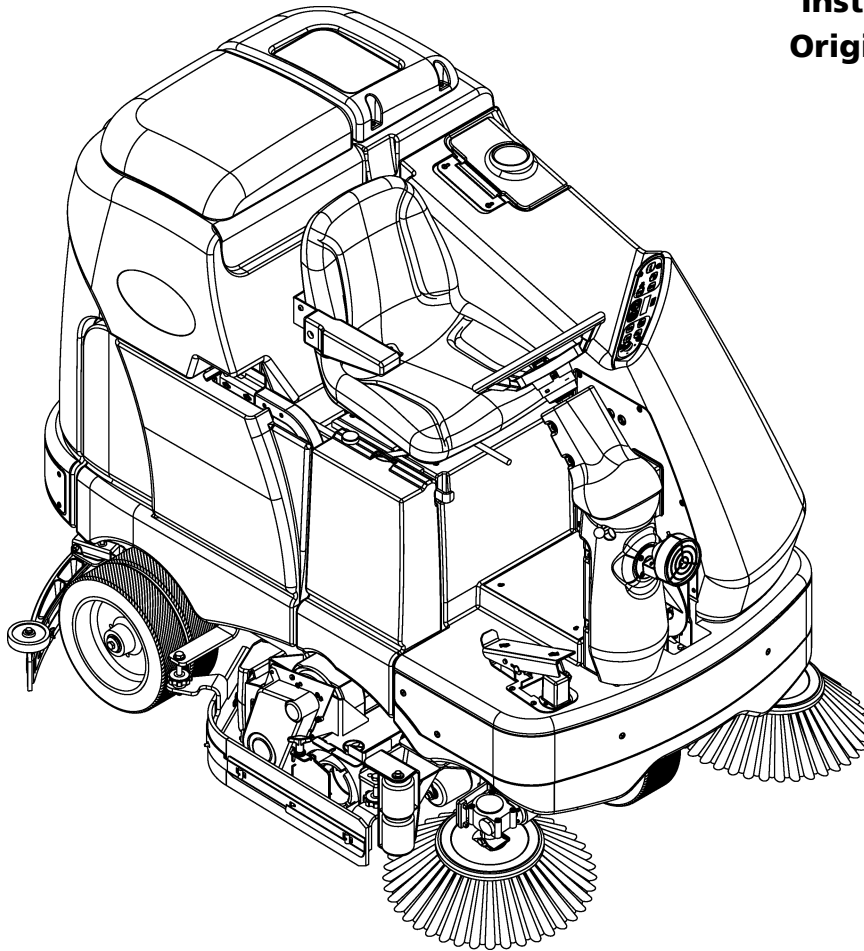


BR 1100S SBG SPECIAL



**Instructions For Use
Original Instructions**



MODEL: 56380640

**7/10
FORM NO. 56091001**

A-2 / ENGLISH

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INTRODUCTION

This manual will help you get the most from your Nilfisk Rider Scrubber. Read it thoroughly before operating the machine.

Note: Bold numbers in parentheses indicate an item illustrated on pages A-4 – A-6.

This product is intended for commercial use only.

PARTS AND SERVICE

Repairs, when required, should be performed by your Authorized Nilfisk Service Center, who employs factory trained service personnel, and maintains an inventory of Nilfisk original replacement parts and accessories.

Call the NILFISK DEALER named below for repair parts or service. Please specify the Model and Serial Number when discussing your machine.

(Dealer, affix service sticker here.)

NAME PLATE

The Model Number and Serial Number of your machine are shown on the Nameplate on the machine. This information is needed when ordering repair parts for the machine. Use the space below to note the Model Number and Serial Number of your machine for future reference.

MODEL NUMBER _____

SERIAL NUMBER _____

UNCRATE THE MACHINE

When the machine is delivered, carefully inspect the shipping packaging and the machine for damage. If damage is evident, save the shipping carton (if applicable) so that it can be inspected. Contact the Nilfisk Customer Service Department immediately to file a freight damage claim. Refer to the unpacking instruction sheet included with the machine to remove the machine from the pallet.

CAUTIONS AND WARNINGS

SYMBOLS

Nilfisk uses the symbols below to signal potentially dangerous conditions. Always read this information carefully and take the necessary steps to protect personnel and property.

DANGER!

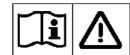
Is used to warn of immediate hazards that will cause severe personal injury or death.

WARNING!

Is used to call attention to a situation that could cause severe personal injury.

CAUTION!

Is used to call attention to a situation that could cause minor personal injury or damage to the machine or other property.



Read all instructions before using.

GENERAL SAFETY INSTRUCTIONS

Specific Cautions and Warnings are included to warn you of potential danger of machine damage or bodily harm.

WARNING!

- This machine shall be used only by properly trained and authorized persons.
- While on ramps or inclines, avoid sudden stops when loaded. Avoid abrupt sharp turns. Use low speed down hills. Clean only while ascending (driving up) the ramp.
- Keep sparks, flame and smoking materials away from batteries. Explosive gases are vented during normal operation.
- Charging the batteries produces highly explosive hydrogen gas. Charge batteries only in well-ventilated areas, away from open flame. Do not smoke while charging the batteries.
- Remove all jewelry when working near electrical components.
- Turn the key switch off (O) and disconnect the batteries before servicing electrical components.
- Never work under a machine without safety blocks or stands to support the machine.
- Do not dispense flammable cleaning agents, operate the machine on or near these agents, or operate in areas where flammable liquids exist.
- Do not clean this machine with a pressure washer.
- Only use the brushes provided with the appliance or those specified in the instruction manual. The use of other brushes may impair safety.

CAUTION!

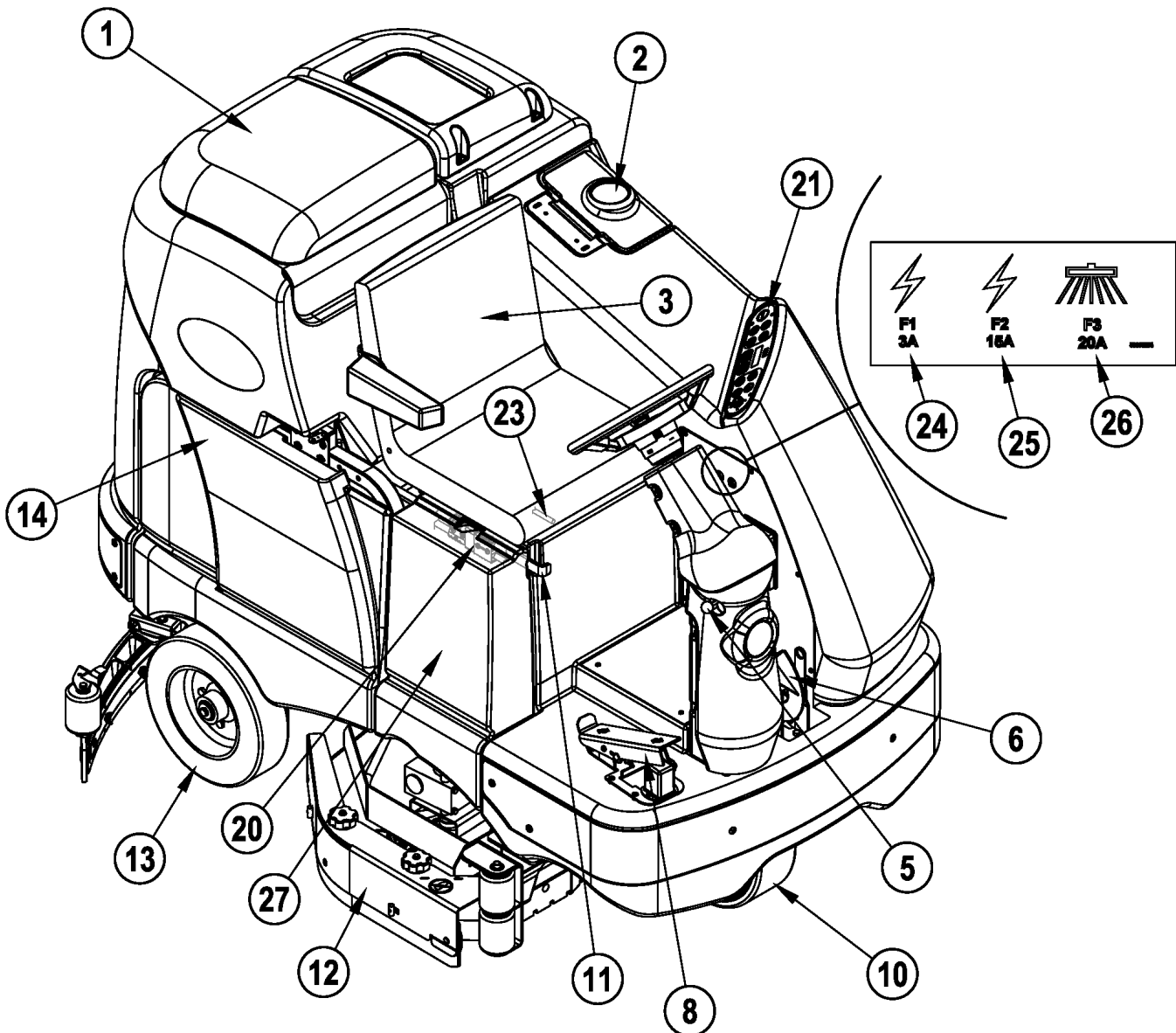
- This machine is not approved for use on public paths or roads.
- This machine is not suitable for picking up hazardous dust.
- Do not use scarifier discs and grinding stones. Nilfisk will not be held responsible for any damage to floor surfaces caused by scarifiers or grinding stones (can also cause damage to the brush drive system).
- When operating this machine, ensure that third parties, particularly children, are not endangered.
- Before performing any service function, carefully read all instructions pertaining to that function.
- Do not leave the machine unattended without first turning the key switch off (O), removing the key and applying the parking brake.
- Turn the key switch off (O) and remove the key, before changing the brushes, and before opening any access panels.
- Take precautions to prevent hair, jewelry, or loose clothing from becoming caught in moving parts.
- Use caution when moving this machine in below freezing temperature conditions. Any water in the solution, recovery or detergent tanks or in the hose lines could freeze, causing damage to valves and fittings. Flush with windshield washer fluid.
- The batteries must be removed from the machine before the machine is scrapped. The disposal of the batteries should be safely done in accordance with your local environmental regulations.
- Do not use on surfaces having a gradient exceeding that marked on the machine.
- All doors and covers are to be positioned as indicated in the instruction manual before using the machine.

SAVE THESE INSTRUCTIONS

KNOW YOUR MACHINE

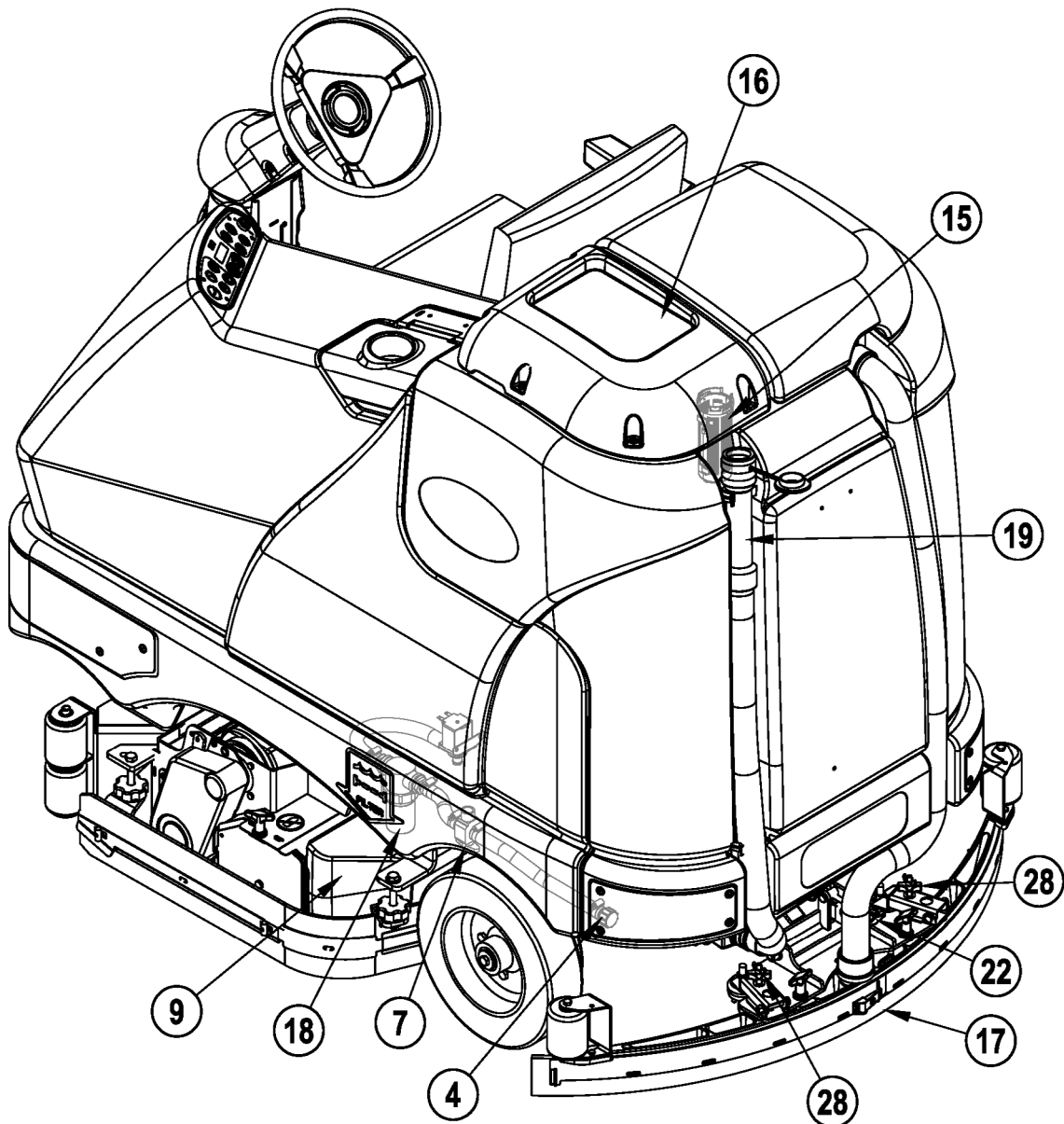
As you read this manual, you will occasionally run across a bold number or letter in parentheses - example: **(2)**. These numbers refer to an item shown on these pages unless otherwise noted. Refer back to these pages whenever necessary to pinpoint the location of an item mentioned in the text. **NOTE:** Refer to the service manual for detailed explanations of each item illustrated on the next 3 pages.

- 1 Recovery Tank Cover
- 2 Solution Tank Fill Cover
- 3 Operator's Seat
- 4 Solution Tank Drain Hose
- 5 Steering Wheel Tilt Adjust Knob
- 6 Brake Pedal / Parking Brake
- 7 Solution Shut off Valve
- 8 Drive Pedal, Directional/Speed
- 9 Hopper (cylindrical models only)
- 10 Drive and Steer Wheel
- 11 Emergency Stop Switch / Battery Disconnect
- 12 Scrub Deck
- 13 Rear Wheel
- 14 Battery Compartment (under recovery tank)



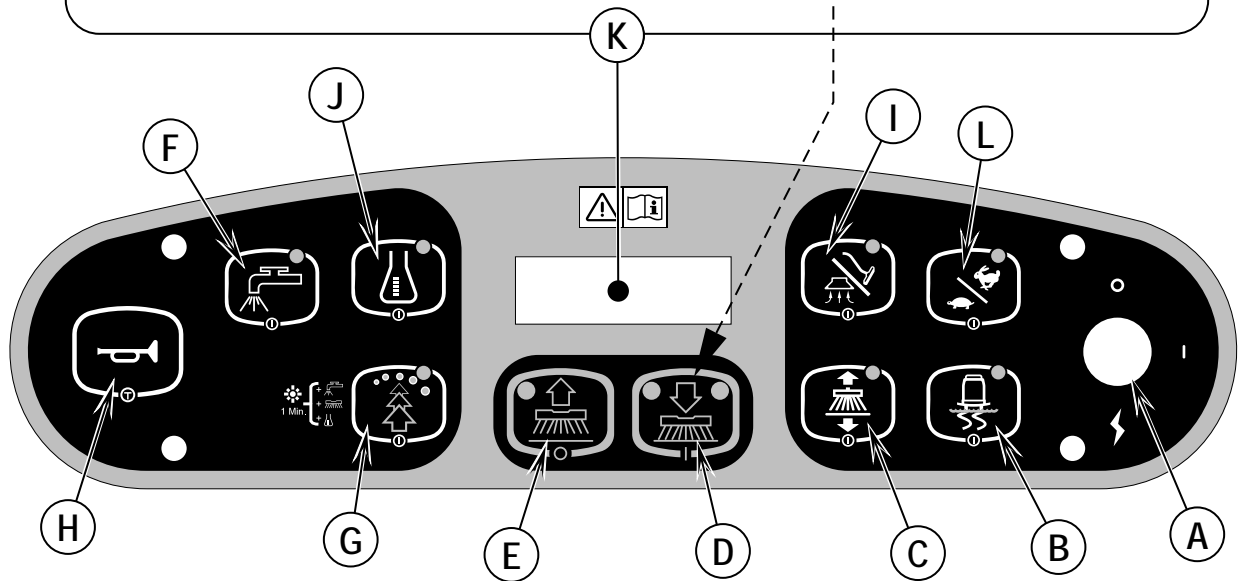
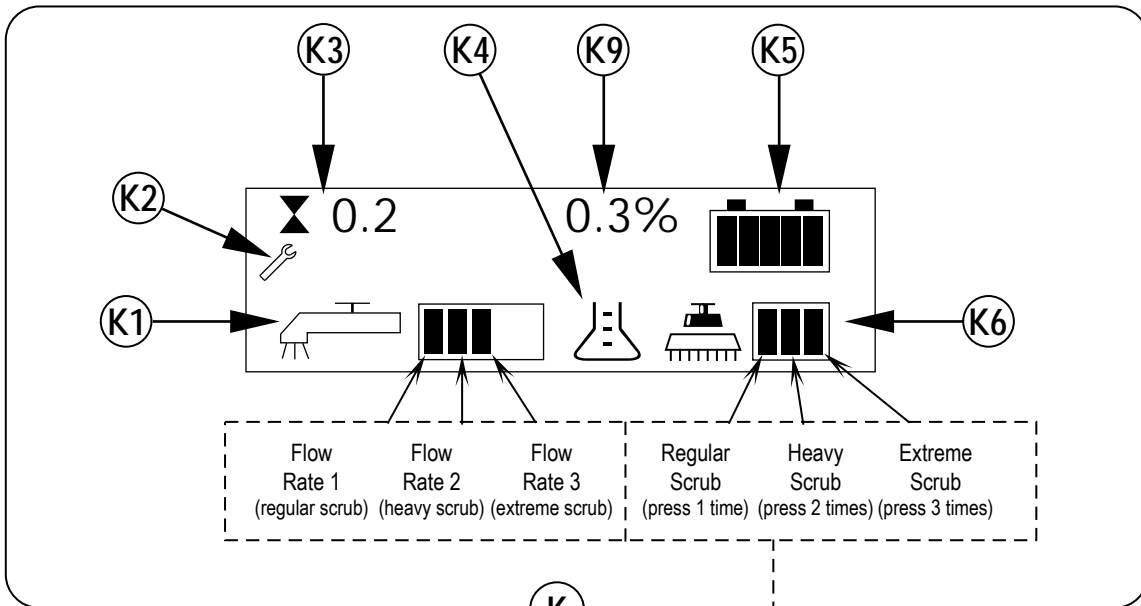
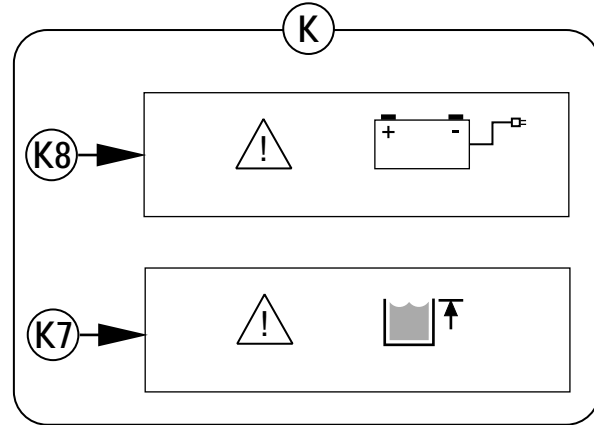
KNOW YOUR MACHINE

- 15 Recovery Tank Shutoff Float
- 16 Vacuum Motor Filter Housing
- 17 Squeegee Assembly
- 18 Solution Filter
- 19 Recovery Tank Drain Hose
- 20 Machine Battery Connector
- 21 Control Panel
- 22 Squeegee Tilt Adjust Knob
- 23 Operator Seat Adjustment Lever
- 24 Control Circuit Breaker
- 25 Auxiliary Circuit Breaker
- 26 Side Broom Motor Circuit Breaker
- 27 Side Access Panel
- 28 Squeegee Height Adjust Knob



CONTROL PANEL

- A Key Switch
- B Traction Control Switch
- C Side Broom Switch (cylindrical models only)
- D Scrub ON / Scrub Mode Select
- E Scrub OFF
- F Solution Switch
- G EcoFlex™ Switch
- H Horn
- I Vacuum / Wand Switch
- J Detergent System (EcoFlex models only)
- K Display
- K1 Solution Flow Indicator
- K2 Fault Indicator
- K3 Hour Meter
- K4 Detergent Indicator (if so equipped)
- K5 Battery Indicator
- K6 Scrub Pressure Indicator
- K7 Recovery Tank FULL Indicator
- K8 Battery Low Indicator
- K9 Detergent Percentage Indicator
- L Scrub Speed Switch



INSTALL THE BATTERIES

WARNING!

Use extreme caution when working with batteries. Sulfuric acid in batteries can cause severe injury if allowed to contact the skin or eyes. Explosive hydrogen gas is vented from the batteries through openings in the battery caps. This gas can be ignited by any electrical arc, spark or flame. Do not install any lead-acid battery in a sealed container or enclosure. Hydrogen gas from overcharging must be allowed to escape.

When Servicing Batteries...

- * Remove all jewelry
- * Do not smoke
- * Wear safety glasses, rubber gloves and a rubber apron
- * Work in a well-ventilated area
- * Do not allow tools to touch more than one battery terminal at a time
- * ALWAYS disconnect the negative (ground) cable first when replacing batteries to prevent sparks.
- * ALWAYS connect the negative cable last when installing batteries.

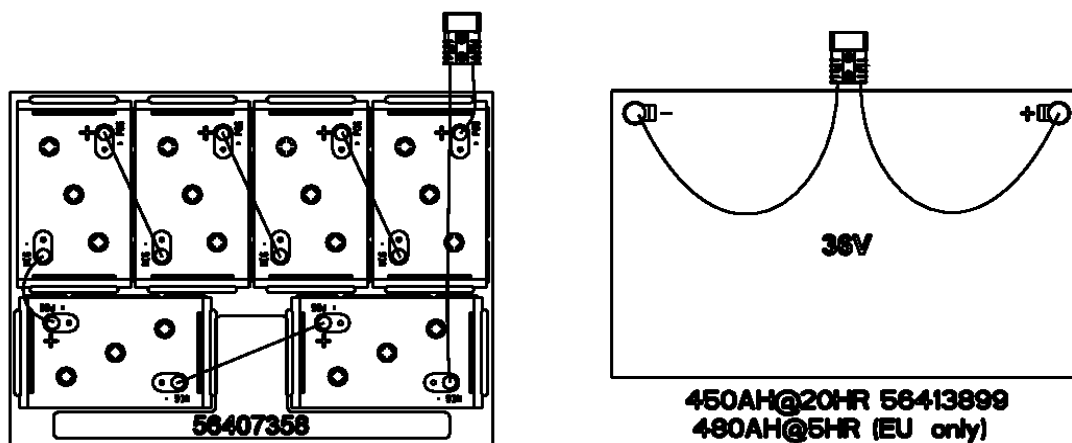
CAUTION!

Electrical components in this machine can be severely damaged if the batteries are not installed and connected properly. Batteries should be installed by Nilfisk or by a qualified electrician.

- 1 Remove the batteries from their shipping crate and carefully inspect them for cracks or other damage. If damage is evident, contact the carrier that delivered them or the battery manufacturer to file a damage claim.
- 2 Turn the Master Key Switch (A) OFF and remove the key.
- 3 Remove the recovery tank from the machine. **NOTE:** Disconnect the tether and the vacuum motor wiring and lift the tank straight up and off the machine.
- 4 Your machine comes from the factory with enough battery cables to install six 6 volt batteries. Using at least (2) people and an appropriate lifting strap, carefully lift the batteries into the battery compartment and arrange them exactly as shown in **FIGURE 1**. Secure the batteries as close to the front of the machine as possible. If installing a mono-block battery use an overhead hoist.
- 5 Install the battery cables as shown. Position the cables so the battery caps can be easily removed for battery service.
- 6 Carefully tighten the nut in each battery terminal until the terminal will not turn. Do not over-tighten the terminals, or they will be very difficult to remove for future service.
- 7 Coat the terminals with spray-on battery terminal coating (available at most auto parts stores).
- 8 Put one of the black rubber boots over each of the terminals and connect the Battery Pack Connector (20).

FIGURE 1

**450AH @ 20HR RATE
(6) MAX 1300LB/590KG**



58407358
395AH@20HR 56388582

450AH@20HR 56413899
480AH@5HR (EU only)



56015272

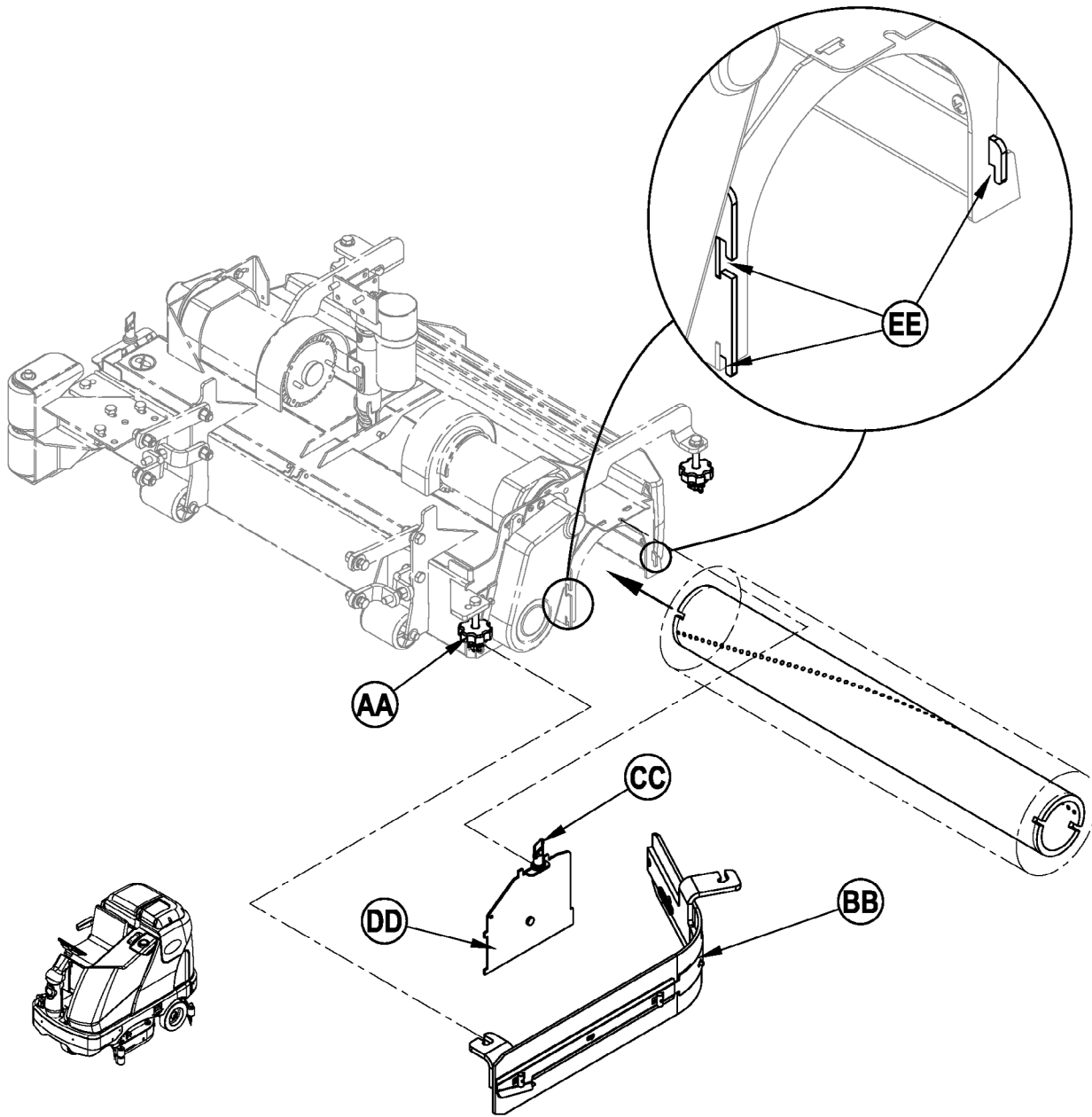
INSTALL THE BRUSHES (CYLINDRICAL SYSTEM)

CAUTION!

Turn the key switch off (O) and remove the key, before changing the brushes, and before opening any access panels.

- 1 Make sure the Scrub Deck is in the RAISED position. Make sure the Key Switch (A) is off (O).
- 2 **See Figure 2.** Remove both side skirt assemblies. **NOTE:** The skirts are held in place by two large Knobs (AA). Loosen these knobs, slide the Skirt Assemblies (BB) forward slightly and then off of the Scrub Deck.
- 3 Loosen the Black Knobs (CC) on top of the Idler Assemblies (DD) until they drop down far enough to disengage from the Notches (EE) and remove.
- 4 Slide the brush into the housing, lift slightly, push and turn until it seats. Re-install the Idler Assemblies (DD) and Skirt Assemblies (BB).

FIGURE 2



FILLING THE SOLUTION TANK

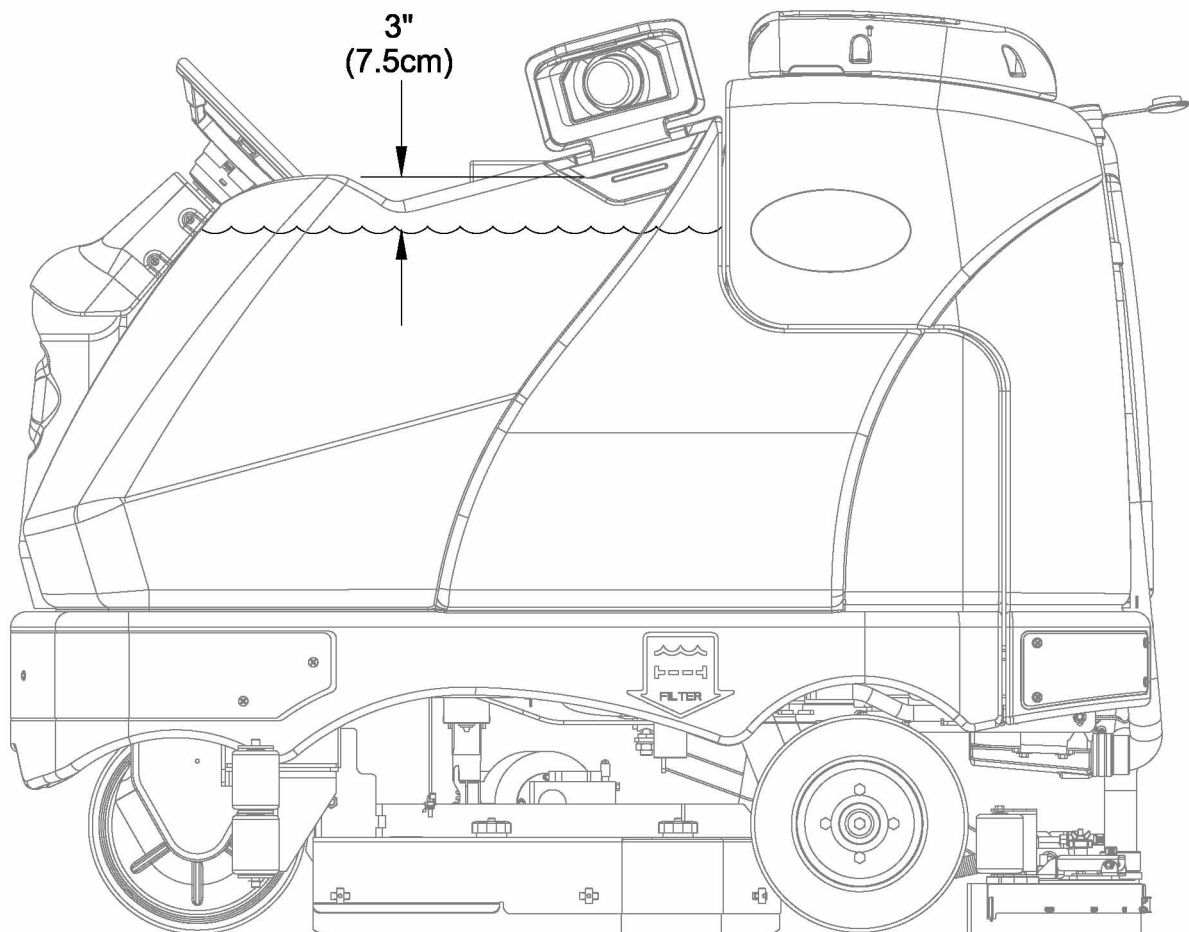
See Figure 3. Fill the solution tank with a maximum of 70 gallons (264 Liters) of cleaning solution. Do not fill the solution tank above 7.5 cm (3 inches) from the bottom of the Solution Fill (2). The solution should be a mixture of water and the proper cleaning chemical for the job. Always follow the dilution instructions on the chemical container label. **NOTE:** EcoFlex machines can either be used conventionally with detergent mixed in the tank or the detergent dispensing system can be used. When using the detergent dispensing do not mix detergent in the tank, plain water should be used.



CAUTION!

Use only low-foaming, non-flammable liquid detergents intended for machine application. Water temperature should not exceed 130 degrees fahrenheit (54.4 degrees celsius)

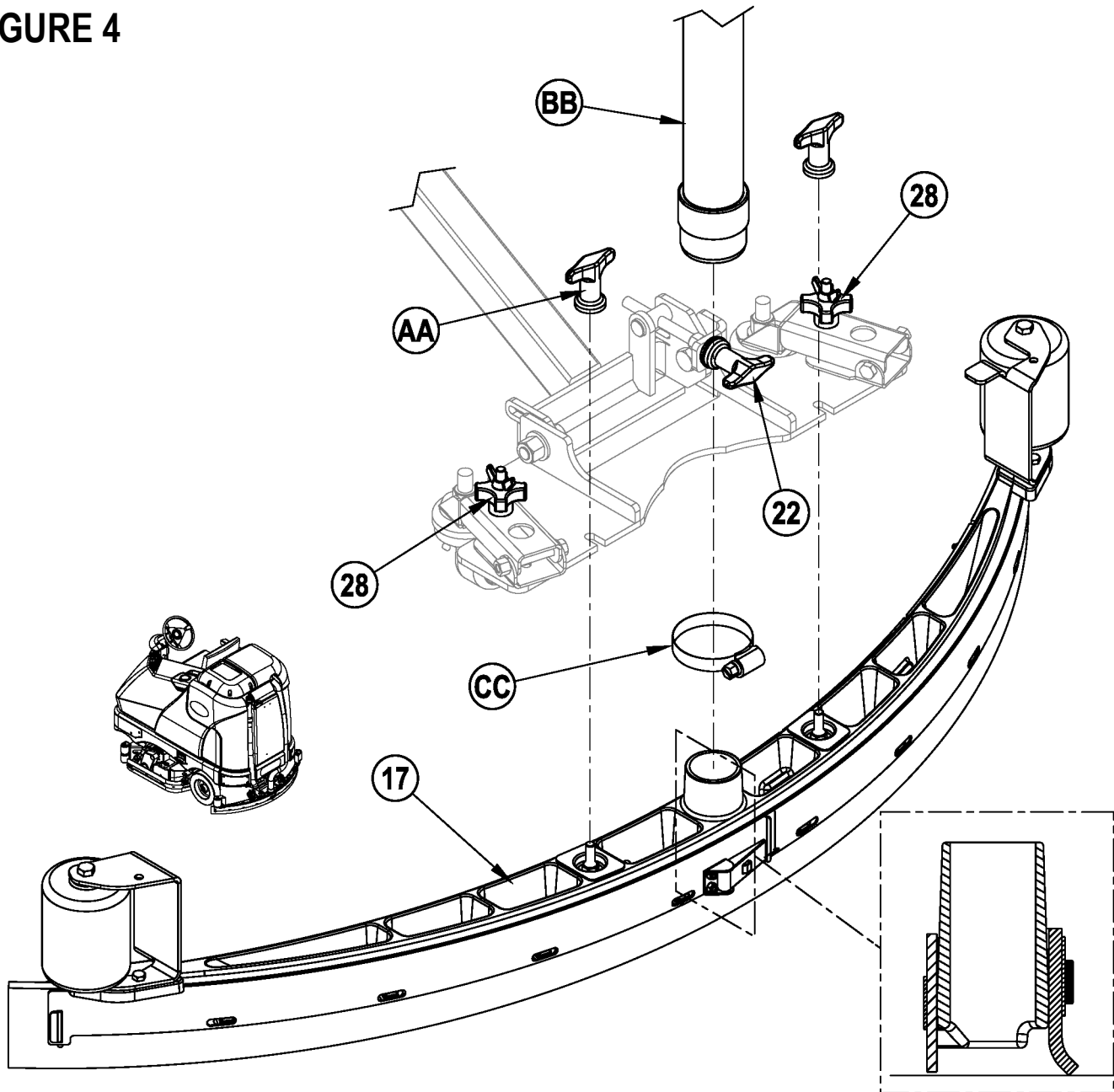
FIGURE 3



SQUEEGEE INSTALLATION

- 1 See Figure 4. Slide the Squeegee Assembly (17) onto the squeegee mount bracket and tighten the Squeegee Mount Thumb Nuts (AA).
- 2 Connect the Recovery Hose (BB) to the squeegee inlet using Hose Clamp (CC).
- 3 Lower the squeegee, move the machine ahead slightly and adjust the squeegee tilt and height using the Squeegee Tilt Adjust Knob (22) and Squeegee Height Adjust Knobs (28) so that the rear squeegee blade touches the floor evenly across its entire width and is bent over slightly as shown in the squeegee cross section.

FIGURE 4



DETERGENT SYSTEM PREPARATION AND USE (ECOFLEX MODELS ONLY)

COMMON INSTRUCTIONS:

Pressing and releasing the Detergent Switch (**J**) while the solution system is active will cause the detergent system to alternately turn on and off. The system should be purged of previous detergent when switching to a different detergent. **SERVICE NOTE:** Move machine over floor drain before purging because a small amount of detergent will be dispensed in the process.

To Purge When Changing Chemicals:

- 1 Disconnect and remove the detergent cartridge.
- 2 Turn the Key Switch (**A**) ON. Press and hold the Solution Switch (**F**) and the Detergent Switch (**J**) down for 3 seconds. **NOTE:** Once activated the purge process takes 10 seconds. See illustration on next page for Detergent System indicators. Normally one purge cycle is adequate to purge the system.

To Purge Weekly:

- 1 Disconnect and remove the detergent cartridge. Install and connect a Cartridge filled with clean water.
- 2 Turn the Key Switch (**A**) ON. Press and hold Solution Switch (**F**) and the Detergent Switch (**J**) down for 3 seconds. **NOTE:** Once activated the purge process takes 10 seconds. See illustration on next page for Detergent System indicators. Normally one purge cycle is adequate to purge the system.

Detergent Percentage:

- 1 The detergent percentage default is 0.25%. To change the percentage, the detergent system must be OFF, then press and hold the Detergent ON/OFF Switch (**J**) for 2 seconds. The detergent indicator will flash and each press of the switch will cycle through the available percentages (3%, 2%, 1.5%, 1%, 0.8%, 0.66%, 0.5%, 0.4%, 0.3%, 0.25%). Once the desired percentage is displayed on the screen (**K9**), stop and it will lock in after 5 seconds.

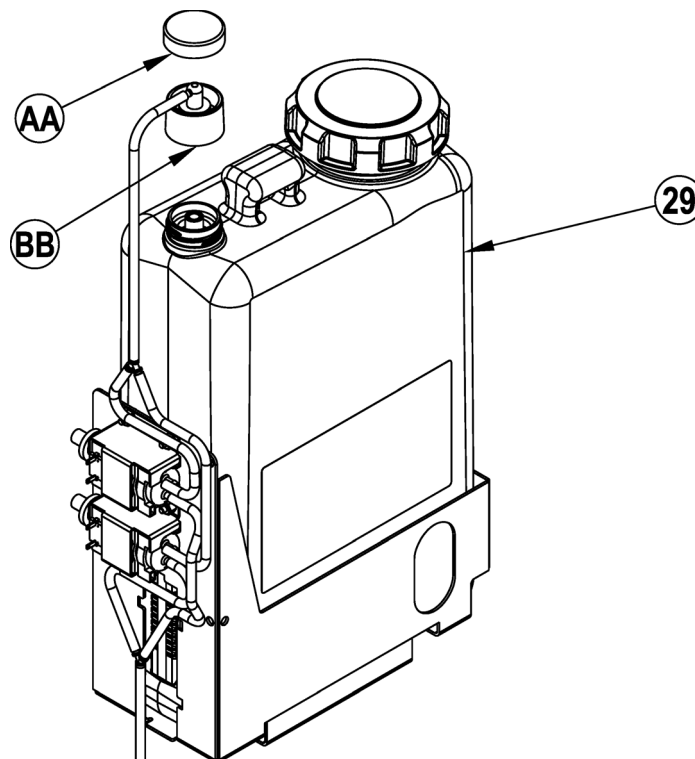
CARTRIDGE INSTRUCTIONS:

The Detergent Cartridge (**29**) is located behind the Side Access Panel (**27**). Fill the detergent cartridge with a maximum of 2.2 gallons (8.32 Liters) of detergent.

SERVICE NOTE: Remove the detergent cartridge from the detergent box prior to filling to avoid spilling detergent on the machine.

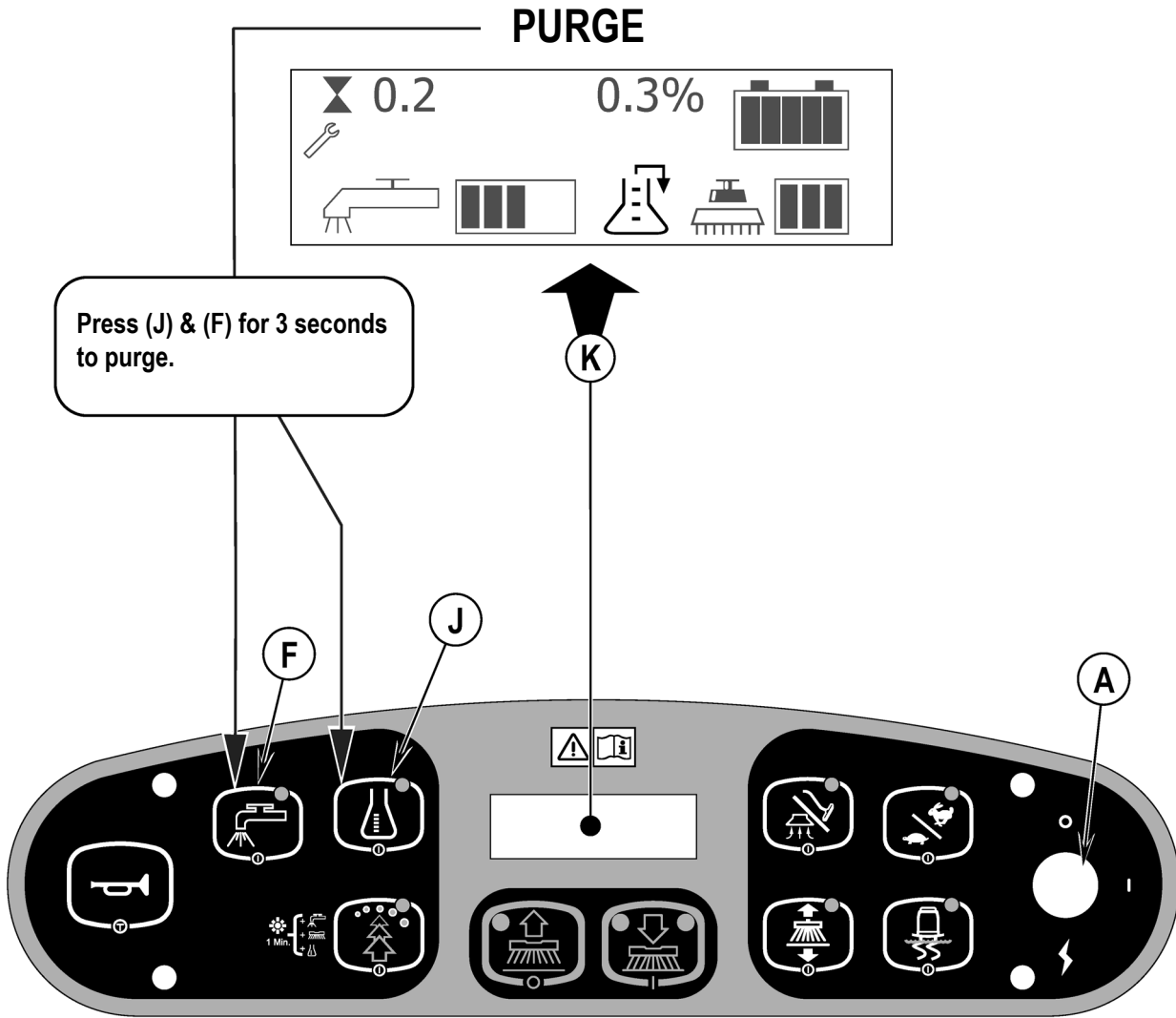
It is recommended that a separate cartridge be used for each detergent you plan to use. The detergent cartridges have a white decal on them so you can write the detergent name on each cartridge to avoid mixing them up. The system should be purged of previous detergent when switching to a different detergent. When installing a new cartridge, remove the Cap (**AA**) and place the cartridge in the detergent box. Install the Dry Break Cap (**BB**) and detergent hose as shown.

FIGURE 5



DETERGENT SYSTEM PREPARATION AND USE (ECOFLEX MODELS ONLY)

FIGURE 6



OPERATING THE MACHINE



WARNING!

Be sure you understand the operator controls and their functions.

While on ramps or inclines, avoid sudden stops when loaded. Avoid abrupt sharp turns. Use low speed down hills. Clean only while ascending (driving up) the ramp.

To Scrub...

Follow the instructions in preparing the machine for use section of this manual.

- 1 **See Figure 7.** While seated on the machine, adjust the seat and steering wheel to a comfortable operating position using the adjustment controls (23) and (5).
- 2 Turn the Master Key Switch (A) ON (I). This will display the control panel indicator lights. Reference the Battery Condition Indicator (K5) and Hour Meter (K3) before proceeding.
- 3 Release the Parking Brake (6). To transport the machine to the work area, apply even pressure with your foot on the front of the Drive Pedal (8) to go forward or the rear of the pedal for reverse. Vary the pressure on the foot pedal to obtain the desired speed.
- 4 Press the Solution Switch (F) and hold for 5 seconds to pre-wet the floor. **NOTE:** This will help prevent scarring of the floor surface when starting to scrub with dry brushes. This must be done prior to pressing the Scrub ON Switch (D).
- 5 Press the Scrub ON Switch (D) once for Regular Scrub, twice for Heavy Scrub or three times for Extreme Scrub mode. Both the solution flow and detergent (EcoFlex models) flow have 3 presets that coincide with the 3 scrub modes (see Control Panel).
NOTE: There is a solution flow rate override function if you wish to increase solution flow without increasing scrub pressure. Hold the Solution Switch (F) for 3 seconds (solution indicator will start flashing) and then let go. You then have 3 seconds to set a different flow rate by simply pressing the Solution Switch (F) repeatedly until the Solution Flow Indicator (K1) shows the rate you desire (1-5 / see Control Panel). Any subsequent scrub pressure adjustments will reset the solution flow rate to default.
NOTE: The scrub, solution, vacuum, detergent (EcoFlex models) and side broom (cylindrical models) systems are automatically enabled when the Scrub ON Switch (D) is pressed. Any individual system can be turned OFF or back ON by simply pressing its switch at any time during scrubbing.
- 6 When the Scrub ON Switch (D) is selected, the brushes, squeegee and side brooms (cylindrical models) are automatically lowered to the floor. The scrub, solution, vacuum, detergent (EcoFlex models) and side broom (cylindrical models) systems all start when the Drive Pedal (8) is activated.
NOTE: When operating the machine in reverse the squeegee automatically raises.
- 7 Begin scrubbing by driving the machine forward in a straight line at a normal walking speed and overlap each path by 2-3 inches (50-75 mm). Adjust the machine speed and solution flow when necessary according to the condition of the floor.
NOTE: The maximum scrub speed can be increased by pressing the Scrub Speed Switch (L). The normal max scrub speed is 80% of transport speed. Pressing this switch increases it to 100% of transport speed.
If scrubbing on a smooth floor surface or double-scrubbing turning on the Traction Control™ button (B) regulates the drive wheel torque providing increased control and enhanced traction on the floor.



CAUTION!

To avoid damaging the floor, keep the machine moving while the brushes are turning.

- 8 When scrubbing, check behind the machine occasionally to see that all of the waste water is being picked up. If there is water trailing the machine, you may be dispensing too much solution, the recovery tank may be full, or the squeegee tool may require adjustment.
- 9 The machine defaults to the EcoFlex cleaning mode (EcoFlex Switch Indicator is lit) conserving solution and detergent. Press the EcoFlex Switch (G) to override the EcoFlex cleaning mode and temporarily increase scrub pressure, solution flow and the detergent percentage. This will cause the indicator to flash for one minute, solution flow rate will increase to the next level, scrub pressure will increase to the next level and the detergent percentage will increase to the next larger percentage.
- 10 For extremely dirty floors, a one-pass scrubbing operation may not be satisfactory and a "double-scrub" operation may be required. This operation is the same as a one-pass scrubbing except on the first pass the squeegee is in the up position (press the Vacuum/Wand Switch (I) to raise the squeegee). This allows the cleaning solution to remain on the floor to work longer. The final pass is made over the same area, with the squeegee lowered to pick up the accumulated solution.
- 11 The recovery tank has a shut-off float (15) that causes ALL systems to turn OFF except the drive system when the recovery tank is full. When this float is activated, the recovery tank must be emptied. The machine will not pick up water or scrub with the float activated.
NOTE: All other indicators vanish and a "Recovery Tank FULL" Indicator (K7) appears on the Display Panel when the float is activated. If the control repeatedly gives a full indication when the tank is not full, the automatic shut-off feature can be disabled, have a qualified service technician refer to the service manual to perform this function.
- 12 When the operator wants to stop scrubbing or the recovery tank is full, press the Scrub OFF Switch (E) once. This will automatically stop the scrub brushes and solution flow and the scrub deck will raise up. The squeegee will raise up after a brief delay and the vacuum will stop after a brief delay (this is to allow any remaining water to be picked up without turning the vacuum back on).
- 13 Drive the machine to a designated waste water "DISPOSAL SITE" and empty the recovery tank. To empty, pull the Drain Hose (19) from its rear storage area, then remove the plug (hold the end of the hose above the water level in the tank to avoid sudden, uncontrolled flow of waste water). Refill the solution tank and continue scrubbing.

NOTE: Make sure the Recovery Tank Cover (1) and the Recovery Tank Drain Hose (19) cap are properly seated or the machine will not pick-up water correctly.

When the batteries require recharging the Battery LOW Indicator (K8) will come on, the scrub brushes and solution flow will stop and the scrub deck will raise up. The squeegee will raise up after a brief delay and the vacuum will stop after a brief delay. Transport the machine to a service area and recharge the batteries according to the instructions in the Battery section of this manual.

WET VACUUMING

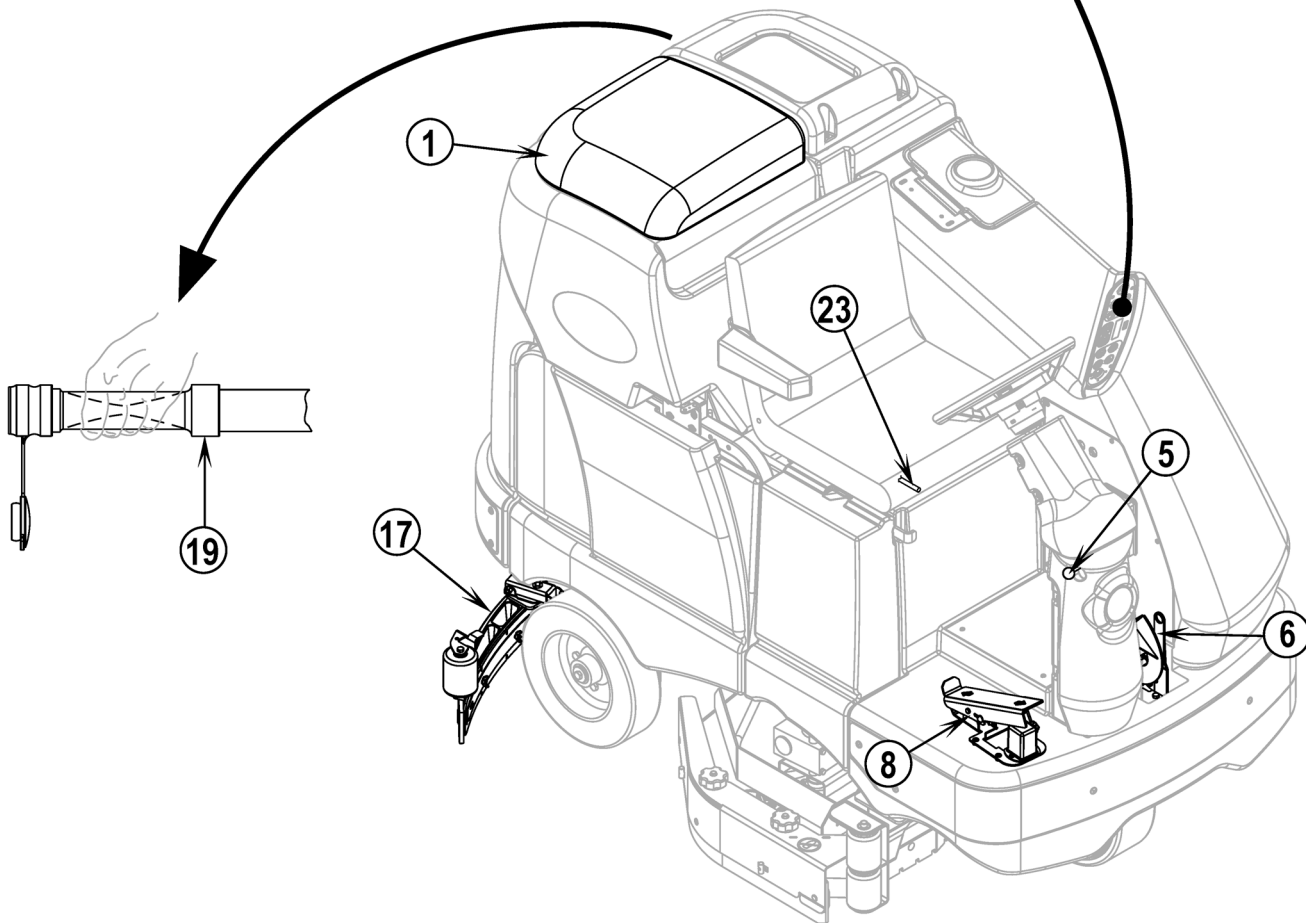
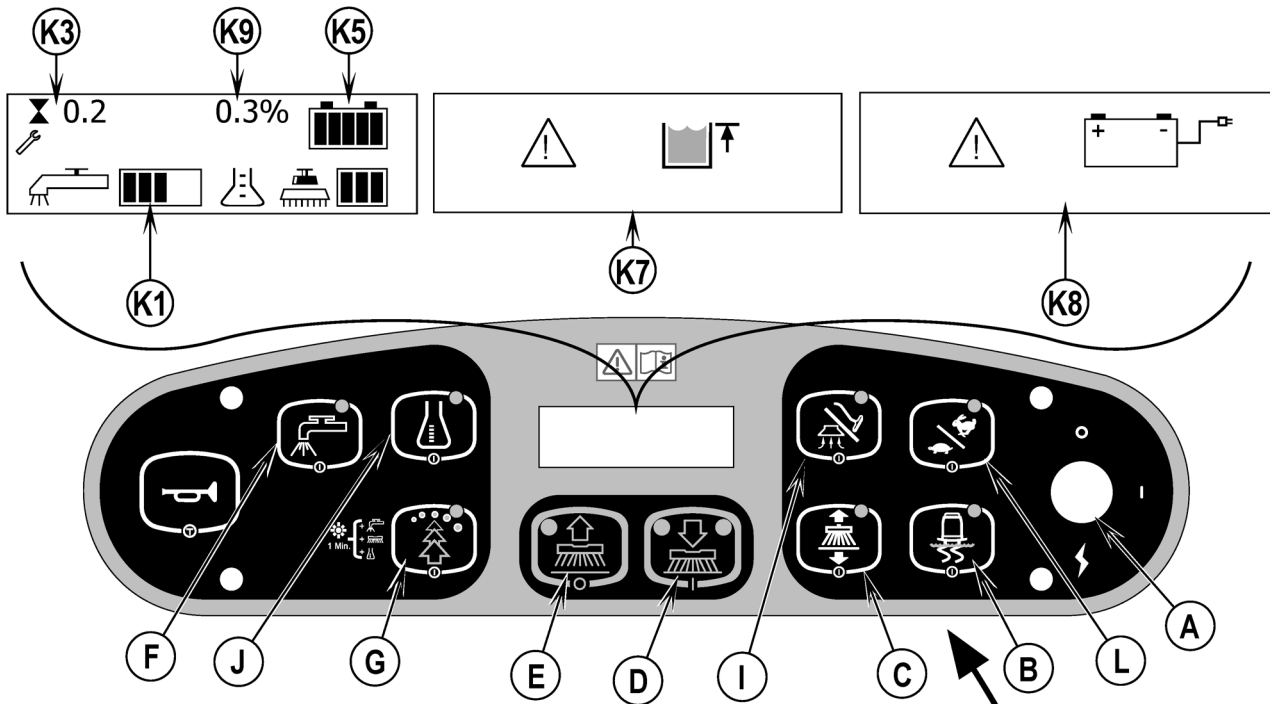
Steps to follow in fitting the machine with optional attachments for wet vacuuming.

- 1 Disconnect the recovery hose from the squeegee (17). Connect the coupler and hose from the wand kit to the recovery hose.
- 2 Attach suitable wet pick-up tools to the hose. (An optional Wand Kit PN56413687 is available from Nilfisk).
- 3 Turn the Master Key Switch (A) ON and press the Vacuum/Wand Switch (I). The vacuum motor and the pump will run continuously until the switch is pressed again to turn it OFF. **NOTE:** The "Recovery Tank FULL" indicator is disabled when the wand mode is activated. The float will stop the flow into the recovery tank.

SERVICE NOTE: Refer to the service manual for detailed functional descriptions of all controls and optional programmability.

OPERATING THE MACHINE

FIGURE 7



AFTER USE

- 1 When finished scrubbing, press the Scrub Off Switch (E). This will automatically raise, retract and stop all the machine systems (brush, squeegee, vacuum, solution and detergent (EcoFlex models)). Then drive the machine to a service area for daily maintenance and review of other needed service up keep.
- 2 To empty the solution tank, remove the Solution Drain Hose (4) from it's storage clamp. Direct the hose to a designated "DISPOSAL SITE" and remove the plug. Rinse the tank with clean water.
- 3 To empty the recovery tank, pull the Recovery Tank Drain Hose (19) from its storage area. Direct the hose to a designated "DISPOSAL SITE" and remove the plug (hold the end of the hose above the water level in the tank to avoid sudden, uncontrolled flow of waste water). The Recovery Tank Drain Hose can be squeezed to regulate the flow. Rinse the recovery tank with clean water. Inspect the recovery and vacuum hoses; replace if kinked or damaged.
- 4 Remove the brushes or pad holders. Rinse the brushes or pads in warm water and hang up to dry.
- 5 Remove the squeegee, rinse it with warm water and re-install on mount.
- 6 Remove the hopper on cylindrical systems and clean thoroughly. Remove from either side of the machine by removing the skirt and tilting the hopper up and away from housing, then pull out.
- 7 Check the maintenance schedule below and perform any required maintenance before storage

MAINTENANCE SCHEDULE

MAINTENANCE ITEM	Daily	Weekly	Monthly	Yearly
Charge Batteries	X			
Check/Clean Tanks & Hoses	X			
Check/Clean/Rotate the Brushes/Pads	X			
Check/Clean the Squeegee	X			
Check/Clean Vacuum Shut-Off Float	X			
Check/Clean the vacuum motor foam filter(s)	X			
Clean Hopper on Cylindrical System	X			
Check Each Battery Cell(s) Water Level		X		
Inspect Scrub Housing Skirts		X		
Inspect and clean Solution Filter		X		
Check Foot/ Parking Brake For Wear & Adjustment		X		
Clean Solution Trough on Cylindrical System		X		
Purge Detergent System (EcoFlex only)		X		
Side Broom Maintenance		X		
Lubrication - Grease Fittings			X	
* Check Carbon Brushes				X

* Have Nilfisk check the vacuum motor carbon motor brushes once a year or after 300 operating hours. The brush and drive motor carbon brushes check every 500 hours or once a year.

NOTE: Refer to the Service Manual for more detail on maintenance and service repairs.

- 8 Store the machine indoors in a clean dry place. Keep from freezing. Leave the tanks open to air them out.
- 9 Turn the Master Key Switch (A) OFF (O) and remove the key.

LUBRICATING THE MACHINE – FIGURE 8

Once a month, pump a small amount of grease into each grease fitting on the machine until grease seeps out around the bearings.

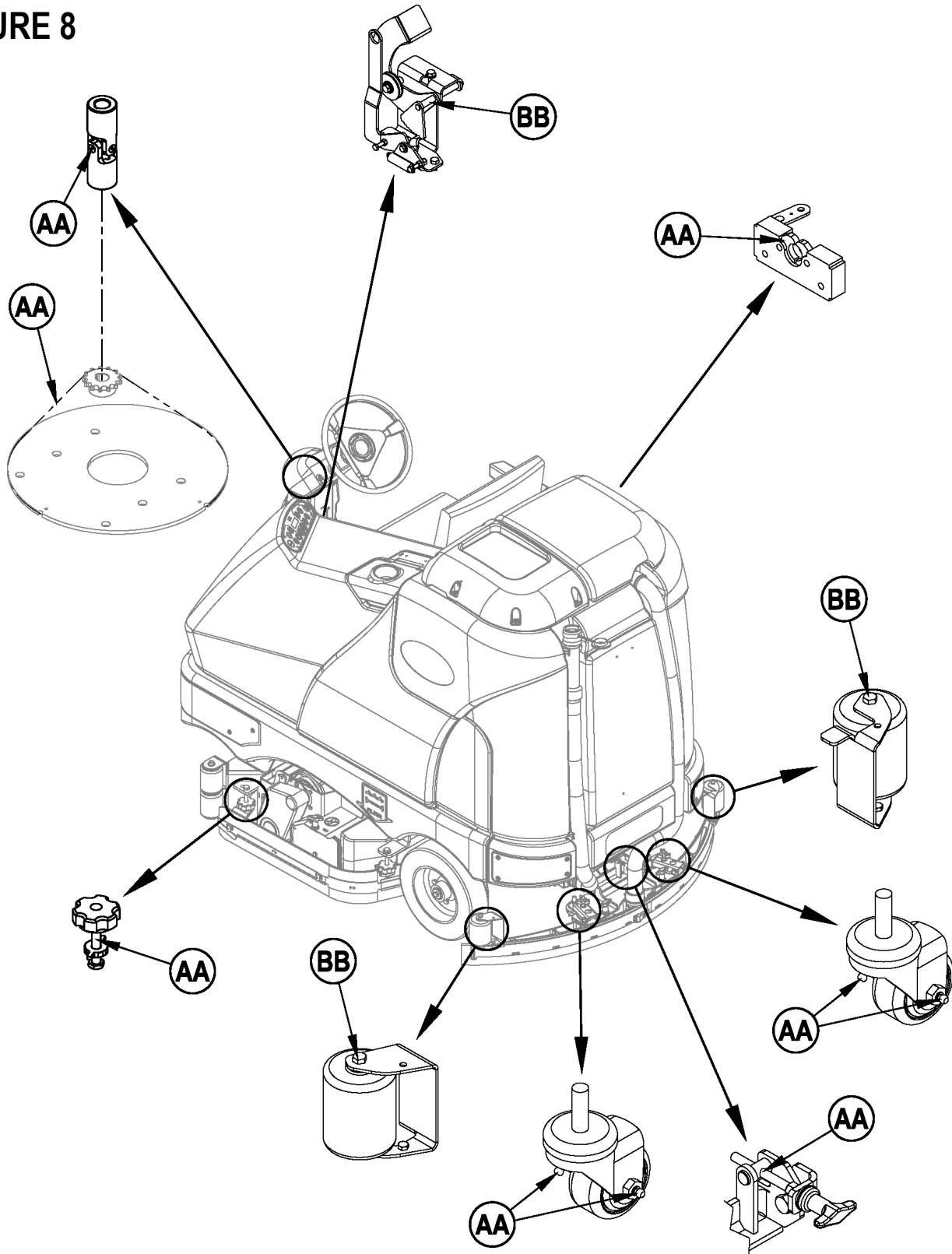
Grease fitting locations (or apply grease to) (AA):

- Squeegee Caster Wheel Axle and Pivot
- Steering Wheel Shaft Universal joint
- Steering Chain
- Squeegee mount angle adjustment knob threads

Once a month, apply light machine oil to lubricate the (BB):

- Squeegee tool end wheels
- Recovery Tank release latch
- Brake Pedal (parking brake) linkage

FIGURE 8



CHARGING THE BATTERIES

Charge the batteries each time the machine is used or when the Battery Indicator (**K5**) is reading less than full.

To Charge the Batteries...

- 1 See Figure 9. Depress the Battery Disconnect (**11**).
- 2 Open Side Access Panel (**27**) and push the connector from the charger into the Battery Connector (**20**).
- 3 Follow the instructions on the battery charger.
- 4 After charging the batteries check the fluid level in all battery cells. Add distilled water, if necessary, to bring the fluid level up to the bottom of the filler tubes.



WARNING!

Do not fill the batteries before charging.

Charge batteries in a well-ventilated area.

Do not smoke while servicing the batteries.

When Servicing Batteries...

- * Remove all jewelry
- * Do not smoke
- * Wear safety glasses, rubber gloves and a rubber apron
- * Work in a well-ventilated area
- * Do not allow tools to touch more than one battery terminal at a time
- * ALWAYS disconnect the negative (ground) cable first when replacing batteries to prevent sparks.
- * ALWAYS connect the negative cable last when installing batteries.



CAUTION!

To avoid damage to floor surfaces, wipe water and acid from the top of the batteries after charging.

CHECKING THE BATTERY WATER LEVEL

Check the water level of the batteries at least once a week.

After charging the batteries, remove the vent caps and check the water level in each battery cell. Use distilled or demineralized water in a battery filling dispenser (available at most auto parts stores) to fill each cell to the level indicator (or to 10 mm over the top of the separators). **DO NOT** over-fill the batteries!



CAUTION!

Acid can spill onto the floor if the batteries are overfilled.

Tighten the vent caps. Wash the tops of the batteries with a solution of baking soda and water (2 tablespoons of baking soda to 1 liter of water).

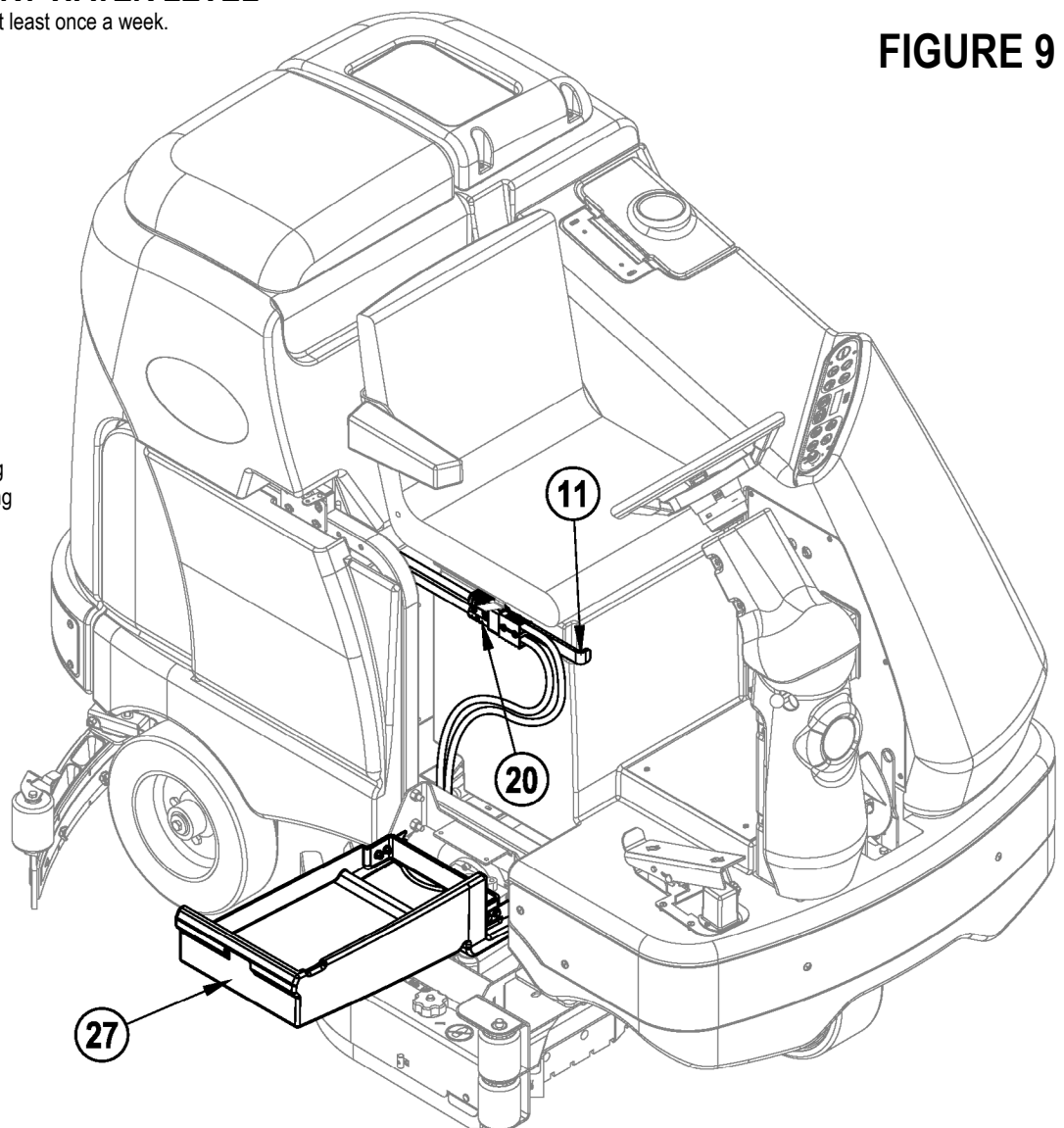


FIGURE 9

SQUEEGEE MAINTENANCE

If the squeegee leaves narrow streaks or water, the blades may be dirty or damaged. Remove the squeegee, rinse it under warm water and inspect the blades. Reverse or replace the blades if they are cut, torn, wavy or worn.

To Reverse or Replace the Rear Squeegee Wiping Blade...

- 1 See Figure 10. Raise the squeegee tool off the floor, then unsnap the Center Latch (AA) on the squeegee tool.
- 2 Remove the Tension Straps (BB).
- 3 Slip the rear blade off the alignment pins.
- 4 The squeegee blade has 4 working edges as shown below. Turn the blade so a clean, undamaged edge faces toward the front of the machine. Replace the blade if all 4 edges are nicked, torn or worn to a large radius.
- 5 Install the blade, following the steps in reverse order and adjust the squeegee tilt.

To Reverse or Replace the Front Squeegee Blade...

- 1 Raise the squeegee tool off the floor, then loosen the (2) Thumb Nuts (CC) on top of the squeegee and remove the squeegee tool from the mount.
- 2 Remove both rear Tension Straps first.
- 3 Remove all the wing nuts that hold the front blade in place, then remove tension strap and blade.
- 4 The squeegee blade has 4 working edges as shown below. Turn the blade so a clean, undamaged edge faces toward the front of the machine. Replace the blade if all 4 edges are nicked, torn or worn to a large radius.
- 5 Install the blade, following the steps in reverse order and adjust the squeegee tilt.

SQUEEGEE ADJUSTMENT

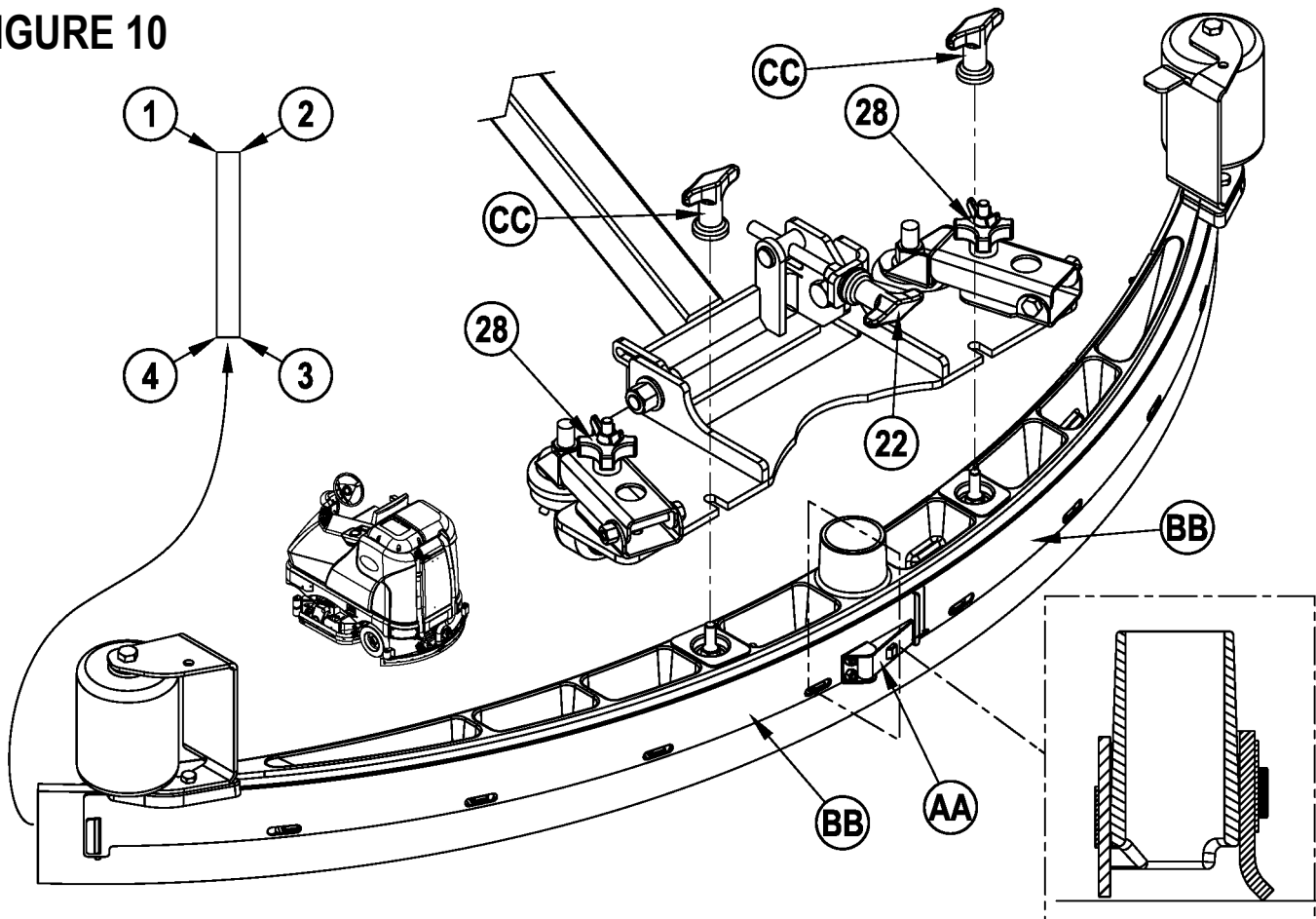
There are two squeegee tool adjustments possible, angle and height.

Adjusting the Squeegee Angle

Adjust the squeegee angle whenever a blade is reversed or replaced, or if the squeegee is not wiping the floor dry.

- 1 Park the machine on a flat, even surface.
- 2 Lower the squeegee, move the machine ahead slightly and adjust the squeegee tilt and height using the Squeegee Tilt Adjust Knob (22) and Squeegee Height Adjust Knobs (28) so that the rear squeegee blade touches the floor evenly across its entire width and is bent over slightly as shown in the squeegee cross section.

FIGURE 10



SIDE SKIRT MAINTENANCE

The side skirt's function is to channel the waste water to the squeegee, helping contain the water within the machines cleaning path. During normal use the blades will wear in time. The operator will notice a small amount of water leaking out underneath the side skirts. A height adjustment can easily be made to lower the blades so that all the water can be pick-up by the squeegee.

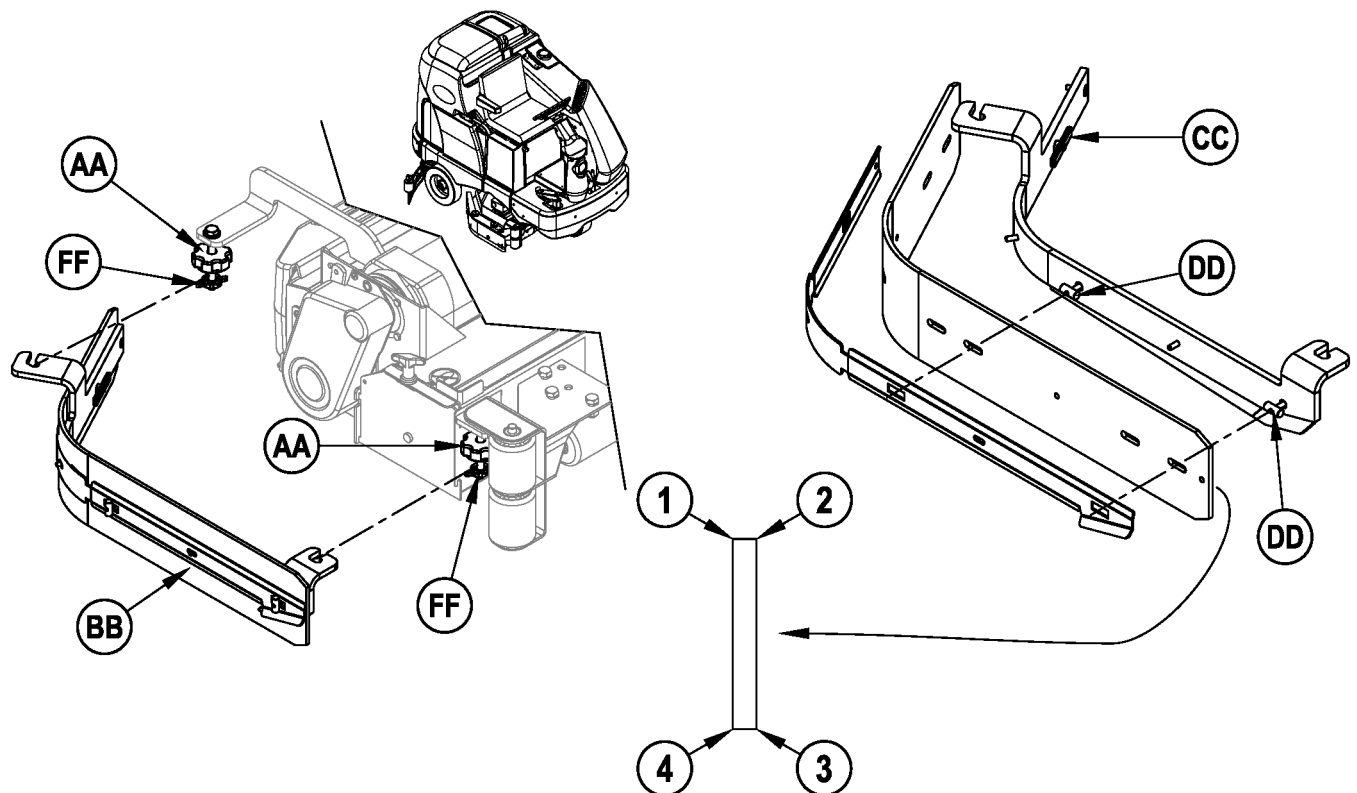
To reverse or replace the scrub system side skirt(s) ...

- 1 **See Figure 11.** Loosen the (2) side skirt Retainer Knobs (AA) (2 per side) and remove the Skirt Assemblies (BB) from the scrub deck. **NOTE:** Remove the skirts by first sliding them forward and then pulling them off.
- 2 Remove all the hardware that holds the blades to the skirt housings. **NOTE:** The main blade on each skirt housing is held on with Tool-less Retainers. Simply loosen the large Wing nuts (CC) and then turn the Knobs (DD) on the outside of the skirt housing until they are horizontal and push through the slots. The small inside Blade (EE) on disk models is held on by (2) screws and nuts and has 2 working edges.
- 3 The main skirt blade has 4 working edges as shown. Turn the blade so a clean, undamaged edge faces toward the center of the machine. Replace the blades as a set if all 4 edges are nicked, torn or worn beyond their ability to be adjusted.
- 4 Reinstall the skirt housing assemblies onto the machine and adjust the blade for proper contact to the floor when the brush deck is placed in the scrub position.

SIDE SKIRT HEIGHT ADJUSTMENT

- 1 The side skirt housing knob retainer screw studs have leveling Adjuster Collars (FF) that can be raised or lowered to compensate for blade wear.
- 2 To adjust, remove the Skirt Assemblies (BB) from the scrub deck to access the Adjuster Collars (FF). Adjustment Tip: The skirts Retainer Knobs (AA) can be loosened with skirts left on and the Adjuster Collars (FF) rotated by reaching under the skirt housing.
- 3 Turn the Adjuster Collars (FF) (Up or Down) to where the blades just fold over enough when scrubbing that all the waste water is contained inside the skirting. **NOTE:** Make small adjustments to obtain good blade wiping. Do not lower the blades too much to where they fold over excessively and cause unneeded blade wear.

FIGURE 11



GENERAL MACHINE TROUBLESHOOTING

Problem	Possible Cause	Remedy
Poor water pick-up	Worn or torn squeegee blades	Reverse or replace
	Squeegee out of adjustment	Adjust so blades touch floor evenly across entire width
	Recovery tank full	Empty recovery tank
	Recovery tank drain hose leak	Secure drain hose cap or replace
	Recovery tank cover gasket leak	Replace gasket / Seat cover properly
	Debris caught in squeegee	Clean squeegee tool
	Vacuum hose clogged	Remove debris
	Using too much solution	Reduce flow via control panel solution button
	Foam filter cover not seated	Seat cover properly
Poor scrubbing performance	Worn brush or pad	Rotate or replace brushes
	Wrong brush or pad type	Consult Nilfisk
	Wrong cleaning chemical	Consult Nilfisk
	Moving machine too fast	Slow down
	Not using enough solution	Increase flow via control panel solution button
Scrub Motors Do Not Run	Tripped 20 Amp (F3) circuit breaker	Check for electrical short circuit & reset
Inadequate solution flow or no solution	Solution tank empty	Fill solution tank
	Solution lines, valves, filter or trough clogged	Flush lines, trough and clean solution filter
	Solution turned OFF	Activate flow via control panel solution button
	Solution solenoid valve plugged or defective	Clean or replace valve (see service manual)
Machine does not run	Emergency stop switch tripped	Reconnect battery connectors
	Operator seat safety switch	Check for open circuit and replace
	Main system controller	Check error fault codes (see service manual)
	Tripped 3 Amp (F1) circuit breaker	Check for electrical short circuit & reset
No FWD/REV wheel drive	Drive system speed controller	Check error fault codes (see service manual)
	Emergency stop switch tripped	Reconnect battery connectors
Vacuum shuts off and display shows "FULL" when recovery tank is not full	Plugged squeegee hose	Clear debris
	Vacuuming large amounts of water at a high travel speed	Slow down or disable auto shut-off feature (see service manual)
Poor Sweeping Performance (Cylindrical System)	Hopper Full	Empty and clean hopper
	Brushes worn	Replace brushes
	Bristles have taken a set	Rotate brushes
No Detergent Flow (EcoFlex models only)	Empty detergent cartridge	Fill detergent cartridge
	Plugged or kinked detergent flow line	Purge system, straighten lines to remove any kinks
	Dry seal cap on detergent cartridge not sealed	Reseat dry seal cap
	Detergent pump wiring disconnected or backwards	Connect or reconnect wiring

TECHNICAL SPECIFICATIONS (as installed and tested on the unit)

Model		BR 1100S SBG SPECIAL
Model No.		56380640
Voltage, Batteries	V	36V
Battery Capacity	Ah	480
Protection Grade		IPX3
Sound Pressure Level IEC 60335-2-72: 2002 Amend. 1:2005, ISO 11201	dB(A)/20µPa	76
Sound Pressure level - KpA (IEC 60335-2-72, ISO 11201) Uncertainty	dB(A)	3.0
Gross Weight	lbs / kg	3325 / 1508
Transportation Weight	lbs / kg	2897 / 1314
Maximum Wheel Floor Loading (center front)	psi / kg/cm ²	116 / 119.9
Maximum Wheel Floor Loading (right rear)	psi / kg/cm ²	81 / 83.7
Maximum Wheel Floor Loading (left rear)	psi / kg/cm ²	86 / 88.9
Vibrations at the Hand Controls (ISO 5349-1)	m/s ²	<1.12m/s ²
Vibrations at the Hand Controls (ISO 5349-1) Uncertainty	m/s ²	.11 m/s ²
Vibrations at the Seat (EN 1032)	m/s ²	<0.35m/s ²
Vibrations at the Seat (EN 1032) Uncertainty	m/s ²	0.035m/s ²
Gradeability		
Transport		16% (9°)
Cleaning		10.5% (6°)

Overenstemmelseserklæring
Declaration of conformity
Konformitätserklärung
Declaración de conformidad
Atbilstības deklarācija
Megfelelősségi nyilatkozat
Certifikat o ustreznosti

Declaration de conformité
Verklaring van overeenstemming
Dichiarazione di conformità
Vastavussertifikaat
Deklaracja zgodności
Försäkran om överensstämmelse

Samsvarserklæring
Vaatimustenmukaisuusvakuutus
Atitikties deklaracija
Osvědčení o shodě
Certifikát súladu

Modell/ Modèle/ Model/ Malli/ Modelo/ Μοντέλο/ Modelo/ Modelis/Модель: Scrubber
Type/ Τυππι/ Tipo/ Τύπος/ Tüüp/ Tipas/ Tips/ Typ/ Τίπος/ Тип/ Tip: BR1100S-C-X and BR1300S-C-X

- D** Der Unterzeichner bestätigt hiermit dass die oben erwähnten Modelle gemäß den folgenden Richtlinien und Normen hergestellt wurden.
- GB** The undersigned certify that the above mentioned model is produced in accordance with the following directives and standards.
- DK** Undertegnede attesterer herved, at ovennævnte model er produceret i overensstemmelse med følgende direktiver og standarder.
- N** Undertegnede attesterer att ovennevnte modell är produsert i overensstemmelse med følgende direktiv og standarder.
- E** El abajo firmante certifica que los modelos arriba mencionados han sido producidos de acuerdo con las siguientes directivas y estandares.
- I** Il sottoscritto dichiara che i modelli sopra menzionati sono prodotti in accordo con le seguenti direttive e standard.
- EST** Allakirjutanu kinnitab, et ülalnimetatud mudel on valmistatud kooskõlas järgmiste direktiivide ja normidega.
- LV** Ar šo tiek apliecināts, ka augstākminētais modelis ir izgatavots atbilstoši šādām direktīvām un standartiem.
- CZ** Niže podepsaný stvrzuje, že výše uvedený model byl vyroben v souladu s následujícími směrnici a normami.
- SLO** Spodaj podpisani potrjujem, da je zgoraj omenjeni model izdelan v skladu z naslednjimi smernicami in standardi.
- F** Je soussigné certifie que les modèles ci-dessus sont fabriqués conformément aux directives et normes suivantes.
- NL** Ondergetekende verzekert dat de bovengenoemde modellen geproduceerd zijn in overeenstemming met de volgende richtlijnen en standaards.
- FIN** Allekirjoittaja vakuuttaa että yllämainittu malli on tuotettu seuraavien direktiivien ja standardien mukaan.
- S** Undertecknad intygar att ovannämnda modell är producerad i överensstämmelse med följande direktiv och standarder.
- GR** Ο κάτωθι υπογεγραμμένος πιστοποιεί ότι η παραγωγή του προαναφερθέντος μοντέλου γίνεται σύμφωνα με τις ακόλουθες οδηγίες και πρότυπα.
- P** A presente assinatura serve para declarar que os modelos supramencionados são produtos em conformidade com as seguintes directivas e normas.
- LT** Toliau pateiktu dokumentu patvirtinama, kad minėtas modelis yra pagamintas laikantis nurodytų direktyvų bei standartų.
- PL** Niżej podpisany zaświadcza, że wymieniony powyżej model produkowany jest zgodnie z następującymi dyrektywami i normami.
- H** Alulirottak igazoljuk, hogy a fent említett modellt a következő irányelvek és szabványok alapján hoztuk létre.
- SK** Dolu podpisaný osvedčuje, že hore uvedený model sa vyrába v súlade s nasledujúcimi smernicami a normami.

EC Low Voltage Directive 06/95/EEC
EC EMC Directive 2004/108/EEC
EC Machinery Directive 06/42/EC

EN 60335-1, EN 60335-2-72
EN 61000, EN 50366
EN 12100-1, EN 12100-2, EN 294, EN 349



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