



Electronic Service Manuals

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You may contact Michco through the following methods:
Phone (517) 484-9312 or (800) 331-3339 MI, OH, IN only
2011 N. High St. -- Lansing, Michigan -- 48906
Fax: (517) 484-9836
Email: CustServ@Michco.com
Web site: www.Michco.Com
Parts Web site: www.FloorMachineParts.Com

Order Parts on Line at:
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Directly to Parts & Service:
By Email: **Shop@Michco.com**
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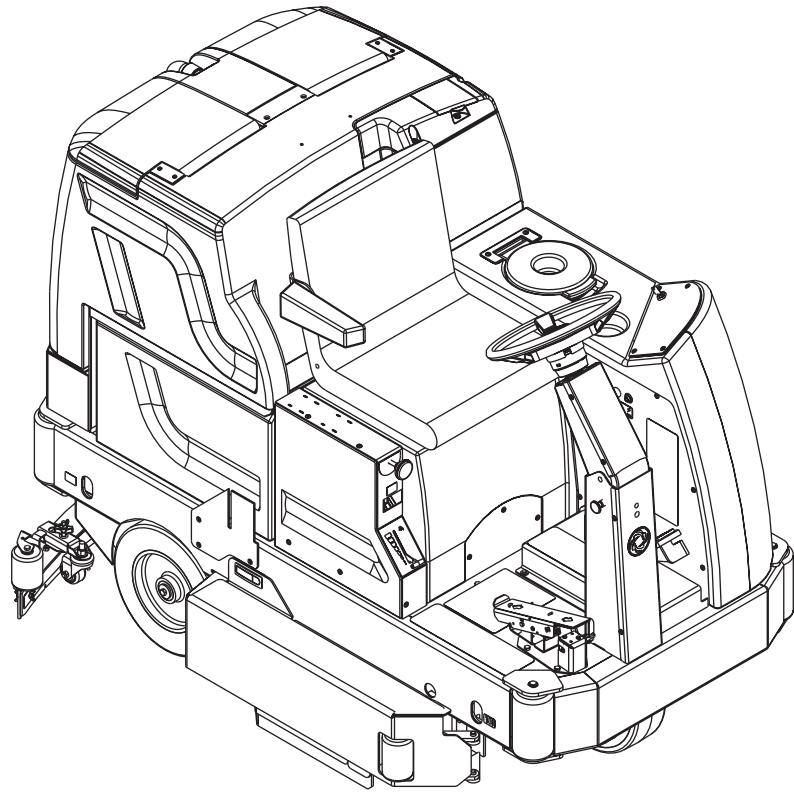
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Hydro-Retriever™ 3800

Hydro-Retriever™ 2042

BR 1100, 1100C, 1100C-XL



Instructions For Use

Advance MODELS 56410000(disc), 56410350(cyl.), 56410001(2042)
Nilfisk MODEL 56410002(disc), 56410351(cyl.), 56410425 (1100C-XL)



**Nilfisk
Advance**
setting standards

English

4/04 Form Number 56041587



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INTRODUCTION

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

Note: Bold numbers in parentheses indicate an item illustrated on pages 6-7.

This product is intended for commercial use only.

PARTS AND SERVICE

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

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

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 carton and the machine for damage. If damage is evident, save the shipping carton so that it can be inspected. Contact the Nilfisk-Advance Customer Service Department immediately to file a freight damage claim.

After removing the carton, cut the plastic straps and remove the wooden blocks next to the wheels. Use a ramp to roll the machine from the pallet to the floor.

CAUTIONS AND WARNINGS

SYMBOLS

Nilfisk-Advance 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.

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-Advance 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 or recovery 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

CONSIGNES DE PRUDENCE ET DE SÉCURITÉ

SYMBOLES

Les symboles reproduits ci-dessous sont utilisés pour attirer l'attention de l'opérateur sur des situations dangereuses. Il est donc conseillé de lire attentivement ces indications et de prendre les mesures adéquates en vue de protéger le personnel et le matériel.

DANGER !

Ce symbole est utilisé pour mettre l'opérateur en garde contre les risques immédiats pouvant provoquer des dommages corporels graves, voire entraîner la mort.

AVERTISSEMENT !

Ce symbole est utilisé pour attirer l'attention sur une situation susceptible d'entraîner des dommages corporels graves.

ATTENTION !

Ce symbole est utilisé pour attirer l'attention de l'opérateur sur une situation qui pourrait entraîner des dommages corporels minimes ou des dommages à la machine ou à d'autres équipements.

CONSIGNES GÉNÉRALES DE SÉCURITÉ

Les consignes spécifiques de prudence et de sécurité mentionnées ici ont pour but de vous informer de la survenance de tout risque de dommages matériels ou corporels.

AVERTISSEMENT !

- * Cette machine ne pourra être utilisée que par du personnel parfaitement entraîné et dûment autorisé.
- * Évitez les arrêts subits lorsque la machine est chargée et se trouve sur des rampes ou des plans inclinés. Évitez les virages serrés. Adoptez une vitesse réduite lorsque la machine est en descente. Ne nettoyez que lorsque la machine monte la pente.
- * Éloignez les batteries de toutes flammes, étincelles ou substance fumigène. Les gaz explosifs sont ventilés pendant le fonctionnement normal.
- * De plus, du gaz hydrogène explosif s'échappe des batteries lorsqu'elles sont en charge. Ne procédez au chargement des batteries que dans une zone bien ventilée, loin de toute flamme. Ne fumez pas à proximité des batteries lorsqu'elles sont en charge.
- * Otez tous vos bijoux lorsque vous travaillez à proximité de composants électriques.
- * Positionnez la clé de contact sur off (O) et déconnectez les batteries avant de procéder à l'entretien des composants électriques.
- * Ne travaillez jamais sous une machine sans y avoir placé, au préalable, des blocs de sécurité ou des étais destinés à soutenir la machine
- * Ne déversez pas d'agents nettoyants inflammables, ne faites pas fonctionner la machine à proximité de ces agents ou d'autres liquides inflammables.
- * Ne nettoyez pas cette machine avec un nettoyeur à pression.
- * Utilisez uniquement les brosses fournies avec l'appareil ou celles spécifiées dans le manuel d'instructions. L'utilisation d'autres brosses peut mettre la sécurité en péril.

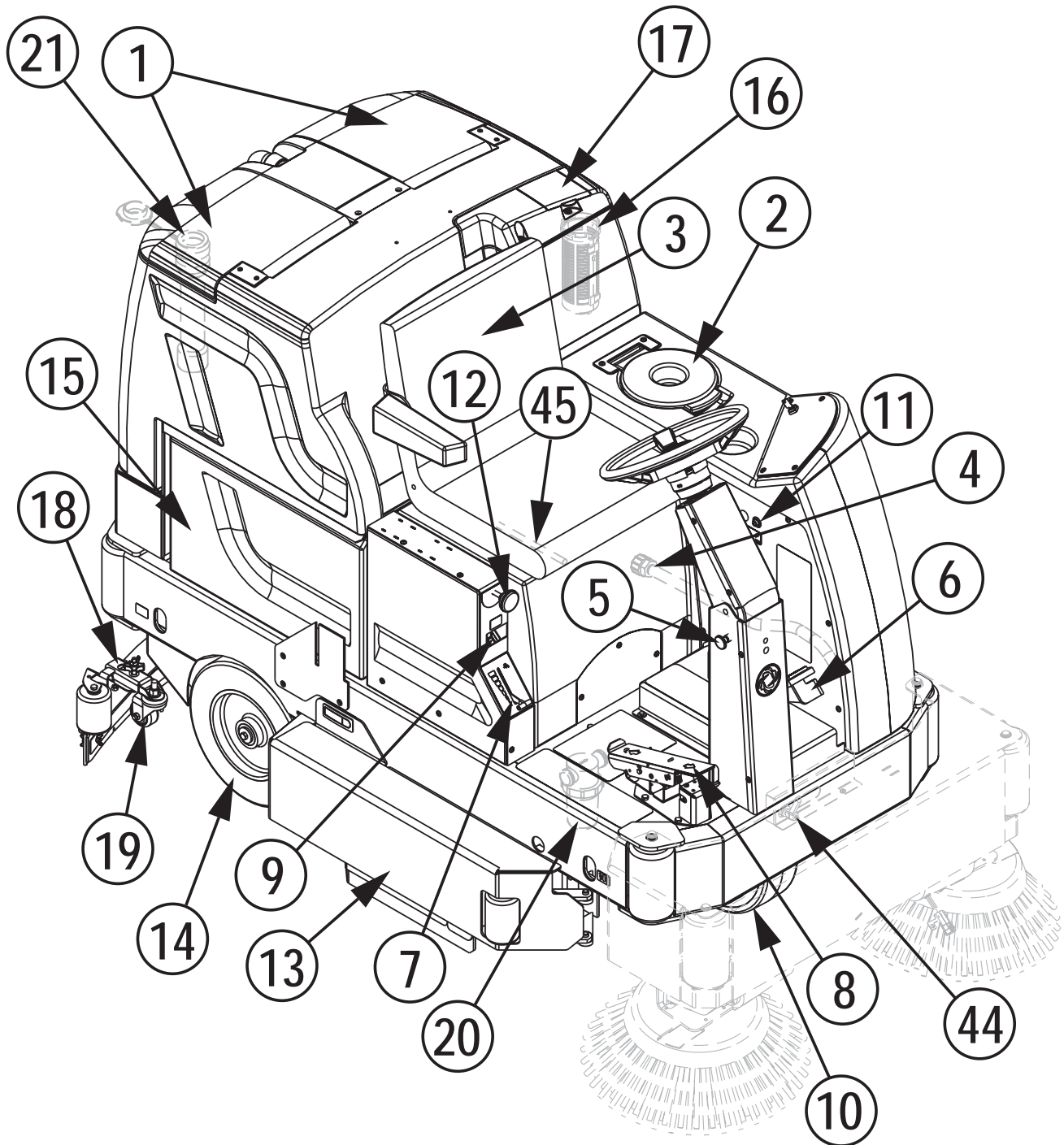
ATTENTION !

- * Cette machine n'est pas conçue pour une utilisation sur les chemins ou voies publics.
- * Cette machine n'est pas conçue pour le ramassage des poussières dangereuses.
- * N'utilisez pas de disques de scarificateur ni de meules. Nilfisk-Advance ne pourra en aucun cas être tenue pour responsable des dommages occasionnés à vos sols par ce type d'équipement (vous risquez également d'endommager le système d'entraînement des brosses).
- * Lors de l'utilisation de cette machine, assurez-vous que des tiers, et notamment des enfants, ne courent pas le moindre risque.
- * Avant de procéder à toute opération d'entretien, veuillez lire attentivement toutes les instructions qui s'y rapportent.
- * Ne laissez pas la machine sans surveillance sans avoir, au préalable, coupé le contact, enlevé la clé de contact (O) et tiré le frein à main.
- * Positionnez la clé de contact sur off (O) avant de remplacer les brosses ou d'ouvrir tout panneau d'accès.
- * Prenez toutes les mesures nécessaires pour éviter que les cheveux, les bijoux ou les vêtements amples ne soient entraînés dans les parties mobiles de la machine.
- * Faites attention lorsque vous déplacez cette machine dans un endroit où la température peut descendre sous 0°. Car l'eau contenue dans les réservoirs de solution ou de récupération ou dans les conduites risquerait de geler et par là même d'endommager les valves et raccords de la machine. Rincez avec un liquide de lave-glace.
- * Prenez soin d'enlever les batteries de la machine avant de mettre cette dernière au rebut. Pour ce qui est de l'élimination des batteries, conformez-vous aux réglementations locales en matière d'environnement.
- * N'utilisez pas sur des surfaces dont la pente dépasse celle mentionnée sur la machine.
- * Toutes les portes et couvercles doivent être dans la position mentionnée dans le manuel d'instruction avant de mettre la machine en service.

CONSERVEZ SOIGNEUSEMENT CES INSTRUCTIONS

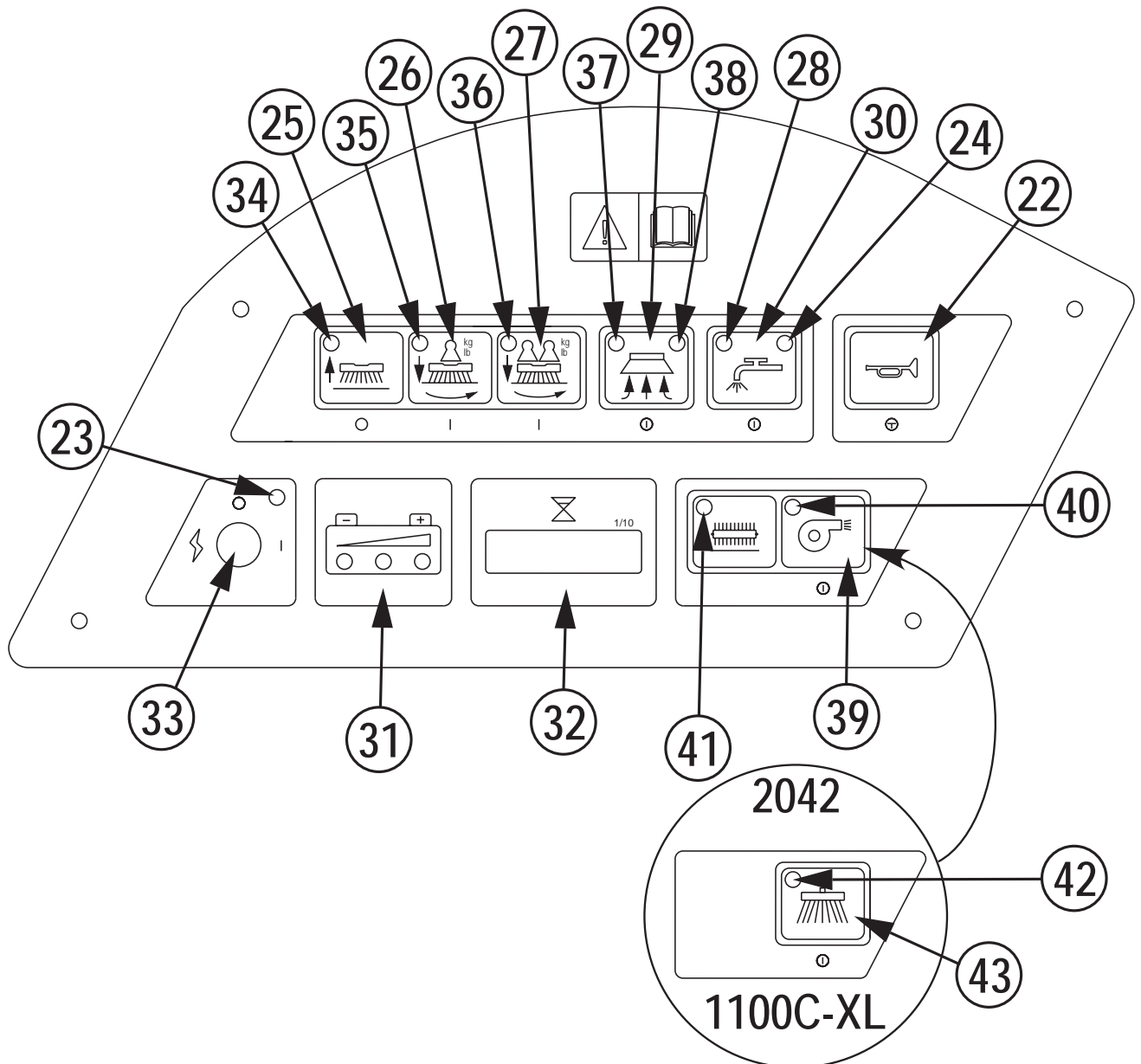
KNOW YOUR MACHINE

- | | | | |
|----|---|----|--|
| 1 | Recovery Tank Covers | 13 | Scrub Brush Deck And Side Skirts |
| 2 | Solution Tank Fill Cover | 14 | Rear Wheel |
| 3 | Operator Seat w/Safety Switch | 15 | Battery Compartment |
| 4 | Solution Tank Drain Hose | 16 | Recovery Tank Shutoff Float |
| 5 | Steering Wheel Adj. Tilt Knob | 17 | Vacuum Motor Filter Housing |
| 6 | Brake Pedal & Parking Brake Set/Release Lever | 18 | Squeegee Assembly |
| 7 | Solution Flow Control Lever | 19 | Squeegee Casters |
| 8 | Drive Pedal Directional/Speed | 20 | Solution Filter |
| 9 | Charger Plug | 21 | Recovery Tank Drain Hose |
| 10 | Drive and Steer Wheel | 44 | Side Broom Wear Adjustment Lever (2042 / BR 1100C-XL only) |
| 11 | Circuit Breakers | 45 | Operator Seat Adjustment Lever |
| 12 | Emergency Stop Switch / Battery Disconnect | | |



CONTROL PANEL

- 22 Horn Button
- 23 Main Power Indicator
- 24 Solution System Fault Indicator
- 25 Scrub Off Button
- 26 Normal Scrub Button
- 27 Heavy Scrub Button
- 28 Solution System Indicator
- 29 Vacuum Button
- 30 Solution Button
- 31 Battery Condition Indicator
- 32 Hourmeter/Status Display
- 33 Master On/Off Key Switch
- 34 Scrub Mode Off Indicator
- 35 Normal Scrub Mode Indicator
- 36 Heavy Scrub Mode Indicator
- 37 Vacuum System Indicator
- 38 Vacuum System Fault Indicator
- 39 Presweep Dust Control Button (3800 / BR 1100 only - opt)
- 40 Presweep Dust Control Indicator (3800 / BR 1100 only - opt)
- 41 Presweep Power Indicator (3800 / BR 1100 only - opt)
- 42 Sweep System Power Indicator (2042 / BR 1100C-XL only)
- 43 Sweep System Control Button (2042 / BR 1100C-XL only)



FUNCTIONAL DESCRIPTION OF CONTROL BUTTONS:

The controls were designed with *one touch operation* in mind. For single pass scrubbing the user can simply depress one button and all systems on the machine will be ready to go.

For most single-pass scrubbing operations, the operator should only need to use the first three buttons on the control panel. These are the Scrub Off (25), Normal Scrub (26), and Heavy Scrub (27) buttons. For this reason these buttons are outlined in bright white on the control panel while the other buttons are outlined in a darker color.

Horn Button (22) - Pressing this button will activate the horn.

Scrub Off Button (25) - Pressing this button when the unit is in a scrub mode will cause the following to occur:

- The scrub brushes will turn off
- The scrub deck will raise to the UP position
- The solution flow will be stopped
- The first time that this button is pressed, the vacuum/squeegee system will NOT be turned off. This is so that any remaining water may be picked up without having to turn the vacuum back on. If this button is pressed a second time (pressed after the scrub mode has been turned off) the squeegee will raise and the vacuum will shut off after a 6 second delay.

Normal Scrub Button (26) - Pressing the normal scrub button will enable the scrub system and set the scrub pressure to the last selected value for the normal scrub mode. The status display will momentarily display the scrub pressure setting. This is indicated by "PA" followed by a number. Subsequent presses of the normal scrub button will step the pad pressure setting through the allowable range up to the maximum value programmed for the normal scrub mode. Once the maximum value is reached the pressure setting will step back to 1. The factory default maximum for the normal scrub mode is 4. The following will occur when this button is pressed:

- The scrub deck will be lowered
- The vacuum and solution systems will be enabled (vacuum and solution modes = AUTO)
- As soon as a direction is commanded by the throttle (forward or reverse) the brushes will start turning and the vacuum will turn on. If the direction is forward, the squeegee will lower and the solution flow will start. If the direction is reverse, the squeegee will go to the up position and the solution flow will be stopped.

Heavy Scrub Button (27) - Pressing the heavy scrub button will enable the scrub system and set the scrub pressure to the last selected value for the heavy scrub mode. The status display will momentarily display the scrub pressure setting. This is indicated by "PA" followed by a number. Subsequent presses of the heavy scrub button will step the pad pressure setting through the allowable range up to the maximum value programmed for the heavy scrub mode. Once the maximum value is reached the pressure setting will step back to (normal scrub limit + 1). The factory default maximum for the heavy scrub mode is 7 (cylindrical) or 9 (disc). The following will occur when this button is pressed:

- The scrub deck will be lowered
- The vacuum and solution systems will be enabled (vacuum and solution modes = AUTO)
- As soon as a direction is commanded by the throttle (forward or reverse) the brushes will start turning and the vacuum will turn on. If the direction is forward, the squeegee will lower and the solution flow will start. If the direction is reverse, the squeegee will go to the up position and the solution flow will be stopped.

Vacuum Button (29) - This button is used to select the mode of operation for the vacuum/squeegee system. There are 3 modes of operation for this system. These modes are OFF, AUTO, ON. Following is a description of each mode and how they are selected.

OFF MODE: In this mode the vacuum is off and the squeegee is in the up position. As mentioned above, when a scrub mode is selected, the vacuum system will be placed in the AUTO mode. If it is desired to double-scrub (scrub without recovering the solution) the vacuum system can be turned off by pressing this button.

AUTO MODE: This mode is automatically selected when a scrub mode is selected. In this mode the squeegee will be in the down position unless the reverse direction is selected via the throttle. The vacuum will turn on if either direction is selected. While in this mode the vacuum will remain on for 10 seconds after the throttle returns to the neutral position. This is so that the solution in the squeegee and hose can be drawn into the tank. This mode can be selected independently of the scrub mode by pressing and releasing the vacuum button.

ON MODE: In this mode the squeegee will remain in the UP position and the vacuum will be on regardless of the throttle position. This mode is selected by pressing and holding the vacuum button for approximately 1.5 seconds. *The vacuum mode must first be OFF before entering this mode.* This mode is included in the event an external wand is to be used with this machine or if the operator wants to clean the squeegee using the vacuum hose.

Solution Button (30) - This button is used to select the mode of operation for the solution system. There are 3 modes of operation for this system. The modes are OFF, AUTO, MOMENTARY ON. Following is a description of each mode and how they are selected.

OFF MODE: In this mode the solution flow is turned off. As mentioned above, when a scrub mode is selected, the solution system will be placed in the AUTO mode. If it is desired to scrub without dispensing solution, the solution can be turned off by pressing this button.

AUTO MODE: This mode is automatically selected when a scrub mode is selected. In this mode the solution flow will be turned on whenever the forward direction is selected via the throttle. The solution flow will be turned off otherwise.

MOMENTARY ON MODE: This mode can only be selected when the scrub mode is OFF. Solution can be dispensed by pressing and holding the solution button. Solution will be dispensed for as long as the button is held. This is for pre-wetting the floor prior to scrubbing.

Presweep Dust Control Button (opt / 39) - Use this button in conjunction with the optional presweep kit. The dust control feature will only work when the brooms are running on the presweep unit.

Sweep System Control Button (2042 / BR 1100C-XL only) (43) - Use this button to turn the sweep system ON or OFF. The side brooms will only run when the scrub system is ON and the machine is in motion (not in neutral). If the scrub system is turned OFF while the sweep system is still ON, the side brooms will automatically lower and run the next time the scrub system is turned ON.

Side Broom Wear Adjustment Lever (2042 / BR 1100C-XL only) (44) - Use this adjustment lever to periodically re-adjust the down limit of the side brooms as they wear. Loosening the lever, sliding it to the left and re-tightening it will cause the side brooms to drop closer to the floor.

Operator Seat Adjustment Lever (45) - Use this lever to slide the operator's seat forward or backward.

DESCRIPTION OF INDICATORS ON THE CONTROL PANEL:

In general, the following guidelines apply to the control panel indicators:

A steady red indicator means that the function is inhibited for some reason. For example, if the scrub system is off and the operator is not on the seat, the scrub system indicator will be red indicating that the system cannot be turned on until the operator is on the seat.

A flashing red indicator means that a fault has occurred in the particular system. An example of this would be an over-current fault.

A yellow indicator means that the particular function has been enabled but is not currently on. For example, if a scrub mode is selected and the throttle is in neutral, the scrub system, vacuum, and solution indicators will all be yellow indicating that the systems are enabled and ready to turn on when the throttle is moved to forward or reverse.

A green indicator means that the particular system is on.

A flashing green indicator means that the particular system is in a delayed-off condition. An example of this is when a scrub mode is selected and the throttle goes from forward or reverse to neutral. When this happens the vacuum indicator will flash green indicating that the vacuum is still on but that it will be turning off after the delay period.

Scrub Mode Off Indicator (34):

- This indicator will be RED if the scrub system is inhibited for any reason. Possible reasons are:
 - Seat switch is open
 - The scrub deck has not returned to the UP position.
 - A system fault
 - Low voltage condition
- This indicator will be GREEN if the system is ready to be placed in either the normal or heavy scrub modes.
- This indicator will be OFF if either the normal or heavy scrub modes have been selected.
- This indicator will flash RED if there is a fault in one of the scrub system components. This will be accompanied by an error indication on the Hour Meter / Status Display (32).

Normal Scrub Mode Indicator (35):

- This indicator will be YELLOW if the normal scrub mode has been selected but the scrub motor is off. This will be the case if the throttle is in the neutral position. The scrub motor will stay on for approximately 3 seconds after the throttle returns to the neutral position.
- This indicator will be GREEN if the normal scrub mode has been selected and the scrub motor is on.
- This indicator will be OFF if the scrub mode is off or if the heavy scrub mode has been selected.

Heavy Scrub Mode Indicator (36):

- This indicator will be YELLOW if the heavy scrub mode has been selected but the scrub motor is off. This will be the case if the throttle is in the neutral position. The scrub motor will stay on for approximately 3 seconds after the throttle returns to the neutral position.
- This indicator will be GREEN if the heavy scrub mode has been selected and the scrub motor is on.
- This indicator will be OFF if the scrub mode is off or if the normal scrub mode has been selected.

Vacuum System Indicator (37):

- This indicator will be YELLOW if the vacuum/squeegee system is in the AUTO mode and the throttle is in the neutral position. This indicates that the vacuum system is enabled but the vacuum is currently off.
- This indicator will be GREEN if the vacuum is currently on. This indicates that the system is in the AUTO mode and the throttle is not in neutral or that the vacuum system is in the ON mode.
- This indicator will FLASH GREEN if the shutoff delay is keeping the vacuum on. This occurs if the vacuum system is in the AUTO mode and the throttle goes to the neutral position. This will also occur if the vacuum system is turned off while it was in either the AUTO or ON modes. The shutoff delay will turn the vacuum off after the delay period.
- This indicator will be OFF if the vacuum/squeegee system is in the OFF mode.

Vacuum System Fault Indicator (38):

- This indicator will flash red if there is a fault in the vacuum or squeegee systems. This will be accompanied by an error indication on the Hour Meter / Status Display (32).
- This indicator will be RED and the Hour Meter / Status Display (32) will show "FULL" if the recovery tank float valve has closed. If this indication occurs and the tank is not full, see the *Troubleshooting* section.

Solution System Indicator (28):

- This indicator will be YELLOW if the solution system is in the AUTO mode and the throttle is in the neutral or reverse positions. This indicates that the solution system is enabled but the solution flow is currently off.
- This indicator will be GREEN if the solution system is in the AUTO mode and the throttle is in the forward position. It will also be GREEN if the solution system is in the MOMENTARY ON mode. This indicates that the solution flow is currently on.
- This indicator will be OFF if the solution system is in the OFF mode.

Solution System Fault Indicator (24):

- This indicator will flash red if there is a fault in the solution system. This will be accompanied by an error indication on the Hour Meter / Status Display (32).

Main Power Indicator (23):

- This indicator will be GREEN when the key switch is ON.
- This indicator will flash RED if there is a system fault that requires turning the Master ON/OFF Key Switch (33) off to reset.
- This indicator will flash fault codes from the Curtis Speed Control if a fault exists. This will be accompanied by an "Err03" indication on the Hourmeter/Status Display (32).

Presweep Dust Control Indicator (40):

- This indicator will be GREEN when the dust control feature is ON.
- This indicator will be YELLOW when the dust control feature is enabled but not ON.
- This indicator will be OFF if the dust control feature is not enabled or unit has the optional side broom kit installed.

Presweep Power Indicator (41):

- This indicator will be GREEN when either the optional presweep or side broom kits are installed and turned ON.
- This indicator will be YELLOW when either the optional presweep or side broom kits are installed and enabled, but not ON (machine in neutral).
- This indicator will be flashing YELLOW when the optional side broom kit is installed, selected and turned ON, but the scrub system is OFF.
- This indicator will be OFF if the foot pedal on the optional presweep or side broom kits is UP.

Sweep System Power Indicator (2042 / BR 1100C-XL only) (42):

- This indicator will be GREEN when the sweep system is turned ON.
- This indicator will be YELLOW when the sweep system is enabled, but not ON (machine in neutral).
- This indicator will be OFF if the sweep system is turned OFF.

DESCRIPTION OF THE BATTERY CONDITION INDICATORS

The battery condition indicators will give an indication of the state of charge of the batteries. The battery condition monitor will retain the state-of-charge even if the key has been turned off. The state-of-charge indication is reset to full charge when the batteries have been recharged. It is also possible to choose between two different low voltage thresholds depending on whether maintenance free or standard batteries are being used (**have qualified service engineer perform this selection**). NOTE: The following percentages are based on *useable* battery capacity not total battery capacity. Therefore, 100% discharge = 80% of total battery capacity for standard wet cell batteries or 70% of total battery capacity for maintenance free batteries.

- Green Indicator = full charge down to 50% discharge
- Green & Yellow Indicator = 50% discharge down to 75% discharge
- Yellow Indicator = 75% discharge down to 90% discharge
- Yellow & Red Indicator = 90% discharge down to 95% discharge
- Red Indicator = 95% discharge down to 99% discharge
- Flashing Red Indicator = 100% discharge - scrub system will automatically shut down

DESCRIPTION OF HOURMETER / STATUS DISPLAY

The 5 character display in the middle of the bottom row of the control panel is primarily used as a display for the hourmeter function. This display is also used to display the following information depending upon which mode the control is in:

- Error codes*
- Brush pressure adjustment settings for normal and heavy scrub mode (fixed and adjustable)*
- Display of control system default parameters*
- Recovery tank FULL indicator*

* NOTE: Have a qualified service engineer reference the Service Manual for explanations about the error code descriptions and scrub system control default parameter changes. A brief description of error codes can be found at the back of this manual.

Emergency Stop Switch / Battery Disconnect (12): This will remove all power from the machine.

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 inside the batteries through openings in the battery caps. This gas can be ignited by any electrical arc, spark or flame.

When Servicing Batteries...

- * Remove all jewelry.
- * Do not smoke.
- * Wear safety glasses, a rubber apron and rubber gloves.
- * Work in a well-ventilated area.
- * Do not allow tools to touch more than one battery terminal at a time.

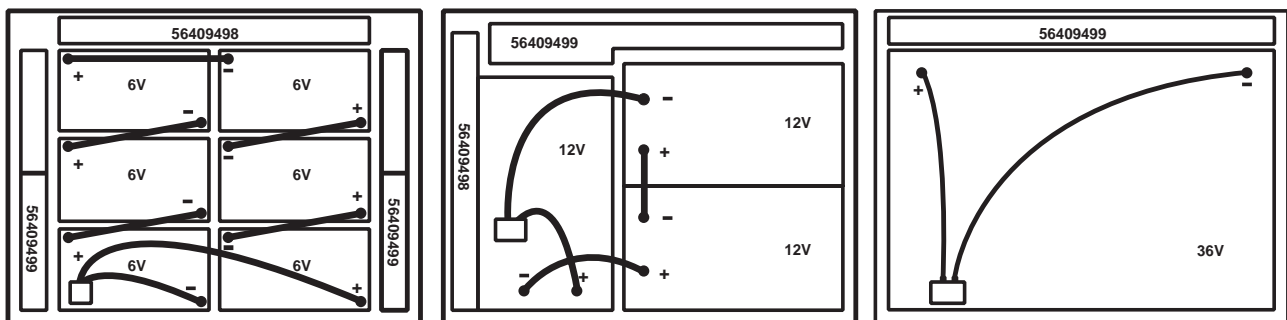
⚠ CAUTION !

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

- 1 Turn the Key Switch (33) off (O) and remove the key. Tip back the recovery tank to expose the battery compartment.
- 2 Using (2) people and an appropriate lifting strap, carefully lift the batteries into the battery compartment and arrange as shown.
- 3 See Figure 1. Insert spacers as shown. Install battery cables as shown and tighten the nuts on the battery terminals.
- 4 Install the battery boots and secure tightly to the battery cables with the supplied tie straps.
- 5 Install the battery cover and connect the battery pack connector to the machine connector, tip the recovery tank back forward.

NOTE! If total battery weight exceeds 920lbs / 417.31 kg, order and install Isolator Kit PN 56409721.

FIGURE 1



INSTALL THE BRUSHES (DISC 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 Key Switch (33) is off (O). To access the brush mounting plates, remove both the left and right outer side skirt assemblies from the Scrub Brush Deck (13).
Note: The skirts are held in place by two black knobs on each skirt, to separate, loosen knob(s) and pull skirt straight out.
- 2 To mount the brushes (or pad holders) align the lugs on the brush with the holes on the mounting plate and turn to lock in place (turn outside edge of brush towards front of machine).

56505791 - Magna Grit 46
56505792 - Dyna Grit 80
56505793 - AgLite Grit 500
56505794 - Prolene
56505795 - ProLite
56505796 - Union Mix
56505797 - MidGrit 240
56505798 - MidLite Grit 180

DISC BRUSH APPLICATION GUIDE (SUGGESTION ONLY)

Application	46 Grit	80 Grit	180 Grit	240 Grit	500 Grit	Prolene	Prolite	Union Mix
Stripping:								
Concrete	X	X						
Terrazo	X	X						
Ceramic/Quarry tile		X						
Vinyl tile		X						
General Scrubbing:								
Concrete	X	X	X	X		X		
Terrazo			X	X	X	X		
Ceramic/Quarry tile			X	X	X	X		
Marble					X		X	
Vinyl tile			X		X	X		
Raised-rubber tile					X		X	
Polishing:								
Raised Disc Tile								X
Marble								X
Vinyl tile								X

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 Key Switch (33) is off (O). To access the brushes, swing both side skirt assemblies open. Note: The skirts are held in place by a large cotter pin on each side, remove the pins and swing the skirt assemblies out of the way. Loosen the black knobs (one on each side) on top of the idler assemblies and remove the idler assemblies. Slide the brush into the housing, lift slightly, push and turn until it seats. Re-install the idler assemblies, close the skirt assemblies and secure with cotter pins.

3800C / BR 1100C	2042 / BR 1100C-XL
56410298 - 46 Grit	56409944 - 46 Grit
56410297 - 80 Grit	56409943 - 80 Grit
56410296 - 180 Grit	56409942 - 180 Grit
56410293 - Polypropylene	56409924 - Polypropylene
56410295 - Stiff Nylon	56409941 - Stiff Nylon
56410294 - Soft Nylon	56409940 - Soft Nylon

CYLINDRICAL BRUSH APPLICATION GUIDE (SUGGESTION ONLY)

Application	46 Grit	80 Grit	180 Grit	Polypropylene	Stiff Nylon	Soft Nylon
Stripping:						
Concrete	X	X				
Terrazo	X	X				
Ceramic/Quarry tile		X				
Vinyl tile		X				
General Scrubbing:						
Concrete	X	X	X	X	X	
Terrazo			X	X	X	X
Ceramic/Quarry tile			X	X	X	X
Marble			X		X	X
Vinyl tile			X	X	X	X
Raised-rubber tile			X			X

INSTALL THE SQUEEGEE

- 1 Make sure the Squeegee (18) is up (O) and the Key Switch (33) is off (O). Hold the squeegee tool so that the curved ends point forward, then slide the squeegee tool onto the Mount (A) (See Figure 2).
- 2 Hand tighten the Thumb Nuts (B) and then connect the vacuum hose to the Squeegee Tube (C) (vacuum hose should loop to the left).

FILL THE SOLUTION TANK

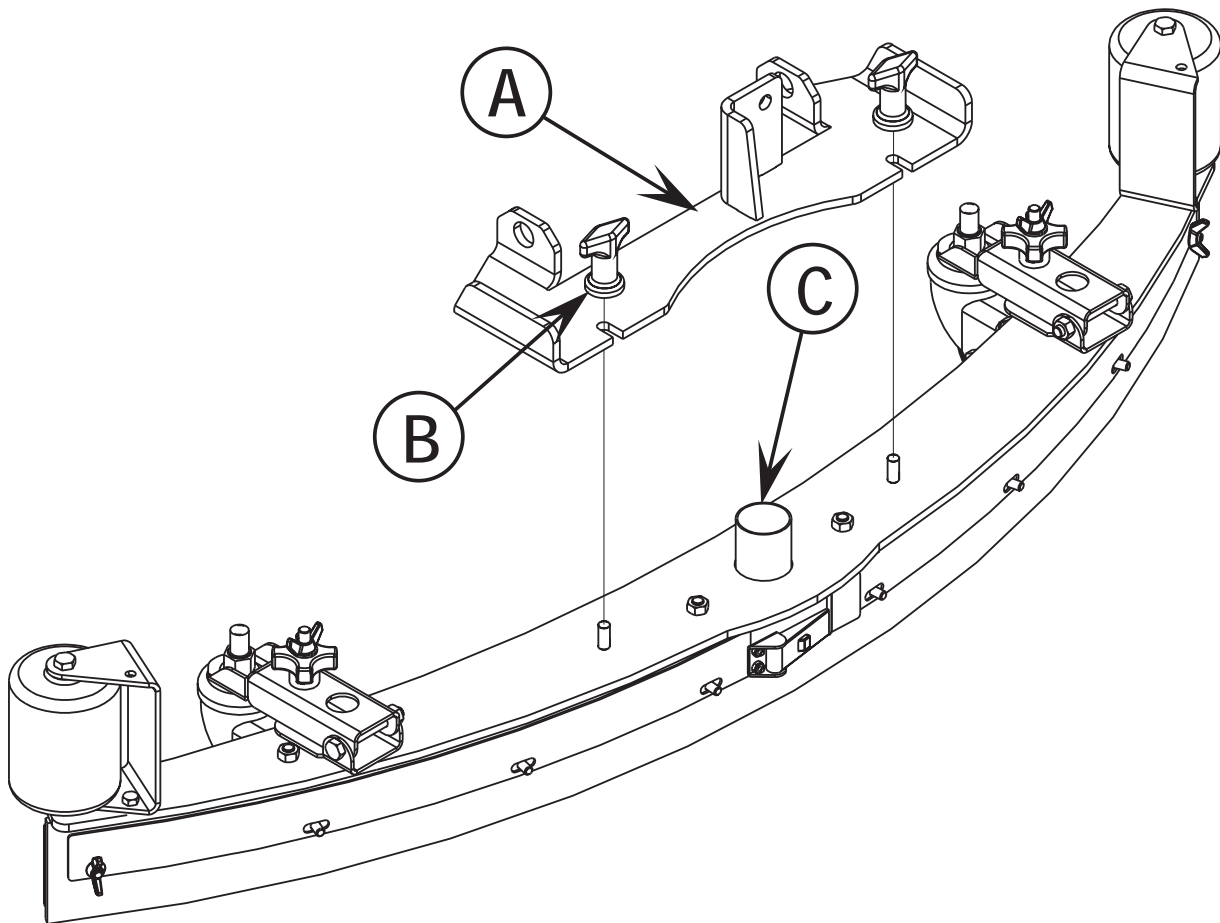
Read the cleaning chemical label and figure the proper amount of chemical to mix for a tank that holds 53 US gallons (200 liters).

Open the Solution Tank Cover (2), then fill the tank 1/3 full of water, add the cleaning chemical, then fill the tank to 7.62cm (3 inches) from the top of the tank opening (fill to bottom of the wall in tank opening).

⚠ CAUTION!

Use only low-foaming, non-flammable liquid detergents intended for automatic scrubber machine applications.

FIGURE 2



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 While seated on the machine, adjust the seat and steering wheel to a comfortable operating position using the adjustment controls (45) and (5).
- 2 Turn the Master Key Switch (33) ON (I). This will display the control panel indicator lights, reference the Battery Condition Indicator (31) and Hour Meter (32).
- 3 Release the Parking Brake (6) by flipping the set/release lever to the rear while pushing on the Brake Pedal (6). To transport the machine to the work area, apply even pressure with your foot on the front of the FWD/REV 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 Adjust the Solution Flow Control Valve Lever (7) to about 1/4 to 1/3 open position. Note the adjustment can be changed to allow variable solution flow for different types of floors to be scrubbed. Example: A rough or absorbent floor surface, such as unfinished concrete, will require more solution than a smooth finished floor.
- 5 Press the Solution Control ON/OFF Touch Pad (30) and hold for 5 seconds. This is done to pre-wet the floor. Note: This will help prevent scarring of the floor surface when starting to scrub with dry brushes.
- 6 Press the Normal Scrub Button (26) for moderate scrub deck pressure or the Heavy Scrub Button (27) for the highest pressure mode. Note refer to the machine control description section to have more detailed explanation of this and other control panel functions.
- 7 When either the Normal Scrub Button (26) or Heavy Scrub Button (27) are selected, the brushes and squeegee automatically are lowered to the floor. The machine's scrub brushes rotation and solution system flow starts when the FWD/REV Drive Pedal (8) is activated. Note: When operating the machine in reverse, only the brushes will rotate, the solution is automatically shut off to conserve the solution usage.
- 8 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 when necessary the machine speed and solution flow according to the condition of the floor.

CAUTION !

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

- 9 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.
- 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 Button (29) to raise the pick up 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 an automatic float shut-off to prevent solution from entering the vacuum system when the recovery tank is full. When the float shut-off is activated, the control system will shut down the scrub, vacuum and solution systems. The Vacuum System Fault Indicator (38) will be lit and the Hour Meter / Status Display (32) will display "FULL". To clear the display, press the Scrub OFF Button (25). When the float closes, the recovery tank must be emptied. The machine will not pick up water with the float closed. **NOTE:** 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 perform this function.
- 12 When the operator wants to stop scrubbing or the recovery tank is full, press the Scrub OFF Button (25) once. This will automatically stop the scrub brushes and solution flow and the scrub deck will raise UP. **NOTE:** the vacuum/squeegee system will not be turned off when the button is only pressed once, this is to allow any remaining water to be picked up without turning the vacuum back on. Press the button a second time and the squeegee will raise and the vacuum will stop after a 10 second delay.
- 13 Drive the machine to a designated waste water "DISPOSAL SITE" and empty the recovery tank. To empty, pull the Drain Hose (21) 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.

WET VACUUMING

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

- 1 Disconnect the recovery hose connection at the recovery tank inlet. Then fit a 1-1/2 inch (38 mm) Dia. vacuum hose to the recovery inlet.
- 2 Attach suitable wet pick-up tools to the hose. (An optional Wand Caddy Kit is available from Nilfisk-Advance).
- 3 Turn the Master Key Switch (33) ON, next press and hold the Vacuum Button (29) until the indicator light turns green. The vacuum motor will run continuously until the button is pressed again to turn it OFF. **NOTE:** 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 perform this function.

AFTER USE

- 1 When finished scrubbing, depress the Scrub Off Button (25) twice, this will automatically raise, retract and stop all the machine systems (brush, squeegee, vacuum & solution). 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 (24) 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 (21) from it's 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). Rinse the tank with clean water.
- 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 left side of machine by opening skirt and tilting 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	•			
Check/Clean Tanks & Hoses	•			
Check/Clean/Rotate the Brushes/Pads	•			
Check/Clean the Squeegee	•			
Check/Clean Vacuum Shut-Off Float	•			
Check/Clean the vacuum motor foam filter	•			
Clean Hopper on Cylindrical System	•			
Check Each Battery Cell(s) Water Level		•		
Inspect Scrub Housing Skirts		•		
Inspect and clean Solution Filter		•		
Check Foot/ Parking Brake For Wear & Adjustment		•		
Clean Solution Trough on Cylindrical System		•		
Lubrication - Grease Fittings			•	
* Check Carbon Brushes				•

* Have Nilfisk-Advance 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 (33) OFF (O) and remove the key.

LUBRICATING THE MACHINE

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 are:

- Squeegee Caster Wheel Axle & Swivel (2) per Assembly
- Steering Chain Idler Sprocket
- Steering Wheel Shaft Universal joint

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

- Steering Chain
- Squeegee Height Adjustment Caster Hardware
- General Pivot Points For the Squeegee, Brush Linkage and Side Skirts

CHARGING THE BATTERIES

Charge the batteries each time the machine is used, or whenever the Battery Condition Meter (31) is showing a yellow, red or flashing red indicator light(s).

To Charge the Batteries...

- 1 Drain and tip back the recovery tank to provide proper ventilation.
- 2 Push the connector from the charger into the Battery Charger Plug (9).
- 3 Follow the instructions on the battery charger.
- 4 Check the fluid level in all battery cells after charging the batteries. 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.

Only charge batteries in a well-ventilated area.

Do not smoke while servicing the batteries.

CAUTION !

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

CHECKING THE BATTERY ELECTROLYTE LEVEL

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

After charging the batteries, remove the vent caps and check the electrolyte level in each battery cell. Use distilled water to fill the batteries to the bottom of the filler tube.

Do not over-fill the batteries!

CAUTION !

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

Tighten the vent caps. If there is acid on the batteries, wash the tops of the batteries with a solution of baking soda and water (2 tablespoons of baking soda to 1 quart of water).

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 3. Raise the squeegee tool off the floor, then unsnap the Center Latch (A) on the squeegee tool.
- 2 Remove the Wing Nut (B) from each end of the squeegee, then remove the Tension Straps (C).
- 3 Slip the rear blade off the alignment pins.
- 4 The squeegee blade has 4 working edges. Turn the blade so a clean, undamaged edge points 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.

To Reverse or Replace the Front Squeegee Blade...

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

SQUEEGEE ADJUSTMENT

There are two major squeegee tool adjustments, height and angle. The recommended adjustment steps are to set the tool angle first, then adjust the blade 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 and lower the squeegee. Then drive the machine forward enough to have the squeegee blades fold over to the rear.
- 2 Loosen the Lock Wing Nut (G) (hand tightened). This secures the squeegee mount angle from easily vibrating out of adjustment.
- 3 Turn the Adjustment Knob (H) to tilt the tool forward or backwards, until the rear squeegee wiping blade touches the floor evenly across its entire width.
- 4 Re-tighten by hand the Lock Wing Nut (G).

Adjusting the Squeegee Blade Height

Adjust the squeegee height whenever a blade is reversed or replaced, or if the squeegee is not wiping the floor dry. The squeegee blade height is easily adjustable at the caster wheels. To adjust...

- 1 Park the machine on a flat even surface and lower the squeegee. Then drive the machine forward enough to have the squeegee blades fold over to the rear.
- 2 Loosen both the lock adjustment Wing Nuts (E) (need to be hand tightened only) located on the top of the caster mount bracket.
- 3 Rotate the Adjustment Knobs (F) CW (clockwise) to lift the squeegee and CCW (counter clockwise) to lower it. A starting point when replacing the blades is to adjust the caster mounting bracket so it is level (parallel) to the top of the squeegee tool. Note: The Right and Left caster wheels must be adjusted equally to maintain level and even blade pressure.
- 4 Re-tighten the lock adjustment Wing Nuts (E) and test for proper squeegee pick-up.

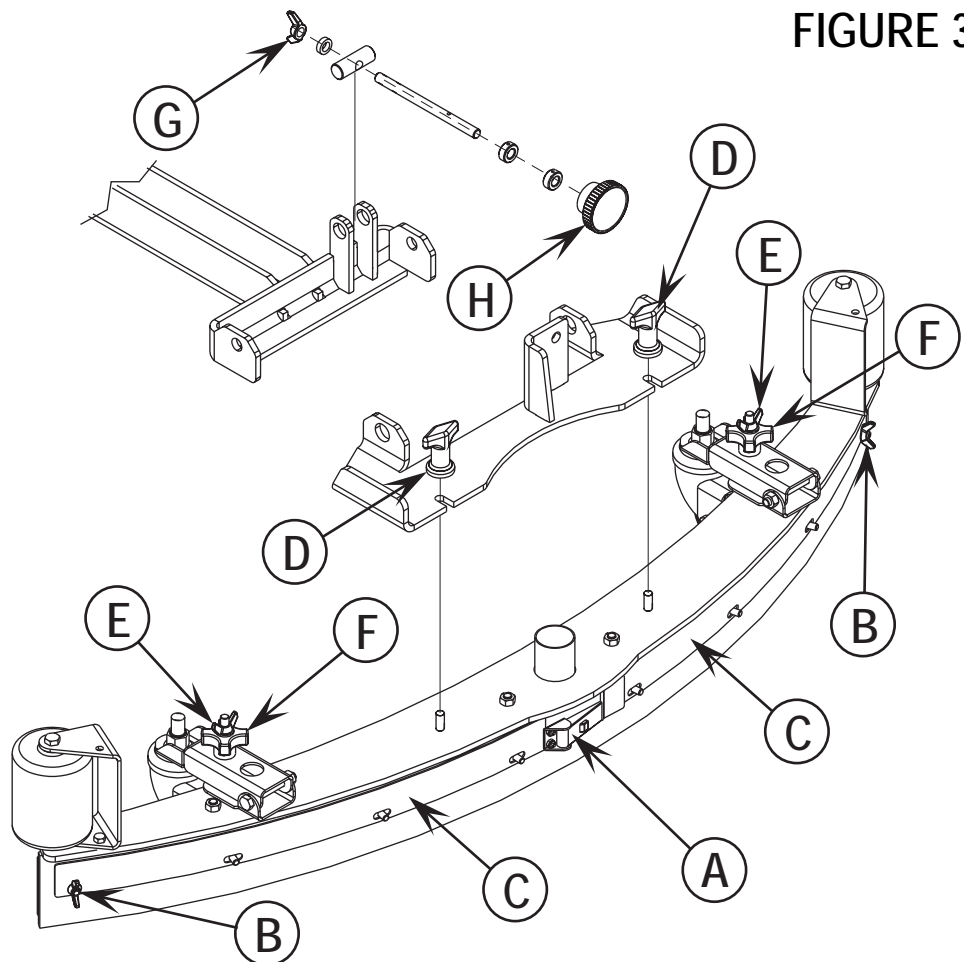


FIGURE 3

SIDE SKIRT MAINTENANCE (DISC SYSTEM)

The side skirts function is to channel the waste water to the rear pick-up squeegee, helping contain the water within the machine's 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.

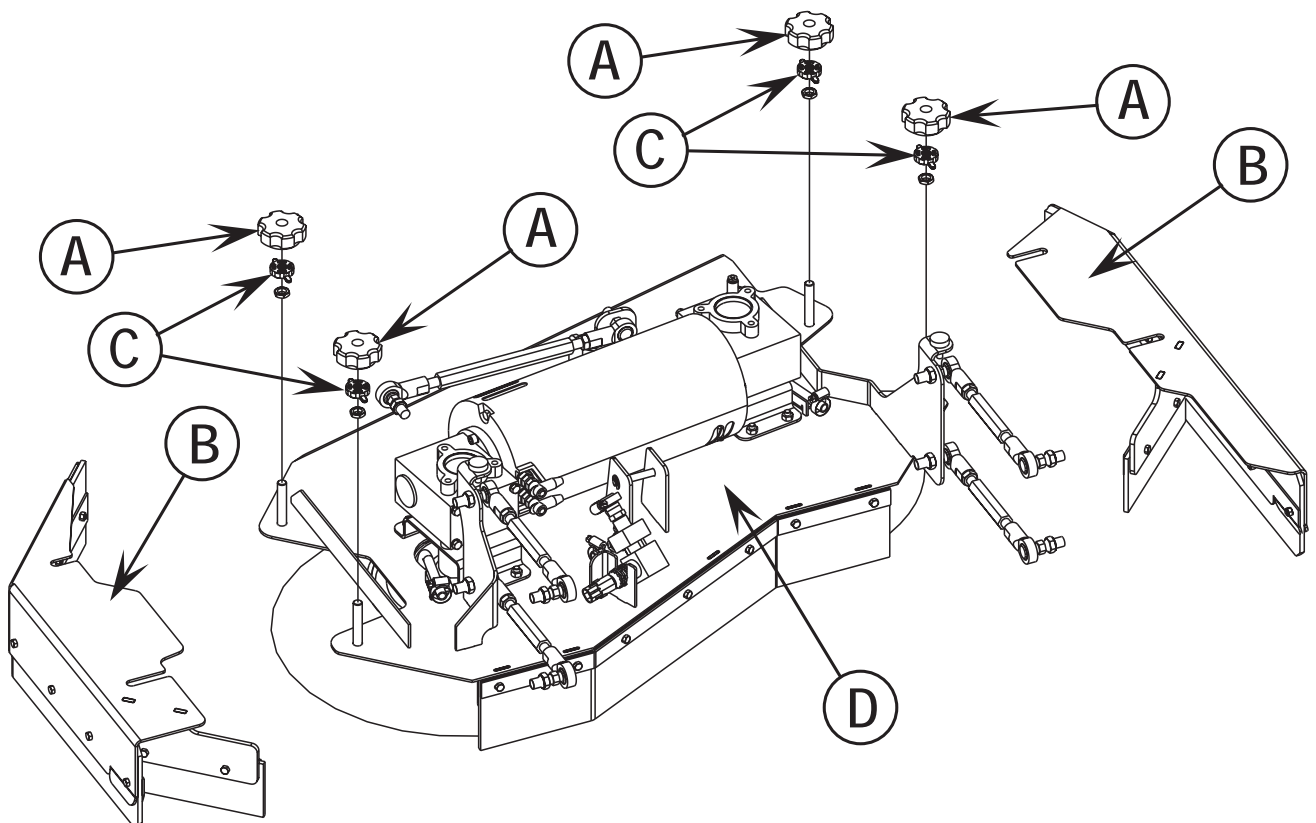
To reverse or replace the scrub system side skirt(s) ...

- 1 See Figure 4. Loosen the (2) side skirt Retainer Knobs (A) (2 per side) and pull the Skirt Assemblies (B) off from the scrub deck.
- 2 Remove all the hardware that holds both the (short and long) blades and retainers to the skirt housing.
- 3 Each blade has 4 working edges. Reinstall the blades to the skirt housing so a clean, undamaged edge points inside towards the scrub brushes. Replace the blades as a set if they 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 (DISC SYSTEM)

- 1 The side skirt housing knob retainer screw studs have leveling Adjuster Collars (C), that are to be raised or lowered to compensate for blade wear.
- 2 To adjust, remove the Skirt Assemblies (B) from the Scrub Deck (D) to access the Adjuster Collars (C). Adjustment Tip: The skirts Retainer Knobs (A) can be loosened with skirts left on and the Adjuster Collars (C) rotated by reaching under the skirt housing.
- 3 Turn the Adjuster Collars (C) (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 4



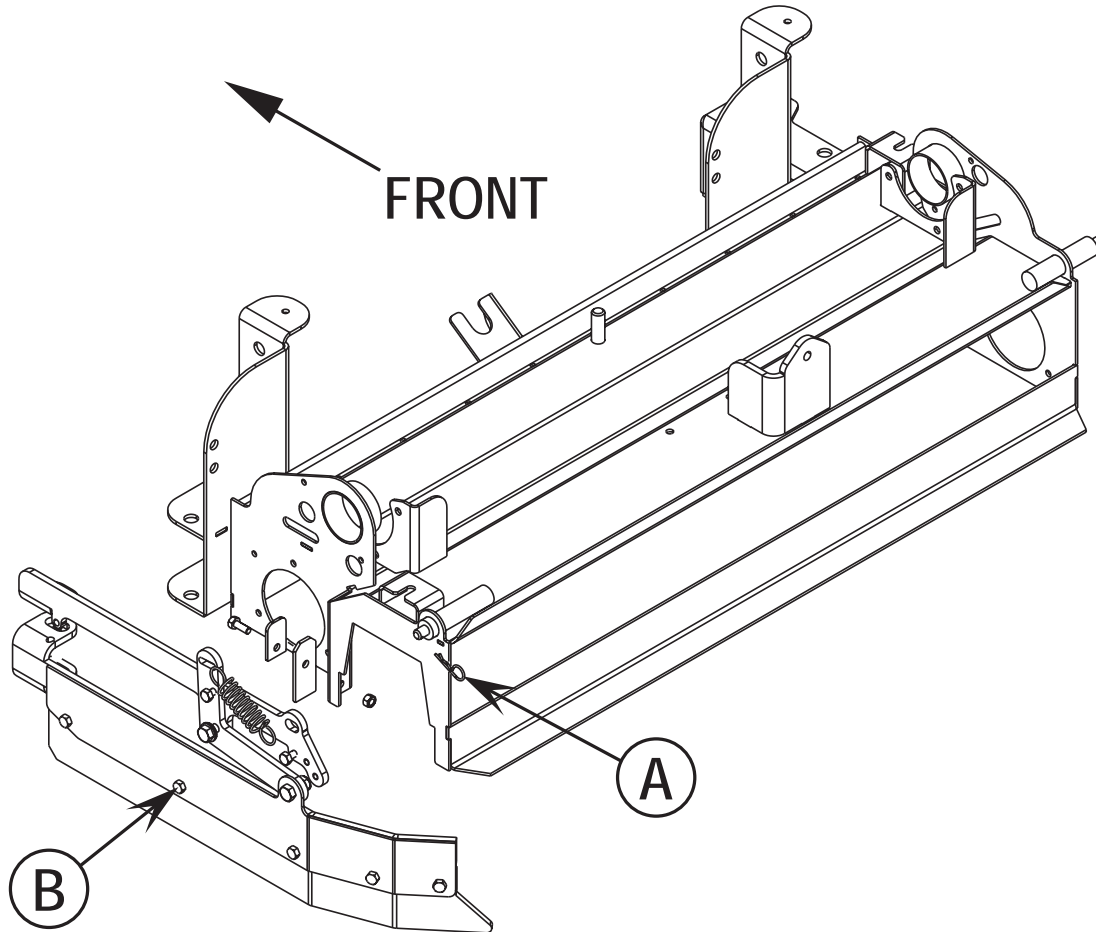
SIDE SKIRT MAINTENANCE (CYLINDRICAL SYSTEM)

The side skirts function is to channel the waste water to the rear pick-up squeegee, helping contain the water within the machine's 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. Skirt height adjustment is automatic on this system. The skirt assemblies should move up and down freely for proper operation.

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

- 1 See Figure 5. Remove the (2) (A) Cotter Pins and swing the Skirt Assemblies open. Remove the (B) Screws and Nuts, remove the Skirts and replace.

FIGURE 5



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	Adjust solution control valves
	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-Advance
	Wrong cleaning chemical	Consult Nilfisk-Advance
	Moving machine too fast	Slow down
	Not using enough solution	Adjust solution control valves
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 control valves not open	Adjust solution control valves
	Solution solenoid valve	Clean or replace valve
Machine does not run	Emergency stop switch	Rotate the stop switch knob to release
	Battery charger port interlock	Check for open circuit and replace
	Operator seat safety switch	Check for open circuit and replace
	Main system controller	Check error fault codes (see service manual)
	Tripped 10 Amp circuit breaker	Check for electrical short circuit & reset
No FWD/REV wheel drive	Drive system speed controller	Check error fault codes (see service manual)
	Tripped 80 Amp circuit breaker	Check for drive motor overload
	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

CONTROLLER ERROR CODES

For all error codes: Turn key switch off & then back on. If error persists consult chart below and/or service manual.

Error Code	Description	Possible Cause	Corrective Action
1	Control fault	Control failure	Turn key switch off & back on. If problem persists consult service manual.
2	Critical control fault	Control failure	Turn key switch off & back on. If problem persists consult service manual.
3	Drive system fault	Tripped wheel drive circuit breaker Throttle not in neutral (HPD fault)	Reset circuit breaker Verify that throttle is in neutral before turning key on. Adjust throttle mechanism.
4	Scrub deck lift actuator overload	Wheel drive system problem Scrub deck obstruction / binding Defective actuator motor	Consult service manual. Remove obstruction. Lubricate mechanism. Consult service manual.
5	Scrub deck lift actuator severe overload	See error code 4	
6	Scrub deck lift actuator circuit open / output fault	Bad electrical connection Defective actuator motor	Check all connections to actuator motor. Consult service manual.
7	Scrub motor overload	Control failure Scrub motor obstruction Defective scrub motor	Consult service manual. Remove obstruction. Check to see that motors rotate freely. Consult service manual.
8	Scrub motor severe overload	See error code 7	
9	Scrub motor circuit open	Bad electrical connection Defective scrub motor(s)	Check all connections to scrub motors. Consult service manual.
10	Scrub motor contactor contacts shorted	Control failure	Consult service manual.
11	Not used		
12	Scrub motor contactor coil overload	Contact failure	Consult service manual.
13	Scrub motor contactor coil severe overload	Coil suppression diode failure	Consult service manual.
14	Scrub motor contactor coil circuit open / output fault	See error code 12 Bad electrical connection Contact failure	Check all connections to scrub motor contactor. Consult service manual.
15	Not used	Control failure	Consult service manual.
16	Not used	Control failure	Consult service manual.
17	Scrub motor cable thermistor fault	Machine temperature out of range	This error will occur if the machine temperature is below 32°F or above 185°F. This error will not prevent operation of the machine. Scrub pressure may be affected.
18	Squeegee lift actuator overload	Thermistor failure Squeegee obstruction / binding Defective actuator motor	Consult service manual. Remove obstruction. Lubricate mechanism. Consult service manual.
19	Squeegee lift actuator severe overload	See error code 18	
20	Squeegee lift actuator circuit open / output fault	Bad electrical connection Defective actuator motor Control failure	Check all connections to actuator motor. Consult service manual. Consult service manual.
21	Not used		
22	Not used		
23	Not used		

Error Code	Description	Possible Cause	Corrective Action
24	Vacuum motor overload	Motor obstruction	Remove obstruction. Consult service manual.
25	Vacuum motor severe overload	Motor failure / carbon brush worn	Consult service manual.
26	Vacuum motor circuit open	See error code 24	Check all connections to vacuum motor(s).
27	Vacuum motor severe overload	Bad electrical connection	Consult service manual.
28	Vacuum motor circuit open	Defective vacuum motor(s)	Consult service manual.
29	Vacuum motor contacts shorted	Control failure	Consult service manual.
30	Not used	Control failure	Consult service manual.
31	Vacuum motor coil overload	Contact failure	Consult service manual.
32	Vacuum motor coil severe overload	Coil suppression diode failure	Consult service manual.
33	Vacuum motor coil circuit open / output fault	See error code 29	Consult service manual.
34	Solution solenoid overload	Bad electrical connection	Check all connections to vacuum motor contactor.
35	Solution solenoid severe overload	Contact failure	Consult service manual.
36	Solution solenoid circuit open / output fault	Control failure	Consult service manual.
37	External wiring fault	Solenoid failure	Consult service manual.
38	No accessory output voltage	Control failure	Consult service manual.
39	Not used	Control failure	Consult service manual.
40	Direction input fault	Wiring problem	Check for loose connections to main control unit. Consult service manual.
41	Pre-sweep contactor coil overload	Control Failure / Wiring problem	Check for loose connections to main control unit. Consult service manual.
42	Pre-sweep contactor coil severe overload	Speed control output problem	Check all connections to solution solenoid.
43	Pre-sweep contactor coil circuit open / output fault	Improperly programmed speed control	Consult service manual.
44	Dust control contactor coil overload (3800 / BR 1100)	Control failure	Consult service manual.
45	Dust control contactor coil severe overload (3800 / BR 1100)	Contact failure	Consult service manual.
46	Dust control contactor coil circuit open / output fault (3800 / BR 1100)	See error code 44	Consult service manual.
		Bad electrical connection	Check all connections to pre-sweep motor contactor.
		Contact failure	Consult service manual.
		Control failure	Consult service manual.
		Contact failure	Consult service manual.

TECHNICAL SPECIFICATIONS (as installed and tested on the unit)

Model		BR 1100	BR 1100C	BR 1100C-XL
		Hydro-Retriever™ 3800	Hydro-Retriever™ 3800C	Hydro-Retriever™ 2042
Model No.		56410002	56410351	56410425
Current	A	136	103	115
Voltage, Batteries	V	36V	36V	36V
Battery Capacity	Ah	480@5 hr	480@5 hr	370@6 hr
Protection Grade		370@6 hr	370@6 hr	370@6 hr
Sound Power Level (IEC 704-1)	dB(A)/20µPa	IPX3	IPX3	IPX3
Gross Weight	lbs / kg	73	73	73
		2988 / 1355	2998 / 1360	2833 / 1285
Vibrations at the Hand Controls	m/s ²	2690 / 1220	2700 / 1225	2833 / 1285
Vibrations at the Seat	m/s ²	<2.5m/s ²	<2.5m/s ²	<2.5m/s ²
Gradeability		<0.5m/s ²	<0.5m/s ²	<0.5m/s ²
Transport		15% (8.5°)	15% (8.5°)	15% (8.5°)
Cleaning		12% (6.8°)	12% (6.8°)	12% (6.8°)

Austria (Sales Sub)

Nilfisk-Advance GmbH	Phone: +43
Voralberger Allee 46	1616 58 30 22
A-1230 Wien	Fax: +43
info@nilfisk-advance.at	1616 58 30 40
www.nilfisk-advance.at	

Belgium (Sales Sub)

Nilfisk-Advance NV/SA	Phone: +32
Doornveld Sphere Business Park	(0)2467 60 50
Industrie Asse 3, No. 11	Fax: +32
B-1731 Zellik-Asse	(0)2463 44 16
www.nilfisk-advance.be	

Czech Republic (Sales Sub)

Nilfisk-Advance s.r.o.	Phone: +420
Lysinská 44/1863	2 44 09 09 12
143 00 Praha - Modrany	+420
Czech Republic	2 44 09 09 21 4
	Fax: +420
	2 44 40 23 93

Denmark

Nilfisk-Advance A/S	Phone: +45
Sognevej 25	43 23 81 00
DK-2605 Brøndby	Fax: +45
mail@nilfisk-advance.dk	43 43 77 00
www.nilfisk-advance.com	

Denmark (Prod. Sub)

Gerni A/S	Phone: +45
Myntevej 2	89 12 22 00
DK-8900 Randers	Fax: +45
www.gerni.com	86 43 14 81

Denmark (Sales Sub)

Nilfisk-Advance Nordic A/S	Phone: +45
Sognevej 25A	43 23 40 50
Postbox 344	Fax: +45
DK-2605 Brøndby	43 23 40 60
kundeservice@nilfisk-advance.dk	
www.nilfisk-advance.dk	

France (Sales Sub)

Nilfisk-Advance S.A.	Phone: +33
27 avenue de la Baltique	1695 98 700
Villebon sur Yvette	Fax: +33
P.B. 246	1695 98 701
F-91944 Courtaboeuf Cedex	
info@nilfisk-advance.fr	
www.nilfisk-advance.fr	

Germany (Sales Sub)

Nilfisk-Advance AG	Phone: +49
Siemensstrasse 25-27	4101 3990
Postfach 1361	Fax: +49
D-25462 Rellingen	4101 39 91 91
info@nilfisk-advance.de	
www.nilfisk-advance.de	

Greece (Sales Sub)

Nilfisk-Advance A.E.	Tel.: +30
8, Thoukididou Str.	210 963 3443
Argioupoli	Fax: +30
Gr - 164 52 Athens	210 965 0975
Greece	

Holland (Sales Sub)

Nilfisk-Advance B.V.	Phone: +31
Camerastraat 9 (2e verdieping)	36 546 07 00
1322 BB Almere	Fax: +31
Postbus 60112	36 523 51 48
1320 AC Almere	
www.nilfisk-advance.nl	

Ireland (Sales Sub)

Nilfisk-Advance Limited	Phone: +35
28 Sandyford Office Park	3 12 94 38 38
Sandyford, Dublin 18	Fax: +35
Ireland	3 12 94 38 45

Italy (Prod & Sales Sub)

CFM SpA	Phone: +39
Nilfisk-Advance Div. Guardamiglio	0377 /414021
Localita Novella III	/45 1124
I-26862 Guardamiglio (Mi)	Fax: +39
	0377 51 443

Italy (Prod & Sales Sub)

CFM S.p.A.	Phone: +39
Via Porrettana 1991	059 973 0000
I-41059 Zocca (Modena)	Fax: +39
cfm@cfm.it	059 973 0099

Norway (Sales Sub)

Nilfisk-Advance AS	Phone: +47
Ulvenveien 89C	23 06 75 00
N-0581 Oslo	Fax: +47
	23 06 75 01

Poland (Sales Sub)

Nilfisk-Advance Sp.Z.O.O.	Phone: +48
05-800 Pruszków	22 738 37 50
ul. 3-go MAJA 8	Fax: +48
Poland	22 738 37 51

Portugal (Sales Sub)

Nilfisk-Advance, Lda.	Phone: +35
Sintra Business Park	121 911 2670
Zona Industrial Da Abrunheira	Fax: +35
Edificio 1, 1o A	121 911 2679
P-2710-089 Sintra	

Russia (Sales Sub)

Nilfisk-Advance LLC	Phone: 7
Vyatskaya str. 27, bld. 7	095 783 9602
127015 Moscow	Fax: +7
Russia	095 783 9603

Spain (Sales Sub)

Nilfisk-Advance S.A.	Phone: +34
Torre D'Ara	93 741 2400
Passeig del Rengle, 5 Pl.10	Fax: +34
E-08302 Mataró (Barcelona)	93 757 8020
nilfisk@nilfisk-advance.es	

Sweden (Sales Sub)

Nilfisk -Advance A/S	Phone: +46
Sjöbjörnsvägen 5	8555 94400
Box 44045	Fax: +46
S-100 73 Stockholm	8555 94430
info@nilfisk-advance.se	
www.nilfisk-advance.se	

Sweden (Prod.)

Nilfisk-Advance A/S	Phone: +46
Åmål Branch	5321 7500
Strömsbergsgatan	Fax: +46
Box 127	5321 7595
S-662 23 Åmål	

Switzerland (Sales Sub)

Nilfisk-Advance AG	Phone: +41
Ringsstrasse 19	71 92 38 444
Kirchberg/Industrie Stelzl	Fax: +41
CH-9500 Wil	71 92 35 283

www.nilfisk-advance.ch

UK (Sales Sub)

Nilfisk-Advance Limited	Phone: +44
Newmarket Road	1284 763163
Bury St. Edmunds	Fax: +44
UK-Suffolk IP33 3SR	1284 750 562

USA (Prod.)

Nilfisk-Advance Inc.	Phone: +1 763
14600 21.st Avenue North	745 3500
Plymouth, MN 55447-3408	Fax: +1 763
www.mn.nilfisk-advance.com	745 3718

USA (Sales Sub)

Nilfisk-Advance America Inc.	Phone: +1 610
300 Technology Drive	647 6420
Malvern, PA 19355	Fax: +1 610
www.pa.nilfisk-advance.com	647 6427

Canada (Sales Sub)

Nilfisk-Advance Canada Comp.	Phone: +1 905
396 Watline Avenue	712 3260
Mississauga, Ontario L4Z 1X2	Fax: +1 905
	712 3255

Australia (Sales Sub)

Nilfisk-Advance Pty. Ltd.	Phone: +61(0)2
48 Egerton Street	9648 2700
Silverwater, NSW 2128	Fax: +61(0)2
Postal addresse:	9648 2711
PO Box 6046	
Silverwater. NSW 1811	
info@nilfisk-advance.com.au	
www.nilfisk-advance.com.au	

China (Shenzhen)

Nilfisk-Advance (Shenzhen) Ltd	Phone: +86 755
Blok 3, Unit 130, 1001 Honghua Road	8359 7937 el.
Int. Commercial & Trade Center	8359 7939-42
Fuitian Free Trade Zone	Fax: +86 755
518038 Shenzhen	8359 1063
P.R. China	

China (Suzhou)

Nilfisk-Advance Professional	Phone: +86 512
Cleaning Equipment (Suzhou) Co. Ltd.	8918 5656
306 Su Hong Zhong Road, Build. 2	Fax: +86 512
Suzhou Industrial Park	8918 5666
215021 Suzhou	
P.R. China	

Hong Kong (Sales Sub)

Nilfisk-Advance Ltd.	Phone: +852
2001 HK Worsted Mills Ind'l Bldg.,	2427 5951
31-39 Wo Tong Tsui St.	Fax: +852
Kwai Chung, Hong Kong	2487 5828

Japan (Sales Sub)

Nilfisk-Advance Inc.	Phone: +8145
3-17-40-101 Chigasaki Higashi	942 7741
Tsuzuki-ku, Yokohama 224-0033	Fax: +8145
Japan	942 6545

Malaysia (Sales Sub)

Nilfisk-Advance Sdn Bhd	Phone: +60 3
No. 21, Jalan SS 25/41	7956 8188
Mayang Industrial Park	Fax: +60 3
47301 Petaling Jaya	7966 6828
Selangor, Malaysia	

New Zealand (Sales Sub)

Nilfisk-Advance Limited	Phone: +64(0)9
Danish House	525 0092
6 Rockridge Avenue	Fax: +64(0)9
Penrose 92-829	525 6440
Auckland1135	
Postal addresse:	
Private Bag 92 825	
Auckland	
New Zealand	

Singapore (Sales Sub)

Nilfisk-Advance Pte. Ltd.	Phone: + 65
22,Woodlands Industrial Park E1	6 7599100
Singapore 757740	Fax: +65
sales@nilfisk-advance.com.sg	7599133

Taiwan, ROC (Sales Sub)

Nilfisk-Advance Ltd.	Phone: +886
Taiwan Branch (H.K.)	2 2239 8812
1F, No. 193, Sec.2	Fax: +886
Xing Long Rd., Taipei	2 2239 8832
Taiwan, R.O.C.	

Thailand (Sales Sub)

Nilfisk-Advance Co. Ltd.	Phone: +66 2
89 Soi Chokechai-Ruammitr	275-5630
Viphavadee-Rangsit Road	Fax: +66 2
Ladyao, Jatuchak, Bangkok 10900	691-4079
Thailand	

TYPE: BR1100, BR1100C

<p>EU Overensstemmelseserklæring DK Batteridreven gulvaskemaskine Maskinen er fremstillet i overensstemmelse med følgende direktiver: Maskindirektiv: 98/37/EØF EMC-direktiv: 89/336/EØF 92/31/EØF 93/68/EØF 98/13/EOF Lavspændingsdirektiv: 73/23/EØF 93/68/EØF Harmoniserede standarder: EN 60 335-2-72</p>	<p>Déclaration CE de conformité B, F Autolaveuse à batterie Cette machine a été fabriquée conformément aux directives suivantes: Réglementation machine: 98/37/CEE Réglementation CEM: 89/336/CEE 92/31/CEE 93/68/CEE 98/13/CEE Règlement basse tension: 73/23/CEE 93/68/CEE Normes harmonisées: EN 60 335-2-72</p>
<p>EU Överensstämmelseförsäkran S, FIN Batteri-Skurmaskin Maskinen är tillverkad i överensstämmelse med följande direktiver: Maskindirektiv: 98/37/EEG EMC-direktiv: 89/336/EEG 92/31/EEG 93/68/EEG 98/13/EEG Lågspänningsdirektiv: 73/23/EEG 93/68/EEG Harmoniserade standarder: EN 60 335-2-72</p>	<p>EG-conformiteitsverklaring NL, B Vloeronderhoudmachine Deze machine is vervaardigd overeenkomstig de volgende richtlijnen: Machine richtlijn: 98/37/EEC EMC-richtlijn: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Laagspanning richtlijn: 73/23/EEC 93/68/EEC Geharmoniseerde normen: EN 60 335-2-72</p>
<p>EU Declaration of Conformity GB, IRL Battery powered floor scrubber This machine was manufactured in conformity with the following directives and standards: Machine Directive: 98/37/EEC EMC-directive: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Low voltage directive: 73/23/EEC 93/68/EEC Harmonized standards: EN 60 335-2-72</p>	<p>Declaración de conformidad de la CEE E Fregadoa a baterías Esta máquina ha sido fabricada en conformidad a las siguientes normativas: Normativa de la máquina: 98/37/CEE Normativa EMC: 89/336/CEE 92/31/CEE 93/68/CEE 98/13/CEE Normativa sobre baja tensión: 73/23/CEE 93/68/CEE Normas armonizadas: EN 60 335-2-72</p>
<p>Dichiarazione di conformità - CEE I Lavasciuga a batteria È prodotto in conformità alle disposizioni contenute nelle Direttive del Consiglio dei Ministri: M-direttiva: 98/37/EEC EMC-direttiva: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC LV-direttiva: 73/23/EEC 93/68/EEC Norme armonizzate: EN 60 335-2-72</p>	<p>EU Declaração de conformidade da CE P Auto-lavadora a baterias Esta máquina foi fabricada em conformidade com as seguintes directrizes: Directriz de maquinaria: 98/37/CEE Directriz EMC: 89/336/CEE 92/31/EEC 93/68/CEE 98/13/CEE Directriz de baixa voltagem: 73/23/CEE 93/68/CEE Normas harmonizadas: EN 60 335-2-72</p>
<p>EG – Konformitätserklärung D, A Batteriebetriebene Scheuersaugmaschine Diese Maschine wurde gemäß den folgenden Richtlinien hergestellt: Maschinerichtlinie: 98/37/EWG EMV-Richtlinie: 89/336/EWG 92/31/EWG 93/68/EWG 98/13/EWG Niederspannungsrichtlinie: 73/23/EWG 93/68/EWG Harmonisierte normen: EN 60 335-2-72</p>	<p>EU:n yhdenmukaisuudesta direktiiveihin FIN Akkukäyttöinen yhdistelmäkon On valmistettu noudattaen yhteisön määrittämiä direktiivejä: M-direktiivi: 98/37/CEE EMC-direktiivi: 89/336/CEE 92/31/CEE 93/68/CEE 98/13/CEE LV-direktiivi: 73/23/CEE 93/68/CEE Yhdenmukaistetut standardit: EN 60 335-2-72</p>
<p>Δηλώση προσαρμογής/συνόρφωσης EU GR Μπαταριοκίνητο μηχανήμα πλυσής δαπέδων Το μηχανήμα έχει κατασκευαστεί ομόψωπα με τις παρακάτω προσαρμογές: Προσαρμογή μηχανήματος: 98/37/EEC Προσαρμογή-EMC: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Προσαρμογή χαμηλής τάσεως: 73/23/EEC 93/68/EEC Εναρμονισμένα πρότυπα: EN 60 335-2-72</p>	<p>EL vastavusdeklaratsioon ET Akutoitega põrandapuhasti Käesolev masin on valmistatud kooskõlas järgmiste direktiivide ja standarditega: Masinadirektiiv: 98/37/EEC Elektromagnetilise sobivuse direktiiv: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Madalpinge direktiiv: 73/23/EEC 93/68/EEC Ühtlustatud standardid: EN 60 335-2-72</p>

<p>ES atbilstības deklarācija LV Grīdas beršanas mašīna ar akumulatoru barošanu Šī mašīna izgatavota atbilstoši šādām direktīvām un standartiem: Mašīnu direktīva: 98/37/EEC Elektromagnētiskās savietojamības (EMC) direktīva: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Zemsprieguma direktīva: 73/23/EEC 93/68/EEC Saskaņotie standarti: EN 60 335-2-72</p>	<p>Pareiškimas apie atitikimą ES direktyvoms LT Baterijos energija varomas grindų šveitimo įrenginys Šis įrenginys pagamintas laikantis tokių direktyvų bei standartų: Įrengimų direktyva: 98/37/EEC EMC direktyva: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Žemos įtampos įrengimų direktyva: 73/23/EEC 93/68/EEC Harmonizuoti standartai: EN 60 335-2-72</p>
<p>Deklaracija EU o skladnosti SL Stroj za čiščenje tal na akumulatorski pogon Ta stroj je izdelan v skladu z naslednjimi smernicami in standardi: Smernica o strojih: 98/37/EEC Smernica o elektromagnetni združljivosti (EMC): 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Smernica o nizki napetosti: 73/23/EEC 93/68/EEC Harmonizirani standardi: EN 60 335-2-72</p>	<p>Prehlásenie o súlade EÚ SK Zariadenie na čistenie povrchov napájané batériou Toto zariadenie bolo vyrobené v súlade s nasledujúcimi direktívami a normami: Direktíva o zariadeniach: 98/37/EEC Direktíva EMC: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Direktíva o nízkom napätí: 73/23/EEC 93/68/EEC Súvisiace normy: EN 60 335-2-72</p>
<p>EU Prohlášení o shodě CS Bateriemi napájené zařízení pro mytí podlah Tento stroj byl vyroben ve shodě s následujícími směrnicemi a normami: Směrnice o strojním zařízení: 98/37/EEC Směrnice o elektromagnetické kompatibilitě: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Směrnice o nízkém napětí: 73/23/EEC 93/68/EEC Harmonizované normy: EN 60 335-2-72</p>	<p>Deklaracja zgodności z normami UE PL Akumulatorowa cyklinarka podłogowa Niniejsze urządzenie zostało wyprodukowane w zgodzie z następującymi dyrektywami i normami UE: Dyrektywa dotycząca maszyn: 98/37/EEC Dyrektywa: kompatybilność elektromagnetyczna 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Dyrektywa: urządzenia elektromagnetyczne niskonapięciowe 73/23/EEC 93/68/EEC Zharmonizowane normy: EN 60 335-2-72</p>
<p>EU megfeleléségi nyilatkozat HU Akkumulátoros padlóúrológép Ez a gép az alábbi irányelvekkel és szabványokkal összhangban készült: Gépészeti irányelvek 98/37/EEC EMC-irányelvek 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Kisfeszültségű irányelvek: 73/23/EEC 93/68/EEC Harmonizált szabványok: EN 60 335-2-72</p>	<p>Декларация изготовителя о соответствии директивам ЕС Поломочная машина, работающая на аккумуляторных батареях Данная машина разработана в соответствии со следующими инструкциями и стандартами: Инструкция по разработке машин: 98/37/EEC Инструкция EMC: 89/336/EEC 92/31/EEC 93/68/EEC 98/13/EEC Инструкция по использованию низких напряжений: 73/23/EEC 93/68/EEC Согласованные стандарты: EN 60 335-2-72</p>



4.3.2004 .

Larry Doerr, Vice President Operations
Nilfisk-Advance, Inc.
14600 21st Avenue North
Plymouth, MN 55447 USA

Nilfisk-Advance A/S
Sognevej 25
DK-2605 Brøndby, Denmark



www.nilfisk-advance.com

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