



Electronic Service Manuals

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E87032-00
E88065-00



STEALTH™ DRS24BT

24" Automatic Rider
Scrubber



Operator and Parts
Manual

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RECEIVING THE MACHINE

On receipt of the machine, you must immediately make sure you have received all the material indicated in the accompanying documentation and that the machine has not been damaged during shipment. Any damage noted should be reported to the carrier immediately and our customer service department should be notified. Following this procedure without delay is the only way to obtain the missing material and compensation for the damage.

INTRODUCTION

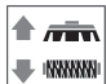
This floor automatic scrubber uses the mechanical action of a rotating brush and the chemical action of a cleaner-water solution to clean hard floors. As it moves forward, it also collects the dirt removed and the cleaning solution leaving the floor dry.

The machine must be used only for this purpose. Even the best machine can only work well if used correctly and maintained. You must read these instructions carefully, and then read them again whenever a problem arises during operation of the machine. Please contact our technical service department or your dealers if you have any questions about the machine.

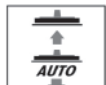
Serial # Plate



SYMBOLS USED ON THE MACHINE



Symbol representing raising and lowering of the brush deck



Symbol representing raising and lowering of the squeegee assembly



Battery charge symbol



Forwards-reverse drive selector symbol



Horn button symbol



ON/OFF switch (key switch) symbol



Water flow control symbol



Indicates the maximum temperature of the detergent solution

TECHNICAL DESCRIPTION	Measurement Unit	Stealth™ DRS24BT
Working width	In (mm)	24 (610)
Squeegee width	In (mm)	33 (850)
Productivity	ft²/h (m²/h)	39,400 (3660)
Brushes	in (mm)	24.0 (610)
Brush RPM	RPM	140
Brush pressure	lb (Kg)	77 (35)
Brush motor	HP (V / W)	0.75 (560)
Drive motor	HP (V / W)	0.54 (400)
Drive wheels	in (mm)	9.8 (250)
Forward speed	mph (km/h)	3.7 (6)
Working grade with full load	%	10
Vacuum motor	HP (V / W)	0.74 (550)
Vacuum motor suction	inches of water (mbar)	75.6 (188)
Solution tank capacity	Gal (l)	20 (75)
Recovery tank capacity	Gal (l)	25 (95)
Weight of machine (excluding batteries)	lb (Kg)	507 (230)
Battery weight	lb (Kg)	286.6 (130)
Batteries	Ah	235 (4)
Charger (power supply)	V / A	24
Battery compartment dimensions (Length / Height / Width)	in x in x in	15.4 x 20.9 x 13.8
	(mm/mm/mm)	(350 /305 /360)
Machine length	in (mm)	53.1 (1350)
Machine height	in (mm)	54.1 (1375)
Machine width (without squeegee)	in (mm)	25.4 (645)

GENERAL SAFETY REGULATIONS

The rules must be followed to avoid injury to the operator or damage to the machine.

- Read the machine labels carefully. They must never be covered and must be replaced immediately if damaged.
- The machine must be used by trained and authorized personnel.
- The machine is not suitable for cleaning carpet.
- Do not mix different types of detergent to avoid the production of harmful gases.
- Do not rest containers of liquid on the machine.
- The machine must be stored at a temperature of between -10°F and +130°F. Do not store outside in damp conditions.
- Working conditions: room temperature between 33°F and 100°F with relative humidity of between 30 and 95%.
- Do not use in an explosive atmosphere.
- Do not use the machine as a means of transportation.
- Do not use acid solutions in the machine.
- Do not operate the brushes with the machine stationary to avoid damaging the floor.
- Do not collect flammable liquids.
- Do not use the machine to pick up hazardous dust or powder.
- In the event of fire, use a powder type extinguisher. Do not use water.
- Do not use the machine on surfaces with a gradient greater than that indicated on the serial tag.
- When the machine is parked, remove the key and apply the parking brake.
- If you experience poor operation, perform standard maintenance. If operational problems remain, contact a **BETCO** technical service center.
- If parts need replacing, ask for **ORIGINAL** spare parts from an authorized **BETCO** dealer only.
- Before performing any maintenance on the machine, turn off the machine and disconnect the battery connector.
- Reconnect all electrical connections after performing any maintenance operations.
- Do not remove guards which can only be removed by using tools.
- Do not wash the machine with direct or pressurized water jets or corrosive substances.
- Every 200 hours of operation, have the machine maintained by a **BETCO** service center.
- Before using the machine, make sure all doors and covers are in position as described in this operator's manual.
- Before lifting the recovery tank, empty the tank.
- Use only the brushes provided with the machine or those specified in the operator's manual.
- The machine must be disconnected from the power supply before removing the batteries.
- Before disposing the machine, remove the batteries.
- The machine should only be used by trained professionals.

MACHINE PREPARATION

1. HANDLING THE PACKAGED MACHINE

The machine is palletized so that it may be moved with forklift trucks.

The pallets should not be double stacked.

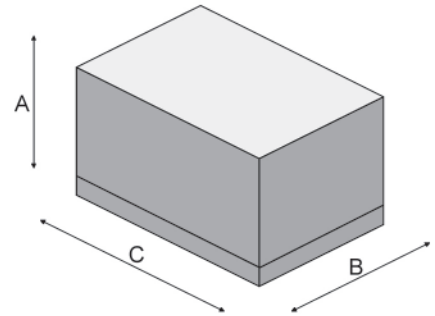
The total weight 775 pounds.

The dimensions of the package are:

A : 61 inches

B : 40 inches

C : 69 inches



2. HOW TO UNPACK THE MACHINE

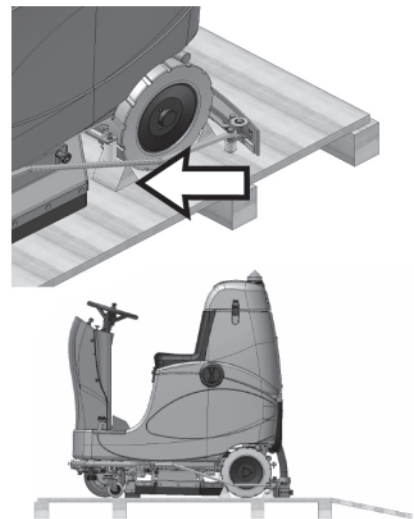
A. Remove the outer box.

B. The machine is fastened to the base board with wedges to block the wheels.

C. Remove the wedges.

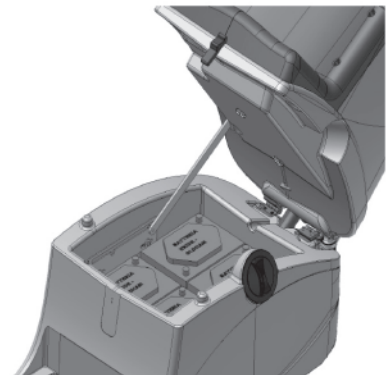
D. Using a ramp, push the machine backwards off the pallet.

E. Keep the pallet for possible shipment in the future.



3. INSTALLING THE BATTERIES IN THE MACHINE

The batteries must be placed in the battery compartment under the operator's seat and the recovery tank.



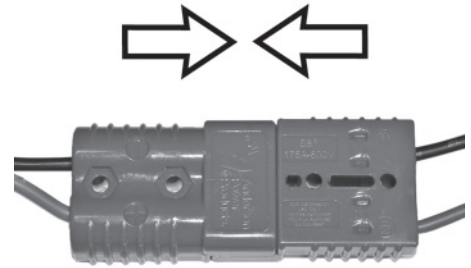
MACHINE PREPARATION

4. CONNECTING THE BATTERY CONNECTOR

- A. Connect the battery connector to the machine connector.
- B. Place the connectors in the battery compartment.



WARNING: This must be done by qualified personnel only. Incorrect or faulty connection of the wires to the connector could cause serious injury to people and damage to the machine.

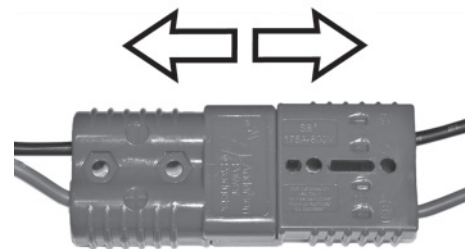


5. CONNECTING THE BATTERY CHARGER

- A. Make sure there is no water in the recovery tank.
- B. Open the latch on the front of the solution tank.
- C. Lift the recovery tank as far as the support will allow.
- D. Disconnect the machine connector from the battery connector.
- E. Connect the battery charger connector to the battery connector.



WARNING: This must be done by qualified personnel only. Incorrect or faulty connection of the wires to the connector could cause serious injury to people and damage to the machine.



WARNING: To avoid permanent damage to the batteries, it is vital to avoid running the batteries to a complete discharge. Recharge a few minutes after the "batteries discharged" signal flashes.

WARNING: Never leave the batteries completely discharged, even if the machine is not used. During recharging, keep the seat support raised. Every 20 charges check the electrolyte level and if necessary add distilled water.

WARNING: All installation and maintenance operations must be performed by trained personnel. Danger of gaseous emissions and leaks of corrosive liquids. Risk of fire: Keep away from open flames.

6. CONNECTING THE BATTERY CHARGER

WARNING: Never charge GEL batteries with the battery charger that shipped with this machine.

To avoid permanent damage to the batteries, do not completely discharge the batteries. Recharge immediately after the "batteries discharge" signal flashes.



WARNING: Never leave the batteries discharged, even if the machine is not used. During recharging, keep the seat raised. Every 20 charges check the electrolyte level and if necessary add distilled water. Batteries reach their nominal capacity after ten complete charging/discharging cycles.

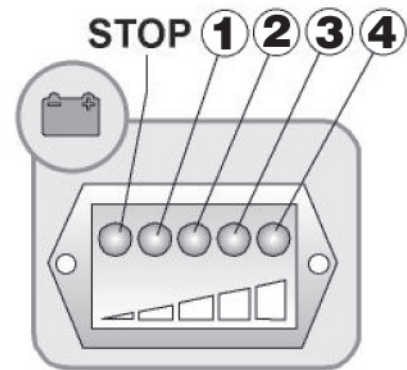
MACHINE PREPARATION

7. BATTERY CHARGE INDICATOR

The battery charge indicator is digital with four fixed states and one flashing state. The numbers displayed indicate the approximate charge status. 4 = maximum charge, 3 = 3/4 charged, 2 = 1/2 charged, 1 = 1/4 charged, STOP = batteries completely discharged (flashing)

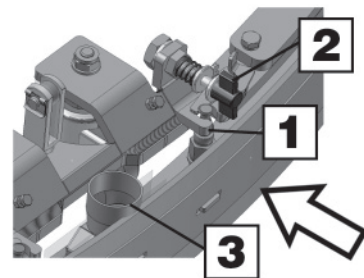


WARNING: A few seconds after the flashing "0" appears the brush motor stops automatically. The remaining charge is sufficient to finish drying the floor before recharging.



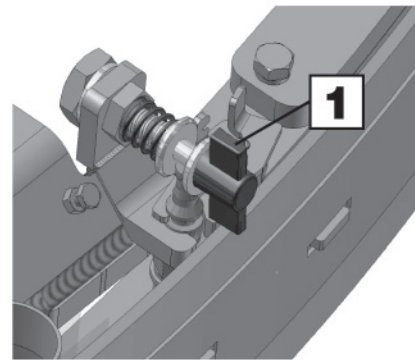
8. INSTALLING THE SQUEEGEE ASSEMBLY

For packaging reasons, the squeegee is supplied detached from the machine and must be mounted as shown in the figure. First insert the right pin of the squeegee (1) into the right slot of the squeegee mount, and then insert the left pin into the left slot, making sure the tabs are positioned correctly and the right pin is in the squeegee adjuster (2). To facilitate this operation, the squeegee adjuster must be loosened. Then tighten the squeegee adjuster. Lastly, connect the squeegee vacuum hose to the squeegee shoe adapter (3).



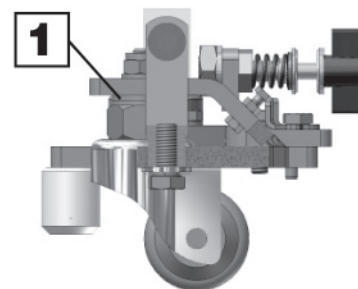
9. SQUEEGEE ADJUSTMENT

While the machine is moving forward, the rear squeegee blade bends slightly backwards uniformly about 0.2 inches along the entire length. The squeegee blade has four usable edges. To increase the bending of the center of the squeegee blade turn the squeegee adjuster counterclockwise (1). To increase the bending of the squeegee blade at the outside edges of the squeegee, turn the squeegee adjuster (1) clockwise. After adjustment, tighten the jam nut.



The height of the squeegee must be adjusted in relation to the wear of the squeegee blades. Remove one or more of the M10x30 UNI6593 washers from both the squeegee wheels.

NOTE: The right and left wheels must be adjusted to the same height from the ground to ensure that the squeegee works parallel to the floor.



MACHINE PREPARATION

10. MOUNTING THE PAD DRIVER

- A. Connect the battery connector.
- B. Turn the key to the ON position.
- C. Use the switch to raise the brush deck.
- D. Turn the key to the OFF position and remove it from the key switch.

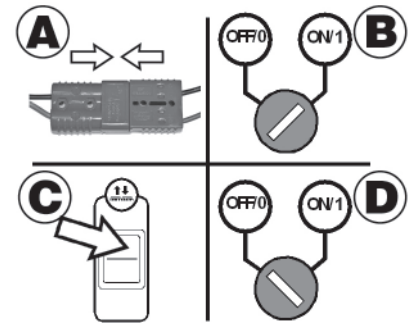


WARNING: Mounting the brush with the power on could lead to injury.

- E. With the brush deck raised, place the pad driver in the shroud of the brush deck. Turn the machine on and lower the brush deck. Turn on the brush motor and slightly depress the speed control speed pedal. The brush motor will begin to rotate and the pad driver will automatically attach to the brush motor.



WARNING: This must be done wearing gloves to protect the hands.



11. THE SOLUTION TANK AND RECOVERY TANK

Fill the solution tank with clean water no hotter than 120° F (50° C), and then add liquid detergent at a concentration specified by the manufacturer. To avoid the formation of excessive foam which would damage the vacuum motor, use the minimum amount of detergent. Make sure the vacuum unit is lowered and correctly positioned. Make sure the latches locking the vacuum unit to the machine are both closed and that the cap on the tank drain hose is closed.



WARNING: Always use low foam detergent. To avoid foam production, before starting work add a small amount of defoamer liquid to the recovery tank. Do not use acids in the pure state.

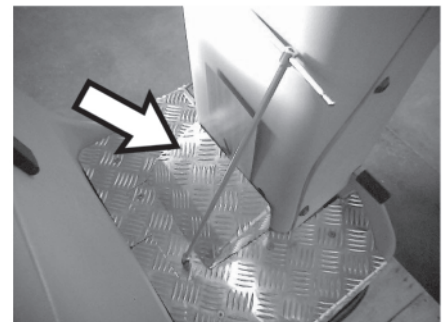


12. CONNECTING THE DRIVE MOTOR

Remove the center guard; connect the power supply wires to the reduction gear wires as shown on the sheet provided.



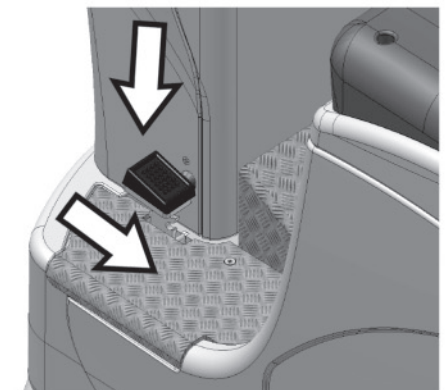
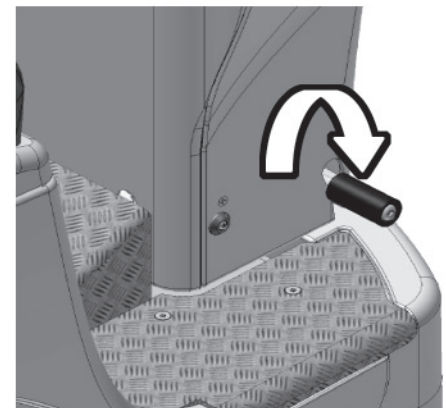
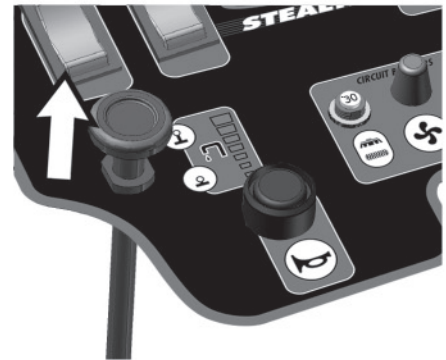
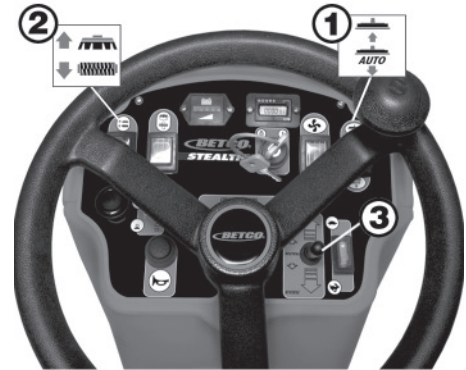
WARNING: This must be done by qualified personnel only. Faulty connection of the connector wires could cause machine malfunction.



OPERATION

1. PREPARING FOR OPERATION

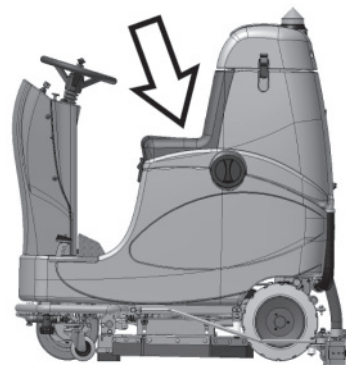
- A. Prepare the machine.
- B. Sit in the driving position.
- C. Check that the parking brake is released.
- D. Turn the ON/OFF key a quarter of a turn clockwise. The battery and hour meter display turns on immediately.
- E. Place the squeegee raised/lowered switch (1) in the lowered position. The vacuum motor will start.
- F. Place the brush deck raised/lowered switch (2) in the lowered position until the brush deck lowers completely.
- G. The brush will not start turning until the speed control pedal is pressed.
- H. Place the forward/reverse selector (3) in the forward position. The machine has two forward speeds indicated by the symbols on the label at the side of the switch: tortoise=slow forward, hare=fast forward.
- I. Open the water flow by raising the water control knob. Water will not flow until the machine moves forward.
- J. Press the speed control pedal. The machine will start moving, the squeegee will lower and the brush starts to rotate. During the first few feet of work, check that the amount of cleaning solution dispensed is appropriate and that the squeegee dries well.



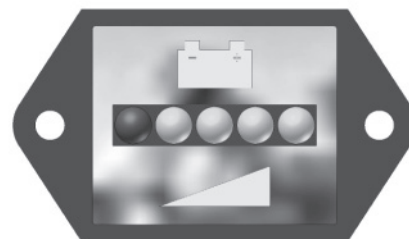
If you encounter problems while working, turn off the key and apply the emergency brake by pushing the brake pedal down and pulling it toward you until it latches in place. These actions stop all movement of the machine. To resume work after resolving the problem turn the key switch on and release the parking brake pedal.

OPERATION

The machine will not move unless the operator is seated correctly in the seat.



When the batteries are fully discharged, a flashing red LED appears on the display and the brush motor turns off automatically. You must recharge the batteries as soon as possible.



2. OVER FULL DEVICE

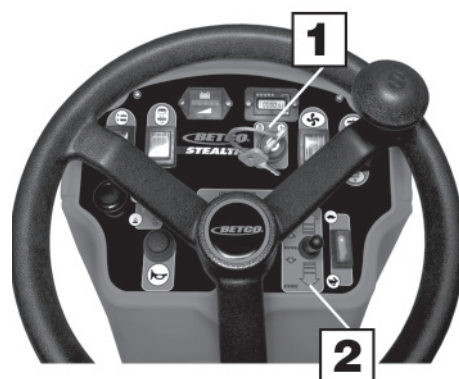
The machine has a float system activates when the recovery tank is full. This system closes the vacuum hose. You must empty the recovery tank.



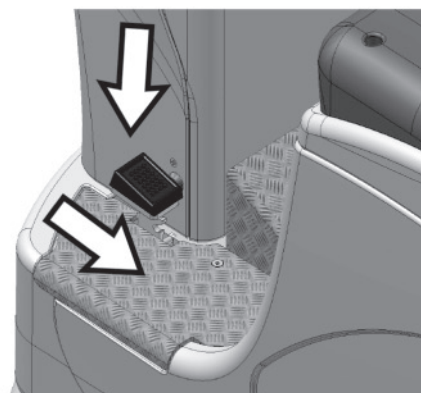
OPERATION

3. DRIVE AND BRAKES

This machine is equipped with an electronically controlled drive. To move the machine, you must turn the key **(1)** then move the switch lever **(2)** forward (forward movement) or backward (reverse movement). The machine starts to move when the speed control pedal is depressed. Use the pedal to regulate speed.



The machine has an electronic braking system. Under normal conditions, remove your foot from the speed control pedal to brake. If the service brake does not work correctly or in case of emergencies, depress the mechanical pedal brake by pushing it down and pulling it towards you until it latches in place.

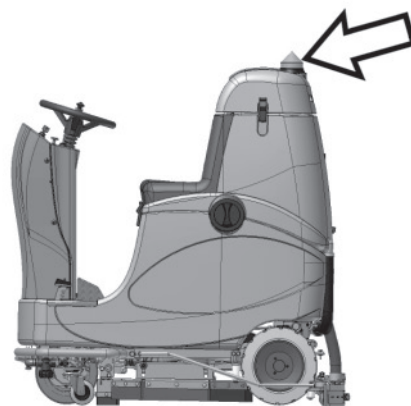


4. HORN AND FLASHING LIGHT

The machine has a safety horn. To operate it, press the button shown in the figure **(1)**.

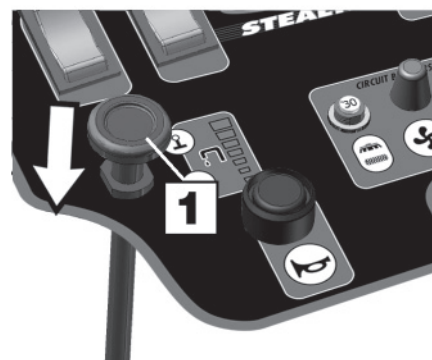


The machine has a flashing light which comes on automatically when the key is turned a quarter of a turn into the ON position.

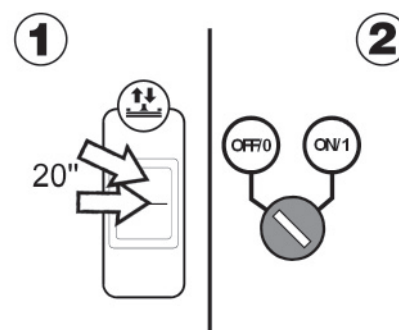


SHUTTING DOWN THE MACHINE

1. After work is complete and before performing maintenance, perform the following operations:
2. Turn off the water control knob (1) by pressing down on the knob
3. Place the brush deck raise/lower switch in the raised position until the brush deck is completely raised.

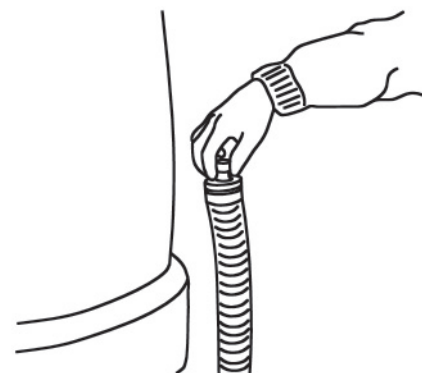


4. Place the squeegee raised/lowered switch (1) in a central position so that the vacuum motor continues to operate to empty the vacuum hose for about 20 seconds, and then place it in the fully raised position.
5. Drain the water.
6. Turn the ON/OFF key switch a quarter of a turn counterclockwise (2).



7. Detach the drainage hose from the clip, unscrew the cap and empty the recovery tank. You should keep the hose higher than the level of water in the tank with one hand and unscrew and remove the cap with the other. Then lower the hose slowly.

WARNING: This must be done wearing gloves to protect from contact with dangerous solutions.



8. The squeegee must be raised when the machine is not in operation to avoid distorting the squeegee blades.
9. Remove the brushes and clean them with water.

WARNING: This must be done wearing gloves to protect from contact with dangerous solutions.

DAILY MAINTENANCE

1. CLEANING THE FILTER AND RECOVERY TANK

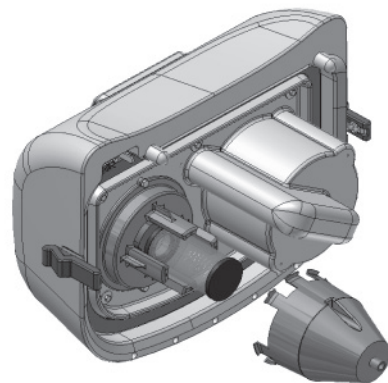
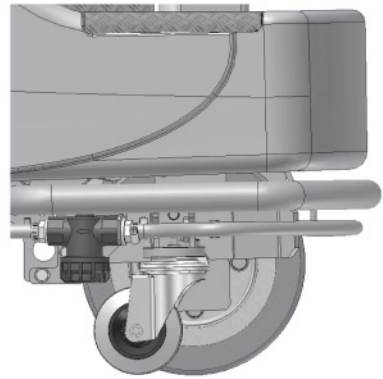
- A. Empty the tank through the drain hose.
- B. Rinse the tank and clean the hose cap.
- C. Replace the cap on the drain hose.
- D. Replace the drain hose and cap following the same process in reverse.



WARNING: This must be done wearing gloves to protect from contact with dangerous solutions.

With the solution tank empty:

- A. Open the water control knob.
- B. Unscrew the filter and rinse thoroughly.
- C. Remove the cap from the solution tank fill hole.
- D. Clean the inside of the solution tank with water.
- E. Remove the filter cartridge and clean.
- F. Replace the assembly following the same process in reverse.
- G. Release the latches at the side of the vacuum unit cover.
- H. Remove the float system guard by rotating it counterclockwise and pulling it toward you.
- I. Remove the filter from the filter ring.
- J. Clean the walls and bottom of the filter with water. Wash all the parts thoroughly.
- K. Replace the assembly following the same process in reverse.



2. CLEANING THE SQUEEGEE

Clean the squeegee with high pressure water. Check the wear of the blades and if necessary turn them or replace them.

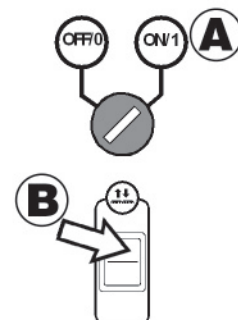
3. REMOVING THE DISK BRUSH

This machine has an automatic brush release system to simplify the work of the operator. To release the pad driver:

- A. Turn the key to the ON position.
- B. Raise the brush deck slightly off the floor and depress the speed control pedal.
- C. Press the brush release button.



WARNING: Removing the brush manually could lead to injury.



WEEKLY MAINTENANCE

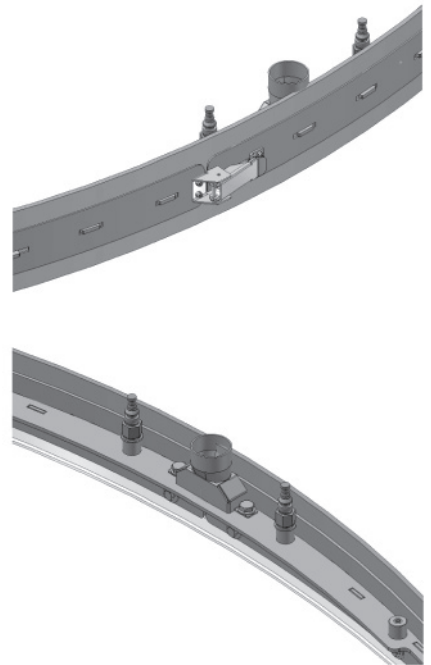
1. REPLACING THE SQUEEGEE BLADES

If the rear squeegee blade is worn and does not dry efficiently, the wiping edge can be changed as follows:

- A. Remove the squeegee from the machine
- B. Remove the locking latch
- C. Remove the band clamps and squeegee blade
- D. Turn the squeegee blade or replace if necessary
- E. Replace the assembly following the same process in reverse.
- F. Adjust the height of the squeegee shoe to the blade

If the front squeegee blade is worn, the vacuum will not be effective and the machine will not dry correctly. In this case, replace as follows:

- A. Remove the squeegee from the machine
- B. Loosen the screws holding the front blade retainer and blade in place
- C. Remove the blade and replace it
- D. Replace the assembly following the same process in reverse.



2. ADJUSTING AND REPLACING THE BRUSH DECK SPLASHGUARDS

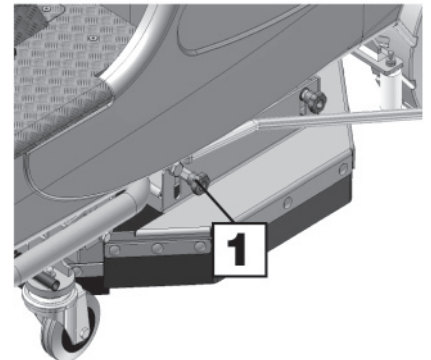
The height of the brush deck splashguards must be adjusted regularly. This must be done with the brush deck lowered.

- A. Loosen the knobs holding the guards (1)
- B. Position the guards
- C. Tighten the knobs

Please note that the splashguard must touch the floor and be parallel to the floor. Check the state of wear of the brush deck splashguards regularly. If necessary, replace as follows:

- A. Unscrew the knobs to remove the guards
- B. Unscrew the rubber splashguard retainers
- C. Remove the splashguards and replace

Replace the assembly following the same process in reverse.



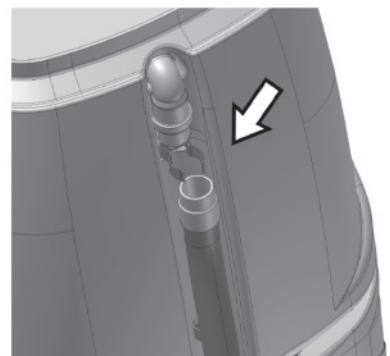
3. CLEANING THE VACUUM HOSE

If suction is inadequate, ensure that the vacuum hose is not blocked. If necessary, clean with water introduced from the tank end of the hose. Proceed as follows:

1. Detach the vacuum hose from the vacuum coupling
2. Clean with water introduced from the tank end of the hose
3. Replace the assembly following the same process in reverse.



WARNING: This must be done wearing gloves to protect from contact with dangerous solutions.



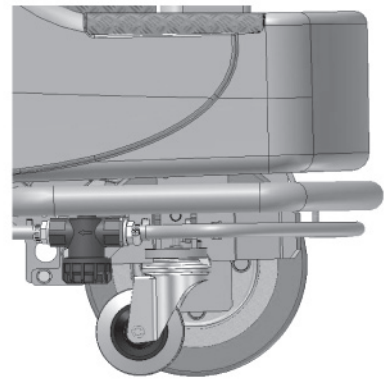
TROUBLESHOOTING GUIDE

1. INSUFFICIENT WATER ON THE BRUSH

- A. Make sure the water control knob is open.
- B. Make sure there is water in the solution tank.
- C. Water comes out only when the machine moves forward.



- D. Clean the solution filter.
- E. Check for correct operation of the solenoid valve.
- F. Check that a thermal shutoff has not tripped.



2. THE MACHINE DOES NOT CLEAN EFFICIENTLY

- A. Check the state of wear of the brush or pad and replace if necessary (the brush must be replaced when the tufts are about 5/8ths of an inch long).
- B. Use a type of brush other than standard to clean floors with particularly stubborn dirt. Use appropriate brushes for required situations.

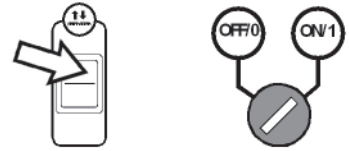
3. SQUEEGEE DOES NOT DRY EFFECTIVELY

- A. Confirm the squeegee is clean.
- B. Adjust the height of the squeegee shoe.
- C. Clean the vacuum system.
- D. Replace the squeegee blades if worn.
- E. Ensure that a thermal shutoff has not tripped.

TROUBLESHOOTING GUIDE

4. THERE IS NO VACUUM SUCTION

Confirm that the squeegee switch is in the lowered or center position, this lowers the squeegee blade.



5. THE MACHINE DOES NOT START

- A. The operator must be sitting in the driver's seat.
- B. Confirm that the parking brake is off.
- C. Check that the key switch is turned on.
- D. Ensure that the connector is connected to the batteries.
- E. Confirm via the charge indicator that the batteries are charged.
- F. Ensure that a thermal shutoff has not been tripped.

6. THE BRUSH MOTOR DOES NOT FUNCTION

- A. Make sure the brush deck is lowered.
- B. Check on the charge indicator that the batteries are charged.
- C. Check that the electrical connector on the brush deck is correctly connected.



WARNING: To avoid damage to the floor, the brush motor operates only when the machine is moving forward.



7. THE BRUSH DECK CANNOT BE RAISED OR LOWERED

- A. Check that a thermal shutoff has not tripped.

TROUBLESHOOTING GUIDE

8. THE HORN DOES NOT FUNCTION

A. Check that a thermal shutoff has not tripped.

9. EXCESSIVE FOAMING

A. Make sure you are using low foam cleaner. If necessary add a small amount of defoamer liquid in the recovery tank. Please note that more foam will be produced when the floor is not excessively dirty. If necessary, use a more dilute detergent solution.

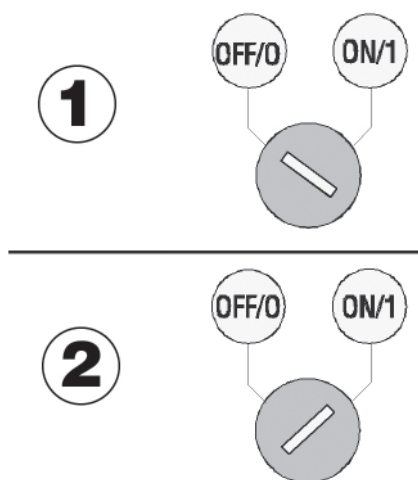
10. ELECTRICAL FUSES AND THERMAL SHUT OFFS

The machine is equipped with the following electrical safety devices:

- Power fuses in the electrical box to protect from short circuits
- Low current resettable fuses to protect:
 - Idle functions
 - Solenoid valve and water pump
 - Horn
 - Drive control system
 - Brush deck raising/lowering actuator
 - Squeegee raising/lowering actuator

If a resettable fuse trips, turn the key switch to the OFF position (**1**), wait for a few seconds, then turn it back to the ON position (**2**).

If the problem persists, contact an authorized BETCO technical service center.



BRUSH SELECTION

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

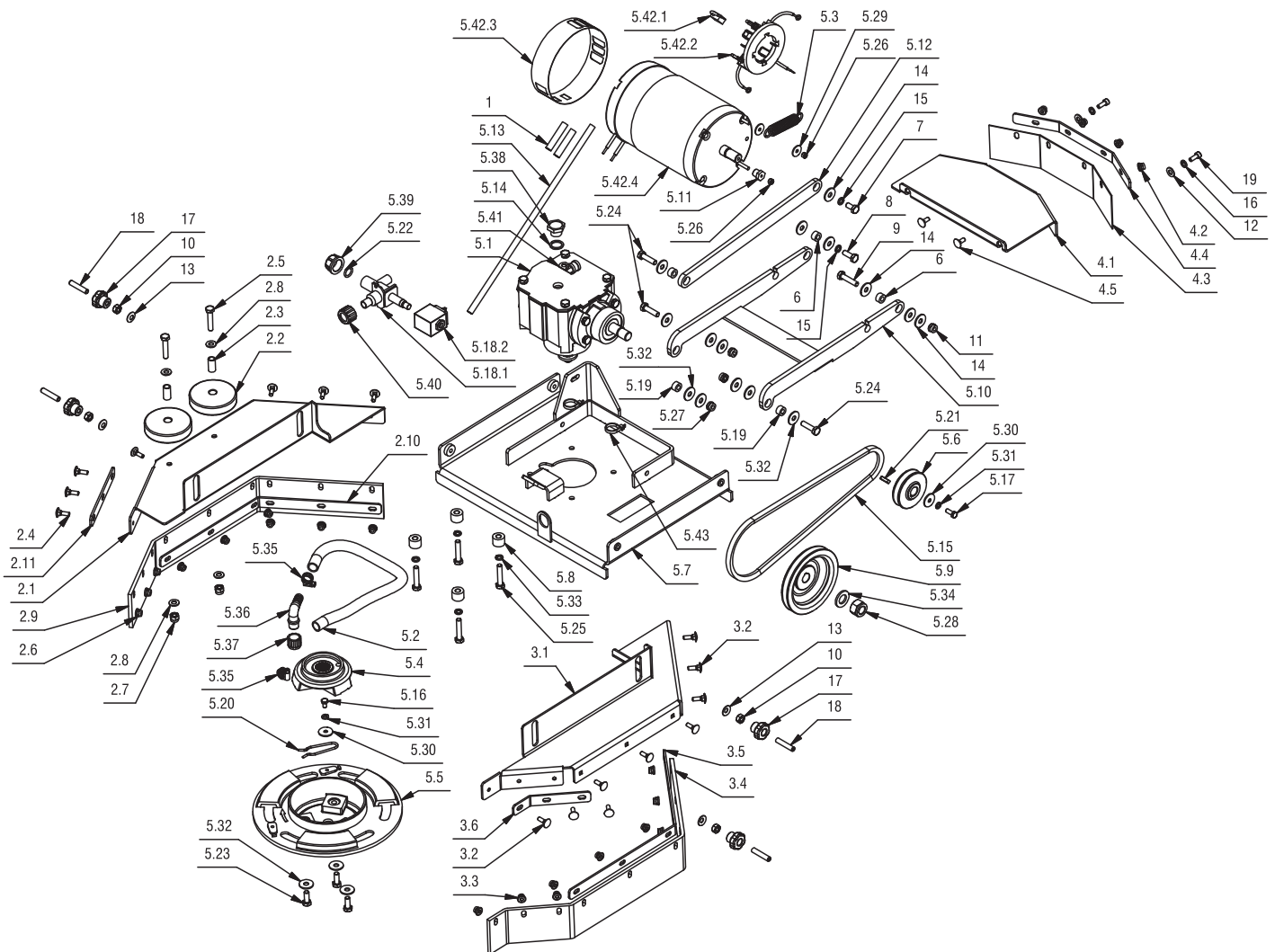
The bristles of this type of brush are coated with highly aggressive abrasives. It is used to clean very dirty floors. To avoid floor damage work only with the head pressure necessary.

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.

PARTS DIAGRAM

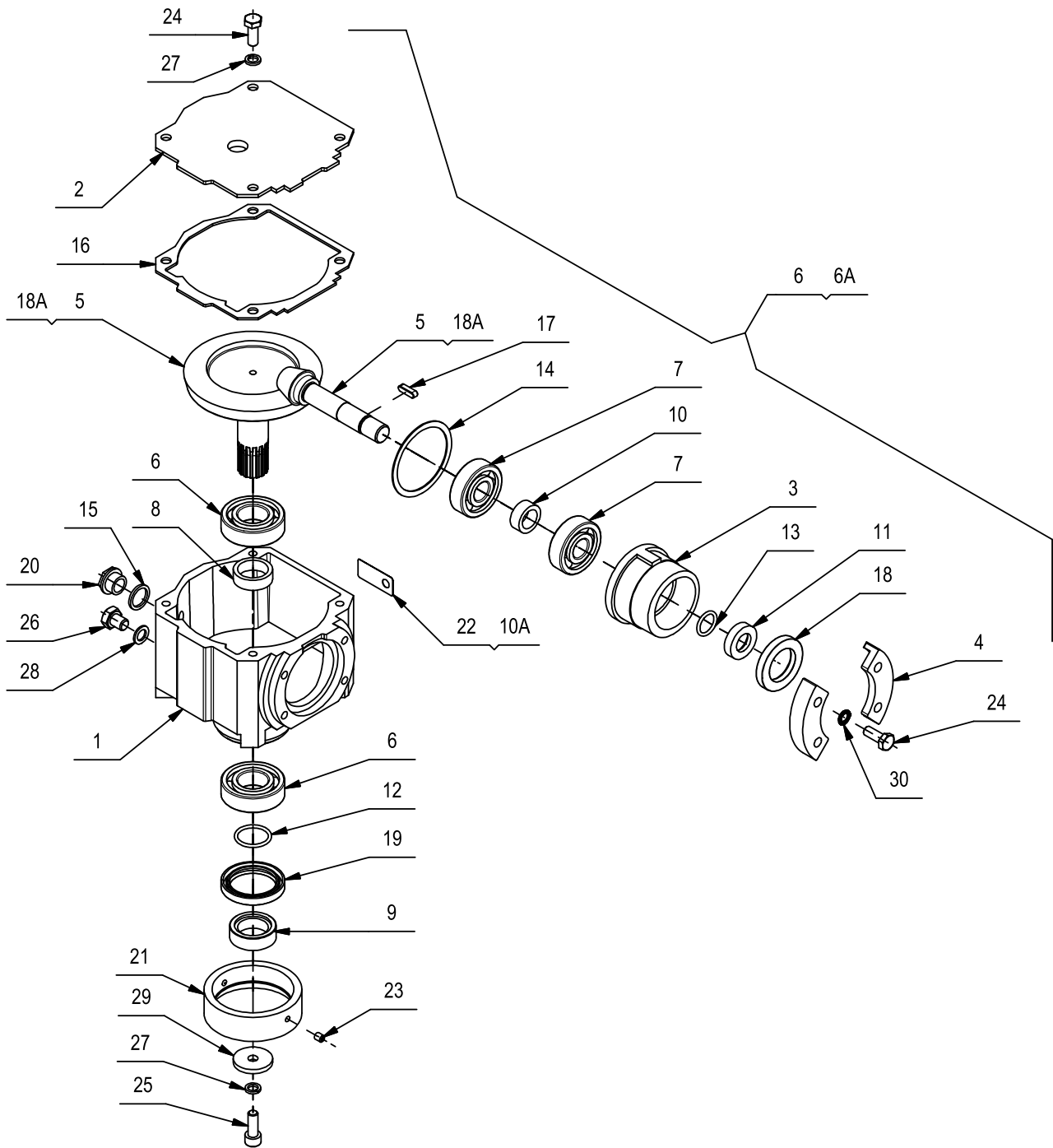


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20654	Gasket	2
2	E20281	Splash Guard ASM Right Side	1
2.1	E20030	Splash Guard Bracket	1
2.2	E83895	Wheel 80 OD x 23 W	2
2.3	E83524	Bushing	2
2.4	E20234	Carriage Bolt M6x20 SS	9
2.5	E20097	Hex Bolt M8x40 SS	2
2.6	E20117	Nyloc Hex Jam Nut, M6x9 SS	9
2.7	E20119	Nyloc Hex Nut, M8 SS	2
2.8	E20125	Flat Washer M8x17x1.6 SS	4
2.9	E88208	Splash Guard	1
2.1	E20142	Band Clamp	1
2.11	E20143	Band Clamp	1
3	E20058	Splash Guard ASM Left Side	1
3.1	E20029	Splash Guard Bracket	1
3.2	E20234	Carriage Bolt M6x20 SS	9
3.3	E20117	Nyloc Hex Jam Nut, M6x9 SS	9
3.4	E88209	Splash Guard	1
3.5	E20141	Band Clamp	1
3.6	E20444	Band Clamp	1
4	E20059	Splash Guard ASM Rear	1
4.1	E20513	Splash Guard Bracket	1
4.2	E20117	Nyloc Hex Jam Nut, M6x9 SS	4
4.3	E20425	Splash Guard Rear	1
4.4	E20140	Band Clamp	1
4.5	E81896	Carriage Bolt M6x16 SS	4
5	E20060	Brush Desk ASM	1
5.1	E20002	Brush Drive Gearbox	1
5.2	E20328	Tubing 12 ID x 480 L	1
5.3	E81778	Spring	1
5.4	E20645	Motor Coupling	1
5.5	E81739	Clutch Plate	1
5.6	E20555	Motor Pulley	1
5.7	E20505	Brush Deck	1
5.8	E20386	Spacer	4
5.9	E20028	Gearbox Pulley	1
5.10	E20032	Brush Deck Lift Arm Weldment	1
5.11	E20206	Bushing	2
5.12	E20575	Brush Deck Lift Idler Arm	1
5.13	E20051	Sheath	1
5.14	E20429	Gasket	1
5.15	E81836	Belt, Brush Drive	1
5.16	E83355	Hex Bolt M6x10 SS	1
5.17	E83547	Hex Bolt M6x16 Zinc	1
5.18	E82322	Solenoid Valve	1

Item#	Part #	Description	Qty.
5.18.1	E81794	Valve Body, Solenoid	1
5.18.2	E81795	Solenoid	1
5.19	E83932	Bushing	3
5.20	E83354	Spring	1
5.21	E83700	Shaft Key	1
5.22	E83617	O-Ring	1
5.23	E86127	Hex Bolt M8x20 SS	3
5.24	E83802	Hex Bolt M8x30 Zinc	3
5.25	E81005	Hex Bolt M8x40 SS	4
5.26	E83535	Hex Nut, M5x5 Zinc	3
5.27	E81709	Nyloc Hex Nut, M8 Zinc	3
5.28	E81627	Nyloc Hex Nut, M16 Zinc	1
5.29	E83878	Flat Washer M5x20x1.5 Zinc	2
5.30	E83278	Flat Washer M6.5x24x2 Zinc	2
5.31	E82774	Flat Washer M6x12x1.6 SS	2
5.32	E83404	Flat Washer M9x24x2.5 Zinc	12
5.33	E20252	Lock Washer M8x13x2.2 SS	4
5.34	E81736	Flat Washer M17x30x3 Zinc	1
5.35	E85762	Hose Clamp	2
5.36	E86275	Barbed Elbow	1
5.37	E20441	Ring Nut	1
5.38	E20378	Vent Plug	1
5.39	E83616	Cap	1
5.40	E20348	Motor Shaft Adapter	1
5.41	E20299	Loop Clamp	1
5.42	E88171	Brush Motor 24VDC 560W	1
5.42.1	E82260	Carbon Brush	4
5.42.2	E88169	Carbon Brush Holder Ring	1
5.42.3	E20632	Motor Cover	1
5.42.4	E88171	Brush Motor 24VDC 560W	1
5.43	E81565	Clamp, 4.8x200 Black	2
6	E83932	Bushing	2
7	E83795	Hex Bolt M8x16 Zinc	1
8	E20095	Hex Bolt M8x22 Zinc	1
9	E83801	Hex Bolt M8x35 Zinc	1
10	E85499	Hex Nut, M8x6.5 SS	4
11	E81709	Nyloc Hex Nut, M8 Zinc	1
12	E20125	Flat Washer M8x17x1.6 SS	2
13	E20126	Cupped Spring Washer M8x18x1	4
14	E83404	Flat Washer M9x24x2.5 Zinc	6
15	E83704	Lock Washer M8x13x2.2 Zinc	2
16	E20252	Lock Washer M8x13x2.2 SS	2
17	E81444	Knob	4
18	E20467	Set Screw Hex Soc Flat End M8x40 Zinc	4
19	E20450	Soc Hd Cap Screw M6x16 SS	2

PARTS DIAGRAM

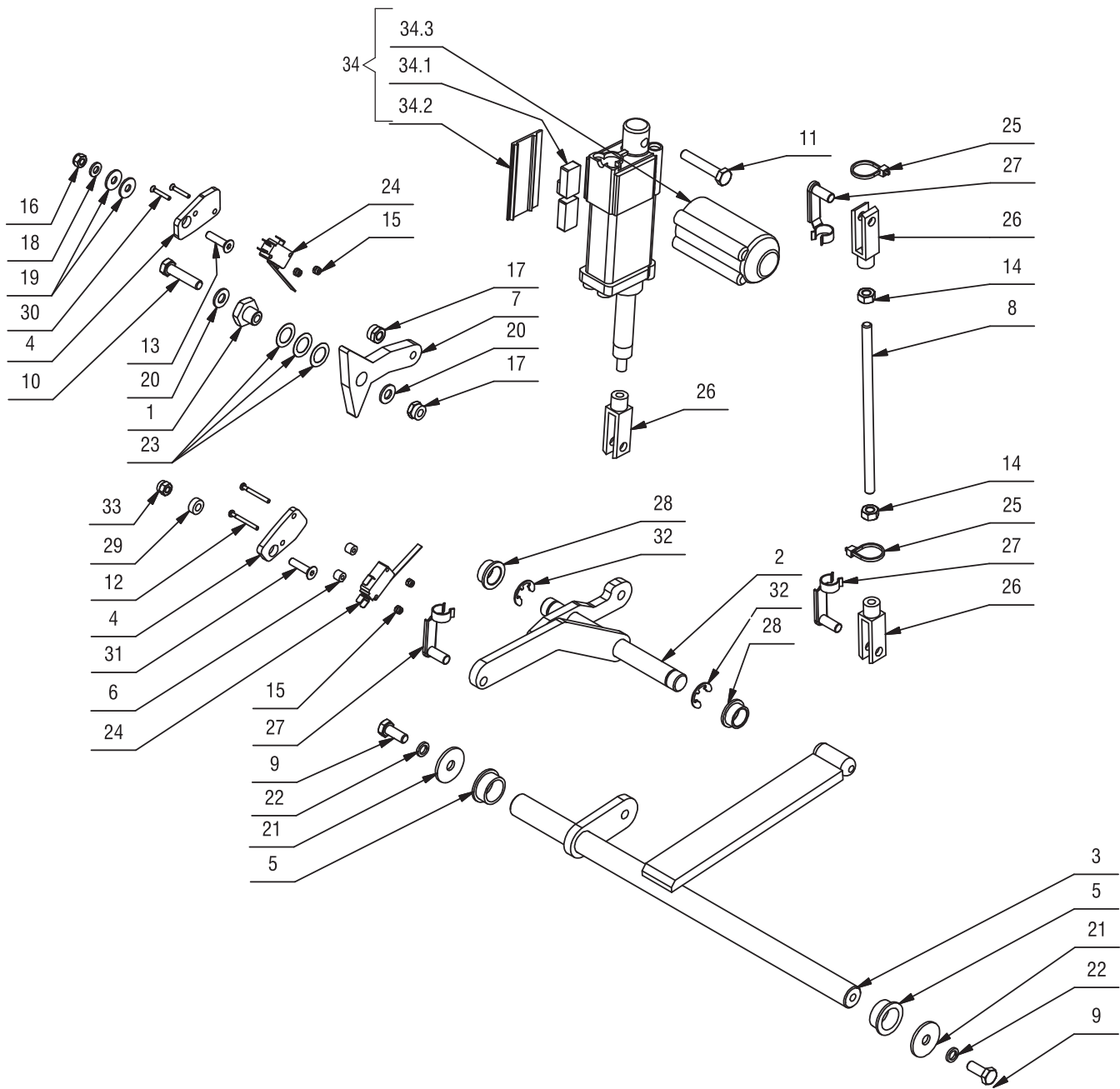


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20590	Gear Housing	1
2	E20618	Gearbox Cover	1
3	E20009	Bearing Cup	1
4	E20075	Bearing Retainer	2
5	E20339	Bevel Gear Shaft	1
6	E81699	Bearing	2
6A	E20656	Gearbox	1
7	E81700	Bearing	2
8	E20005	Spacer	1
9	E20422	Spacer	1
10	E20552	Spacer	1
10A	E20655	Serial Tag	1
11	E86177	Spacer	1
12	E81701	O-Ring	1
13	E86178	O-Ring	1
14	E86176	Gasket	1
15	E20230	O-Ring	1

Item#	Part #	Description	Qty.
16	E20083	Gasket	1
17	E82399	Shaft Key	1
18	E81708	Oil Seal	1
18A	E20092	Bevel Gear Shaft	1
19	E20355	Oil Seal	1
20	E20320	Oil Fill Plug	1
21	E20588	Bearing Retainer	1
22	E20082	Serial Tag	1
23	E20344	Set Screw Hex Soc Cup Point M6x8 Zinc	2
24	E81917	Hex Bolt M8x20 Zinc	8
25	E20390	Soc Hd Cap Screw M8x22 Zinc	1
26	E20238	Hex Bolt M10x12 Zinc	1
27	E83704	Lock Washer M8x13x2.2 Zinc	5
28	E88105	Flat Washer M10x16x1.5 AL	1
29	E81915	Flat Washer M8.2x32x4 Zinc	1
30	E81355	Lock Washer M8x13 Zinc	4

PARTS DIAGRAM

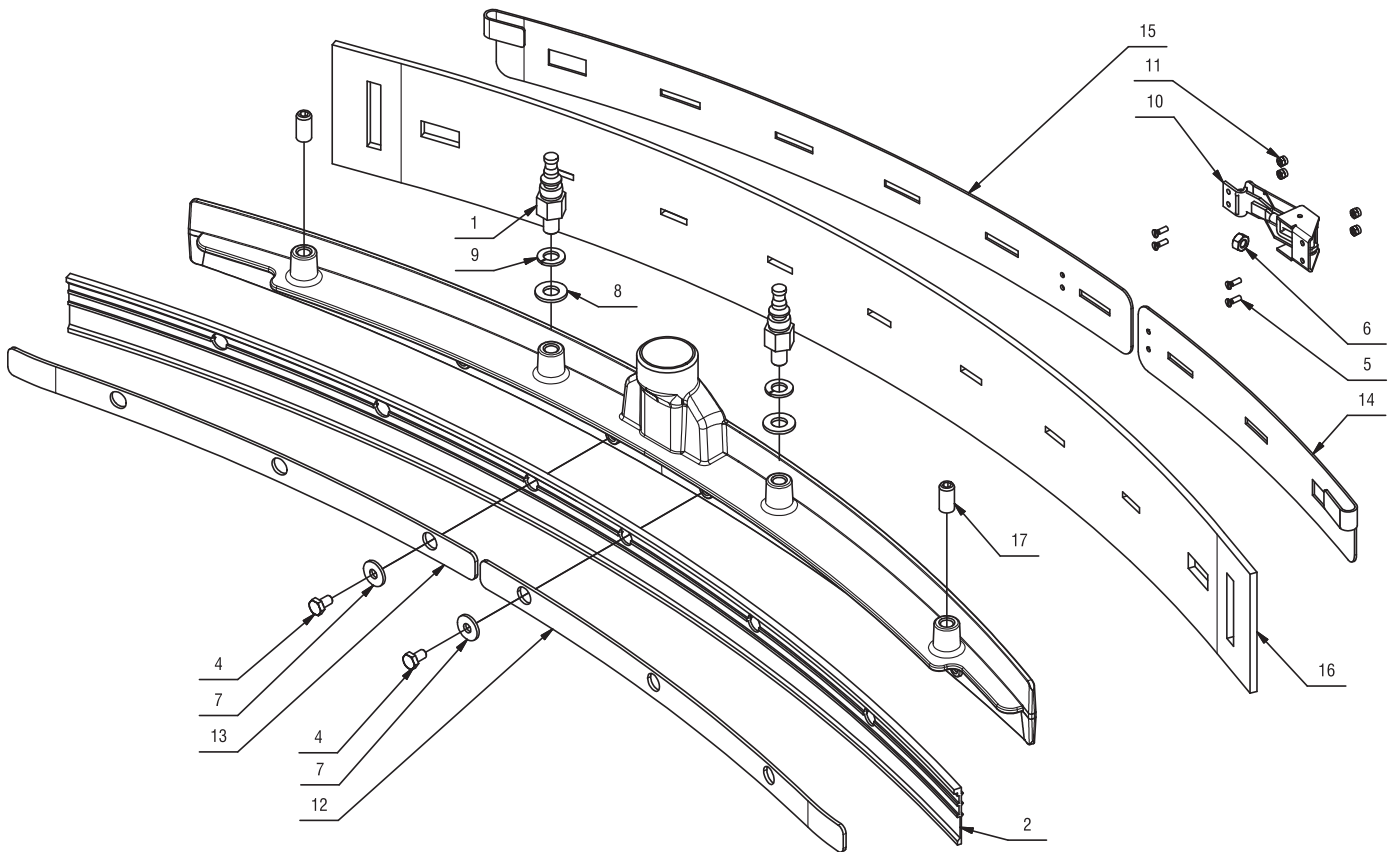


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20006	Bushing	1
2	E20205	Actuator Pivot Arm Weldment	1
3	E20310	Actuator Pivot Arm Weldment	1
4	E20033	Mounting Plate	2
5	E20034	Bushing	2
6	E20035	Spacer 8 OD x 3.5 ID x 6.5 W PVC	2
7	E20454	Pivot Arm	1
8	E20046	Tie Rod	1
9	E81917	Hex Bolt M8x20 Zinc	2
10	E83801	Hex Bolt M8x35 Zinc	1
11	E20412	Hex Bolt M8x45 Zinc	1
12	E20243	Pan Hd Phil Machine Screw M3x30 Zinc	2
13	E81848	Flat Hd Soc Machine Screw M6x25 SS	1
14	E83656	Hex Nut, M8x6.5 Zinc	2
15	E81673	Hex Nyloc Nut, M3 Zinc	4
16	E83550	NyLoc Hex Nut, M6 Zinc	1
17	E81709	Nyloc Hex Nut, M8 Zinc	2
18	E82761	Flat Washer M6x12x1.6 Zinc	1
19	E82798	Flat Washer M6x18x1.5 Zinc	2

Item#	Part #	Description	Qty.
20	E81874	Flat Washer M8x17x1.6 Zinc	2
21	E81918	Flat Washer M9x32x2.5 Zinc	2
22	E83704	Lock Washer M8x13x2.2 Zinc	2
23	E83903	Shim Washer M14x22x0.3	3
24	E83164	Micro Switch	2
25	E83935	Hose Clamp	2
26	E81651	Clevis	3
27	E83931	Clevis Pin	3
28	E20434	Bushing	2
29	E20509	Bushing	1
30	E20361	Oval Hd Phil Machine Screw M3x20 Zinc	2
31	E20381	Flat Hd Soc Machine Screw M6x25 Zinc	1
32	E20262	E Style Circlip	2
33	E20539	Nyloc Hex Nut, M6 Zinc	1
34	E20534	Actuator ASM 36VDC 30W	1
34.1	E88184	Micro Switch ASM	2
34.2	E20168	Cover Plate	1
34.3	E88170	Actuator Motor 36VDC 30W	1

PARTS DIAGRAM

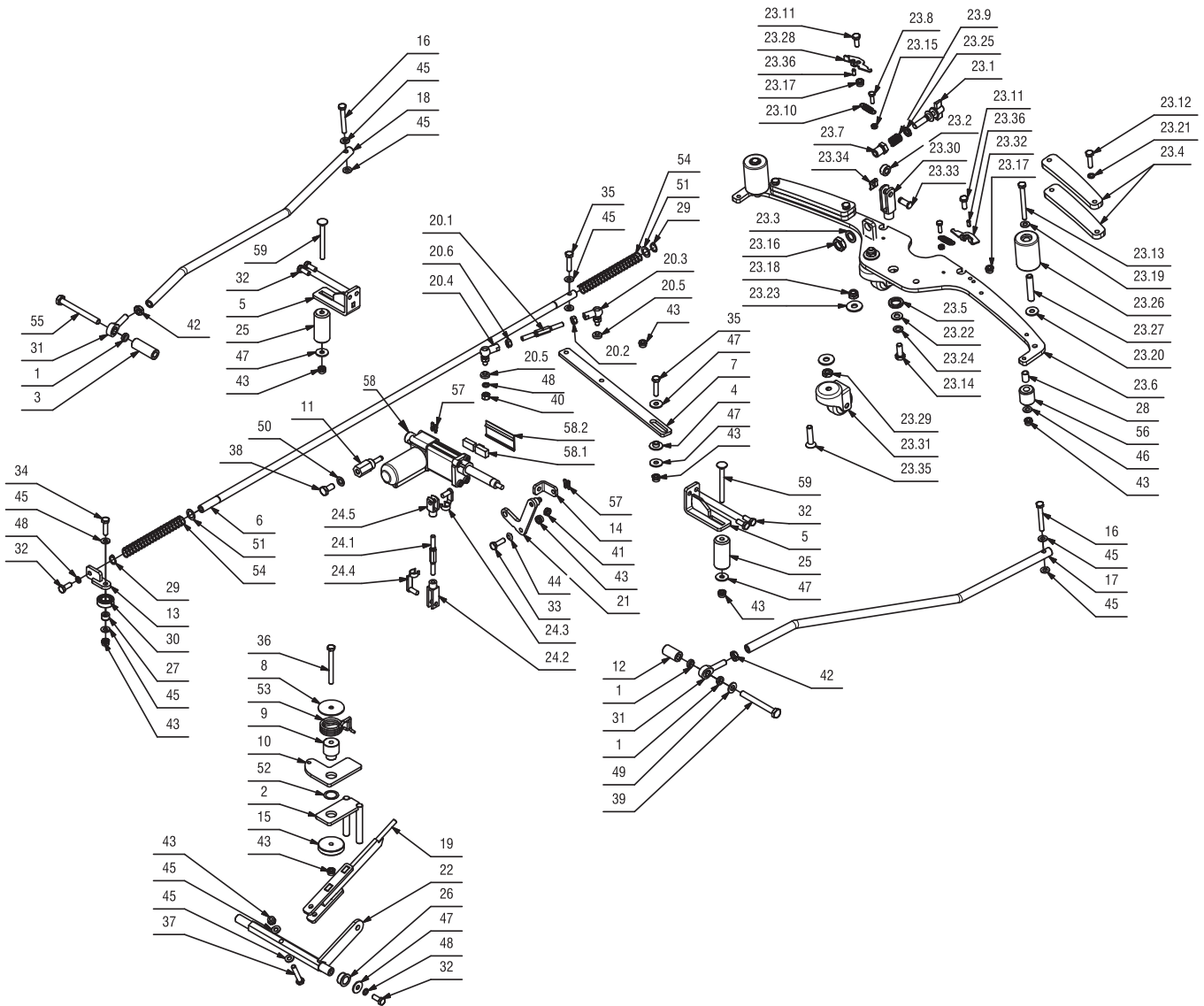


PARTS LISTING

Item#	Part #	Description	Qty.
1	E82275	Stud Bolt M10 Custom	2
2	E81664	Squeegee Blade, Front	1
3	E20404	Squeegee Shoe	1
4	E83355	Hex Bolt M6x10 SS	6
5	E81672	Flat Hd SL Machine Screw M3x10 SS	4
6	E83947	Hex Nut, M6x5 SS	1
7	E83799	Flat Washer M6.6x18x2 SS	6
8	E86255	Flat Washer M10x21x2 SS	2
9	E20128	Lock Washer M10 SS	2

Item#	Part #	Description	Qty.
10	E82376	Latch	1
11	E20435	Nyloc Hex Nut, M3 SS	4
12	E20560	Band Clamp	1
13	E20137	Band Clamp	1
14	E20138	Band Clamp	1
15	E20139	Band Clamp	1
16	E81665	Squeegee Blade, Rear, Shore 33	1
17	E20146	Set Screw Hex Soc Flat End M10x20 SS	2

PARTS DIAGRAM

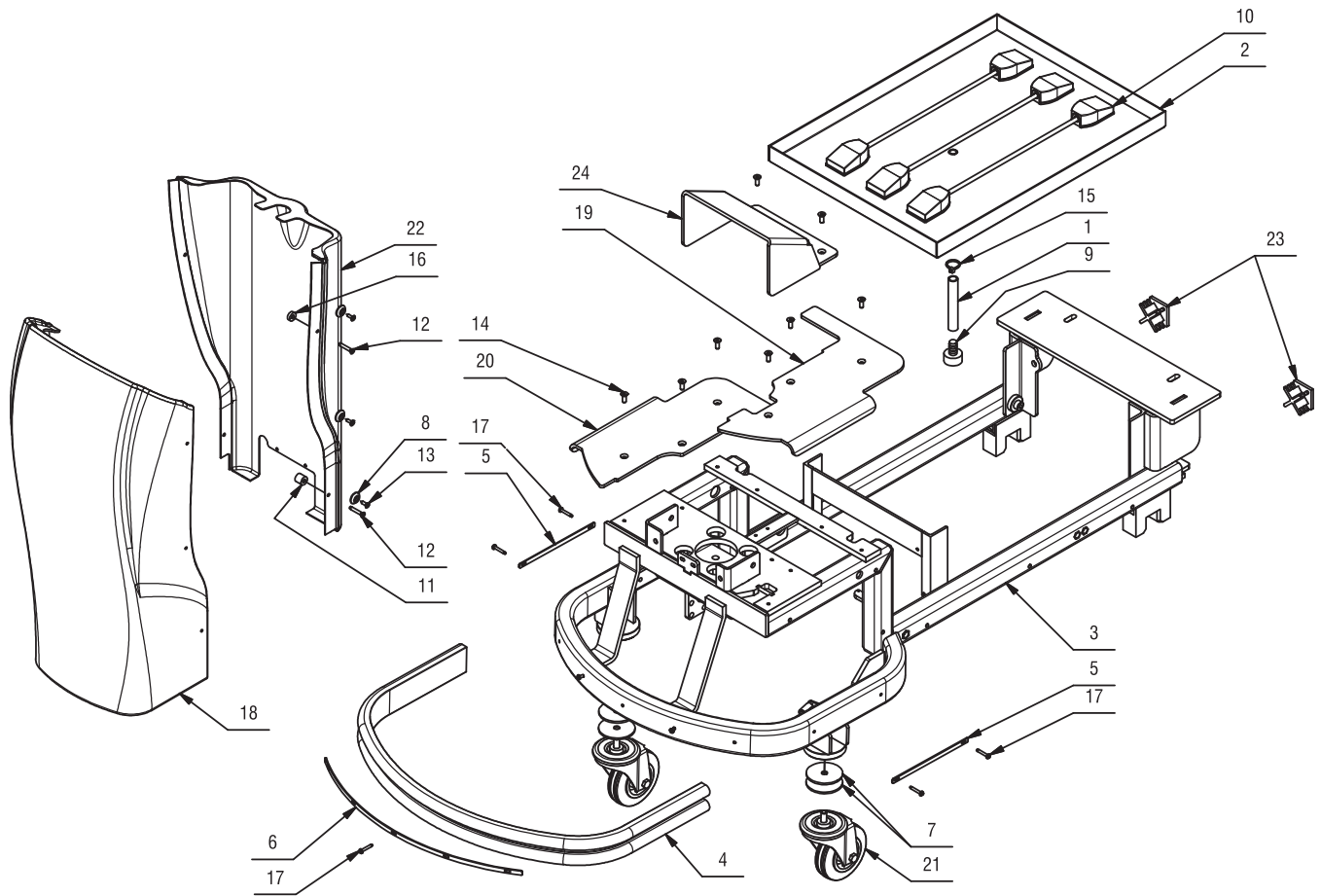


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20643	Spacer	3
2	E20275	Guide Arm	1
3	E20439	Spacer	1
4	E20036	Bushing	1
5	E20037	Bumper Wheel Bracket	2
6	E20276	Connecting Rod	1
7	E20207	Pivot Arm	1
8	E20038	Fender Washer M8x50x2 Zinc	1
9	E20208	Bushing	1
10	E20209	Pivot Arm	1
11	E20039	Standoff	1
12	E20040	Spacer	1
13	E20041	Cam Bearing Arm	1
14	E20042	Bracket	1
15	E20417	Spacer	1
16	E20566	Hex Bolt M8x60 Zinc	2
17	E20598	Drag Link	1
18	E20052	Drag Link	1
19	E20278	Lift Arm	1
20	E20218	Tie Rod ASM	1
20.1	E20057	Tie Rod	1
20.2	E83656	Hex Nut, M8x6.5 Zinc	1
20.3	E20648	Ball Joint Linkage M8	1
20.4	E20514	Ball Joint Linkage M8 Left Hand THD	1
20.5	E20161	Grease Seal M8 Neoprene	2
20.6	E20162	Hex Nut, M8 Zinc	1
21	E20333	Pivot Arm	1
22	E20284	Pivot Arm Weldment	1
23	E20225	Squeegee Yoke ASM	1
23.1	E83576	Squeegee Adjuster	1
23.2	E20477	Spacer	1
23.3	E81359	Flat Washer M16.5x24.5x2.5 SS	1
23.4	E20049	Ballast	4
23.5	E20406	Spacer	1
23.6	E20068	Squeegee Yoke	1
23.7	E82302	Bushing	1
23.8	E83914	Hex Bolt M6x20 SS	2
23.9	E82703	Spring	1
23.10	E82453	Spring	2
23.11	E86127	Hex Bolt M8x20 SS	2
23.12	E83671	Hex Bolt M8x30 SS	4
23.13	E20099	Hex Bolt M8x80 SS	2
23.14	E20499	Hex Bolt M10x25 SS	1
23.15	E20113	Hex Jam Nut, M6X4 SS	2
23.16	E82315	Hex Jam Nut, M16X8 Zinc	1
23.17	E81342	Nyloc Hex Jam Nut, M8 SS	4
23.18	E20120	Nyloc Hex Nut, M10 SS	2
23.19	E20125	Flat Washer M8x17x1.6 SS	4
23.20	E86164	Flat Washer M9x24x2.5 SS	2
23.21	E20252	Lock Washer M8x13x2.2 SS	4
23.22	E86255	Flat Washer M10x21x2 SS	1
23.23	E20294	Flat Washer M10x30x2 SS	8
23.24	E20128	Lock Washer M10 SS	1
23.25	E81406	External Serrated Lock Washer M13x18 Zinc	1
23.26	E88223	Squeegee Bumper Wheel 45 OD x 65 W	2

Item#	Part #	Description	Qty.
23.27	E88222	Bushing	2
23.28	E88176	Latch	1
23.29	E20460	Hex Jam Nut, M10X6 SS	2
23.30	E20580	Clevis	1
23.31	E20414	Caster	2
23.32	E88177	Latch	1
23.33	E20550	Clevis Pin	1
23.34	E20154	Self Locking Circlip M10 Zinc	1
23.35	E20445	Flat Hd Soc Machine Screw M10x45 SS	2
23.36	E20352	Spring Pin M6x12 SS	2
24	E20069	Tie Rod ASM	1
24.1	E20057	Tie Rod	1
24.2	E81651	Clevis	1
24.3	E81410	Clevis Pin	1
24.4	E83931	Clevis Pin	1
24.5	E20452	Clevis	1
25	E88181	Bumper Wheel 30 OD x 64 W	2
26	E81986	Bushing	2
27	E85767	Bushing	1
28	E82253	Bushing	2
29	E20459	Retaining Ring - External M14 SS	2
30	E20340	Bearing	1
31	E20483	Ball Joint Rod End	2
32	E81917	Hex Bolt M8x20 Zinc	7
33	E83833	Hex Bolt M8x25 Zinc	1
34	E83802	Hex Bolt M8x30 Zinc	1
35	E83801	Hex Bolt M8x35 Zinc	2
36	E83606	Hex Bolt M8x80 Zinc	1
37	E20412	Hex Bolt M8x45 Zinc	1
38	E20239	Hex Bolt M10x20 Zinc	1
39	E20317	Hex Bolt M10x90 Zinc	1
40	E83891	Hex Nut, M8x8 Zinc	1
41	E82808	Hex Jam Nut, M8X5 Zinc	1
42	E83875	Hex Jam Nut, M10X6 Zinc	2
43	E81709	Nyloc Hex Nut, M8 Zinc	10
44	E20394	Spring Washer M8 Zinc	1
45	E81874	Flat Washer M8x17x1.6 Zinc	10
46	E20125	Flat Washer M8x17x1.6 SS	2
47	E83404	Flat Washer M9x24x2.5 Zinc	6
48	E83704	Lock Washer M8x13x2.2 Zinc	4
49	E82773	Flat Washer M10x21x2 Zinc	1
50	E83948	Lock Washer M10x18x2.2 Zinc	1
51	E83903	Shim Washer M14x22x0.3	2
52	E87289	Shim Washer M20x28x0.3	1
53	E88183	Spring	1
54	E20426	Spring	2
55	E20147	Hex Bolt M10x100 Zinc	1
56	E88178	Bumper Wheel 28 OD x 32 L	2
57	E20521	Self Locking Circlip M8 Zinc	2
58	E20534	Actuator ASM 36VDC 30W	1
58.1	E88184	Micro Switch ASM	2
58.2	E20168	Cover Plate	1
58.3	E88170	Actuator Motor 36VDC 30W	1
59	E20401	Carriage Bolt M8x80 Zinc	2

PARTS DIAGRAM

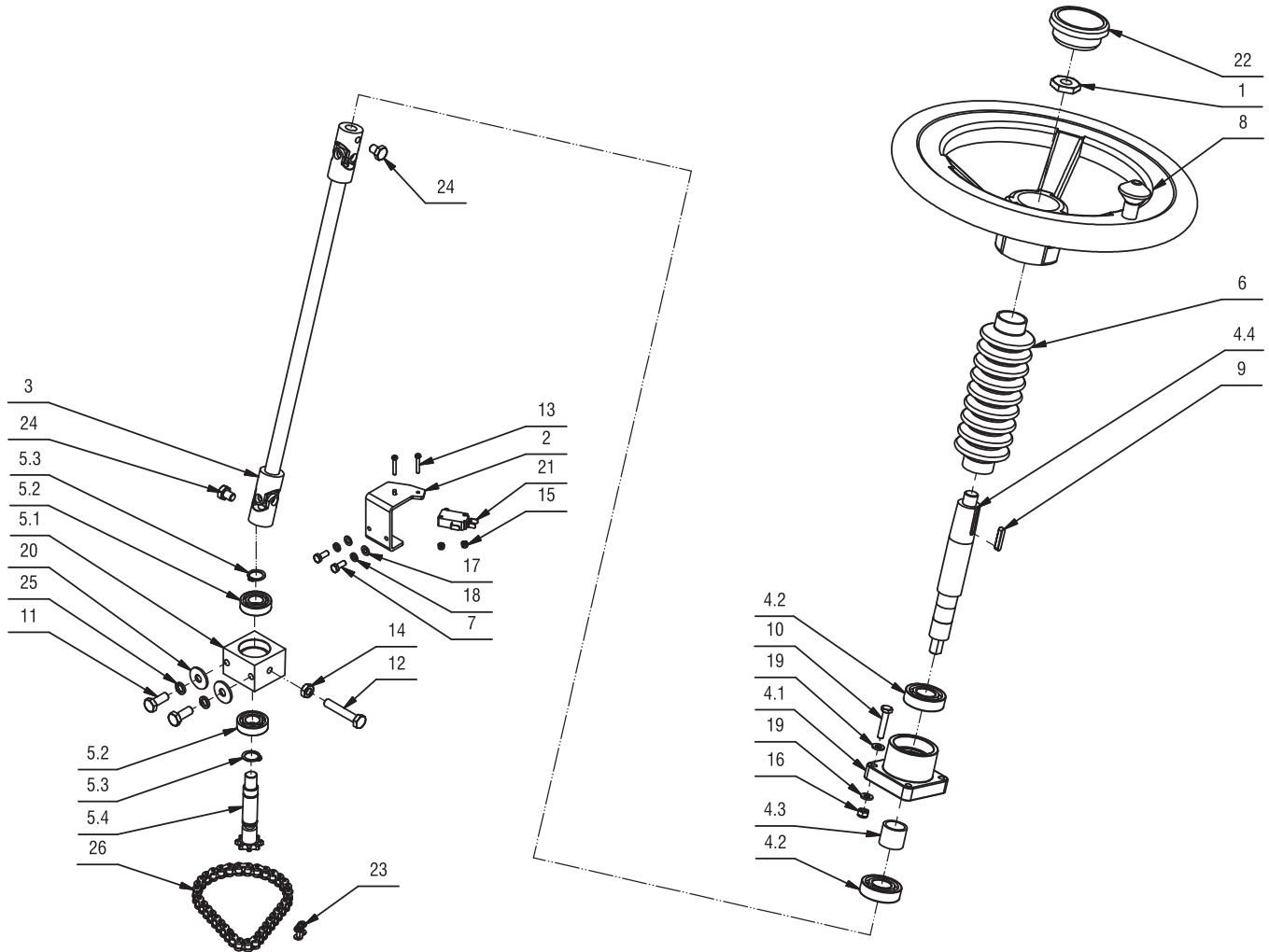


PARTS LISTING

Item#	Part #	Description	Qty.
1	E82397	Hose, 12 OD x L 100	1
2	E20277	Battery Tray	1
3	E20640	Main Frame Weldment	1
4	E20542	Front Bumper	1
5	E20506	Band Clamp	2
6	E20054	Band Clamp	1
7	E20447	Fender Washer M10.2x60x3 Zinc	4
8	E83850	Flat Washer M5x20 SS	6
9	E82391	Plug	1
10	E20650	Battery Series Cable	3
11	E20594	Standoff	2
12	E20431	Flat Hd Phil Machine Screw M5x30 Zinc	4

Item#	Part #	Description	Qty.
13	E83796	Screw, Pan Hd Phil Self Tap M4.2x16 Zinc	6
14	E88042	Flat Hd Soc Machine Screw M6x16 Zinc	8
15	E83935	Hose Clamp	1
16	E20524	Standoff	2
17	E20424	Screw, Pan Hd Phil Self Tap M4.8x25 Zinc	9
18	E20135	Front Console Cover	1
19	E20303	Tread Plate Left	1
20	E20259	Tread Plate Right	1
21	E88193	Caster	2
22	E20443	Back Console Cover	1
23	E20633	End Cap	2
24	E20642	Tread Plate Center	1

PARTS DIAGRAM

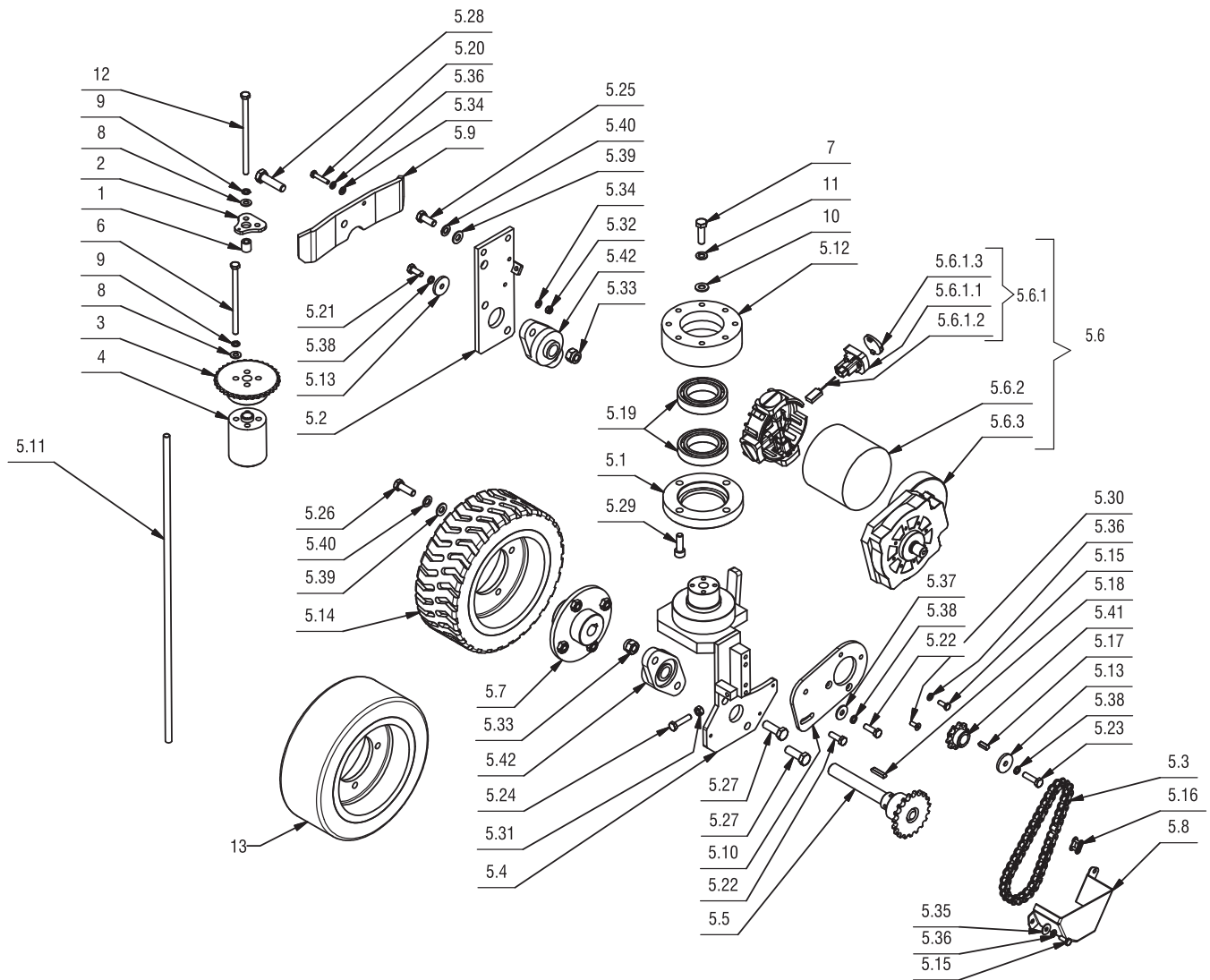


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20608	Special Hex Nut M14	1
2	E20203	Switch Mounting Bracket	1
3	E20471	Steering Drive Shaft	1
4	E20456	Steer Shaft Hub ASM	1
4.1	E20081	Bearing Block	1
4.2	E83923	Bearing	2
4.3	E20482	Spacer	1
4.4	E20331	Steering Shaft	1
5	E20280	Steering Sprocket Shaft Hub ASM	1
5.1	E20044	Bearing Block	1
5.2	E88186	Bearing	2
5.3	E83437	Retaining Ring - External	2
5.4	E20027	Steering Sprocket Shaft	1
6	E88185	Bellows	1
7	E83665	Hex Bolt M5x12 Zinc	2

Item#	Part #	Description	Qty.
8	E20529	Steering Wheel	1
9	E20232	Shaft Key	1
10	E83974	Hex Bolt M6x30 Zinc	4
11	E81917	Hex Bolt M8x20 Zinc	2
12	E83827	Hex Bolt M8x45 Zinc	1
13	E20242	Pan Hd Phil Machine Screw M3x20 Zinc	2
14	E82808	Hex Jam Nut, M8X5 Zinc	1
15	E81673	Hex Nyloc Nut, M3 Zinc	2
16	E83550	NyLoc Hex Nut, M6 Zinc	4
17	E83879	Flat Washer M5x11x1 Zinc	2
18	E20123	Lock Washer M5x1.6 Zinc	2
19	E82761	Flat Washer M6x12x1.6 Zinc	8
20	E83404	Flat Washer M9x24x2.5 Zinc	2
21	E82270	Micro Switch	1
22	E20449	Steering Wheel Cap	1

PARTS DIAGRAM

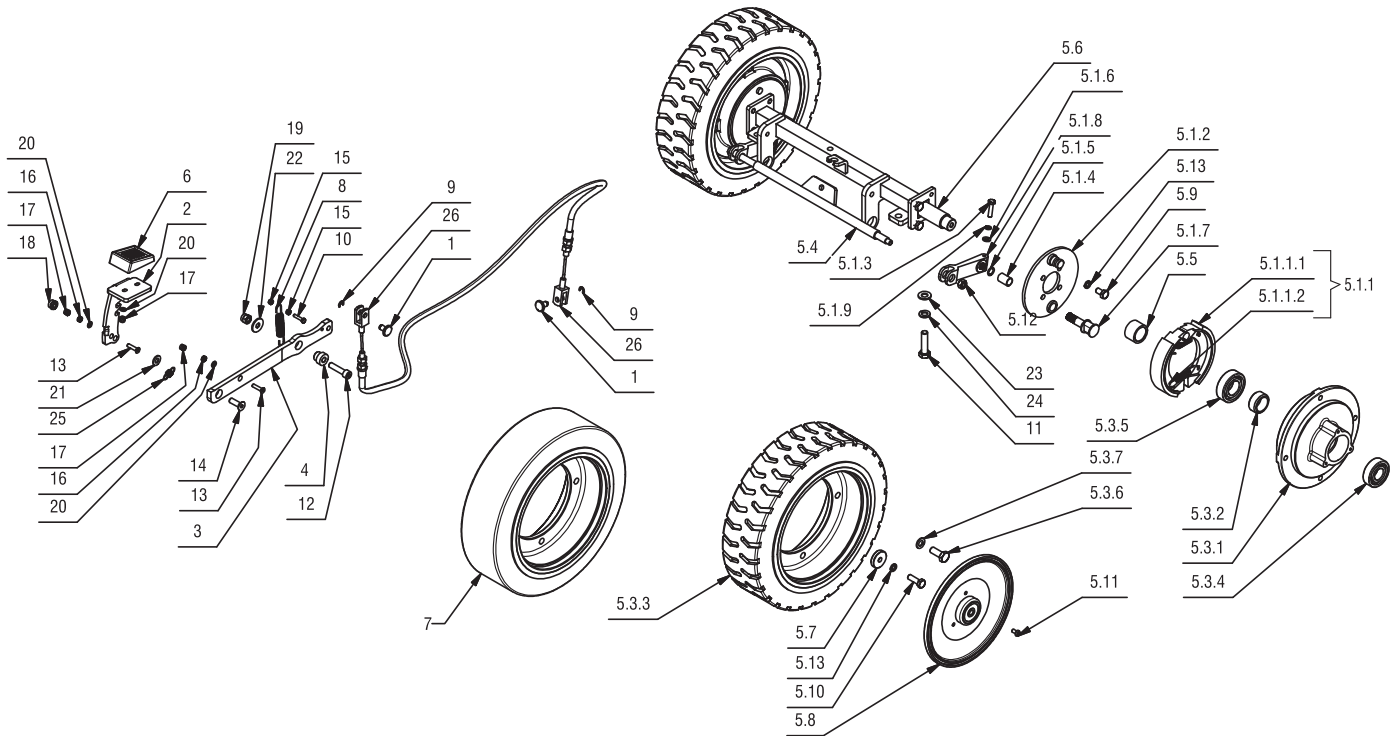


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20558	Spacer	2
2	E20204	Switch Cam Arm	1
3	E20214	Steering Sprocket	1
4	E20215	Steering Sprocket Spacer	1
5	E20472	Traction Drive ASM	1
5.1	E20636	Bearing Retainer	1
5.2	E20578	Bracket	1
5.3	E88188	Chain	1
5.4	E20023	Traction Drive Weldment	1
5.5	E20024	Traction Drive Sprocket Axle	1
5.6	E88189	Traction Motor 24VDC 400W ASM	1
5.6.1	E88190	Carbon Brush Holder ASM	1
5.6.1.1	E20163	Carbon Brush Holder	4
5.6.1.2	E81973	Carbon Brush	4
5.6.1.3	E20164	Carbon Brush Holder Cap	4
5.6.2	E20165	Traction Motor 24VDC 400W	1
5.6.3	E20166	Traction Motor Gear Box	1
5.7	E20025	Wheel Hub	1
5.8	E20387	Chain Guard	1
5.9	E20212	Cam Lever Arm	1
5.10	E20045	Motor Mount Plate	1
5.11	E20571	Sheath	1
5.12	E20055	Bearing Retainer	1
5.13	E81915	Flat Washer M8.2x32x4 Zinc	2
5.14	E88215	Traction Wheel 250 OD x 90 W	1
5.15	E83547	Hex Bolt M6x16 Zinc	5
5.16	E83424	Master Chain Link	1
5.17	E81694	Shaft Key	1
5.18	E20233	Shaft Key	1
5.19	E88020	Bearing	2
5.20	E83974	Hex Bolt M6x30 Zinc	1

Item#	Part #	Description	Qty.
5.21	E81917	Hex Bolt M8x20 Zinc	1
5.22	E83833	Hex Bolt M8x25 Zinc	2
5.23	E83802	Hex Bolt M8x30 Zinc	1
5.24	E83801	Hex Bolt M8x35 Zinc	1
5.25	E20240	Hex Bolt M10x25 Zinc	2
5.26	E81017	Hex Bolt 10x30 Zinc	4
5.27	E81735	Hex Bolt M12x35 Zinc	3
5.28	E20101	Hex Bolt M12x45 Zinc	1
5.29	E20289	Soc Hd Cap Screw M10x30 Zinc	4
5.30	E88042	Flat Hd Soc Machine Screw M6x16 Zinc	2
5.31	E83656	Hex Nut, M8x6.5 Zinc	1
5.32	E83550	NyLoc Hex Nut, M6 Zinc	1
5.33	E20249	Nyloc Hex Nut, M12x15 Zinc	4
5.34	E82761	Flat Washer M6x12x1.6 Zinc	2
5.35	E82798	Flat Washer M6x18x1.5 Zinc	3
5.36	E82774	Flat Washer M6x12x1.6 SS	6
5.37	E83404	Flat Washer M9x24x2.5 Zinc	1
5.38	E83704	Lock Washer M8x13x2.2 Zinc	3
5.39	E82773	Flat Washer M10x21x2 Zinc	6
5.40	E83948	Lock Washer M10x18x2.2 Zinc	6
5.41	E20131	Sprocket	1
5.42	E88191	Flange Bearing	2
6	E20237	Hex Bolt M8x130 Zinc	2
7	E82455	Hex Bolt M10x35 Zinc	4
8	E81874	Flat Washer M8x17x1.6 Zinc	4
9	E83704	Lock Washer M8x13x2.2 Zinc	4
10	E82773	Flat Washer M10x21x2 Zinc	4
11	E20396	Lock Washer M10 Zinc	4
12	E20583	Hex Bolt M8x150 Zinc	2
13	E83256	Traction Wheel 250 OD x 90 W Anti Skid	1

PARTS DIAGRAM

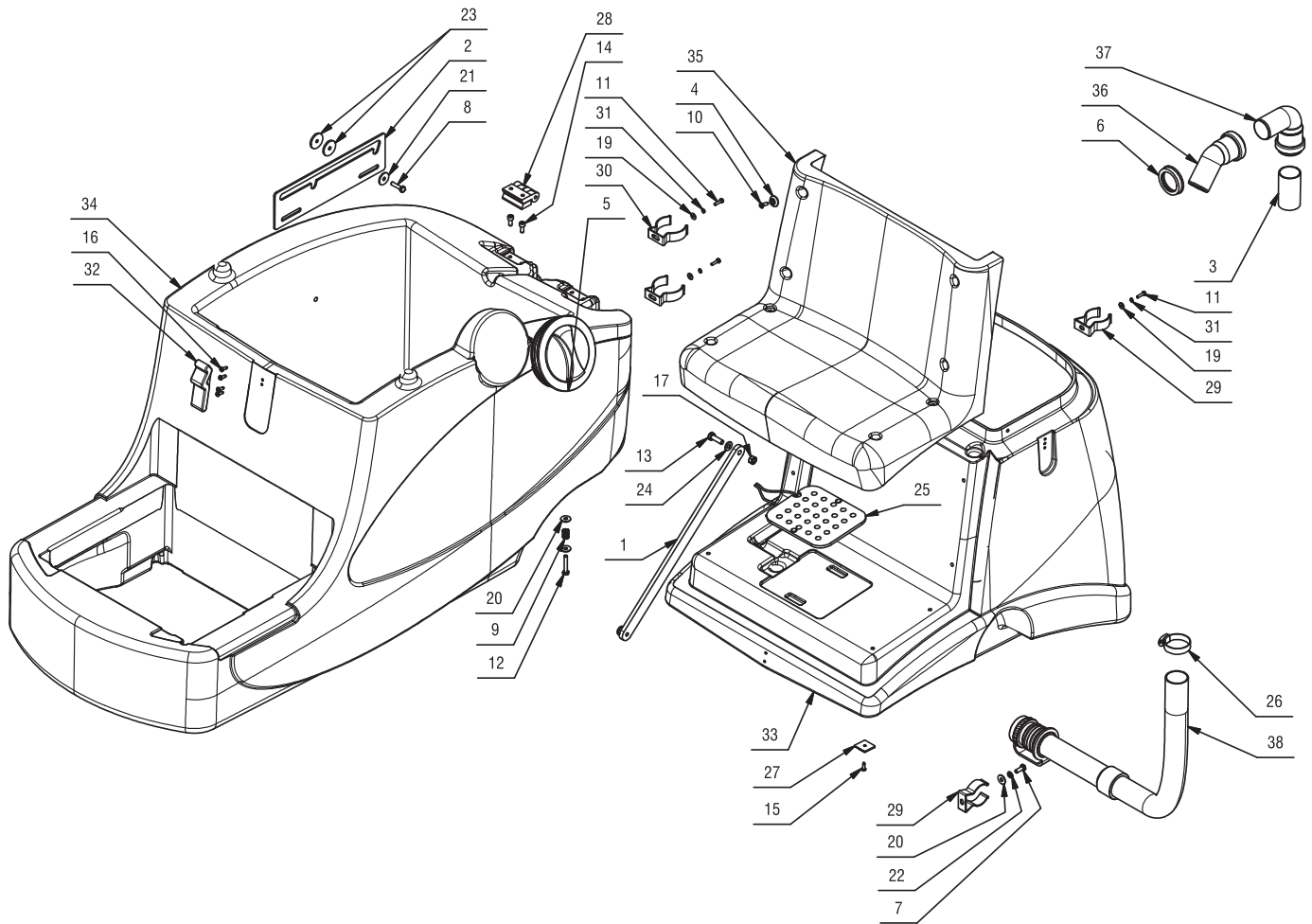


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20626	Clevis Pin	2
2	E20021	Brake Pedal	1
3	E20022	Brake Lever Pivot Arm	1
4	E20274	Bushing	1
5	E20353	Rear Transport Wheel ASM	1
5.1	E20371	Brake ASM Left	1
5.1.1	E82324	Brake Shoes ASM	1
5.1.1.1	E87966	Brake Shoe	2
5.1.1.2	E81566	Spring	2
5.1.2	E20420	Brake Shoe Mounting Plate	1
5.1.3	E20090	Hex Bolt M6x25 Zinc	1
5.1.4	E20338	Bushing	1
5.1.5	E20511	Gasket	1
5.1.6	E82761	Flat Washer M6x12x1.6 Zinc	1
5.1.7	E20562	Brake Lever Cam	1
5.1.8	E82540	Brake Lever Arm	1
5.1.9	E20323	Lock Washer M6 SS	1
5.2	E20216	Brake ASM Right	1
5.3	E20312	Transport Wheel ASM	2
5.3.1	E20405	Brake Drum Wheel Hub	1
5.3.2	E20067	Spacer	1
5.3.3	E88217	Transport Wheel 300 OD x 90 W	1
5.3.4	E81657	Bearing	1
5.3.5	E81771	Bearing	1
5.3.6	E20240	Hex Bolt M10x25 Zinc	4
5.3.7	E83948	Lock Washer M10x18x2.2 Zinc	4
5.4	E20372	Brake Linkage	1
5.5	E20217	Spacer	2
5.6	E20056	Axle Weldment	1

Item#	Part #	Description	Qty.
5.7	E20421	Fender Washer M8.2x30x6 Zinc	2
5.8	E20464	Hub Cap	2
5.9	E20357	Hex Bolt M8x14 Zinc	8
5.10	E83833	Hex Bolt M8x25 Zinc	2
5.11	E83899	Pan Hd Phil Machine Screw M5x10 SS	6
5.12	E83656	Hex Nut, M8x6.5 Zinc	2
5.13	E83704	Lock Washer M8x13x2.2 Zinc	10
6	E81992	Pedal Cover	1
7	E88216	Transport Wheel 300 OD x 90 W Anti Skid	2
8	E81056	Spring	1
9	E20465	E Style Circlip	2
10	E20094	Hex Bolt M4x20 Zinc	1
11	E20100	Hex Bolt M10x40 Zinc	4
12	E20103	Soc Hd Cap Screw M8x35 Zinc	1
13	E20245	Flat Hd Soc Machine Screw M5x22 Zinc	2
14	E20291	Flat Hd Soc Machine Screw M8x25 Zinc	1
15	E20248	Hex Nut, M4x4 Zinc	2
16	E82317	Hex Jam Nut, M5X3.5 Zinc	2
17	E82256	Nyloc Hex Nut, M5x7 Zinc	4
18	E81709	Nyloc Hex Nut, M8 Zinc	1
19	E20118	Nyloc Hex Nut, M8x10.6 Zinc	1
20	E83879	Flat Washer M5x11x1 Zinc	4
21	E81874	Flat Washer M8x17x1.6 Zinc	1
22	E83404	Flat Washer M9x24x2.5 Zinc	1
23	E82773	Flat Washer M10x21x2 Zinc	4
24	E83948	Lock Washer M10x18x2.2 Zinc	4
25	E88196	Spring	1
26	E20570	Brake Cable	1

PARTS DIAGRAM

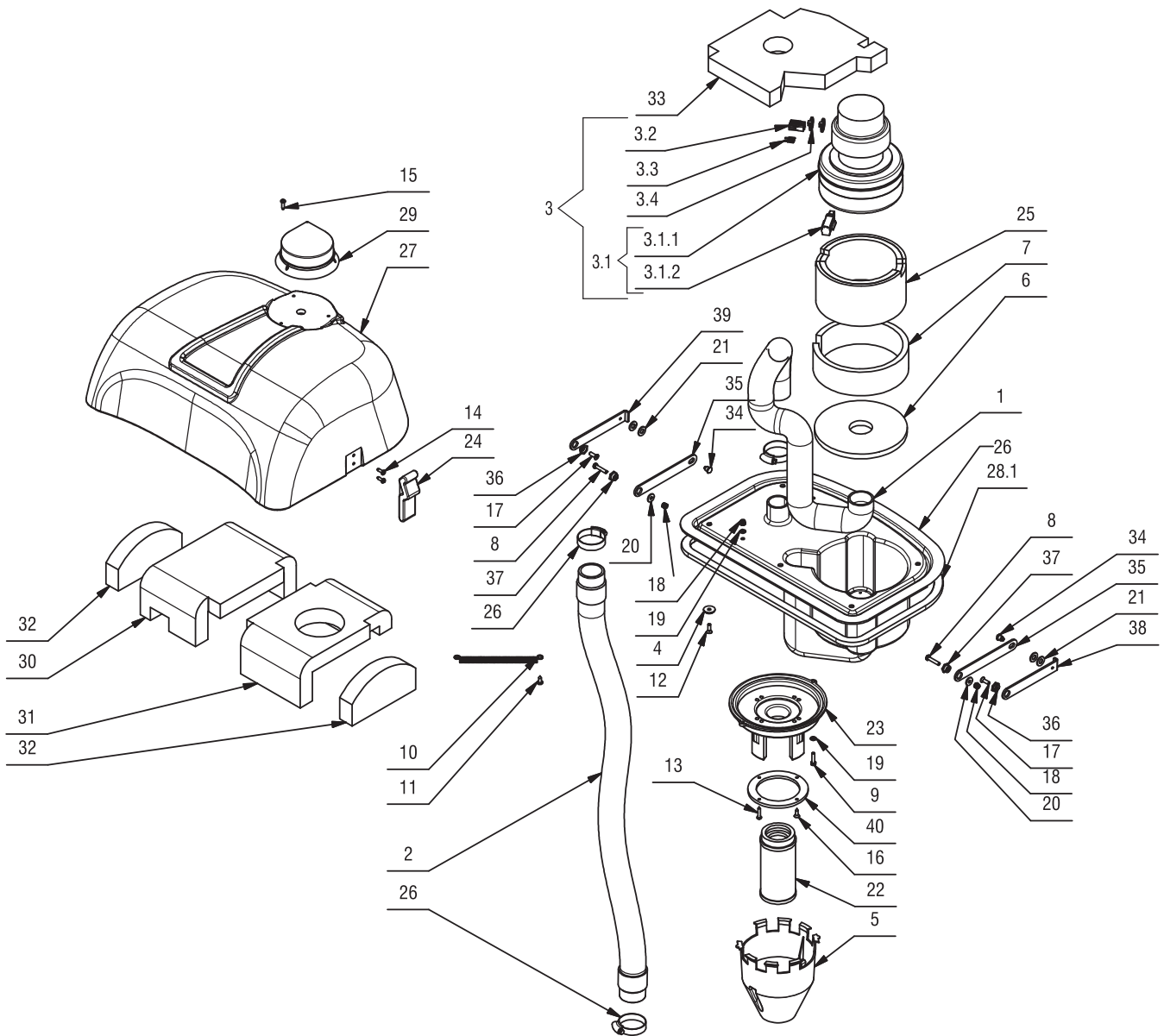


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20585	Seat Prop	1
2	E20211	Cam Plate	1
3	E20541	Pipe	1
4	E83850	Flat Washer M5x20 SS	8
5	E82429	Cap	1
6	E82313	Grommet	1
7	E83547	Hex Bolt M6x16 Zinc	2
8	E20090	Hex Bolt M6x25 Zinc	2
9	E82309	Spring, Compression	2
10	E83839	Oval Hd Phil Machine Screw M5x16 Zinc	8
11	E20341	Hex Bolt M4x16 Zinc	3
12	E20236	Hex Bolt M6x35 Zinc	2
13	E83833	Hex Bolt M8x25 Zinc	1
14	E20241	Soc Hd Cap Screw M6x14 Zinc	8
15	E20104	Screw, Pan Hd Phil Self Tap M4.2x13 SS	2
16	E20106	Screw, Pan Hd Phil Self Tap M4.2x13 SS	4
17	E83656	Hex Nut, M8x6.5 Zinc	1
19	E83037	Flat Washer M4x12x1.6 Zinc	3
20	E82798	Flat Washer M6x18x1.5 Zinc	6

Item#	Part #	Description	Qty.
21	E83278	Flat Washer M6.5x24x2 Zinc	2
22	E82774	Flat Washer M6x12x1.6 SS	2
23	E83798	Flat Washer M6x30x3 PVC Black	4
24	E81874	Flat Washer M8x17x1.6 Zinc	1
25	E83165	Safety Switch	1
26	E83966	Hose Clamp	1
27	E81619	Support Bracket	2
28	E81029	Hinge	2
29	E81786	Hose Clip	3
30	W87296	Drain Hose Clip	2
31	E20475	Lock Washer M4 Zinc	3
32	E20413	Latch	1
33	E20366	Recovery Tank	1
34	E20149	Solution Tank	1
35	E20304	Seat - Black	1
36	E20150	Elbow 45°	1
37	E20151	Elbow 90°	1
38	E20596	Hose, Drain	1

PARTS DIAGRAM

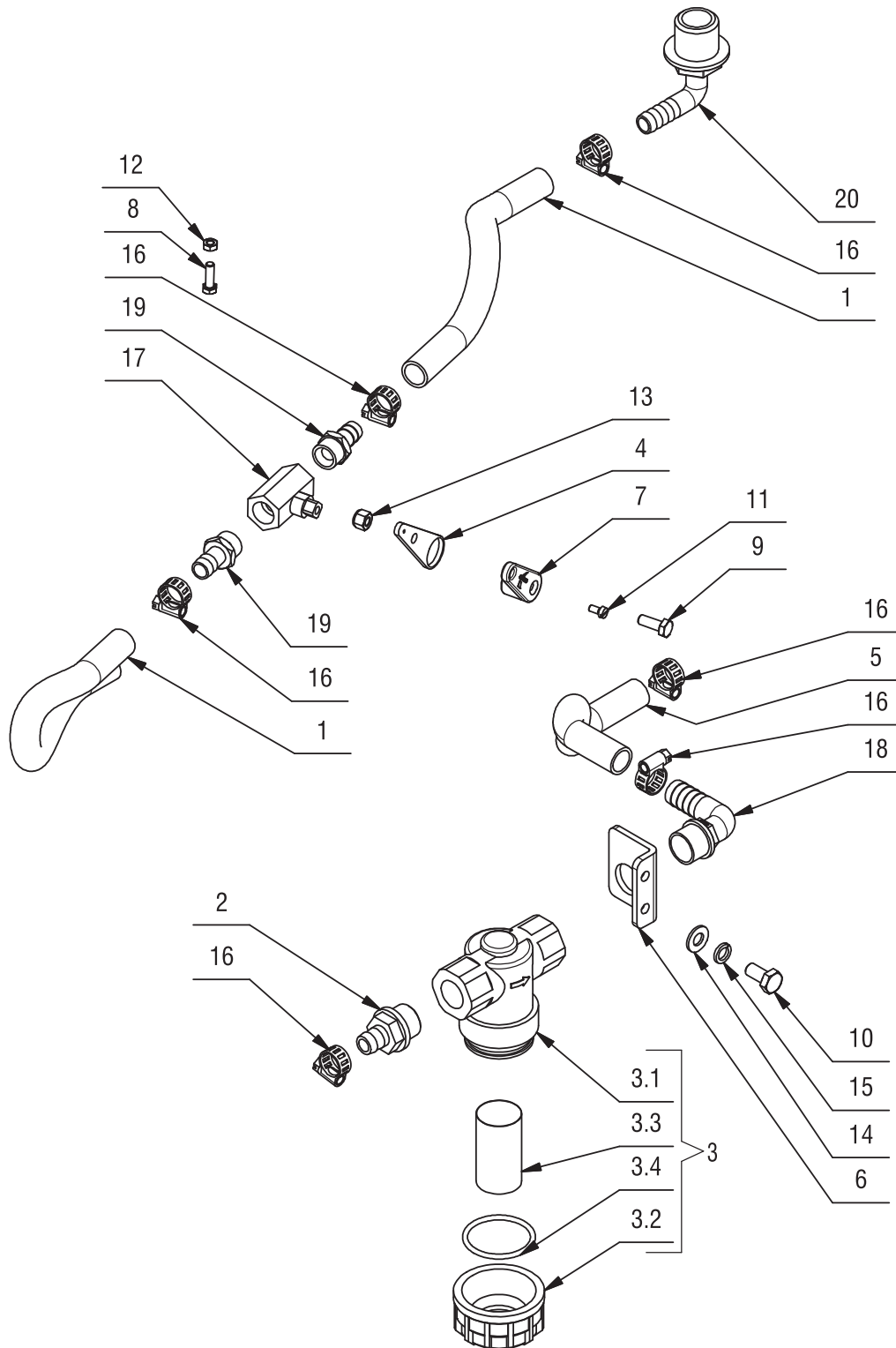


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20462	Hose, Vacuum	1
2	E82362	Hose, Vacuum	1
3	E83614	Vacuum Motor 36VDC	1
3.1	E88200	Vacuum Motor 36VDC 550W	1
3.1.1	E88200	Vacuum Motor 36VDC 550W	1
3.1.2	E20525	Carbon Brush	2
3.2	E83897	Electrical Connector 30A	2
3.3	E83883	Electrical Contact 30A	2
3.4	E83935	Hose Clamp	2
4	E83850	Flat Washer M5x20 SS	6
5	E81006	Vacuum Splash Guard	1
6	E83944	Sound Deadening Foam	1
7	E82282	Sound Deadening Foam	1
8	E20085	Hex Bolt M5x25 SS	2
9	E83666	Hex Bolt M5x20 SS	2
10	E82691	Spring	1
11	E87972	Screw, Pan Hd Phil Self Tap M4.8x13 SS	1
12	E83839	Oval Hd Phil Machine Screw M5x16 Zinc	6
13	E20105	Screw, Pan Hd Phil Self Tap M4.2x22 SS	2
14	E20106	Screw, Pan Hd Phil Self Tap M4.2x13 SS	8
15	E20107	Screw, Pan Hd Phil Self Tap M4.2x16 SS	3
16	E83796	Screw, Pan Hd Phil Self Tap M4.2x16 Zinc	2
17	E20290	Flat Hd Soc Machine Screw M5x16 SS	2
18	E20116	Nyloc Hex Nut, M5x7 SS	4

Item#	Part #	Description	Qty.
19	E81618	Flat Washer M5x10x1 SS	4
20	E20122	Flat Washer M5x15x1.5 SS	2
21	E20125	Flat Washer M8x17x1.6 SS	4
22	E82790	Air Filter/Shutoff	1
23	E20495	Filter Mount	1
24	E20413	Latch	2
25	E20652	Sound Deadening Foam	1
26	E20325	Hose Clamp	4
27	E20526	Recovery Tank Cover	1
28	E20260	Recovery Tank Cover Bottom	1
28.1	E20436	Gasket	1
29	E20520	Warning Light	1
30	E20605	Sound Deadening Foam	1
31	E20158	Sound Deadening Foam	1
32	E20159	Sound Deadening Foam	2
33	E20160	Sound Deadening Foam	1
34	E20589	Pivot Bolt	2
35	E20171	Hinge Bracket	2
36	E20172	Bushing	2
37	E20173	Bushing	2
38	E20174	Hinge Bracket	1
39	E20367	Hinge Bracket	1
40	E20305	Mounting Ring	1

PARTS DIAGRAM

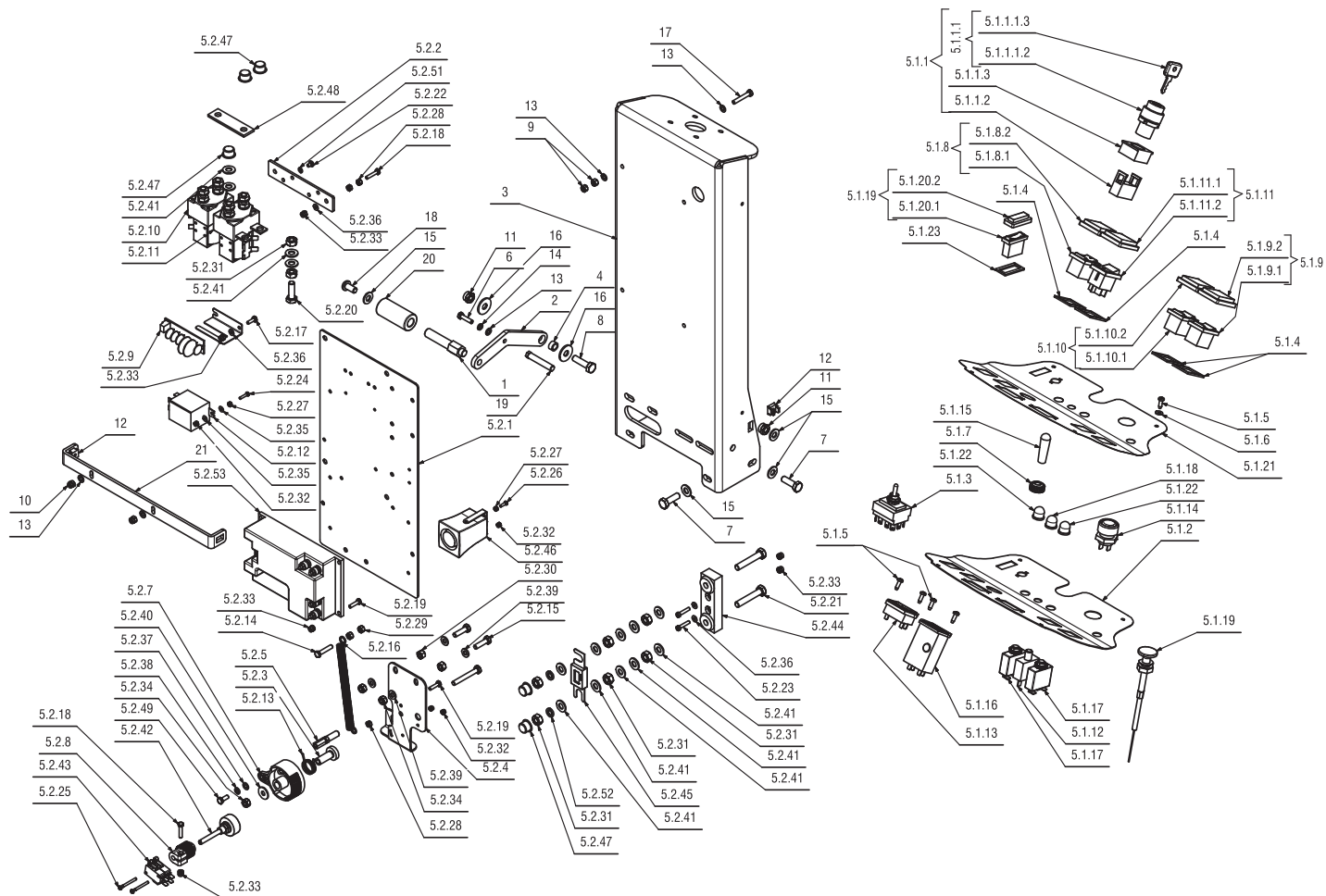


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20649	Tubing 14 ID x 250 L	2
2	E82447	Barbed Nipple	1
3	E88207	Filter	1
3.1	E20512	Filter, Body	1
3.2	E20144	Cap	1
3.3	E88218	Filter Cartridge	1
3.4	E20145	O-Ring	1
4	E20496	Lever Extension	1
5	E20072	Tubing 14 ID x 170 L	1
6	E20316	Bracket	1
7	E82705	Valve Lever	1
8	E83836	Hex Bolt M5x16 Zinc	1

Item#	Part #	Description	Qty.
9	E20087	Hex Bolt M6x16 SS	1
10	E83795	Hex Bolt M8x16 Zinc	2
11	E86194	Hex Bolt M5x20 SS	1
12	E82317	Hex Jam Nut, M5X3.5 Zinc	1
13	E82775	Nyloc Hex Nut, M6 SS	1
14	E81874	Flat Washer M8x17x1.6 Zinc	2
15	E83704	Lock Washer M8x13x2.2 Zinc	2
16	E85762	Hose Clamp	6
17	E83361	Ball Valve	1
18	E81454	Barbed Elbow	1
19	E82269	Barbed Fitting, 3/8 in.	2
20	E88206	Barbed Elbow	1

PARTS DIAGRAM

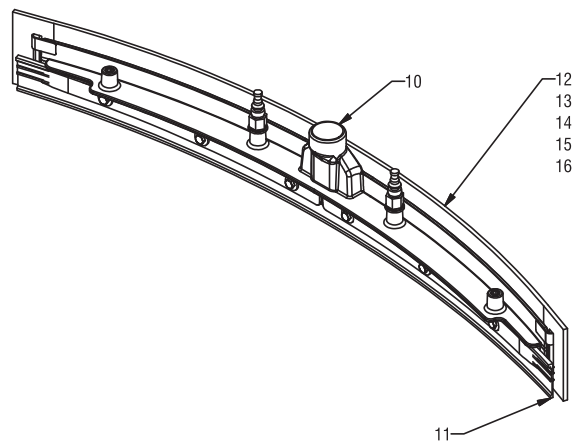
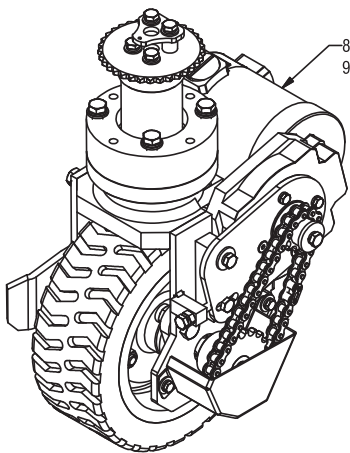
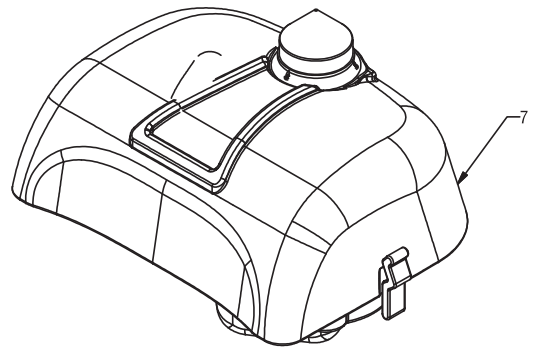
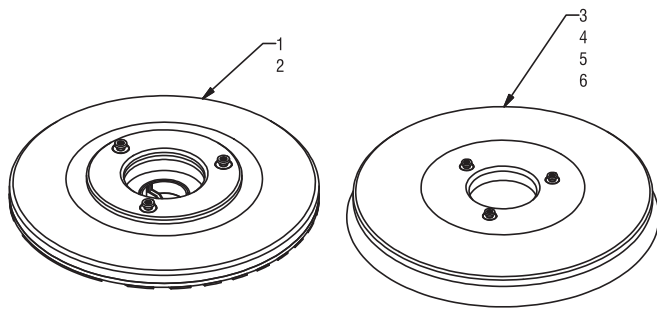


PARTS LISTING

Item#	Part #	Description	Qty.
1	E20653	Stud Pin	1
2	E20015	Pivot Arm	1
3	E20016	Console Frame	1
4	E20453	Bushing	1
5	E20224	Electronic Control Console ASM	1
5.1	E20210	Instrument Panel ASM	1
5.1.1	E82351	Key Switch	1
5.1.1.1	E82351	Key Switch	1
5.1.1.1.2	E83316	Key Switch	1
5.1.1.1.3	E83315	Switch Key	1
5.1.1.2	E83173	Key Switch Contact	1
5.1.1.3	E81358	Switch Flange	1
5.1.2	E20018	Instrument Panel	1
5.1.3	E20031	3 Way Paddle Switch	1
5.1.4	E81704	Gasket	4
5.1.5	E20104	Screw, Pan Hd Phil Self Tap M4.2x13 SS	8
5.1.6	E20293	Flat Washer M4x10x1 Nylon	4
5.1.7	E20504	Switch Cover	1
5.1.8	E20559	2 Way Rocker Switch ASM - Amber	1
5.1.8.1	E20559	2 Way Rocker Switch ASM - Amber	1
5.1.8.2	E20561	Rocker Switch Cover	1
5.1.9	E83162	2 Way Momentary Rocker Switch ASM - Amber	1
5.1.9.1	E83162	2 Way Momentary Rocker Switch ASM - Amber	1
5.1.9.2	E20561	Rocker Switch Cover	1
5.1.10	E82486	1 Way Momentary Rocker Switch ASM - Amber	1
5.1.10.1	E82486	1 Way Momentary Rocker Switch ASM - Amber	1
5.1.10.2	E20561	Rocker Switch Cover	1
5.1.11	E88202	1 Way Momentary Rocker Switch ASM - Green	1
5.1.11.1	E20561	Rocker Switch Cover	1
5.1.11.2	E20263	1 Way Momentary Rocker Switch - Green	1
5.1.12	E83959	Circuit Breaker 20A	1
5.1.13	E83495	Hour Meter	1
5.1.14	E88145	Momentary Switch	1
5.1.15	E83639	Switch Paddle	1
5.1.16	E88022	Battery Check Card 24 Volt	1
5.1.17	E83952	Circuit Breaker 30A	2
5.1.18	E88299	Cover, Thermal Switch	1
5.1.19	E20610	Water Control Cable	1
5.1.20	E20261	2 Way Rocker Switch ASM - Amber	1
5.1.20.1	E20261	2 Way Rocker Switch ASM - Amber	1
5.1.20.2	E20398	Rocker Switch Cover	1
5.1.21	E20148	Instrument Panel Decal	1
5.1.22	E20576	Cap	2
5.1.23	E20351	Gasket	1
5.2	E20531	Electronic Control Panel ASM	1
5.2.1	E20515	Electrical Panel	1
5.2.2	E20008	Bracket	1
5.2.3	E20574	Bushing	1
5.2.4	E20017	Bracket	1
5.2.5	E20043	Pin	1
5.2.6	E20510	Support	1
5.2.7	E81763	Cam	1
5.2.8	E20076	Pinion Gear	1
5.2.9	E83161	Current Limiter Board	1
5.2.10	E83628	Contactora 24VDC	1
5.2.11	E82321	Contactora, 24VDC 100A	1
5.2.12	E83160	Relay 24VDC 30A	1

Item#	Part #	Description	Qty.
5.2.13	E88204	Spring	1
5.2.14	E20086	Hex Bolt M5x25 Zinc	1
5.2.15	E20089	Hex Bolt M6x22 Zinc	2
5.2.16	E82691	Spring	1
5.2.17	E83857	Hex Bolt M4x12 Zinc	2
5.2.18	E20094	Hex Bolt M4x20 Zinc	3
5.2.19	E20341	Hex Bolt M4x16 Zinc	5
5.2.20	E20096	Hex Bolt M8x25 SS	2
5.2.21	E20287	Hex Bolt M8x45 SS	2
5.2.22	E20494	Pan Hd Phil Machine Screw M4x6 Zinc	4
5.2.23	E20318	Cheese Hd Slotted Machine Screw M4x20 SS	2
5.2.24	E20391	Pan Hd Phil Machine Screw M3x14 Zinc	2
5.2.25	E20243	Pan Hd Phil Machine Screw M3x30 Zinc	2
5.2.26	E20244	Pan Hd Phil Machine Screw M3x10 Zinc	2
5.2.27	E20540	Hex Nut, M3x3 SS	4
5.2.28	E20248	Hex Nut, M4x4 Zinc	5
5.2.29	E83535	Hex Nut, M5x5 Zinc	2
5.2.30	E20112	Hex Nut, M6x6 Zinc	2
5.2.31	E20115	Hex Nut, M8x6.5 Brass	10
5.2.32	E81673	Hex Nyloc Nut, M3 Zinc	6
5.2.33	E83867	Nyloc Hex Nut, M4x6 Zinc	11
5.2.34	E83550	NyLoc Hex Nut, M6 Zinc	3
5.2.35	E82090	Flat Washer M3x8x1 Zinc	4
5.2.36	E20292	Flat Washer M4x9x0.8 Zinc	6
5.2.37	E83879	Flat Washer M5x11x1 Zinc	1
5.2.38	E20123	Lock Washer M5x1.6 Zinc	1
5.2.39	E82761	Flat Washer M6x12x1.6 Zinc	4
5.2.40	E82798	Flat Washer M6x18x1.5 Zinc	1
5.2.41	E20124	Flat Washer M8x17x1.6 SS	20
5.2.42	E82824	Potentiometer	1
5.2.43	E82270	Micro Switch	2
5.2.44	E20484	Fuse Block	1
5.2.45	E20296	Fuse, 100A	1
5.2.46	E83177	Horn 24 VDC	1
5.2.47	E20129	Cap	6
5.2.48	E20634	Buss Bar	1
5.2.49	E20132	Hex Bolt M5x12 SS	1
5.2.50	E20360	Hex Bolt M6x45 Zinc	1
5.2.51	E20475	Lock Washer M4 Zinc	4
5.2.52	E81046	Lock Washer M8 Zinc	4
5.2.53	E82569	Variable Speed Controller	1
6	E83881	Hex Bolt M5x20 Zinc	1
7	E83833	Hex Bolt M8x25 Zinc	3
8	E83802	Hex Bolt M8x30 Zinc	1
9	E83535	Hex Nut, M5x5 Zinc	8
10	E82256	Nyloc Hex Nut, M5x7 Zinc	4
11	E81709	Nyloc Hex Nut, M8 Zinc	4
12	E20250	Cage Nut M5	4
13	E83879	Flat Washer M5x11x1 Zinc	13
14	E20123	Lock Washer M5x1.6 Zinc	1
15	E81874	Flat Washer M8x17x1.6 Zinc	7
16	E83404	Flat Washer M9x24x2.5 Zinc	2
17	E20359	Hex Bolt M5x30 Zinc	4
18	E20321	Button Hd Soc Machine Screw M8x16 Zinc	1
19	E20485	Pivot Pin	1
20	E20136	Foot Pedal Sleeve	1
21	E20500	Bracket	1

PARTS DIAGRAM

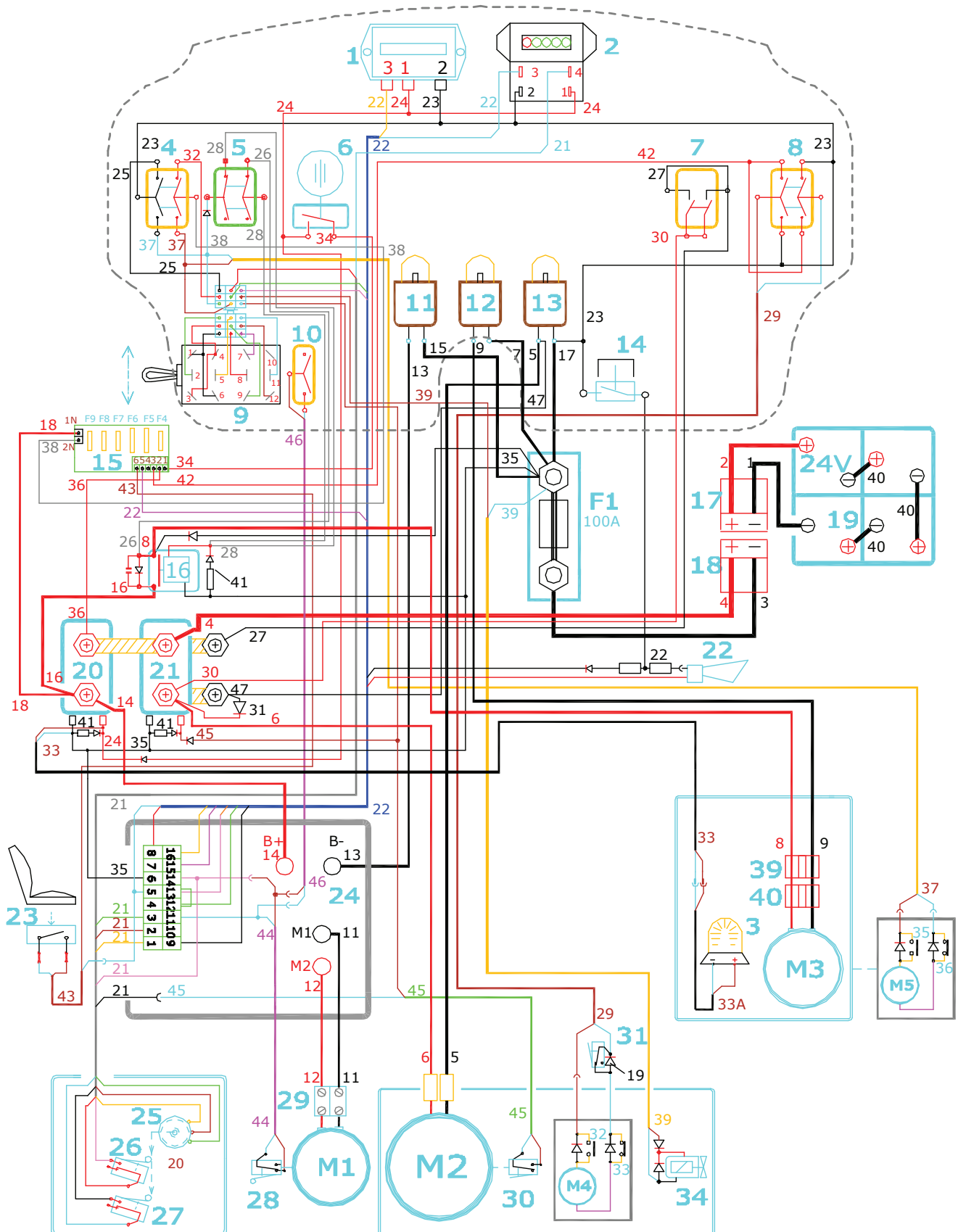


PARTS LISTING

Item#	Part #	Description	Qty.
1	E88144	Pad Holder, 24 Center Lock	1
2	E82367	Center Lock	1
3	E20603	Brush, 24" 0.9 Nylon	1
4	E82457	Brush, 24" Tynex Grit	1
5	E82584	Brush, 24" 0.6 PPL	1
6	E82583	Brush, 24" 0.9 PPL	1
7	E20639	Recovery Tank Cover ASM	1
8	E20213	Traction Motor ASM 24VDC 400W	1

Item#	Part #	Description	Qty.
9	E20213	Traction Motor ASM 24VDC 400W	1
10	E20487	Squeegee Shoe ASM	1
11	E81664	Squeegee Blade, Front	1
12	E81665	Squeegee Blade, Rear, Shore 33	1
13	E88213	Squeegee Blade - Rear Shore 40	1
14	E20156	Squeegee Blade - Rear Shore 33 4mm	1
15	E20155	Squeegee Blade - Rear Shore 50 5mm	1
16	E88214	Squeegee Blade - Rear Shore 40 Poly	1

ELECTRICAL DIAGRAM

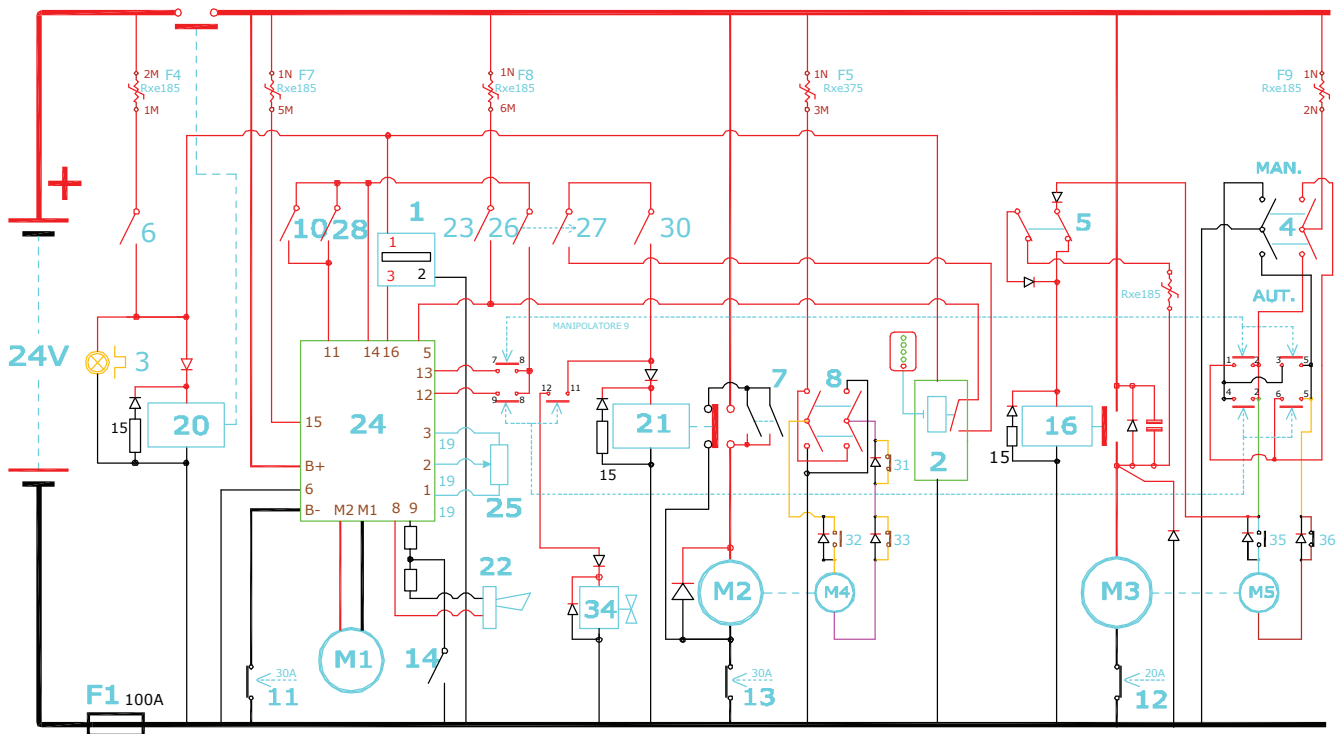


ELECTRICAL LISTING

Item#	Part #	Description
1	E83495	Hour Meter
2	E88022	Battery Check Card 24 Volt
3	E20520	Warning Light
4	E20559	2 Way Rocker Switch ASM - Amber
5	E88202	1 Way Momentary Rocker Switch ASM - Green
6	E83173	Key Switch Contact
7	E82486	1 Way Momentary Rocker Switch ASM - Amber
8	E83162	2 Way Momentary Rocker Switch ASM - Amber
9	E20031	3 Way Paddle Switch
10	E20261	2 Way Rocker Switch ASM - Amber
11	E83952	Circuit Breaker 30A
12	E83959	Circuit Breaker 20A
13	E83952	Circuit Breaker 30A
14	E88145	Momentary Switch
15	E83161	Current Limiter Board
16	E83160	Relay 24VDC 30A
17	E11410	SB175 Red Electrical Connector
20	E83628	Contactactor 24VDC
21	E82321	Contactactor, 24VDC 100A
22	E83177	Horn 24 VDC
23	E83165	Safety Switch
24	E82569	Variable Speed Controller

Item#	Part #	Description
25	E82824	Potentiometer
26	E82270	Micro Switch
27	E82270	Micro Switch
28	E82270	Micro Switch
29	E82567	Terminal Block
30	E83164	Micro Switch
31	E83164	Micro Switch
34	E81795	Solenoid
39	E20402	Electrical Connector 30A
40	E20402	Electrical Connector 30A
F1	E20296	Fuse, 100A
F4	E83910	Current Limiter
F5	E82432	Current Limiter
F7	E83910	Current Limiter
F8	E83910	Current Limiter
F9	E83910	Current Limiter
M1	E88189	Traction Motor 24VDC 400W ASM
M2	E20630	Brush Motor 24VDC 560W
M3	E88200	Vacuum Motor 36VDC 550W
M4	E20534	Actuator ASM 36VDC 30W
M5	E20534	Actuator ASM 36VDC 30W

ELECTRICAL DIAGRAM



PROGRAMMING CONSOLE

CONSOLE SERVICES

The console allows to:

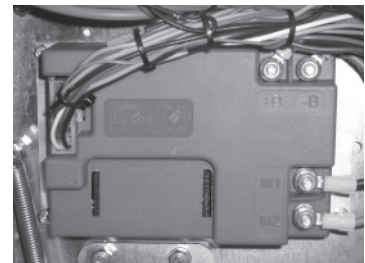
- Program the traction card to have a customized performance of the traction.
- Test and check the electric values and the electric circuit conditions (only the traction part).
- Read the alarm and warnings to help the operator to solve the problems.

CONSOLE USE

The right sequence to connect the console is the following:

1. TURN OFF the machine with the key switch
2. Connect the console in the socket on the traction card
3. TURN ON the machine with the key switch
4. Terminate any program you used with the console and TURN OFF the machine with the key switch
5. Take off the console from its socket

A OPERATION SEQUENCE DIFFERENT FROM THAT SHOWN ABOVE CAN COMPROMISE OR DAMAGE THE TRACTION CARD OR THE CONSOLE



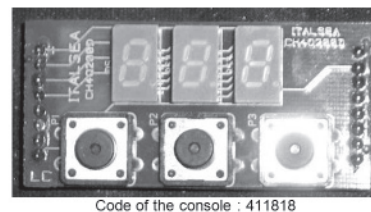
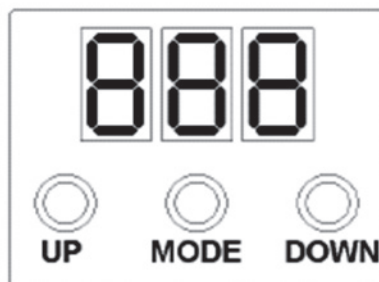
ALARM AND WARNING TABLE

Alarms or warnings stop the machine. The number of the alarm occurred is readable by the console display or counting the flashes of the alarm led. The number of flashes matches with the alarm number (for example 4 flashes are equal to A4).

Message	Purpose	Alarm
A1	FORWARD GEAR TURNED ON DURING SWITCHING	CONTROL THE MICRO FORWARD GEAR
A2	REVERSE GEAR TURNED ON DURING SWITCHING	CONTROLS THE MICRO REVERSE GEAR
A3	TEAR POTENTIOMETER	CONTROL THE CABLES OF THE POTENTIOMETER
A4	POTENTIOMETER NOT SET TO ZERO DURING SWITCHING – SET	THE POSITION OF THE ZERO POINT OF THE POTENTIOMETER
A5	THERMAL PROTECTION (it activates at temperature over 190° F, causing stopping of the machine, until the temperature is below limits – control the value of temperature with the parameter F14=4))	CONTROL THE ABSORPTION OF THE MOTOR – INCREASE THE DISSIPATION
A6	SHORT MOS DURING THE SWITCHING	SWITCH OFF, VERIFY AND SWITCH ON AGAIN. CONNECTIONS. IF IT PERSISTS CHANGE THE OPERATION.
A7	OVER CURRENT LINE 1	CONTROLS THE MOTOR OR – DECREASE THE MAX. CURRENT
A8	OVER CURRENT LINE 2	CONTROLS THE MOTOR OR – DECREASE THE MAX. CURRENT
A9	UNDER VOLTAGE	VOLTAGE < 18V CONTROLS THE CONNECTIONS AND THE SECTION OF THE CABLES OF POWER
A10	OVER VOLTAGE	VOLTAGE > 45 V
A11	AMP PROTECTION	CONTROLS THE CURRENT OF THE MOTOR
A12	DISABLE	CONTROLS THE CONNECTION OF THE PIN 6
A13	ALARM SWITCHING OFF	CONTROLS THE KEY AND THE CORRESPONDENT CONNECTION
A14	ALARM EEPROM	SWITCH OFF AND SWITCH ON AGAIN

PROGRAMMING THE TRACTION CARD

To enter into the programming functions, push “MODE”. Then will appear the text indicating the first parameter (“F0”); pushing “UP” and “DOWN” to select the required parameter. Push “MODE” to enter into the modes of the change and push “UP” and “DOWN” to obtain the required value; when it's selected, confirm another time the new value with “MODE”.



PARAMETERS

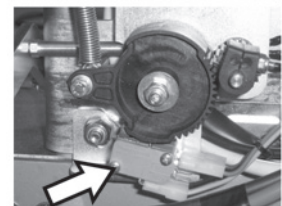
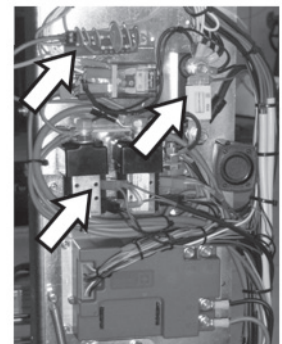
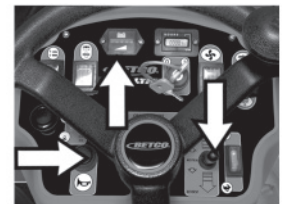
Name	Default	Min	Max	Description
F 0	2	0	2	Parameters of default (F0=2), switch off and switch on again
F 1 *	50	0	999	IGSL
F 2 *	100	0	999	PGSL
F 3 *	70	0	999	IGCL
F 4 *	600	0	999	PGCL
F 5	20	5	50 Ramp	Acceleration (10=1s)
F 6	10	5	50 Ramp	Deceleration when reversing (10=1s)
F 7	8	5	50	Deceleration ramp when stopping (10=1s)
F 8	60	0	60	Limit of current [A] - I _{max}
F 9	60	0	100	Decrease reverse gear [%]
F 10	0	0	2	Refer of speed 0=potentiometer 0-max. with 2 micro of gear 1=potentiometer wig-wag with micro of gear 2=potentiometer wig-wag without micro of gear
F 11 *	----	----	----	LPOT
F 12 *	----	----	----	CPOT
F 13 *	----	----	----	HPOT
F 14	2	0	99	Display view: 0=none 1=motor current [1=1A] 2=motor voltage [10=1V] 3=potentiometer voltage [10=1V] 4=temperature dissipater [°C] 5=battery voltage [10=1V] 9=software version
F 15	5	0	100	Late of release electric brake (10=1s)
F 16	0	0	20	Minimal speed (% respect of the max speed)
F 17	20	0	20	Nominal current of the motor – I _n
F 18	15	0	15	Time ammeter [s] with max current – t
F 19	15	5	50	Dead strip potentiometer (10=0,1V)
F 20	0	0	1	Qualification calibration potentiometer 0=no qualified / 1 = qualified
F 21	0	0	100	Time duration anticrushing (0,1 s)
F 22	100	0	100	Max. speed with forward gear [%]
F 23	1	0	2	Entrance Multimode: 0=inhibited entrance 1=reduction of speed with mando Multimode, 2=reduction of current with mando Multimode
F 24	60	0	100	Max. speed in Multimode [%]
F 25	25	0	40	Max current in Multimode [A]
F 26	0	0	100	RxI [100=10% a 120 A (60 A)]
F 27	0	0	100	Speed in anticrushing [%of speed max] F27=0 DISABLES ANTICRUSHING
F 28	0	0	1	VOLTAGE battery [0 = 24V ; 1 = 36V] SWITCH OFF AND SWITCH ON AGAIN TO CONFIRM
F 29 *	---	---	---	I_TAR
F 30	0	0	1	Entrance key to parameters (*)
F 31	1	0	1	Entrance logic disable [0=N.A. ; 1=N.C.]

POTENTIOMETER CALIBRATION

1. Be sure that the machine is turned off.
2. Connect the programming console to the traction card and then turn on the machine.
3. A check out message (like - -3 or similar will flash few times) will be shown and then "0" will appear.
4. Push the ENTER button, "F1" will appear.
5. Push the "UP" button until "F20" appear and then press the Enter button to be able to change the parameter 20.
6. Push the "UP" button to set the parameter at "1" then confirm the value with the ENTER button.
7. Wait until the console shows "0".
8. Push simultaneously the "UP" and "DOWN" keys and keep them pressed for few seconds.
9. The low flashing segment and the potentiometer voltage value will appear.
10. With pedal in idle condition press "ENTER" to store in the traction card the idle potentiometer value.
11. Then a the high segment will start to flash.
12. Push the accelerator pedal to its end stroke and, keeping it pressed, push the "ENTER" button to store in the traction card the maximum potentiometer value.
13. Wait until on the console "0" appears.
14. Then push the "ENTER" button to let "F1" appear.
15. Push the "UP" button until "F20" appear and then press the "ENTER" button.
16. The console will show the number 1 which is the value of the parameter 20.
17. Push the "DOWN" button to set the parameter 20 to 0 and confirm with the "ENTER" button.
18. Wait until the console shows the number "0".
19. Turn off the machine and restart it.
20. The Accelerator Programming is finished.
21. Be sure to disconnect the console only if the machine is turned off.

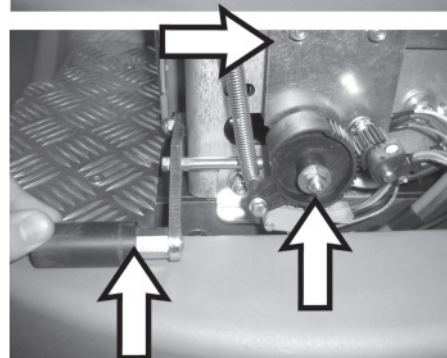
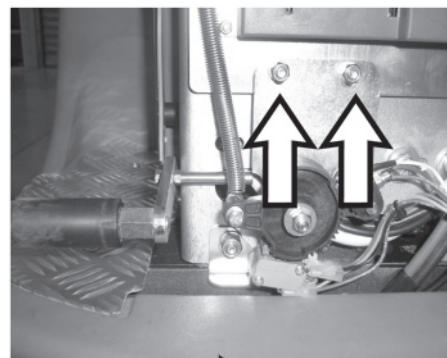
ELECTRIC PLANT TEST

1. Disconnect the supply plug.
2. Check the connections of the battery cables.
3. Check the tightness of power cables, **relays, fuses (RXE)** motors etc.
4. Check the conditions and the right values of **fuses**.
5. Check the functionality of **traction micro switch**.
6. Check that the potentiometer support is adjusted so if the potentiometer is at maximum travel the pedal touches the bottom plate. This is to prevent potentiometer damage.
7. Connect the battery plug.
8. Turn on the machine with the key switch.
9. Check the lamps and the switches:
 - Check the functionality of **battery level LEDS**.
 - Check the functionality of the horn.
 - Check the functionality of **forward back switch**.



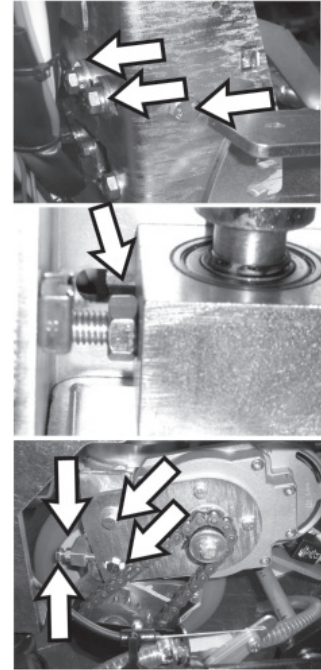
SPEED CONTROL PEDAL ADJUSTMENT

1. Verify that if the potentiometer gears are at the end of stroke, the speed control pedal touches the bottom plate. This is important to avoid the gears breaking down for a too high pressure.
2. If an adjustment is needed:
 - Unscrew the **two M6 nuts** which lock the potentiometer plate.
 - Put the **potentiometer gears** at end of stroke and, using the slot on the plate, move the potentiometer plate to let the **pedal** lay on the bottom plate.
 - Tighten the **two M6 nuts**.



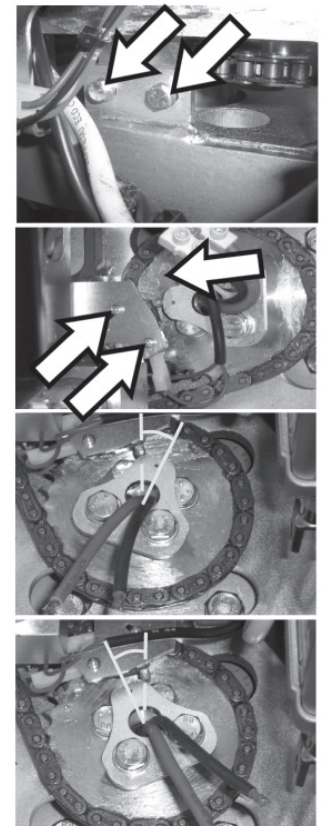
STEERING AND TRACTION ADJUSTMENT

1. Check the tension of the steering chain. If you have to adjust it do as follows:
 - Unscrew the **front M8 screws** which lock the castle wheel support.
 - Unscrew the **M8 nut** on the lateral screw.
 - Screw the **lateral screw M8** on the castle wheel support so the front screws can slide in their slot until the chain reach the correct tension.
 - Tighten the **nut** on the lateral screw.
 - Tighten the front screws to stop the castle wheel support at the right position to prevent accidental movement.
2. If pinion and steering crown are not on the same plane use the screws clearance to align them.
3. Check the traction chain tension. If it is necessary adjust it as follows:
 - Unscrew the **M8 nut**.
 - Unscrew the **M8 screw** which locks the motor support.
 - Screw or unscrew the M8 screw which regulate the chain tension to reach a suitable condition.
 - Tighten the M8 screw and tighten its nut.
 - Be sure that the **M8 screw** is tight.



SPEED REDUCTION SWITCH ADJUSTMENT

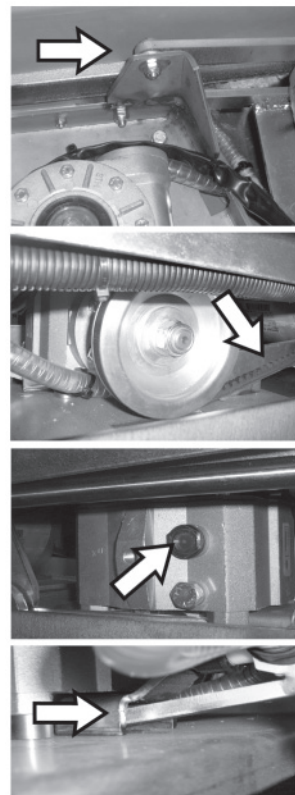
1. Check the functionality of the speed reduction micro switch. If necessary do as follows:
 - Unscrew the **2 cross head screws** which lock the switch.
 - In the slot move the micro switch so when the **roller** of the micro switch is pushed the same has small clearance.
 - Tighten the two cross head screws.
 - Unscrew the **2 M5 screws** of the micro switch support.
 - Check that, rotating the traction wheel, the micro switch activates at the **same angle** turning the wheel on right and left. If this doesn't happen move the micro switch support in the slot on which it is mounted.
 - Tighten the **M5 screws** of the micro switch support.



BRUSH DECK ADJUSTMENT

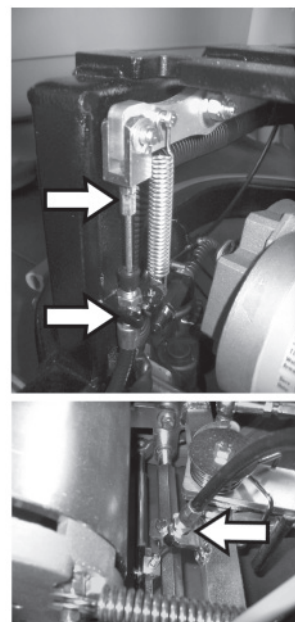
1. Put the machine on a level floor. Check when lowering the brush deck, the front of the brush touches the floor, and the rear edge of the brush is 1/4 inch off the floor.
2. If the brush deck needs adjustment do as follows:
 - Unscrew **the M8 screw** that locks the third point brush deck (right side of the machine).
 - Lock the brush deck at the correct position.
 - Tighten the **M8 screw**.
3. Check the conditions of the **belt**. There is an automatic adjustment of the belt with a spring.
4. Check the oil level of the gear reducers. Verify that the oil level reaches the **red point** in the sight glass. Use oil type SHELL OMALA 460 or equivalent.
5. Check that if the brush deck is lifted up to the maximum height it does not hit the traction wheel motor. When it is lowered the brush touches the floor.
6. If the movement is incorrect do as follows:
 - Lift up the brush deck verifying that the **levers** which lift it up do not hit the **assembly frame** and the brush does not hit the **traction wheel motor** (while turning the steering wheel completely to the left);
 - If necessary unscrew the **nuts** on the tie bar and unscrew and adjust the forks until the brush deck is at the right height. Tighten the nuts.
 - Check that, when the brushes deck is lowered, the **end of travel micro switch**, stops the brush deck when is down.

When the brush deck is totally up, the distance between a knob which secure the splash guard and the floor is 6.6 to 7.0 inches.



BRAKE ADJUSTMENT

1. Check the functionality of brakes for parking and emergency use. If a new adjustment is necessary do as follows:
 - Screw the brake tie rod thimble in the **fork** so 2-3 threads go out.
 - Locate the tie rod connector on its supports so 2-3 threads go out from the **external nuts**.
- Adjust the **lock nut** so that the wheels do not interfere with the brake at the same time.
- Tighten all the lock nuts.
2. Check that the brake pedal stroke stops at the second step and when you lock the pedal it doesn't unlock itself accidentally.



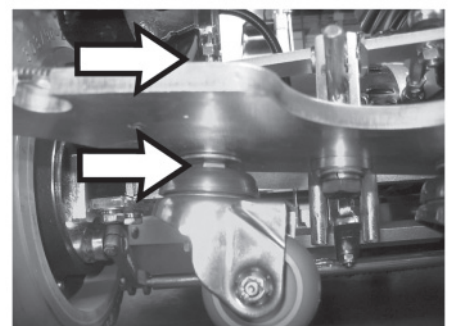
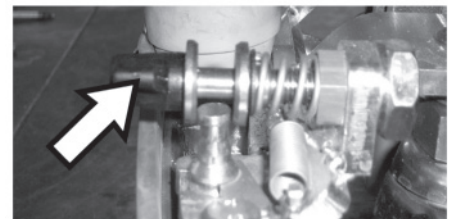
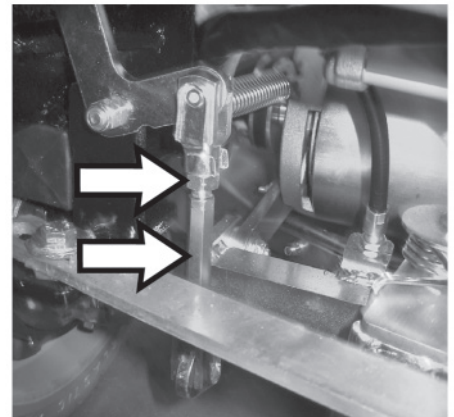
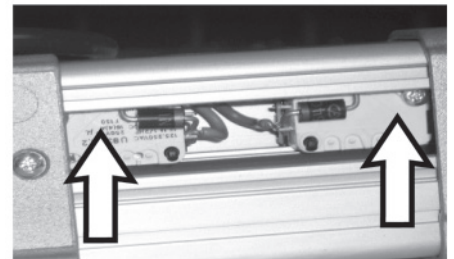
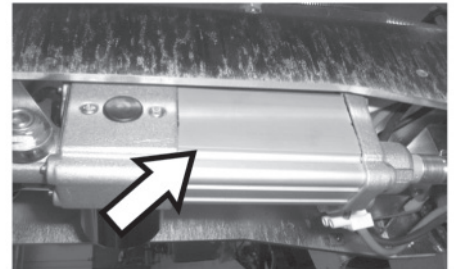
SQUEEGEE ADJUSTMENT

1. Check that squeegee lifts up and lowers correctly.
2. If the squeegee has bad movement, check that the squeegee micro switches are properly adjusted to stroke ends.
3. If necessary adjust the micro switches as follows:
 - Remove the **plastic cover** using a screw driver.
 - Unscrew the **cross head screws** which locates the micro switches.
 - Move the switches so they slide to the end stroke.
 - Tighten the cross head screws to locate the micro switches in the correct position.
4. If the squeegee does not lift up enough do as follows to the **tie rod bar**:
 - Loosen the **nuts**.
 - Adjust the bar until the squeegee blade is roughly 0.2 inches from the floor.
 - Tighten the nuts.
5. Adjust the inclination of the squeegee blades with the **adjustment knob**. Check that the angle between floor and squeegee blade is about 30-45 degrees.

Front blade

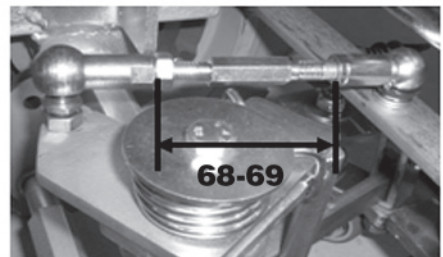
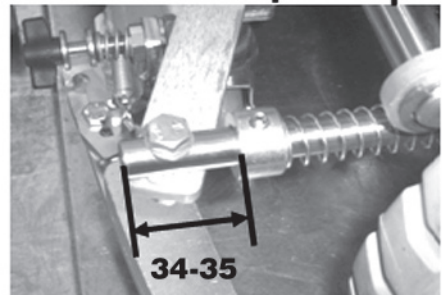
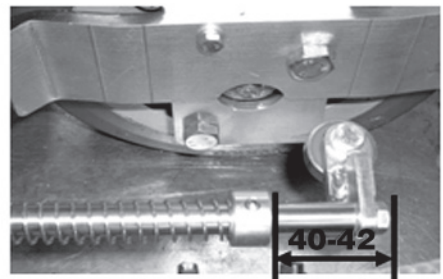
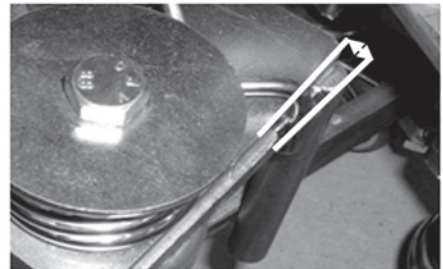
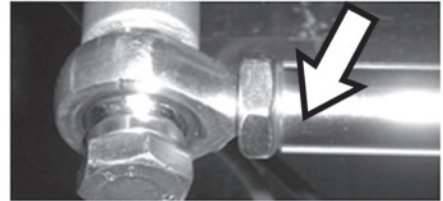
Rear blade

30° - 45°
6. If it is necessary, lift up or lower the squeegee, add or remove washers to lower or increase the inclination.
 - Unscrew the **M10 nut**.
 - Back off the screw that locks the squeegee wheel to the squeegee shoe.
 - Add or remove **washers**.
 - Reattach the squeegee wheel using the screw and the **M10 nut**.



SQUEEGEE LIFT ADJUSTMENT

1. Adjust the **tie rods** to their end points tightening them in completely.
 - Adjust the **tie rod end of stroke bumpers**.
 - Unscrew the **M8 screws**.
 - The end of stroke bumpers have to be located such that when the tie rod is pushed toward the machine the distance between the tie rod and the rear wheel is about 1/8 of an inch.
 - Tighten the **M8 screws**.
2. Check that with the steering turned completely to the left, the traction wheel rotation end stroke cam adjust the squeegee spring has a **gap of about 1/4 inch** between the two blades. If a adjustment is necessary do as follows:
 - Check that in front of the machine the distance between the head of the screw on the tie rod and the spring stop is about **40-42mm**.
 - Check that, at the rear, the distance between the end of the rod and the spring stop is **34-35 mm**.
 - Check that the distance between the ball joints on the tie rod is **68-69 mm**.
3. If the squeegee spring needs to be adjusted do as follows:
 - Unscrew the M8 lock nut on the ball joint on the tie rod.
 - Screw or unscrew the tie rod to achieve the correct adjustment.
 - Tighten the lock nut.

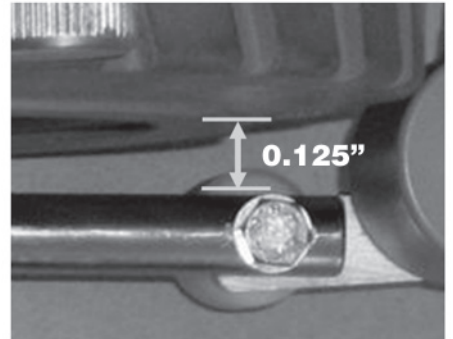
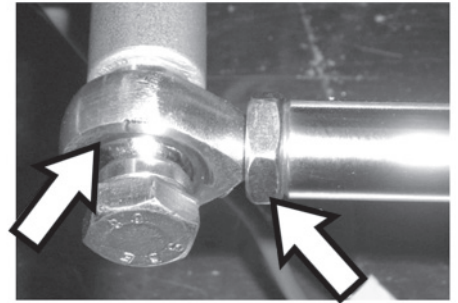
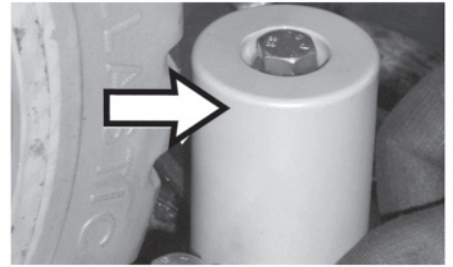


SQUEEGEE LIFT ADJUSTMENT

4. Check that, when the squeegee is completely pushed to the side of the machine, the **bumper wheels** have a distance to the rear wheels of about 0.1 inches. If necessary unscrew the joints of the side bars to increase this distance as follows:

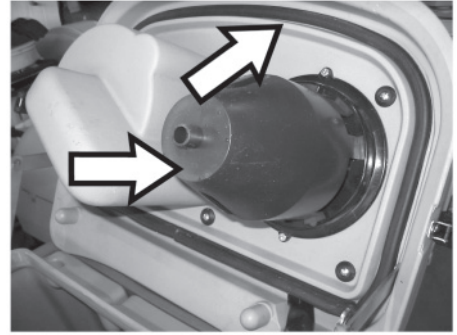
- Loosen the lock nut M10.
- Unscrew the **joint** on the side of the rear wheel so that the bumper wheel does not touch the other.
- Tighten the **lock nut M10**.

5. Check that with squeegee at full travel has a space between the squeegee rod and the rear wheel is about **0.125 inches**.



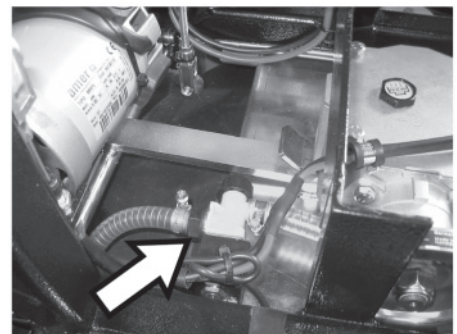
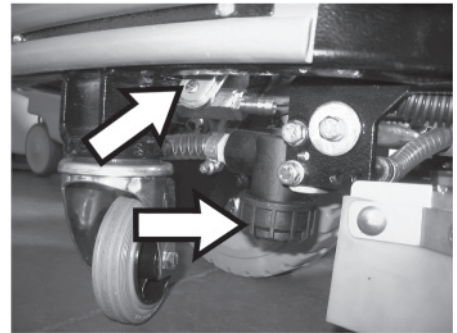
VACUUM TEST

1. Check the cleanliness and the functionality of the **filter – float**.
2. Check the sealing of the **gasket** on the recovery tank.
3. Check the connections of the vacuum hoses and of the squeegee hose.



TEST WATERING SYSTEM

1. Check the cleanliness and the condition of the **solution filter**.
2. Fill the water in the solution tank and check that there are not leaks in the water system.
3. Check the sealing of the hoses, the functionality of the **solenoid valve** and the adjustment of the **water valve**.
4. Fill the recovery tank and check for leaks
5. Check for sealing of the drain hose and the cap.



CHECK LIST

Operational testing of the machine

- ☐ Check the function of switches and signal lamps.
- ☐ Check the function of the operator seat micro switch.
- ☐ Check the function of the speed control pedal.
- ☐ Check the function of the brush deck.
- ☐ Check the function of the brush motor.
- ☐ Check the function of the sideways squeegee movement.
- ☐ Check the function of the solenoid valve.
- ☐ Check the function of squeegee operating modes.
- ☐ Check the function of the vacuum motor.
- ☐ Check the function of the emergency and parking brakes.
- ☐ Check the function of the steering.
- ☐ Check the state of the batteries, terminals and cables.
- ☐ Check the function of the horn.
- ☐ Check the function of flashing lights.

Operational tests of the machine

- ☐ Fill the tanks with water and check for leaks.
- ☐ Check the plumbing system for leaks and that water flows to the brush.
- ☐ Adjust the squeegee inclination and perform an operating test.
- ☐ Adjust the brush deck inclination and perform an operating test.
- ☐ Adjust the side brush deck splash guards and side bars by performing an operating test.
- ☐ Check the function of the parking and emergency brakes:
- ☐ Check forward gear, reverse motion, acceleration and braking.

Final test

- ☐ Check all functions: washing, drying, forward gear, reverse motion and braking.

MAINTENANCE SCHEDULE

	Stealth DRS24BT	DAILY	SUGGESTED HOURS					
	Suggested replacement		50	100	250	400	750	1,000
BATTERIES	Check water level add if necessary	Daily						
	Check cables, connections and plugs.		50					1,000
	Check cleanness of machine battery tray .				250			
ELECTRIC SYSTEM	Check tightness of electric contacts and fuses		50					
	Check state of electric cables crossing the machine					400		
	Check traction card and speed control adjustment on and connections				250			
SOLUTION TANK	Check cleanness of solution filter	Daily				400		
	Check water valves and hoses to the brush deck		50					
	Check all water connection from the tank to the brush				250			
RECOVERY TANK	Check cleanness of the tank	Daily						
	Check filter and float system	Daily						
	Check vacuum and drain hoses	Daily						1,000
	Check vacuum gasket and drain hoses plugs			100				
BRUSH DECK	Check slash guard and right brush inclination		50			400		
	Check tightness and wear of the main belt					400		1,000
	Check brush gear box (oil leakage, vibration, noise)					400		
	Check brush clutch (rust, damaged parts, cracks)				250			
	Check wear of brush or pad driver		50		250			
	Check function of the lifting/lowering actuator					400		
BRUSH MOTOR	Check cleanness of air cooling inlet			100				
	Check carbon brushes					400		1,000
	Check amperage draw and noise level							1,000
VACUUM MOTOR	Check noise level and cleanness of the inlet hose		50					
	Check carbon brushes				250		750	
	Check vacuum performance, replace if necessary							1,000
SQUEEGEE SYSTEM	Check cleanness of the squeegee blades and squeegee adjustment	Daily						
	Check side movement system				250			
	Check wear of rear squeegee blade		50	100				
	Check wear of front squeegee blade			100	250			
	Check squeegee structure and adjustment casters			100				
	Check lifting/lowering actuator and micro switches				250			
TRACTION SYSTEM	Check motor carbon brushes				250		750	
	Check air cooling inlet			100				
	Check noise level and motor structure					400		
	Check fasteners						750	
	Check wear of back wheels					400		
BRAKING SYSTEM	Drive the machine and test the effectiveness of the system			100				
	Check adjustment from the pedal to the wheels				250			
	Check wear of the brake pads					400		
	Check the function of the parking brake				250			
STEERING SYSTEM	Check wear of gears and chain tightness					400		
	Check tightness of steering column and bearings						750	
	Check wear of front wheel					400		
Suggested replacement 								

WEAR ITEMS	
Stealth DRS24BT	
PART NUMBER	DESCRIPTION
E88208	Splash Guard
E88209	Splash Guard
E82260	Carbon Brush
E81664	Squeegee Blade, Front
E81665	Squeegee Blade, Rear, Shore 33
E88213	Squeegee Blade - Rear Shore 40
E88214	Squeegee Blade - Rear Shore 40 Poly
E81973	Carbon Brush
E83256	Traction Wheel 250 OD x 90 W Anti Skid
E88215	Traction Wheel 250 OD x 90 W
E88216	Transport Wheel 300 OD x 90 W Anti Skid
E88217	Transport Wheel 300 OD x 90 W
E88218	Filter Cartridge
E82584	Brush, 24" 0.6 PPL
E82583	Brush, 24" 0.9 PPL
E88144	Pad Holder, 24 Center Lock
E86277	Battery 6V 235AH Wet
E88031	Battery 6V 200AH AGM
E88036	Charger 24VDC 25AMP 120VAC EXT AGM WET RSB175

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.

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.

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.

- DM Series Vacuums: #85506-00, #85507-00
- Bac Pac Lite Vacuum: #85903-00
- FiberPRO® Floor Dryer: #85507-00
- WORKMAN™ Series Vacuums: #85024-00, #85025-00, #85026-00, #85027-00
- CV100T Vacuum: #85023-00
- All Tools and Accessories
- All Battery Chargers
- All 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 from date of sale to the original purchaser. A maximum 60 mile round trip at 44 cents per mile will be allowed for warranty consideration.

Propane Machine Warranty:

Honda engines are warranted by Honda for a period of 2 years against manufacturer defects. Kawasaki engines are warranted by Kawasaki 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 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)

