



Operator & Parts Manual

Battery Automatic Floor Scrubber

Model: i20NBV



8130054
REV.05(04-2025)

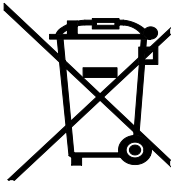


READ OPERATOR MANUAL CAREFULLY!

HOW TO ORDER PARTS

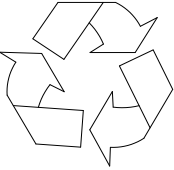
Please contact your local distributor. Having the following information available will be helpful:

- Machine model name
- Serial number from serial plate
- Part # and quantity (do not order by page 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.



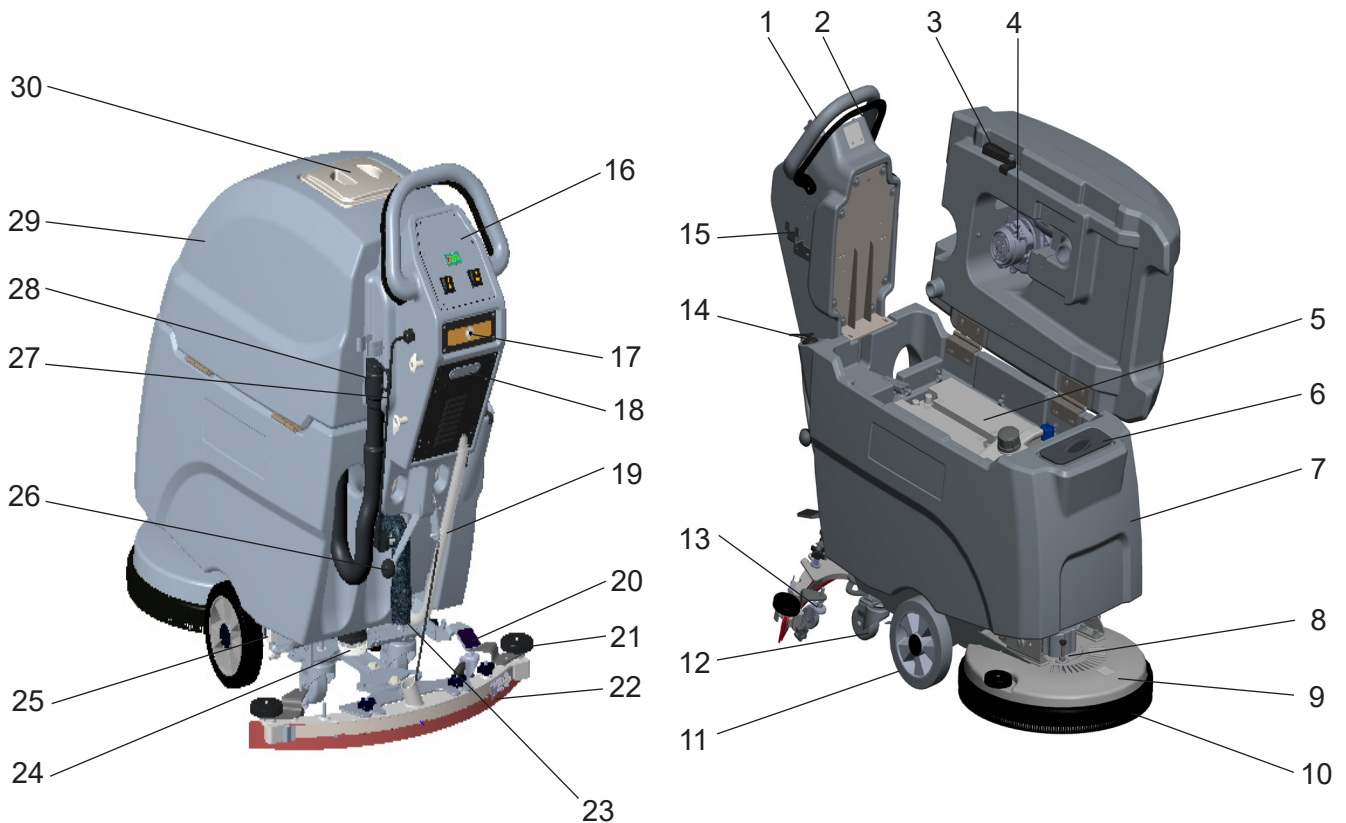
Always remember to recycle.

Specifications and parts are subject to change without notice.

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MACHINE COMPONENTS



1. Control Handle
2. Control Handle Start Bail
3. Recovery Tank Support Stand
4. Vacuum Motor, 24VDC
5. Batteries
6. Bucket Fill Port/ Clean-Out Port
7. Solution Tank
8. Motor Hub Lock Pin (Disk Models)
9. Scrub Head Assembly
10. Scrub Head Skirt
11. Wheels, 8 Inch
12. Caster, 3.15 Inch
13. Caster, 2 Inch, Squeegee Blade Adjustment
14. Hose Fill-Port
15. Squeegee Storage Bracket
16. Control panel (see Panel components)
17. Overload protector
18. On-board battery charger / Window
19. Solution Tank Level / Drain Hose
20. Scrub Head Lift Pedal
21. Bumper Rollers
22. Squeegee Assembly
23. Squeegee Vacuum Hose
24. Filter Assembly
25. Ball Valve
26. Squeegee Lift Lever
27. Power cord, on-board Battery charger
28. Recovery Tank Drain Hose
29. Recovery Tank
30. Cover

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.

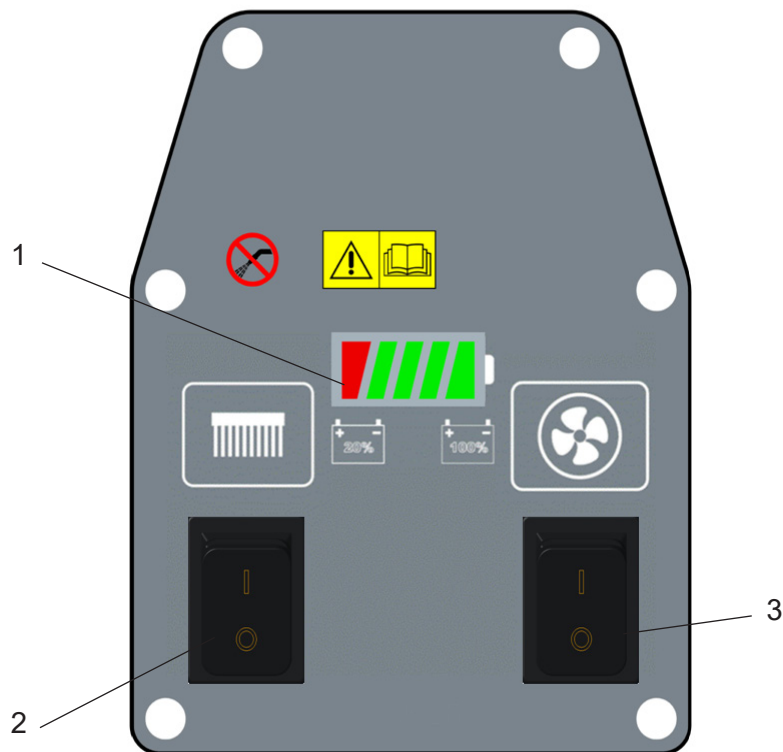


WARNING: Flammable materials can cause an explosion or fire. Do not use flammable materials in tanks.



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

PANEL COMPONENTS



1. Battery capacity indicator
2. Bush motor switch
3. Vacuum motor switch

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
- Requires 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.



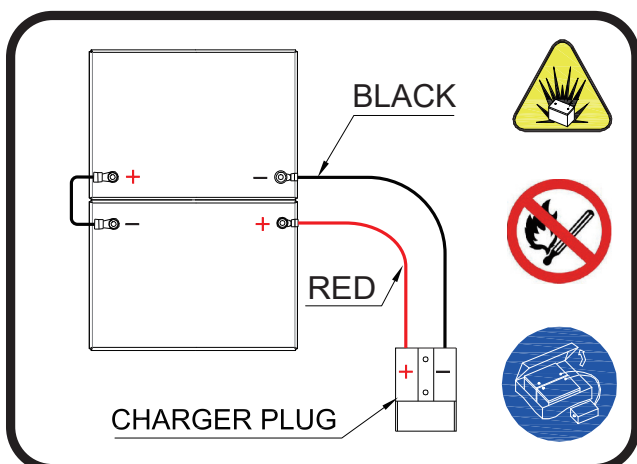
WARNING: Batteries emit hydrogen gas. Explosion or fire can result from hydrogen gas. Keep sparks and open flames away! Keep battery compartment open when charging.

1. Make sure vacuum motor and brush switch are in the OFF position
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 #20) 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 components, item # 8) to lock motor hub in place.

MOUNTING THE SQUEEGEE ASSEMBLY

1. Lift the squeegee lift lever (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.


OPERATOR MANUAL

FILLING THE SOLUTION TANK


The machine is equipped with a hose fill-port (see machine components, item #14) at the rear of the machine, and a bucket fill-port at the front of the solution tank. (see machine components, item #6) Fill the solution tank to the "16Gal" 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.

Conventional scrubbing - Fill solution tank with water (not to exceed 60°C/140°F. Pour a recommended cleaning detergent into the solution tank according to mixing instructions on the container)

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 Dealer 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 #26).
2. Lower the scrub head to the floor by stepping on the scrub head lift pedal (see machine components, item #20).
3. Turn the power button switch (see machine components, item #20) to the on (I) position.
4. Check the battery meter (see Panel components, item #1), if the battery is very low, Please DO NOT continue to operate the machine and recharge the batteries immediately.
5. To change solution flow use the ball valve to increase or decrease flow rate. When ball valve is in horizontal position, the solution flow is OFF turn to vertical position for maximum 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 #3).
7. i20NBV: Pull the control handle bail (see machine components, item #2) backwards to start scrubbing by moving the machine forward.


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

8. 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 #1). 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 electronic components. If the circuit breaker should trip, it can't be reset immediately. You must first determine what caused the breaker to trip, and allow electronic components to cool down and then you can manually reset the circuit breakers.

NOTE: Contact Dealer for machine repairs.

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 #28) 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 #19) 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 #24) 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 Dealer only. Any repairs completed by unauthorized persons will void the warranty.

OPERATOR MANUAL

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.
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.

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.
7. Battery must be stored in a charged state, please charge monthly.

MOTOR MAINTENANCE

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

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.

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.

ADJUSTMENT OF SQUEEGEE ASSEMBLY

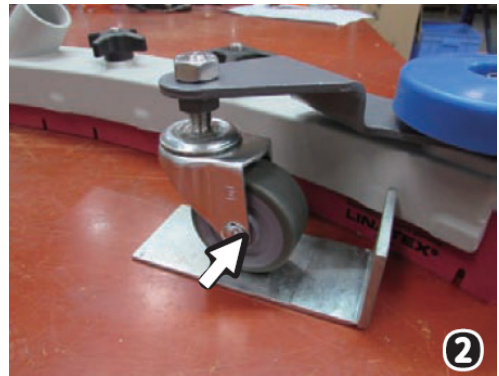
Model: i20NBV

Tools: Offset spanner (17mm)
Gauge block (2mm)

For optimum squeegee blade performance, the squeegee assembly casters might need to be adjusted to the floor type and squeegee blade wear.

**Adjustment Process:**

1. Turn off the machine after you lower the squeegee assembly down.
2. Clean up foreign matter or dirty surfaces on the squeegee blades.
3. Check that the squeegee Blades are installed correctly and not worn out or damaged.
(The assembly needs to be placed on a level surface. And the front/rear squeegee should be close to the Horizontal plane).
4. Check the caster and adjust it to approximately 2MM.



To adjust the caster height, loosen the top nut with 17mm Spanner wrench and Turn the adjustment nut until properly adjusted (Step 4). After adjusting, tighten the top nut. Repeat step for the other caster.

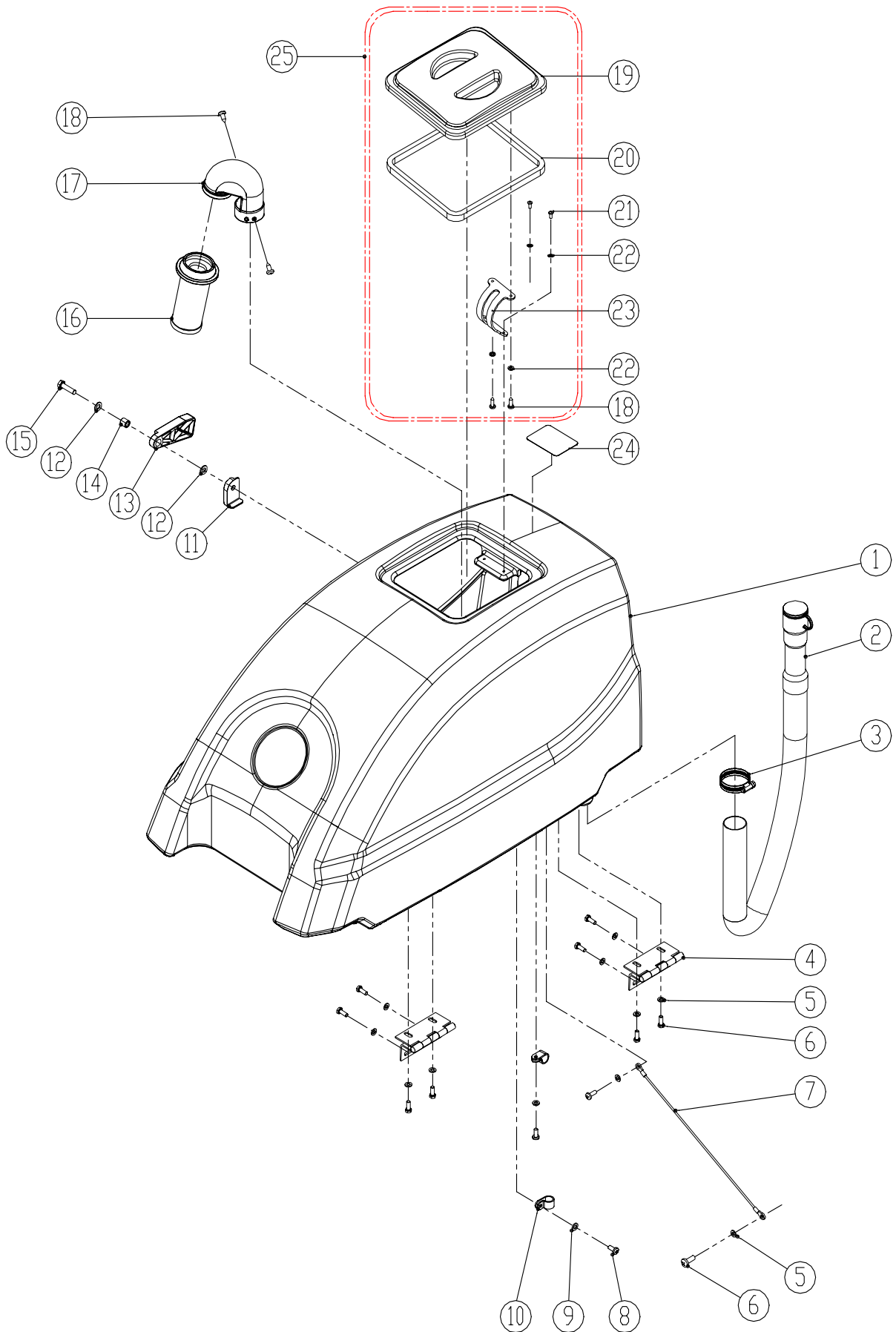
BASIC TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|-------------------------------|--|---|
| 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 |
| | Circuit breaker tripped | Reset breaker |
| | Faulty button switch | Contact Dealer |
| Brush motor will not operate | Scrub head is raised off floor | Lower scrub head |
| | Faulty scrub head (up/down) switch | Contact Dealer |
| | Faulty control handle bail switch | Contact Dealer |
| | Faulty brush motor or wiring | Contact Dealer |
| | Worn motor carbon brushes | Contact Dealer |
| Vacuum motor will not operate | Faulty vacuum motor or wiring | Contact Dealer |
| | Worn motor carbon brushes | Contact Dealer |
| 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 Dealer |
| | 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 |

TECHNICAL SPECIFICATIONS

| MODEL | i20NBV Brush Assist |
|--|---|
| DIMENSIONS L | 55.7 in / 1,415 mm |
| DIMENSIONS W | 22 in / 560 mm |
| DIMENSIONS H | 44.9 in / 1,140 mm |
| WEIGHT | 210 lbs / 95 Kg |
| WEIGHT WITH BATTERIES | 410 lbs / 185 Kg |
| RECOVERY TANK CAPACITY | 17.2 Gal / 65 L |
| SOLUTION TANK CAPACITY | 15.9 Gal / 60 L |
| SQUEEGEE WIDTH | 30 in / 762 mm |
| CLEANING PATH WIDTH | 20 in / 500 mm (Disk) |
| PRODUCTIVITY RATE | 19,375 ft ² / 1,800 m ² h |
| DRIVE SYSTEM | Brush Assisted |
| TRAVEL SPEED, MAXIMUM | N/A |
| MINIMUM AISLE TURN | 63 in / 1,600 mm |
| PAD/BRUSH PRESSURE | 65 lbs / 30 Kg Min |
| SOLUTION FLOW RATE | 0 ~ 0.37 Gal / Min 0 ~ 1,400 ml / Min |
| BRUSH MOTOR | 0.75hp / 0.55KW 180 RPM |
| VIBRATIONS @ CONTROLS | N/A |
| VACUUM MOTOR | 0.54hp / 0.4KW |
| WATER LIFT - AIR FLOW | 45 in / 1,143 mm |
| BATTERIES | 2-12, 105AH @ 20 hr |
| RUN TIME PER CHARGE | 3 Hours |
| VOLTAGE DC | 24V |
| DECIBEL RATE AT OPERATOR'S EAR, INDOORS | 68dB(A) |
| GRADE LEVEL, MAX | 5% (3°) |

RECOVERY TANK GROUP



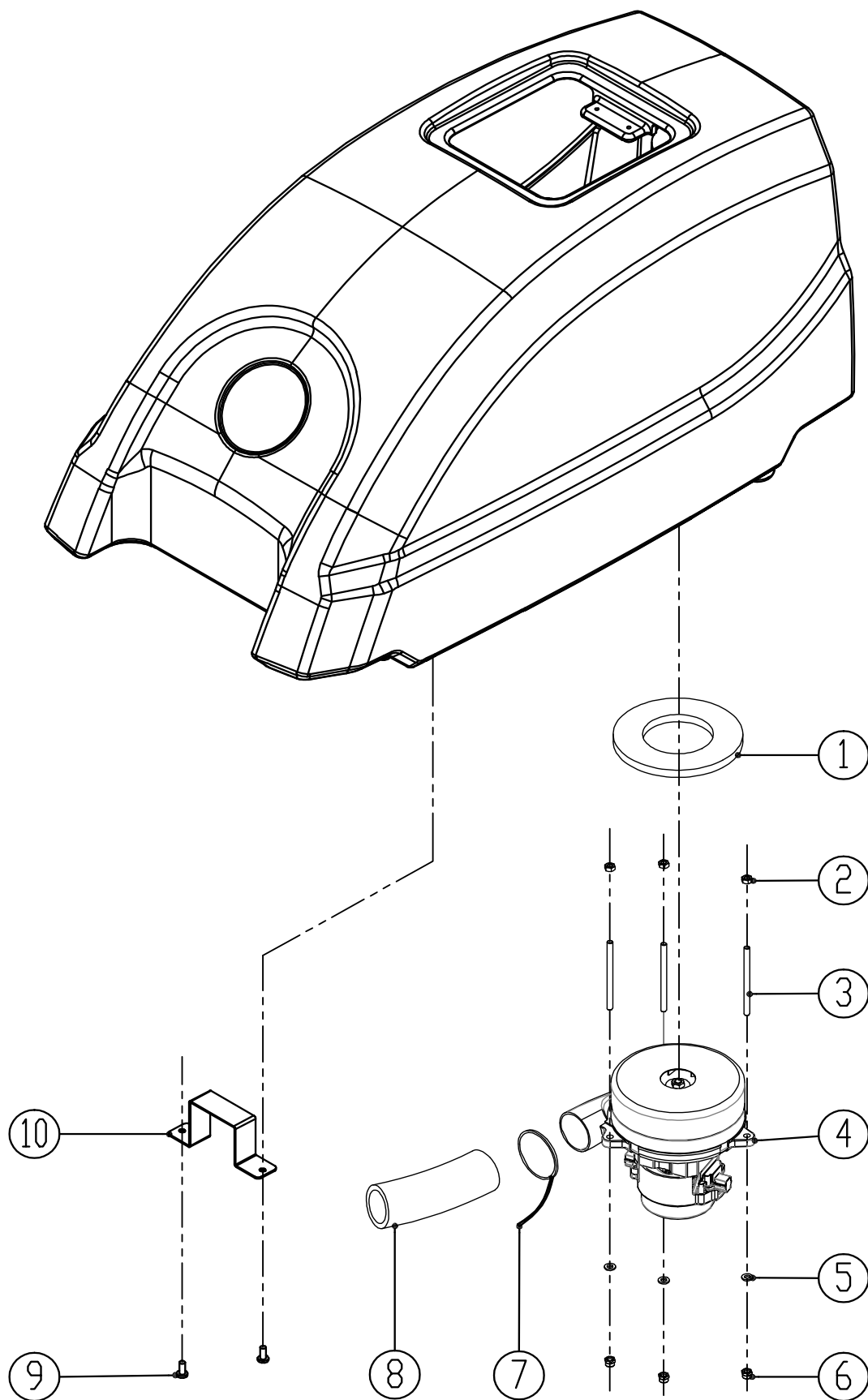
RECOVERY TANK GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|---------------------------|-------------------------|------------------|
| 1 | 8136003 | RECOVERY TANK COVER | | 1 |
| 2 | 8131030 | DRAIN HOSE | 60041100101~60041100274 | 1 |
| | 8131031 | DRAIN HOSE | 60041100275~ | |
| 3 | 1962050 | CLAMP | | 1 |
| 4 | 8111300 | HINGE ASSEMBLY | | 2 |
| 5 | 1421618 | FLAT WASHER M6×DIA18×1.6 | | 10 |
| 6 | 1021616 | HEX BOLT M6×16 | | 10 |
| 7 | 8131020 | CABLE | | 1 |
| 8 | 1221512 | SCREW M5×12 | | 2 |
| 9 | 1421510 | FLAT WASHER M5×DIA10×1 | | 2 |
| 10 | 8113009 | NYLON, CLAMP | | 2 |
| 11 | 8111008 | BRACKET | | 1 |
| 12 | 1421816 | FLAT WASHER M8×DIA16×1.6 | | 2 |
| 13 | 8111007 | RECOVERY TANK SUPPORT | | 1 |
| 14 | 8115404 | SLEEVE, P/M | | 1 |
| 15 | 1021830 | HEX BOLT M8×30 | | 1 |
| 16 | 8111015 | FLOAT, SHUT-OFF | | 1 |
| 17 | 2320220 | BEND | | 1 |
| 18 | 1321210 | SCREW, SELF-TAPPING, | | 4 |
| 19 | 2320216 | COVER, CLEAR | | 1 |
| 20 | 2320218 | GASKET, CLEAR WINDOW | | 1 |
| 21 | 1221410 | SCREW M4×10 | | 2 |
| 22 | 1421409 | FLAT WASHER M4.3×DIA9×0.8 | | 4 |
| 23 | 2320217 | RUBBER HINGE | | 1 |
| 24 | 8111022 | WARNING LABEL | | 1 |
| 25 | 2320216A | CLEAR COVER, KIT | | 1 |

NOTES:

DIA NO.2:Supplier change, material number change;

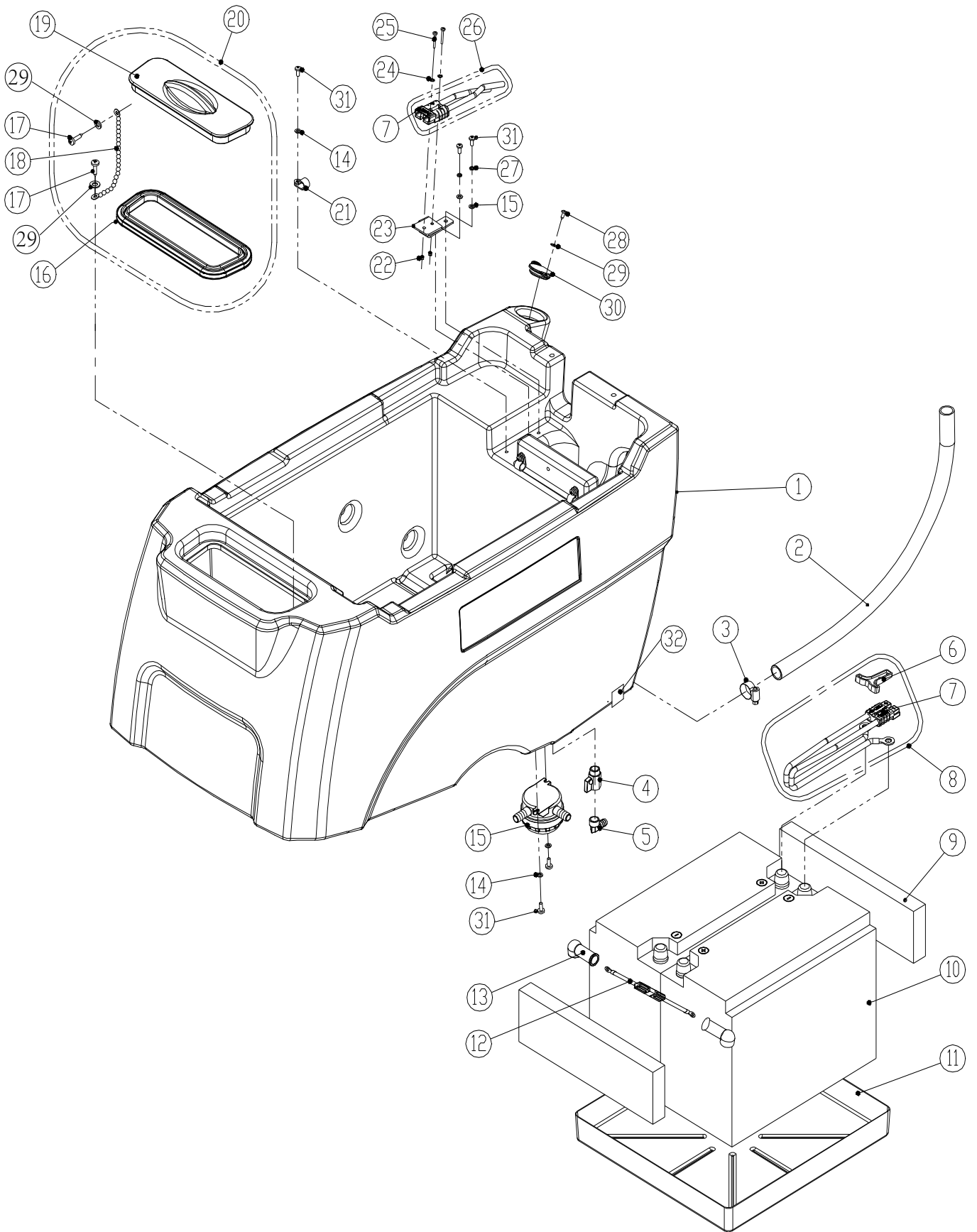
VACUUM FAN GROUP



VACUUM FAN GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|------------------------------------|----------------------|------------------|
| 1 | 8112005 | GASKET, VACUUM MOTOR | | 1 |
| 2 | 1121605 | HEX NUT M6 | | 3 |
| 3 | 8112006 | STUD M6×92 | | 3 |
| 4 | 8116500 | VACUUM MOTOR , 24VDC, 2-STAGE, KIT | 60041100101~ | 1 |
| 5 | 1421612 | FLAT WASHER M6×DIA12×1.6 | | 3 |
| 6 | 1123608 | LOCK NUT M6 | | 3 |
| 7 | 1914300 | TIE, NYLON, 5×300 | | 1 |
| 8 | 8132007 | MUFFLER, VACUUM MOTOR | | 1 |
| 9 | 1221512 | SCREW M5×12 | | 2 |
| 10 | 8133012 | BRACKET | | 1 |

SOLUTION TANK GROUP



SOLUTION TANK GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|---|----------------------|------------------|
| 1 | 8136002 | SOLUTION TANK | | 1 |
| 2 | 8133008 | CLEAN TUBING | 60041100101~ | 1 |
| 3 | 1962032 | CLAMP 16-27mm | | 1 |
| 4 | 8119005 | BALL VALVE, G1/2 | | 1 |
| 5 | 8119007 | ELBOW G1/2 | | 1 |
| 6 | 8113021 | HANDLE, CONNECTOR | | 1 |
| 7 | 8113020 | CONNECTOR | | 2 |
| 8 | 8114731 | BATTERY CONNECT CABLE, ASSEMBLY | | 1 |
| 9 | 8113013 | SPACER, BATTERY | | 2 |
| 10 | - | CONTACT ICE USA FOR BATTERY PART NUMBER | | 2 |
| 11 | 8113012 | BATTERY TRAY | | 1 |
| 12 | 8050475 | BATTERY CONNECT CABLE, BLACK | | 2 |
| 13 | 8114751 | JACKET, BATTERY TERMINAL, BLACK | | 4 |
| 14 | 1421510 | FLAT WASHER M5×DIA10×1 | | 11 |
| 15 | 8119200 | FILTER ASSEMBLY | | 1 |
| 16 | 8050152 | SEAL | | 1 |
| 17 | 1321310 | SCREW, SELF-TAPPING, ST5×10 | | 2 |
| 18 | 8050153 | CHAIN | | 1 |
| 19 | 8050156 | LID, SOLUTION TANK FILL PORT | | 1 |
| 20 | 8050150-BK | LID, KIT | | 1 |
| 21 | 8113009 | NYLON, CLAMP | | 7 |
| 22 | 1123305 | LOCK NUT M3 | | 2 |
| 23 | 8113010 | BRACKET, CONNECTOR MOUNTING | | 1 |
| 24 | 1434300 | LOCK WASHER, TOOTH, M3 | | 2 |
| 25 | 1211325 | SCREW M3×25 | | 2 |
| 26 | 8134783 | BATTERY CONNECT CABLE, ASSEMBLY | | 1 |

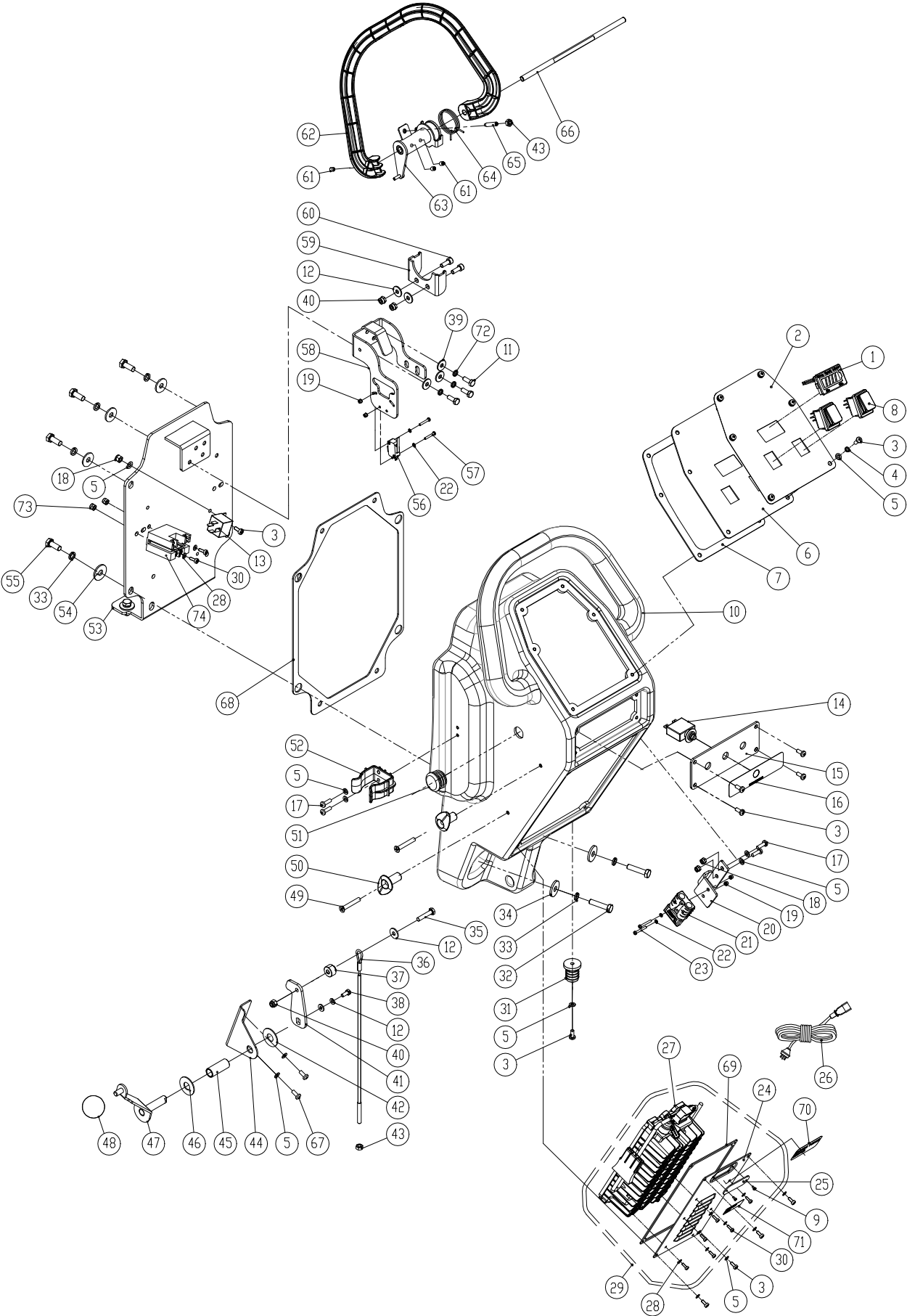
SOLUTION TANK GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|-----------------------------|----------------------|------------------|
| 27 | 1422513 | LOCK WASHER M5 | | 2 |
| 28 | 1321110 | SELF-TAPPING SCREW ST3.5×10 | | 1 |
| 29 | 1421412 | FLAT WASHER M4×DIA12×1.0 | | 1 |
| 30 | 8133002 | CAP, SOLUTION FILL | | 1 |
| 31 | 1221512 | SCREW M5×12 | | 9 |
| 32 | 8133027 | LABEL,BALL VALVE | | 1 |

NOTES:

DIA NO.2:Change the material number so that the material number is the same as the actual use number;

CONTROL CONSOLE GROUP



OPERATOR MANUAL

CONTROL CONSOLE GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|---------|-------------|--|-------------------------|-----------|
| 1 | 8014063 | BATTERY CAPACITY INDICATOR | | 1 |
| 2 | 8134741 | CONTROL PANEL DECAL, I20NBV | | 1 |
| 3 | 1221512 | SCREW M5×12 | | 17 |
| 4 | 1422513 | LOCK WASHER M5 | | 6 |
| 5 | 1421510 | FLAT WASHER M5×DIA10×1.0 | | 13 |
| 6 | 8134811 | CONTROL PANEL, I20NBV | | 1 |
| 7 | 8134015 | GASKET | | 1 |
| 8 | 8014006 | WATERPROOF SWITCH | | 2 |
| 9 | 1221306 | SCREW M3×6 | | 2 |
| 10 | 8134005 | CONTROL HOUSING, I20NBV | | 1 |
| 11 | 1021616 | HEX BOLT M6×16 | | 5 |
| 12 | 1421618 | PLAIN WASHER M6×DIA18×1.6, SS | | 5 |
| 13 | 8114707 | RELAY | | 1 |
| 14 | 8114703 | OVERLOAD PROTECTOR, 35A | | 1 |
| 15 | 8134006 | PLATE, CIRCUIT BREAKERS MOUNTING | | 1 |
| 16 | 8144025 | LABEL, CIRCUIT BREAKER | | 1 |
| 17 | 1221515 | PH SCREW M5×15 | | 4 |
| 18 | 1123507 | LOCK NUT M5 | | 4 |
| 19 | 1123305 | LOCK NUT M3 | | 4 |
| 20 | 8113010 | BRACKET, CONNECTOR MOUNTING | | 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 | 60041100101~60041100274 | 1 |
| | 8134066 | PLATE, ON BOARD BATTERY CHARGER | 60041100275~ | |
| 25 | 8134061 | CLEAR COVER | | 1 |
| 26 | 8112030A | BATTERY CHARGER POWER CORD, KIT | 60041100101~60041100274 | 1 |
| | 8112030 | BATTERY CHARGER POWER CORD, KIT, US | 60041100275~ | 1 |
| 27 | 8132020-PC | Pro charging charger | 60041100101~60041100274 | 1 |
| | 8132015 | ON BOARD BATTERY CHARGER, 380W | 60041100275~ | |
| 28 | 1421409 | FLAT WASHER, M4×DIA9×0.8 | | 6 |
| 29 | 8132071-US | CHARGER BRACKET,KIT | 60041100101~60041100274 | 1 |
| | 8132015A | Onboard Charger Kit with Charger Plate and Cover | 60041100275~ | |
| 30 | 1221412 | SCREW M4×12 | | 6 |
| 31 | 8114005 | CONNECTOR | | 1 |
| 32 | 1021840 | HEX BOLT M8×40 | | 2 |
| 33 | 1422821 | LOCK WASHER M8 | | 12 |
| 34 | 1421828 | FLAT WASHER M8×DIA28×3 | | 2 |
| 35 | 1021630 | HEX HEAD BOLT M6×30, SS | | 1 |
| 36 | 8134082 | CABLE, SQUEEGEE LIFT | | 1 |
| 37 | 8014101 | LIFTING ROPE SPACER | | 1 |

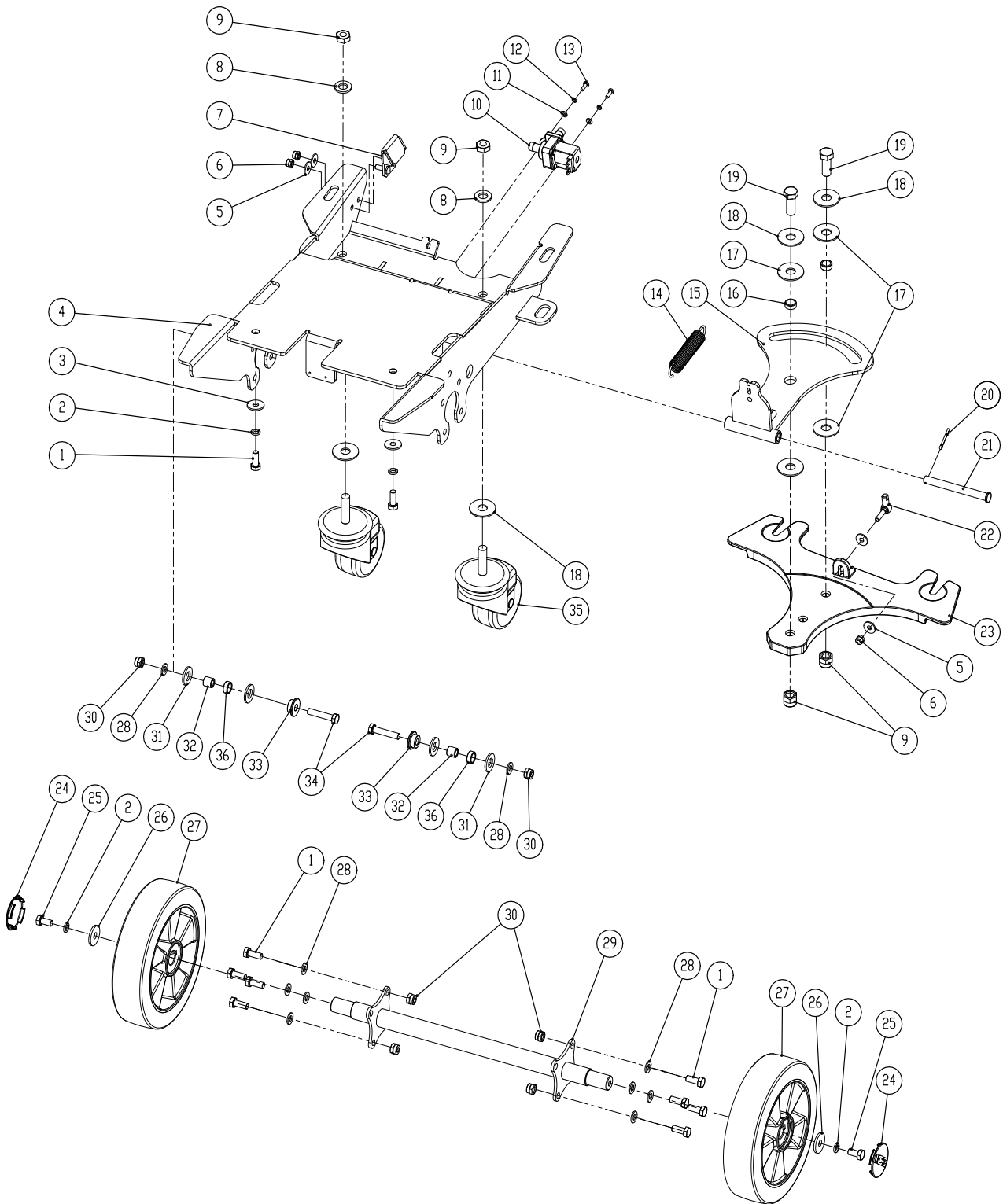
CONTROL CONSOLE GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|--|-------------------------|------------------|
| 38 | 1021610 | HEX HEAD BOLT M6×10, SS | | 1 |
| 39 | 1421612 | FLAT WASHER M6×DIA12×1.6 | | 3 |
| 40 | 1123608 | LOCK NUT M6 | | 3 |
| 41 | 8014012 | BAFFLE | | 1 |
| 42 | 8113111 | NYLON FLAT WASHER DIA12.9×DIA25.4×0.8 | | 1 |
| 43 | 1121605 | HEX NUT M6 | | 2 |
| 44 | 8134501 | BRACKET | | 1 |
| 45 | 8134081 | SLEEVEE | | 1 |
| 46 | 1421132 | FLAT WASHER M12×DIA32×1.5 | | 1 |
| 47 | 8134080 | SQUEEGEE LIFTING HANDLE | | 1 |
| 48 | 8113104 | BALL KNOB M8 | | 1 |
| 49 | 1222641 | SUNK HEAD SCREW M6×40 | | 2 |
| 50 | 8210112 | HOOK,POWER CORD | | 2 |
| 51 | 8014054 | STRAIN RELIEF | 60041100101~60041100274 | 4 |
| | 7000318 | PLUG(ROUND PLUG) | 60041100275~ | 1 |
| 52 | 6210120 | CLAMP, DRAIN HOSE | | 1 |
| 53 | 8134070 | REAR PLATE, CONTROL CONSOLE | | 1 |
| 54 | 1421824 | FLAT WASHER M8×DIA24×2 | | 10 |
| 55 | 1021820 | HEX BOLT M8×20 | | 10 |
| 56 | 8114712 | MICRO SWITCH | | 1 |
| 57 | 1021320 | SCREW M3×20 | | 2 |
| 58 | 8134022 | BRACKET, SWITCH | | 1 |
| 59 | 8114402 | BRACKET, SPRING | | 1 |
| 60 | 1521616 | SCREW M6×16, HEX SCOKET | | 2 |
| 61 | 1534608 | SET SCREW M6×8 | | 4 |
| 62 | 8134301 | LEVER, BAIL | | 1 |
| 63 | 8114300 | ACTUATOR | | 1 |
| 64 | 8114306 | SPRING | | 1 |
| 65 | 1535630 | SET SCREW M6×30 | | 1 |
| 66 | 8114101 | SHAFT | | 1 |
| 67 | 1021512 | HEX HEAD BOLT M5×12, SS | | 2 |
| 68 | 8134085 | SEALING RING ON back OF CONTROL BOX | 60041100275~ | 1 |
| 69 | 8134083 | CONTROL BOX SEAL RING | 60041100275~ | 1 |
| 70 | 8133051 | CHARGING STATUS INDICATING STICKER | 60041100275~ | 1 |
| 71 | 8140022 | CHARGER CODING STICKER(FIRMWARE UPGRADE) | 60041100436~ | 1 |
| 72 | 1422616 | WASHER LOCK φ6 | | 4 |
| 73 | 1123406 | NUT, LOCK, M4 | | 2 |
| 74 | 8210421 | RELAY | | 1 |

NOTES:

DIA NO 68,69,70,71:Structural optimization increase.

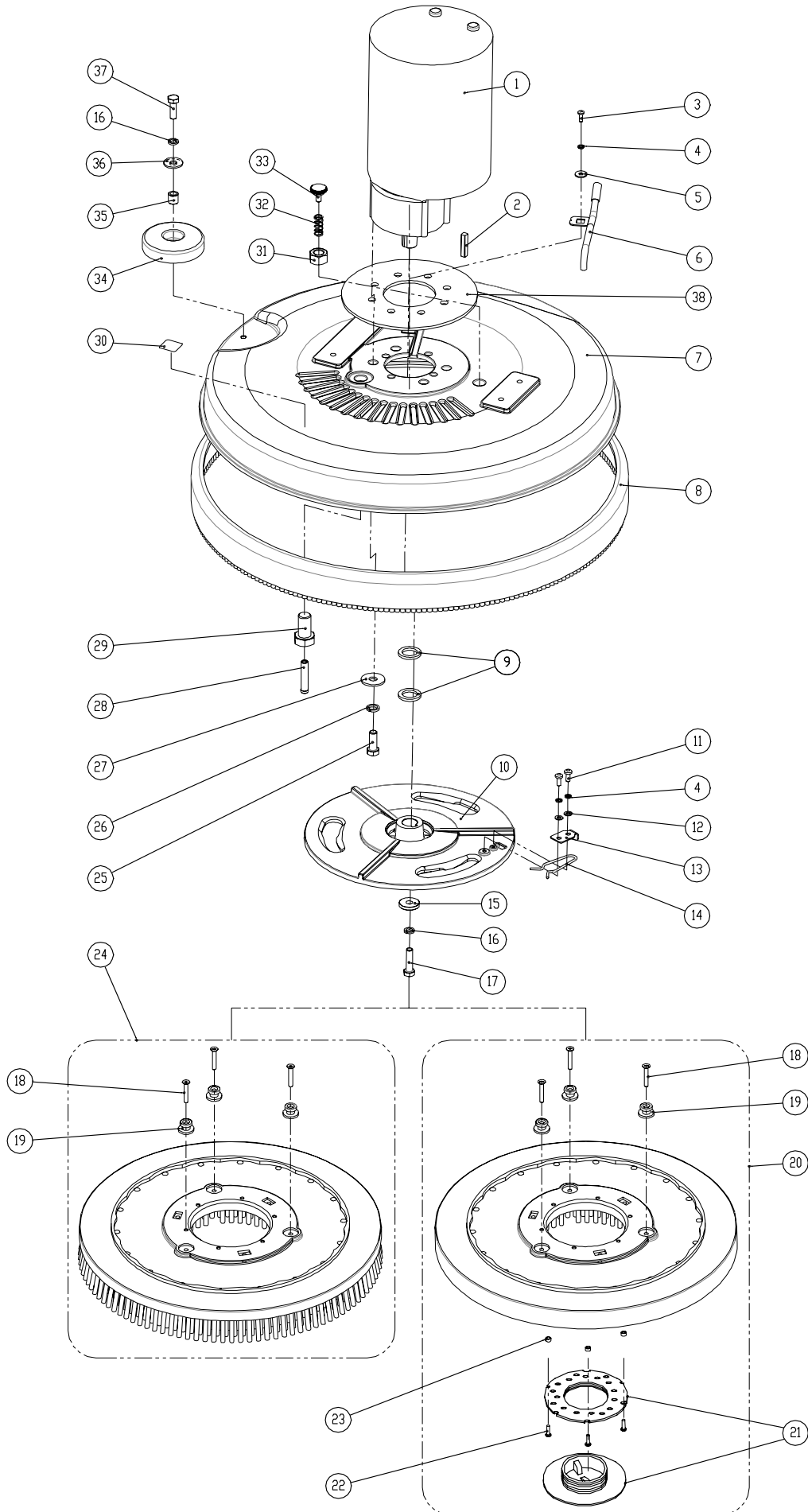
FRAME & WHEEL GROUP



FRAME & WHEEL GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|--|----------------------|------------------|
| 1 | 1021820 | HEX BOLT M8×20 | | 12 |
| 2 | 1422821 | LOCK WASHER M8 | | 6 |
| 3 | 1421824 | FLAT WASHER M8×DIA24×2 | | 4 |
| 4 | 8145100 | MAIN FRAME | | 1 |
| 5 | 1421618 | FLAT WASHER M6×DIA18×1.6 | | 4 |
| 6 | 1123608 | LOCK NUT M6 | | 3 |
| 7 | 8115300 | BRACKET, PEDAL LOCKING | | 1 |
| 8 | 1421124 | FLAT WASHER M12×DIA24×2.5 | | 4 |
| 9 | 1123115 | LOCK NUT M12 | | 4 |
| 10 | 8119003 | SOLENOID VALVE, 24VDC | | 1 |
| 11 | 1421409 | FLAT WASHER M4×DIA9×0.8 | | 2 |
| 12 | 1422411 | LOCK WASHER M4 | | 2 |
| 13 | 1221412 | SCREW M4×12 | | 4 |
| 14 | 8115004 | SPIRNG | | 1 |
| 15 | 8135010 | BRACKET, SQUEEGEE LIFT | 60041100257~ | 1 |
| 16 | 8115005 | AXLE SLEEVE | | 2 |
| 17 | 8135001 | PLASTIC THRUST WASHER M12×DIA30×1.5 | | 4 |
| 18 | 1421132 | FLAT WASHER M12×DIA32×1.5 | | 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, SQUEEGEE MOUNTING | | 1 |
| 24 | 8115206 | COVER, WHEEL | | 2 |
| 25 | 1021816 | HEX BOLT M8×16 | | 2 |
| 26 | 1421828 | FLAT WASHER M8×DIA28×3 | | 2 |
| 27 | 8115200 | WHEEL, 8 INCH | | 2 |
| | 1612607 | BALL BEARING, 6004LU | | 4 |
| 28 | 1421816 | FLAT WASHER M8×DIA16×1.6 | | 10 |
| 29 | 8135405 | SHAFT | | 1 |
| 30 | 1123810 | LOCK NUT M8 | | 10 |
| 31 | 8117007 | NYLON WASHER DIA12.9×DIA24×2.5 | | 4 |
| 32 | 8115404 | BEARING, JOURNAL | | 2 |
| 33 | 8145001 | BUSHING | | 2 |
| 34 | 1021840 | HEX BOLT M8×40 | | 2 |
| 35 | 8115500 | CASTER, SWIVEL, 80MM | | 2 |
| 36 | 8115405 | SLEEVE, P/M | | 2 |

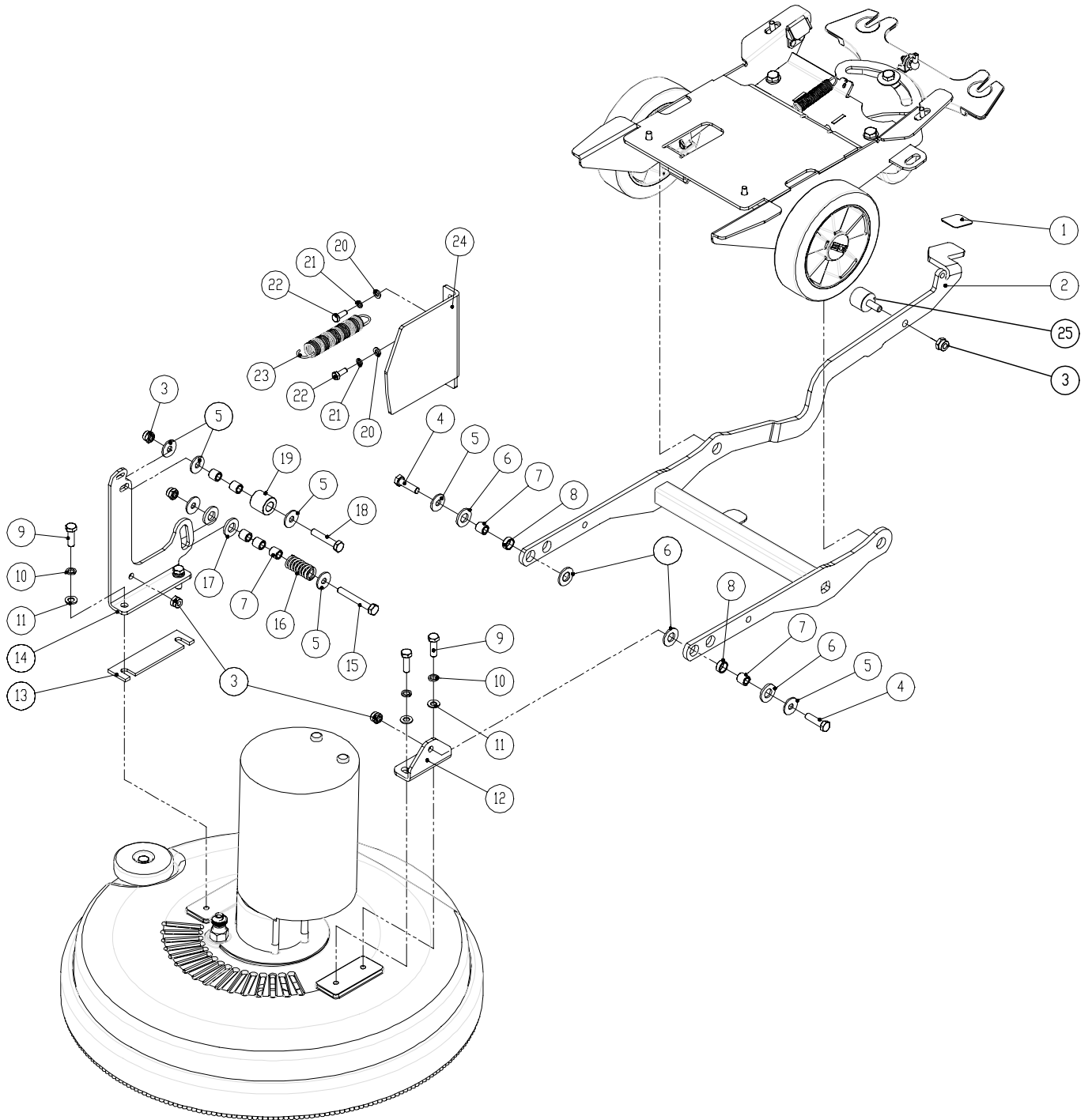
SCRUB HEAD GROUP



SCRUB HEAD GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|--------------------------------------|----------------------|------------------|
| 1 | 8015200 | BRUSH MOTOR, 24V,550W,KIT | | 1 |
| 2 | 1656433 | KEY | | 1 |
| 3 | 1221412 | SCREW M4×12 | | 1 |
| 4 | 1422513 | LOCK WASHER M5 | | 3 |
| 5 | 1421518 | FLAT WASHER M5×DIA18×2 | | 1 |
| 6 | 8116100 | WATER SUPPLY TUBE | | 1 |
| 7 | 8116017 | 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×DIA10×1 | | 2 |
| 13 | 8116002 | BRUSH CLAMP PLATE | | 1 |
| 14 | 8116003 | SPRING CLIP | | 1 |
| 15 | 8116010 | FLAT WASHER DIA8.5×DIA25.4×4.5 | | 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 |
| 21 | 9000001 | BIG MOUTH | | 1 |
| 22 | 1321325 | SELF-TAPPING SCREW, ST4.8×25 | | 3 |
| 23 | 8116040 | SPACER | | 3 |
| 24 | 9050020 | 20" BRUSH, 0.7mm PP BRISTLE (OPTION) | | 1 |
| | 9050020E | 20" BRUSH, 0.5mm PP BRISTLE (OPTION) | | 1 |
| 25 | 1023010 | HEX BOLT 3/8-16×1" UNC | | 4 |
| 26 | 1422026 | LOCK WASHER M10 | | 4 |
| 27 | 1421030 | FLAT WASHER M10×DIA30×2.5 | | 4 |
| 28 | 8116202 | PIN | | 1 |
| 29 | 8116205 | SCREW M14×20 | | 1 |
| 30 | 8111023 | WARNING LABEL | | 1 |
| 31 | 1121913 | HEX NUT M14 | | 1 |
| 32 | 8116204 | SPRING | | 1 |
| 33 | 8116210 | KNOB M6 | | 1 |
| 34 | 8116078 | PROTECTIVE WHEEL | | 1 |
| 35 | 8115404 | SLEEVE, P/M | | 1 |
| 36 | 1421824 | FLAT WASHER M8×DIA24×2.0 | | 1 |
| 37 | 1021825 | HEX BOLT M8×25 | | 1 |
| 38 | 8210803 | SPACER,RUBBER | | 1 |

SCRUB HEAD LIFT GROUP



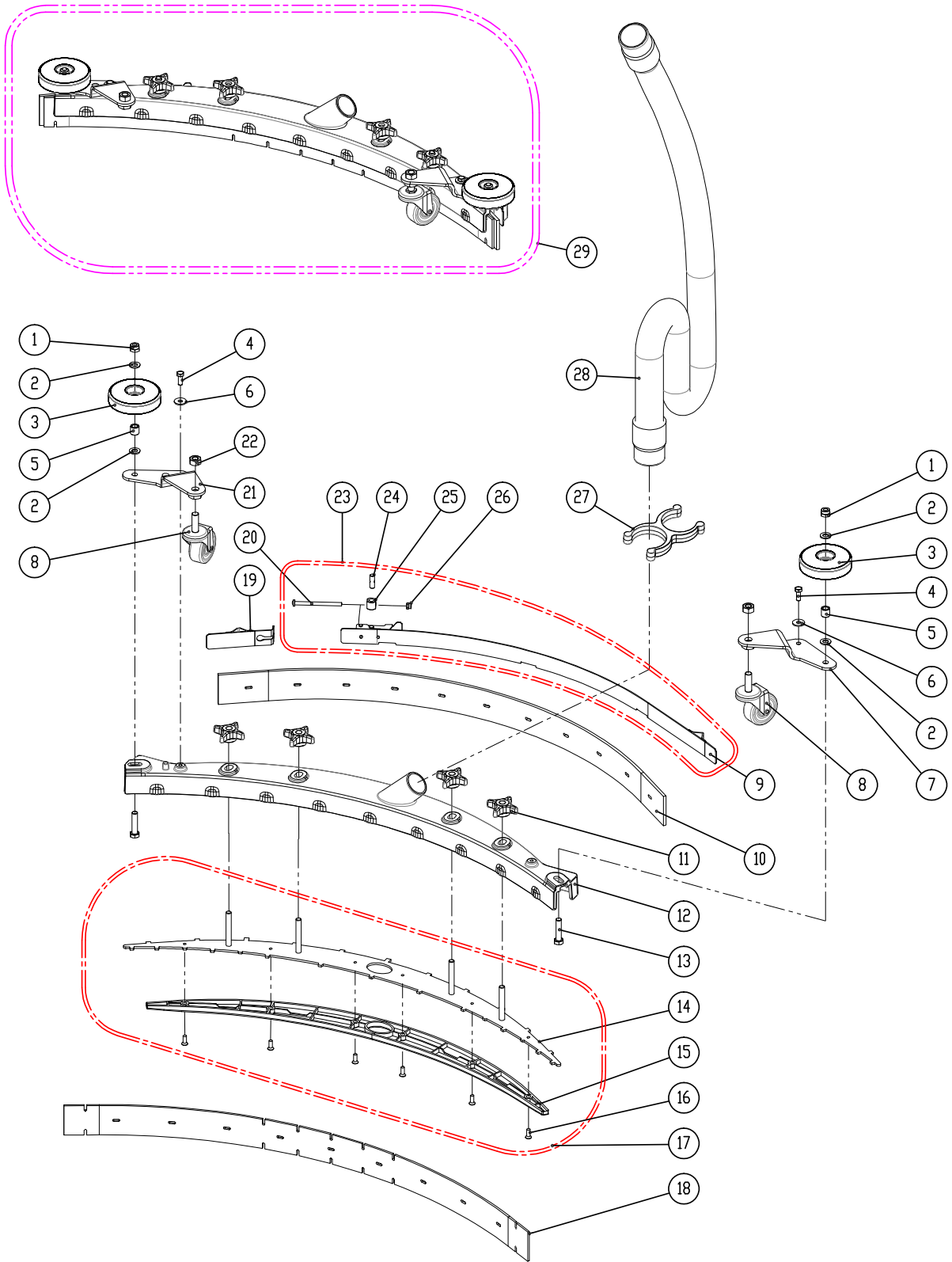
SCRUB HEAD LIFT GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|--------------------------------|----------------------|------------------|
| 1 | 8137006 | NON-SLIP MAT | | 1 |
| 2 | 8137100 | BRACKET, SCRUB HEAD LIFT | | 1 |
| 3 | 1123810 | LOCK NUT M8 | | 5 |
| 4 | 1021830 | HEX BOLT M8×30 | | 2 |
| 5 | 1421824 | FLAT WASHER M8×DIA24×2 | | 6 |
| 6 | 8117007 | NYLON WASHER DIA12.9×DIA24×2.5 | | 4 |
| 7 | 8115404 | BEARING, JOURNAL | | 7 |
| 8 | 8115405 | SLEEVE, P/M | | 2 |
| 9 | 1021825 | HEX BOLT M8×25 | | 4 |
| 10 | 1422821 | LOCK WASHER M8 | | 4 |
| 11 | 1421816 | FLAT WASHER M8×DIA16×1.6 | | 4 |
| 12 | 8117002 | LEFT BRACKET | | 1 |
| 13 | 8117005 | SPACER | | 1 |
| 14 | 8117003 | RIGHT BRACKET | | 1 |
| 15 | 1022860 | HEX BOLT M8×60 | | 1 |
| 16 | 8117008 | SPRING | | 1 |
| 17 | 8113109 | BEARING, THRUST | | 2 |
| 18 | 1022845 | HEX BOLT M8×45 | | 1 |
| 19 | 8117004 | ROLLER | | 1 |
| 20 | 1421612 | FLAT WASHER M6×DIA12×1.6 | | 2 |
| 21 | 1422616 | LOCK WASHER M6 | | 2 |
| 22 | 1021616 | HEX BOLT M6×16 | | 2 |
| 23 | 8133150 | SPRING | | 1 |
| 24 | 8117001 | BRACKET, GUIDE | | 1 |
| 25 | 8133151 | BUMPER | 60041100275~ | 1 |

NOTES:

DIA NO 25: Structural optimization increase。

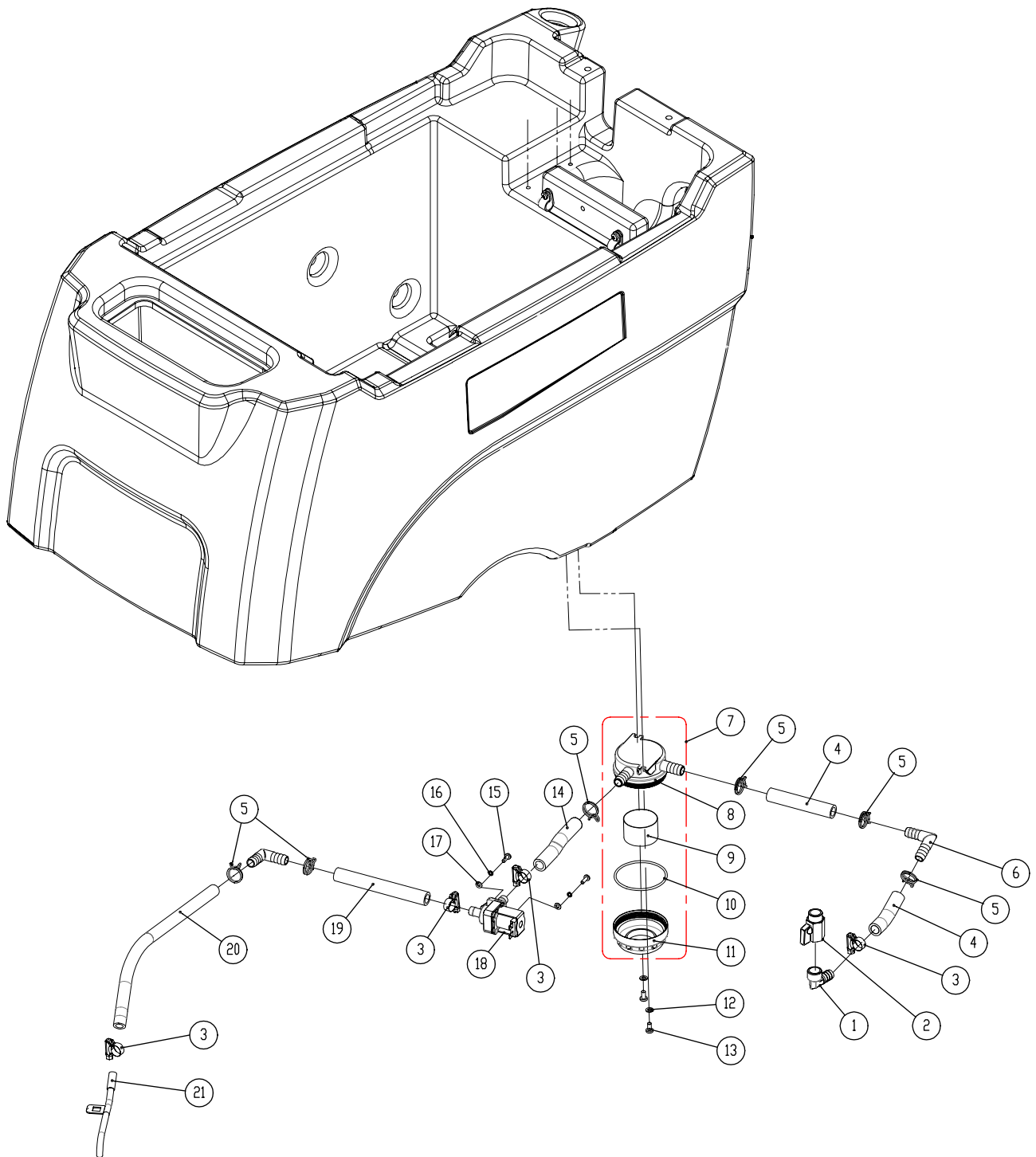
SQUEEGEE GROUP



SQUEEGEE GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|------------------------------------|----------------------|------------------|
| 1 | 1123810 | LOCK NUT M8 | | 2 |
| 2 | 1421824 | FLAT WASHER M8×DIA24×2.0 | | 4 |
| 3 | 8116078 | PROTECTIVE WHEEL | | 2 |
| 4 | 1021616 | HEX BOLT M6×16 | | 2 |
| 5 | 8115404 | BEARING, JOURNAL | | 2 |
| 6 | 1421612 | FLAT WASHER M6×DIA12×1.6 | | 2 |
| 7 | 8118300 | LEFT 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 | STAINLESS STEEL RETAINER, SQUEEGEE | | 1 |
| 15 | 8118008 | PLASTIC SPACER | | 1 |
| 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 | RIGHT 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 | 8118018 | VACUUM HOSE | | 1 |
| 29 | 8118000-BK | SQUEEGEE ASSEMBLY, LINATEX | | 1 |

SOLUTION GROUP



SOLUTION GROUP

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|-------------------------|----------------------|------------------|
| 1 | 8119007 | ELBOW G1/2 | | 1 |
| 2 | 8119005 | BALL VALVE, G1/2 | | 1 |
| 3 | 1962016 | CLAMP, 10-16mm | | 4 |
| 4 | 8119201 | TUBING ID=12MM L=70MM | | 2 |
| 5 | 8119006 | CLAMP | | 6 |
| 6 | 8119002 | TUBING ID=12MM L=100MM | | 2 |
| 7 | 8119200 | SCREEN, FILTER, 40 MESH | | 1 |
| 8 | 8119101 | BASE, FILTER ASSEMBLY | | 1 |
| 9 | 8119104 | SCREEN, FILTER, 40 MESH | | 1 |
| 10 | 1623660 | O RING | | 1 |
| 11 | 8119102 | CAP, FILTER ASSEMBLY | | 1 |
| 12 | 1421510 | FLAT WASHER M5×DIA10×1 | | 2 |
| 13 | 1221512 | SCREW M5×12 | | 2 |
| 14 | 8119202 | TUBING ID=12MM L=100MM | | 1 |
| 15 | 1221412 | SCREW M4×12 | | 2 |
| 16 | 1422411 | LOCK WASHER M4 | | 2 |
| 17 | 1421409 | FLAT WASHER M4×DIA9×0.8 | | 2 |
| 18 | 8119003 | SOLENOID VALVE, 24VDC | | 1 |
| 19 | 8119203 | TUBING ID=12MM L=135MM | | 1 |
| 20 | 8119204 | TUBING ID=10MM L=360MM | | 1 |
| 21 | 8116100 | WATER SUPPLY TUBE | | 1 |

NOTES:

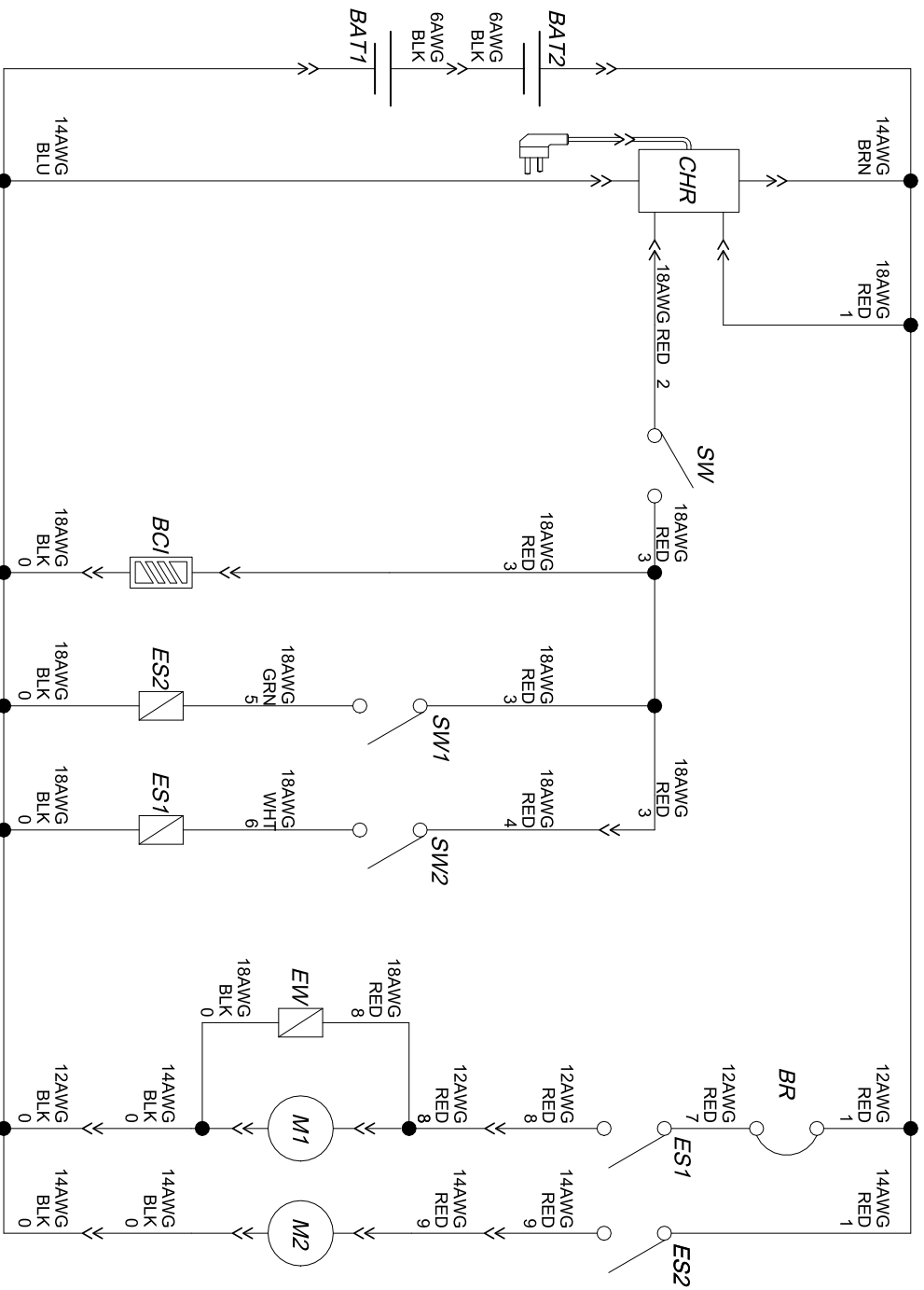
DIA NO 3~11: Change the material number so that the material number is the same as the actual use number;

OPERATOR MANUAL

WEAR AND TEAR PARTS

| DIA NO. | PART NUMBER | DESCRIPTION | SERIAL NUMBER | NO. REQ'D |
|----------------|--------------------|--|----------------------|------------------|
| 1 | 8115200 | WHEEL, 8 INCH | | 2 |
| | 1612607 | BEARING, BALL, 6004, 8" WHEEL | | 4 |
| 2 | 8116078 | 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. (OPTIONAL) | | 1 |
| | 9050020E | 20" BRUSH, 0.5MM PP BRISTLE, BLUE. (OPTIONAL) | | 1 |
| 6 | 9040019 | 19" PAD HOLDER | | 1 |

WIRING DIAGRAM(i20NBV)



- BAT1: 12V battery
- BAT2: 12V battery
- CHR: Charger
- SW: Main switch&Brush motor switch
- SW1: Vacuum motor switch
- SW2: Control handle switch
- BCI: Battery capacity indicator
- ES1: Brush motor solenoid switch
- ES2: Vacuum motor relay
- BR: Circuit breaker
- EW: Solution selenoid valve
- M1: Brush motor
- M2: Vacuum motor
- BLK: Black
- BLU: Blue
- BRN: Brown
- GRN: Green
- RED: Red
- WHT: White

CERTIFICATE OF QUALIFIED

MODEL:_____ SERIAL NO.:_____

INSPECTOR:_____ DATE:_____

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