



E87030-00 E29935-00  
E88062-00



# STEALTH™ ASD20B

20" Automatic Scrubber  
with Brush Assist



Operator and Parts  
Manual

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# RECEIVING THE MACHINE

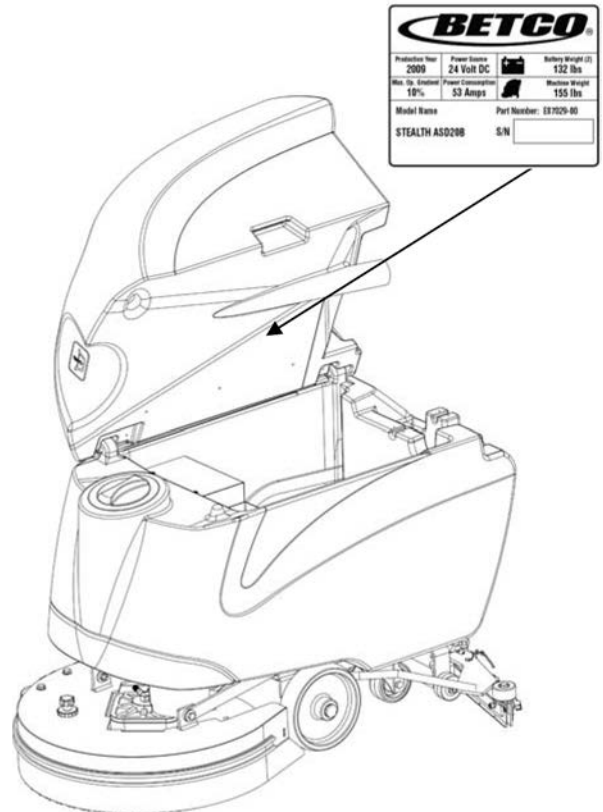
Immediately check, when receiving the machine, that all the materials indicated on delivery documents have been received and also that the machine has not been damaged in transit. If it has been damaged, this damage must be immediately reported to the shipper and also to our customer's service department. Only acting promptly in this manner will make it possible to receive missing material and to be compensated for damage.

## INTRODUCTION

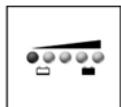
This is an automatic scrubber which, via the mechanical action of the rotating brush and the chemical action of a water/detergent solution, can clean many types of hard flooring. As it advances, it also collects the dirt removed and the detergent solution not absorbed by the floor.

**The machine must be used only for this purpose.** Even the best machines will only work well if used correctly and kept in good working order. We therefore suggest you read this instruction booklet carefully and re-read it whenever difficulties arise while using the machine. Please contact our technical service department or your dealers if you have any questions about the machine.

## Serial # Plate



## SYMBOLS USED ON THE MACHINE



**Battery charge gauge**

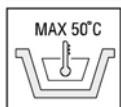


**Battery symbol**



**Open book symbol**

Used to tell the operator to read the manual before using the machine



**Maximum solution temperature gauge**

Located near the solution tank inlet

<b>TECHNICAL DESCRIPTION</b>	<b>Measurement Unit</b>	<b>Stealth™ ASD20B</b>
Rated power	HP (W)	1.3 (950)
Working width	In (mm)	19.7 (500)
Rear squeegee width	In (mm)	29.2 (742)
Work capacity	ft²/h (m²/h)	18,500 (1720)
Water consumption	g/m2	38
Brush & Pad (diameter)	in (mm)	20 (500)
Brush RPM	RPM	140
Brush pressure	Lbs. (Kg)	51 (23)
Brush motor	V / HP (V / W)	24 / 0.54 (24 / 400)
Drive Type		Semi-Automatic
Vacuum motor	V / HP (V / W)	36 / 0.74 (36 / 550)
Vacuum motor suction	water lift (mbar)	75.6 (188)
Solution tank capacity	Gal (l)	11 (40)
Recovery tank capacity	Gal (l)	13 (50)
Weight of machine (excluding batteries)	Lbs. (Kg)	165 (75)
Batteries	V / Ah	12 / 130 (2)
Charger	V / A	24 / 12
Battery compartment dimensions (Length / Height / Width)	in x in x in	14.2 x 12.8 x 13.0
	(mm/mm/mm)	(360 /325 /330)
Machine dimensions (Length / Height / Width)	in x in x in	45.3 x 39.4 x 20.9
	(mm/mm/mm)	(1150 / 1000 / 530)
Noise level	dBA	58

# GENERAL SAFETY REGULATIONS

**The regulations below must be carefully followed in order to avoid harm to the operator and damage to the machine.**

- Read all labels on the machine carefully. Do not cover them for any reason and replace them immediately if they become damaged.
- The machine must be used exclusively by authorized and trained personnel.
- When operating the machine be careful of other people.
- The machine is not designed for cleaning carpets.
- The power cable outlet must be provided with a proper ground.
- Avoid damaging the power cable of the battery charger by crushing, bending, cutting or stressing it.
- Whenever the power cable of the battery charger is damaged, immediately contact a BETCO service center.
- Do not mix different types of detergent as this may produce harmful gases.
- Do not set containers on the machine.
- Machine storage temperature without fluids is between -10°F and 130°F, never store outside under humid conditions.
- Operating conditions: room temperature between 33°F and 100°F with relative humidity between 30% to 95%.
- Only use the machine in covered areas and do not expose it directly to rain.
- Never use the machine in an explosive environment.
- Do not use the machine as a means of transport.
- Never use acidic chemicals which could damage the machine.
- Avoid running the brushes with the machine stopped; this could damage the floor.
- Never vacuum up flammable liquids.
- Never use the machine to gather dangerous powders.
- Use a powder fire extinguisher in case of fire. Do not use water.
- Do not hit against shelving or scaffolding. The operator must always be equipped with the appropriate safety equipment (gloves, shoes, helmet, glasses, etc.)
- Do not use the machine on surfaces with an inclination greater than the one shown on the serial plate.
- The machine is designed to wash and dry floors simultaneously. Signal the presence of wet floors with suitable signs.
- If the machine does not work properly, perform routine maintenance. Otherwise, request the assistance of the BETCO technical service.
- When replacing parts ask for ORIGINAL spare parts from your Authorized BETCO Dealer and/or Retailer.
- Always turn off the machine and disconnect the battery connector whenever maintenance is performed.
- Never remove guards that require tools for removal.
- **Never wash the machine with direct or pressurized jets of water or with corrosive substances.**
- Have your BETCO service center check the machine once a year.
- To prevent the formation of scale in the solution tank filter, do not store the machine with detergent solution in the tanks.
- Before using the machine make sure that all doors and covers are positioned as shown in this operating and maintenance manual.
- When your BETCO machine is ready to be retired, the machine must be disposed of properly. It contains oils and electronic components. The machine was built using totally recyclable materials.
- Use only brushes furnished with the machine or those specified in the user's manual. Use of other brushes can compromise safety.
- When removing the battery, unplug the battery connection, unplug the charger and disconnect the battery terminals.
- Before recycling the machine, remove the batteries.

# MACHINE PREPARATION

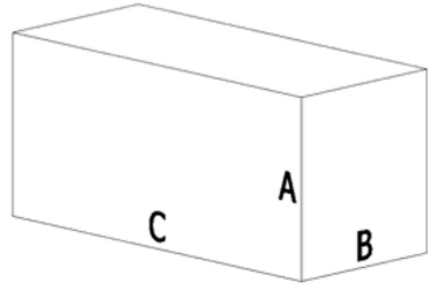
## 1. HANDLING THE PACKED MACHINE

Do not place more than two packages on top of each other.

The total weight is Lbs. (100 kg).

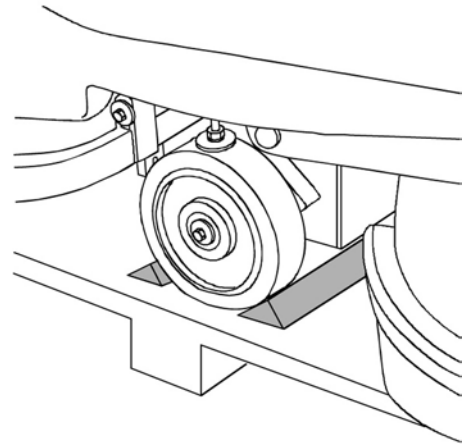
The overall dimensions of the package are:

- A : 45.1 in (1145 mm)
- B : 26.2 in (665 mm)
- C : 48.4 in (1230 mm)

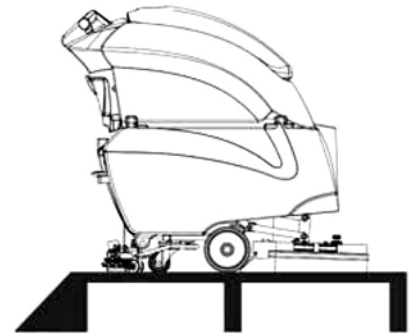


## 2. HOW TO UNPACK THE MACHINE

- A. Remove the outer packaging.
- B. The machine is placed on the pallet with wedges which block the wheels.
- C. Remove these wedges.



- D. Use a ramp to get the machine down from the pallet, pulling it backwards.
- E. Keep the pallet for any future transport needs.



# MACHINE PREPARATION

## 3. BATTERY INSTALLATION

The machine will be supplied with a battery charger and either two 12V Wet or AGM batteries. The batteries must be housed in the battery tray in the battery compartment beneath the recovery tank.

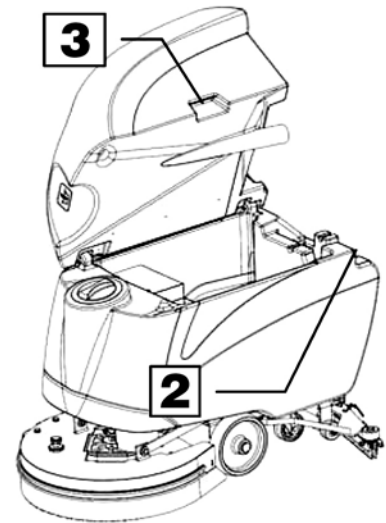
To insert the batteries you must:

- A. Lower the squeegee and brush deck.
- B. Open the rear latch **(2)** that secures the tank.
- C. Rotate the recovery tank as far as it will go, using the side handle **(3)**.



**WARNING:** To avoid acid spillage you can use sealed batteries.

**WARNING:** Perform one battery charging cycle before using the machine.



## 4. TYPE OF BATTERY

To power the machine you can use:

- Wet batteries
- AGM batteries
- Gel batteries

OTHER TYPES MUST NOT BE USED.

The maximum battery dimensions and the weight are:

Width 6.7 in (171 mm)

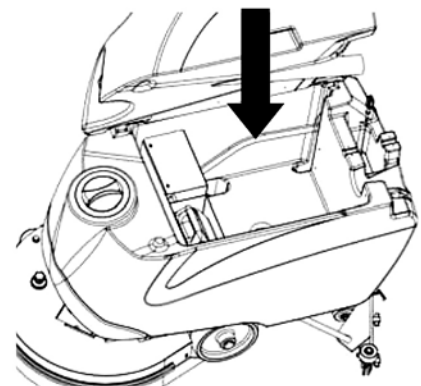
Length 12.9 in (329 mm)

Height 9.6 in (245 mm)

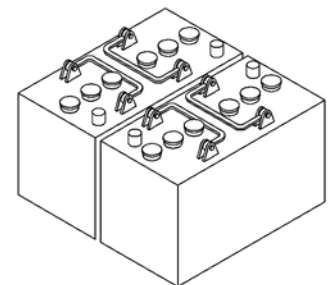
Weight Lbs. (31 kg)



**WARNING:** Your charger and battery check card must be set according to the type of battery you install. Call BETCO customer service to ensure correct charger setting after replacement batteries are installed.



- The batteries must be handled using lifting and transportation means suitable for the weight and dimensions.
- They must be connected together in series, to obtain an overall voltage of 24V on the lugs.
- The electrical connection operations must be carried out by certified trained personnel.



# MACHINE PREPARATION

## 5. BATTERY MAINTENANCE

For maintenance and recharging, follow the instructions provided by the battery manufacturer.

## 6. BATTERY DISPOSAL

When the battery reaches the end of its working life, it must be disconnected by a certified professional, then lifted (using the handles and suitable lifting device) to remove it from the battery compartment.

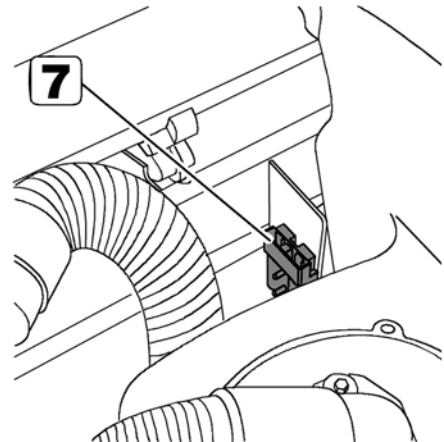
USED BATTERIES ARE CLASSIFIED AS HAZARDOUS WASTE AND MUST BE DISPOSED OF AT AUTHORIZED BATTERY DISPOSAL SITE.

## 7. CONNECTING THE BATTERY CHARGER

Beneath the recovery tank there is the battery connector (7). The battery charger connector must be plugged into the battery plug.



**WARNING:** This process must be carried out by qualified personnel. The incorrect connection of the cables to the connector can seriously harm people and damage objects.

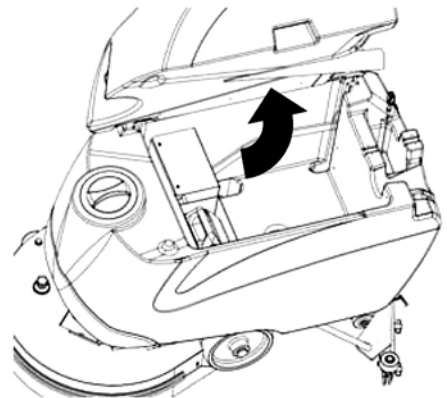


## 8. RECHARGING THE BATTERIES

Perform one complete battery charge cycle before using the machine. Avoid totally discharging the batteries! This can cause permanent damage. Recharge as soon as the battery discharged signal light starts to flash.



**WARNING:** Never leave the batteries completely discharged, not even if the machine is not being used. This can cause permanent damage to them. While recharging, keep the recovery tank raised. Ensure the battery charger is suitable for the batteries installed.



**Danger of inhalation of gas and leakage of corrosive liquids.**



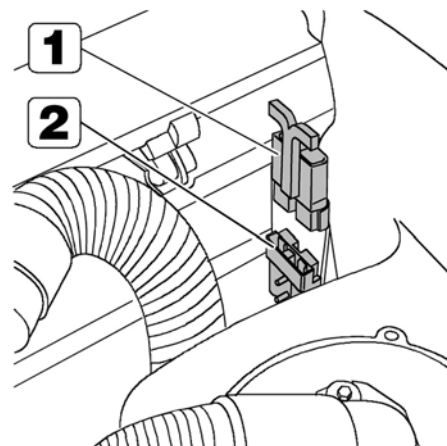
**Danger of fire: do not go near flames.**



# MACHINE PREPARATION

## 9. CONNECTING THE BATTERY CONNECTOR

Connect the battery connector (2) to the machine connector (1)

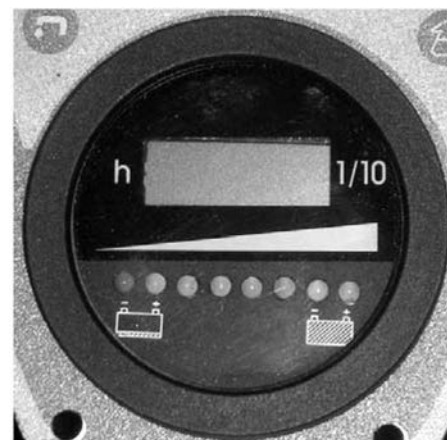


## 10. BATTERY INDICATOR

The battery indicator uses LEDs and has 8 positions (7 yellow - charged batteries, and 1 red - discharged batteries).



**WARNING:** A few seconds after the red indicator light comes on, the brush motor switches off automatically. With the remaining charge it is possible to complete the drying process before recharging.

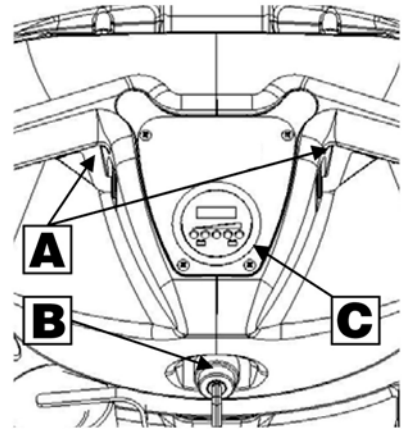


# MACHINE PREPARATION

## 11. INSTRUMENT PANEL COMPONENTS

The instrument panel components are identified as follows:

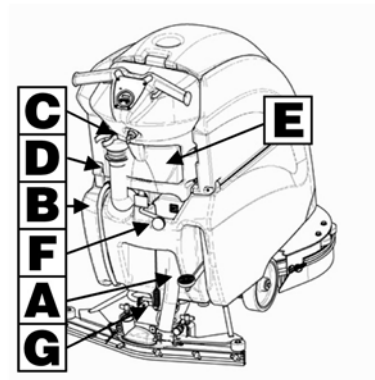
- A. Levers to activate brushes / traction (located beneath the grip)
- B. ON/OFF key switch
- C. Battery level / hour meter



## 12. REAR COMPONENTS

The rear components are identified as follows:

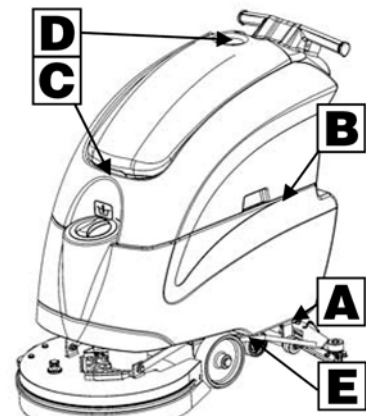
- A. Foot pedal to raise the brush deck
- B. Water / solution level hose
- C. Drain hose with recovery tank cap
- D. Latch to close the tanks
- E. Storage compartment
- F. Lever to raise the squeegee
- G. Solution filter



## 13. SIDE COMPONENTS

The side components are identified as follows:

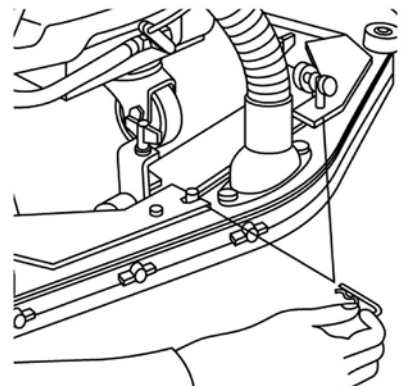
- A. Valve for manual regulation of clean water outlet
- B. Handle to raise the recovery tank
- C. Handle to raise the vacuum unit
- D. Upper storage compartment
- E. Brake lever



## 14. ASSEMBLING THE SQUEEGEE

For packaging reasons, the squeegee is supplied dismantled from the machine, and must be assembled as follows:

- A. Insert the two small pins of the squeegee in the appropriate holes on the squeegee support;
- B. Insert the two cotter pins chained to the squeegee;
- C. Plug the squeegee hose into the squeegee shoe adaptor.

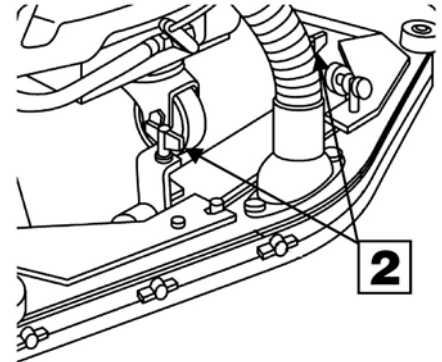


# MACHINE PREPARATION

## 15. ADJUSTING THE SQUEEGEE HEIGHT

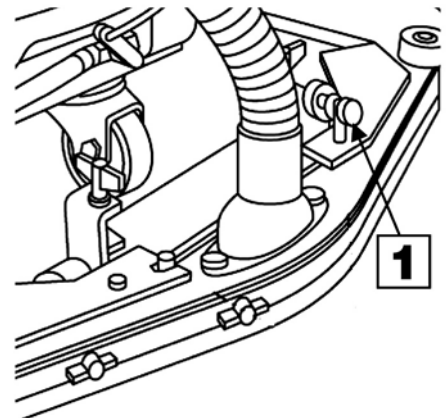
The height of the squeegee must be adjusted based on wear of the squeegee blade. To do this, turn the knobs (2) counter clockwise to raise the squeegee, and clockwise to lower it.

**Note:** *the right and left wheels must be adjusted to the same level, so the squeegee works parallel to the floor.*



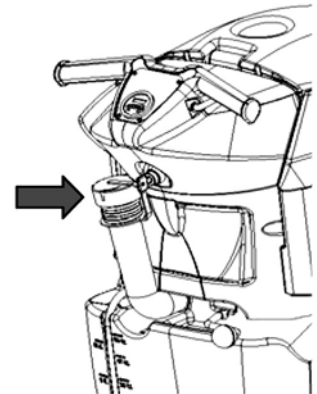
## 16. ADJUSTING THE SQUEEGEE INCLINATION

During working operation, the rear squeegee blade is slightly bent backwards (by about 0.2 in (5 mm)) in a uniform manner for its entire length. If it is necessary to increase the bend of the squeegee blade in the central region, you must tilt the squeegee backwards, rotating the adjuster (1) counter clockwise. To increase the bend of the squeegee blade at the sides of the squeegee, rotate the adjuster clockwise. When fully adjusted, tighten the jam nut.



## 17. RECOVERY TANK

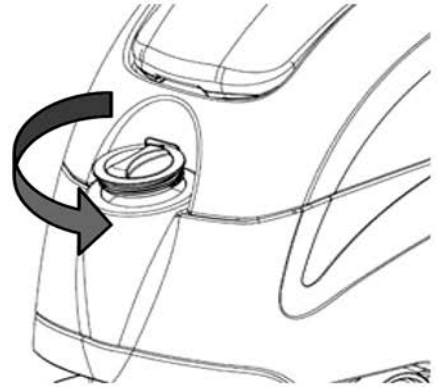
Check the drain hose cap (on the rear of the machine) to ensure it's closed.



# MACHINE PREPARATION

## 18. SOLUTION TANK

Remove the front inlet cap and confirm the solution filter is correctly installed. Confirm the filter cap (beneath the solution tank, at the back) is correctly closed.



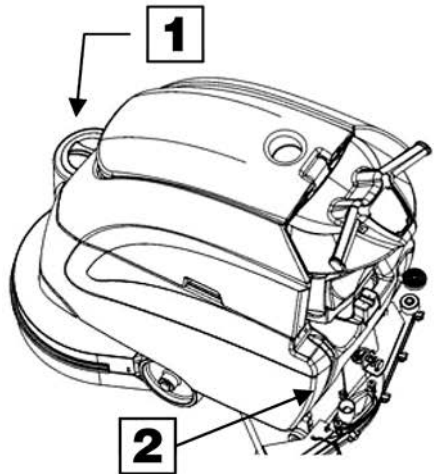
## 19. SOLUTION TANK

Fill the tank with clean, room temperature water through the front fill location (1). Water temperature not to exceed 120°F (50°C). You can check the level of solution in the tank by reviewing fluid level in the sight tube (2). Add the liquid detergent into the tank, in the concentration and manner specified by the manufacturer. The formation of excess foam could damage the vacuum motor, so be sure to use the correct concentration of detergent.



**WARNING:** Always use low-foam detergent. Introduce a small amount of defoaming chemical in the recovery tank before starting to work to prevent foam from being generated.

**WARNING:** Never use acids.



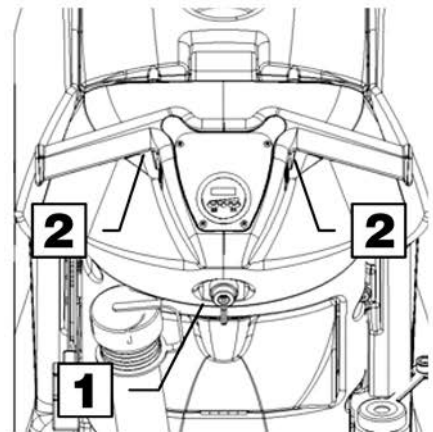
## 20. MOUNTING THE BRUSH

- A. With the brush deck up, place the brush under the brush deck and position it in line with the clutch plate beneath the brush deck.
- B. Lower the brush deck, turn the key (1) to position "1", pull the levers (2) on the handlebars.

The brush will automatically attach to the drive under the brush deck.



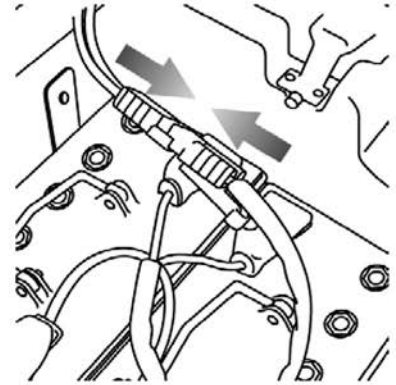
**WARNING:** Make sure there are no objects or people in the vicinity of the brush when doing this operation.



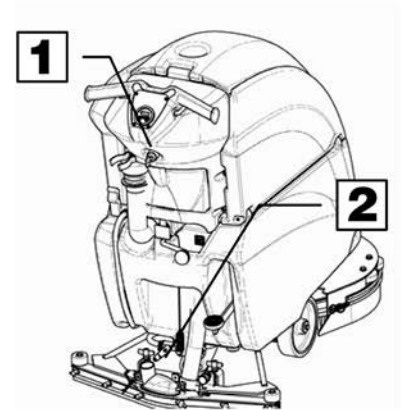
# OPERATION

## 1. MACHINE OPERATION

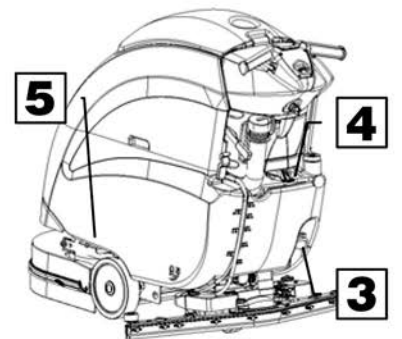
A. Connect the battery plug to the machine plug.



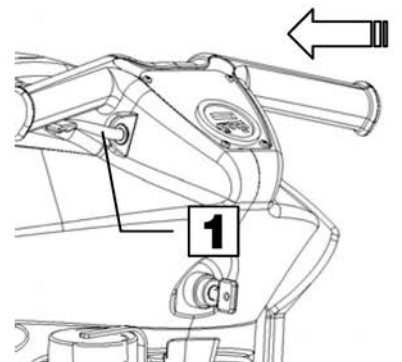
- B. Turn the key (1) of the main switch to the "ON" position (clockwise). The battery charge level indicator lights will immediately turn on.
- C. Turn on the water valve (2) (the water dispenses automatically when the brush is turning).



- D. Release the lever (3) and lower the brush deck.
- E. Lower the squeegee, by rotating the squeegee lift lever (4) counter clockwise. The vacuum motor will turn on.
- F. Confirm that the brake (5) is released.



- G. Pressing the levers (1), activates the brushes and the machine begins to move itself forward. During the first few feet, adjust the amount of solution dispensed, and confirm that the squeegee dries the floor.
- H. The machine will now start to scrub and dry until the solution tank is empty or recovery tank is full.



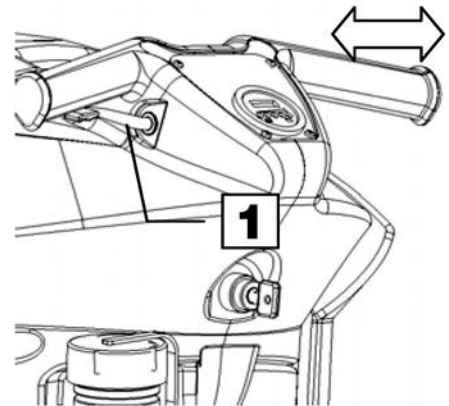
# OPERATION

## 2. FORWARD MOVEMENTS

The traction of these machines is obtained by means of the pad which, working slightly inclined, is able to pull the machine forward. To move the machine, activate the switch levers (1) on the handlebars.



**WARNING:** When moving in reverse lift the squeegee.



## 3. OVERFLOW DEVICE

The machine has a shut off float in a filter basket that activates when the recovery tank is full and stops airflow into the vacuum hose. At this point you must empty the recovery tank by removing the cap of the drain hose.



**WARNING:** Always wear gloves when doing this operation to protect you from contact with hazardous chemicals.





# SHUTTING DOWN THE MACHINE

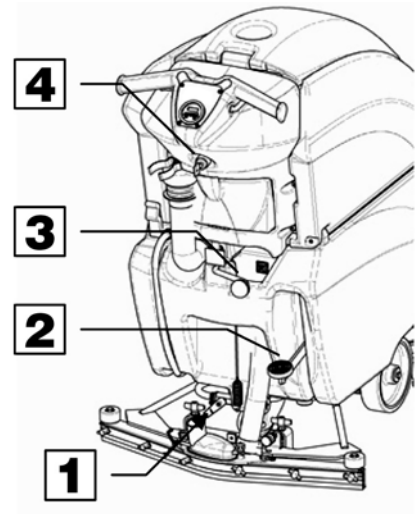
## 1. AFTER FINISHED CLEANING

Do the following when shutting down the machine and before you perform any type of maintenance:

- A. Turn off the solution valve using the knob (1)
  - B. Raise the brush deck using the foot pedal (2)
  - C. Raise the squeegee using the squeegee lift lever (3)
  - D. Turn off the key switch (4)
  - E. Move the machine where the tanks can be drained.
- 
- F. Remove the drain hose from its holder, unscrew the drain cap and empty the recovery tank.
  - G. The squeegee must be raised when the machine is not operating, to avoid deforming the squeegee blades.
  - H. Remove the floor scrub pad and clean it with water.



**WARNING: Always wear gloves when doing this operation to protect you from contact with hazardous chemicals.**



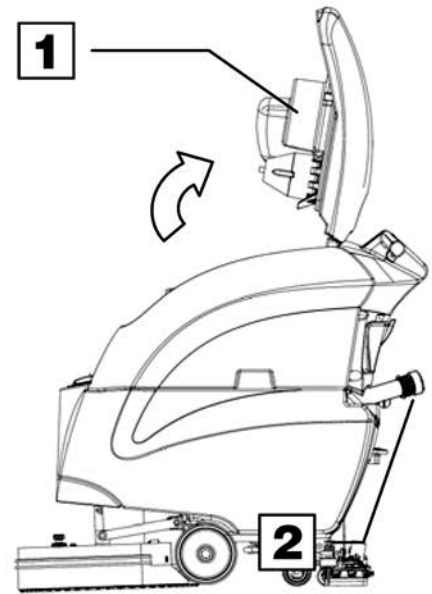
# DAILY MAINTENANCE

## 1. CLEANING THE RECOVERY TANK

- A. Raise the vacuum cover (1).
- B. Remove the drain hose (2) from its holder and empty the tank.
- C. Rinse the inside of the tank with water.
- D. Close the recover tank cover on the machine and replace the drain hose cap and drain hose.



**WARNING:** Always wear gloves when doing this operation to protect yourself from contact with hazardous chemicals.

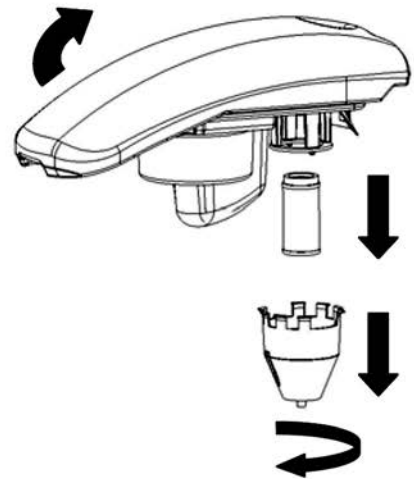


## 2. CLEANING THE VACUUM FILTER

- A. Raise the recover tank cover.
- B. Remove the vacuum filter cover by rotating it clockwise.
- C. Pull the filter to remove it.
- D. Use water to clean the filter.
- E. Perform the cleaning operations with care.
- F. Reassemble all the components.



**WARNING:** Always wear gloves when doing this operation to protect yourself from contact with hazardous chemicals.

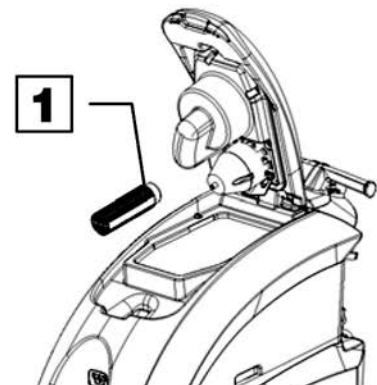


## 3. CLEANING THE VACUUM HOSE FILTER

- A. Raise the recover tank cover.
- B. Rotate the inner filter (1) and remove it.
- C. Use water to clean the filter.
- D. Perform the cleaning operations with care.
- E. Reassemble all the components.



**WARNING:** Always wear gloves when doing this operation to protect yourself from contact with hazardous chemicals.





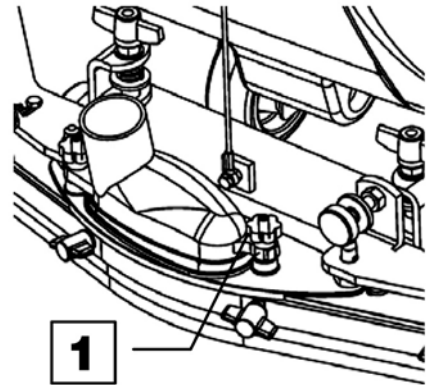
# DAILY MAINTENANCE

## 4. CLEANING THE SQUEEGEE

For the best floor drying performance keep the squeegee clean.

To clean it:

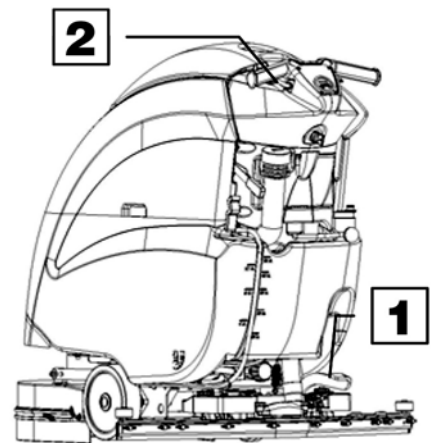
- A. Remove the vacuum hose from the squeegee.
- B. Loosen the knobs (1) that hold the squeegee shoe adapter.
- C. Remove and clean the squeegee shoe adapter.
- D. Carefully clean inside the squeegee.
- E. Carefully clean the squeegee blades.
- F. Reassemble all the squeegee components.



## 5. REMOVING THE PAD

To remove the pad driver:

- A. Turn on the machine with the key switch.
- B. Press the foot pedal that raises and lowers the brush deck (1), and slightly raise the floor pad off the floor.
- C. Pull the switch levers (2) and quickly release them.
- D. The pad driver will be automatically release from the brush deck.



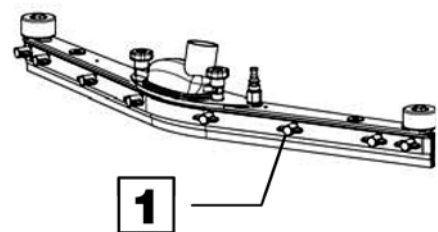
## 6. REPLACING THE SQUEEGEE BLADES

Check the condition of the squeegee blades and, if necessary, replace them.

To replace them:

- A. Remove the squeegee vacuum hose from the squeegee shoe adapter.
- B. Remove the cotter pins that pass through the mounting pins of the squeegee shoe.
- C. Remove the squeegee shoe from the squeegee yoke.
- D. Loosen the knobs two complete turns (1).
- E. Remove the squeegee band clamp and squeegee blade.
- F. Replace the squeegee blades.

To reassemble the squeegee, repeat the above-mentioned operations in the reverse order.



**WARNING: Always wear gloves when doing this operation to protect yourself from contact with hazardous chemicals.**

# WEEKLY MAINTENANCE

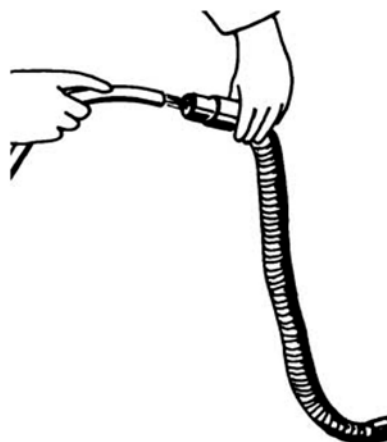
## 1. CLEANING THE SQUEEGEE HOSE

Every week, or whenever vacuum seems to be unsatisfactory, check the squeegee hose for obstructions. To clean it, proceed as follows:

- Remove the hose from the sleeve on the squeegee.
- Remove the other end from the recovery tank.
- Wash the inside of the hose with water introduced from the side where it is connected to the tank.
- Reassemble the hose.

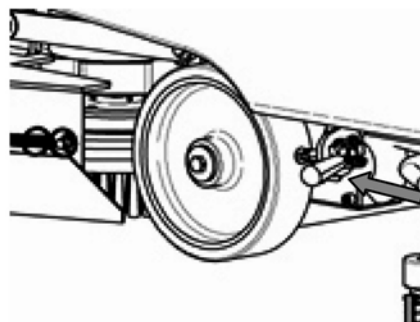


**WARNING:** Always wear gloves when doing this operation to protect yourself from contact with hazardous chemicals.



## 2. CHECKING THE BRAKE

Every week, check the distance between the work brake pads and the wheels. If necessary, adjust them by means of the nuts, so they are at a distance of 0.12 in (3 mm) when released.

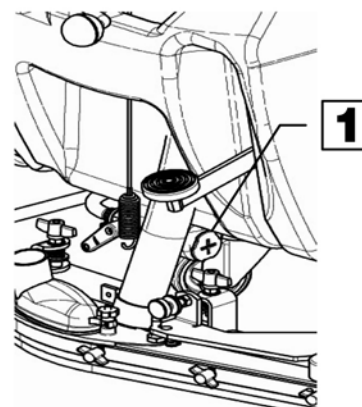


## 3. CLEANING THE SOLUTION TANK

- Loosen the solution tank cap.
- Rinse with water.
- Loosen the drain cap (1) located on the filter, and empty the tank.



**WARNING:** Always wear gloves when doing this operation to protect yourself from contact with hazardous chemicals.



# TROUBLESHOOTING GUIDE

## INSUFFICIENT WATER ON THE PAD

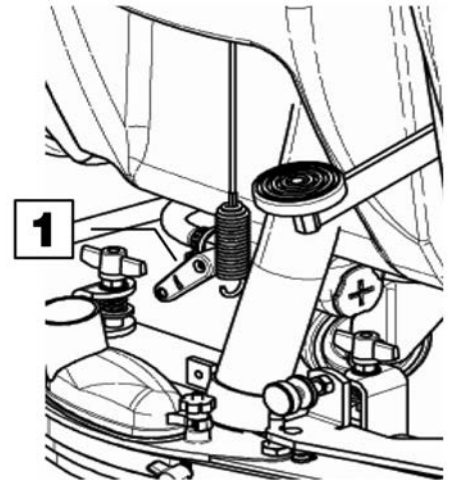
1. Check the valve – located beneath the symbol – (1) is turned on.
2. Confirm that there is water in the solution tank.

## THE MACHINE DOES NOT CLEAN WELL

1. Check the condition of the pad and, if necessary, replace it.
2. For cleaning floors where the dirt is particularly resistant, we recommend the use of special brushes supplied upon request and according to needs.

## THE SQUEEGEE DOES NOT DRY EFFECTIVELY

1. Confirm that the squeegee blades are clean.
2. Adjust the inclination of the squeegee.
3. Ensure the vacuum hose is correctly inserted in its housing on the recovery tank.
4. Check the inner filter of the recovery tank to ensure it is not dirty and, if necessary, clean it thoroughly.
5. Disassemble the entire vacuum unit and clean it.
6. Replace the squeegee blades, if worn.
7. Ensure the vacuum motor switch is turned on.
8. Check squeegee wheel adjustment.



## TOO MUCH FOAM IS GENERATED

Check that low-foam detergent is being used. If necessary add a small amount of defoaming liquid to the recovery tank. Remember that more foam is generated when the floors are not very dirty. Dilute the detergent more when cleaning floors that are not very dirty.

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## CHOOSING AND USING THE BRUSHES

### POLYPROPYLENE BRUSH (PPL)

Used on all types of floors. Good resistance to wear and tear, and hot water (no greater than 140°F (60°C)).

### NYLON BRUSH

Used on all types of floors. Excellent resistance to wear and tear and hot water (even over 140°F (60°C)).

### ABRASIVE BRUSH

The bristles of this type of brush are coated with highly aggressive abrasives. It is used to clean very dirty floors.

### THICKNESS OF THE BRISTLES


Thicker bristles are more rigid and are therefore used on smooth floors or floors with small joints. On uneven floors or those with deep joints, it is advisable to use softer bristles which can enter the gaps easier. Remember that when the bristles are worn and too short, they will become rigid and are no longer able to penetrate and clean deep down. In this case the brush tends to jump.

### PAD DRIVER

The pad holder is recommended for cleaning smooth surfaces. There are two types of pad holder:

1. The traditional pad holder is fitted with a series of anchor points that allow the abrasive floor pad to be held and dragged while working.
2. The CENTER LOCK type pad holder not only has anchor points, but also a snap-type central locking system made of plastic that allows the abrasive floor pad to be perfectly centered and held without any risk of it becoming detached.

# MAINTENANCE SCHEDULE

	Stealth ASD20B		RECOMMENDED SERVICE INTERVALS (HOURS)				
		DAILY	50	100	200	400	1,000
<b>BATTERIES</b>	Check water level add if necessary	DAILY					
	Check cables, connections and plugs		50				<del>1,800</del>
	Check cleanliness of machine battery tray				200		
<b>ELECTRIC</b>	Check tightness of electric contacts and fuses		50				
	Check state of electric cables crossing the machine					400	
<b>SOLUTION TANK</b>	Check cleanliness of solution filter	DAILY				<del>400</del>	
	Check water valves and hoses to the brush head		50				
	Check all water connection from the tank to the brushes				200		
<b>RECOVERY TANK</b>	Check cleanliness of the tank	DAILY					
	Check filter and float system	DAILY					
	Check vacuum and drain hoses	DAILY					<del>1,800</del>
	Check vacuum gasket and drain hoses plugs			100			
<b>BRUSH HEAD</b>	Check spraying guard and right brush inclination		50			<del>400</del>	
	Check state of bearings					400	<del>1,800</del>
	Check brush attachments				200		
	Check wear of rotating brushes		50		<del>200</del>		
<b>BRUSH MOTOR</b>	Check cleanliness of air cooling inlet			100			
	Check carbon brushes					400	<del>1,800</del>
	Check amp draw and noise level						1,000
<b>VACUUM MOTOR</b>	Check noise level and cleanliness of the inlet hose		50				
	Check carbon brushes				200	<del>400</del>	
	Check vacuum performance, replace if necessary						<del>1,800</del>
<b>SQUEEGEE</b>	Check cleanliness of the squeegee blades and shoe	DAILY					
	Check wear of rear squeegee blade		50	<del>100</del>			
	Check wear of front squeegee blade			100	<del>200</del>		
	Check squeegee structure and machine support			100			
	Check lever and lifting cable					400	
Suggested replacement 							

# WEAR ITEMS LISTING

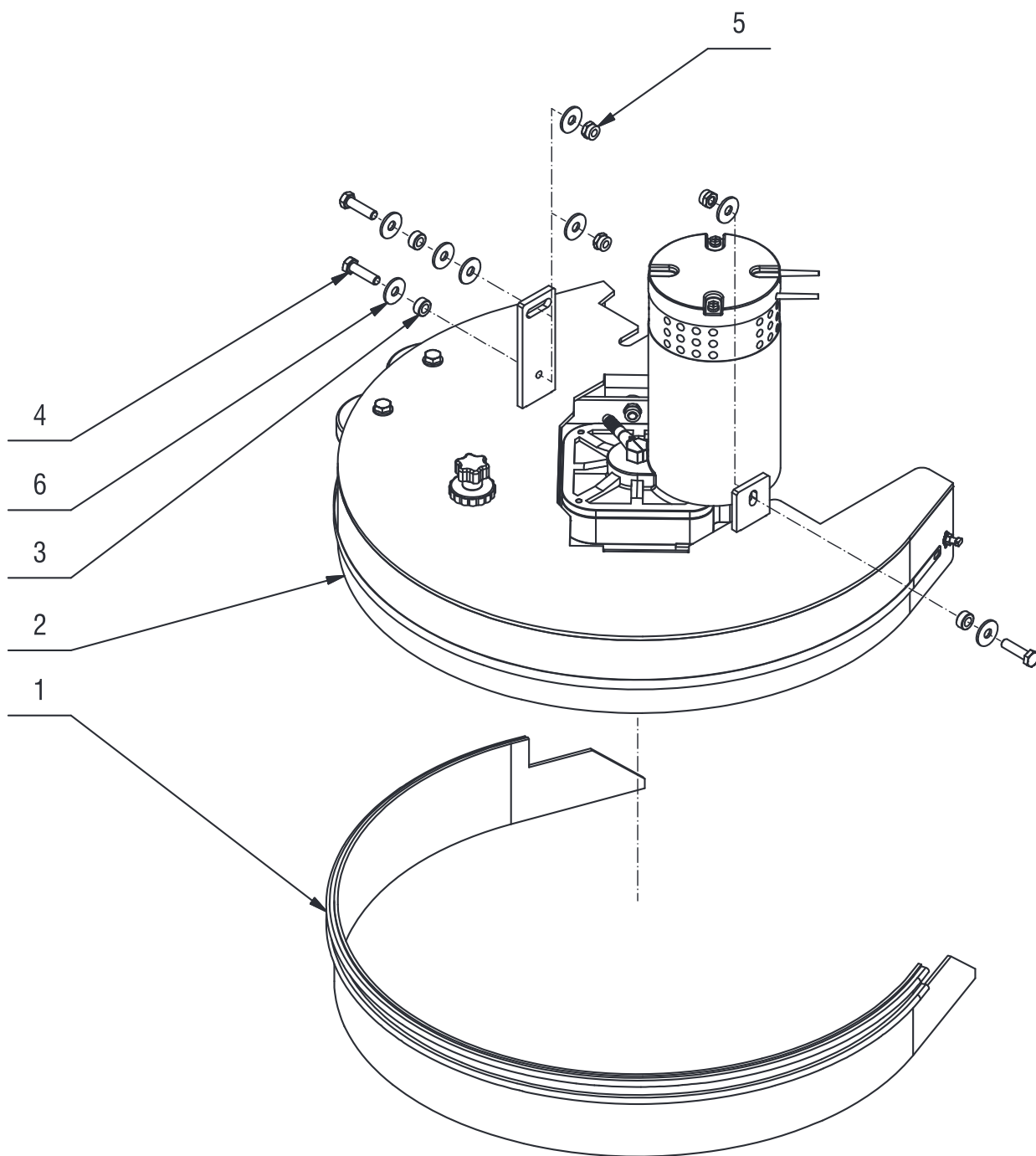
## Wear Items - Before Serial Number 214999999

Part #	Description
E88268	Pad Driver
E88330	Brush, General Purpose 20" 0.3mm
E88269	Brush, Medium Duty 20" 0.55mm
E88270	Brush, Heavy Duty 20" 0.7mm
E88271	Brush, Stripping Grit 20" 1.2mm
E88272	Brush Deck Splash Guard
E86169	Band Clamp
E83909	Front Squeegee Blade, Polyurethane 30" x 1-3/4" x 1/8"
E12686	Wiping Squeegee Blade, Gum Rubber 30 3/4" x 1 3/4" x 1/8"
E88276	Wiping Squeegee Blade, Polyurethane 30 3/4" x 1 3/4" x 1/8"
E12560	Support Blade, Polyurethane 30 3/4" x 1 3/4" x 1/8"
E11767	Battery 12V 130AH Wet
E88030	Battery 12V 110AH AGM
E86276	Battery 12V 115AH Wet

## Wear Items - After Serial Number 215000000

Part #	Description
E82320	Pad Driver
E83033	Brush, General Purpose 20" 0.3mm
E83034	Brush, Medium Duty 20" 0.55mm
E83035	Brush, Heavy Duty 20" 0.7mm
E82633	Brush, Stripping Grit 20" 1.2mm
E22637	Squeegee Blade Kit, 31"
E84277	Squeegee Blade Kit, Poly, 31"
E84278	Squeegee Blade Kit, Latex, 31"
E11767	Battery 12V 130AH Wet
E88030	Battery 12V 110AH AGM
E86276	Battery 12V 115AH Wet

## BRUSH DECK DIAGRAM - BEFORE SERIAL NUMBER 214999999

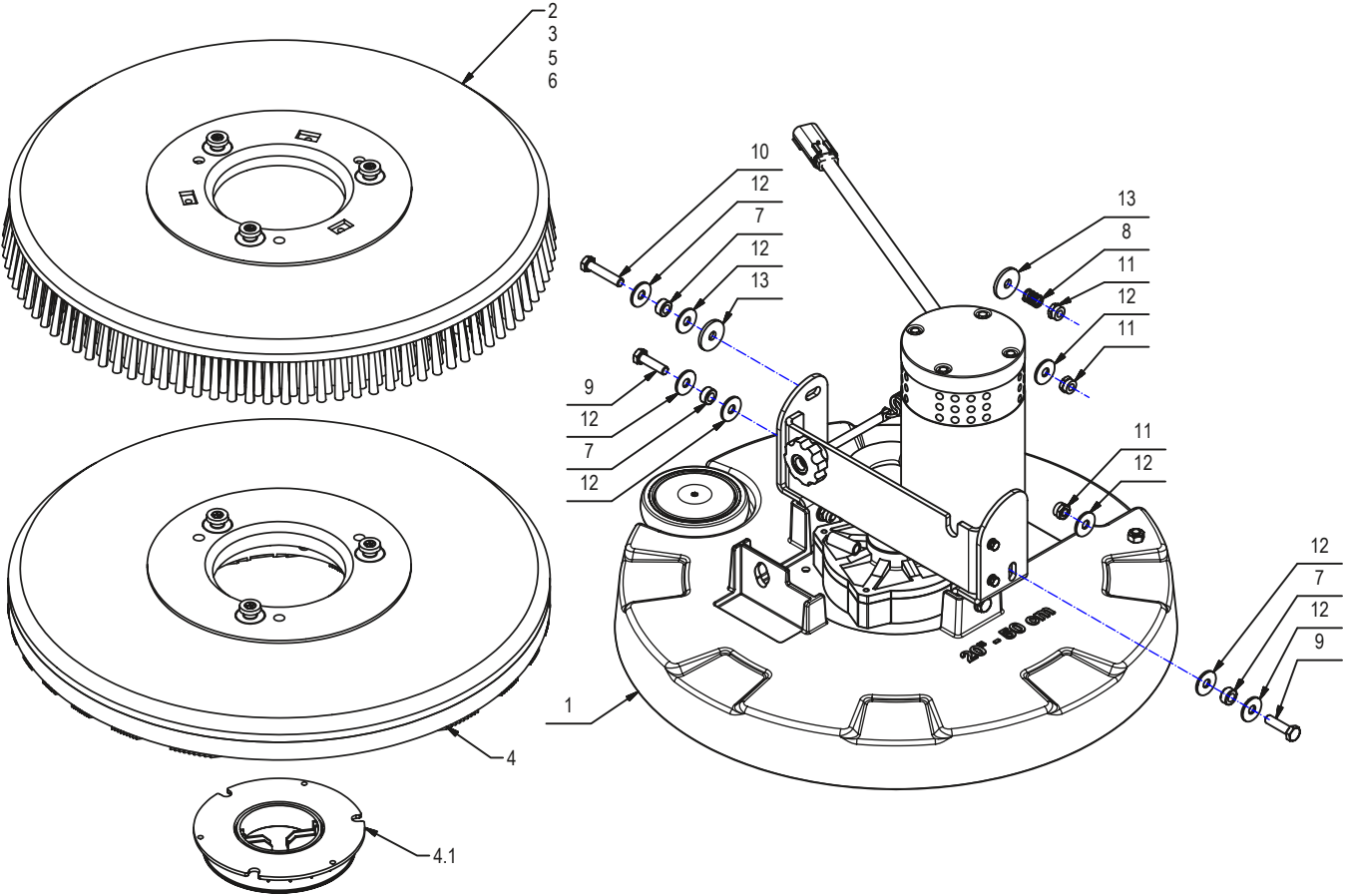


## BRUSH DECK PARTS LISTING - BEFORE SERIAL NUMBER 214999999

Item#	Part #	Description	Qty.
1	E88272	Brush Deck Splash Guard	1
2	E20073	Brush Deck	1
3	E83970	Bushing	3

Item#	Part #	Description	Qty.
4	E83802	Hex Bolt M8x30 Zinc	3
5	E81709	Nyloc Hex Nut, M8 Zinc	3
6	E83404	Flat Washer M9x24x2.5 Zinc	8

# BRUSH DECK DIAGRAM - AFTER SERIAL NUMBER 215000000



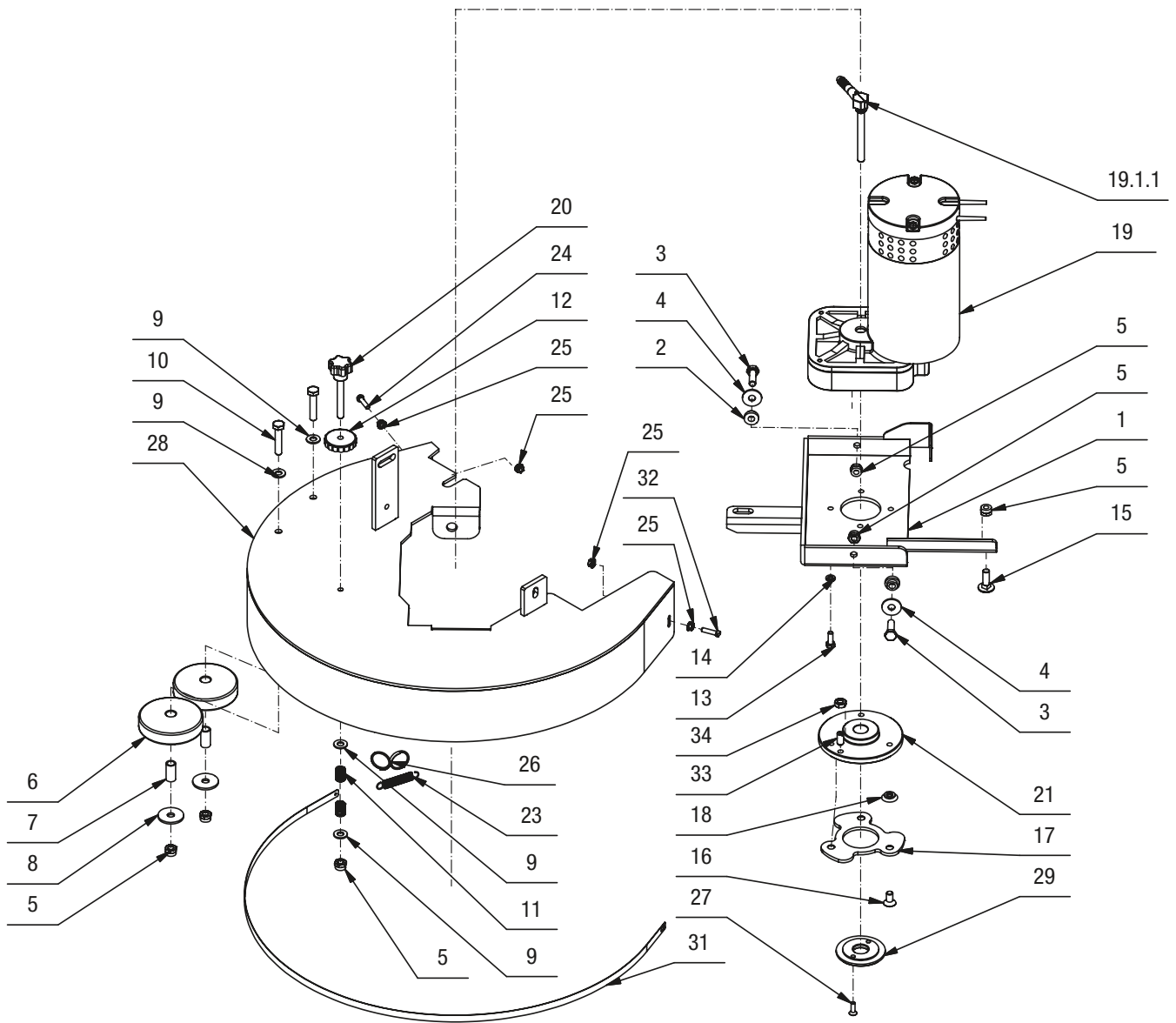


## BRUSH DECK PARTS LISTING - AFTER SERIAL NUMBER 215000000

Item#	Part #	Description	Qty.
1	E84318	Brush Deck Housing	1
2	E83035	Brush, Heavy Duty 20" 0.7mm	1
3	E83033	Brush, General Purpose 20" 0.3mm	1
4	E82320	Pad Driver Assembly, 20"	1
4.1	E82367	Center Lock	1
5	E83034	Brush, Medium Duty 20" 0.55mm	1
6	E82633	Brush, Stripping Grit 20" 1.2mm	1

Item#	Part #	Description	Qty.
7	E83970	Bushing	3
8	E82309	Spring, 11.8x1.2x15mm Zinc Compression	1
9	E83802	Hex Bolt M8x30 Zinc	2
10	E83830	Hex Bolt M8x40 Zinc	1
11	E86853	Nyloc Hex Nut, M8 Zinc	3
12	E83404	Washer, Flat, M8 x 24 OD, Zinc	8
13	E83832	Flat Washer M8.5x30x3 Nylon	2

# BRUSH DECK DRIVE DIAGRAM - BEFORE SERIAL NUMBER 214999999

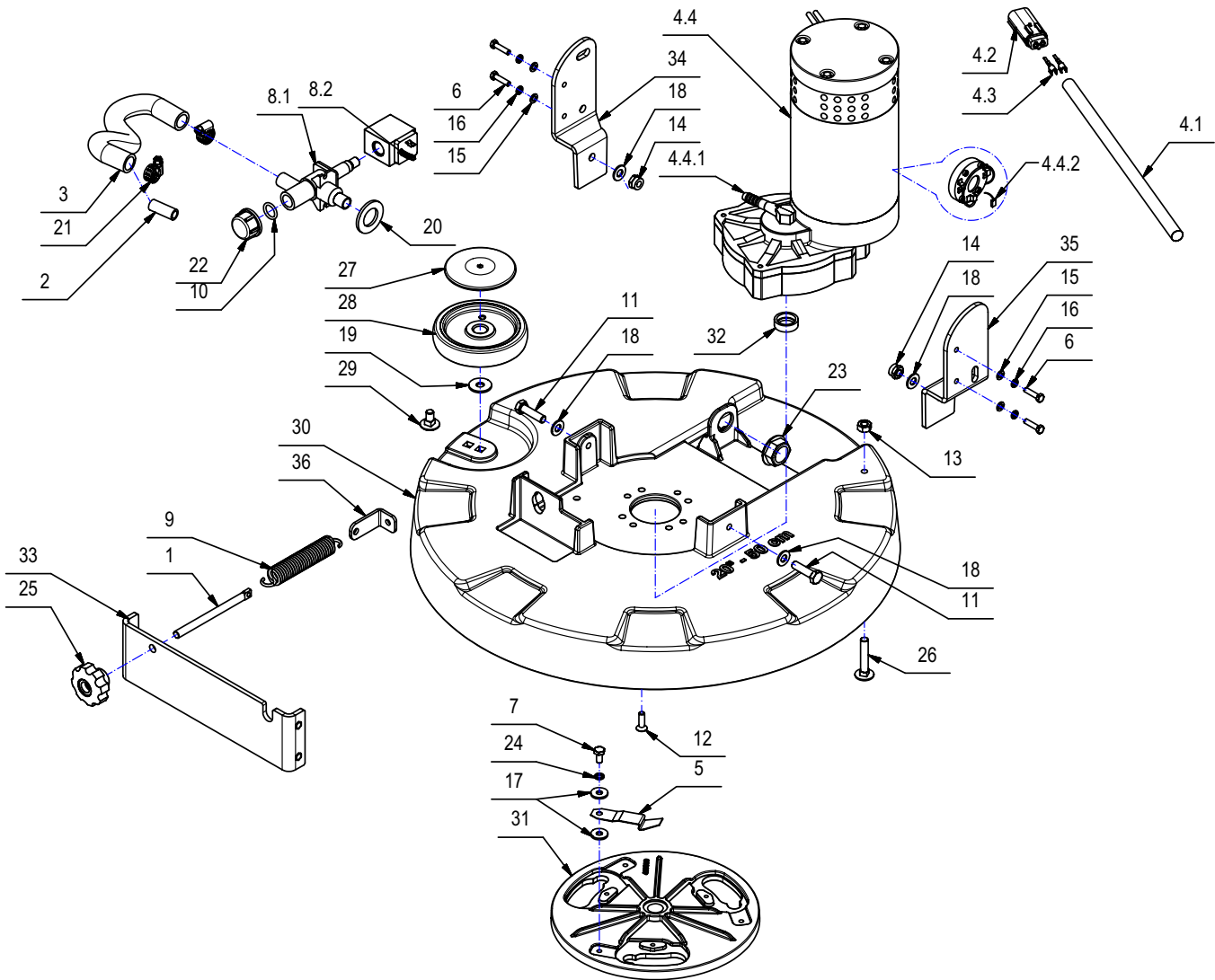


# BRUSH DECK DRIVE PARTS LISTING - BEFORE SERIAL NUMBER 214999999

Item#	Part #	Description	Qty.
1	E20011	Motor Mount Plate	1
2	E82312	Bushing	2
3	E83833	Hex Bolt M8x25 Zinc	2
4	E83404	Flat Washer M9x24x2.5 Zinc	2
5	E81709	Nyloc Hex Nut, M8 Zinc	6
6	E83895	Wheel 80 OD x 23 W	2
7	E83524	Bushing	2
8	E81918	Flat Washer M9x32x2.5 Zinc	2
9	E81874	Flat Washer M8x17x1.6 Zinc	4
10	E83830	Hex Bolt M8x40 Zinc	2
11	E82309	Spring, Compression	2
12	E83331	Knob	1
13	E83547	M6x16 Bolt, Zinc Hex Head	4
14	E82774	Lock Washer, M6 Zinc	4
15	E20093	Carriage Bolt M8x25 Zinc	1
16	E20297	Flat Hd Soc Machine Screw M8x16 Zinc	3
17	E82844	Clutch Plate	1

Item#	Part #	Description	Qty.
18	E82845	Spacer	3
19	E88245	Motor, Geared 24V 400W 140 RPM	1
19.1.1	E20451	Fitting, Solution Delivery Tube	1
20	E83565	Knob	1
21	E88246	Brush, Flange Threaded	1
23	E83491	Spring	1
24	E83881	Hex Bolt M5x20 Zinc	1
25	E88010	Hex Nut, M5	4
26	E83489	Rings	1
27	E20290	Flat Hd Soc Machine Screw M5x16 SS	2
28	E20507	Brush Deck	1
29	E20584	Retainer	1
31	E86169	Band Clamp	1
32	E83823	Screw M5x20/ SS Custom	1
33	E20592	Dowel Pin M8	1
34	E83672	Hex Jam Nut, M8x5 SS	1

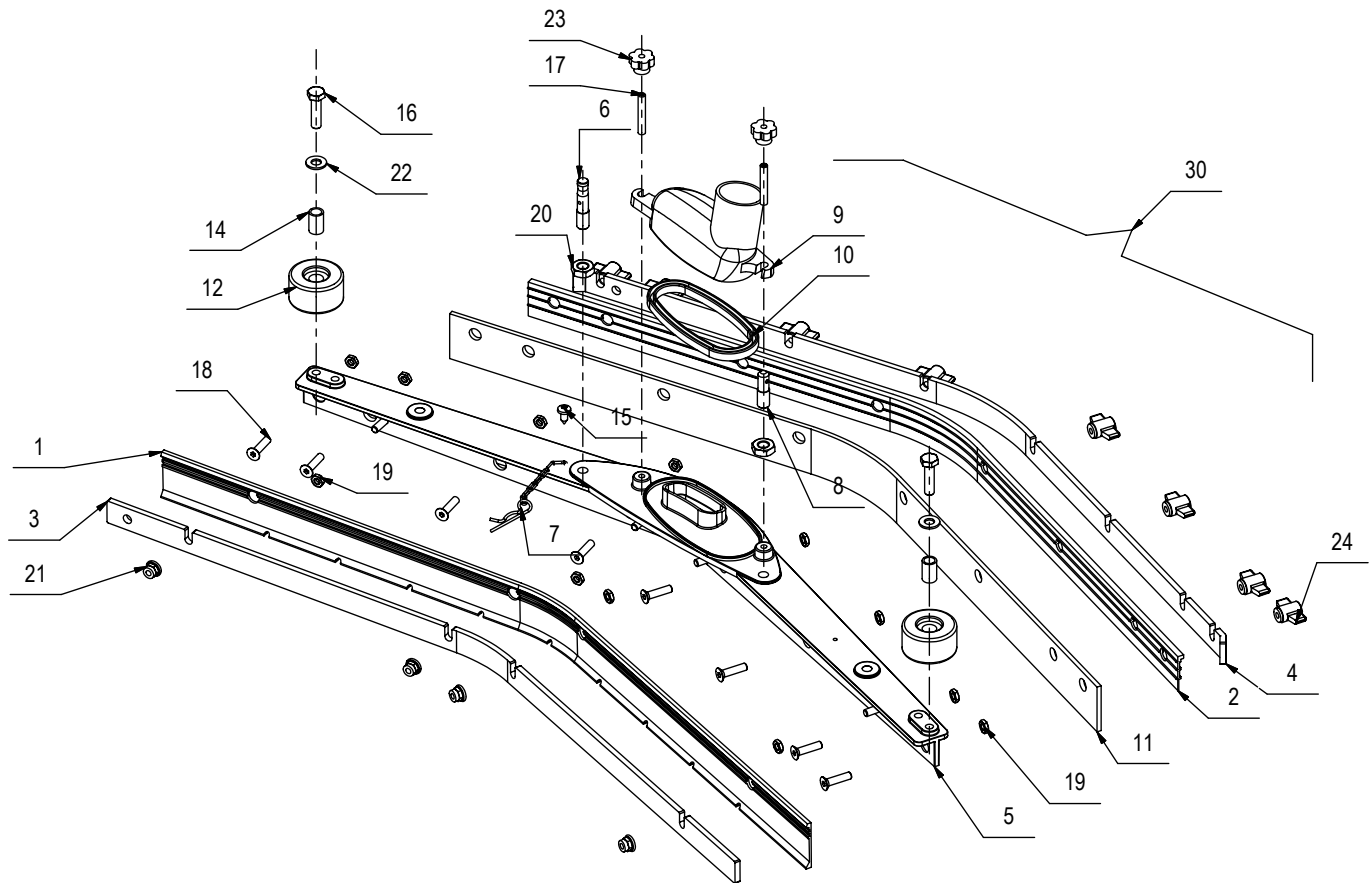
## BRUSH DECK DRIVE DIAGRAM - AFTER SERIAL NUMBER 215000000



# BRUSH DECK DRIVE PARTS LISTING - AFTER SERIAL NUMBER 215000000

Item#	Part #	Description	Qty.	Item#	Part #	Description	Qty.
1	E84326	Threaded Rod	1	16	E20123	Lock Washer M5x1.6 Zinc	4
2	E22639	Tubing, 1.25"	1	17	E83799	Flat Washer M6.6x18x2 SS	2
3	E84327	Tubing, 6.5"	1	18	E81874	Flat Washer M8x17x1.6 Zinc	4
4.1	E22640	Cable Sheath	1	19	E83404	Washer, Flat, M8 x 24 OD, Zinc	1
4.2	E22641	Connector, Female	1	20	E20253	Flat Washer M21x60x3 Nylon	1
4.3	E84319	Molex Pin	2	21	E85762	Hose Clamp	2
4.4	E84328	Brush Motor, 24V 500W	1	22	E83882	Cap, 1/2" NPT	1
4.4.1	E20451	Fitting, Solution Delivery Tube	1	23	E20433	Nut, Hex Flange, M20, Plastic	1
4.4.2	E81553	Carbon Brush	4	24	E20323	Lock Washer M6 SS	1
5	E81659	Spring	1	25	E84329	Adjustment Knob	1
6	E83881	Hex Bolt M5x20 Zinc	4	26	E84320	Bolt, M8 x 45	1
7	E83279	Screw	1	27	E22646	Wheel Cover	1
8	E82322	Solenoid Valve, 24v 10w 3-Port Nylon	1	28	E22668	Bumper Wheel	1
8.1	E81794	Valve Body, Solenoid	1	29	E22653	Screw, M8 x 16	1
8.2	E81795	Solenoid	1	30	E84318	Brush Base Housing	1
9	E22288	Spring, 20x2.8x109mm Zinc Tension	1	31	E84330	Pad Gimble	1
10	E83617	O-Ring, 14x2.5mm Buna-N	1	32	E84321	Spacer	1
11	E83802	Hex Bolt M8x30 Zinc	2	33	E84322	Front Plate	1
12	E83831	Flat Hd Soc Machine Screw M6x20 SS	4	34	E84323	Deck Mounting Plate, Right	1
13	E85499	Hex Nut, M8x6.5 SS	1	35	E84324	Deck Mounting Plate, Left	1
14	E86853	Nyloc Hex Nut, M8 Zinc	2	36	E84325	Plate	1
15	E83879	Flat Washer M5x11x1 Zinc	4				

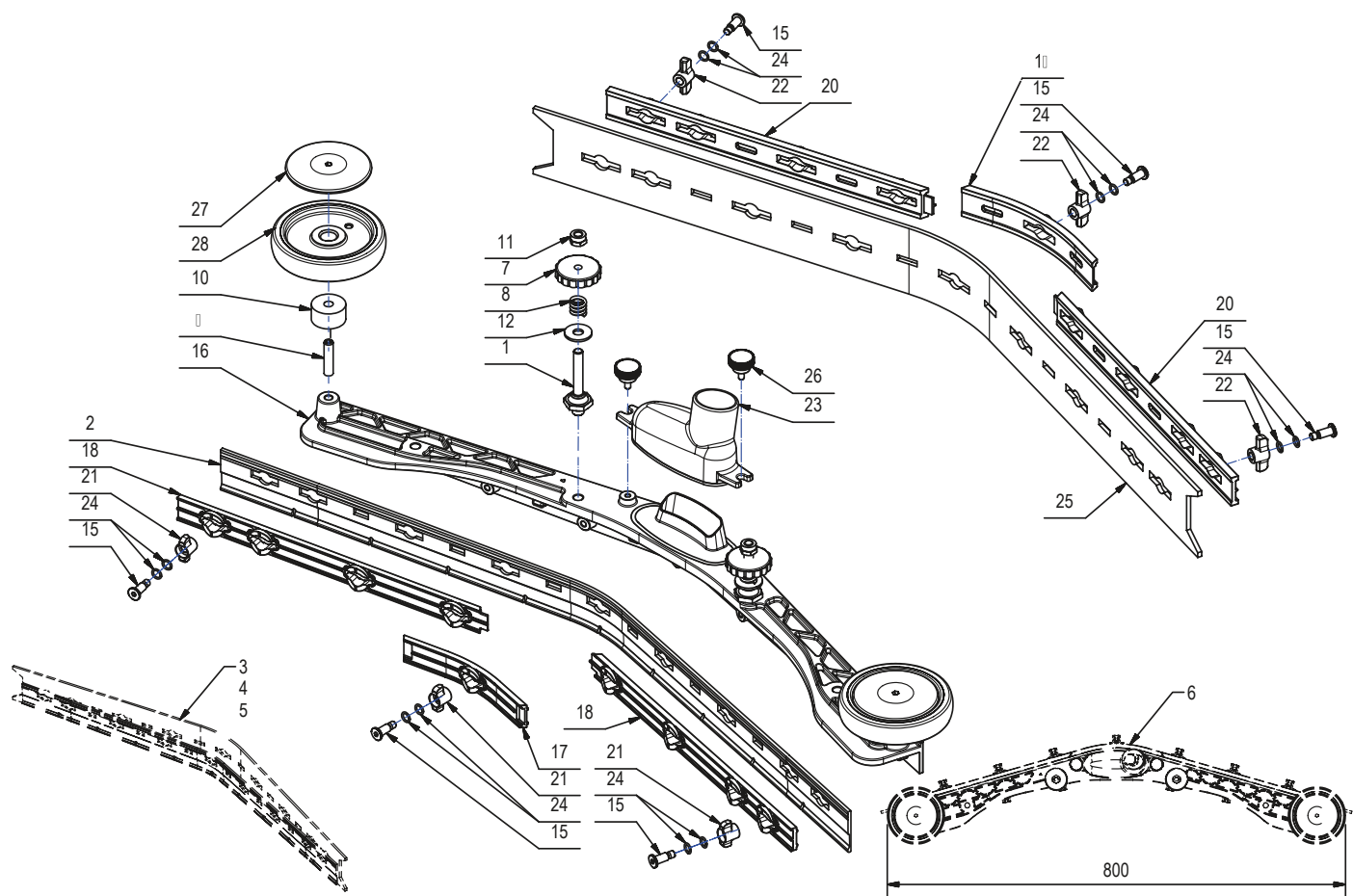
# SQUEEGEE ASSEMBLY DIAGRAM - BEFORE SERIAL NUMBER 214999999



# SQUEEGEE ASSEMBLY PARTS LISTING - BEFORE SERIAL NUMBER 214999999

Item#	Part #	Description	Qty.	Item#	Part #	Description	Qty.
1	E83909	Squeegee Blade, Polyurethane 30" x 1 3/4" x 1/8"	1	14	E82253	Bushing, Brass OD 11.95mm x ID 8.9mm x L 8.45mm	1
2	E12560	Squeegee Blade, Polyurethane 30 3/4" x 1 3/4" x 1/8"	1	15	E83851	Screw, Pan Hd Phil Self Tap M5.5x13 SS	2
3	E82608	Band Clamp 29 1/2" x 7/8" x 1/8"	1	16	E83802	Hex Bolt M8x30 Zinc	2
4	E82676	Band Clamp 31 1/4" x 7/8" x 1/8"	1	17	E82707	Set Screw Hex Soc Flat End M6x40 SS	8
5	E88240	Squeegee Body	1	18	E81848	Flat Hd Soc Machine Screw M6x25 SS	12
6	E83911	Stud Bolt M10x46 Custom	1	19	E20114	Hex Jam Nut, M6X3 SS	2
7	E83590	Chain	1	20	E83875	Hex Jam Nut, M10X6 Zinc	4
8	E83945	Stud Bolt M10x33 Custom	1	21	E20117	Nyloc Hex Jam Nut, M6x9 SS	2
9	E82307	Squeegee Vacuum Adapter	1	22	E81874	Flat Washer M8x17x1.6 Zinc	2
10	E83971	Gasket	1	23	E83810	Knob	8
11	E12686	Squeegee Blade, Gum Rubber 30 3/4" x 1 3/4" x 1/8"	1	24	E83591	Knob	1
12	E82451	Wheel 45 OD x 25 W	2	30	E88536	Squeegee Assembly	1
13	E83914	Hex Bolt M6x20 SS	2				

# SQUEEGEE ASSEMBLY DIAGRAM - AFTER SERIAL NUMBER 215000000

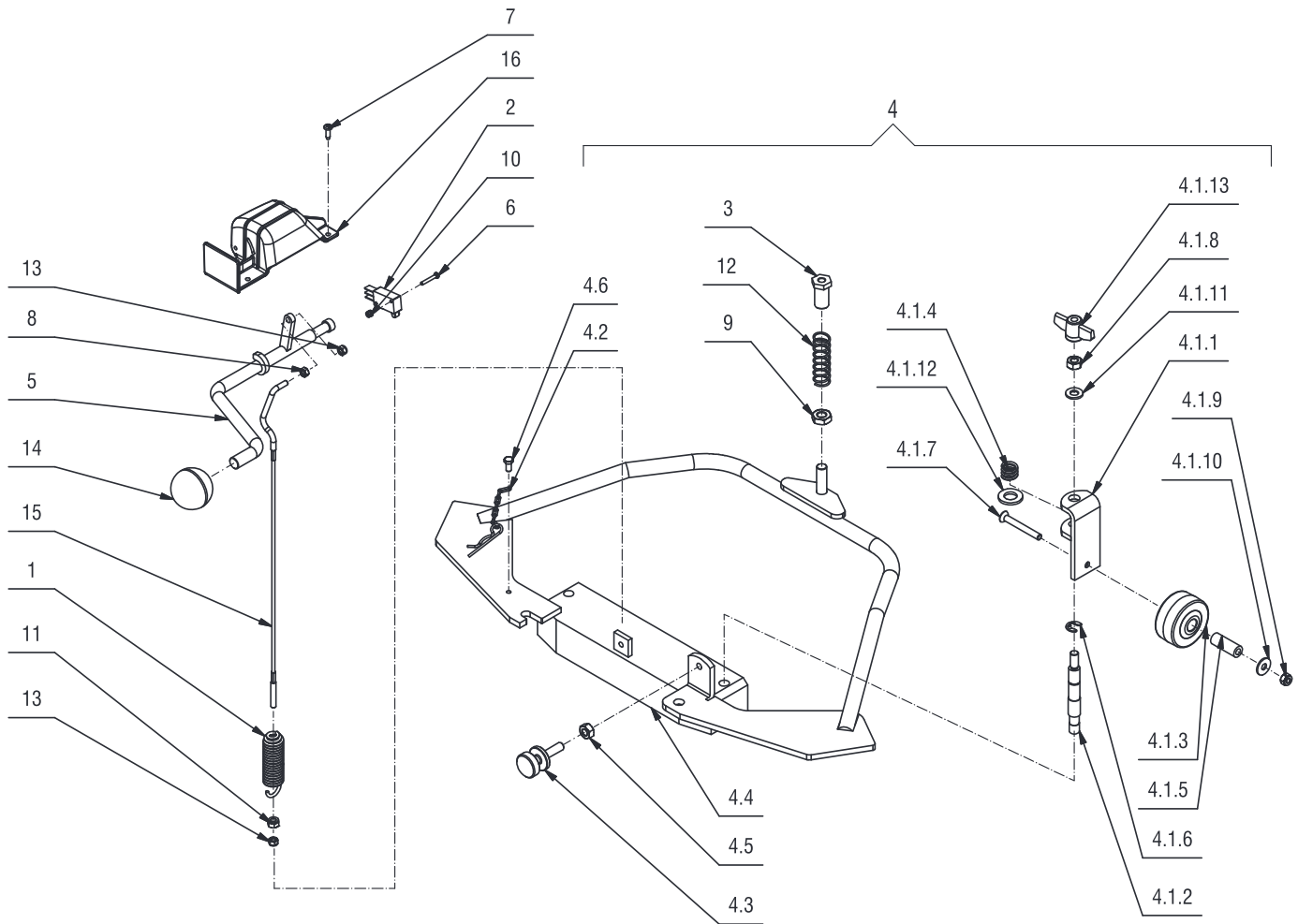




# SQUEEGEE ASSEMBLY PARTS LISTING - AFTER SERIAL NUMBER 215000000

Item#	Part #	Description	Qty.	Item#	Part #	Description	Qty.
1	E84336	Mounting Stud	2	17	E22352	Center Front Squeegee Blade Clamp	1
3	E22637	Squeegee Blade Kit, 31"	1	18	E22635	Clamp, Front Squeegee Blade	2
4	E84277	Squeegee Blade Kit, Poly, 31"	1	19	E22355	Center Rear Squeegee Blade Clamp	1
5	E84278	Squeegee Blade Kit, Latex, 31"	1	20	E22634	Rear Squeegee Blade Clamp	2
6	E84337	Squeegee Assembly Complete, 31.5"	1	21	E22358	Wing Nut Knob	9
7	E83331	Knob, M8 Round Nylon Female	2	22	E22359	Wing Nut Knob	9
8	E83402	Spring, 15mm O.D. x 11mm I.D. x 16mm L	2	23	E22360	Squeegee Shoe Adapter	1
9	E83804	Stud	2	24	E22385	O-Ring, 7mm	36
10	E84338	Spacer	2	25A	E22637	Squeegee Blade Kit, 31"	1
11	E81342	Nut, Hex Jam, Nyloc, M8 SS	2	25B	E84277	Squeegee Blade Kit, Poly, 31"	1
12	E86164	Flat Washer M9x24x2.5 SS	2	25C	E84278	Squeegee Blade Kit, Latex, 31"	1
15	E22346	Screw, Custom Cap	18	26	E22630	Thumb Screw	2
16	E22633	Squeegee Body	1	27	E22646	Wheel Cover	2
				28	E22668	Bumper Wheel	2

# SQUEEGEE YOKE DIAGRAM - BEFORE SERIAL NUMBER 214999999

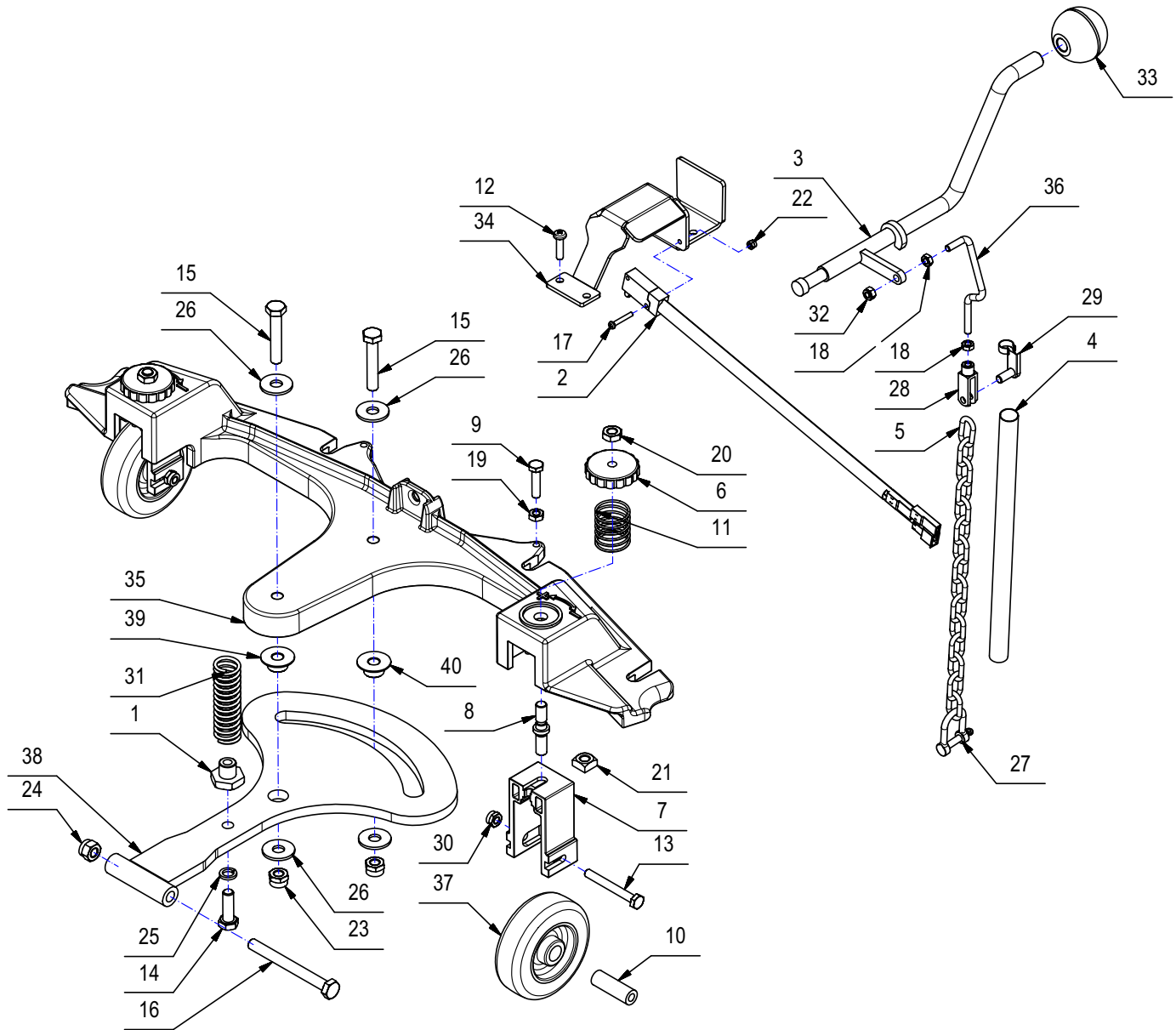


# SQUEEGEE YOKE PARTS LISTING - BEFORE SERIAL NUMBER 214999999

Item#	Part #	Description	Qty.
1	E82279	Spring	1
2	E88279	Micro Switch Sealed	1
3	E20373	Guide Bushing	1
4	E20227	Squeegee Yoke ASM	1
4.1	E20644	Squeegee Wheel Support ASM	2
4.1.1	E85497	Weldment, Squeegee Wheel Support	1
4.1.2	E82329	Threaded Pin	1
4.1.3	E82428	Wheel 52 OD x 28 W	1
4.1.4	E81634	Spring Compression	1
4.1.5	E82273	Bushing	1
4.1.6	E85498	E Style Circlip	1
4.1.7	E20246	Flat Hd Soc Machine Screw M6x50 Zinc	1
4.1.8	E83656	Hex Nut, M8x6.5 Zinc	1
4.1.9	E83550	NyLoc Hex Nut, M6 Zinc	1
4.1.10	E82798	Flat Washer M6x18x1.5 Zinc	1
4.1.11	E81874	Flat Washer M8x17x1.6 Zinc	1
4.1.12	E85722	Flat Washer M13x24x2.5 Zinc	1
4.1.13	E83531	Knob	1

Item#	Part #	Description	Qty.
4.2	E83590	Chain	1
4.3	E83655	Adjuster Knob	1
4.4	E20286	Squeegee Yoke	1
4.5	E85499	Hex Nut, M8x6.5 SS	1
4.6	E20134	Hex Bolt M5x10 Zinc	1
5	E20408	Squeegee Lift Lever	1
6	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	2
7	E83838	Screw 4.2 X 13	4
8	E82317	Hex Jam Nut, M5X3.5 Zinc	1
9	E83875	Hex Jam Nut, M10X6 Zinc	1
10	E81673	Hex Nyloc Nut, M3 Zinc	2
11	E83550	NyLoc Hex Nut, M6 Zinc	1
12	E88248	Spring 17 x 14 x 53 Wide D=1.5	1
13	E20382	Nyloc Hex Nut, M5x5 Zinc	2
14	E20638	Knob	1
15	E88250	Squeegee Lift Cable	1
16	E20641	Bracket	1

# SQUEEGEE YOKE DIAGRAM - AFTER SERIAL NUMBER 215000000

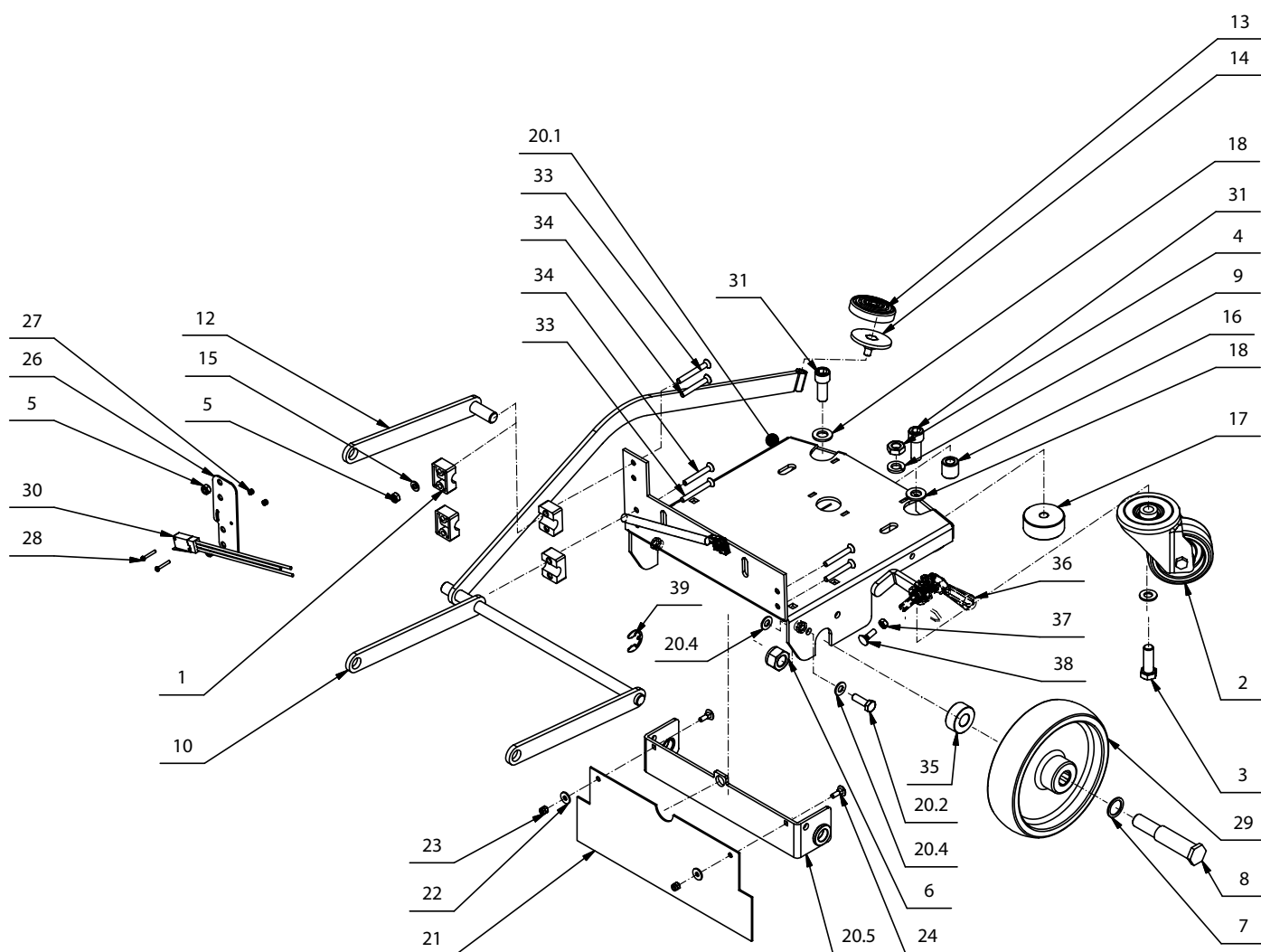


# SQUEEGEE YOKE PARTS LISTING - AFTER SERIAL NUMBER 215000000

Item#	Part #	Description	Qty.
1	E20006	Bushing	1
2	E88279	Micro Switch Sealed	1
3	E20408	Squeegee Lift Lever	1
4	E84339	Sheath	1
5	E84340	Squeegee Lift Chain	1
6	E83331	Knob, M8 Round Nylon Female	2
7	E20078	Squeegee Wheel Support	2
8	E20079	Threaded Adjuster Rod	2
9	E22671	Bolt, M6 x 25	1
10	E82274	Bushing	2
11	E20091	Spring	2
12	E82288	Screw, Pan Hd Phil, Self Tap, M5.2 x 20, Zinc	4
13	E83933	Screw, Tripla Side Squeegee	2
14	E83833	Hex Bolt M8x25 Zinc	1
15	E20287	Hex Bolt M8x45 SS	2
16	E20099	Hex Bolt M8x80 SS	1
17	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	2
18	E82317	Hex Jam Nut, M5X3.5 Zinc	2
19	E20113	Hex Jam Nut, M6X4 SS	1
20	E83672	Hex Jam Nut, M8x5 SS	2

Item#	Part #	Description	Qty.
21	E83824	Square Nut, M8 SS	2
22	E81673	Nut, Hex Nyloc, M3 Zinc	2
23	E81342	Nut, Hex Jam, Nyloc, M8 SS	2
24	E20119	Nyloc Hex Nut, M8 SS	1
25	E81046	Lock Washer M8 Zinc	1
26	E86164	Flat Washer M9x24x2.5 SS	4
27	E86147	Split Pin	1
28	E83538	Fork	1
29	E83542	Clip	1
30	E82314	Nut, Hex Jam, Nyloc, M6, SS	2
31	E20519	Spring	1
32	E82256	Nyloc Hex Nut, M5x7 Zinc	1
33	E20638	Knob	1
34	E84341	Cam Guard	1
35	E84342	Squeegee Carriage	1
36	E84343	Lift Coupling	1
37	E84344	Squeegee Support Wheel	2
38	E84345	Pivot Plate	1
39	E84346	Spacer	1
40	E84347	Spacer	1

# MAIN FRAME DIAGRAM - BEFORE SERIAL NUMBER 214999999

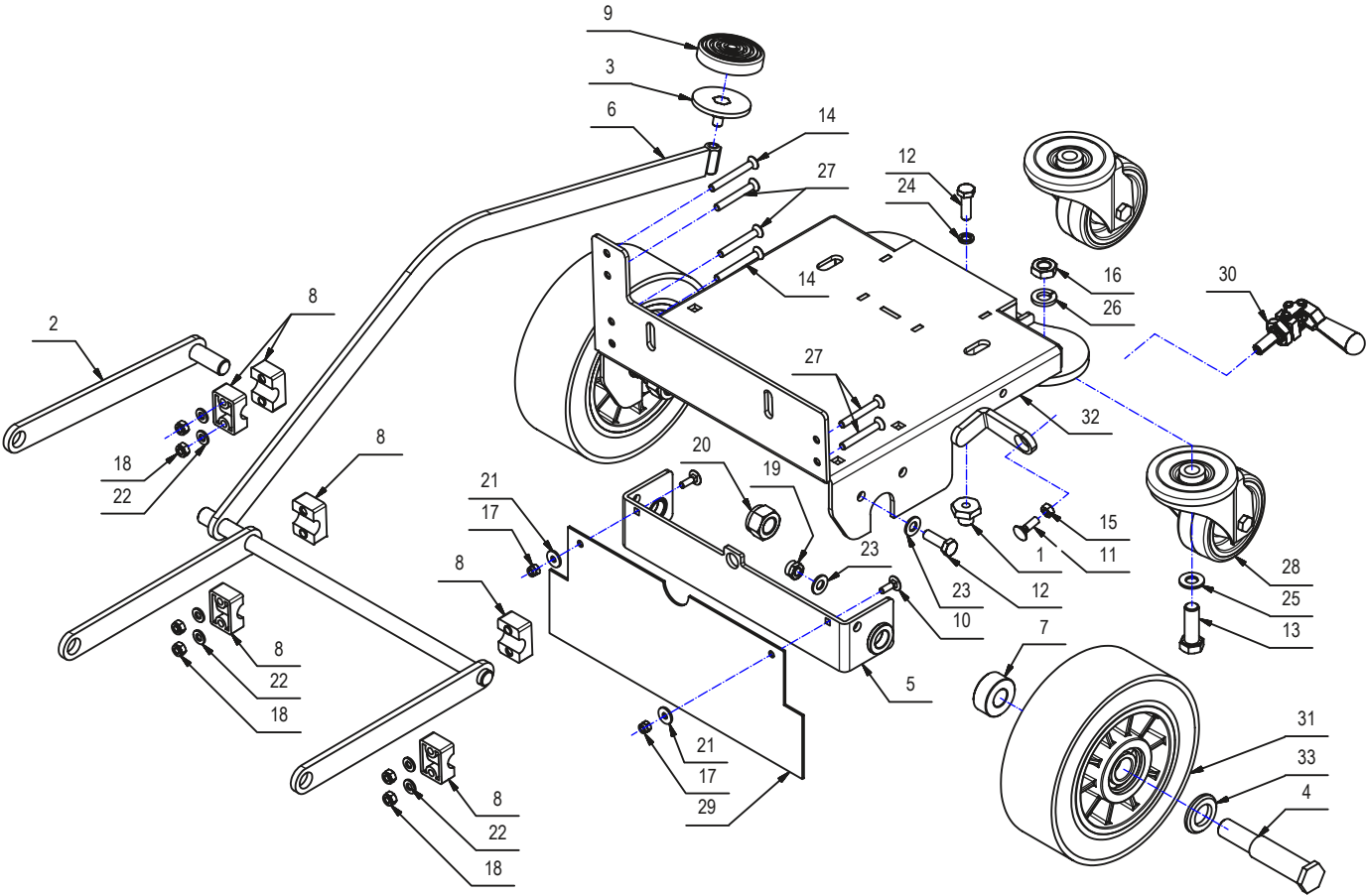


# MAIN FRAME PARTS LISTING - BEFORE SERIAL NUMBER 214999999

Item#	Part #	Description	Qty.
1	E82834	Pivot Block	6
2	E20437	Castor	1
3	E81735	Hex Bolt M12x35 Zinc	1
4	E83829	Hex Jam Nut, M12X7 Zinc	1
5	E83550	NyLoc Hex Nut, M6 Zinc	8
6	E81627	Nyloc Hex Nut, M16 Zinc	2
7	E81948	Flat Washer M20x26x1.5 AL	2
8	E20647	Axle Shaft	2
9	E81738	Flat Washer M4x12x3 Zinc	1
10	E20388	Brush Deck Lift Arm Weldment	1
12	E83597	Brush Deck Lift Idler Arm Weldment	1
13	E83669	Pedal cover	1
14	E20370	Foot Pedal	1
15	E82761	Washer 6x12x1.6	6
16	E20226	Bumper	1
17	E20334	Bumper	1
18	E85722	Flat Washer M13x24x2.5 Zinc	2
20	E20430	Main Frame ASM	1
20.1	E20600	Main Frame Weldment	1
20.2	E83833	Hex Bolt M8x25 Zinc	2

Item#	Part #	Description	Qty.
20.4	E81874	Flat Washer M8x17x1.6 Zinc	4
20.5	E20532	Axle Mounting Bracket	1
20.6	E81709	Nyloc Hex Nut, M8 Zinc	2
21	E20501	Splash Guard	1
22	E20122	Flat Washer M5 x 15 x 1.5 SS	2
23	E20705	Nyloc Hex Nut, M5 Zinc	2
24	E20488	Carriage Bolt M5x16 Zinc	2
26	E20473	Switch Plate	1
27	E20435	Nyloc Hex Nut, M3 SS	2
28	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	2
29	E82551	Transport Wheel 175 OD x 45 W	2
30	E88256	Micro Switch	1
31	E20380	Soc Hd Cap Screw M12x30 Zinc	2
33	E20246	Flat Hd Soc Machine Screw M6x50 Zinc	2
34	E20255	Flat Hd Soc Machine Screw M6x45 Zinc	4
35	E20528	Spacer	2
36	E20369	Parking Brake	1
37	E83852	Hex Nut, M6x5	1
38	E20356	Carriage Bolt M6x20 Zinc	1
39	E20706	Retaining Ring, E-Style M15	1

# MAIN FRAME DIAGRAM - AFTER SERIAL NUMBER 215000000

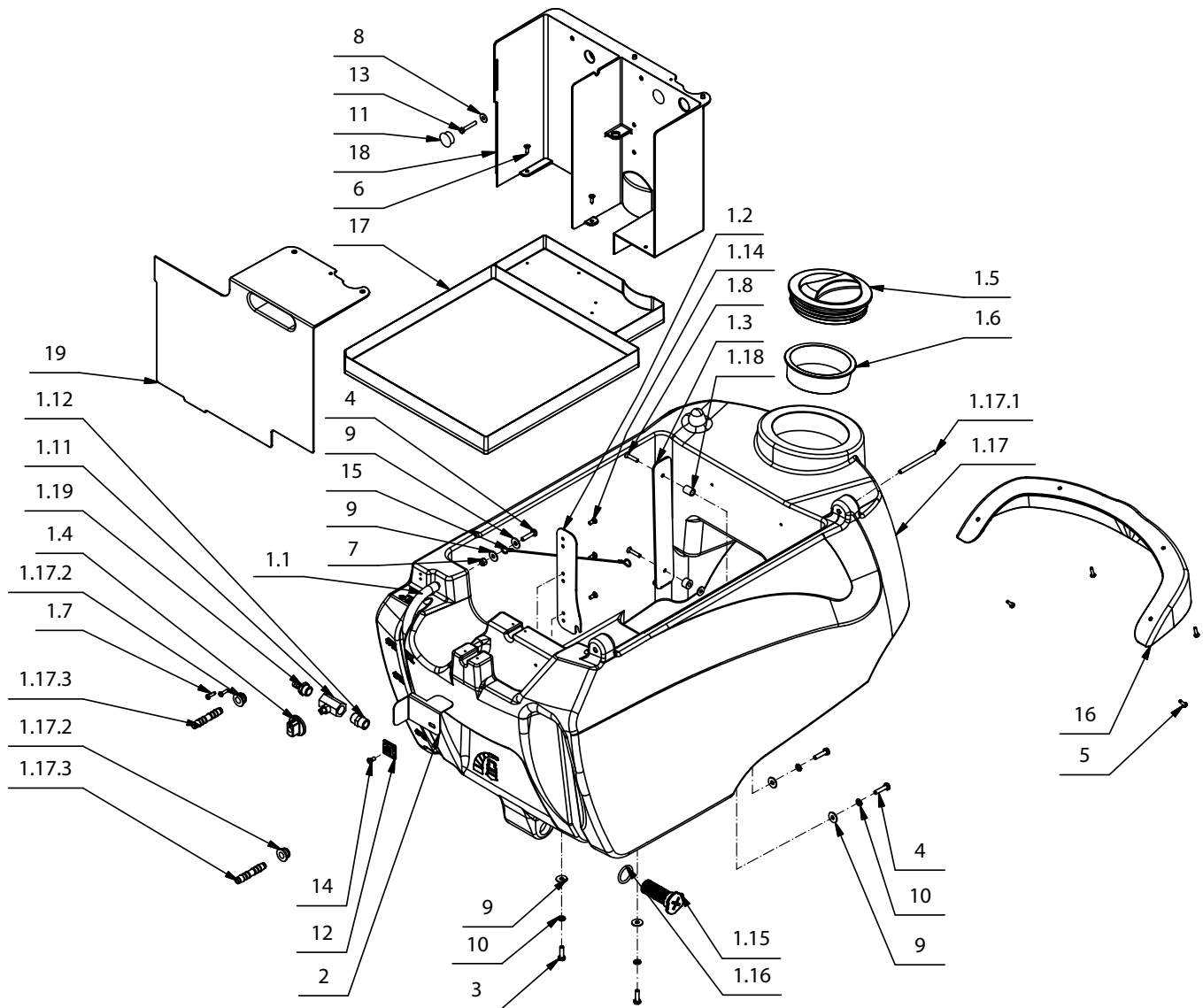




# MAIN FRAME PARTS LISTING - AFTER SERIAL NUMBER 215000000

Item#	Part #	Description	Qty.	Item#	Part #	Description	Qty.
1	E20006	Bushing	1	18	E83550	NyLoc Hex Nut, M6 Zinc	6
2	E83597	Brush Deck Lift Idler Arm Weldment	1	19	E86853	Nyloc Hex Nut, M8 Zinc	2
3	E20370	Foot Pedal	1	20	E81627	Nyloc Hex Nut, M16 Zinc	2
4	E20647	Axle Shaft	2	21	E20122	Flat Washer M5 x 15 x 1.5 SS	2
5	E20532	Axle Mounting Bracket	1	22	E82761	Flat Washer M6x12x1.6 Zinc	6
6	E20388	Brush Deck Lift Arm Weldment	1	23	E81874	Flat Washer M8x17x1.6 Zinc	4
7	E20528	Spacer	2	24	E81046	Lock Washer M8 Zinc	1
8	E82834	Pivot Block	6	25	E82773	Flat Washer M10x21x2 Zinc	2
9	E83669	Pedal cover	1	26	E81738	Flat Washer M4x12x3 Zinc	2
10	E20488	Carriage Bolt M5x16 Zinc	2	27	E20255	Flat Hd Soc Machine Screw M6x45 Zinc	4
11	E20356	Carriage Bolt M6x20 Zinc	1	28	E20437	Castor	2
12	E83833	Hex Bolt M8x25 Zinc	3	29	E20501	Splash Guard	1
13	E81735	Hex Bolt M12x35 Zinc	2	30	E20369	Parking Brake	1
14	E20246	Flat Hd Soc Machine Screw M6x50 Zinc	2	31	E84234	Front Wheel	2
15	E83852	Nut, Hex, M8, Zinc	1	32	E84331	Chassis	1
16	E83829	Hex Jam Nut, M12X7 Zinc	2	33	E84332	Bearing Washer	2
17	E20705	Nut, Nyloc, Hex, M5, Zinc	2				

# SOLUTION TANK DIAGRAM

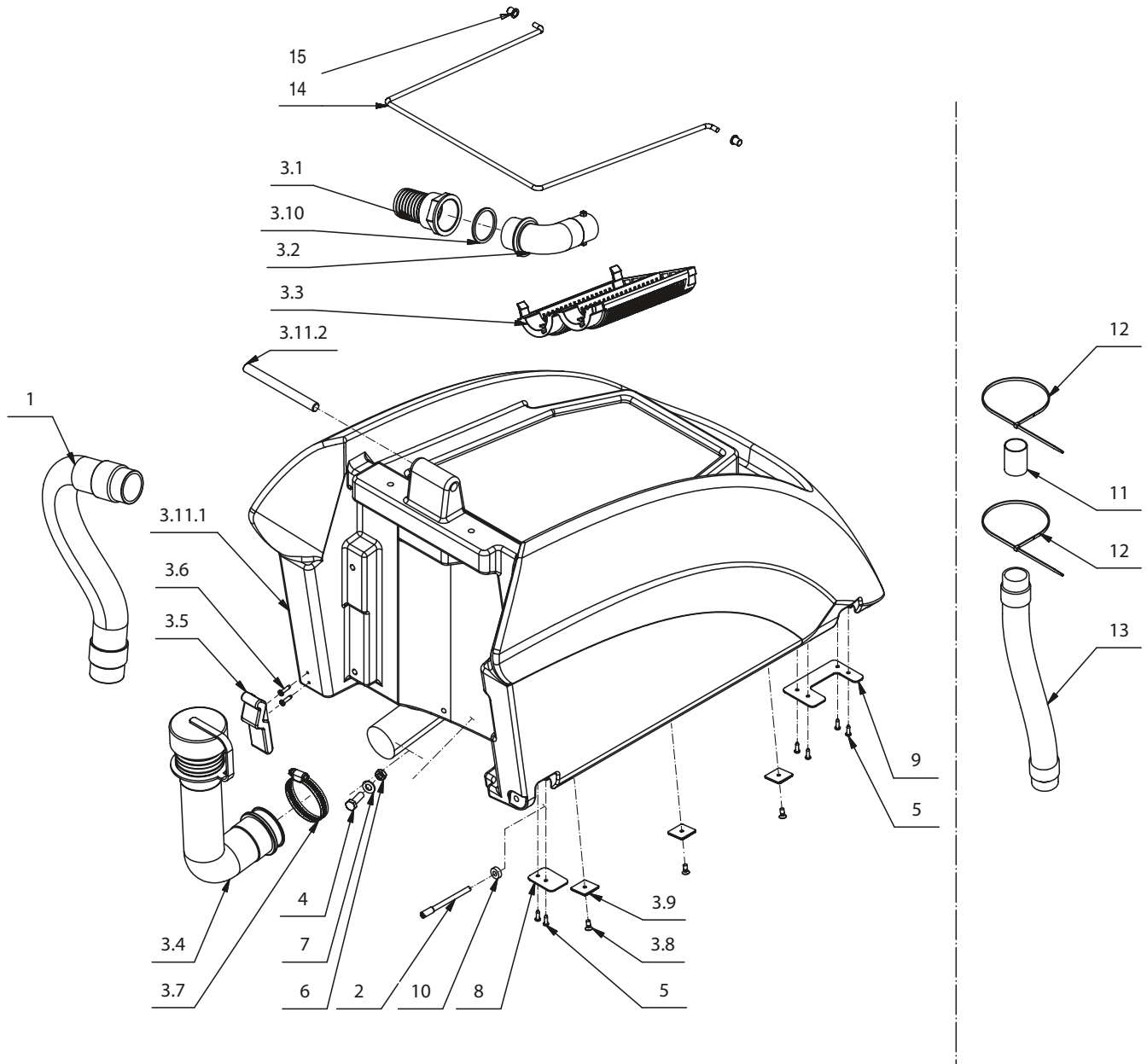


## SOLUTION TANK PARTS LISTING

Item#	Part #	Description	Qty.
1	E20285	Solution Tank ASM	1
1.1	E88258	Hose, Glass Reinforced 15 OD x 10 ID x 496 L	1
1.2	E20409	Foot Pedal Latch Plate	1
1.3	E20611	Guard Plate	1
1.4	E86145	Knob	1
1.5	E82429	Cap	1
1.6	E82612	Filter	1
1.7	E20107	Screw, Pan Hd Phil Self Tap M4.2x16 SS	2
1.8	E20110	Flat Hd Soc Machine Screw M5x25 SS	2
1.9	E20122	Flat Washer M5 x 15 x 1.5 SS	1
1.10	E85762	Hose Clamp	1
1.11	E83361	Ball Valve	1
1.12	E83943	Nipple 3/8	1
1.13	E81981	Spacer	1
1.14	E20468	Flat Hd Phil Machine Screw M5x12 Zinc	3
1.15	E88259	Filter, Water 23 x 53 Plug 3/4"	1
1.16	E88261	Flat Washer M8.2x32x4 Zinc	1
1.17	E20197	Solution Tank, Gray	1
1.17.1	E20389	Hinge Pin	1
1.17.2	E20271	Grommet	2
1.17.3	E20196	Fitting, Barbed	2

Item#	Part #	Description	Qty.
1.18	E20577	Spacer	1
1.19	E20602	Fitting, Barbed Threaded	1
2	E20411	Bracket	1
3	E82772	Hex Bolt M6x20 Zinc	2
4	E20090	Hex Bolt M6x25 Zinc	3
5	E20392	Pan Hd Phil Machine Screw M4x16 Zinc	4
6	E83796	Screw, Pan Hd Phil Self Tap M4.2x16 Zinc	5
7	E20112	Hex Nut, M6x6 Zinc	1
8	E20121	Flat Washer M5x15x1.5 Zinc	2
9	E82798	Washer, 6x18x1.5	6
10	E82774	Lock Washer, M6 Zinc	4
11	E20708	Cover, Bolt	2
12	E81619	Support Bracket	1
13	E20359	Hex Bolt M5x30 Zinc	2
14	E20468	Flat Hd Phil Machine Screw M5x12 Zinc	1
15	E88260	Lanyard	1
16	E20438	Bezel	1
17	E20709	Battery Tray	1
18	E20710	Housing, Plastic	1
19	E20711	Housing Cover, Plastic	1

# RECOVERY TANK DIAGRAM

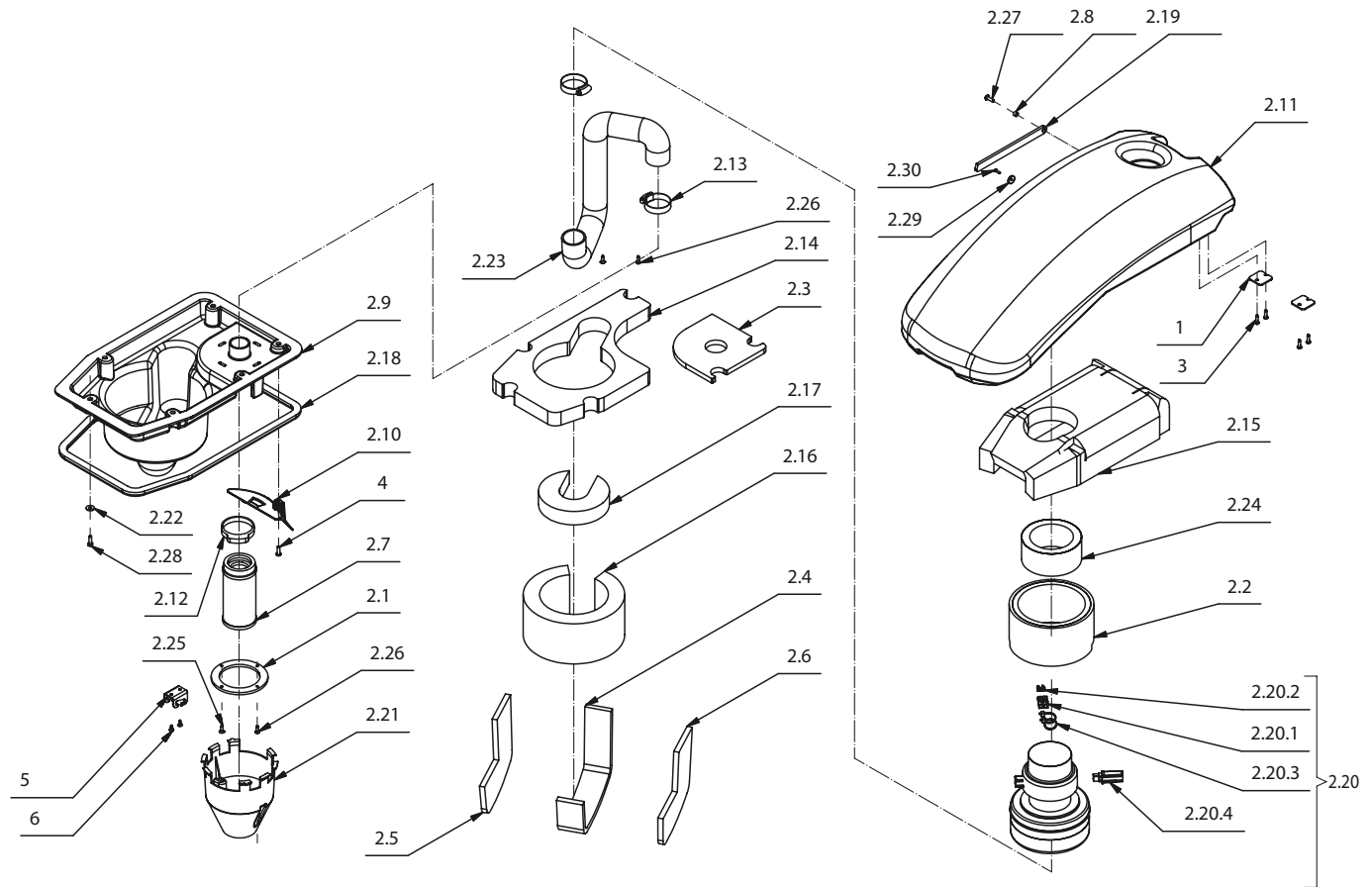


## RECOVERY TANK PARTS LISTING

Item#	Part #	Description	Qty.
1	E88499	Hose, Vacuum	1
2	E20074	Hinge Pin	1
3	E20354	Recovery Tank ASM	1
3.1	E20189	Fitting, Barbed	1
3.2	E20186	Elbow	1
3.3	E88285	Filter, Cage	1
3.4	E88286	Hose, Drain	1
3.5	E12633	Latch	1
3.6	E20107	Screw, Pan Hd Phil Self Tap M4.2x16 SS	2
3.7	E20707	Clamp, Hose M40-64 Zinc	1
3.8	E20468	Flat Hd Phil Machine Screw M5x12 Zinc	3
3.9	E81619	Cable Tie Holder	3
3.10	E82341	Gasket	1
3.11.1	E20198	Recovery Tank, Red	1

Item#	Part #	Description	Qty.
3.11.2	E20188	Hinge Pin	1
4	E83833	Hex Bolt M8x25 Zinc	1
5	E82638	Screw, Pan Hd Phil Self Tap M3.9x13 SS	6
6	E82808	Hex Jam Nut, M8X5 Zinc	1
7	E20127	Flat Washer M9x18x1.5 Zinc	1
8	E20563	Plate	1
9	E20195	Plate	1
10	E20524	Spacer, Nylon	1
11	E88500	Fitting, Hose D38, W1.5, L50	1
12	E83920	Clamp 9x300 4,8x360 black	2
13	E88499	Hose, Vacuum	1
14	E22072	Bale, Vac Lid	1
15	E22074	Plug, Vac Lid Bale	2

# VACUUM UNIT DIAGRAM

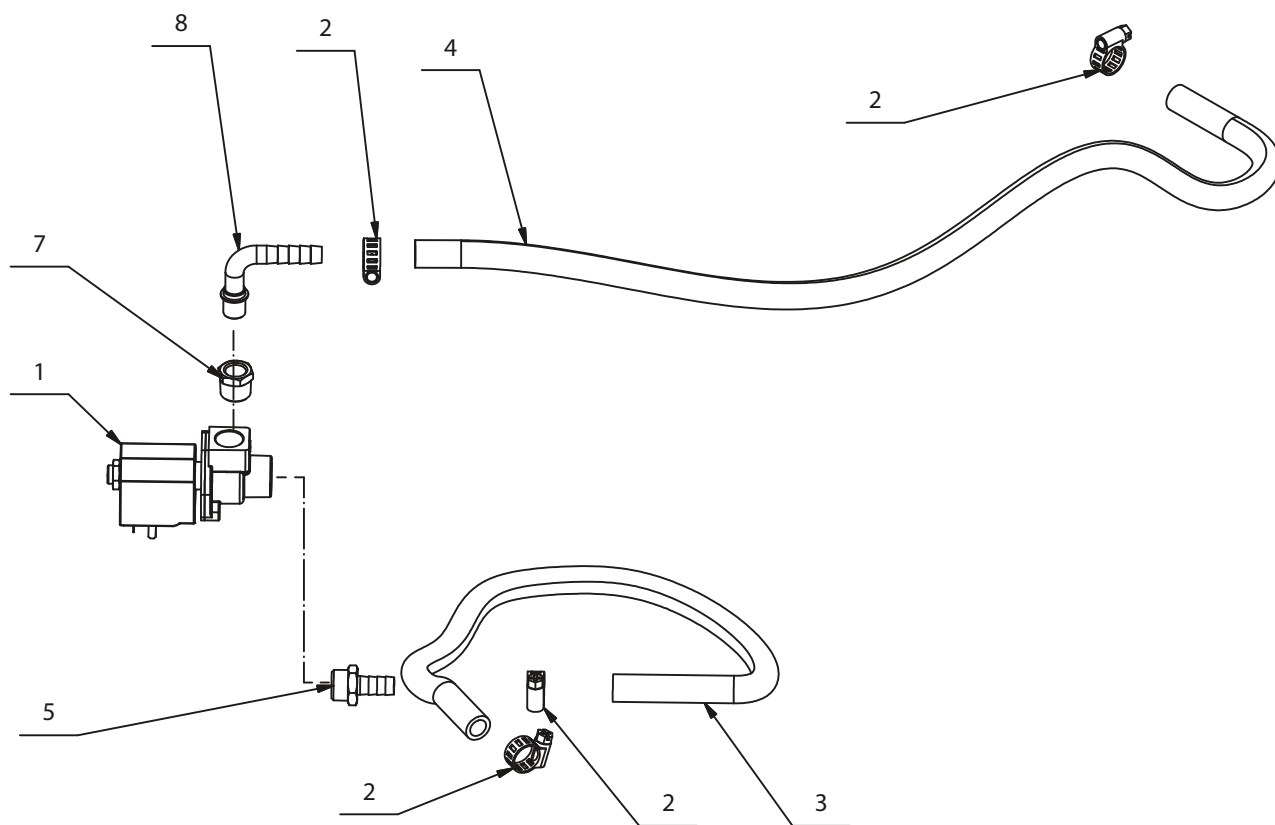


# VACUUM UNIT PARTS LISTING

Item#	Part #	Description	Qty.
1	E20265	Plate	2
2	E20066	Recovery Tank Cover ASM	1
2.1	E20305	Mounting Ring	1
2.2	E20652	Sound Deadening Foam	1
2.3	E20180	Sound Deadening Foam	1
2.4	E20179	Sound Deadening Foam	1
2.5	E20178	Sound Deadening Foam	1
2.6	E20266	Sound Deadening Foam	1
2.7	E88292	Filter, Cage	1
2.8	E20486	Bushing	1
2.9	E20384	Vacuum Motor Cover	1
2.10	E20191	Deflector	1
2.11	E20199	Recovery Tank Cover	1
2.12	E81710	Hose Clamp	1
2.13	E20325	Hose Clamp	2
2.14	E20181	Sound Deadening Foam	1
2.15	E20184	Sound Deadening Foam	1
2.16	E20183	Sound Deadening Foam	1
2.17	E20182	Sound Deadening Foam	1
2.18	E88289	Gasket	1

Item#	Part #	Description	Qty.
2.19	E20064	Support Bracket	1
2.20	E88291	Vacuum Motor 24VDC 310W	1
2.20.1	E83897	Connector, Electrical Housing 30A	2
2.20.2	E83883	Lug, Electrical 30A	2
2.20.3	E83935	Wire Tie	2
2.20.4	E22324	Carbon Brush	2
2.21	E81006	Vacuum Splash Guard	1
2.22	E20122	Flat Washer M5 x 15 x 1.5 SS	5
2.23	E88290	Hose, Vacuum	1
2.24	E20440	Sound Deadening Foam	1
2.25	E83796	Screw, Pan Hd Phil Self Tap M4.2x16 Zinc	2
2.26	E83838	Screw, Flat Hd M4x15 Zinc	2
2.27	E20442	Button Hd Soc Machine Screw M5x16 Zinc	1
2.28	E20084	Hex Bolt M5x16 SS	5
2.29	E20712	Magnet	1
2.30	E20192	CHIPBOARD SCREW M3x12 Zinc	1
3	E20107	Screw, Pan Hd Phil Self Tap M4.2x16 SS	4
4	E20298	Soc Button Head Screw M5x16 SS	1
5	E22075	Hook, Vac Lid Bale	1
6	E22076	Screw, M4 x 10	2

## SOLUTION DELIVERY DIAGRAM - BEFORE SERIAL NUMBER 21499999



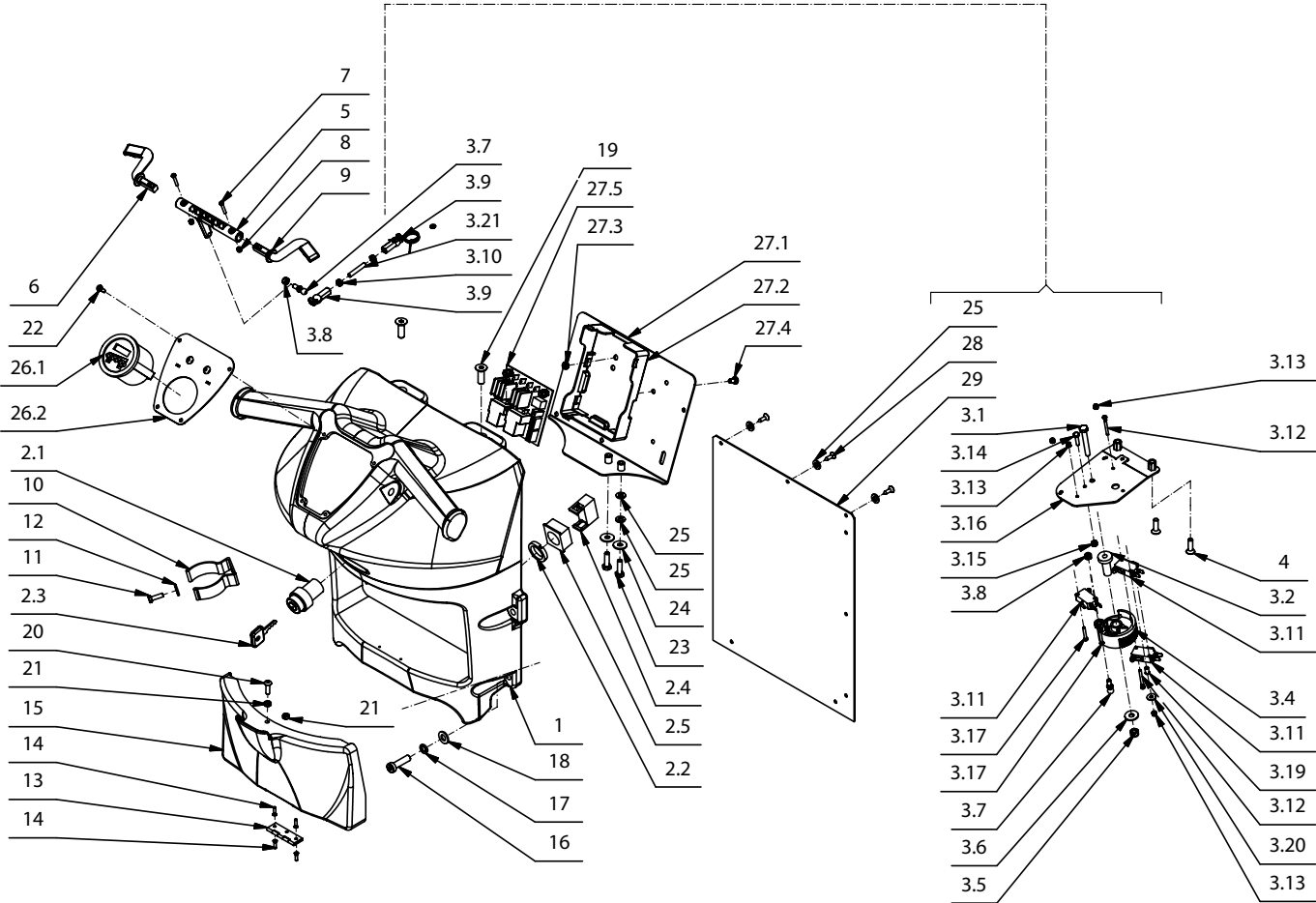


## SOLUTION DELIVERY PARTS LISTING - BEFORE SERIAL NUMBER 21499999

Item#	Part #	Description	Qty.
1	E81035	Solenoid Valve	1
2	E85762	Hose Clamp	4
3	E22144	Tubing, 10 ID x 370 L	1
4	E20375	Tubing, 10 ID x 650 L	1

Item#	Part #	Description	Qty.
5	E20602	Fitting, Threaded Barb	1
7	E22145	Fitting, 3/8" - 1/4" Reducer	1
8	E88829	Fitting, 90 Degree Elbow	1

# HANDLEBAR DIAGRAM - BEFORE SERIAL NUMBER 214999999

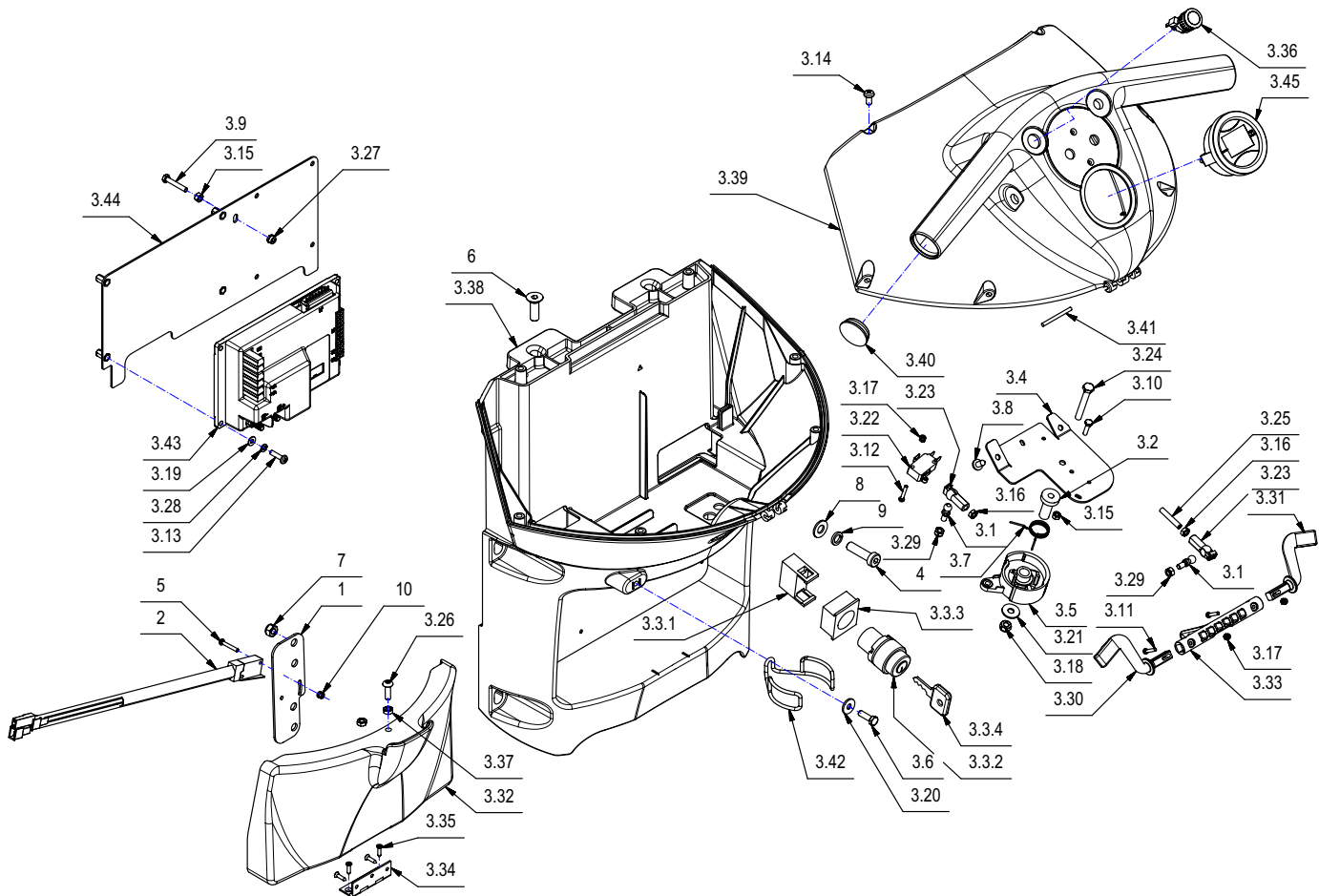


# HANDLEBAR PARTS LISTING - BEFORE SERIAL NUMBER 214999999

Item#	Part #	Description	Qty.
1	E20200	Handlebar Housing	1
2	E82351	Key switch	1
2.1	E83316	Key Switch	1
2.2	E83316	Key Switch	1
2.3	E83315	Switch Key	1
2.4	E83173	Key Switch Contact	1
2.5	E81358	Switch Flange	1
3	E20223	Drive Control	1
3.1	E20360	Hex Bolt M6x45 Zinc	1
3.2	E81597	Circuit Breaker 10 amp, 1/4" Tab Terminals	1
3.3	E88204	Spring	1
3.4	E81763	Cam	1
3.5	E83550	NyLoc Hex Nut, M6 Zinc	1
3.6	E82798	Washer, 6x18x1.5	1
3.7	E20330	Pin	2
3.8	E20382	Nyloc Hex Nut, M5 x 5 Zinc	2
3.9	E81625	Ball Stud Receiver	2
3.10	E82317	Hex Jam Nut, M5X3.5 Zinc	2
3.11	E82270	Micro Switch	3

Item#	Part #	Description	Qty.
3.12	E20243	Pan Hd Phil Machine Screw M3x30 Zinc	2
3.13	E81673	Hex Nyloc Nut, M3 Zinc	4
3.14	E20341	Hex Bolt M4x16 Zinc	1
3.15	E20248	Hex Nut, M4x4 Zinc	1
3.16	E20556	Plate	1
3.17	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	3
3.18	E20367	Hinge Bracket RH	5
3.19	E20466	Insert	1
3.20	E83037	Flat Washer M4x12x1.6 Zinc	1
3.21	E20362	Set Screw Hex Soc Dog Point M5x30 Zinc	1
4	E20111	Flat Hd Soc Machine Screw M6x20 Zinc	2
5	E88267	Switch Cam	1
6	E88300	Lever, Left Switch	1
7	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	2
8	E81673	Hex Nyloc Nut, M3 Zinc	2
9	E88301	Lever, Right Switch	1
10	E87296	Drain Hose Clip	1
11	E83836	Hex Bolt M5x16 Zinc	1

# HANDLEBAR DIAGRAM - AFTER SERIAL NUMBER 215000000

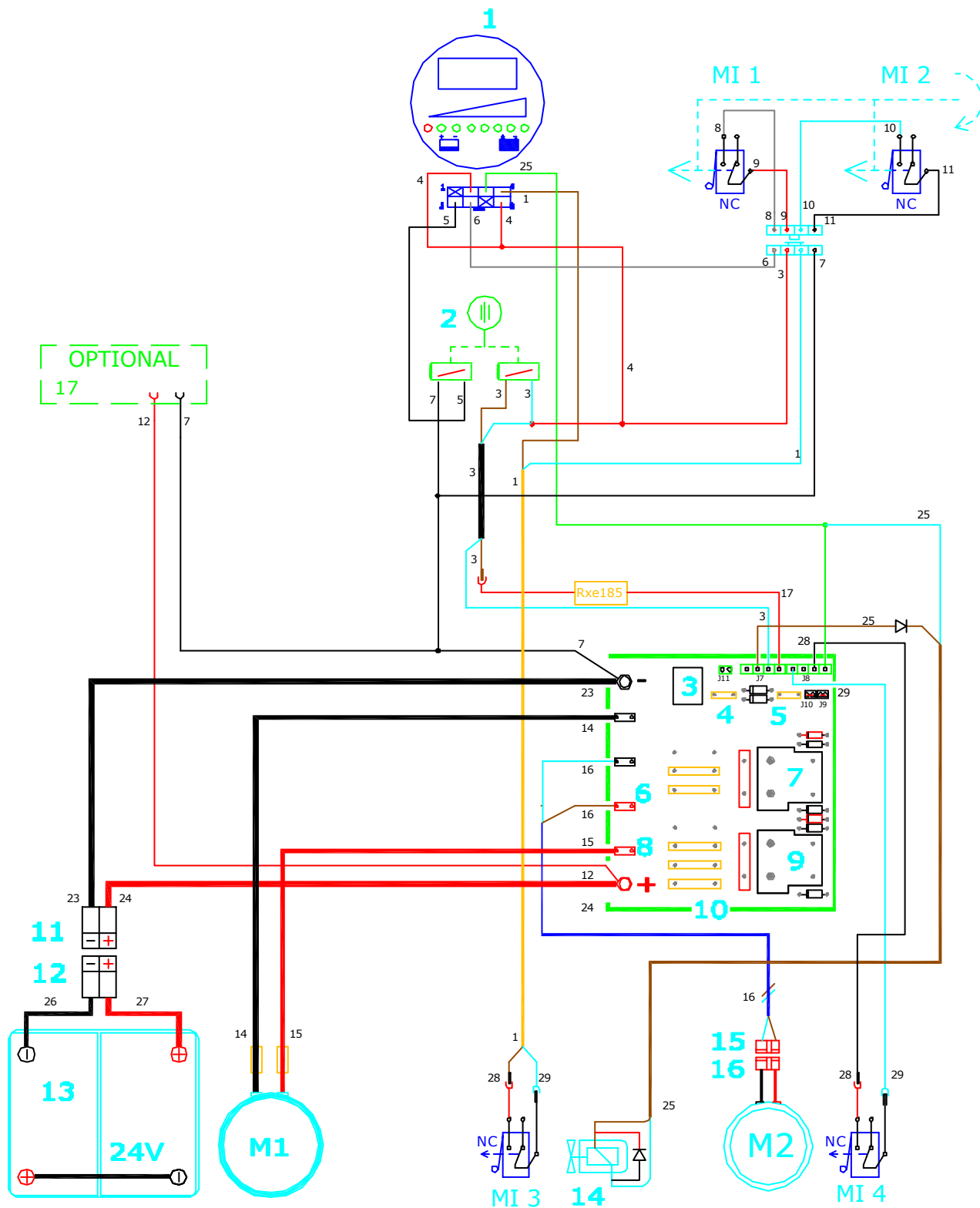


# HANDLEBAR PARTS LISTING - AFTER SERIAL NUMBER 215000000

Item#	Part #	Description	Qty.
1	E20473	Switch Plate	1
2	E88256	Micro Switch	1
3.1	E20330	Ball Stud M10x22.5	2
3.2	E20574	Bushing	1
3.3	E82351	Key Switch Assembly w/Keys	1
3.3.1	E83173	Contact, Key Switch	1
3.3.2	E83316	Key Switch	1
3.3.3	E81358	Switch Flange	1
3.3.4	E83315	Switch Key (1)	1
3.4	E22079	Plate, Electrical Panel	1
3.5	E81763	Cam	1
3.6	E83836	Hex Bolt M5x16 Zinc	1
3.7	E82304	Spring, 20.2x1.3x20.8mm Steel Torsion	1
3.8	E83851	Screw, Pan Hd Phil Self Tap, M5.5x13, SS	2
3.9	E84348	Screw, M4 x 25 Zinc	1
3.10	E20341	Hex Bolt M4x16 Zinc	1
3.11	E84349	Bolt, M3 x 16	2
3.12	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	2
3.13	E20392	Pan Hd Phil Machine Screw M4x16 Zinc	4
3.14	E83899	Screw, Machine, Pan Hd Phil, M5x10, SS	6
3.15	E20248	Hex Nut, M4x4 Zinc	2
3.16	E82317	Hex Jam Nut, M5X3.5 Zinc	2
3.17	E81673	Nut, Hex Nyloc, M3 Zinc	4
3.18	E83550	NyLoc Hex Nut, M6 Zinc	1
3.19	E20292	Flat Washer M4x9x0.8 Zinc	4
3.20	E20121	Flat Washer M5x15x1.5 Zinc	1
3.21	E88585	Washer, Flat, M6 x 18, Zinc	1
3.22	E82270	Micro Switch	1
3.23	E81625	Shank, M5x32 Female Threaded Nylon	2
3.24	E20360	Hex Bolt M6x45 Zinc	1

Item#	Part #	Description	Qty.
3.25	E20362	Set Screw Hex Soc Dog Point M5x30 Zinc	1
3.26	E20298	Soc Button Head Screw M5x16 SS	1
3.27	E81978	Nut	1
3.28	E20475	Lock Washer M4 Zinc	4
3.29	E82256	Nyloc Hex Nut, M5x7 Zinc	2
3.30	E88300	Lever, Left Switch	1
3.31	E88301	Lever, Right Switch	1
3.32	E20267	Door	1
3.33	E88267	Switch Cam	1
3.34	E20400	Hinge	1
3.35	E20192	Screw, Chipboard, M3x12 Zinc	4
3.36	E84350	Push Button	1
3.37	E22619	Nut	2
3.38	E22082	Lower Handle Bar	1
3.39	E22083	Upper Handle Bar	1
3.40	E22084	Cap, Handle Bar	2
3.41	E22085	Hinge Pin	1
3.42	E22620	Hose Clip	1
3.43	E84351	Control Card	1
3.44	E84352	Plate	1
3.45	E84353	Battery Discharge Indicator	1
4	E20288	Soc Hd Cap Screw M8x30 Zinc	4
5	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	2
6	E20346	Screw, Flat Hd Soc Machine, M8x25, SS	2
7	E83550	NyLoc Hex Nut, M6 Zinc	2
8	E81874	Flat Washer M8x17x1.6 Zinc	4
9	E81046	Lock Washer M8 Zinc	4
10	E20435	Nyloc Hex Nut, M3 SS	2
11	E89890	Battery Cable w/ 80Amp Fuse	1

# ELECTRICAL DIAGRAM - BEFORE SERIAL NUMBER 214999999

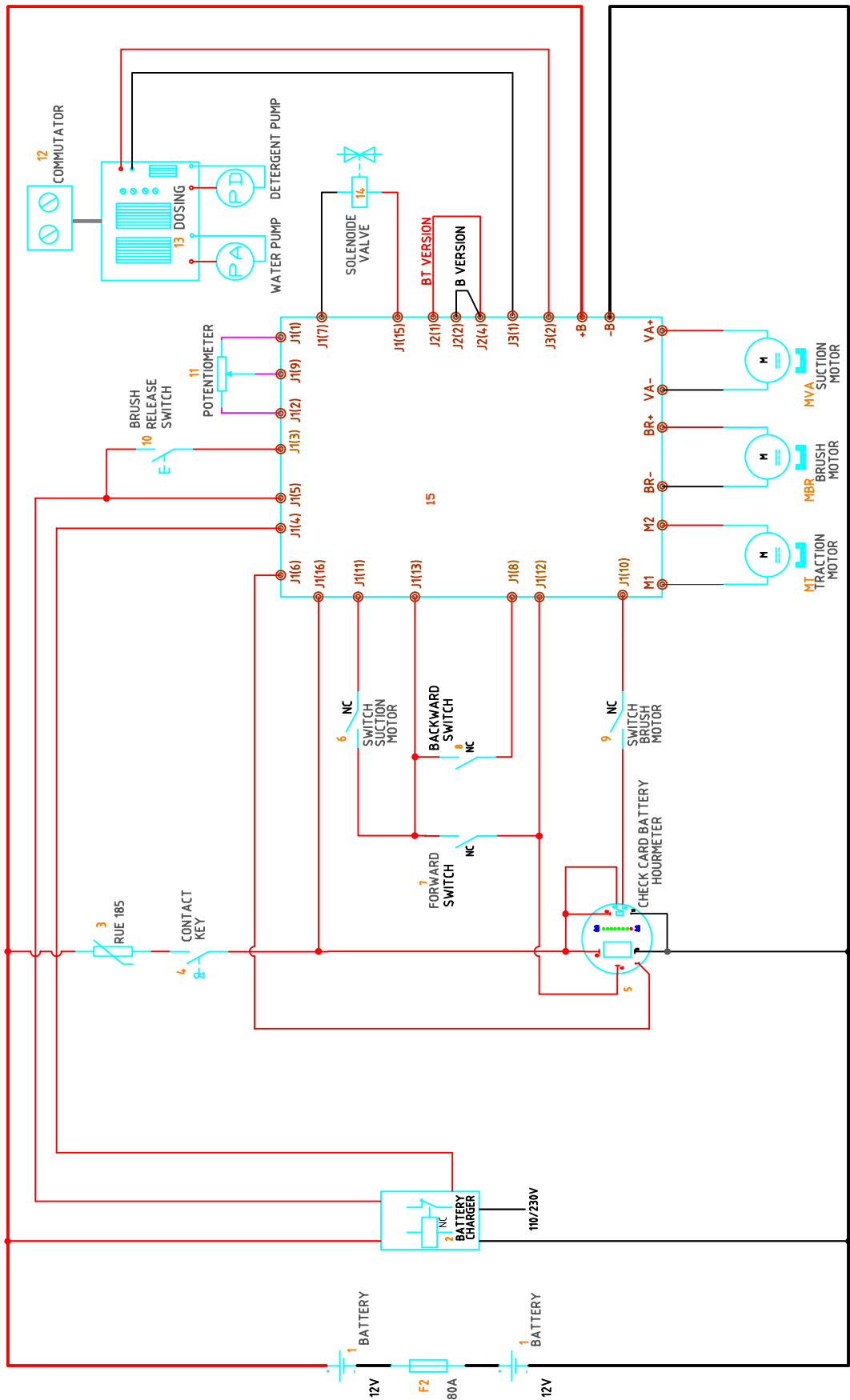


## ELECTRICAL PARTS LISTING - BEFORE SERIAL NUMBER 214999999

Item#	Part #	Description	Qty.
1	E88293	Hour Meter	
2	E82351	Key Switch	
10	E88266	Relay Card	
11	E86208	SB50 Red Electrical Connector	
14	E82322	Solenoid Valve	
15	E20402	Electrical Connector 30A	
16	E20402	Electrical Connector 30A	

Item#	Part #	Description	Qty.
MI 1	E82270	Micro Switch	
MI 2	E82270	Micro Switch	
MI 3	E88249	Micro Switch	
MI 4	E88249	Micro Switch	
M1	E88235	Brush Gear Motor 24VDC 400W	
M2	E88291	Vacuum Motor 24VDC 310W	

ELECTRICAL DIAGRAM - AFTER SERIAL NUMBER 215000000



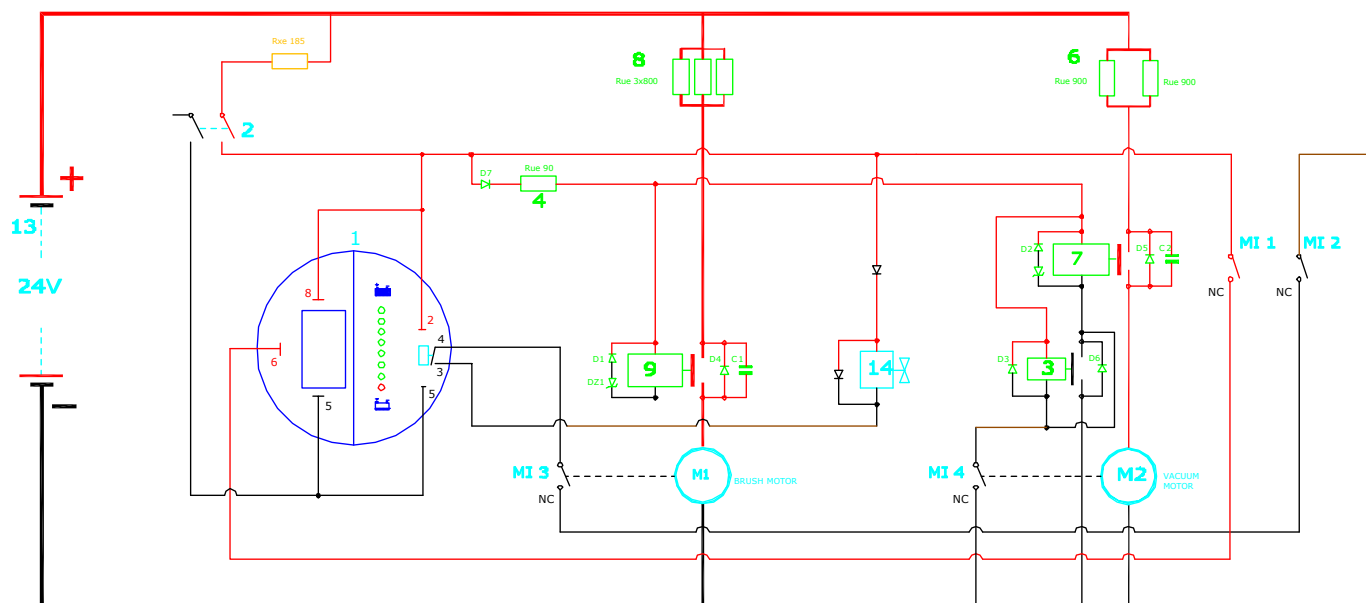


# ELECTRICAL PARTS LISTING - AFTER SERIAL NUMBER 215000000

Item#	Part #	Description	Qty.
1	Various	Batteries	2
2	Various	Battery Charger	1
3	N/A	Fuse	1
4	E83316	Key Switch	1
5	E84353	Battery Discharge Indicator	1
6	E88279	Microswitch Vacuum Motor	1
7	E82270	Microswitch Forward	1
8	E82270	Microswitch Reverse	1
9	E88256	Microswitch Brush Motor	1
10	E84350	Push Button	1

Item#	Part #	Description	Qty.
11	E20713	Potentiometer	1
12	N/A	Dilution Control Commutator Card (Not Used)	0
13	N/A	Dilution Control Card (Not Used)	0
14	E81035	Solenoid Valve	1
15	E84351	Control Card	1
F2	E89890	Fuse 80A	1
MTE	E20582	Traction Motor	1
MBR	E84328	Brush Motor	1
MVA	E88291	Vacuum Motor 24VDC 310W	1

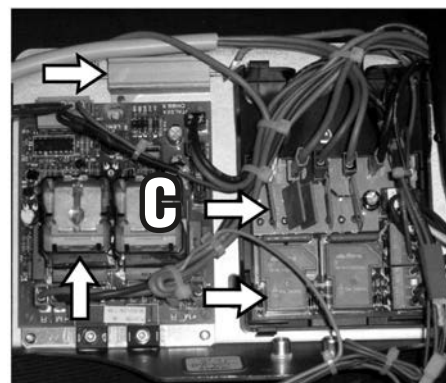
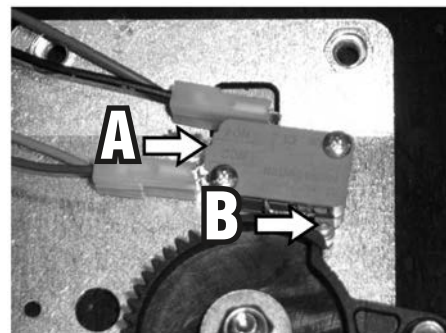
# ELECTRICAL DIAGRAM - BEFORE SERIAL NUMBER 214999999



## ELECTRICAL SYSTEM

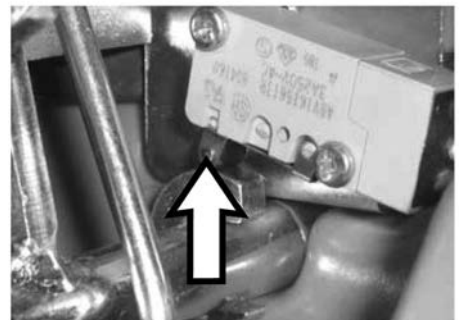
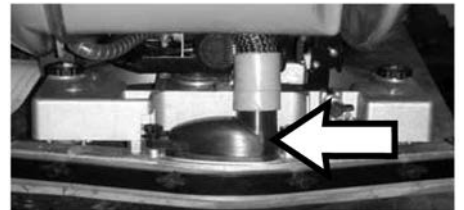
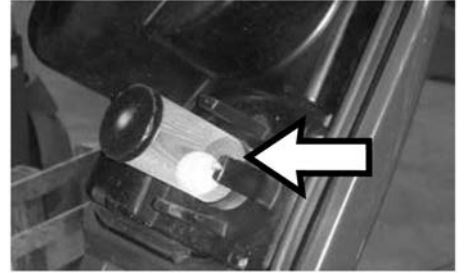
### 1. ELECTRIC HARNESS INSPECTION

- Verify the functionality and adjustment of the micro switches of the switch levers.
- Verify that the micro switches are pressed with the lever in rest position and that in that condition the micro switch lever has about 0.5 mm of movement.
- Verify the functionality and conditions of the power contactors of the self recovery fuses.



# VACUUM SYSTEM INSPECTION

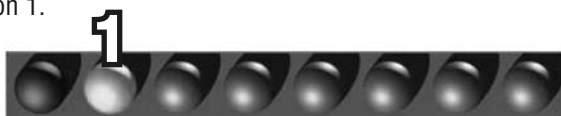
1. Verify the cleanliness and functionality of the **float filter**.
2. Check the air sealing of the **vacuum head** on the recovery tank.
3. Verify the connections and the sealing of the vacuum hoses and the squeegee hoses.
4. Check the sealing of the **squeegee hose adapter**.
5. Check the sealing of the exhaust hose and exhaust hose plug.
6. Vacuum micro switch adjustment:  
Adjust the vacuum micro switch in way that when the cam on the squeegee lever **push the micro switch** there is about 0.5 mm of clearance of the micro switch lever.



## BATTERY CHECK CARD/HOUR METER - BEFORE SERIAL NUMBER 214999999

1. Verify that when turning on the machine, the battery check card has the following starting sequence:
  - Turning on of the LED which correspond to the set-up (red LED = "0").
  - Turning on of all the LEDs (check of the lamps)
  - Turning on of the LEDs depending on the charge of the battery
2. Verify the hour meter functionality
  - To verify which is the set-up you simply need to turn on the machine and check which is the first LED that turns on. Counting the LEDs since the left side any LED correspond to a position and the LED which turn on correspond to the current set-up.

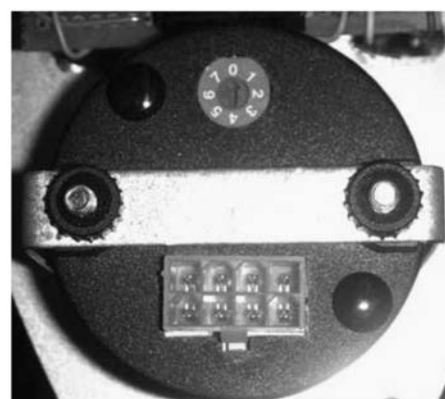
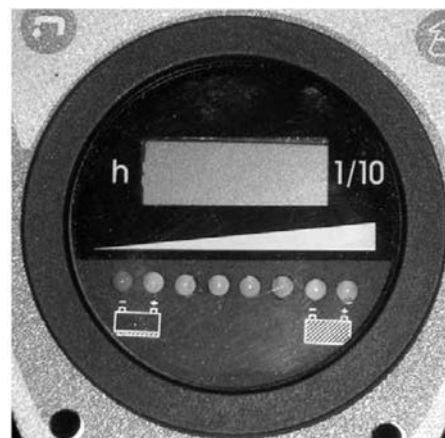
- Verify that if the machine uses wet cell batteries the adjustment is on position 1.



- Verify that if the machine uses GEL batteries the adjustment is on position 4.

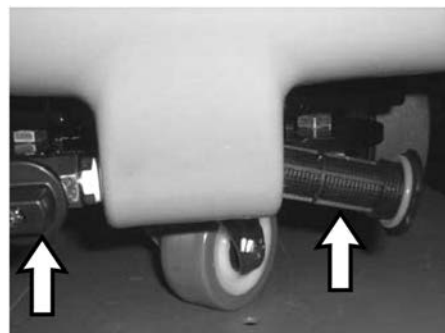


**WARNING:** A wrong set-up of the battery control card can compromise the battery efficiency and damage then in irreversible way.



## SOLUTION TANK INSPECTIONS

1. Fill up the solution tank and look for leaks around the **solution valve** and the **drain plug**.
2. Verify that the water distribution on the floor is even and dependent on the solution valve adjustment.
3. Check the internal cleanness of the water valve.

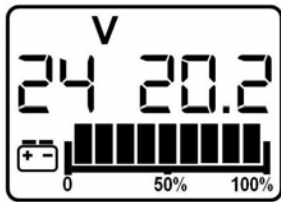


4. Verify the cleanness and functionality of the **solution filter** under the solution tank cap.

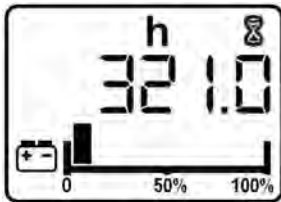


# BATTERY CHECK CARD/HOUR METER - AFTER SERIAL NUMBER 215000000

1. Verify that when turning on the machine, the battery discharge indicator has the following starting sequence:



- For the first 2 seconds, display the setting of the dip switches.



- Then display the total worked hours and level of residual charge of the battery.

During the first 2 seconds, the value displayed on the left indicates the rated voltage set for the battery discharge indicator. The value on the right indicates the low voltage shutoff threshold.

For Wet Cell batteries, the low voltage shutoff should be equal to 20.2V.  
For Gel or AGM batteries, the low voltage shutoff should be equal to 21.8V.

2. The battery discharge indicator should be adjusted according to the type of batteries that are installed in the machine. To change the settings, simply adjust the dip switches located on the back of the device.

**The grid below shows the proper settings for each battery type.**



**Hour meter Dip Switch Settings**

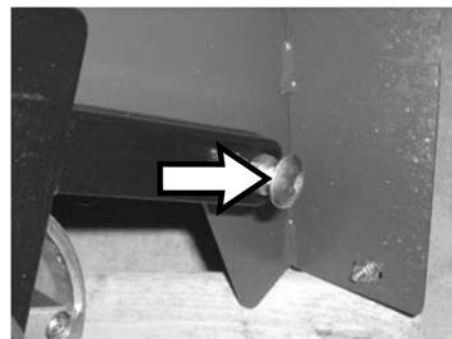
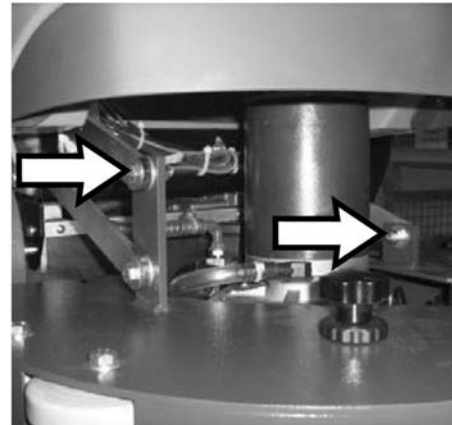
1	2	3	4	5	6	Setup
OFF	ON	OFF	OFF	OFF	OFF	Wet Cell
OFF	ON	ON	OFF	OFF	OFF	GEL / AGM

## BRUSH BASE ADJUSTMENT

### 1. Verify the right inclination of the brush deck.

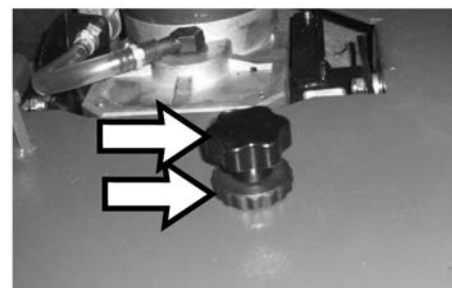
To adjust the brush deck:

- A. Lower the brush deck on the floor with the brush.
  - B. **Loosen the M8 bolt and the M8 nut** that attach the brush deck to the left arm.
  - C. **Loosen the nut and the bolt** that attach the brush deck to the idler arm.
  - D. Verify that the brush deck correctly lays on the floor and the brush touch completely the floor.
  - E. **Tighten the nut and its M8 bolt** to lock the left arm of the brush deck.
  - F. Lift up the front side of the brush deck to let it be 5 mm from the floor as regards the back side.
  - G. **Tighten the M8 nut** to secure the brush deck in this position.
- 
- H. Check that the **pan head screw** on the back side is adjusted near the flat part of the brush. The distance between the screw head and the brush has to be 1 - 2 mm when the brush is locked and the brush deck is lowered.



### 2. In the machines without traction:

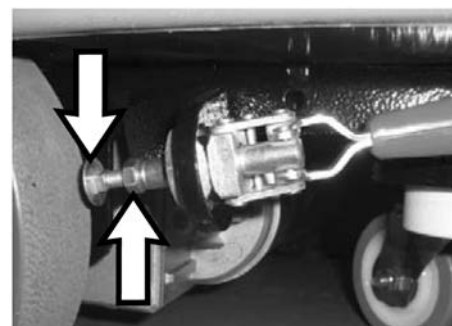
- A. Loose the **ring nut**.
- B. Adjust the **knob** to let the brush in working condition help the machine in going forward. (**Tighten** to increase the traction effect, **loosen** to decrease the traction effect).
- C. When the right adjustment is reached, tighten the **ring nut**.



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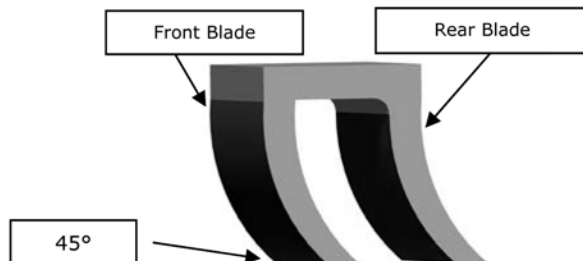
## BRAKE ADJUSTMENT

- 1. Verify that the brake on the left hand wheel blocks the wheel when activated.
- 2. Otherwise act as follow:
  - A. Unscrew the **jam nut**.
  - B. Loosen the **pad screw** to achieve the right adjustment.
  - C. Verify the adjustment with a functional test.
  - D. Tighten the **jam nut** to assure a right adjustment.

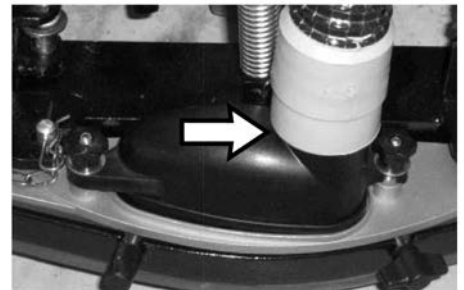
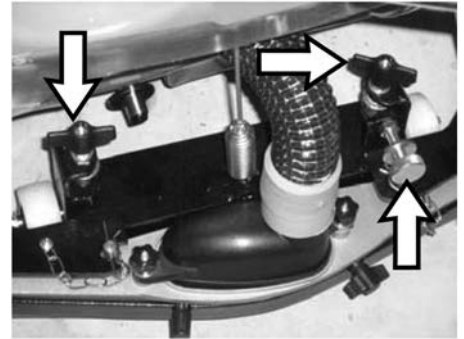


# SQUEEGEE ADJUSTMENT

1. Adjust the inclination adjuster of the squeegee blade until the blade has a common inclination over it's entire length.
2. Adjust the height of the wheels using the knob checking that the blade has an inclination between 30 and 45 degrees.



3. Verify the cleanliness and sealing of the squeegee hose adapter.



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## CHECK LIST

### Functional check of the machine

- ☐ Check the functionality of switches.
- ☐ Check the functionality of the accelerator lever.
- ☐ Check the functionality of the brush deck.
- ☐ Check the functionality of the brush motor.
- ☐ Check the functionality of the solenoid valve.
- ☐ Check the functionality of the vacuum motor.
- ☐ Check the functionality of the brakes.
- ☐ Check the functionality of batteries and power cables.

### Functional test of the machine

- ☐ Fill up the tanks completely and verify the sealing.
- ☐ Verify the sealing of all the water plant and that the water is equal on the brush.
- ☐ Adjust the inclination and the height of the squeegee blades doing a functional test.
- ☐ Adjust the inclination of the brush deck and do a functional test.
- ☐ Check the efficiency of the parking brake.

### Final test

- ☐ Check all the functions: washing, drying and movement.



# BETCO US WARRANTY POLICY

## **10 year coverage**

Subject to the conditions stated below, Betco warrants parts and labor on rotationally molded polyethylene tanks/housings and injection molded vacuum head assemblies to be free from defects in materials and workmanship for a period of ten years to the original purchaser.

## **5 Year Coverage**

Subject to the conditions stated below, Betco warrants parts and labor on all other Betco components to be free from defects in materials and workmanship for a period of five years to the original purchaser.

- Lithium Ion batteries for GeneSys™ Scrubbers is full 5 years

## **3 Year Coverage**

Subject to the conditions stated below, Betco warrants parts and labor on all other Betco components to be free from defects in materials and workmanship for a period of three years to the original purchaser.

- Lithium Ion battery for MotoMop™ is a full 3 years

## **1 Year Coverage**

Subject to the conditions stated below, Betco offers a limited warranty on parts and labor on the following equipment: parts and accessories to be free from defects in materials and workmanship for a period of one year to the original purchaser.

- PowerUp™ 14 Upright Vacuum: #E29990-00
- Bac Pac Lite Vacuum: #85903-00
- FiberPRO® Floor Dryer: #85507-00
- WORKMAN™ Series Vacuums: #85024-00, #85025-00, #83012-00, #85027-00
- All Tools and Accessories
- All Battery Chargers
- Deep cycle batteries are pro-rated for 1 year

## **Allowable Travel Time Warranty Reimbursement:**

Eligible equipment: All battery and propane powered equipment products. Warranty period: 90 days (GeneSys™ Mid-Size Scrubber: 180-days) from date of sale to the original purchaser. A maximum 180 mile round trip at 50 cents per mile will be allowed for warranty consideration.

## **Propane Machine Warranty:**

Kawasaki/Subaru engines are warranted by Kawasaki/Subaru for a period of 2 years against manufacturer defects. All other components (except wear items)\* are warranted by Betco for a period of 3 years.

**\*Wear Items exempt from Warranty consideration include but may not be limited to: power cords, transport wheels, vacuum bags, belts, squeegee blades, pad drivers, clutch plates, handle grips, filters, screens, throttle cables, brushes and carbon brushes.**

Subject to the conditions and exceptions stated in this warranty, Betco warrants the Betco products to be free from defects in material and workmanship, under normal use and service, for the periods listed under the warranty policy to the original purchaser. At any time during the warranty period, Betco will furnish replacement parts for the Betco parts to the original purchaser. Such parts will be furnished and charged including transportation costs, to the original owner through any Betco authorized Service Distributor. If the original part is returned within the warranty policy period from date of delivery for inspection by Betco and is found to be defective the owner will be credited for the cost of replacement parts plus shipping and handling. Replacement parts that have become defective through wear or abuse are not included in this warranty.

This warranty does not apply to damage or defect caused by accident, misuse, negligence, fire, or to any Betco product which has been serviced or repaired by other than an authorized Betco Service Distributor or Betco factory personnel. This warranty is void if unauthorized modifications are made to any Betco products. This warranty is void if products are used for any purpose other than that which was intended. There are no other warranties expressed or implied. In no event shall Betco be liable for incidental or consequential damages or any damage to person or property. (Please note some states do not allow the exclusion or limitations for incidental and consequential damages).

