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Operator & Parts Manual

Automatic Scrubber



i36BT

8230901
REV.01(01-2017)

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.

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Specifications and parts are subject to change without notice.

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SAFETY PRECAUTIONS


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

All operators 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.

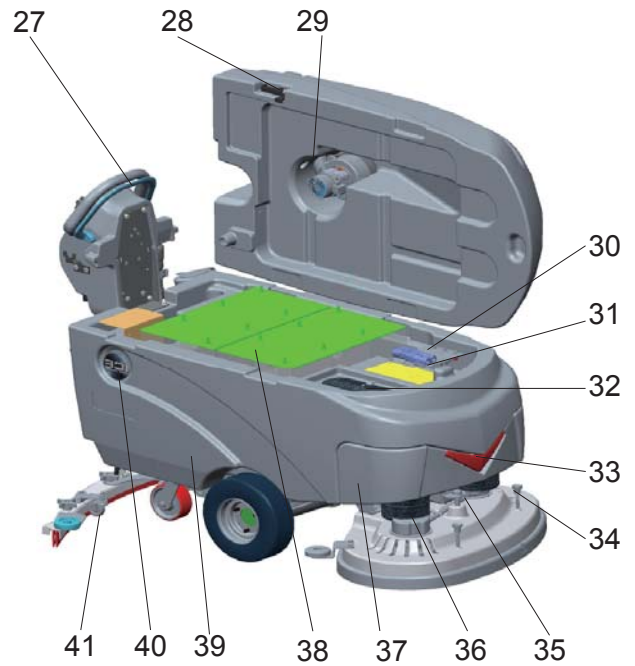
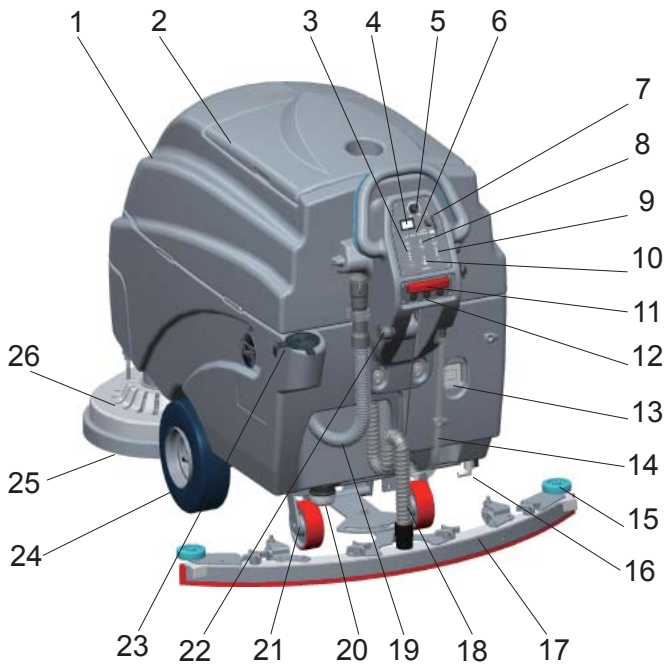
- Avoid any contact with battery acid
- Avoid moving parts. Do not wear loose fitting clothing while servicing machine.

 **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



- 1. Recovery Tank
- 2. Recovery Tank Cover
- 3. Brush Pressure Adjusting Buttons & Indicator Light
 - Brush Pressure Increase Button
 - Brush Pressure Decrease Button
- 4. Hour Meter
- 5. Speed Control Knob
 - Slow Speed
 - Fast Speed
- 6. Battery Meter
- 7. Main Power Key Switch
- 8. 1-STEP Scrub Head Up/Down Switch & Indicator Light
- 9. Solution Flow Control Buttons & Indicator Light
 - Solution Flow Increase Button
 - Solution Flow Decrease Button
- 10. Vacuum Motor Switch & Indicator Light
- 11. Emergency Stop Button
- 12. Drive Motor Circuit Breaker
- 13. On-board Charger
- 14. Solution Tank Level / Drain Hose
- 15. Bumper Rollers
- 16. Ball Valve
- 17. Squeegee Assembly

- 18. Squeegee Vacuum Hose
- 19. Recovery Tank Drain Hose
- 20. Filter Assembly
- 21. Caster, 5 Inch
- 22. Squeegee Lift Lever
- 23. Hose Fill-port
- 24. Wheels, 12 Inch
- 25. Scrub Head Skirt
- 26. Disk Scrub Head
- 27. Control Handle Start Bail
 - Direction Decal
- 28. Recovery Tank Support Stand
- 29. Vacuum Motor, 36VDC
- 30. Vacuum Motor Circuit Breaker
- 31. Connector, 175A
- 32. Bucket Fill Port/ Clean-Out Port
- 33. Led Light
- 34. Brush & Pad Release Plunger
- 35. Scrub Head Adjusting Bolt
- 36. Brush Motor, 36VDC
- 37. Front Cover
- 38. Batteries
- 39. Solution Tank
- 40. Logo, ICE
- 41. Caster, 2 Inch, Squeegee

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
- 6-6V Batteries
- Squeegee assembly
- 2-Pad Drivers
- 2-Brushes

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.

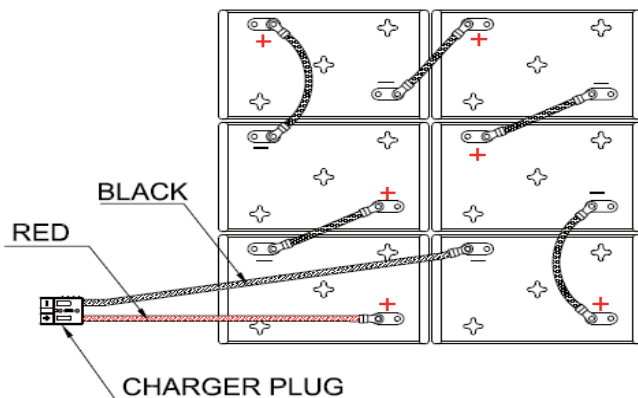
Recommended Battery spec:
6-6V, 260AH@20HR or 330AH@20HR deep cycle batteries.

Max. batteries dimensions :
590mm (L) X 534mm (W) X 365mm (H)

1. Turn the main power key switch off.
2. Open recovery tank to gain access to battery compartment.
3. Carefully place the batteries into the compartment as shown in figure below. Place the battery brace at the rear of the 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 brushes / pads is properly installed.

INSTALLING BRUSHES OR PADS

1. Turn off the 1-STEP Scrub head up/down switch (see machine components, item #8) and Raise the Scrub head off the floor, then stop machine on the level surface, remove the key and ensure the machine is turned off.
2. If using the Pad Driver, first attach the appropriate pad to the pad driver surface.
3. Align the pad driver or brush under the motor hub and push it upward to engage.



4. To remove the pad driver or brush, raise the scrub head and push the pad release plunger (see machine components, item #34) downward.

MOUNTING THE SQUEEGEE ASSEMBLY

1. Lift the squeegee lift lever (see machine components, item #22) 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 #23) at the rear of the machine, and a bucket fill-port (see machine components, item #32) 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 "110L" 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. Turn the main power key switch(see machine components, item #7) to the on (I) position.
2. Check the battery level meter (see machine components, item #6), if the battery meter is in the red, **DO NOT** continue to operate the machine and recharge the batteries immediately.
3. Turn on the 1-STEP scrub head up/dwon switch (see machine components, #8) to lower the scrub head to the floor, the 1-STEP switch indicator is light.
4. Lower squeegee assembly to the floor by lowering the squeegee lift lever(see machine components, item #22).
5. Check the solution flow indicator (see machine components, item #9), adjust the solution flow control switch 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 machine components, item #10).
7. Pull the control handle bail (see machine components, item #27) backwards to start scrubbing .The machine will automatically propel forward. To reverse the machine, simply push the control handle bail forward.
NOTE: Raise squeegee when reversing machine.
8. The scrubbing speed can be adjusted, Adjust the speed control knob (see machine components, item #5) to a desired speed.
NOTE: 45-60 meters (150-200 ft)per minute is the recommended scrubbing speed.
simply press the pressure adjuting button to increase (+) or decrease (-) the brush pressure as needed.(see machine components, item #3)
10. To stop scrubbing, release the control handle bail, turn off the 1-STPE switch to raise the scrub head assembly, raise he 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 level meter(see machine components, item #6). when meter is in the red, stop scrubbing and recharge the batteries.

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

6. When the solution tank runs empty, press the 1-STEP switch raise the brush head. Keep the squeegee down and continue to vacuum until all the dirty water is picked up.

NOTE: *Brush motors will not work when the scrub head assembly raised.*

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

CIRCUIT BREAKER / FUSES

The machine is equipped with 2 resettable circuit breakers(see machine components, item #12, item# 30) to protect the drive motor and the vacuum motor from damage. If the circuit breakers should trip, it can't be reset immediately. You must first determine what caused the breaker to trip, and allow the motor to cool down and then you can manually reset the circuit breakers.

The machine is also equipped with a 50A current transformer to protect the brush motors from damage. When replacing a fuse never substitute a higher Amps rated fuse than specified.

HOURLY METER

The hour meter (see machine components, item #4) 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.

EMERGENCY STOP BUTTON/ BRAKE

The machine is equipped with an Electromagnetic Brake Mechanism on the Transaxle. When in case of Emergency, release the Control Handle bail(see machine components, item #27) or strike the Emergency stop button (see machine components, item #11), the machine will be braked and then stop. Reset the emergency stop button, turn on the Main power key switch, and then pull the control handle bail, the machine will be restart.

NOTE: *The machine can not be moved unless the Main Power Key Switch and the Control Handle bail be turned on.*



WARNING: Do Not Change the Default Settings of the Electromagnetic Brake Mechanism unless Authorized, otherwise it may cause Machine Damage or Personal Injury. Contact the Authorized Service center for machine repairs.

TANK DRAINING

1. Turn the machine off.
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 filter screen and cause damage to the vacuum motor.

1. While holding the drain hose (see machine components, item #19) 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 filter screen 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 #14) 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 #20) 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 20-30 Amps**
- **Output voltage of 36 volts**

ON-BOARD BATTERY CHARGER

As standard configuration, the machine is equipped with the On-board battery charger (see machine components, item #13). The settings of On-board battery charger had been set for the recommended batteries type.



WARNING: The On-board battery charger setting's change are to be completed by authorized service centers only. Failure to properly set will result in the batteries or charger damage.

1. Transport the machine to a well ventilated area.
2. Turn the machine off.
3. If charging wet (lead acid) batteries check the fluid level before charging.
4. Prop up the recovery tank by the support stand (see machine components, item #28) for ventilation.
5. Connect the charger's AC power supply cord to a properly grounded receptable.
6. The charger will automatically begin to charge, once the charging cycle begins, the indicator lights will progress from red, yellow to green. when the green indicator light comes on, the charging cycle is done. Unplug the charger cord.

NOTE: The machine will can not operate when charging.

OFF-BOARD BATTERY CHARGER (OPTION)

1. Place charger and machine in a well ventilated area.
2. Turn the machine off.

3. If charging wet (lead acid) batteries check the fluid level before charging.
4. Prop up the recovery tank by the support stand (see machine components, item #28) for ventilation.
5. Connect the charger's AC power supply cord to a properly grounded receptable.
6. Connect the charger's DC cord into the machine's battery receptacle at the rear of the machine.
7. The charger will automatically begin to charge and will autoatically shut off once the batteries are fully charged.
8. Upon completion of charging, disconnect the AC power supply cord first, and then disconnect the charger from the machine.

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 avoid the warrenty.

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. Open recovery tank cover, Remove the vacuum fan filter and rinse it out with low pressure water, if dirty.



OPERATOR MANUAL

4. Raise the squeegee assembly off floor and wipe it down with a damp towel. Be sure to store the squeegee in the up position.
5. Clean machine with an approved cleaner and a damp towel.
6. Recharge the batteries.
7. Check the condition of the squeegee blade wiping edge, rotate blade if worn.

MONTHLY MAINTENANCE

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

MOTOR MAINTENANCE

1. Contact your 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.

PUSHING OR TOWING THE MACHINE

If the machine becomes disabled, it can be pushed from the front or rear, but only tow it from the rear.

! WARNING: When servicing machine, do not push or tow the machine on inclines with the brake disabled.

Before attempting to push or tow the machine, disengage the brake as described below. To disengage the brake, you can turn the electronic brake lever to the other side.



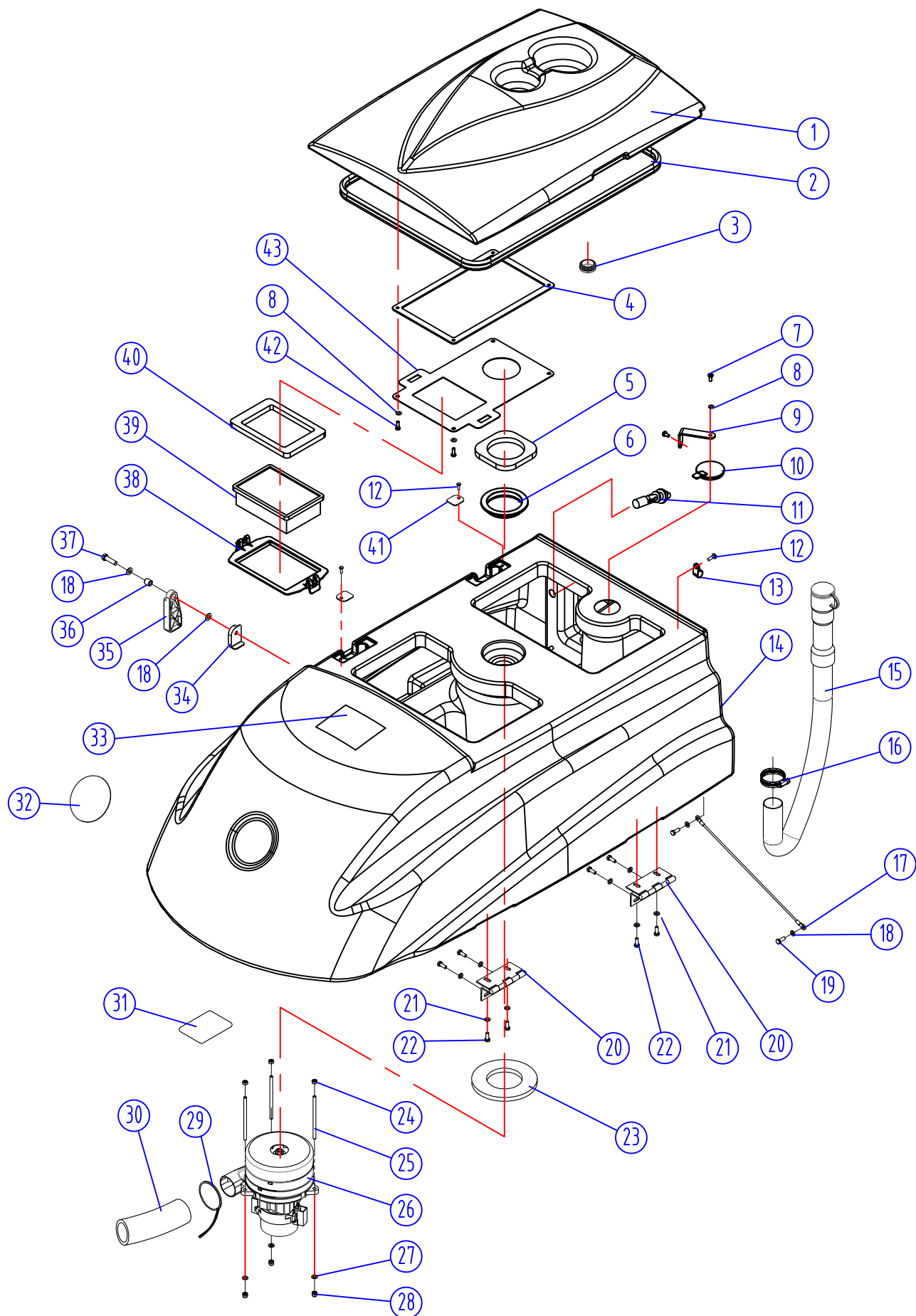
BASIC TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Machine will not operate	Control handle bail not pulled	Pull control handle bail
	Batteries need to be charged	Charge batteries
	Bad battery(s)	Replace battery(s)
	Loose battery cable	Tighten loose cable
	Emergency stop button activated	Reset Emergency stop button
	Main PCB fuse blown	Contact ICE service center
	Faulty key switch	Contact ICE service center
Brush motor will not operate	1-STEP scrub head up/down switch is off	Turn on the 1-STEP switch
	Battery meter lockout activated	Recharge batteries
	Brush motor fuse blown	Replace 50A current transformer
	Brush motors over load	Turn on / off the 1-STEP switch
	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
	Bad solenoid	Contact ICE service center
Machine does not propel	The Main Power Key Switch be Turned off, the Control handle bail not pulled	Turn on the Key switch, Pull the control handle bail
	Tripped drive motor circuit breaker	Reset drive motor circuit breaker button
	Faulty transaxle motor or wiring	Contact ICE service center
	Worn Motor carbon brushes	Contact ICE service center
Vacuum motor will not operate	Recovery tank is full	Drain recovery tank
	Tripped vacuum motor circuit breaker	Reset vacuum circuit breaker button
	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 filter located in recovery tank cover	Clean filter
	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
Short run time	Low battery charge	Recharge batteries
	Low battery charge	Fully recharge batteries
	Defective batteries	Replace batteries
	Batteries need maintenance	See BATTERY MAINTENANCE
	Faulty battery charger	Repair or replace battery charger
	Down pressure lever is set for extra scrub head pressure	Lower down pressure lever

TECHNICAL SPECIFICATIONS

MODEL	i36BT
DIMENSIONS L X W X H	1650 X 865 X 1130 mm
WEIGHT	170 Kg
WEIGHT WITH BATTERIES	440 Kg
SOLUTION TANK CAPACITY	110 L / 29 Gal
RECOVERY TANK CAPACITY	120 L / 31.5 Gal
SQUEEGEE WIDTH	1185 mm / 46.5 in
CLEANING PATH WIDTH	800mm / 32 in
PRODUCTIVITY RATE	3250 m ² h
DRIVE SYSTEM	Transaxle, 36VDC, 350W
TRAVEL SPEED, MAXIMUM	Cleaning: 65m/Min Transporting: 72 m/Min
MINIMUM ALSLE TURN	1600mm
PAD/BRUSH PRESSURE	40kg / 65kg / 90kg
SOLUTION FLOW RATE	0 ~ 3200ml/Min
BRUSH MOTOR(S)	650WX2,36VDC
VACUUM MOTOR	600W,36VDC
WATER LIFT - AIR FLOW	65 in
BATTERIES	6 - 6V, 260AH or 305AH @ 20 hr
RUN TIME PER CHARGE	4 or 4.5 Hours
VOLTAGE DC	36V
GRADE LEVEL, MAX	10% (6°)
DECIBEL RATING AT OPERATOR'S EAR, INDOORS	68 dB(A)

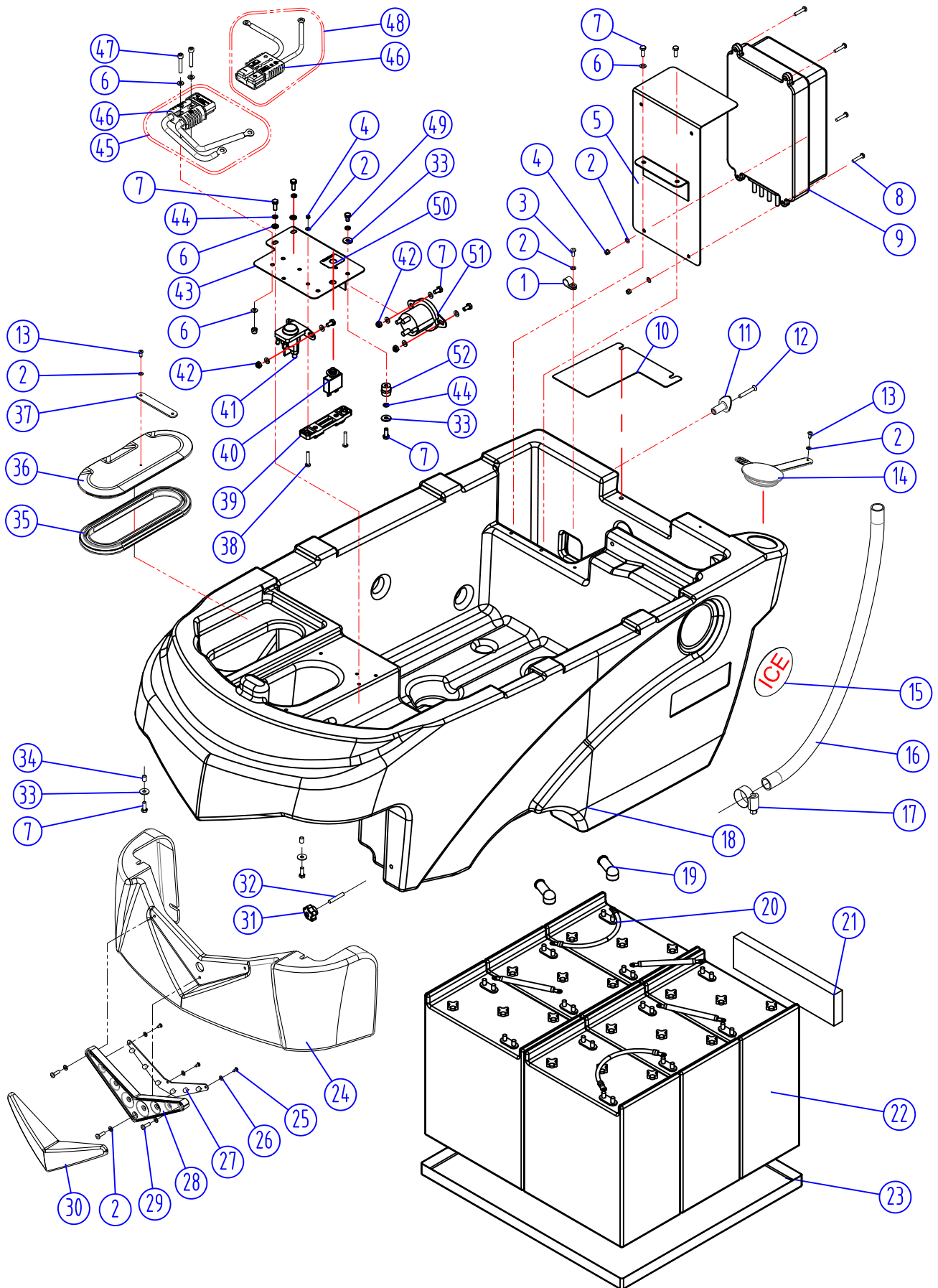
RECOVERY TANK GROUP



RECOVERY TANK GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8230103	RECOVERY TANK COVER	1
2	8230201	SEAL	1
3	8011005	CAP	1
4	8230209	GASKET	1
5	8230208	GASKET, SCREEN	1
6	8230204	SCREEN	1
7	1321213	SELF-TAPPING SCREW,ST4.2 X 13	2
8	1421510	WASHER,M5 X 10 X 1	9
9	8113007	STRIP	1
10	8131003	CAP	1
11	8310238	SENSOR, LEVEL, LIQUID,	1
12	1221512	SCREW,M5X12	3
13	8113009	CLAMP	1
14	8230102	RECOVERY TANK	1
15	8131010	DRAIN HOSE	1
16	1962050	CLAMP	1
17	8230205	CABLE	1
18	1421816	FLAT WASHER,M8 X 16 X 1.6	4
19	1021820	HEX BOLT,M8 X 20	2
20	8111300	HINGE ASSEMBLY	2
21	1421618	FLAT WASHER,M 6 X 18 X 1.6	8
22	1021616	HEX BOLT,M6 X 16	8
23	8112005	GASKET, VACUUM MOTOR	1
24	1121605	HEX NUT,M6	3
25	8210209	STUD,M6 X 110	3
26	8230200	3 STAGE VACUUM MOTOR,36VDC,640W,KIT	1
27	1421612	FLAT WASHER,M6 X 12 X 1.6	5
28	1123608	LOCK NUT,M6	3
29	1914300	TIE, NYLON, 5 X 300	1
30	8132007	MUFFLER, VACUUM MOTOR	1
31	8230126	LABEL, BATTERY INSTALLATION	1
32	4010316	ICE LOGO	1
33	8111022	WARNING LABEL	1
34	8111008	BRACKET	1
35	8111007	RECOVERY TANK SUPPORT	1
36	8115404	SLEEVE, P/M	1
37	1021830	HEX BOLT,M8 X 30	1
38	8230210	BRACKET,FILTER	1
39	8310237	FILTER,DUST	1
40	8310230	GASKET,FILTER	1
41	8111016	PLATE	2
42	1221510	SCREW,M5 X 10	7
43	8230207	PLATE	1

SOLUTION TANK GROUP



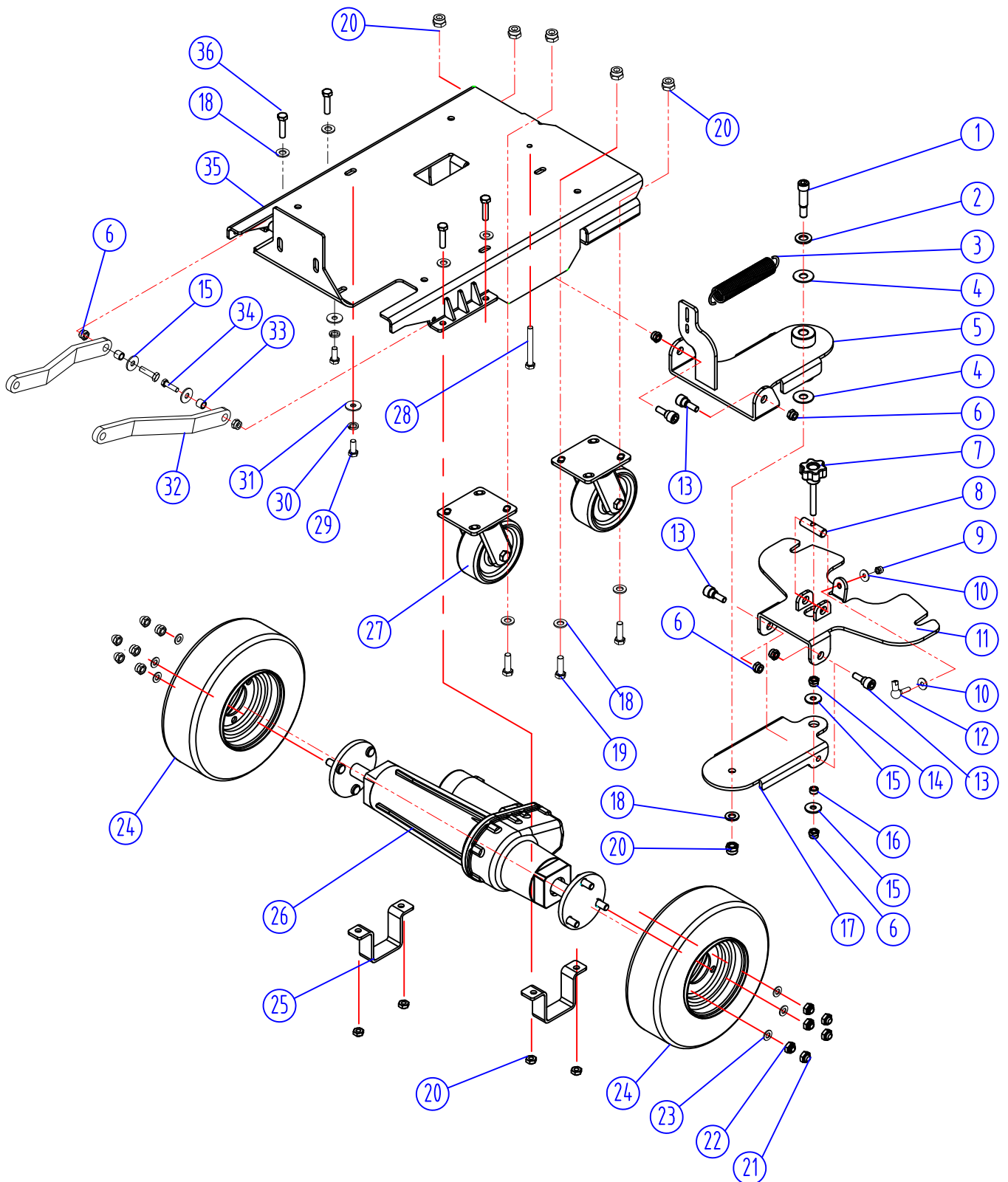
SOLUTION TANK GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	6210131	NYLON, CLAMP	6
2	1421510	FLAT WASHER,M5 X 10 X 1	20
3	1221512	SCREW,M5 X 12	9
4	1123507	LOCK NUT,M5	6
5	8230114	BRACKET, ON BOARD CHARGER	1
6	1421612	FLAT WASHER,M6 X 12 X 1.6	14
7	1021616	HEX BOLT,M6 X 16	12
8	1221525	SCREW,M5 X 25	4
9	8230117-US	ON BOARD CHARGER,36VDC,KIT [US]	1
	8230131-K	ON BOARD CHARGER,36VDC,KIT [EU]	1
	8230132	ON BOARD CHARGER,36VDC,KIT [UK]	1
10	8230127	PLATE	1
11	8210112	HOOK, CORD	2
12	1222641	SCREW,M6 X 40	2
13	1321213	SELF-TAPPING SCREW,ST4.2 X 13	2
14	8210113	CAP, SOLUTION FILL	1
15	4010316	ICE LOGO	2
16	8230134	CLEAN TUBING	1
17	1962025	CLAMP,16 - 25mm	1
18	8230101	SOLUTION TANK	1
19	8114751	JACKET, BATTERY TERMINAL, BLACK	12
20	8230705	BATTERY CONNECT CABLE, BLACK	5
21	8113013	SPACER, BATTERY	4
22	8210105	BATTERY, 260AH @ 20Hr	6
	8230120	BATTERY, 305AH @ 20Hr (OPTIONAL)	6
23	8230121	BATTERY TRAY	1
24	8230104	COVER, FRONT	1
25	1321110	SELF-TAPPING SCREW,ST3.5 X 10	3
26	1421409	FLAT WASHER,M4 X 9 X 0.8	3
27	8230750	LED LIGHT,36V,KIT	1
28	8133601	LED LIGHT MOUNTING BASE	1
29	1221520	SCREW,M5 X 20	3
30	8133602	LED LIGHT COVER	1

SOLUTION TANK GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
31	8210518	KNOB, M8	2
32	1535830	SET SCREW, M8 X 30	2
33	1421618	PLAIN WASHER ,M6 X 18 X 1.6,SS	6
34	8113112	BUSHING	2
35	8113030	SEAL	1
36	8113002	COVER	1
37	8113007	STRAP	1
38	1221520	SCREW, M5 X 20	2
39	8230711	CURRENT TRANSFORMER, 50A	1
40	8114703	CIRCUIT BREAKER, 35A	1
41	8230708	SOLENOID SWITCH, 36VDC	1
42	1123608	LOCK NUT, M6	4
43	8230128	BRACKET, SOLENOID SWITCH	1
44	1422616	LOCK WASHER, M6	6
45	8230707	KIT, BATTERY CONNECT CABLE	1
46	8230714	CONNECTOR, SB175-GREY	2
47	1521635	SCREW, HEX SOCKET, M6 X 35	2
48	8230706	KIT, BATTERY CONNECT CABLE	1
49	1021610	HEX BOLT, M6 X 10	2
50	8144024	LABEL, CIRCUIT BREAKER	2
51	8230702	SOLENOID SWITCH, 36VDC	1
52	8114705	STAND-OFF, M6, RED	2

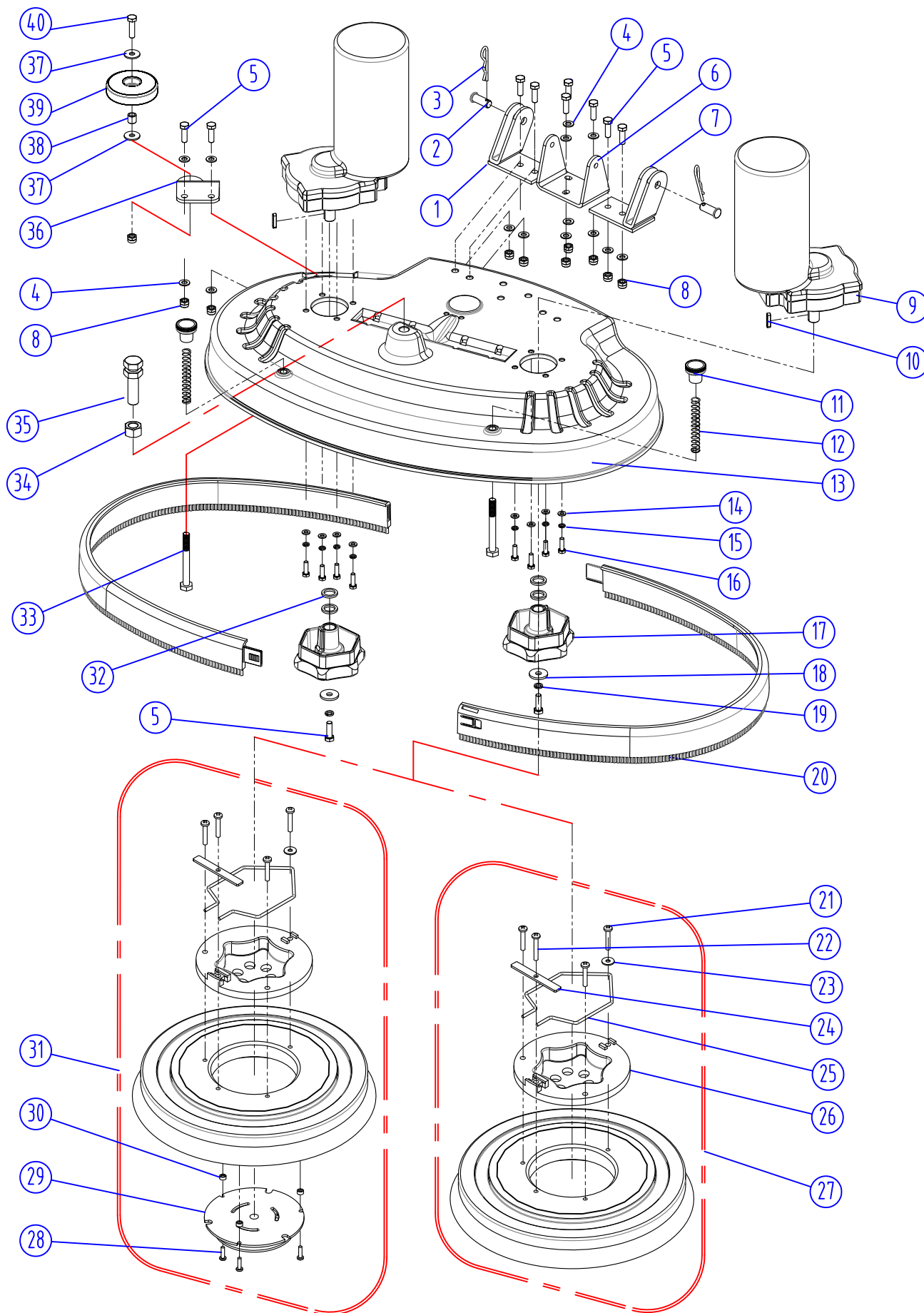
FRAME & DRIVE GROUP



FRAME & DRIVE GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8211505	SHOULDER BOLT,M12 X 30 X M10	1
2	1421132	FLAT WASHER,M12 X 32 X 1.5	1
3	8210508	SPIRNG	1
4	8135001	PLASTIC THRUST WASHER,M12 X 30 X 1.5	2
5	8211501	BRACKET, SQGE LIFT	1
6	1123810	LOCK NUT,M8	7
7	8211507	KNOB, M8	1
8	8211506	PIN	1
9	1123608	LOCK NUT,M6	5
10	1421618	FLAT WASHER,M6 X 18 X 1.6	2
11	8211503	BRACKET, SQGE MNTG	1
12	8114511	BALL JOINT,M6	1
13	8211504	SHOULDER BOLT,M12 X 7 X M8	4
14	1121807	NUT,M8	1
15	1421824	FLAT WASHER,M8 X 24 X 2	4
16	8211508	BUSHING	1
17	8211502	BRACKET, SWING	1
18	1421020	FLAT WASHER,M10 X 20 X 2	13
19	1021030	HEX BOLT,M10 X 30	8
20	1123012	LOCK NUT,M10	13
21	1124111	NUT,CAP	6
22	1123111	LOCK NUT,7/16"- 20UNF	6
23	1421120	FLAT WASHER,M12.1 X 20 X 2	6
24	8230129	WHEEL,12", FOAM FILL	2
	8230116	WHEEL,12", PNEUMATIC (OPTIONAL)	2
25	8230118	BRACKET, TRANSAXLE MOUNTING	2
26	8230810	TRANSAXLE, 36VDC,KIT	1
	8230811	ELECTRIC BRAKE KIT	1
27	8230119	5",CASTER	2
28	1022809	HEX BOLT,M8 X 90	1
29	1021820	HEX BOLT,M8 X 20	5
30	1422821	LOCK WASHER,M8	5
31	1421828	FLAT WASHER,M8 X 28 X 2	5
32	8210115	ARM, SCRUB HEAD LIFTING	2
33	8210116	BUSHING	2
34	1021830	HEX BOLT,M8 X 30	5
35	8230105	FRAME	1
36	1021025	HEX BOLT,M10 X 25	4

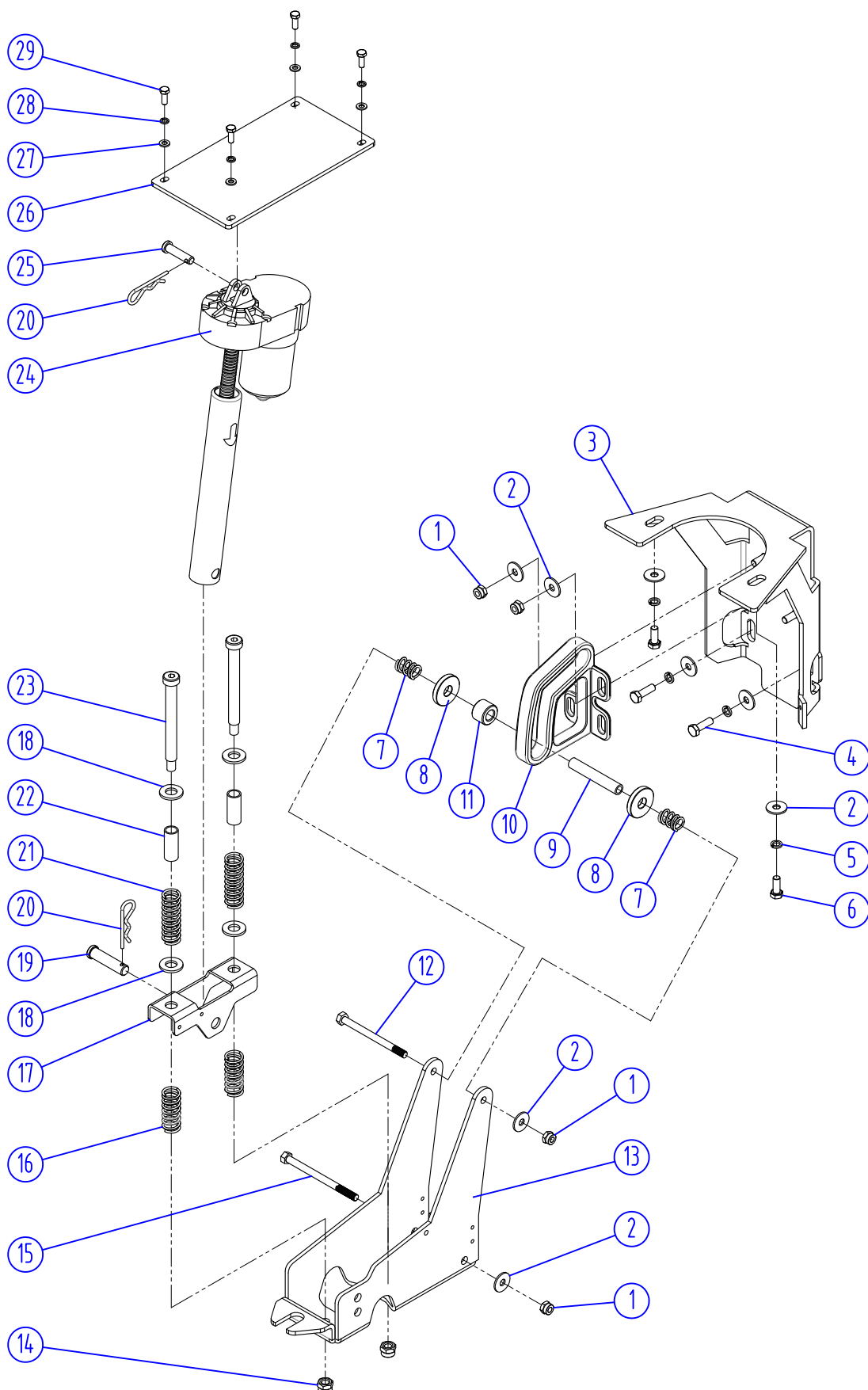
SCRUB HEAD GROUP



SCRUB HEAD GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8210830	BRACKET, SCRUB HEAD LIFT, RIGHT	1
2	8210807	PIN	2
3	8210309	PIN, COTTER	2
4	1421816	FLAT WASHER,M8 X 16 X 1.6	14
5	1021825	HEX BOLT,M8 X 25	11
6	8210806	BRACKET, ACTUATOR MNTG	1
7	8210820	BRACKET, SCRUB HEAD LIFT, LEFT	1
8	1123810	LOCK NUT,M8	10
9	8230300	BRUSH MOTOR, 36VDC, 630W,KIT	2
10	1655025	KEY, 5 X 5 X 25	2
11	8210808	KNOB, M10	2
12	8210809	SPRING	2
13	8230301	HOUSING, SCRUB HEAD,i36BT	1
14	1421612	FLAT WASHER,M6 X 12 X 1.6	8
15	1422616	LOCK WASHER, M6	8
16	1021620	HEX BOLT,M6 X 20	8
17	8210805	HUB, BRUSH DRIVE	2
18	1421828	FLAT WASHER,M8 X 28 X 3.0	2
19	1422821	LOCK WASHER,M8	2
20	8218050	BUMPER, SCRUB HEAD	2
21	1221635	SCREW, M6 X 35	12
22	1221640	SCREW, M6 X 40	4
23	1421618	FLAT WASHER,M6 X 18 X 1.6	4
24	8210861	RETAINER BAR	4
25	8210862	SPRING, G-400S	4
26	9000004	CLUTCH, G-400S	4
27	9050016	BRUSH ASSEMBLY, 16 INCH	2
28	1321325	SELF-TAPPING SCREW,ST5 X 25	6
29	9000003	CENTER LOCK, #3	2
30	8116040	SPACER, 6.5 X 14.5 X 7.0	6
31	9040016	PAD DRIVER, 16 INCH	2
32	8210804	SPACER	4
33	1022090	HEX BOLT,M10 X 90	2
34	1111215	HEX NUT, M16	1
35	8210811	AJUSTMENT STUD, M16	1
36	8210810	BRACKET, ROLLER MNTG	1
37	1421824	FLAT WASHER,M8 X 24 X 2	2
38	8115404	SLEEVE, P/M	1
39	8116009	PROTECTIVE WHEEL	1
40	1021830	HEX BOLT,M8 X 30	1

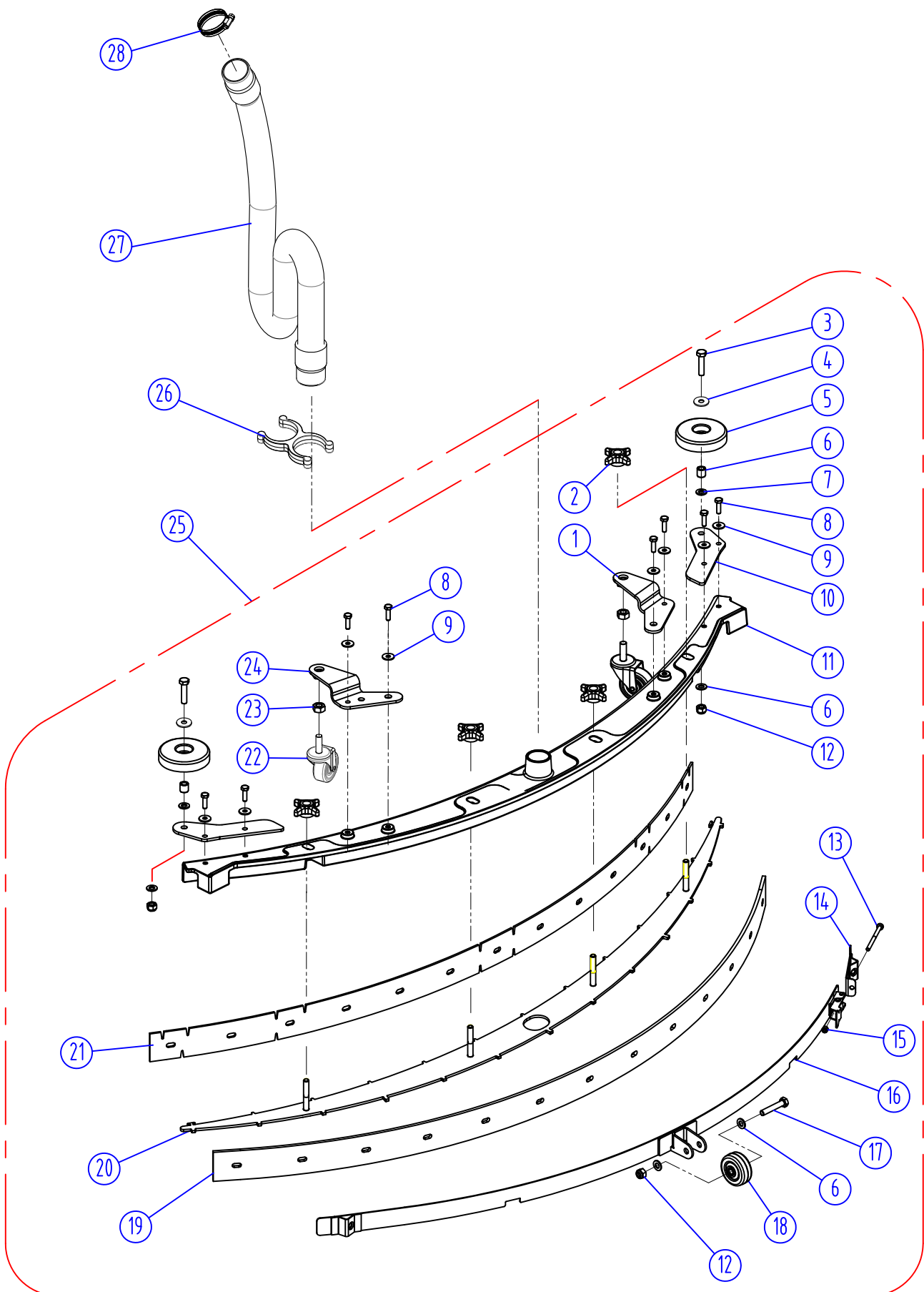
SCRUB HEAD LIFT GROUP



SCRUB HEAD LIFT GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	1123810	LOCK NUT,M8	6
2	1421824	FLAT WASHER,M8 X 24 X 2	10
3	8210306	BRACKET, GUIDE MNTG	1
4	1021825	HEX BOLT,M8 X 25	2
5	1422821	LOCK WASHER,M8	4
6	1021820	HEX BOLT,M8 X 20	2
7	8210311	SPRING	2
8	8210312	WASHER, PM	2
9	8210314	SHAFT	1
10	8210310	GUIDE, ROLLER	1
11	8210313	ROLLER	1
12	1022800	HEX BOLT,M8 X 100	1
13	8210316	BRACKET, SCRUB LIFT	1
14	1123008	LOCK NUT,3/8	2
15	1022811	HEX BOLT,M8 X 110	1
16	8210319	SPRING	2
17	8210317	BRACKET, SPRING	1
18	1421132	FLAT WASHER,M 12 X 32 X 1.5	4
19	8210322	PIN	1
20	8210309	PIN, COTTER	2
21	8210318	SPRING	2
22	8230311	SLEEVE	2
23	8210321	BOLT, SHOULDER, 3/8	2
24	8230302	ACTUATOR, 36VDC	1
25	8210301	PIN	1
26	8210303	BRACKET, ACTUATOR MNTG	1
27	1421612	FLAT WASHER,M6 X 12 X 1.6	4
28	1422616	LOCK WASHER,M6	4
29	1021616	HEX BOLT,M6 X 16	4

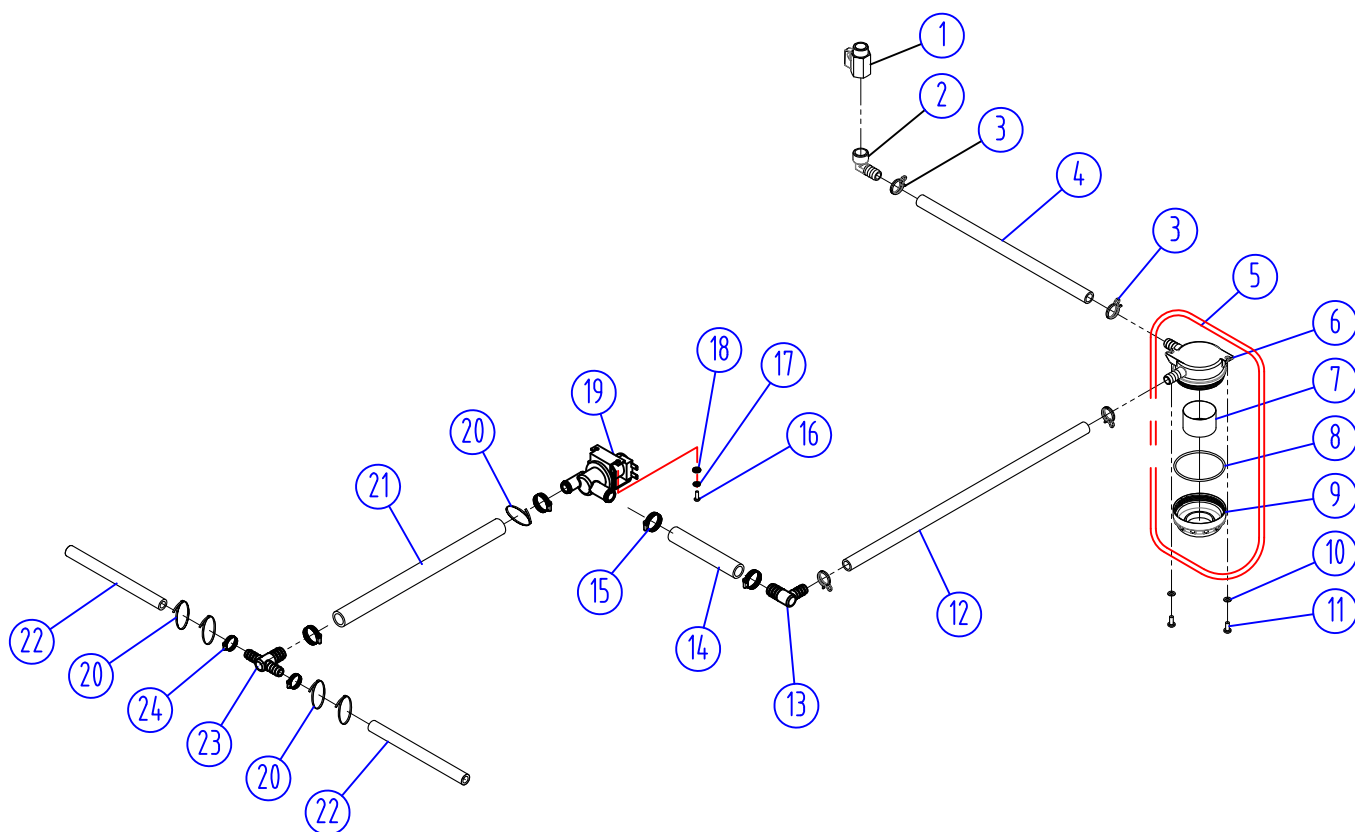
SQUEEGEE GROUP



SQUEEGEE GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8118300	RIGHT BRACKET	1
2	8118003	STAR KNOB,M8	4
3	1021835	HEX BOLT,M8 X 35	2
4	1421824	FLAT WASHER,M8 X 24 X 2.0	2
5	8116009	PROTECTIVE WHEEL	2
6	8115404	BEARING, JOURNAL	2
7	1421816	FLAT WASHER,M8 X 16 X1 .6	6
8	1021616	HEX BOLT,M6 X 16	8
9	1421618	FLAT WASHER,M6 X 18 X 1.6	8
10	8210515	BRACKET, ROLLER MNTG	2
11	8230501	SQUEEGEE HOUSING	1
12	1123810	LOCK NUT,M8	2
13	1221575	SCREW,M5 X 75	1
14	8210525	SHORT CLAMP ASSEMBLY	1
15	1123507	LOCK NUT,M5	1
16	8210520	CLAMP ASSEMBLY, SQUEEGEE	1
	8211520	CLAMP ASSEMBLY, SQUEEGEE WITHOUT WHEEL(OPTIONAL)	1
17	1022845	HEX BOLT,M8 X 45	1
18	8210527	WHEEL, 2 INCH	1
19	8230504	SQUEEGEE BLADE, REAR, LINATEX	1
	8230507	SQUEEGEE BLADE, REAR, PU (OPTIONAL)	1
20	8230502	RETAINER,SQUEEGEE	1
21	8230503	SQUEEGEE BLADE, FRONT, LINATEX	1
	8230506	SQUEEGEE BLADE, FRONT, PU (OPTIONAL)	1
22	8118400	CASTER, 2 INCH	2
23	1121008	HEX NUT,M10	2
24	8118200	LEFT BRACKET	1
25	8230500	SQUEEGEE ASSEMBLY	1
26	8118109	HOLDER VACUUM HOSE	1
27	8118006	VACUUM HOSE	1
28	1962050	CLAMP	1

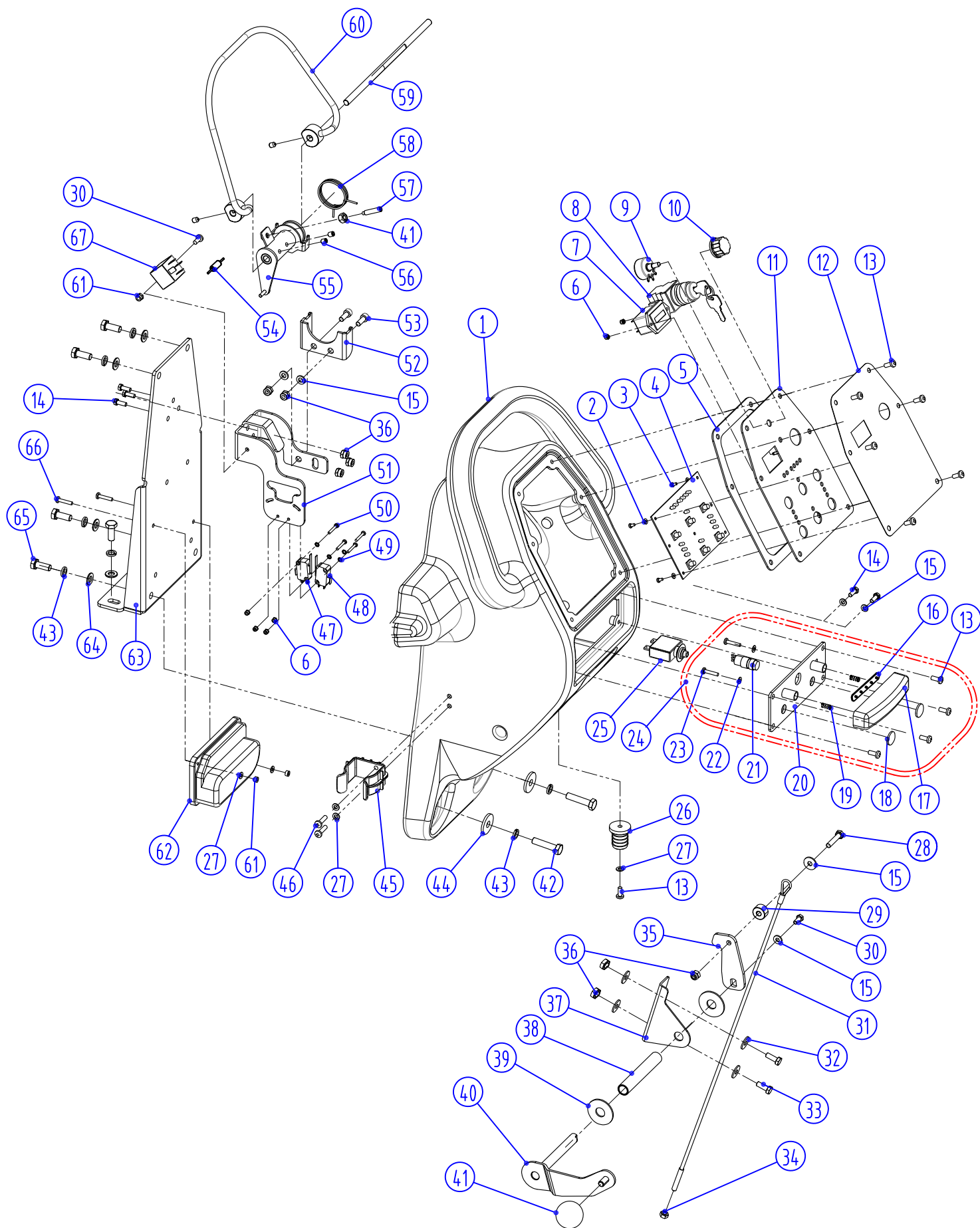
SOLUTION GROUP



SOLUTION GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8119005	BALL VALVE, G1/2	1
2	8119007	ELBOW, G1/2	1
3	8119006	CLAMP	4
4	8230304	TUBING, ID=12 X 365MM	1
5	8119100	FILTER ASSEMBLY	1
6	8119101	BASE, FILTER ASSEMBLY	1
7	8119103	SCREEN, FILTER, 70 MESH	1
	8119105	SCREEN, FILTER, 40 MESH (OPTIONAL)	1
8	1622063	"O" RING	1
9	8119102	CAP, FILTER ASSEMBLY	1
10	1421510	FLAT WASHER, M5 X 10 X 1	2
11	1221512	SCREW, M5 X 12	2
12	8230305	TUBING, ID=12 X 560MM	1
13	8230309	ELBOW, TUBING BARB	1
14	8230306	TUBING, ID=16 X 120MM	1
15	1962025	CLAMP, 16-25mm	4
16	1221512	SCREW, M5 X 12	2
17	1422513	LOCK WASHER, M5	2
18	1421512	FLAT WASHER, M5 X 10 X 1	2
19	8230122	SOLENOID VALVE, 36VDC	1
20	1914300	TIE, NYLON, 5X300	5
21	8230307	TUBING, ID=16 X 300MM	1
22	8310903	TUBING, ID=12 X 175MM	2
23	8230308	FITTING, PLASTIC, TEE	1
24	1962016	CLAMP, 10-16mm	2

CONTROL CONSOLE GROUP



CONTROL CONSOLE GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8134001	CONTROL CONSOLE HOUSING	1
2	1421307	FLAT WASHER,M3 X 7X 0.5	5
3	1221306	SCREW,M3X6	5
4	8230709	PCB ASSEMBLY,36VDC	1
5	8134015	GASLET	1
6	1123305	LOCK NUT,M3	6
7	8114710	TIMER	1
8	8114709	KEY SWITCH	1
9	8124717	POTENTIOMETER	1
10	8124718	KNOB, POTENTIOMETER	1
11	8210410	CONTROL PANEL	1
12	8230701	CONTROL PANEL DECAL, i36BT	1
13	1221512	SCREW,M5 X 12	12
14	1021616	HEX BOLT,M6 X 16	5
15	1421618	PLAIN WASHER ,M6 X18 X 1.6,SS	9
16	1421618	LIGHT BELT,36V	1
17	8124007	BUTTON,EMERGENCY STOP	1
18	8210414	CAP	2
19	8124008	SPRING	2
20	8144030	BASE, CIRCUIT BREAKERS MNTG	1
21	8124715	EMERGENCY STOP SWITCH	1
22	1421409	FLAT WASHER,M4 X 9 X 0.8	4
23	1221421	SCREW,M4 X 20	2
24	8230751	KIT,EMERGENCY STOP SWITCH,36V	1
25	8114703	CIRCUIT BREAKER, 35A	1
26	8114005	CONNECTOR	1
27	1421510	FLAT WASHER,M5 X 10 X 1.0	5
28	1021630	HEX HEAD BOLT,M6 X 30,SS	1
29	8014101	LIFTING ROPE SPACER	1
30	1021512	HEX HEAD BOLT,M5 X 12,SS	2
31	8134013	CABLE, SQGE LIFT	1
32	1421515	FLAT WASHER,M5 X 15 X 1.0	1
33	1021620	HEX HEAD BOLT, M6 X 20	2

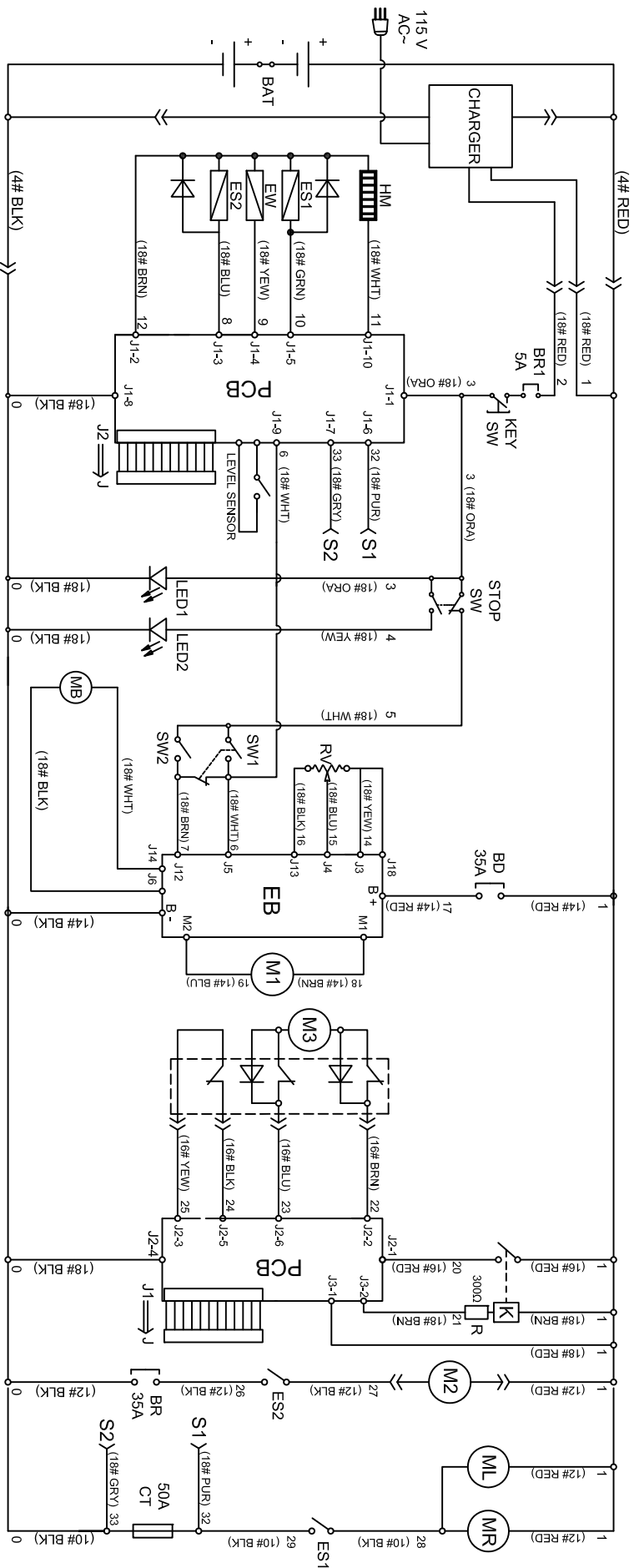
CONTROL CONSOLE GROUP

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
34	1121605	HEX NUT,M6	2
35	8014012	BAFFLE	1
36	1123608	LOCK NUT,M6	8
37	8134501	BRACKET	1
38	8134508	SLEEVE	1
39	1421132	FLAT WASHER,M12 X 32 X 1.5	2
40	8014010	SQUEEGEE LIFTING HANDLE	1
41	8113104	BALL KNOB,M8	1
42	1021840	HEX BOLT,M 8X 40	2
43	1422821	LOCK WASHER,M8	6
44	1421828	FLAT WASHER,M8 X 28 X 3	2
45	6210111	CLAMP, DRAIN HOSE	1
46	1221516	PH SCREW,M5X16,SS	2
47	8124743	MICRO SWITCH	1
48	8114712	MICRO SWITCH	1
49	1434300	LOCK WASHER, TOOTH, M3	4
50	1021320	SCREW,M3 X 20	4
51	8134022	BRACKET,SWITCH	1
52	8114402	BRACKET, SPRING	1
53	1521616	SCREW,M6X16, HEX SCOKET	2
54	8230710-US	RESISTANCE,5W,300Ω,KIT	1
55	8114300	ACTUATOR	1
56	1534608	SET SCREW,M6 X 8	4
57	1535630	SET SCREW,M6 X 30	1
58	8114306	SPRING	1
59	8114101	SHAFT	1
60	8134300	LEVER, BAIL	1
61	1123507	LOCK NUT,M5	3
62	8230704	SPEED CONTROL BOARD,i36BT	1
63	8134021	REAR PLATE, CONTROL CONSOLE	1
64	1421824	FLAT WASHER,M8 X 24 X 2	6
65	1021820	HEX BOLT,M8 X 20	6
66	1021535	SCREW, M5 X 35	2
67	8114707	RELAY	1

WAER & TEAR PARTS LIST

DIA NO	PART NUMBER	DESCRIPTION	NO REQ'D
1	8230129	WHEEL, 12 INCH	2
2	8116009	PROTECTIVE WHEEL	3
3	8230119	CASTER, 5 INCH	2
4	8210513	SQUEEGEE BLADE, FRONT, LINATEX	1
5	8210514	SQUEEGEE BLADE, REAR, LINATEX	1
6	9050016	16" BRUSH	2
7	9040016	16" PAD HOLDER	2

WIRING DIRGRAM



- BAT:6X6V Batteries
- CHARGER:On board charge
- KEY SW: Main power key switch
- HM:Hour meter
- ES1:Brush motor solenoid switch
- EW:Solution solenoid valve switch
- ES2:Vacuum motor solenoid switch
- PCB:Fuction electronic board
- STOP SW:Emergency stop switch
- MB:Electromagnetic brake
- LED1:Running lights
- LED2:Emergency stop lights
- MR:Brush motor ,right

- BD: Driver motor circuit breaker
- RV: Speed potentiometer
- SW1: Control switch,forward
- SW2: Control switch,backward
- EB:Speed control board
- M1:Traction motor
- K:Key
- M3:Scrub hend lifting motor
- BR:Vacuum motor circuit breaker
- M2:Vacuum motor
- ML:Brush motor, left
- CT:Current transformer
- BR1: Brake circuit breaker

CERTIFICATE OF QUALIFIED

MODEL: _____

SERIAL NO.: _____

INSPECTOR: _____

DATE: _____

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