm	25.6 in / 650 mm
<b>DIMENSIONS H</b>	44.9 in / 1,140 mm		44.9 in / 1,140 mm	44.9 in / 1,140 mm
<b>WEIGHT</b>	210 lbs / 95 Kg	230 lbs / 105 Kg		
<b>WEIGHT with BATTERIES</b>	410 lbs / 185 Kg	440 lbs / 200 Kg		
<b>RECOVERY TANK CAPACITY</b>	17.2 Gal / 65 L			
<b>SOLUTION TANK CAPACITY</b>	15.9 Gal / 60 L			
<b>SQUEEGEE WIDTH</b>	30 in / 762 mm			
<b>CLEANING PATH WIDTH</b>	20 in / 500 mm (Disk)		500 mm / 20 in (20 in x 14 in Pad)	24 in / 600mm
<b>PRODUCTIVITY RATE</b>	19,375 ft <sup>2</sup> / 1,800 m <sup>2</sup> h	23,680 ft <sup>2</sup> / 2,200 m <sup>2</sup> h		28,000 ft <sup>2</sup> / 2,600m <sup>2</sup> h
<b>DRIVE SYSTEM</b>	Brush Assisted	Transaxle, 0.27 hp / 0.2KW		
<b>TRAVEL SPEED, MAXIMUM</b>	N/A	246 ft / Min 75 m / Min		
<b>MINIMUM AISLE TURN</b>	63 in / 1,600 mm			
<b>PAD/BRUSH PRESSURE</b>	65 lbs / 30 Kg Min 100 lbs / 45 Kg Max			
<b>SOLUTION FLOW RATE</b>	0 ~ 0.37 Gal / Min 0 ~ 1,400 ml / Min			
<b>BRUSH MOTOR</b>	0.75hp / 0.55KW 220 RPM		0.75hp / 0.55KW 2,200RPM	0.9hp / 0.68KW 2,000RPM
<b>VIBRATIONS @ CONTROLS</b>	N/A		< 2.5 m / s <sup>2</sup> < 8.2 ft / s <sup>2</sup>	N/A
<b>VACUUM MOTOR</b>	0.7hp / 0.5KW			
<b>WATER LIFT - AIR FLOW</b>	45 in / 1,143 mm			
<b>BATTERIES</b>	2- 12, 130AH @ 20 hr			
<b>RUN TIME PER CHARGE</b>	3.5 Hours	3 Hours		
<b>VOLTAGE DC</b>	24V			
<b>DECIBEL RATE AT OPERATOR'S EAR, INDOORS</b>	68dB(A)		<70dB(A)	68dB(A)
<b>GRADE LEVEL, MAX</b>	5% (3°)			

RECOVERY TANK GROUP

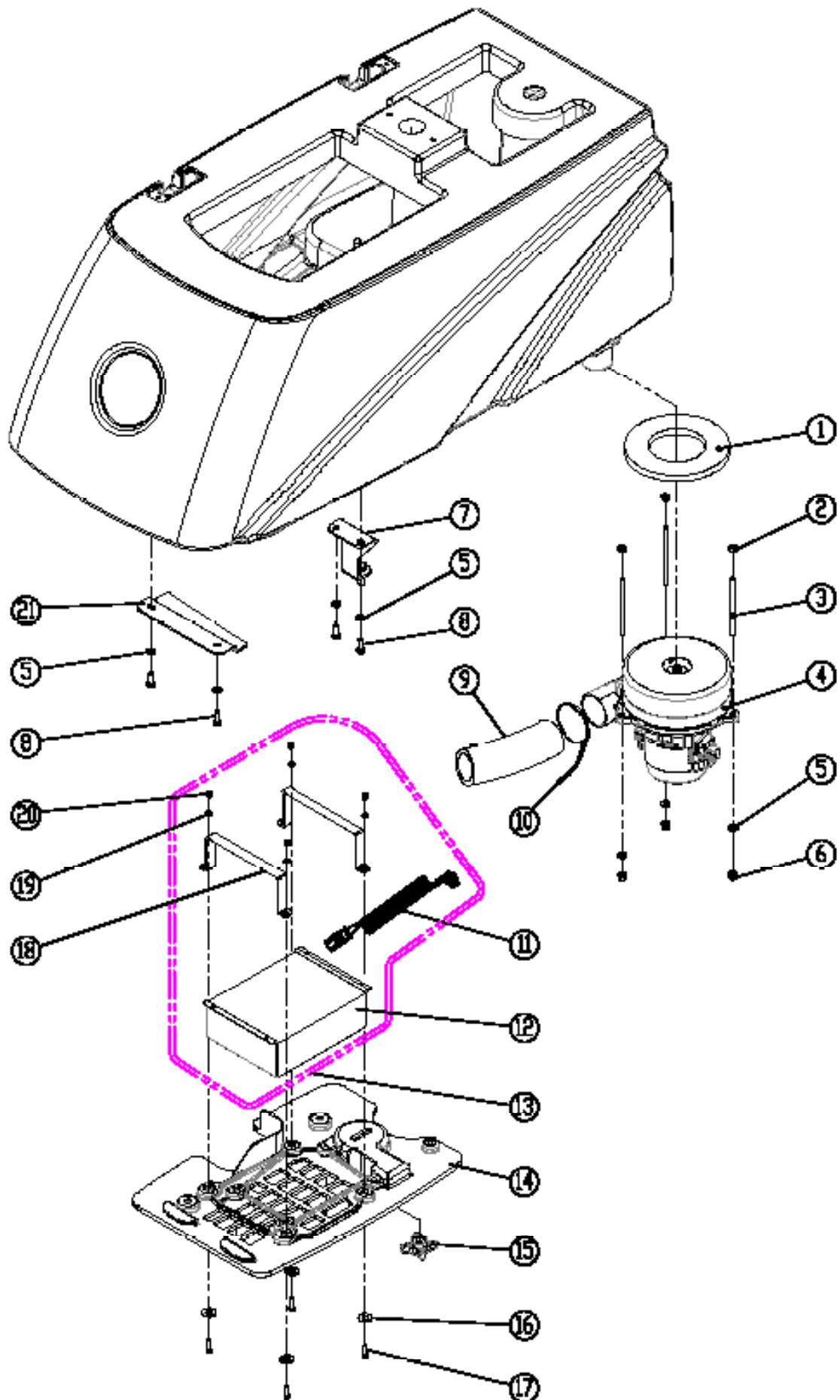


# PARTS LIST

## RECOVERY TANK GROUP

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8111022	000101-	WARNING LABEL	1
2	8131002	000101-	RECOVERY TANK COVER	1
3	8131005	000165-001099 for i20NB	RECOVERY TANK COVER SEAL	1
		000187-000776 for i20NBT		
		000139-000482 for i24BT		
	8131005-2	001010- for i20NB		
		000777- for i20NBT		
		000483- for i24BT		
4	1021616	000101-	HEX BOLT M6 X 16	12
5	1421618	000101-	FLAT WASHER M6× $\phi$ 18×1.6	10
6	8111014	000101-	FLOAT ADAPTER	1
7	8111001	000101-	GASKET	1
8	8111015	000101-	FLOAT, SHUT-OFF	1
9	8131003	000101-	CAP	1
10	8131001	000101-	RECOVERY TANK	1
11	8131010	000101-	DRAIN HOSE	1
12	1962050	000101-	CLAMP	1
13	8111300	000101-	HINGE ASSEMBLY	2
14	8131020	000101-	CABLE	1
15	1421612	000101-	FLAT WASHER M6× $\phi$ 12×1.6	2
16	8111024	000101-	LABEL, BATTERY INSTALLATION	1
17	4010316	000101-	ICE LOGO	1
18	8111008	000101-	BRACKET	1
19	1421816	000101-	FLAT WASHER M8× $\phi$ 16×1.6	2
20	8111007	000101-	RECOVERY TANK SUPPORT	1
21	8115404	000101-	SLEEVE, P/M	1
22	1021830	000101-	HEX BOLT M8×30	1
23	8111016	000101-	PLATE	2
24	1221412	000101-	SCREW M4×12	2

**VACUUM FAN GROUP**



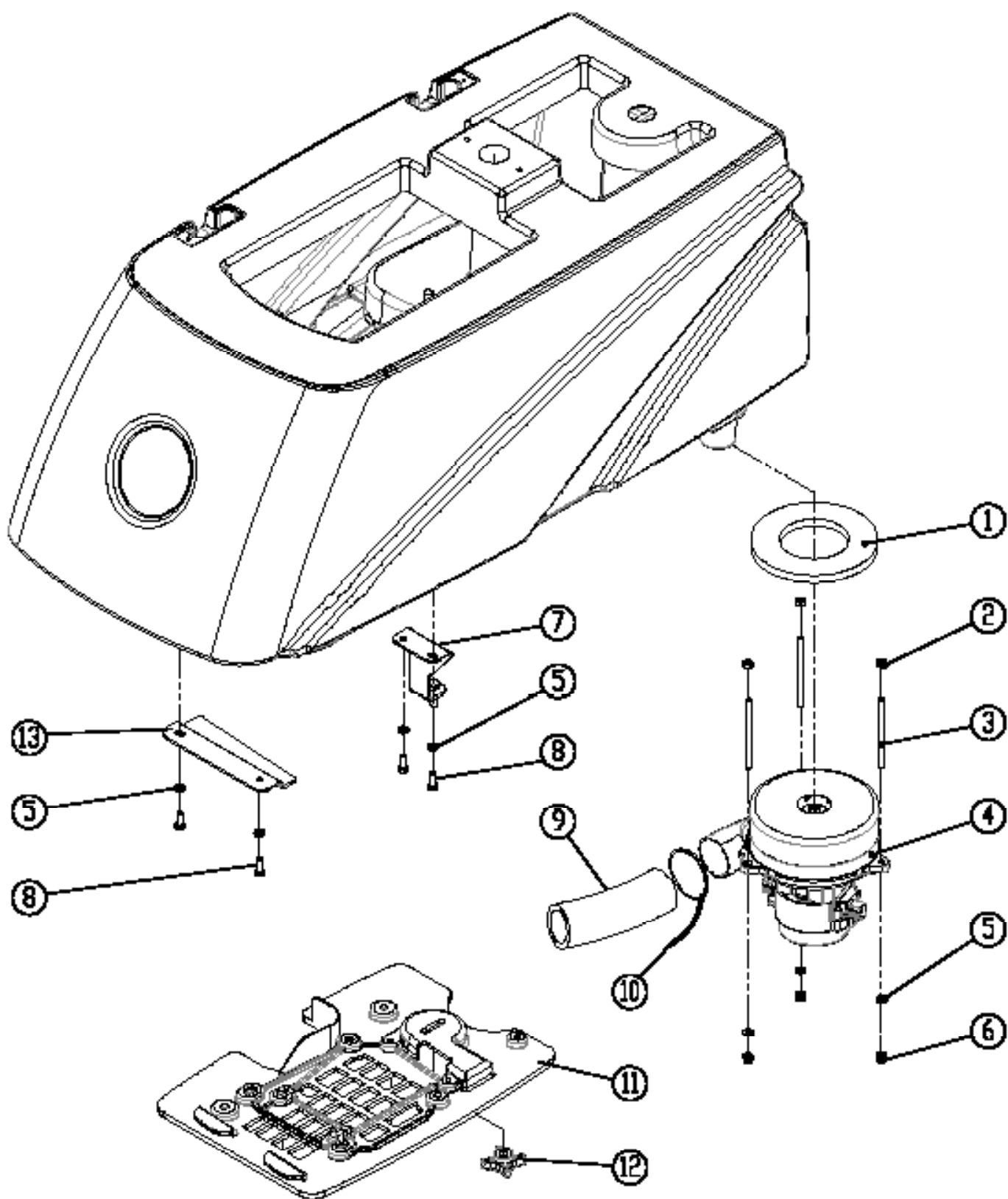


# PARTS LIST

## VACUUM FAN GROUP

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8112005	000101-	GASKET, VACUUM MOTOR	1
2	1121605	000101-	HEX NUT M6	3
3	8112006	000101-	STUD M6×92	3
4	8116500	000165-000511 for i20NB	AMETEK VACUUM MOTOR , KIT, 24VDC	1
		000187-000448 for i20NBT		
		000139-000281 for i24BT		
	8132005	000512- for i20NB	CARBON BRUSH, 24VDC VACUUM MOTOR	1
		000449 - for i20NBT		
		000282- for i24BT		
5	1421612	000101-	FLAT WASHER M6× $\phi$ 12×1.6	7
6	1123608	000101-	LOCK NUT M6	3
7	8112003	000101-	BRACKET	1
8	1021616	000101-	HEX HEAD BOLT M6×16	4
9	8132007	000101-	MUFFLER, VACUUM MOTOR	1
10	1914300	000101-	TIE, NYLON, 5X300	2
11	8112030	000101-	POWER CORD, BATTERY CHARGER, US	1
12	8132010A	000101-	ON BOARD BATTERY CHARGER, 13A	1
13	8132020-US	000165-000527 for i20NB	ON BOARD BATTERY CHARGER, KIT, US	1
		000187-000603 for i20NBT		
		000139-000321 for i24BT		
14	8112001	000101-	CHARGER COVER	1
15	8118003	000101-	KNOB M8	1
16	1421515	000101-	FLAT WASHER M5× $\phi$ 16×1.0	4
17	1221516	000101-	PAN HEAD SCREW M5X16	4
18	8131008	000101-	CLAMP, ON BOARD BATTERY CHARGER	2
19	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1.0	4
20	1123507	000101-	LOCK NUT M5	4
21	8112004	000101-	BRACKET	1

VACUUM FAN GROUP

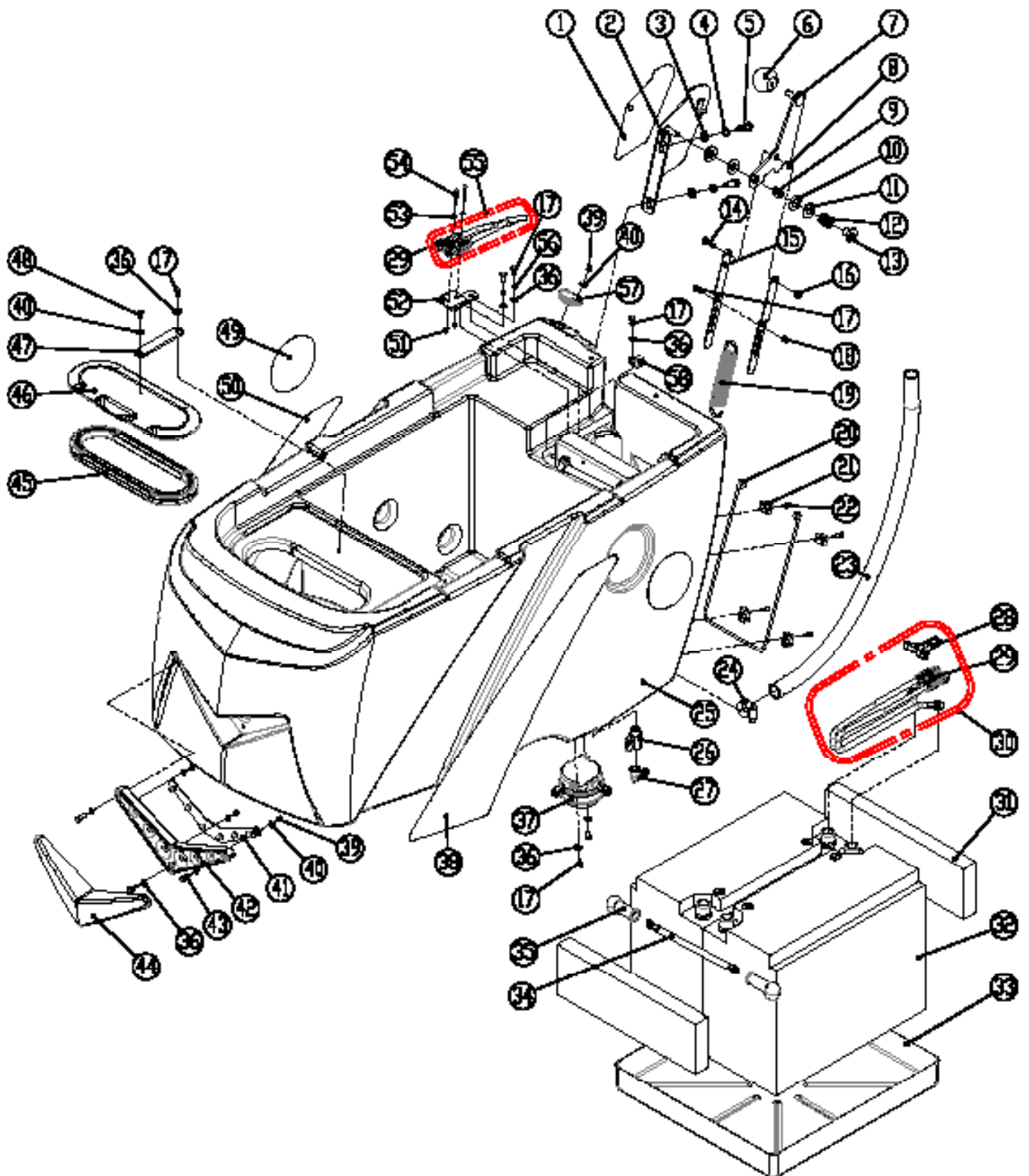


# PARTS LIST

## VACUUM FAN GROUP

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8112005		GASKET, VACUUM MOTOR	1
2	1121605		HEX NUT M6	3
3	8112006		STUD M6×92	3
4	8132050	000165-000511 for i20NB	AMETEK VACUUM MOTOR , KIT, 24VDC	1
		000187-000448 for i20NBT		
		000139-000281 for i24BT		
	8132006	000512- for i20NB	CARBON BRUSH, 24VDC VACUUM MOTOR	1
		000449 - for i20NBT		
		000282- for i24BT		
5	1421612		FLAT WASHER M6× $\phi$ 12×1.6	7
6	1123608		LOCK NUT M6	3
7	8112003		BRACKET	1
8	1021616		HEX BOLT M6×16	4
9	8132007		MUFFLER, VACUUM MOTOR	1
10	1914300		TIE, NYLON, 5X300	2
11	8112001		CHARGER COVER	1
12	8118003		KNOB M8	1
13	8112004		BRACKET	1

SOLUTION TANK GROUP



# PARTS LIST

## SOLUTION TANK GROUP

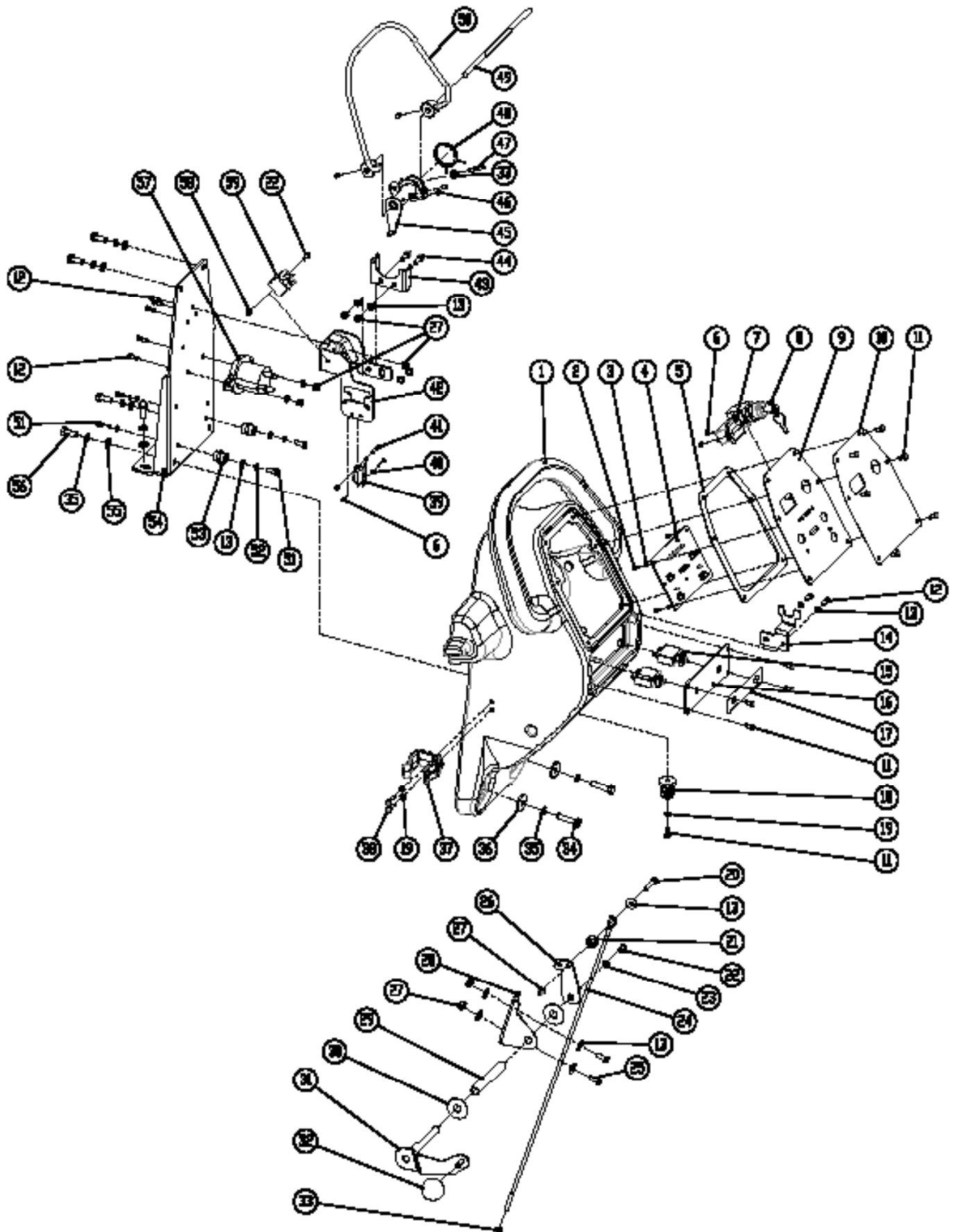
DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8113115	000101-	DOWN PRESSURE LABEL	1
2	8113101	000101-	DOWN PRESSURE LEVER BRACKET	1
3	1421816	000101-	FLAT WASHER M8× $\phi$ 16×1.6	2
4	1422821	000101-	LOCK WASHER M8	2
5	1021820	000101-	HEX BOLT M8×20	2
6	8113104	000101-	BALL KNOB	1
7	8113106	000101-	DOWN PRESSURE LEVER	1
8	8113112	000101-	BUSHING	1
9	8113110	000101-	SLEEVE, P/M	1
10	8113111	000101-	NYLON FLAT WASHER $\phi$ 12.9× $\phi$ 25.4×0.8	2
11	8113109	000101-	THRUST BEARING	2
12	8113114	000101-	SPRING	1
13	8113107	000101-	RETAINER, SPRING	1
14	8113103	000101-	BOLT M6×18	1
15	8113108	000101-	LINK, SPRING	2
	8133108	000101-	LINK, SPRING, ORBITAL HEAD MODEL	2
16	1123608	000101-	LOCK NUT M6	1
17	1221512	000101-	SCREW M5×12	15
18	1123507	000101-	LOCK NUT M5	1
19	8133113	000101-	SPRING	1
20	8133501	000101-	CARGO NET	1
21	8133502	000101-	CLAMP	4
22	1221412	000101-	SCREW M4X12	4
23	8133008	000528- for i20NB	CLEAN TUBING	1
		000604- for i20NBT		
		000322- for i24BT		
		000165-00527 for i20NB		
		000187-000603 for i20NBT		
		000139-000321 for i24BT		
24	1962025	000101-	CLAMP 16-25mm	1
25	8133001	000101-	SOLUTION TANK	1
26	8119005	000101-	BALL VALVE, G1/2	1
27	8119007	000101-	ELBOW G1/2	1
28	8113021	000101-	HANDLE, CONNECTOR	1
29	8113020	000101-	CONNECTOR	2

## PARTS LIST

### SOLUTION TANK GROUP

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
30	8114731	000101-	BATTERY CONNECT CABLE, ASSEMBLY	1
31	8113013	000101-	SPACER, BATTERY	2
32	8113011	000101-	BATTERY, 12TB115, 115AH, HOPPECKE	2
	8133010	000101-	BATTERY, 6-EVF-100, 110AH, CHILWEE	2
	8133020	000101-	BATTERY, EV12A-A, 120AH, DISCOVER	2
34	8114750	000101-	BATTERY CONNECT CABLE, BLACK	1
35	8114751	000101-	JACKET, BATTERY TERMINAL, BLACK	4
36	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1	17
37	8119100	000101-	FILTER ASSEMBLY	1
38	8133025	000101-	LABEL, LEFT SIDE	1
39	1321110	000101-	SELF-TAPPING SCREW ST3.5 ×10	4
40	1421409	000101-	FLAT WASHER M4× $\phi$ 9×0.8	5
41	8133610	000101-	LED LIGHT, KIT	1
42	8133601	000101-	LED LIGHT MNTG BASE	1
43	1221520	000101-	SCREW M5X20	3
44	8133602	000101-	LED LIGHT COVER	1
45	8113030	000101-	SEAL	1
46	8113002	000101-	COVER	1
47	8113007	000101-	STRAP	1
48	1321213	000101-	SELF-TAPPING SCREW ST4.2X13	1
49	4010316	000101-	ICE Logo	2
50	8133026	000101-	LABEL, RIGHT SIDE	1
51	1123305	000101-	LOCK NUT M3	2
52	8113010	000101-	BRACKET, CONNECTOR MTG	1
53	1434300	000101-	LOCK WASHER, TOOTH, M3	2
54	1211325	000101-	SCREW M3×25	2
55	8134783	000101-	BATTERY CONNECT CABLE, ASSEMBLY	1
56	1422513	000101-	LOCK WASHER M5	2
57	8133002	000101-	CAP, SOLUTION FILL	1
58	8113009	000101-	NYLON, CLAMP	9

CONTROL CONSOLE GROUP (i20NB)



## PARTS LIST

### CONTROL CONSOLE GROUP (i20NB)

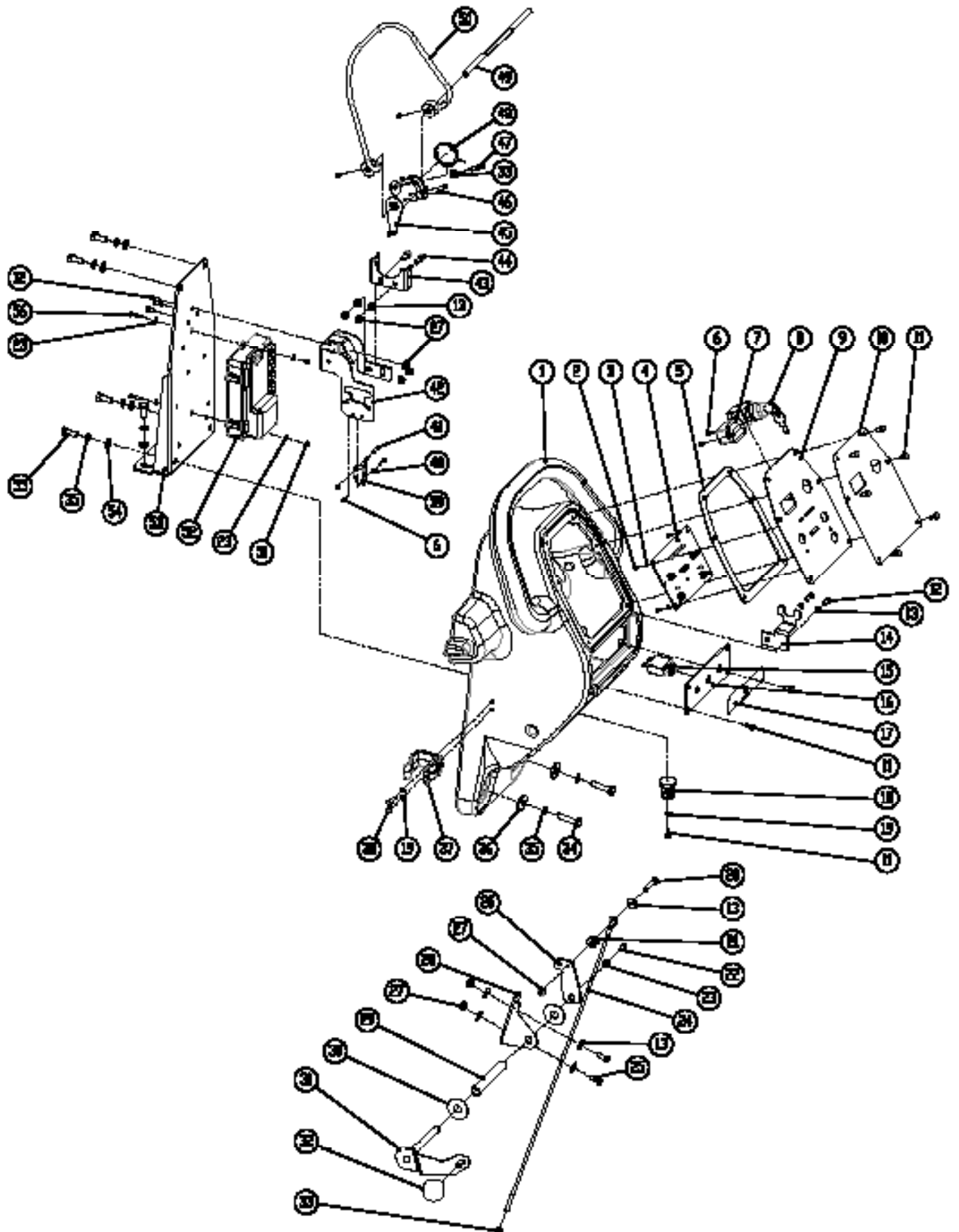
DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8134001	000101-	CONTROL CONSOLE HOUSING	1
2	1221306	000101-	PAN HEAD SCREW M3×6	5
3	1421307	000101-	FLAT WASHER M3× $\phi$ 7×0.5	5
4	8114701	000165-000270	PCB ASSEMBLY	1
5	8134015	000101-	GASLET	1
6	1123305	000101-	LOCK NUT M3	4
7	8114710	000101-	TIMER	1
8	8114709	000101-	KEY SWITCH	1
9	8134010	000101-	CONTROL PANEL	1
10	8134014	000101-	CONTROL PANEL DECAL, I20NB	1
11	1221512	000101-	PAD SCREW M5×12	12
12	1021616	000101-	HEX HEAD BOLT M6 X 16	7
13	1421618	000101-	PLAIN WASHER M6× $\phi$ 18×1.6, SS	15
14	8114008	000101-	BRACKET, SQGE STORAGE	1
15	8114703	000101-	CIRCUIT BREAKER, 35A	2
16	8134006	000101-	PLATE, CIRCUIT BREAKERS MNTG	1
17	8144021	000101-	LABEL, CIRCUIT BREAKER	1
18	8114005	000101-	CONNECTOR	1
19	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1.0	3
20	1021630	000101-	HEX HEAD BOLT M6×30,SS	1
21	8014101	000101-	LIFTING ROPE SPACER	1
22	1021512	000101-	HEX HEAD BOLT M5×12,SS	2
23	1421515	000101-	FLAT WASHER M5× $\phi$ 15×1.0	1
24	8134013	000165-000527	CABLE, SQGE LIFT	1
25	1021620	000101-	HEX HEAD BOLT M6×20,SS	2
26	8014012	000101-	BAFFLE	1
27	1123608	000101-	LOCK NUT M6	10
28	8134501	000101-	BRACKET	1
29	8134508	000101-	SLEEVE	1
30	1421132	000101-	FLAT WASHER M12× $\phi$ 32×1.5	2
31	8014010	000101-	SQUEEGEE LIFTING HANDLE	1
32	8113104	000101-	BALL KNOB M8	1
33	1121605	000101-	HEX NUT M6	2
34	1021840	000101-	HEX HEAD BOLT M8×40	2



## PARTS LIST

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
35	1422821	000101-	LOCK WASHER M8	8
36	1421828	000101-	FLAT WASHER M8× $\phi$ 28×3	2
37	6210111	000101-	CLAMP, DRAIN HOSE	1
38	1221515	000101-	PAN HEAD SCREW M5×15	2
39	8114712	000101-	MICRO SWITCH	1
40	1434300	000101-	LOCK WASHER, TOOTH, M3	2
41	1021320	000101-	HEX HEAD SCREW M3×20	2
42	8134022	000101-	BRACKET, SWITCH	1
43	8114402	000101-	BRACKET, SPRING	1
44	1521616	000101-	SCREW M6X16, HEX SCOKET	2
45	8114300	000101-	ACTUATOR	1
46	1534608	000101-	SET SCREW M6 ×8	4
47	1535630	000101-	SET SCREW M6 ×30	1
48	8114306	000101-	SPRING	1
49	8114101	000101-	SHAFT	1
50	8134300	000101-	LEVER, BAIL	1
51	1021610	000101-	HEX HEAD BOLT M6 X 10	4
52	1422616	000101-	LOCK WASHER, M6	4
53	8114705	000101-	STAND-OFF, M6	2
54	8134021	000101-	REAR PLATE, CONTROL CONSOLE	1
55	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2	6
56	1021820	000101-	HEX HEAD BOLT M8×20	6
57	8124704	000165-000270	SOLENOID SWITCH	1
58	1123507	000101-	LOCK NUT M5	1
59	8114707	000165-000270	RELAY, 40A	1

CONTROL CONSOLE GROUP (i20NB)



**PARTS LIST****CONTROL CONSOLE GROUP (i20NB)**

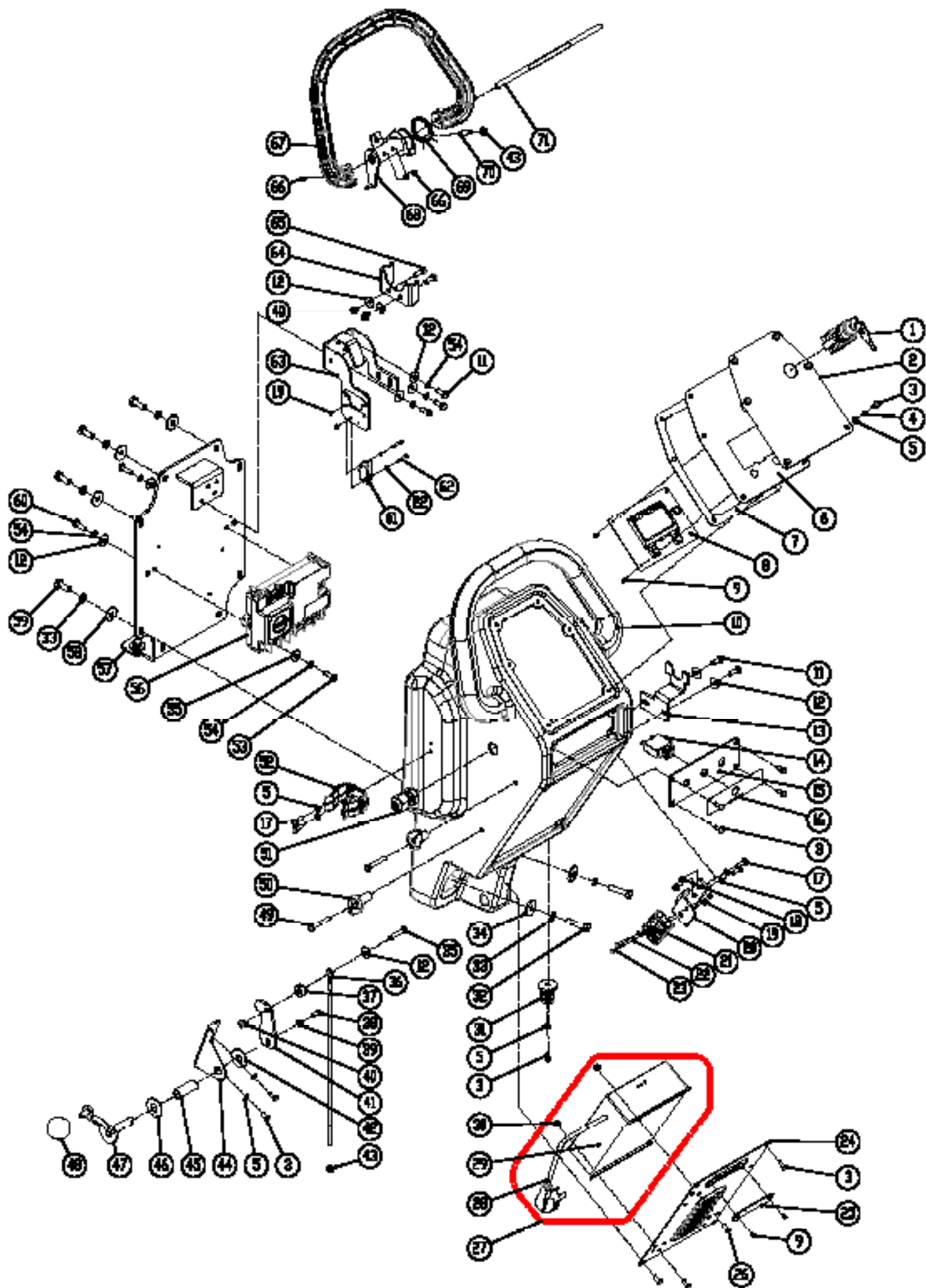
<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	8134001		CONTROL CONSOLE HOUSING	1
2	1221306		SCREW M3×6	5
3	1421307		FLAT WASHER M3× $\phi$ 7×0.5	5
4	8134702	000271-000527	PCB ASSEMBLY	1
5	8134015		GASKET	1
6	1123305		LOCK NUT M3	4
7	8114710		TIMER	1
8	8114709		KEY SWITCH	1
	8114752		KEY	1
9	8134010		CONTROL PANEL	1
10	8134014		CONTROL PANEL DECAL, i20NB	1
11	1221512		SCREW M5×12	12
12	1021616		HEX BOLT M6 X 16	7
13	1421618		PLAIN WASHER M6× $\phi$ 18×1.6,SS	8
14	8114008		BRACKET, SQGE STORAGE	1
15	8310740		CIRCUIT BREAKER, 5A	1
16	8134006		PLATE, CIRCUIT BREAKERS MNTG	1
17	8144025		LABEL, CIRCUIT BREAKER	1
18	8114005		CONNECTOR	1
19	1421510		FLAT WASHER M5× $\phi$ 10×1.0	3
20	1021630		HEX HEAD BOLT M6×30,SS	1
21	8014101		LIFTING ROPE SPACER	1
22	1021512		HEX HEAD BOLT M5×12,SS	2
23	1421515		FLAT WASHER M5× $\phi$ 15×1.0	5
24	8134013	000165-000527	CABLE, SQGE LIFT	1
25	1021620		HEX HEAD BOLT M6×20,SS	2
26	8014012		BAFFLE	1
27	1123608		LOCK NUT M6	10
28	8134501		BRACKET	1
29	8134508		SLEEVE	1
30	1421132		FLAT WASHER M12× $\phi$ 32×1.5	2
31	8014010		SQUEEGEE LIFTING HANDLE	1
32	8113104		BALL KNOB M8	1
33	1121605		HEX NUT M6	2

## PARTS LIST

### CONTROL CONSOLE GROUP (i20NB)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
34	1021840		HEX BOLT M8×40	2
35	1422821		LOCK WASHER M8	8
36	1421828		FLAT WASHER M8× $\phi$ 28×3	2
37	6210111		CLAMP, DRAIN HOSE	1
38	1221515		PH SCREW M5×15	2
39	8114712		MICRO SWITCH	1
40	1434300		LOCK WASHER, TOOTH, M3	2
41	1021320		SCREW M3×20	2
42	8134022		BRACKET, SWITCH	1
43	8114402		BRACKET, SPRING	1
44	1521616		SCREW M6X16, HEX SCOKET	2
45	8114300		ACTUATOR	1
46	1534608		SET SCREW M6 ×8	4
47	1535630		SET SCREW M6 ×30	1
48	8114306		SPRING	1
49	8114101		SHAFT	1
50	8134300		LEVER, BAIL	1
51	1123507		LOCK NUT M5	2
52	8134701	000271-000527	MAIN CONTROLLER	1
53	8134021		REAR PLATE, CONTROL CONSOLE	1
54	1421824		FLAT WASHER M8× 24×2	6
55	1021820		HEX BOLT M8×20	6
56	1221525		PH SCREW M5 X 25	2

CONTROL CONSOLE GROUP ( i20NB )



# PARTS LIST

## CONTROL CONSOLE GROUP ( i20NB )

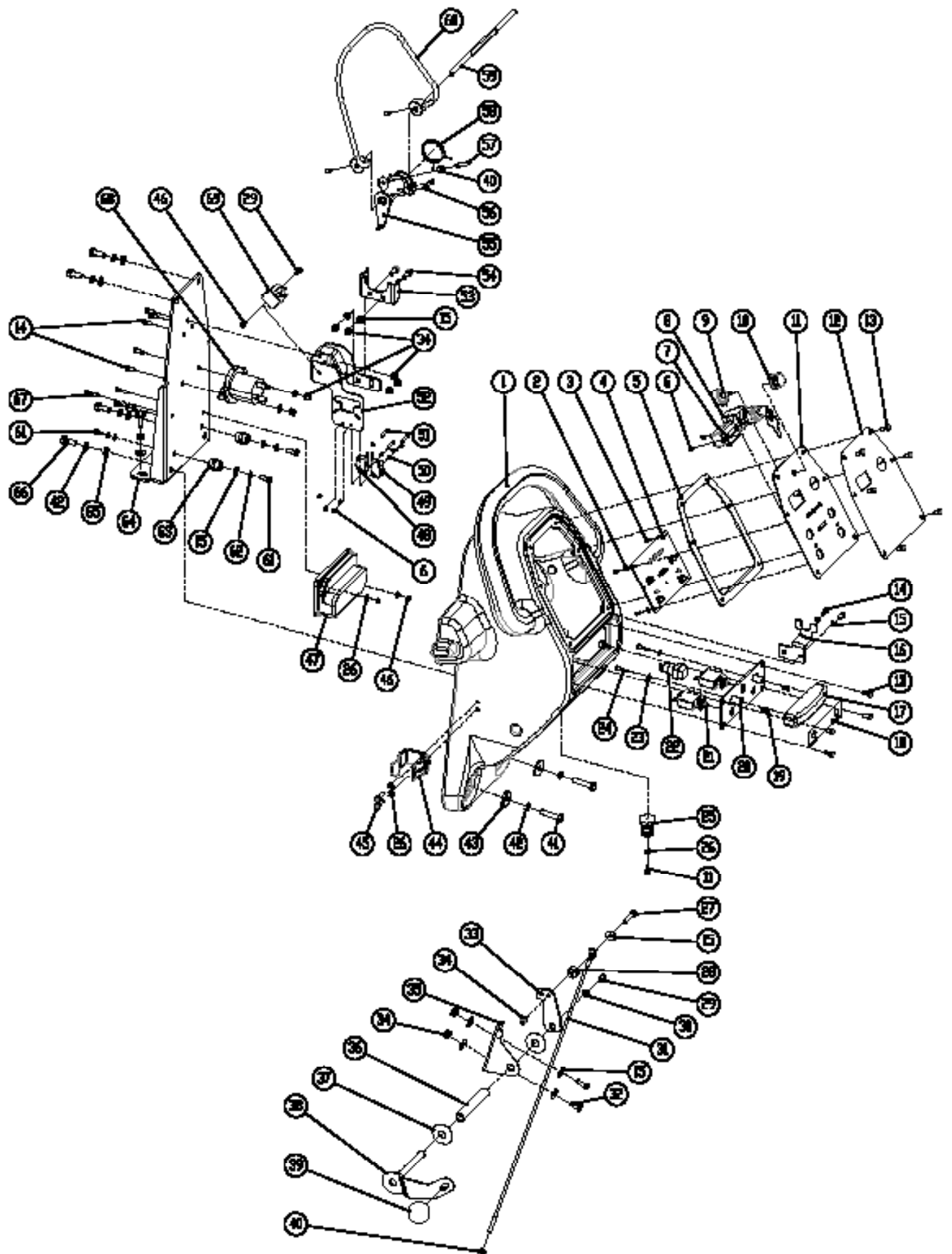
DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8114709		KEY SWITCH	1
	8114752		KEY	1
2	8134724		CONTROL PANEL DECAL, i20NB	1
3	1221512		SCREW M5×12	17
4	1422513		LOCK WASHER M5	6
5	1421510		FLAT WASHER M5× $\phi$ 10×1.0	13
6	8134720		CONTROL PANEL, i20NB	1
7	8134015		GASKET	1
8	8134734	00528-	CONTROL PANEL PCB, i20NB (AGM / EN)	1
	8134736		CONTROL PANEL PCB, i20NBT(WET FLOODED/ EN)	1
9	1221306		SCREW M3×6	7
10	8134005A		CONTROL HOUSING, i20NB	1
11	1021616		HEX BOLT M6 X 16	5
12	1421618		PLAIN WASHER M6× $\phi$ 18×1.6,SS	10
13	8114008		BRACKET, SQGE STORAGE	1
14	8310740		CIRCUIT BREAKER, 5A	1
15	8134006		PLATE, CIRCUIT BREAKERS MNTG	1
16	8144025		LABEL, CIRCUIT BREAKER	1
17	1221515		PH SCREW M5×15	4
18	1123507		LOCK NUT M5	2
19	1123305		LOCK NUT M3	4
20	8113010		BRACKET, CONNECTOR MTG	1
21	8113020		CONNECTOR	1
22	1434300		LOCK WASHER, TOOTH, M3	4
23	1211325		SCREW M3×25	2
24	8134060		PLATE, ON BOARD BATTERY CHARGER	1
25	8134061		CLEAR COVER	1
26	1221412		SCREW M4×12	4
27	8132010-US	000528-000999	ON BOARD BATTERY CHARGER,KIT	1
28	8112030A		BATTERY CHARGER POWER CORD, KIT	1
29	8132010A		ON BOARD BATTERY CHARGER	1
30	1123406		LOCK NUT M4	4
31	8114005		CONNECTOR	1
32	1021840		HEX BOLT M8×40	2
33	1422821		LOCK WASHER M8	12
34	1421828		FLAT WASHER M8× $\phi$ 28×3	2
35	1021630		HEX HEAD BOLT M6×30,SS	1

## PARTS LIST

### CONTROL CONSOLE GROUP ( i20NB )

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
36	8134082	000528-	CABLE, SQGE LIFT	1
37	8014101		LIFTING ROPE SPACER	1
38	1021512		HEX HEAD BOLT M5×12,SS	1
39	1421515		FLAT WASHER M5× $\phi$ 15×1.0	1
40	1123608		LOCK NUT M6	3
41	8014012		BAFFLE	1
42	8113111		NYLON FLAT WASHER $\phi$ 12.9× $\phi$ 25.4×0.8	1
43	1121605		HEX NUT M6	2
44	8134501		BRACKET	1
45	8134081		SLEEVEE	1
46	1421132		FLAT WASHER M12× $\phi$ 32×1.5	1
47	8134080		SQUEEGEE LIFTING HANDLE	1
48	8113104		BALL KNOB M8	1
49	1222641		SUNK HEAD SCREW M6 X 40	2
50	8210112		HOOK, POWER CORD	2
51	8014054		STRAIN RELIEF	1
52	6210111		CLAMP, DRAIN HOSE	1
53	1023612		HEX BOLT M6 X 12, COPPER	6
54	1422616		LOCK WASHER, M6	11
55	1423612		FLAT WASHER M6× $\phi$ 12×1, COPPER	6
56	8134790	000528-	MAIN CONTROLLER, i20NB	1
57	8134070		REAR PLATE, CONTROL CONSOLE	1
58	1421824		FLAT WASHER M8× $\phi$ 24×2	10
59	1021820		HEX BOLT M8×20	10
60	1221620		PH SCREW M6 X 20	2
61	8114712		MICRO SWITCH	1
62	1021320		SCREW M3 X 20	2
63	8134022		BRACKET,SWITCH	1
64	8114402		BRACKET, SPRING	1
65	1521616		SCREW M6X16, HEX SCOKET	2
66	1534608		SET SCREW M6 ×8	4
67	8134300		LEVER, BAIL	1
68	8114300		ACTUATOR	1
69	8114306		SPRING	1
70	1535630		SET SCREW M6 ×30	1
71	8114101		SHAFT	1

CONTROL CONSOLE GROUP (i20NB/i24BT)





# PARTS LIST

## CONTROL CONSOLE GROUP (i20NBT/i24BT)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8134001	000101-	CONTROL CONSOLE HOUSING	1
2	1421307	000101-	FLAT WASHER M3× $\phi$ 7×0.5	5
3	1221306	000101-	SCREW M3×6	5
4	8124701	000187-000603 for i20NBT	PCB ASSEMBLY	1
		000139-000321 for i24BT		
5	8134015	000101-	GASLET	1
6	1123305	000101-	LOCK NUT M3	6
7	8114710	000101-	TIMER	1
8	8114709	000101-	KEY SWITCH	1
	8114752	000101-	KEY	1
9	8124717A	000101-	POTENTIOMETER, KIT	1
10	8124718	000101-	KNOB, POTENTIOMETER	1
11	8144010	000101-	CONTROL PANEL	1
12	8144014	000101-	CONTROL PANEL DECAL, i20NBT	1
	8144015	000101-	CONTROL PANEL DECAL, i24BT	1
13	1221512	000101-	SCREW M5×12	12
14	1021616	000101-	HEX BOLT M6 X 16	7
15	1421618	000101-	PLAIN WASHER M6× $\phi$ 18×1.6,SS	15
16	8114008	000101-	BRACKET, SQGE STORAGE	1
17	8124007	000101-	BUTTON,EMERGENCY STOP	1
18	8144022	000101-	LABEL, CIRCUIT BREAKER	1
19	8124008	000101-	SPRING	2
20	8144030	000101-	BASE, CIRCUIT BREAKERS MNTG	1
21	8114703	000101-	CIRCUIT BREAKER, 35A	3
22	8124715A	000101-	EMERGENCY STOP SWITCH, KIT	1
23	1421409	000101-	FLAT WASHER M4× $\phi$ 9×0.8	2
24	1221421	000101-	SCREW M4×20	2
25	8114005	000101-	CONNECTOR	1
26	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1.0	5
27	1021630	000101-	HEX HEAD BOLT M6×30,SS	1
28	8014101	000101-	LIFTING ROPE SPACER	1
29	1021512	000101-	HEX HEAD BOLT M5×12,SS	2
30	1421515	000101-	FLAT WASHER M5× $\phi$ 15×1.0	1
31	8134013	000187-000603 for i20NBT	CABLE, SQGE LIFT	1
		000139-000321 for i24BT		
32	1021620	000101-	HEX HEAD BOLT M6×20,SS	2

## PARTS LIST

### CONTROL CONSOLE GROUP (i20NBT/i24BT)

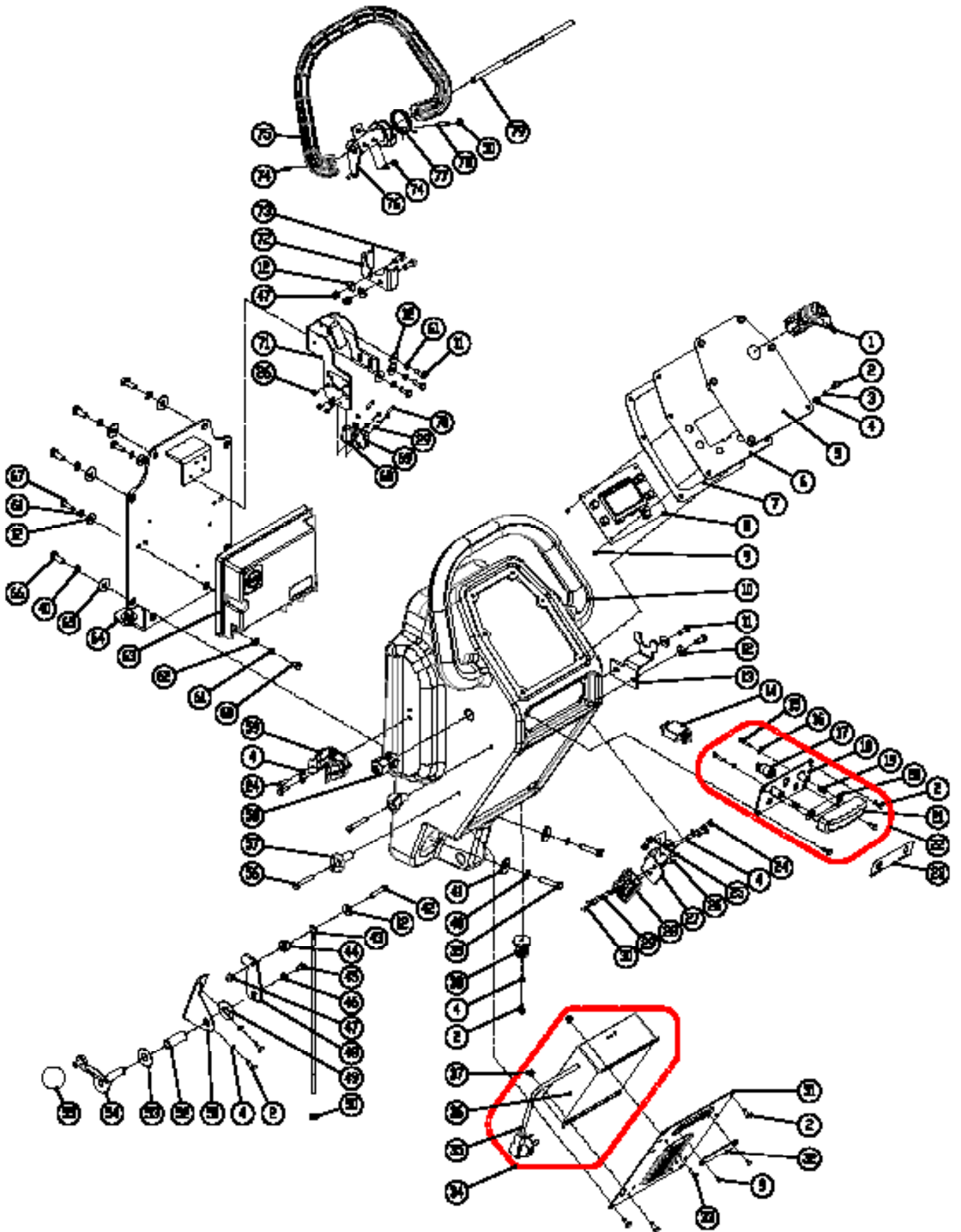
DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
33	8014012	000101-	BAFFLE	1
34	1123608	000101-	LOCK NUT M6	10
35	8134501	000101-	BRACKET	1
36	8134508	000101-	SLEEVE	1
37	1421132	000101-	FLAT WASHER M12× $\phi$ 32×1.5	2
38	8014010	000101-	SQUEEGEE LIFTING HANDLE	1
39	8113104	000101-	BALL KNOB M8	1
40	1121605	000101-	HEX NUT M6	2
41	1021840	000101-	HEX HEAD BOLT M8×40	2
42	1422821	000101-	LOCK WASHER M8	8
43	1421828	000101-	FLAT WASHER M8× $\phi$ 28×3	2
44	6210111	000101-	CLAMP, DRAIN HOSE	1
45	1221515	000101-	PAN HEAD SCREW M5×15	2
46	1123507	000101-	LOCK NUT M5	3
47	8124501	000187-000603 for i20NBT 000139-000321 for i24BT	SPEED CONTROL BOARD	1
48	8124743	000101-	MICRO SWITCH	1
49	8114712	000101-	MICRO SWITCH	1
50	1434300	000101-	LOCK WASHER, TOOTH, M3	4
51	1021320	000101-	HEX HEAD SCREW M3×20	4
52	8134022	000101-	BRACKET, SWITCH	1
53	8114402	000101-	BRACKET, SPRING	1
54	1521616	000101-	SCREW M6X16, HEX SCOKET	2
55	8114300	000101-	ACTUATOR	1
56	1534608	000101-	SET SCREW M6 ×8	4
57	1535630	000101-	SET SCREW M6 ×30	1
58	8114306	000101-	SPRING	1
59	8114101	000101-	SHAFT	1
60	8134300	000101-	LEVER, BAIL	1
61	1021610	000101-	HEX HEAD BOLT M6 × 10	4
62	1422616	000101-	LOCK WASHER, M6	4
63	8114705	000101-	STAND-OFF, M6	2
64	8134021	000101-	REAR PLATE, CONTROL CONSOLE	1
65	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2	6
66	1021820	000101-	HEX HEAD BOLT M8×20	6

## **PARTS LIST**

### **CONTROL CONSOLE GROUP (i20NBT/i24BT)**

<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
67	1021535	000101-	HEX HEAD BOLT, M5 × 35	2
68	8124704	000187-000603 for i20NBT	SOLENOID SWITCH	1
		000139-000321 for i24BT		
69	8114707	000187-000603 for i20NBT	RELAY, 40A	1
		000139-000321 for i24BT		

CONTROL CONSOLE GROUP ( i20NBT /i24BT )



# PARTS LIST

## CONTROL CONSOLE GROUP ( i20NBT /i24BT )

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8114709		KEY SWITCH	1
	8114752		KEY	1
2	1221512		SCREW M5×12	17
3	1422513		LOCK WASHER M5	6
4	1421510		FLAT WASHER M5× $\phi$ 10×1.0	13
5	8144724		CONTROL PANEL DECAL, i20NBT	1
	8144725		CONTROL PANEL DECAL, i24BT	1
6	8144720		CONTROL PANEL, i20NBT	1
7	8134015		GASKET	1
8	8144795	000604- for i20NBT	CONTROL PANEL PCB, i20NBT (AGM / EN)	1
		000322- for i24BT		
	8144797	000604- for i20NBT	CONTROL PANEL PCB, i20NBT (WET FLOODED / EN)	1
		000322- for i24BT		
9	1221306		SCREW M3×6	7
10	8134005A		CONTROL HOUSING, i20NB	1
11	1021616		HEX BOLT M6 X 16	5
12	1421618		PLAIN WASHER M6× $\phi$ 18×1.6,SS	10
13	8114008		BRACKET, SQGE STORAGE	1
14	8310740		CIRCUIT BREAKER, 5A	1
15	1221421		SCREW M4×20	2
16	1421409		FLAT WASHER M4× $\phi$ 9×0.8	2
17	8124715A		EMERGENCY STOP SWITCH, KIT	1
18	8144030		BASE, CIRCUIT BREAKERS MNTG	1
19	8124008		SPRING	2
20	8124716		LED LIGHT	1
21	8124007		BUTTON,EMERGENCY STOP	1
22	8124710		EMERGENCY STOP SWITCH KIT	1
23	8144025		LABEL, CIRCUIT BREAKER	1
24	1221515		PH SCREW M5×15	4
25	1123507		LOCK NUT M5	6
26	1123305		LOCK NUT M3	6
27	8113010		BRACKET, CONNECTOR MTG	1
28	8134750		CONNECTOR, GRID, BLUE	1
29	1434300		LOCK WASHER, TOOTH, M3	6
30	1211325		SCREW M3×25	2
31	8134060		PLATE, ON BOARD BATTERY CHARGER	1
32	8134061		CLEAR COVER	1
33	1221412		SCREW M4×12	4
34	8132010-US	000604-000820 for i20NBT	ON BOARD BATTERY CHARGER,KIT	1
		000322-000482 for i24BT		
35	8112030A		BATTERY CHARGER POWER CORD, KIT	1
36	8132010A		ON BOARD BATTERY CHARGER	1

# PARTS LIST

## CONTROL CONSOLE GROUP ( i20NBT / i24BT )

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
37	1123406		LOCK NUT M4	4
38	8114005		CONNECTOR	1
39	1021840	T	HEX BOLT M8×40	2
40	1422821		LOCK WASHER M8	12
41	1421828		FLAT WASHER M8× $\phi$ 28×3	2
42	1021630		HEX HEAD BOLT M6×30,SS	1
43	8134082	000604- f0r i20NBT	CABLE, SQGE LIFT	1
		000322- f0r i24BT		
44	8014101		LIFTING ROPE SPACER	1
45	1021512		HEX HEAD BOLT M5×12,SS	1
46	1421515		FLAT WASHER M5× $\phi$ 15×1.0	1
47	1123608		LOCK NUT M6	3
48	8014012		BAFFLE	1
49	8113111		NYLON FLAT WASHER $\phi$ 12.9× $\phi$ 25.4×0.8	1
50	1121605		HEX NUT M6	2
51	8134501		BRACKET	1
52	8134081		SLEEVEE	1
53	1421132		FLAT WASHER M12× $\phi$ 32×1.5	1
54	8134080		SQUEEGEE LIFTING HANDLE	1
55	8113104		BALL KNOB M8	1
56	1222641		SUNK HEAD SCREW M6 X 40	2
57	8210112		HOOK, POWER CORD	2
58	8014054		STRAIN RELIEF	1
59	6210111		CLAMP, DRAIN HOSE	1
60	1023612		HEX BOLT M6 X 12, COPPER	8
61	1422616		LOCK WASHER, M6	13
62	1423612		FLAT WASHER M6× $\phi$ 12×1, COPPER	8
63	8144790	000604- f0r i20NBT	MAIN CONTROLLER, i20NBT	1
		000322- f0r i24BT		
64	8134070		REAR PLATE, CONTROL CONSOLE	1
65	1421824		FLAT WASHER M8× $\phi$ 24×2	10
66	1021820		HEX BOLT M8×20	10
67	1221620		PH SCREW M6×20	2
68	8114712		MICRO SWITCH	1
69	8124743		MICRO SWITCH	1
70	1021320		SCREW M3 X 20	4
71	8134022		BRACKET,SWITCH	1
72	8114402		BRACKET, SPRING	1
73	1521616		SCREW M6X16, HEX SCOKET	2
74	1534608		SET SCREW M6 ×8	4
75	8134300		LEVER, BAIL	1

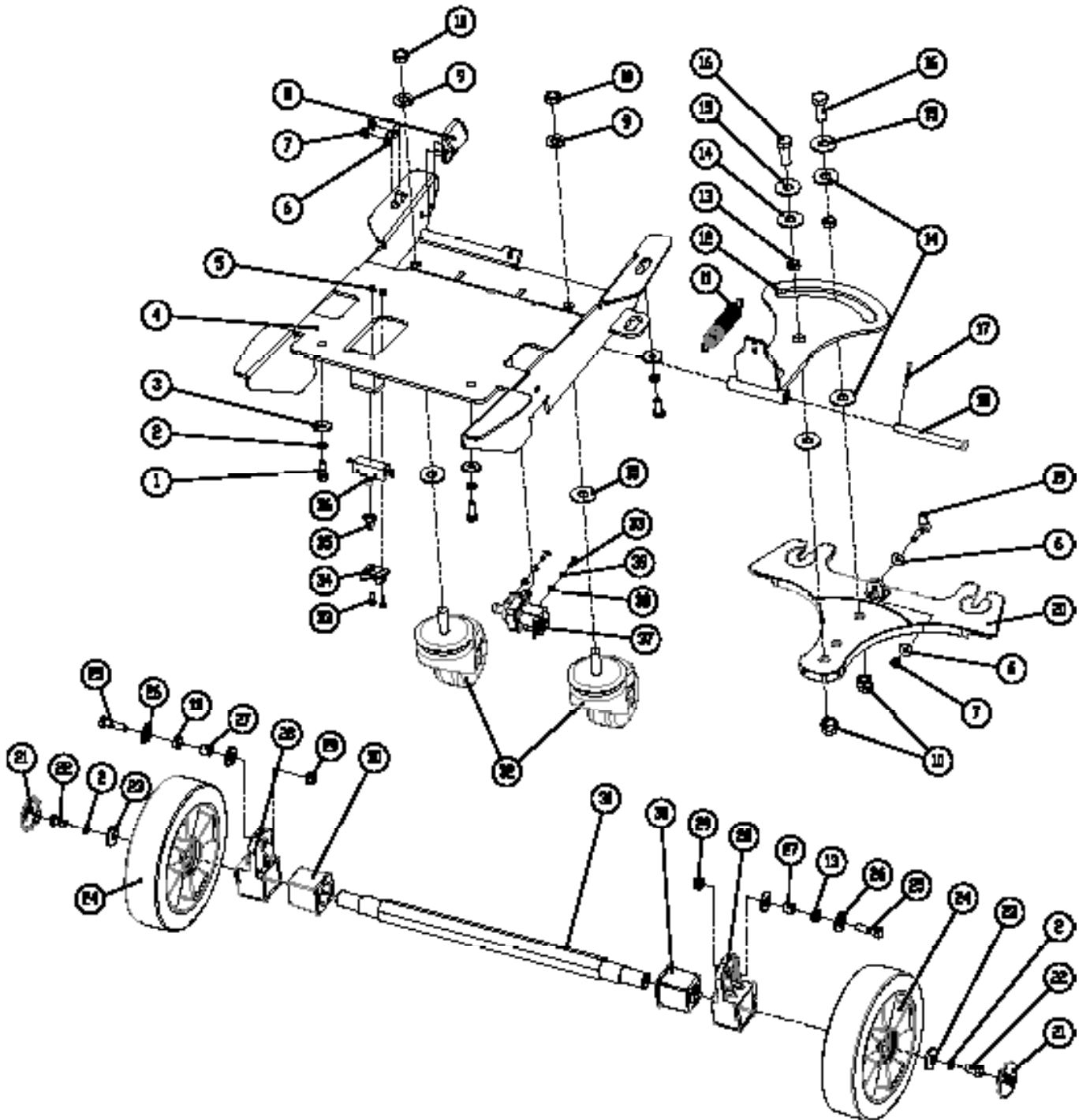
## **PARTS LIST**

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### **CONTROL CONSOLE GROUP ( i20NBT / i24BT )**

<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
76	8114300		ACTUATOR	1
77	8114306		SPRING	1
78	1535630		SET SCREW M6 ×30	1
79	8114101		SHAFT	1

FRAME & WHEEL GROUP (i20NB)



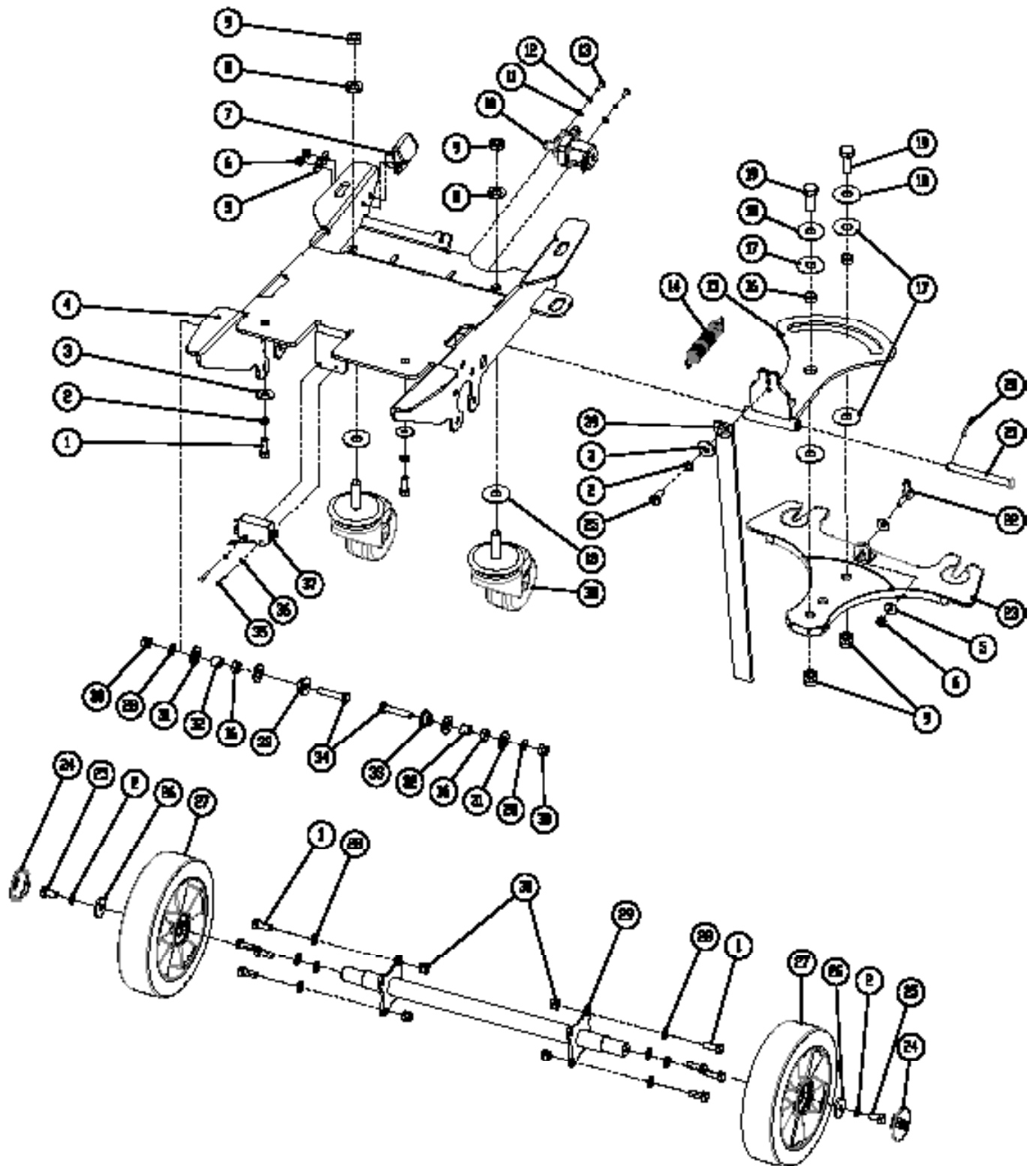


# PARTS LIST

## FRAME & WHEEL GROUP (i20NB)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	1021820	000101-	HEX HEAD BOLT M8×20	4
2	1422821	000101-	LOCK WASHER M8	6
3	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2	4
4	8135100	000165-000527	MAIN FRAME	1
5	1123406	000101-	LOCK NUT M4	2
6	1421618	000101-	FLAT WASHER M6× $\phi$ 18×1.6	4
7	1123608	000101-	LOCK NUT M6	3
8	8115300	000101-	BRACKET, PEDAL LOCKING	1
9	1421124	000101-	FLAT WASHER M12× $\phi$ 24×2.5	2
10	1123115	000101-	LOCK NUT M12	4
11	8115004	000101-	SPIRNG	1
12	8135010	000101-	BRACKET, SQGE LIFT	1
13	8115405	000101-	SLEEVE, P/M	4
14	8135001	000101-	PLASTIC THRUST WASHER M12× $\phi$ 30×1.5	4
15	1421132	000101-	FLAT WASHER M12× $\phi$ 32×1.5	4
16	1021230	000101-	HEX HEAD BOLT M12 ×30	2
17	1645324	000101-	COTTER 3.2 ×24	1
18	8115003	000101-	PIN	1
19	8114511	000101-	BALL JOINT M6	1
20	8115001	000101-	BRACKET, SQGE MNTG	1
21	8115203	000101-	COVER, WHEEL	2
22	1021816	000101-	HEX HEAD BOLT M8×16	2
23	1421828	000101-	FLAT WASHER M8× $\phi$ 28×3	2
24	8115200	000101-	WHEEL, 8 INCH	2
25	1021835	000101-	HEX HEAD BOLT M8×35	2
26	8117007	000101-	NYLON WASHER $\phi$ 12.9× $\phi$ 24×2.5	4
27	8115404	000101-	BEARING, JOURNAL	2
28	8115402	000165-000527	ADAPTER, AXLE MNTG	2
29	1123810	000101-	LOCK NUT M8	2
30	8115403	000165-000527	GROMMENT, AXLE	2
31	8135401	000165-000527	AXLE, WHEEL	1
32	8115500	000101-	CASTER, SWIVEL, 80MM	2
33	1221412	000101-	PAN HEAD SCREW M4×12	4
34	8115009	000101-	BRACKET	1
35	8115008	000271-	CAP, MICRO SWITCH, 3/8	1
36	8115007	000528-	MICRO SWITCH 25A	1
37	8119003	000101-	SOLENOID VALVE, 24VDC	1
38	1421409	000101-	FLAT WASHER M4× $\phi$ 9×0.8	2
39	1422411	000101-	LOCK WASHER M4	2

**FRAME & WHEEL GROUP ( i20NB )**

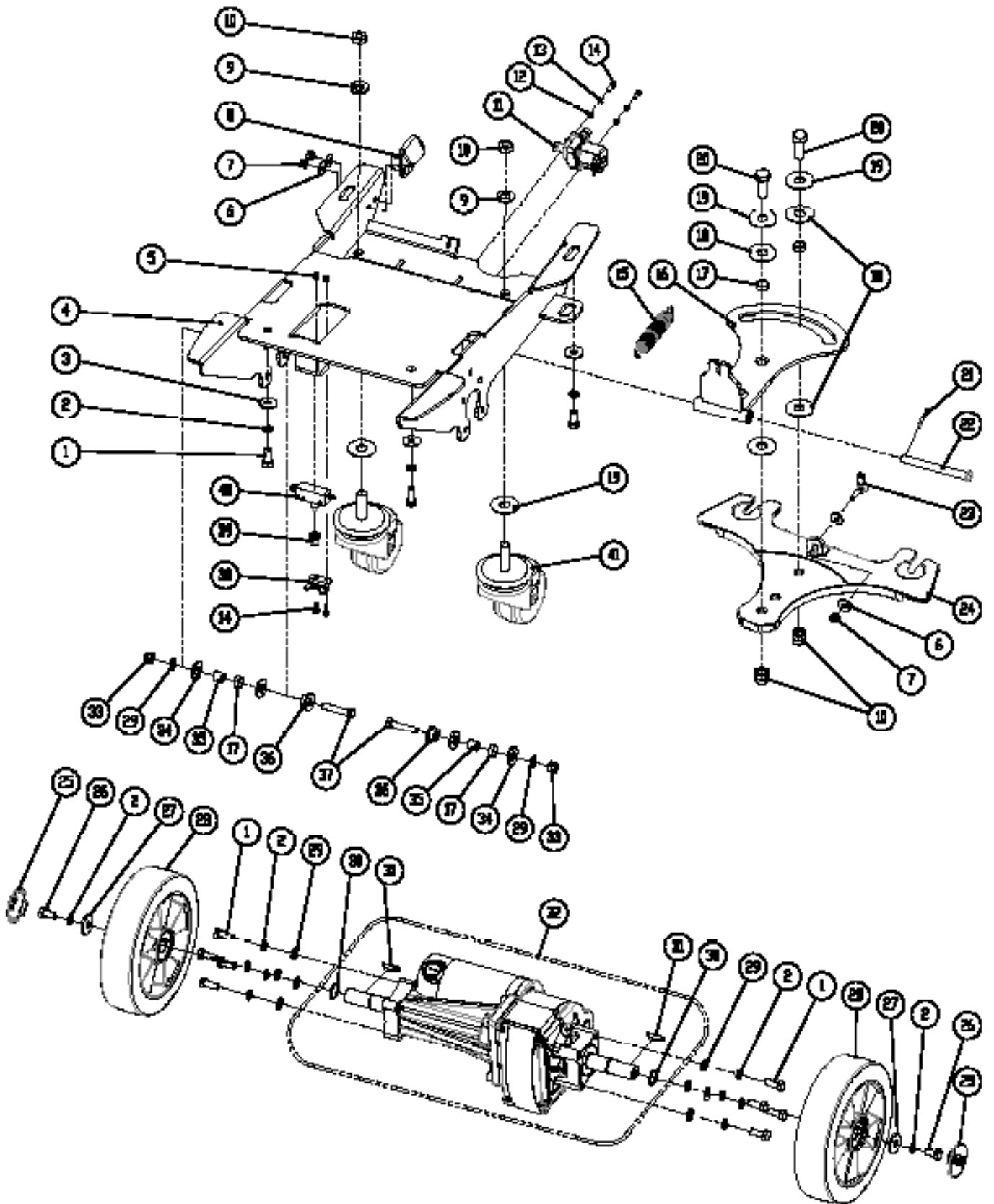


# PARTS LIST

## FRAME & WHEEL GROUP ( i20NB )

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	1021820		HEX BOLT M8×20	12
2	1422821		LOCK WASHER M8	7
3	1421824		FLAT WASHER M8× $\phi$ 24×2	5
4	8145100	000528-	MAIN FRAME	1
5	1421618		FLAT WASHER M6× $\phi$ 18×1.6	4
6	1123608		LOCK NUT M6	3
7	8115300		BRACKET, PEDAL LOCKING	1
8	1421124		FLAT WASHER M12× $\phi$ 24×2.5	4
9	1123115		LOCK NUT M12	4
10	8119003		SOLENOID VALVE, 24VDC	1
11	1421409		FLAT WASHER M4× $\phi$ 9×0.8	2
12	1422411		LOCK WASHER M4	2
13	1221412		SCREW M4×12	4
14	8115004		SPIRNG	1
15	8135010		BRACKET, SQGE LIFT	1
16	8115405		SLEEVE, P/M	4
17	8135001		PLASTIC THRUST WASHER M12× $\phi$ 30×1.5	4
18	1421132		FLAT WASHER M12× $\phi$ 32×1.5	4
19	1021230		HEX BOLT M12 ×30	2
20	1645324		COTTER 3.2 ×24	1
21	8115003		PIN	1
22	8114511		BALL JOINT M6	1
23	8115001		BRACKET, SQGE MNTG	1
24	8115203		COVER, WHEEL	2
25	1021816		HEX BOLT M8×16	3
26	1421828		FLAT WASHER M8× $\phi$ 28×3	2
27	8115200		WHEEL, 8 INCH	2
	1612607		BALL BEARING, 6004LU	4
28	1421816		FLAT WASHER M8× $\phi$ 16×1.6	10
29	8135405	000528-	SHAFT	1
30	1123810		LOCK NUT M8	10
31	8117007		NYLON WASHER $\phi$ 12.9× $\phi$ 24×2.5	4
32	8115404		BEARING, JOURNAL	2
33	8145001		BUSHING	2
34	1021840		HEX BOLT M8 ×40	2
35	1211325		SCREW M3×25	2
36	1434300		LOCK WASHER, TOOTH, M3	2
37	8014071	000528-	MICRO SWITCH 20A	1
38	8115500		CASTER, SWIVEL, 80MM	2
39	8210118		STATIC STRAP	1

FRAME & TRANSAXLE GROUP (i20NB/i24BT)



# PARTS LIST

## FRAME & TRANSAXLE GROUP (i20NBT/i24BT)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	1021820	000101-	HEX HEAD BOLT M8×20	12
2	1422821	000101-	LOCK WASHER M8	14
3	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2	4
4	8145100	000101-	MAIN FRAME	1
5	1123406	000101-	LOCK NUT M4	2
6	1421618	000101-	FLAT WASHER M6× $\phi$ 18×1.6	4
7	1123608	000101-	LOCK NUT M6	3
8	8115300	000101-	BRACKET, PEDAL LOCKING	1
9	1421124	000101-	FLAT WASHER M12× $\phi$ 24×2.5	4
10	1123115	000101-	LOCK NUT M12	4
11	8119003	000101-	SOLENOID VALVE, 24VDC	1
12	1421409	000101-	FLAT WASHER M4× $\phi$ 9×0.8	2
13	1422411	000101-	LOCK WASHER M4	2
14	1221412	000101-	PAN HEAD SCREW M4×12	4
15	8115004	000101-	SPIRNG	1
16	8135010	000101-	BRACKET, SQGE LIFT	1
17	8115405	000101-	SLEEVE, P/M	4
18	8135001	000101-	PLASTIC THRUST WASHER M12× $\phi$ 30×1.5	4
19	1421132	000101-	FLAT WASHER M12× $\phi$ 32×1.5	4
20	1021230	000101-	HEX HEAD BOLT M12 ×30	2
21	1645324	000101-	COTTER 3.2 ×24	1
22	8115003	000101-	PIN	1
23	8114511	000101-	BALL JOINT M6	1
24	8115001	000101-	BRACKET, SQGE MNTG	1
25	8115203	000101-	COVER, WHEEL	2
26	1021816	000101-	HEX HEAD BOLT M8×16	2
27	1421828	000101-	FLAT WASHER M8× $\phi$ 28×3	2
28	8125200	000101-	WHEEL, 8 INCH	2
29	1421816	000101-	FLAT WASHER M8× $\phi$ 16×1.6	10
30	1436019	000101-	RETAINING RING 19	2
31	8125403	000101-	WOODRUFF KEY	2
32	8125410	000101-	TRANSAXLE, KIT	1
33	1123810	000101-	LOCK NUT M8	2
34	8117007	000101-	NYLON WASHER $\phi$ 12.9× $\phi$ 24×2.5	4
35	8115404	000101-	BEARING, JOURNAL	2
36	8145001	000101-	BUSHING	2
37	1021840	000101-	HEX HEAD BOLT M8 ×40	2
38	8115009	000101-	BRACKET	1
39	8115008	000187-000403 for i20NBT	CAP, MICRO SWITCH, 3/8	1
		000139-000222 for i24BT		
40	8115007	000187-000403 for i20NBT	MICRO SWITCH 25A	1
		000139-000271 for i24BT		

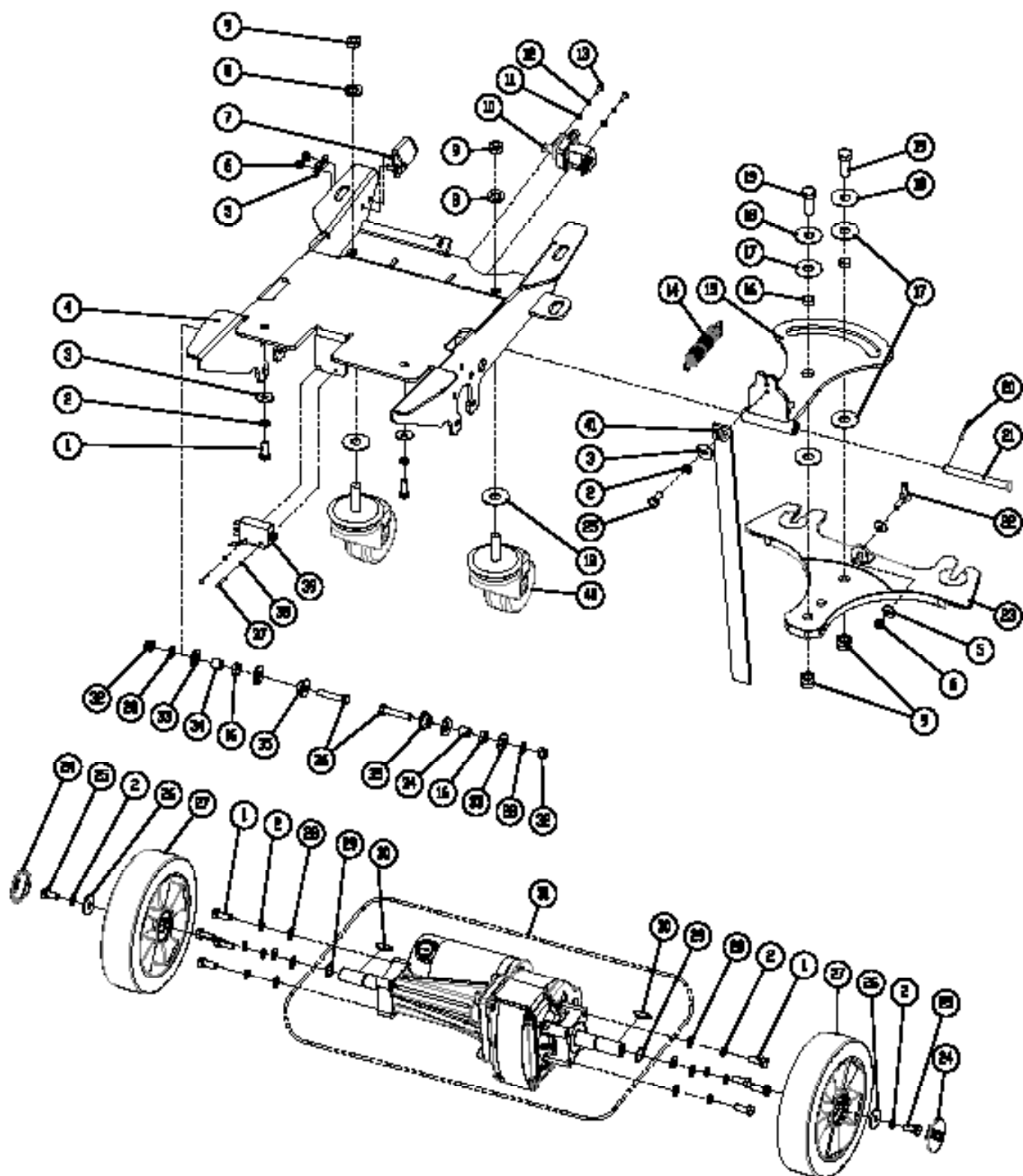
## **PARTS LIST**

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### **FRAME & TRANSAXLE GROUP (i20NBT/i24BT)**

<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
41	8115500	000101-	CASTER, SWIVEL, 80MM	2

**FRAME & TRANSAXLE GROUP ( i20NB /i24BT )**



# PARTS LIST

## FRAME & TRANSAXLE GROUP ( i20NBT /i24BT )

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	1021820		HEX BOLT M8×20	12
2	1422821		LOCK WASHER M8	15
3	1421824		FLAT WASHER M8× $\phi$ 24×2	5
4	8145100		MAIN FRAME	1
5	1421618		FLAT WASHER M6× $\phi$ 18×1.6	4
6	1123608		LOCK NUT M6	3
7	8115300		BRACKET, PEDAL LOCKING	1
8	1421124		FLAT WASHER M12× $\phi$ 24×2.5	4
9	1123115		LOCK NUT M12	4
10	8119003		SOLENOID VALVE, 24VDC	1
11	1421409		FLAT WASHER M4× $\phi$ 9×0.8	2
12	1422411		LOCK WASHER M4	2
13	1221412		SCREW M4×12	4
14	8115004		SPIRNG	1
15	8135010		BRACKET, SQGE LIFT	1
16	8115405		SLEEVE, P/M	4
17	8135001		PLASTIC THRUST WASHER M12× $\phi$ 30×1.5	4
18	1421132		FLAT WASHER M12× $\phi$ 32×1.5	4
19	1021230		HEX BOLT M12 ×30	2
20	1645324		COTTER 3.2 ×24	1
21	8115003		PIN	1
22	8114511		BALL JOINT M6	1
23	8115001		BRACKET, SQGE MNTG	1
24	8115203		COVER, WHEEL	2
25	1021816		HEX BOLT M8×16	3
26	1421828		FLAT WASHER M8× $\phi$ 28×3	2
27	8125200		WHEEL, 8 INCH	2
	8225200		AIR FILLED WHEEL, 8 INCH, KIT	2
	8225210		FOAM FILLED WHEEL, 8INCH, KIT	2
28	1421816		FLAT WASHER M8× $\phi$ 16×1.6	10
29	1436019		RETAINING RING 19	2
30	8125403		WOODRUFF KEY	2
31	8125410		TRANSAXLE, KIT	1
	8116011		CARBON BRUSH, DRIVE MOTOR	2
32	1123810		LOCK NUT M8	10
33	8117007		NYLON WASHER $\phi$ 12.9× $\phi$ 24×2.5	4
34	8115404		BEARING, JOURNAL	2
35	8145001		BUSHING	2
36	1021840		HEX BOLT M8 ×40	2
37	1211325		SCREW M3×25	2
38	1434300		LOCK WASHER, TOOTH, M3	2
39	8014071	000528- for i20NBT	MICRO SWITCH 20A	1
		000272- for i24BT		
40	8115500		CASTER, SWIVEL, 80MM	2



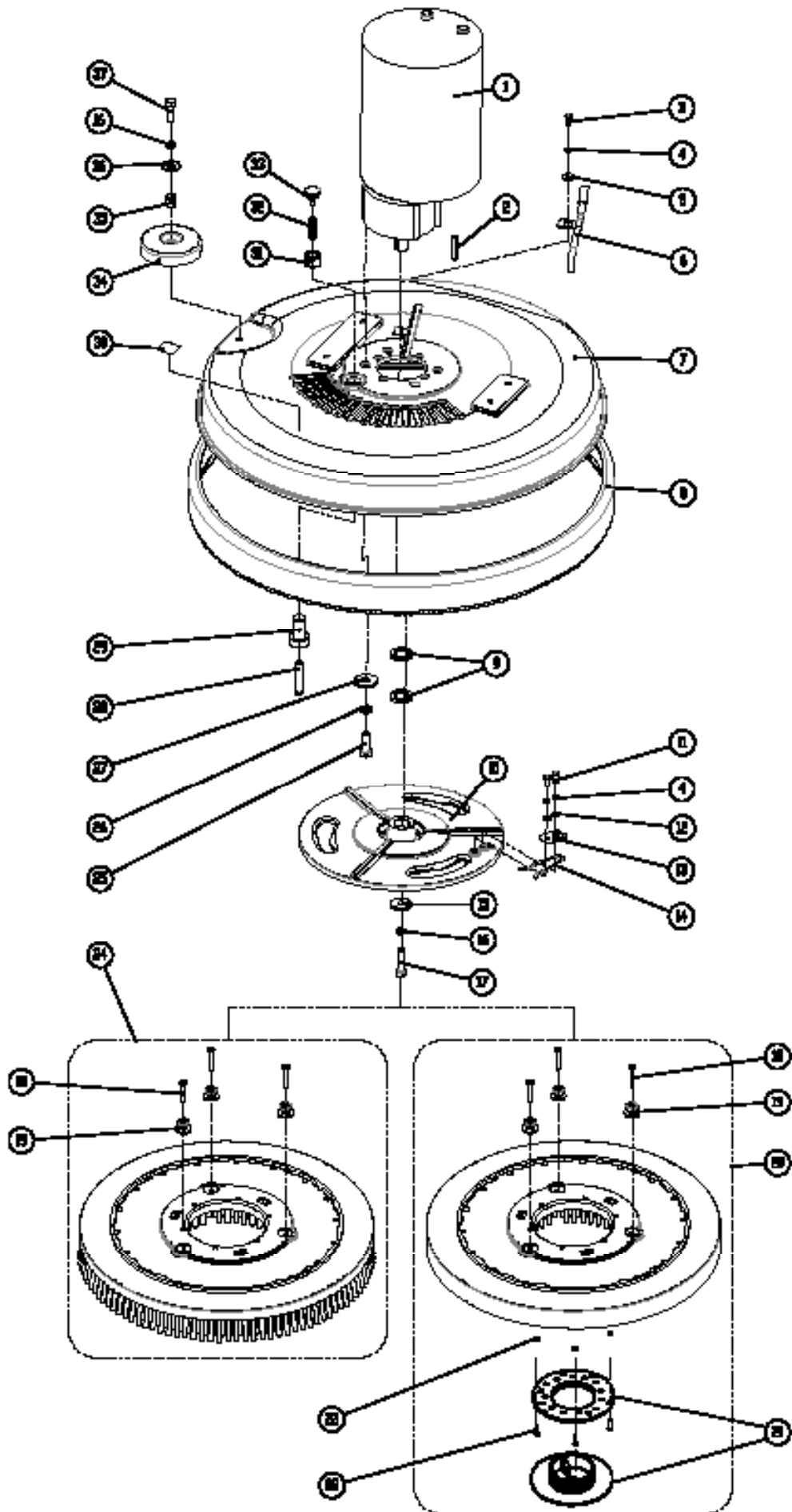
## **PARTS LIST**

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### **FRAME & TRANSAXLE GROUP ( i20NBT /i24BT )**

<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
41	8210118		STATIC STRAP	1

**SCRUB HEAD GROUP (i20NB / i20NBT)**

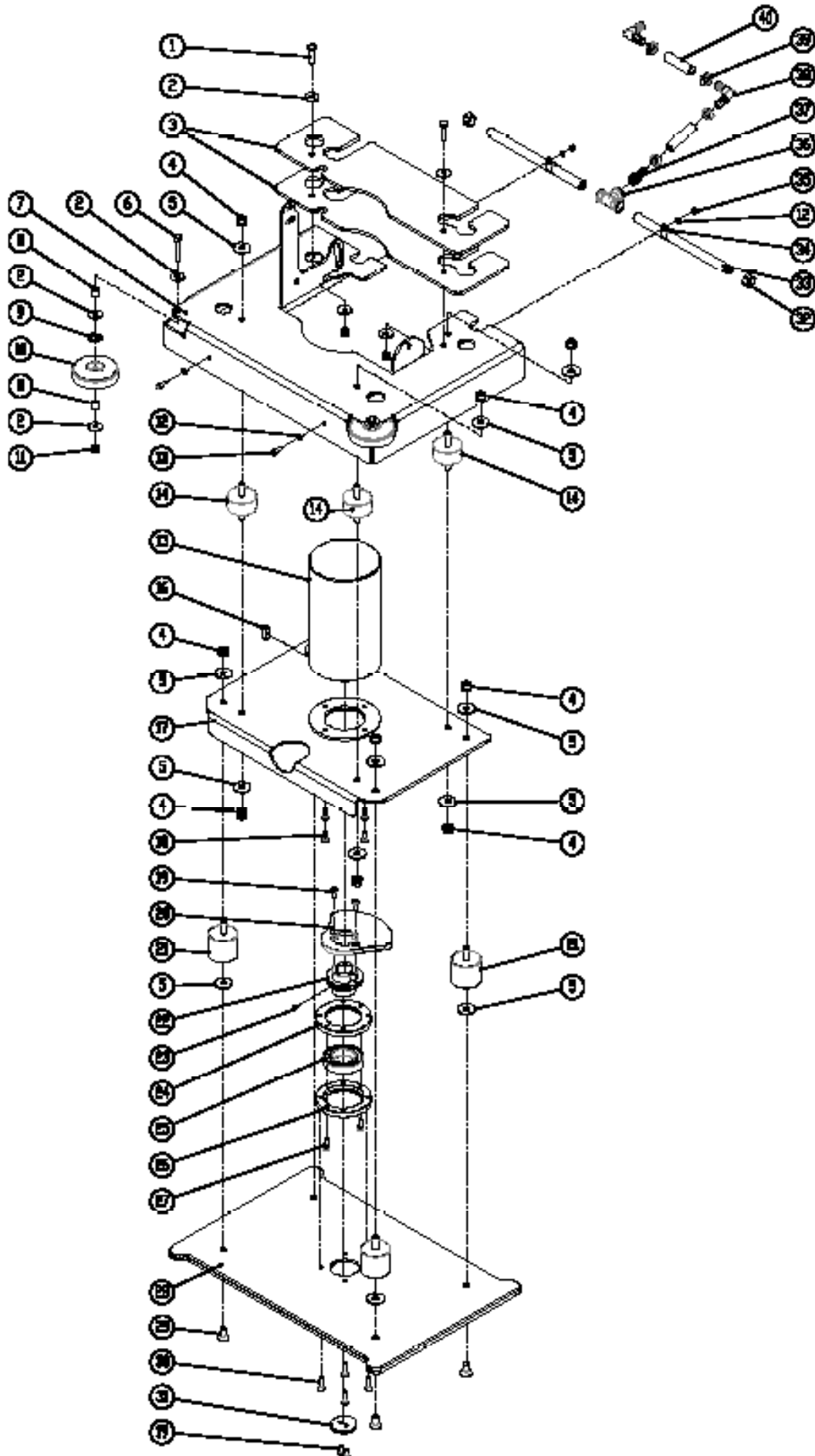


## PARTS LIST

### SCRUB HEAD GROUP (i20NB / i20NBT)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8116200	000101-	BRUSH MOTOR, 24VDC 1.0HP, KIT	1
	8116007	000101-	BRUSH MOTOR CARBON BRUSH	2
2	1656432	000101-	KEY	1
3	1221412	000101-	SCREW M4×12	1
4	1422513	000101-	LOCK WASHER M5	3
5	1421518	000101-	FLAT WASHER M5× $\phi$ 18×2	1
6	8116100	000101-	WATER SUPPLY TUBE	1
7	8116006	000101-	SCRUB HEAD HOUSING	1
8	8116020	000101-	BUMPER, SCRUB HEAD	1
9	8116001	000101-	SPACER	2
10	8116008	000101-	HUB, DRIVE, 3 LUG	1
11	1221512	000101-	SCREW M5×12	2
12	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1	2
13	8116002	000101-	BRUSH CLAMP PLATE	1
14	8116003	000101-	SPRING CLIP	1
15	8116010	000101-	FLAT WASHER $\phi$ 8.5× $\phi$ 25.4×4.5	1
16	1422821	000101-	LOCK WASHER M8	2
17	1023815	000101-	HEX BOLT 5/16-18 ×1.5" UNC	1
18	1222635	000101-	SCREW, M6X35	6
19	8116030	000101-	STUD	6
20	9040019	000101-	19" PAD DRIVER	1
	9040019K	000101-	19" PAD DRIVER (OPTION)	1
21	9000001	000101-	BIG MOUTH	1
	9000003	000101-	CENTER-LOK 3 (OPTION)	1
22	1321325	000101-	SELF-TAPPING SCREW, ST4.8X25	3
23	8116040	000101-	SPACER	3
24	9050020	000101-	20" BRUSH, 0.7mm PP BRISTLE (OPTION)	1
	9050020E	000101-	20" BRUSH, 0.5mm PP BRISTLE (OPTION)	1
25	1023010	000101-	HEX BOLT 3/8-16 ×1" UNC	4
26	1422026	000101-	LOCK WASHER M10	4
27	1421030	000101-	FLAT WASHER M10× $\phi$ 30×2.5	4
28	8116202	000101-	PIN	1
29	8116205	000101-	SCREW M14 × 20	1
30	8111023	000101-	WARNING LABEL	1
31	1121913	000101-	HEX NUT M14	1
32	8116204	000101-	SRPING	1
33	8116210	000101-	KNOB M6	1
34	8116009	000101-	PROTECTIVE WHEEL	1
35	8115404	000101-	SLEEVE, P/M	1
36	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2.0	1
37	1021825	000101-	HEX BOLT M8×25	1

**ORBITAL HEAD GROUP (i20NBT-OB)**

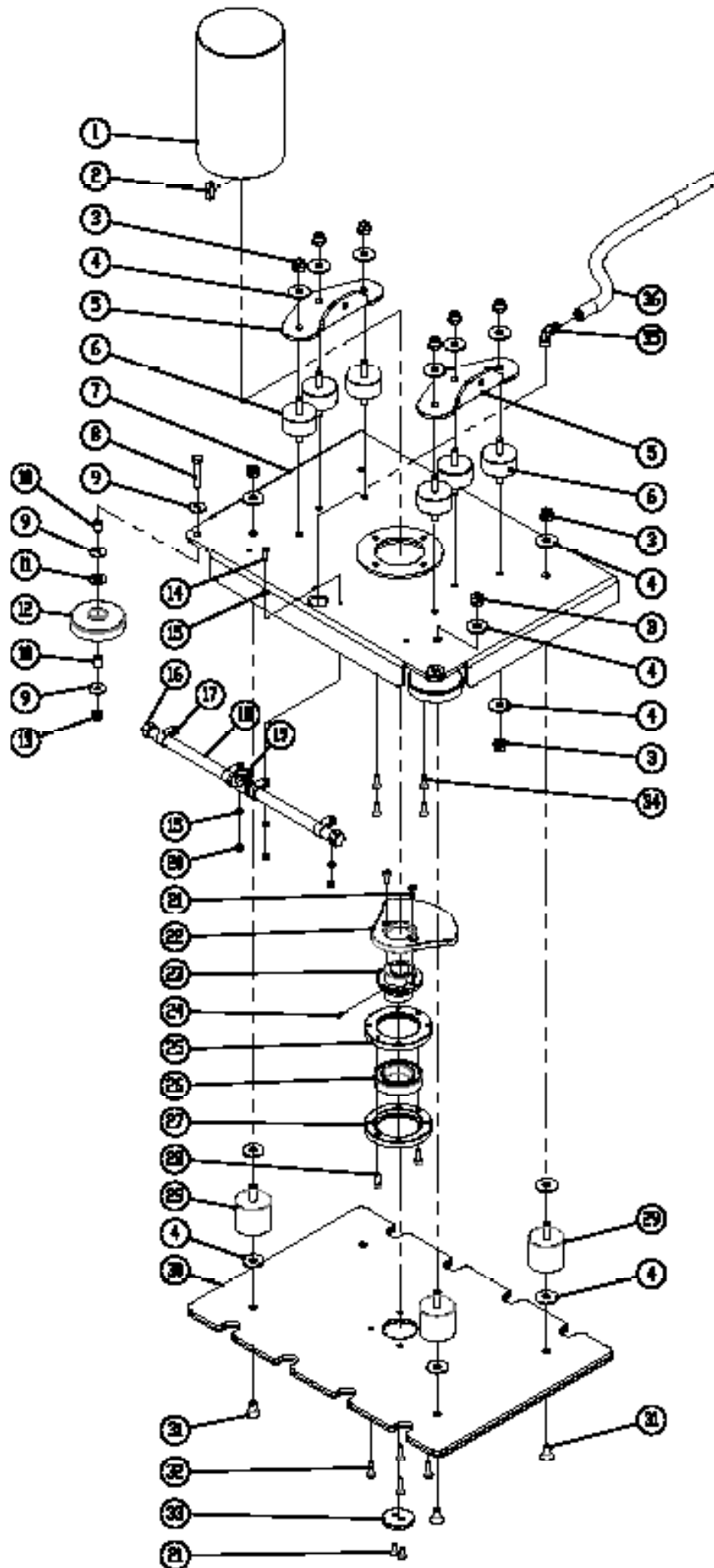


## PARTS LIST

### ORBITAL HEAD GROUP (i20NBT-OB)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	1021830	000101-	HEX BOLT M8×30	2
2	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2.0	10
3	8146106	000101-	BLOCK, WEIGHT	2
4	1123012	000101-	LOCK NUT, M10	12
5	1421030	000101-	FLAT WASHER M10× $\phi$ 30×2.5	16
6	1022845	000101-	HEX BOLT M8×45	2
7	8146101	000101-	BRACKET, ORBITAL HEAD	1
8	8115404	000101-	BEARING, JOURNAL	4
9	1435013	000449-	WAVE WASHER	2
10	8116009	000101-	PROTECTIVE WHEEL	2
11	1123810	000101-	LOCK NUT, M8	4
12	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1.0	4
13	1221515	000101-	SCREW M5×15	2
14	8146116	000101-	ISOLATORS, M10×25	4
15	8146199	000101-	MOTOR, 24VDC 550W 2200RPM, KIT	1
16	8146110	000101-	KEY, 8×7×28	1
17	8146102	000101-	BRACKET, MOTOR MOUNTING	1
18	1513620	000101-	HEX SOCKET SCREW, M6×20	4
19	1513616	000101-	HEX SOCKET SCREW, M6×16	4
20	8146202	000101-	ECCENTRIC	1
21	8146107	000101-	ISOLATORS, M10×25	4
22	8146201	000101-	ECCENTRIC SHAFT	1
23	1535610	000101-	SET SCREW, M6×10	1
24	8146204	000101-	BEARING HOUSING	1
25	1612608	000101-	BALL BEAING 6008	1
26	8146203	000101-	BEARING HOUSING	1
27	1521616	000101-	HEX SOCKET BOLT M6×16	2
28	8146103	000101-	PAD DRIVER	1
29	1513020	000101-	HEX SOCKET SCREW, M10×20	4
30	1513625	000101-	HEX SOCKET SCREW, M6×25	4
31	8146205	000101-	PLATE	1
32	8146303	000101-	END CAP 3/8	2
33	8146302	000101-	PVC TUBING	2
34	8146305	000101-	PLASTIC CLAMP	2
35	1123507	000101-	LOCK NUT M5	2
36	8146301	000101-	TEE FITTING 3/8	1
37	8013007	000101-	TUBING FITTING	1
38	8119002	000101-	ELBOW, TUBING BARB	2
39	1962016	000101-	CLAMP	4
40	8146320	000101-	TUBING, ID=12mm, l=60mm	2

**ORBITAL HEAD GROUP (i20NBT-OB)**

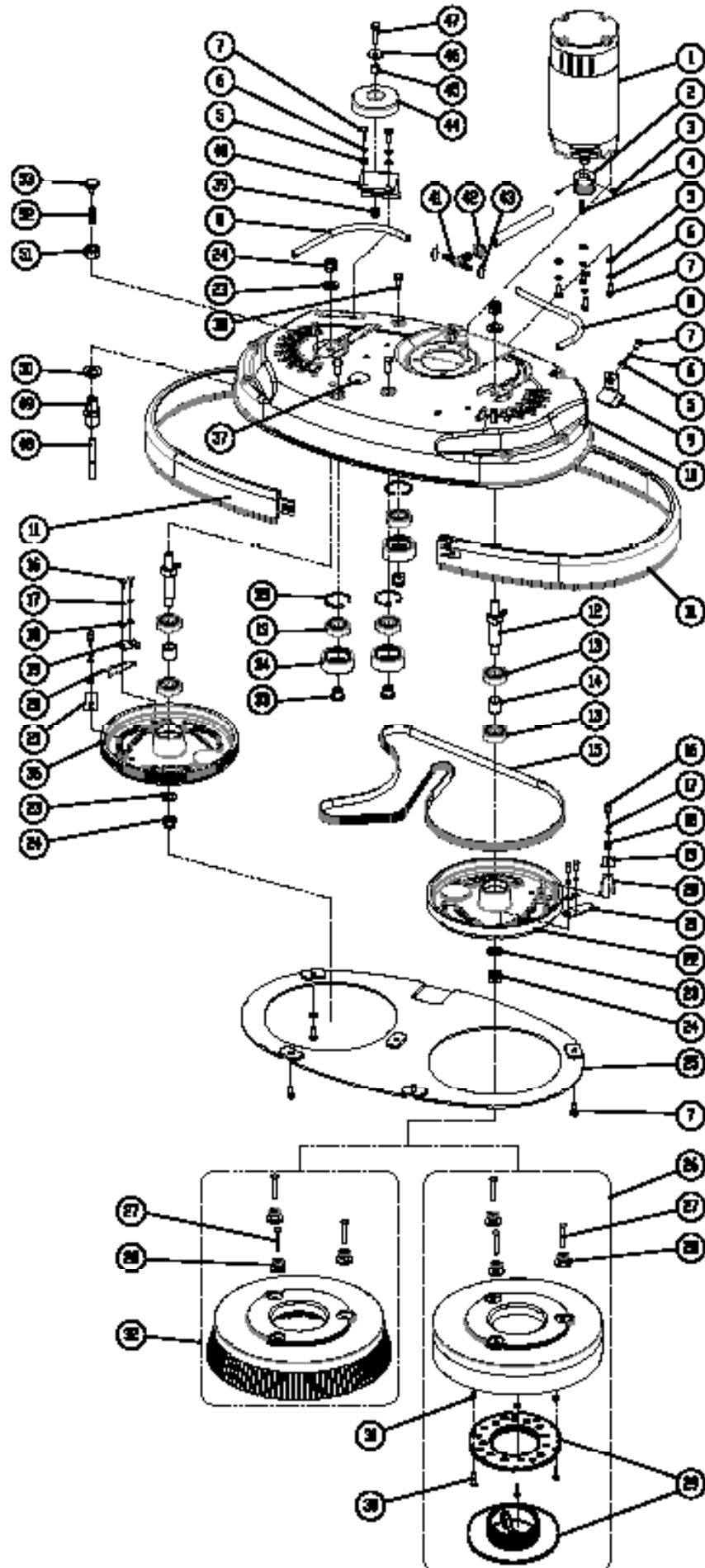


## PARTS LIST

### ORBITAL HEAD GROUP (i20NBT-OB)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8146199		MOTOR, 24VDC 550W 2200RPM, KIT	1
	8146198		CARBON BRUSH, MOTOR	2
2	8146110		KEY, 8×7×28	1
3	1123012		LOCK NUT, M10	16
4	1421030		FLAT WASHER M10× $\phi$ 30×2.5	24
5	8146520		MOUNTING BRACKET, ORBITAL HEAD	2
6	8146116		ISOLATORS, M10×25	6
7	8146501		BRACKET, MOTOR MOUNTING	1
8	1022845		HEX BOLT M8×45	2
9	1421824		FLAT WASHER M8× $\phi$ 24×2.0	6
10	8115404		BEARING, JOURNAL	4
11	1435013	000449-	WAVE WASHER	2
12	8116009		PROTECTIVE WHEEL	2
13	1123810		LOCK NUT, M8	2
14	1221515		SCREW M5×15	4
15	1421510		FLAT WASHER M5× $\phi$ 10×1.0	8
16	8146303		END CAP 3/8	2
17	8146305		PLASTIC CLAMP	4
18	8146508		PVC TUBING	2
19	8146301		TEE FITTING 3/8	1
20	1123507		LOCK NUT M5	4
21	1513616		HEX SOCKET SCREW, M6×16	4
22	8146202		ECCENTRIC	1
23	8146201		ECCENTRIC SHAFT	1
24	1535610		SET SCREW, M6×10	1
25	8146204		BEARING HOUSING	1
26	1612608		BALL BEAING 6008	1
27	8146203		BEARING HOUSING	1
28	1521616		HEX SOCKET BOLT M6×16	2
29	8146107		ISOLATORS, M10×25	4
30	8146502		PAD DRIVER	1
31	1513020		HEX SOCKET SCREW, M10×20	4
32	1513625		HEX SOCKET SCREW, M6×25	4
33	8146205		PLATE	1
34	1513620		HEX SOCKET SCREW, M6×20	4
35	8146511		ELBOW, 3/8	1
36	8146512		TUBING, WIRE REINFORCED	1

**SCRUB HEAD GROUP (i24BT)**



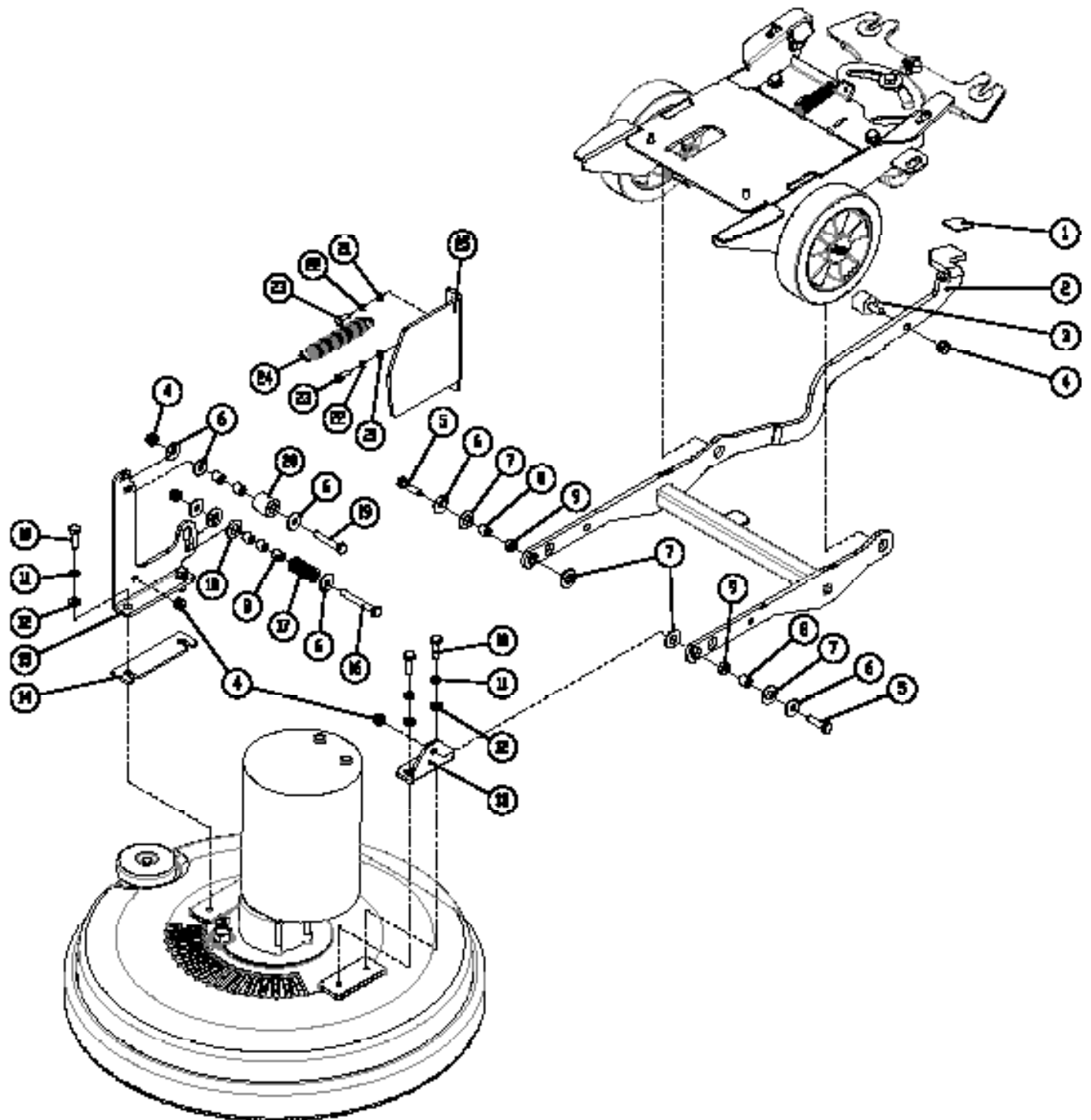


# PARTS LIST

## SCRUB HEAD GROUP (i24BT)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8126200	000101-	BRUSH MOTOR, 24VDC 680W 2000RPM, KIT	1
	8126070	000101-	CARBON BRUSH, BRUSH MOTOR	2
2	8126006	000101-	SHEAVE, SS	1
3	1534508	000101-	SCREW, SET, M5X8	2
4	1655025	000101-	KEY, 5X5X25	1
5	1421612	000101-	FLAT WASHER M6× $\phi$ 12×1.6	7
6	1422616	000101-	LOCK WASHER, M6	7
7	1021616	000101-	HEX BOLT M6×16	12
8	8119301	000101-	TUBING, ID=6mm, L=250mm	2
9	8126007	000101-	BRACKET, GUIDE, BELT	1
10	8126002	000101-	SCRUB HEAD HOUSING	1
11	8126050	000101-	BUMPER, SCRUB HEAD	2
12	8126040	000101-	SHAFT, PULLY	2
13	1612203	000101-	BEARING, 6203RS	7
14	8126008	000101-	BUSHING	2
15	8126005	000101-	BELT, 6PJ1598	1
16	1221512	000101-	SCREW M5×12	8
17	1422513	000101-	LOCK WASHER M5	8
18	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1	8
19	8116002	000101-	BRUSH CLAMP PLATE	2
20	8116003	000101-	SPRING CLIP	2
21	8126009	000101-	PLATE, CLAMP, BRUSH	2
22	8126004	000101-	HUB, DRIVER, 3LUG, PULLY	1
23	1421124	000101-	FLAT WASHER M12× $\phi$ 24×2.5	4
24	1123115	000101-	LOCK NUT M12	4
25	8126020	000101-	BRACKET, GUARD, SPLASH	1
26	9040011	000101-	11" PAD DRIVER	2
	9040011K	000101-	11" PAD DRIVER (OPTION)	2
27	1222635	000101-	SCREW, M6X35	12
28	8116030	000101-	STUD	12
29	9040011	000139-000391	BIG MOUTH	2
	9040011U	000482-	CENTER-LOK 3 (OPTION)	2
30	1321325	000101-	SELF-TAPPING SCREW, ST4.8X25	6
31	8116040	000101-	SPACER	6
32	9050012	000101-	12" BRUSH (OPTION)	2
33	8126032	000101-	SPACER, IDLER	3
34	8126031	000101-	PULLEY, IDLER	3
35	1437040	000101-	RING, RETAINING, 40	3
36	8126003	000101-	HUB, DRIVE, 3LUG, 6GRV	1
37	8111023	000101-	WARNING LABEL	1
38	1021820	000101-	HEX BOLT M8×20	3
39	1123810	000101-	LOCK NUT M8	1
40	8126012	000101-	BRACKET, WALL-ROLLER	1
41	8119004	000101-	FITTING, PLASTIC, TEE	1
42	1962016	000101-	CLAMP, 10-16mm	1
43	1914300	000101-	TIE, NYLON, 5X300	2
44	8116009	000101-	PROTECTIVE WHEEL	1
45	8115404	000101-	SLEEVE, P/M	1
46	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2.0	1
47	1021825	000101-	HEX BOLT M8×25	1
48	8126202	000101-	PIN	1
49	8126205	000101-	GUIDE, M14X20	1
50	1421428	000101-	FLAT WASHER M14× $\phi$ 28×2.0	1
51	1121913	000101-	NUT M14	1
52	8116204	000101-	SPRING	1
53	8116210	000101-	KNOB M6	1

**SCRUB HEAD LIFT GROUP (i20NB / i20NBT)**

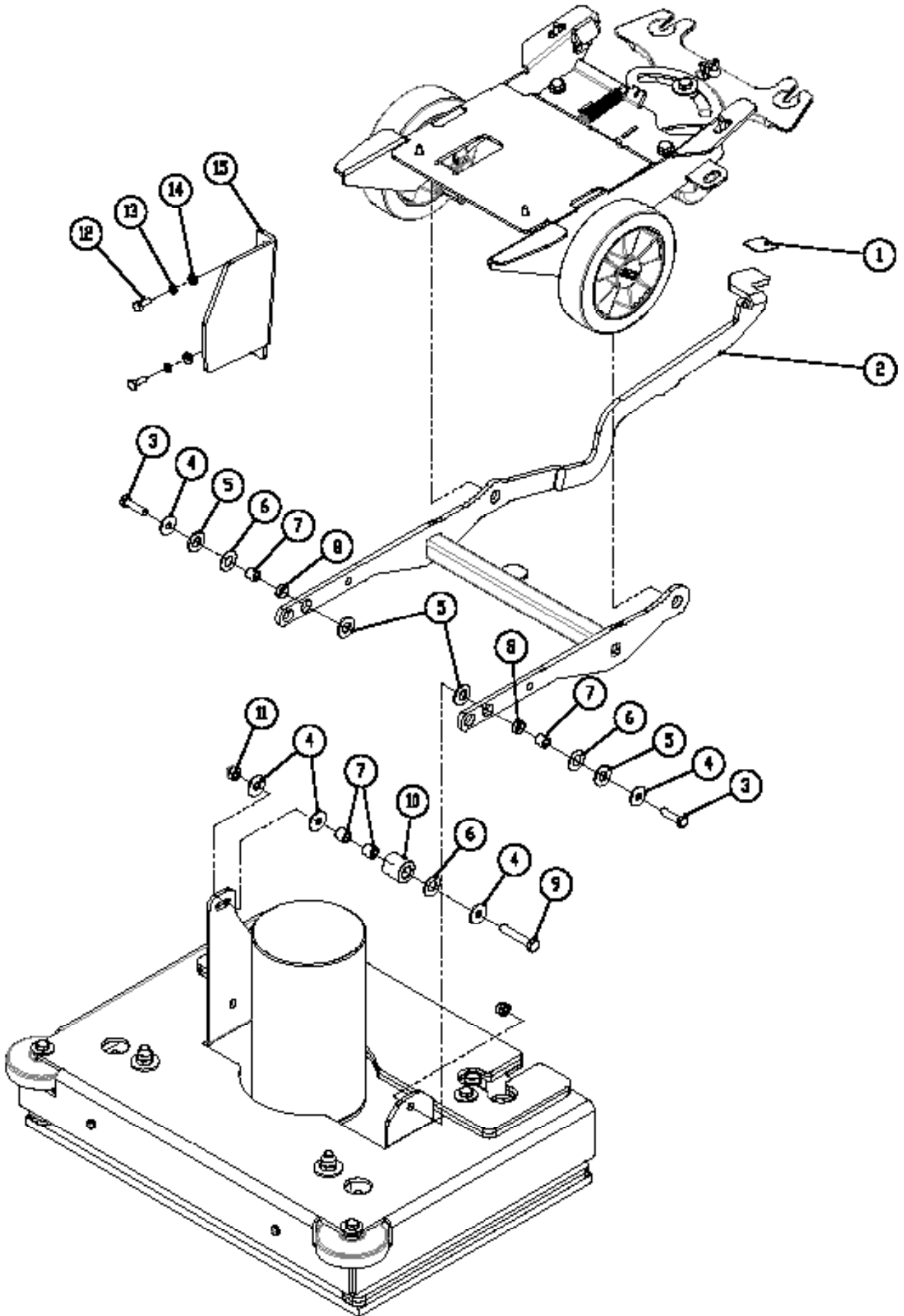


## PARTS LIST

### SCRUB HEAD LIFT GROUP (i20NB / i20NBT)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8137006	000101-	NON-SLIP MAT	1
2	8137100	000101-	BRACKET, SCRUB HEAD LIFT	1
3	8133151	000528- for i20NB	BUMPER	1
		000449- for i20NBT		
4	1123810	000101-	LOCK NUT M8	5
5	1021830	000101-	HEX BOLT M8×30	2
6	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2	6
7	8117007	000101-	NYLON WASHER $\phi$ 12.9× $\phi$ 24×2.5	4
8	8115404	000101-	BEARING, JOURNAL	7
9	8115405	000101-	SLEEVE, P/M	2
10	1021825	000101-	HEX BOLT M8×25	4
11	1422821	000101-	LOCK WASHER M8	4
12	1421816	000101-	FLAT WASHER M8× $\phi$ 16×1.6	4
13	8117002	000101-	LEFT BRACKET	1
14	8117005	000101-	SPACER(i20NB)	1
15	8117003	000101-	RIGHT BRACKET	1
16	1022860	000101-	HEX BOLT M8 ×60	1
17	8117008	000101-	SPRING	1
18	8113109	000101-	BEARING, THRUST	2
19	1022845	000101-	HEX BOLT M8 ×45	1
20	8117004	000101-	ROLLER	1
21	1421612	000101-	FLAT WASHER M6× $\phi$ 12×1.6	2
22	1422616	000101-	LOCK WASHER M6	2
23	1021616	000101-	HEX BOLT M6 ×16	2
24	8117009	000101-	SPRING	1
25	8117001	000101-	BRACKET, GUIDE	1

**ORBITAL HEAD LIFT GROUP (i20NBT-OB)**

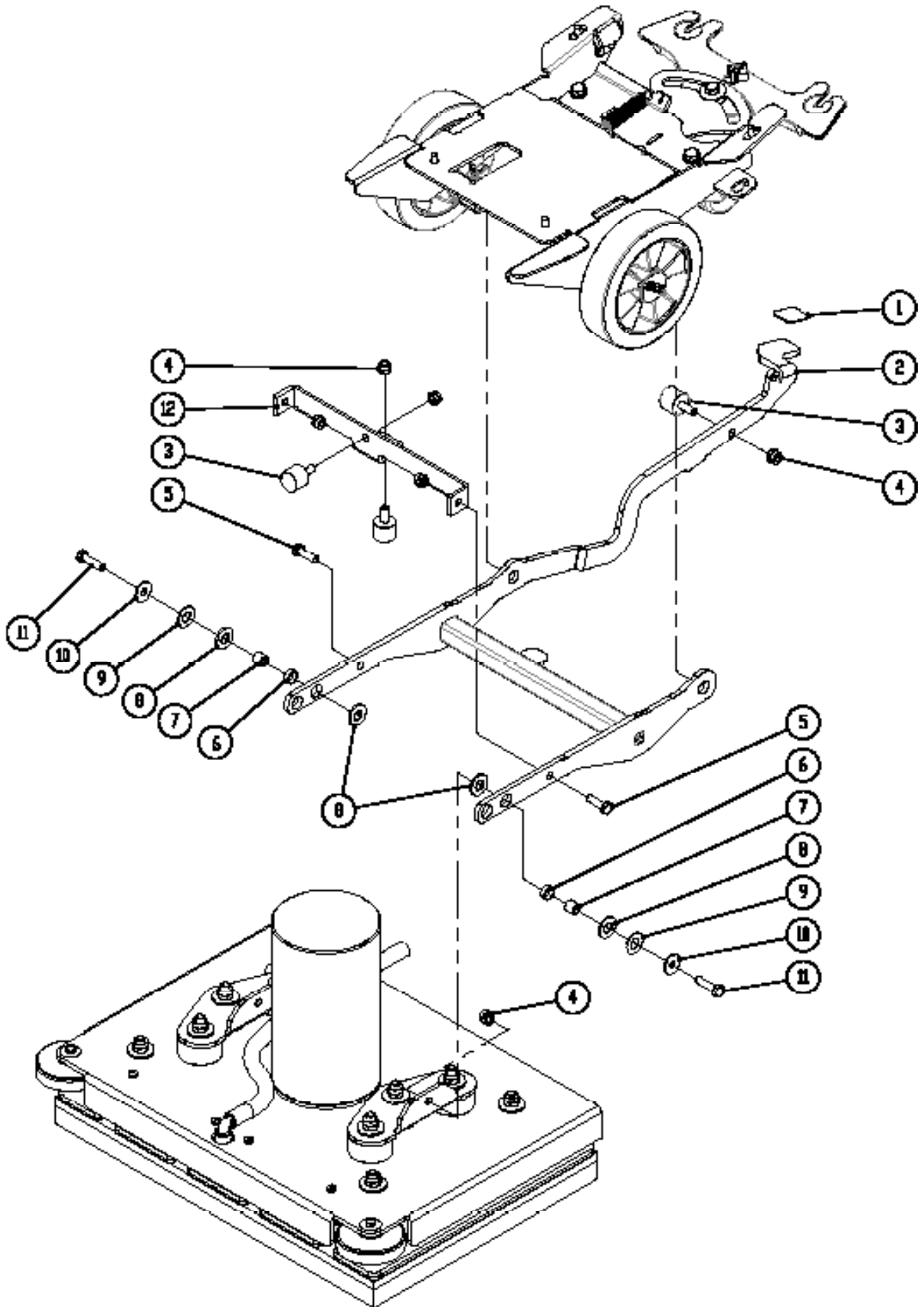


## PARTS LIST

### ORBITAL HEAD LIFT GROUP (i20NBT-OB)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8137006	000101-	NON-SLIP MAT	1
2	8137100	000101-	BRACKET, SCRUB HEAD LIFT	1
3	1021830	000101-	HEX HEAD BOLT M8×30	2
4	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2	8
5	8117007	000101-	NYLON WASHER $\phi$ 12.9× $\phi$ 24×2.5	4
6	1435013	000449-	WAVE WASHER	10
7	8115404	000101-	BEARING, JOURNAL	4
8	8115405	000101-	SLEEVE, P/M	2
9	1022845	000101-	HEX HEAD BOLT M8 ×45	1
10	8117004	000101-	ROLLER	1
11	1123810	000101-	LOCK NUT M8	3
12	1021616	000101-	HEX HEAD BOLT M6 ×16	2
13	1422616	000101-	LOCK WASHER M6	2
14	1421612	000101-	FLAT WASHER M6× $\phi$ 12×1.6	2
15	8117001	000101-	BRACKET, GUIDE	1

**ORBITAL HEAD LIFT GROUP (i20NBT-OB)**

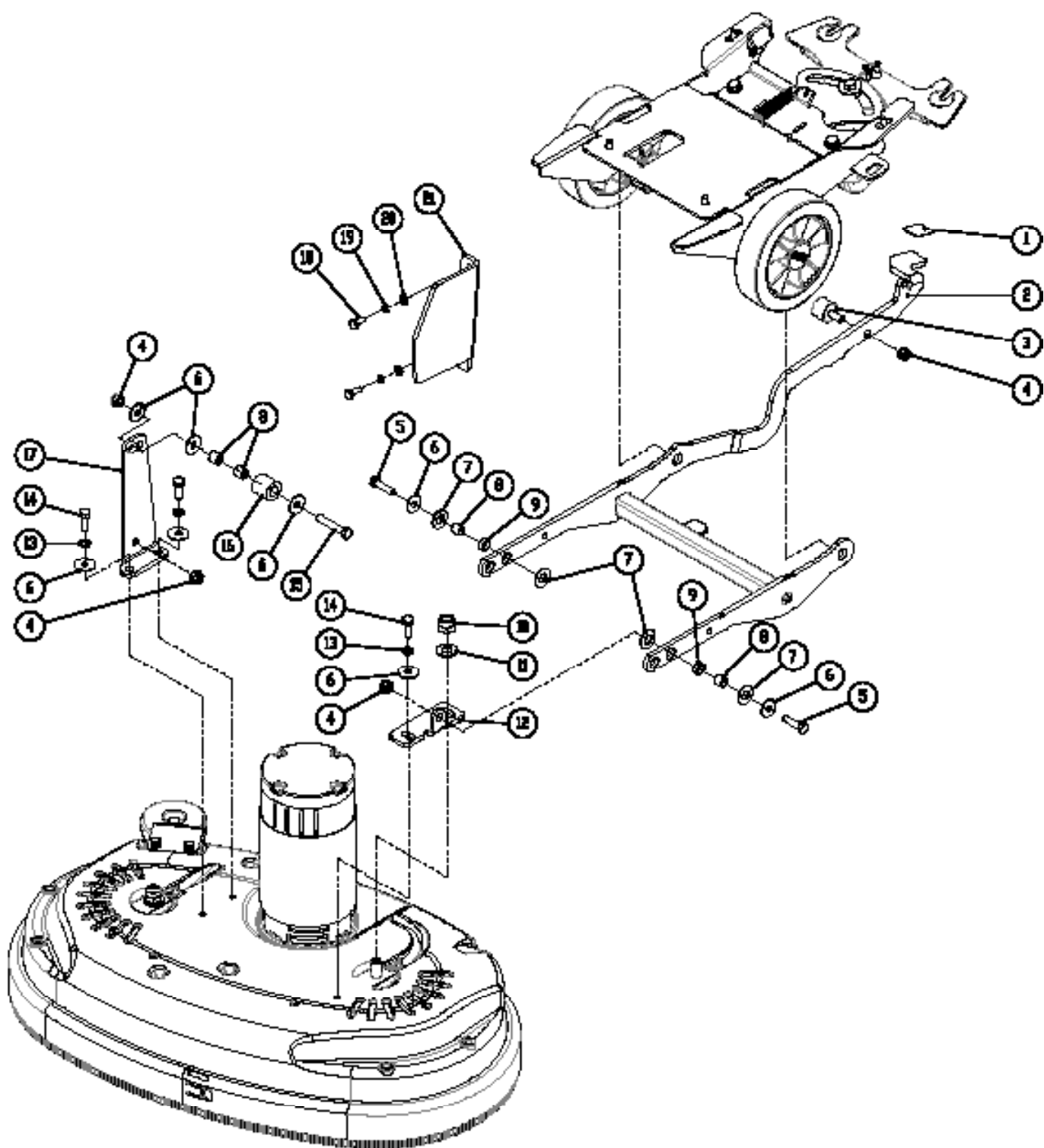


## PARTS LIST

### ORBITAL HEAD LIFT GROUP (i20NBT-OB)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8137006		NON-SLIP MAT	1
2	8137100		BRACKET, SCRUB HEAD LIFT	1
3	8133151	000449-	BUMPER	3
4	1123810		LOCK NUT M8	7
5	1021820		HEX HEAD BOLT M8×20	2
6	8115405		SLEEVE, P/M	2
7	8115404		BEARING, JOURNAL	2
8	8117007		NYLON WASHER $\phi 12.9 \times \phi 24 \times 2.5$	4
9	1435013	000449-	WAVE WASHER	4
10	1421824		FLAT WASHER M8× $\phi 24 \times 2$	2
11	1021830		HEX HEAD BOLT M8×30	2
12	8146530		BRACKET, ORBITAL HEAD LIFT	1

**SCRUB HEAD LIFT GROUP (i24BT)**



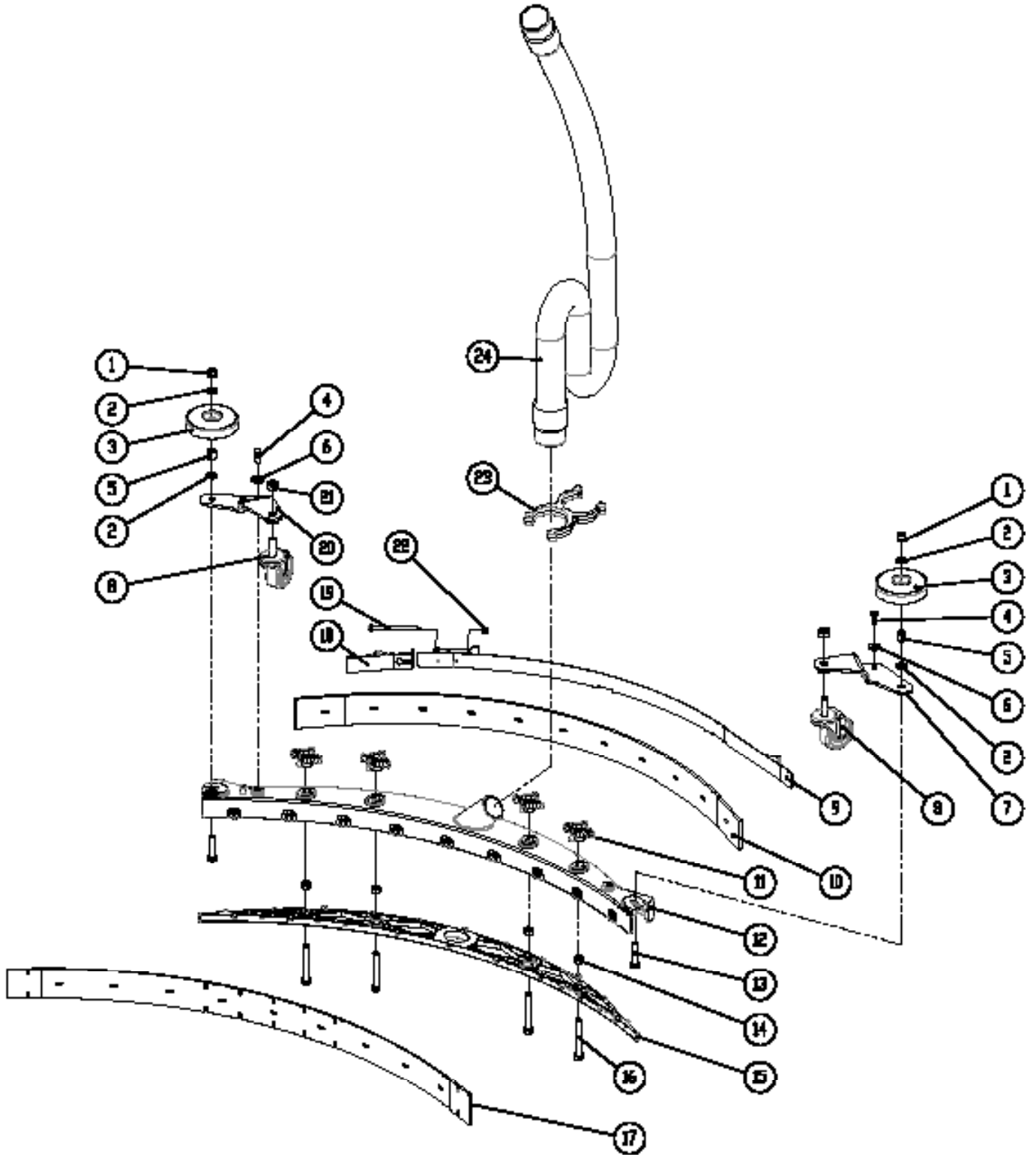


## PARTS LIST

### SCRUB HEAD LIFT GROUP (i24BT)

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	8137006	000101-	NON-SLIP MAT	1
2	8137100	000101-	BRACKET, SCRUB HEAD LIFT	1
3	8133151	000287-	BUMPER	1
4	1123810	000101-	LOCK NUT M8	5
5	1021830	000101-	HEX BOLT M8×30	2
6	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2	8
7	8117007	000101-	NYLON WASHER $\phi$ 12.9× $\phi$ 24×2.5	4
8	8115404	000101-	BEARING, JOURNAL	4
9	8115405	000101-	SLEEVE, P/M	2
10	1123115	000101-	LOCK NUT M12	1
11	1421124	000101-	FLAT WASHER M12× $\phi$ 24×2.5	1
12	8126011	000101-	LEFT BRACKET	1
13	1422821	000101-	LOCK WASHER M8	3
14	1021820	000101-	HEX BOLT M8×20	3
15	1022845	000101-	HEX BOLT M8 ×45	1
16	8117004	000101-	ROLLER	1
17	8126010	000101-	RIGHT BRACKET	1
18	1021616	000101-	HEX BOLT M6 ×16	2
19	1422616	000101-	LOCK WASHER M6	2
20	1421612	000101-	FLAT WASHER M6× $\phi$ 12×1.6	2
21	8137001	000101-	BRACKET, GUIDE	1

SQUEEGEE GROUP

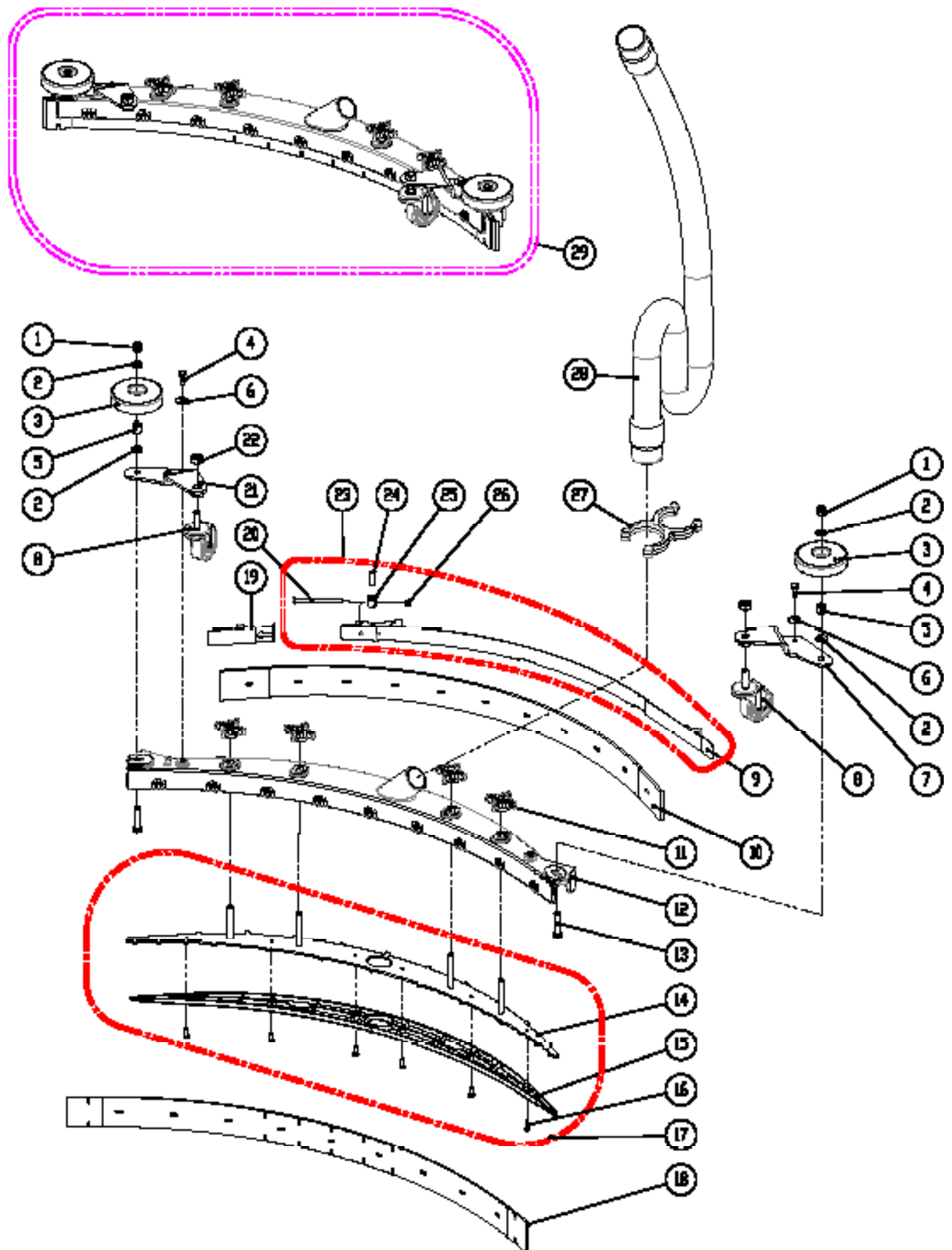


# PARTS LIST

## SQUEEGEE GROUP

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	1123810	000101-	LOCK NUT M8	2
2	1421824	000101-	FLAT WASHER M8× $\phi$ 24×2.0	4
3	8116009	000101-	PROTECTIVE WHEEL	2
4	1021616	000101-	HEX HEAD BOLT M6×16	2
5	8115404	000101-	BEARING, JOURNAL	2
6	1421612	000101-	FLAT WASHER M6× $\phi$ 12×1.6	2
7	8118300	000101-	RIGHT BRACKET	1
8	8118400	000101-	CASTER, 2 INCH	2
9	8118600	000101-	CLAMP ASSEMBLY, SQUEEGEE	1
10	8118022	000101-	SQUEEGEE BLADE, REAR, LINATEX	1
	8118002	000101-	SQUEEGEE BLADE, REAR, PU (OPTIONAL)	1
11	8118003	000101-	STAR KNOB M8	4
12	8118004	000101-	SQUEEGEE HOUSING	1
13	1021835	000101-	HEX HEAD BOLT M8×35	2
14	1121807	000101-	HEX NUT M8	4
15	8118005	000165-000527 for i20NB	RETAINER,SQUEEGEE	1
		000187-000487 for i20NBT		
		000139-000311 for i24BT		
16	1021860	000101-	HEX HEAD BOLT M8×60	4
17	8118021	000101-	SQUEEGEE BLADE, FRONT, LINATEX	1
	8118001	000101-	SQUEEGEE BLADE, FRONT, PU (OPTIONAL)	1
18	8118610	000101-	SHORT CLAMP ASSEMBLY	1
19	1221575	000101-	PAN HEAD SCREW M5×75	1
20	8118200	000101-	LEFT BRACKET	1
21	1121008	000101-	HEX NUT M10	2
22	1123507	000101-	LOCK NUT M5	1
23	8118109	000101-	HOLDER VACUUM HOSE	1
24	8118006	000101-	VACUUM HOSE	1

**SQUEEGEE GROUP**



# PARTS LIST

## SQUEEGEE GROUP

DIA NO.	PART NUMBER	SERIAL NUMBER	DESCRIPTION	NO REQ'D
1	1123810		LOCK NUT M8	2
2	1421824		FLAT WASHER M8× $\phi$ 24×2.0	4
3	8116009		PROTECTIVE WHEEL	2
4	1021616		HEX BOLT M6×16	2
5	8115404		BEARING, JOURNAL	2
6	1421612		FLAT WASHER M6× $\phi$ 12×1.6	2
7	8118300		RIGHT BRACKET	1
8	8118400		CASTER, 2 INCH	2
9	8118600		CLAMP ASSEMBLY, SQUEEGEE	1
10	8118022		SQUEEGEE BLADE, REAR, LINATEX	1
	8118002		SQUEEGEE BLADE, REAR, PU (OPTION)	1
11	8118003		STAR KNOB M8	4
12	8118004		SQUEEGEE HOUSING	1
13	1021835		HEX BOLT M8×35	2
14	8118009	000528- for i20NB	STAINLESS STEEL RETAINER,SQUEEGEE	1
		000489- for i20NBT		
		000321- for i24BT		
15	8118008	000619- for i20NB	PLASTIC SPACER	1
		000337- for i24BT		
		000604- for i20NBT		
16	1222515		COUNTERSUNK FLAT HEAD SCREW M5×15	6
17	8118010		RETAINER KIT	1
18	8118021		SQUEEGEE BLADE, FRONT, LINATEX	1
	8118001		SQUEEGEE BLADE, FRONT, PU (OPTION)	1
19	8118610		SHORT CLAMP ASSEMBLY	1
20	1221575		SCREW M5×75	1
21	8118200		LEFT BRACKET	1
22	1121008		HEX NUT M10	2
23	8118600A		CLAMP ASSEMBLY	1
24	8118624		SHAFT	1
25	8118623		SPACER	1
26	1123507		LOCK NUT M5	1
27	8118109		HOLDER VACUUM HOSE	1
28	8118006		VACUUM HOSE	1

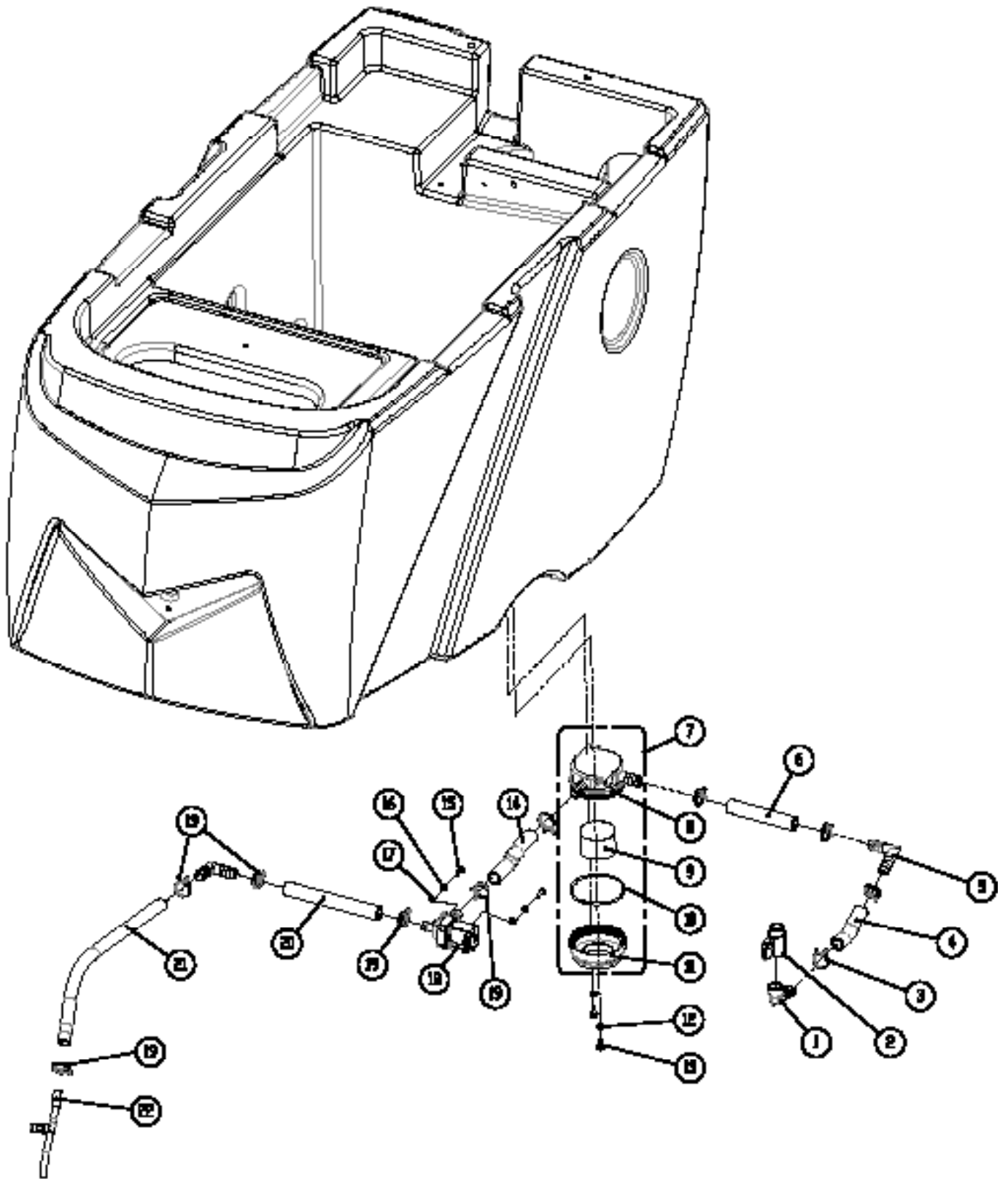
## **PARTS LIST**

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### **SQUEEGEE GROUP**

<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
29	8118000		SQUEEGEE ASSEMBLY, LINATEX	1
	8118000-PU		SQUEEGEE ASSEMBLY, PU	1

**SOLUTION GROUP**



**PARTS LIST****SOLUTION GROUP**

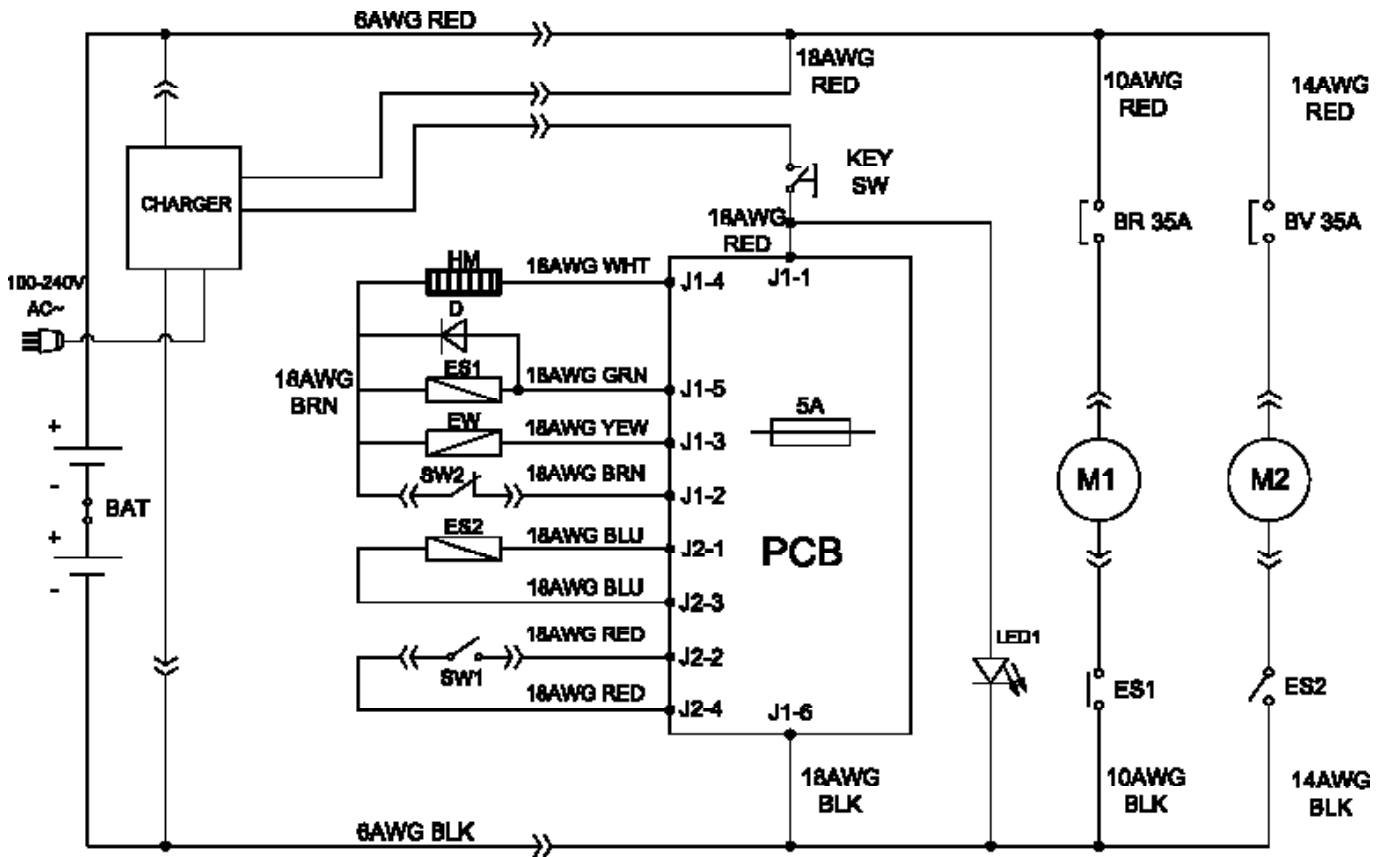
<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	8119007	000101-	ELBOW G1/2	1
2	8119005	000101-	BALL VALVE, G1/2	1
3	8119006	000101-	CLAMP	5
4	8119201	000101-	TUBING ID=12MM L=70MM	1
5	8119002	000101-	ELBOW, TUBING BARB	2
6	8119202	000101-	TUBING ID=12MM L=100MM	1
7	8119100	000101-	FILTER ASSEMBLY, 70 MESH	1
	8119200	000101-	FILTER ASSEMBLY, 40 MESH	1
8	8119101	000101-	BASE, FILTER ASSEMBLY	1
9	8119103	000101-	SCREEN, FILTER, 70 MESH	1
	8119105	000101-	SCREEN, FILTER, 40 MESH (OPTION)	1
10	1622760	000101-	O RING	1
11	8119102	000101-	CAP, FILTER ASSEMBLY	1
12	1421510	000101-	FLAT WASHER M5× $\phi$ 10×1	2
13	1221512	000101-	SCREW M5×12	2
14	8119202	000101-	TUBING ID=12MM L=100MM	1
15	1221412	000101-	SCREW M4×12	2
16	1422411	000101-	LOCK WASHER M4	2
17	1421409	000101-	FLAT WASHER M4× $\phi$ 9×0.8	2
18	8119003	000101-	SOLENOID VALVE,24VDC	1
19	1962016	000101-	CLAMP, 10-16mm	5
20	8119203	000101-	TUBING ID=12MM L=135MM	1
21	8119204	000101-	TUBING ID=10MM L=360MM	1
22	8116100	000101-	WATER SUPPLY TUBE	1



# WIRING DIAGRAM

## WIRING DIAGRAM FOR I20NB

(SN:) 271 )



BAT: 2-12V Batteries

CHARGER: On board battery charger

KEY SW: Main power Key switch

HM: Hour meter

D: Diode

ES1: Brush motor solenoid switch

EW: Solution solenoid valve switch

SW2: Safe switch, Scrub head lifting

ES2: Vacuum motor relay

ES2: Vacuum motor relay

SW1: Control handle start bail switch

PCB: Function electronic board

LED1: Running lights

BR: Circuit breaker, Brush motor

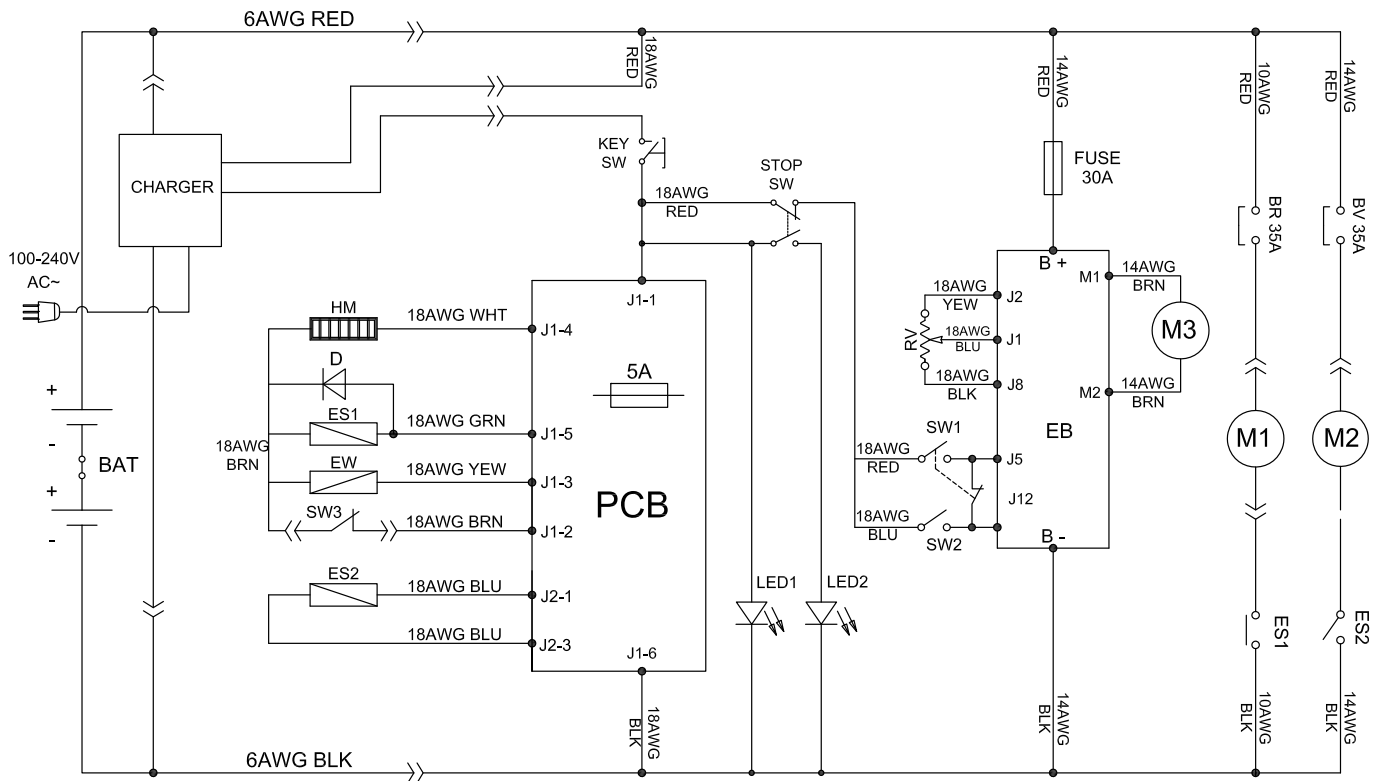
BV: Circuit breaker, Vacuum motor

M1: Brush motor

M2: Vacuum motor

# WIRING DIAGRAM

## WIRING DIAGRAM FOR I20NBT & I24BT (I20NBT & I24BT) (SN: i20NBT- 603 i20NBT-OB - 293 i24BT - 320 )



BAT: 2-12V Batteries

CHARGER: On board battery charger

KEY SW: Main power Key switch

HM: Hour meter

D: Diode

ES1: Brush motor solenoid switch

EW: Solution solenoid valve switch

SW3: Safe switch, scrub head lifting

ES2: Vacuum motor relay

PCB: Function electronic board

STOP SW: Emergency stop switch

LED1: Running lights

LED2: Emergency stop lights

RV: Speed potentiometer

SW1: Control handle bail switch, forward

SW2: Control handle bail switch, backward

EB: Speed control board

M3: Transaxle motor

BR: Circuit breaker, Brush motor

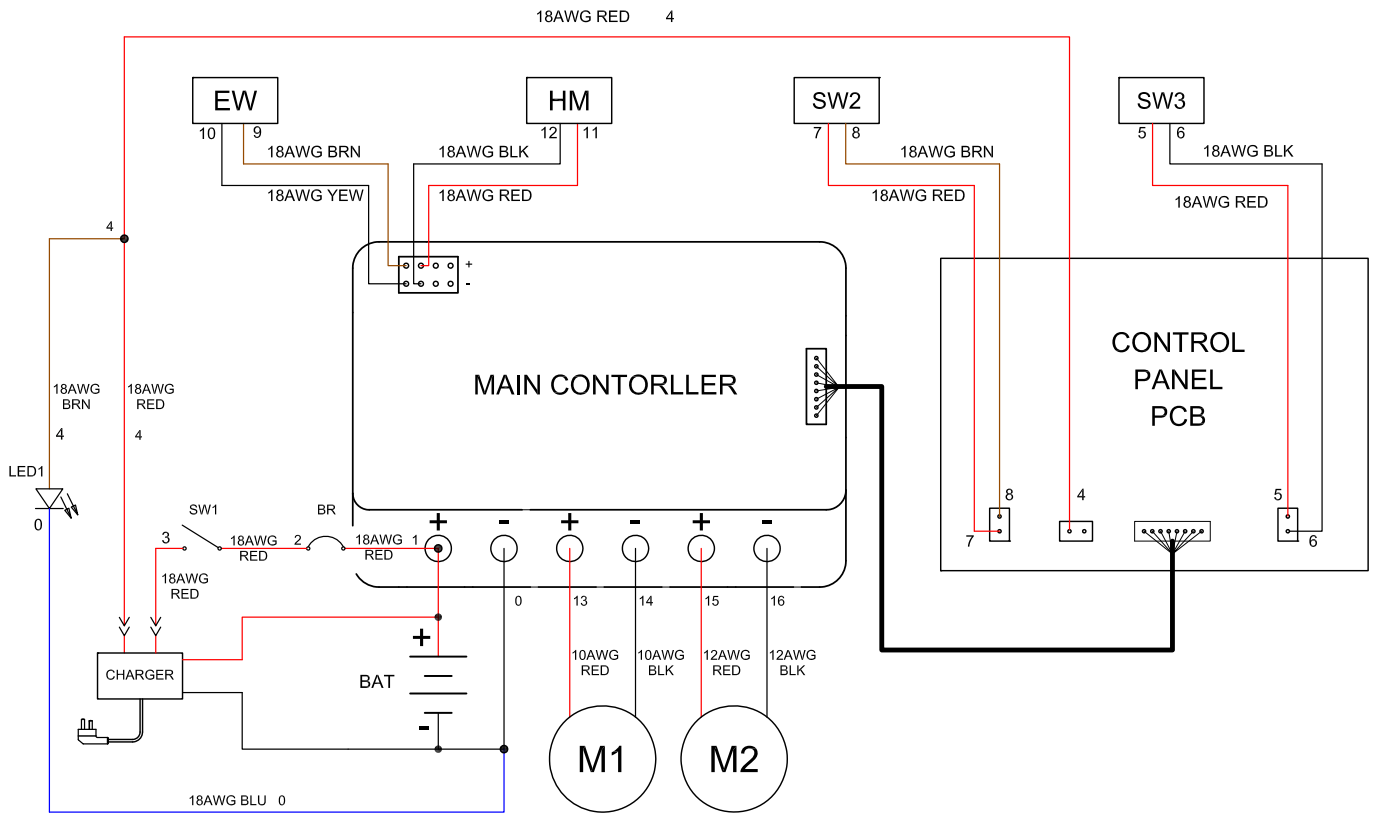
BV: Circuit breaker, Vacuum motor

M1: Brush motor

M2: Vacuum motor

# WIRING DIAGRAM

## WIRING DIAGRAM FOR i20NB (SN: 272 - 5288 )



BAT: 2-12V Batteries

CHARGER: On board battery charger

SW1: Key switch

BR: Circuit breaker, 5A

LED1: Running lights

EW: Solution solenoid valve switch

HM: Hour meter

SW2: Safe switch, Scrub head lifting

SW3: Control handle start bail switch

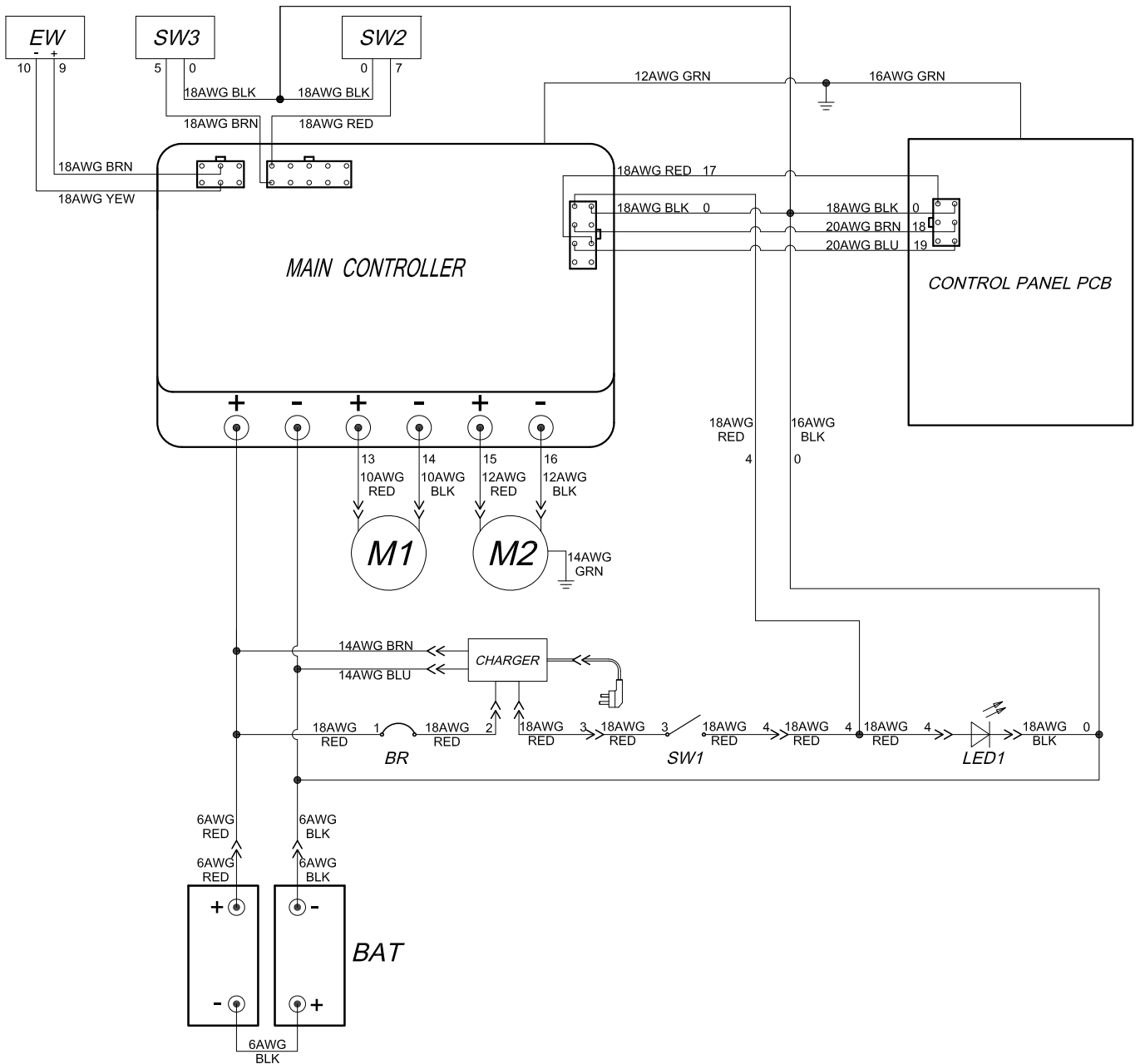
M1: Brush motor

M2: Vacuum motor

# WIRING DIAGRAM

## WIRING DIAGRAM FOR i20NB

SN: 5298



BAT: 2-12V Batteries

BR: Main controller circuit breaker, 5A

SW1: Main power key switch

LED1: Running lights

CHARGER: On board battery charger

M1: Brush motor

M2: Vacuum motor



WEAR AND TEAR PARTS

<b>DIA NO.</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	8115200	WHEEL, 8 INCH, i20NB	2
	1612607	BEARING, BALL, 6004, 8"WHEEL	4
	8125200	WHEEL, 8 INCH, i20NBT / i24BT	2
2	8116009	PROTECTIVE WHEEL	3
3	8118021	SQUEEGEE BLADE, FRONT, LINATEX	1
4	8118022	SQUEEGEE BLADE, REAR, LINATEX	1
5	9050020	20" BRUSH ,0.7MM PP BRISTLE, BLACK, i20NB/NBT (OPTIONAL)	1
	9050020E	20" BRUSH ,0.5MM PP BRISTLE, BLUE, i20NB/NBT (OPTIONAL)	1
	9050012	12" BRUSH , i24BT	2
6	9040019	19" PAD HOLDER, i20NB/NBT	1
	9040019K	19" PAD HOLDER, i20NB/NBT (OPTIONAL)	1
	9040011	11" PAD HOLDER, i24BT	2
	9040011K	11" PAD HOLDER, i24BT (OPTIONAL)	2
7	8146116	ISOLATORS, M10×25, i20NBT-OB	4
	8146107	ISOLATORS, M10x25, i20NBT-OB	4