



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

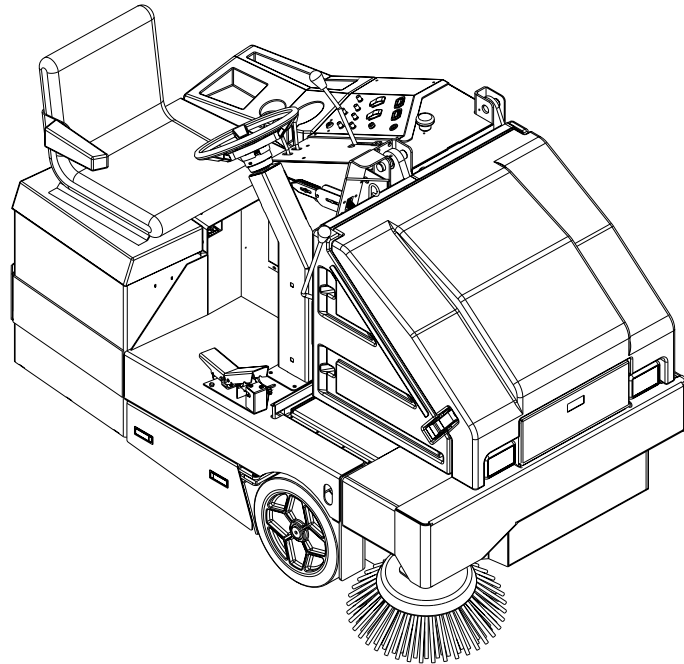
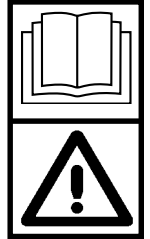
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Retriever™ 4600



OPERATOR MANUAL **Advance MODEL 56416000**



**Nilfisk
Advance**
setting standards

9/97 revised 7/00 Form Number 56041389

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INTRODUCTION

This manual will help you get the most from your Nilfisk-Advance Retriever™ 4600. Read it thoroughly before operating the machine.

Note: Bold numbers in parentheses indicate an item illustrated on pages 5-6.

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.

(Dealer, affix service sticker here.)

NAME PLATE

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

MODEL _____

SERIAL NUMBER _____

UNCRATING 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.

- 1 After removing the crate, remove the wooden blocks next to the wheels.
- 2 **Read the instructions** in the Preparing the Machine For Use section.
- 3 Place a ramp next to the front end of the pallet.
- 4 **Read the instructions** in the Operating the Machine section, slowly drive the machine forward from the pallet to the floor. Keep your left foot lightly on the brake pedal until your sweeper is off the pallet.

CAUTION!

Use extreme CAUTION when operating this sweeper. Be certain that you are thoroughly familiar with all of the operating instructions prior to using this sweeper. If you have any questions, contact your supervisor or your local Nilfisk-Advance Industrial Dealer.

Should your sweeper malfunction, do not attempt to correct the problem unless your supervisor directs you to do so. Have a qualified company mechanic or an authorized Nilfisk-Advance Dealer Service person make any necessary corrections to the equipment.

Use extreme care when working on this machine. Neckties, loose clothing, long hair, rings and bracelets can get caught in moving parts. Turn the Key Switch (4) OFF, set the Parking Brake (24) and disconnect the batteries before working on the machine. Use good common sense, practice good safety habits and pay attention to the yellow decals on this machine.

WARNING!

NEVER OPERATE THIS MACHINE NEAR FLAMMABLE LIQUIDS OR VAPORS.

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.
- * Avoid sudden stops when loaded. Avoid abrupt sharp turns. Use low speed down hills or ramps.
- * To avoid hydraulic oil injection or injury always wear appropriate clothing and eye protection when working with or near hydraulic system.
- * Turn the Key Switch (Main Power) **(4)** to the OFF position, set the Parking Brake **(24)** and disconnect the batteries before performing any service function.
- * Never work under a machine without safety blocks or stands to support the machine.
- * Make sure the Hopper Safety Support **(37)** is in place whenever attempting to do any maintenance work under or near the raised hopper.
- * Never operate this machine near flammable liquids or vapors.
- * Do not clean this machine with a pressure washer.

CAUTION !

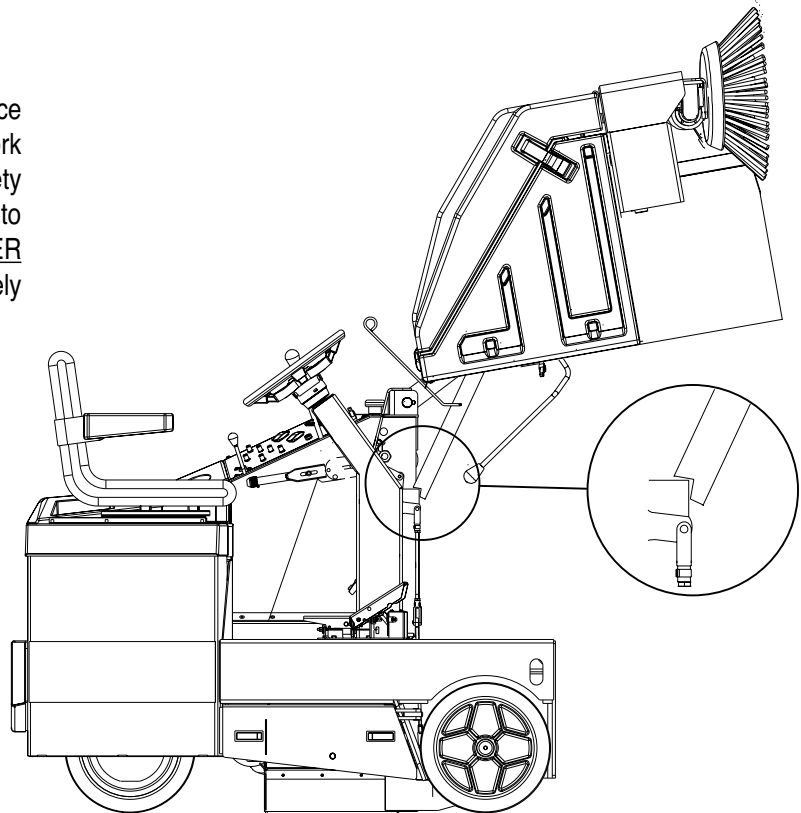
- * This machine is not approved for use on public paths or roads.
- * This machine is not suitable for picking up hazardous dust.
- * Do not operate this machine on ramps or inclines of more than 5 degrees.
- * When operating this machine, ensure that third parties, particularly children, are not endangered.
- * 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 **(4)** OFF, removing the key and applying the Parking Brake **(24)**.
- * Take precautions to prevent hair, jewelry, or loose clothing from becoming caught in moving parts.
- * Make sure all safety devices are in place and operating properly.
- * Before use, all doors and hoods should be properly latched.
- * Moving parts. Disconnect power before servicing filter.

SAVE THESE INSTRUCTIONS

HOPPER SAFETY SUPPORT

WARNING!

Make sure the Hopper Safety Support (37) is in place whenever attempting to do any maintenance work under or near the raised hopper. The Hopper Safety Support (37) holds the hopper in the raised position to allow work to be performed under the hopper. NEVER rely on the machine's hydraulic components to safely support the hopper.



JACKING THE MACHINE

CAUTION!

Never work under a machine without safety stands or blocks to support the machine.

- When jacking the machine, do so at designated locations (Do Not jack on the hopper) - see jacking locations (42).

TRANSPORTING THE MACHINE

CAUTION!

Before transporting the machine on an open truck or trailer, make sure that . . .

- All access doors are latched securely.
- The machine is tied down securely - see tie-down locations (34).

TOWING

CAUTION!

If the machine must be towed or pushed, make sure the Key Switch (Main Power) (4) is in the OFF position and do not move the machine faster than 5 mph.

OTHER MANUALS AVAILABLE FOR THE RETRIEVER 4600B

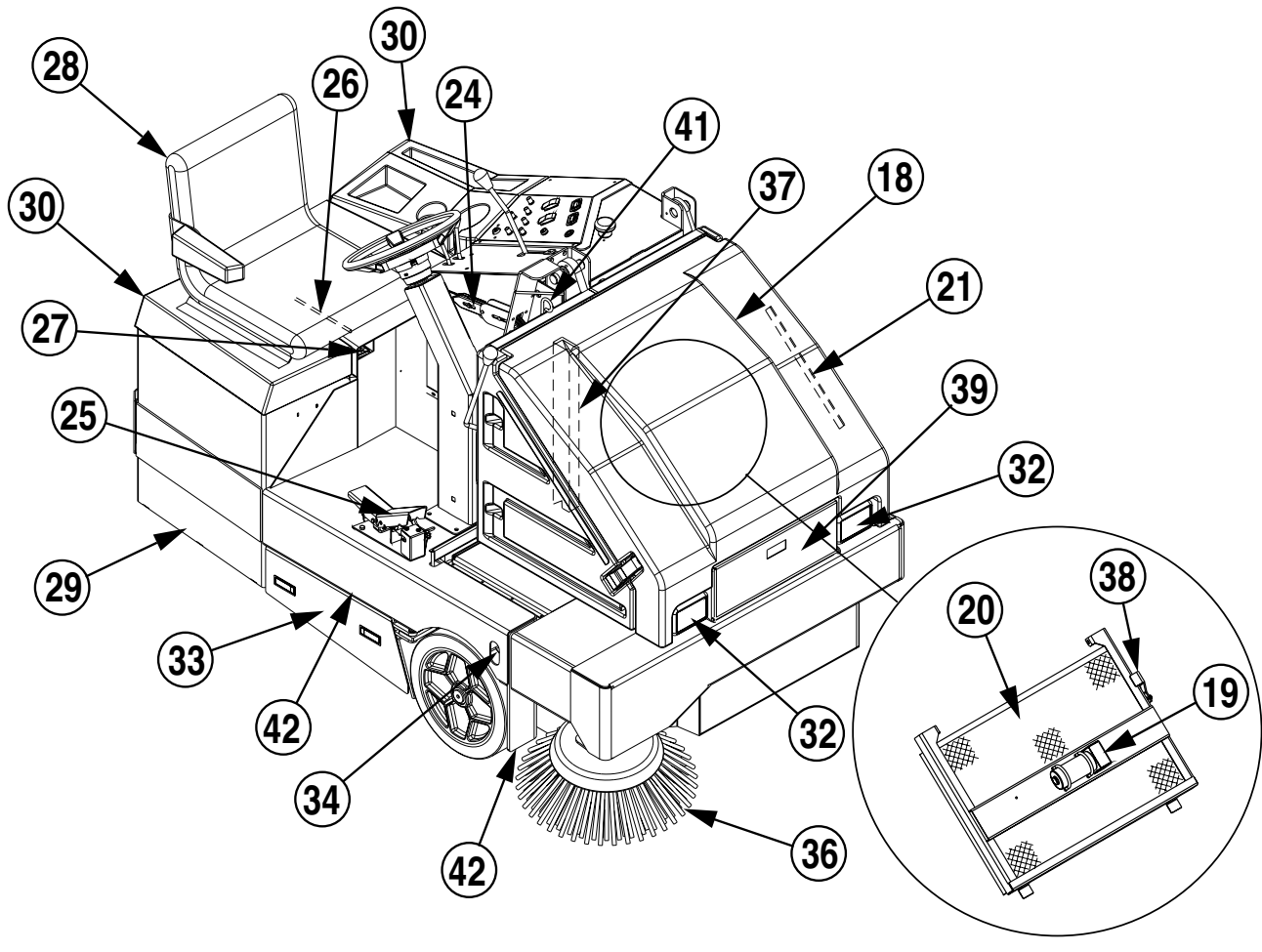
The following manuals are available from the Nilfisk-Advance Literature Service Department:

- Retriever™ 4600B Parts List - Nilfisk-Advance Form Number 56042334
- Retriever™ 4600B Service Manual - Nilfisk-Advance Form Number 56043043

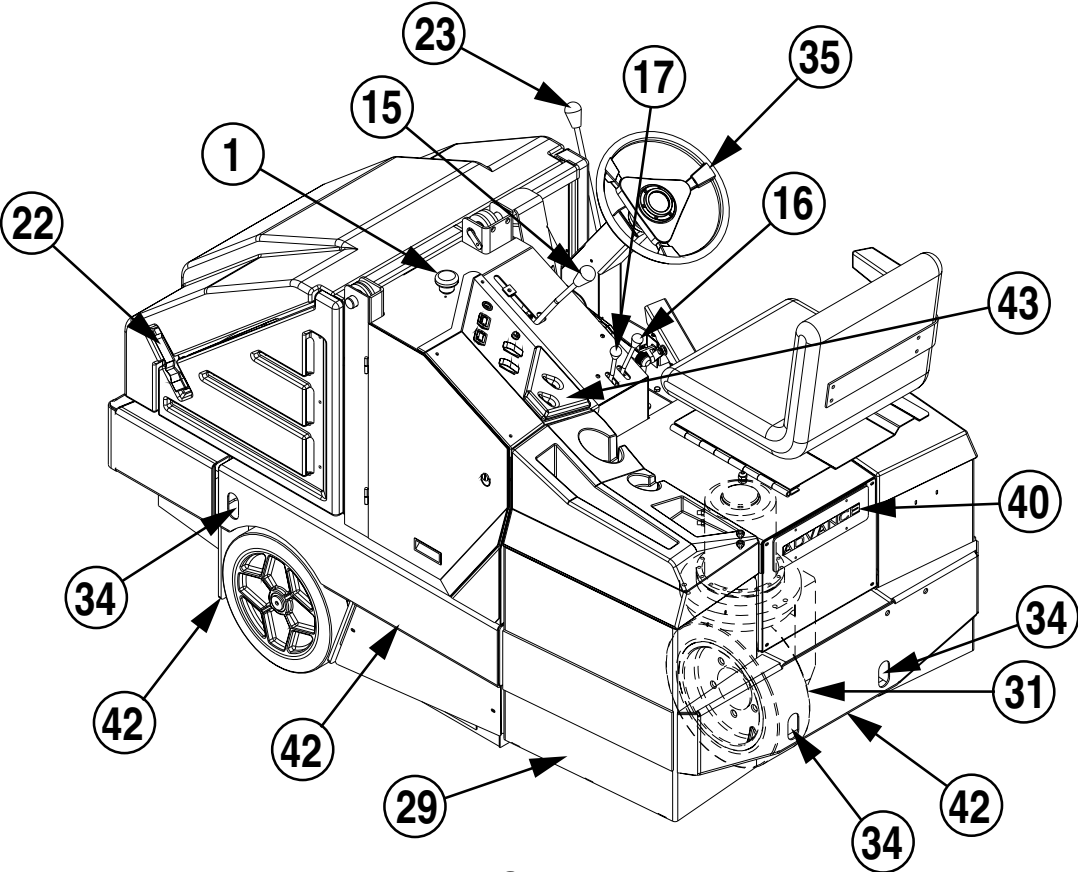
KNOW YOUR MACHINE

As you read this manual, you will occasionally run across a bold number in parentheses - example: (2). These numbers refer to an item on these two pages. Refer back to these pages whenever necessary to pinpoint the location of an item mentioned in the text.

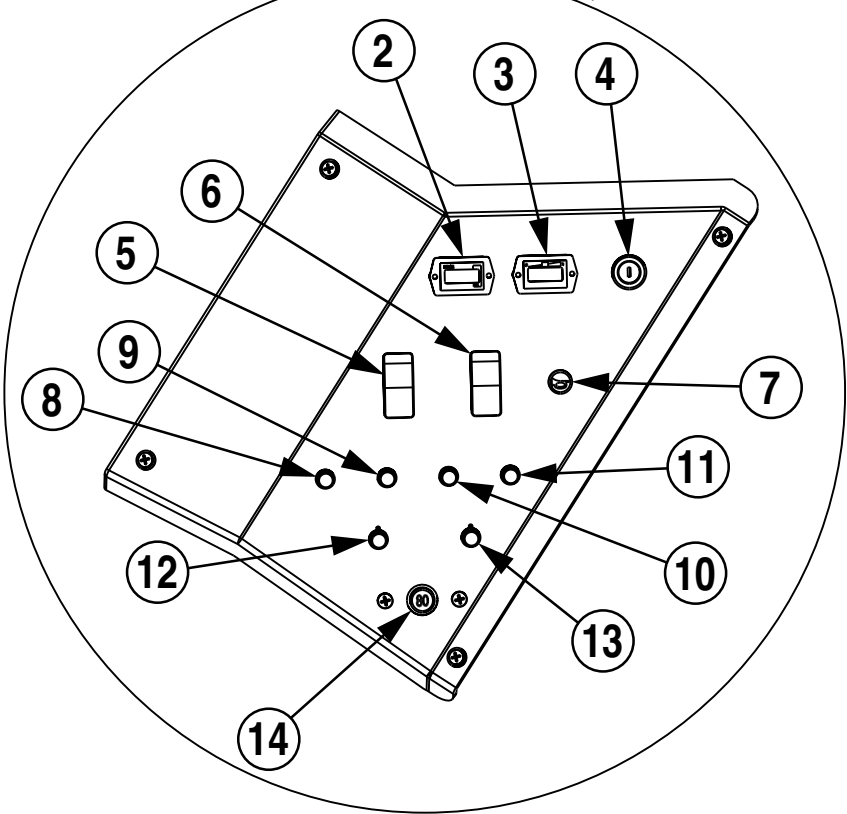
- | | | | |
|----|---|----|--|
| 1 | Emergency Quick Disconnect | 22 | Hopper Cover Latch |
| 2 | Hour Meter | 23 | Side Broom Raise / Lower (ON / OFF) Lever |
| 3 | Battery Condition Meter | 24 | Parking Brake Set / Release Lever (Foot Brake) |
| 4 | Key Switch (Main Power) | 25 | FWD / REV Drive Pedal |
| 5 | Headlight Switch | 26 | Operator's Seat Adjust Lever |
| 6 | Dust Control / Shaker Switch | 27 | Battery Charger Port |
| 7 | Horn Switch | 28 | Operator's Seat (W / Safety Switch) |
| 8 | Circuit Breaker, 15 Amp (Dust Control / Shaker Motor) | 29 | Battery Compartments (Removable) |
| 9 | Circuit Breaker, 6 Amp (Aux. Circuit 1) | 30 | Battery Compartment Covers |
| 10 | Circuit Breaker, 10 Amp (Side Broom Motor) | 31 | Wheel Drive / Steer Wheel |
| 11 | Circuit Breaker, 5 Amp (Aux. Circuit 2) | 32 | Headlights |
| 12 | Circuit Breaker, 60 Amp (Hydraulic Pump) | 33 | Main Broom Access Door |
| 13 | Circuit Breaker, 40 Amp (Main Broom Motor) | 34 | Tie Down Points |
| 14 | Circuit Breaker, 80 Amp (Wheel Drive Motor) | 35 | Steering Wheel |
| 15 | Main Broom Raise / Lower (ON / OFF) Lever | 36 | Side Broom |
| 16 | Hopper Raise / Lower Lever | 37 | Hopper Safety Support |
| 17 | Hopper Door Open / Close Lever | 38 | Shaker Assembly Latch |
| 18 | Hopper Cover | 39 | Litter Door |
| 19 | Dust Filter Shaker Assembly | 40 | Tail Light |
| 20 | Hopper Dust Control Filter | 41 | Hopper Safety Support Pull Rod |
| 21 | Hopper Cover Prop Rod | 42 | Jacking Points |
| | | 43 | Circuit Breaker Cover |



KNOW YOUR MACHINE



CONTROL PANEL



PREPARING THE MACHINE FOR USE

INSTALLING 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 arc, spark or flame.

WHEN SERVICING BATTERIES...

- Remove all jewelry
- Do not smoke
- Wear safety glasses
- Work in a well-ventilated area
- Do not allow tools to touch more than one battery terminal at a time

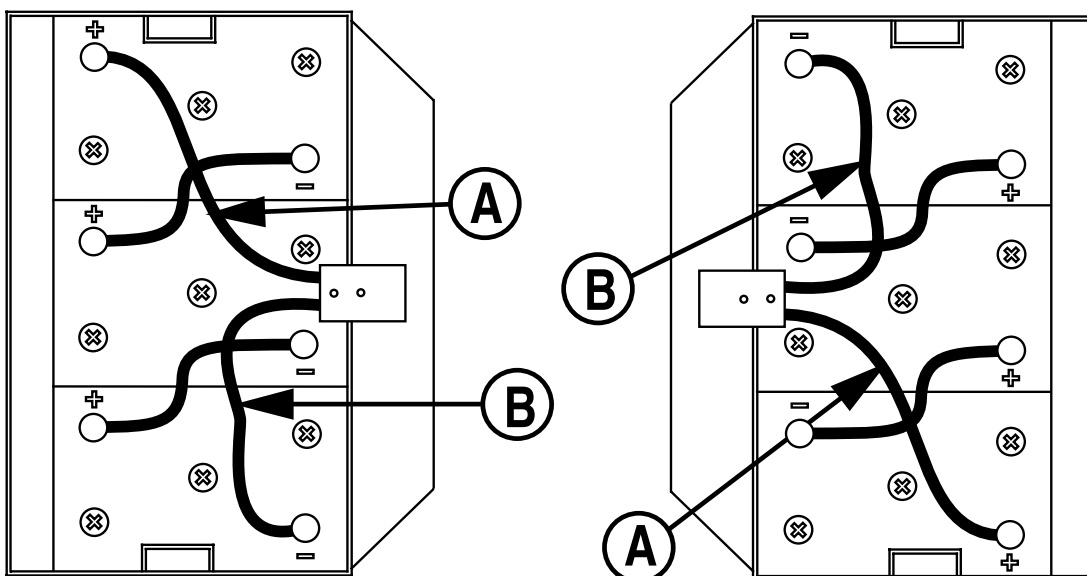
⚠ CAUTION!

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

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

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

- 1 When fitting or replacing the batteries from their shipping crate, carefully inspect them for cracks or other damage. If damage is evident, contact the transport company that delivered them or the battery manufacturer to file a damage claim.
- 2 Make sure the machine's Key Switch (Main Power) (4) is in the OFF position and the Emergency Quick Disconnect (1) is depressed.
- 3 Remove both Battery Compartment Covers (30).
- 4 Using (2) people and an appropriate lifting strap, carefully lift the batteries into each battery compartment and arrange them exactly as shown.
- 5 Install the battery cables as shown (Red (A) is Positive / Black (B) is Negative). Position the cables so the battery caps can be easily removed for service.
- 6 Carefully tighten the screw and nut on each battery terminal until the terminal will not turn on the battery post (min. 70 in lbs).
- 7 Coat the terminals and posts with a high temperature grease, or spray-on battery terminal coating (available at most auto parts stores).
- 8 Put one black rubber boot over each of the terminals and secure with a tie strap.
- 9 Plug the yellow battery connectors from the batteries into the matching yellow connectors on the chassis on each side.



OPERATING THE MACHINE

SWEEPING

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

- 1 Turn the Key Switch (4) ON. Pull the Main Broom Raise / Lower (ON/OFF) Lever (15) back and slide to the left and up to lower and start the main broom. NOTE: The brooms will not turn on if the hopper door is closed.
- 2 When sweeping **dry floors**, turn the dust control system ON by pushing the Dust Control / Shaker Switch (6) up to the permanent ON position. When sweeping **floors with puddles**, put the Dust Control / Shaker Switch (6) in the neutral or OFF position before the machine enters a puddle. Turn the Dust Control / Shaker Switch (6) ON when the machine is back on a completely dry floor. When sweeping **wet floors**, keep the Dust Control / Shaker Switch (6) in the OFF position. (This will prevent moisture from getting into the Hopper Dust Control Filter (20)).
- 3 Lower the Side Broom (36) by pushing the Side Broom Raise / Lower (ON / OFF) Lever (23) down to the right and up for sweeping along a wall or curb. Raise the side broom when sweeping in an open area.
- 4 Drive the machine forward in a straight line at a quick walking speed and overlap each pass approximately 6 inches (150 mm). Drive the machine slower when sweeping large amounts of dirt or debris or when safe operation dictates slower speeds.
- 5 When sweeping extremely dusty floors, it may be necessary to stop sweeping occasionally and shake the Hopper Dust Control Filter (20). To shake the filter, push the Dust Control / Shaker Switch (6) down to the momentary ON position, and hold for 20 seconds. Push the switch back up to the permanent ON position to activate the dust control impeller and continue sweeping.
- 6 Check behind the machine occasionally to make sure that the machine is picking up debris. Dirt left behind in the path of the machine usually indicates that the machine is moving too fast, the broom needs to be adjusted, or the hopper is full. NOTE: If there is debris on the floor too large to be swept up, open the Litter Door (39) and throw it into the hopper.

NOTE: The main and side broom, dust control and shaker motor will turn OFF automatically and cease to function after the batteries reach an 80% depth of discharge. Normal function will return to the brooms when the batteries are re-charged.

EMPTYING THE HOPPER

NOTE: The MINIMUM ceiling height dumping clearance required for raising the hopper is 101" (256.54 cm)

- 1 Put the Main Broom Raise / Lower (ON / OFF) Lever (15) and the Side Broom Raise / Lower (ON / OFF) Lever (23) to the UP position.
- 2 Pull the Hopper Door Open / Close Lever (17) back to close the hopper door.
- 3 Push the Dust Control / Shaker Switch (6) down to the momentary ON position and hold it for 20 seconds.
- 4 Drive the machine close to a large trash receptacle and pull the Hopper Raise / Lower Lever (16) back into the UP position until the hopper is raised to the desired height.
- 5 Slowly drive the machine forward until the hopper is over the receptacle and apply the Parking Brake (24).
- 6 Push the Hopper Door Open / Close Lever (17) forward until the hopper door is completely open. Once all of the debris has emptied out, close the hopper door. NOTE: The Dust Control / Shaker Switch (6) may be left ON while dumping to draw some of the dust through the Hopper Dust Control Filter (20). This is effective when dumping onto the ground or onto a pile.
- 7 Put the Hopper Safety Support (37) in place by pulling up on the Hopper Safety Support Pull Rod (41), then lower the hopper slightly to secure.
- 8 Look for an accumulation of litter on the back of the hopper and on the front of the broom housing. Use a broom, if necessary, to remove litter from these areas. The back of the hopper must seal tightly against the front of the broom housing for proper operation.
- 9 Return to the operator's compartment. Release the parking brake. Move the machine back until the hopper will clear the receptacle. Raise the hopper slightly until the Hopper Safety Support (37) disengages, then lower the hopper. and re-open the hopper door. NOTE: The brooms will not turn on if the hopper door is closed.

AFTER USE

- 1 Shake the Hopper Dust Control Filter (20) and empty the hopper.
- 2 Check the maintenance schedule and perform all required maintenance before storage.
- 3 Move the machine to an indoor storage area.
- 4 Make sure the Key Switch (4) is OFF and the Parking Brake (24) is engaged.

MAINTENANCE

Make sure that the machine is kept in top shape by following the maintenance schedule closely. Maintenance intervals given are for average operating conditions. Machines used in severe environments may require service more often.

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 Equipment Replacement Parts and Accessories.

MAINTENANCE SCHEDULE

MAINTENANCE ITEM	Daily	Weekly	Monthly	Yearly
Charge Batteries	•			
Check Battery Water Level(s)		•		
Check Foot/ Parking Brake For Wear & Adjustment		•		
Inspect Broom Housing Skirts		•		
Inspect Main Broom Upper and Lower Belts			•	
Steering Chain Tension			•	
Lubrication - Grease Fittings			•	
Check Hydraulic Fluid			•	
Replace Hydraulic Filter				•
* Check Carbon Brushes				•

* Have your Nilfisk-Advance Dealer check the carbon motor brushes once a year or after 300 operating hours.

NOTE: Refer to the Service Manual (form number 043043) for more detail on maintenance and service repairs.

EVERY 30 HOURS OF OPERATION

- 1 Rotate the Main Broom. Refer to the Main Broom Maintenance section.
 - 2 Adjust the Main Broom. Refer to the Main Broom Maintenance section.
 - 3 Clean the Hopper Dust Control Filter **(20)** using Method "A". Refer to the Hopper Dust Control Filter section.
 - 4 Adjust the Side Broom. Refer to the Side Broom Maintenance section.
-

EVERY 150 HOURS OF OPERATION

- 1 Clean the Hopper Dust Control Filter **(20)** using Method "B". Refer to the Hopper Dust Control Filter section.
- 2 Lubricate all Grease Fittings.

Grease fitting locations are:

- * (4) on steering sprockets
 - * (1) on steering u-joint
 - * (2) on drive wheel gearcase spindle
-

EVERY 300 HOURS OF OPERATION

- 1 **IMPORTANT!** Change the gear lube in the drive wheel gearcase after the first 300 hours of operation.
 - 2 Clean the Hopper Dust Control Filter **(20)** using Method "C". Refer to the Hopper Dust Control Filter section.
-

CHARGING THE BATTERIES

Charge the batteries each time the machine is used, or whenever the Battery Condition Meter Lights (3) are flashing.

To Charge the Batteries...

- 1 Open the Battery Compartment Covers (30) to provide proper ventilation.
- 2 Push the connector from the charger into the Machine Battery Charger Port (27) below the Operator's Seat (28).
- 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).

RECOMMENDED BATTERIES AND CHARGERS

Part No.	Qty	Description
56206079	6	Battery, 6V 238 AH (standard)
56376014	6	Battery, 6V 244 AH (optional)
56388503	6	Battery, 6V 360 AH (optional)
56388582	6	Battery, 6V 395 AH (optional)
56395101	1	Charger, 36V Auto 20 Amp (standard) (for use with 56206079 & 56376014, 120V, 60Hz)
56206086	1	Charger, 36V Auto 20 Amp (optional) (for use with 56206079 & 56376014, 100V, 50/60Hz)
56388120	1	Charger, 36V Auto 36 Amp (optional) (for use with 56388503 & 56388582, 120V, 60Hz)
56388119	1	Charger, 36V Auto 36 Amp (optional) (for use with 56388503 & 56388582, 230V, 50Hz)
56409788	1	Charger, 36V Auto 38 Amp (optional) (for use with 56388503 & 56388582, 200-240V, 50/60Hz)
56416624	1	Charge Plug Adapter (for charging battery packs off of the machine)

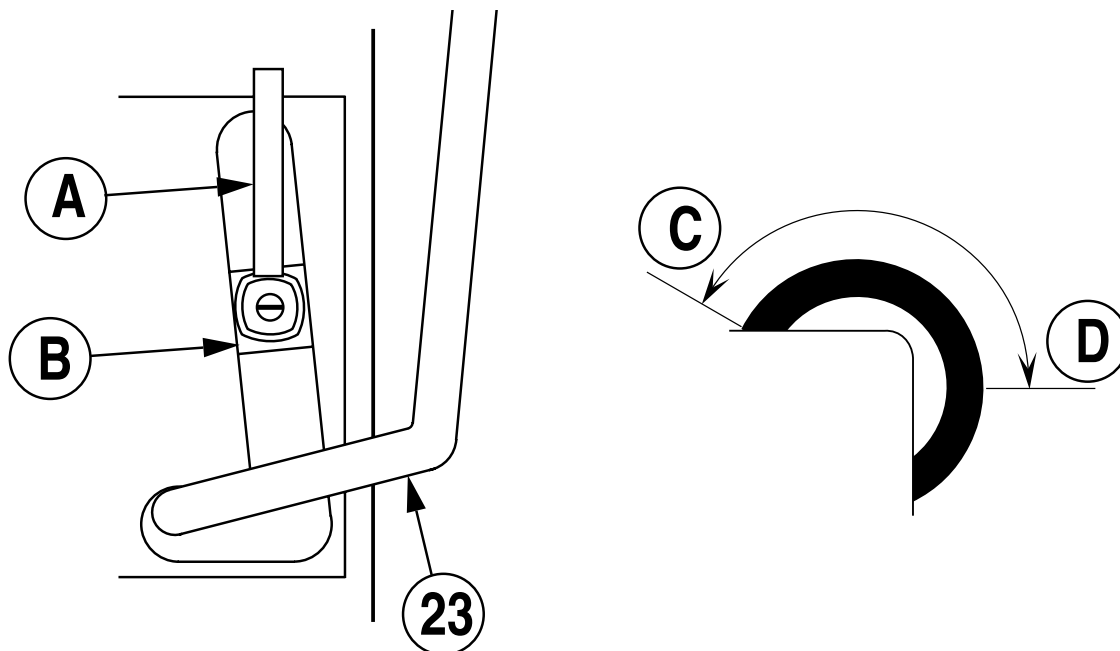
MAINTENANCE

SIDE BROOM MAINTENANCE

To adjust the Side Broom...

- 1 Put the side broom in the DOWN position.
- 2 Loosen the Handle (A) and slide the Stop Bracket (B) up or down to lower or raise the Side Broom (36). The farther the Lever (23) travels up in the slot, the lower the Side Broom (36) will be.
- 3 When in the Down position, the Side Broom (36) should be contacting the floor from the 10 O'Clock (C) to the 3 O'Clock (D) area shown.
- 4 Once the Side Broom (36) is properly adjusted, tighten the Handle (A) to secure the Stop Bracket (B).

NOTE: The machine should be stored with the Side Broom (36) in the raised position. The Side Broom (36) should be replaced when the bristles are worn to a length of 3 inches (7.62 cm) or it becomes ineffective. The Side Broom stop must be re-adjusted when ever the broom has been replaced.



MAIN BROOM MAINTENANCE

Since the Main Broom Motor always turns in the same direction, the bristles on the broom eventually become curved, reducing sweeping performance. Sweeping performance can be improved by removing the broom and turning it around (end-for-end). This procedure, known as “rotating” the main broom, should be done once every 30 hours of operation.

The main broom should be replaced when the bristles are worn to a length of 2-1/2 inches (6.35 cm). The main broom stop must be re-adjusted when the broom is replaced.

NOTE: The machine should be stored with the Main Broom in the raised position.

WARNING!

Turn the Key Switch (Main Power) (4) to the OFF position and disconnect the batteries before performing this procedure.

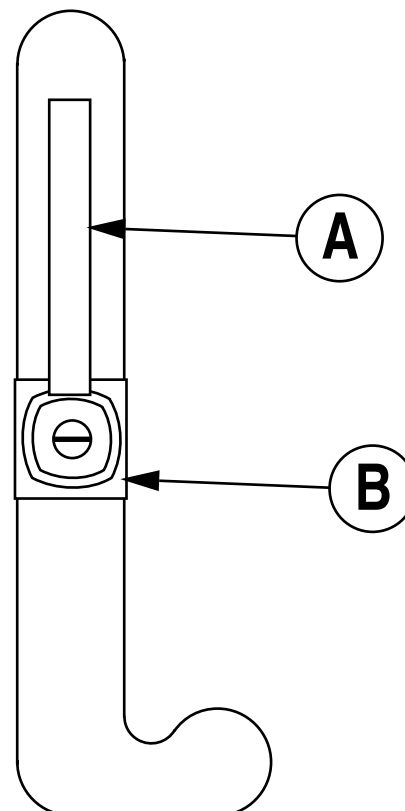
To Rotate or Replace the Main Broom...

- 1 Turn the Key Switch (4) OFF and depress the Emergency Quick Disconnect (1).
- 2 Put the Main Broom Raise / Lower (ON / OFF) Lever (15) in the DOWN position.
- 3 Open the Main Broom Access Door (33) by releasing both latches and pulling the door outward before swinging it open.
- 4 Remove the large T-Bolt from the side of the broom idler arm. Pull the idler arm assembly out of the main broom core.
- 5 Pull the main broom out of the broom housing and remove any string or wire wrapped around it. Also inspect the skirts at the front, back and sides of the broom housing. The skirts should be replaced if they are torn or worn to a height of more than 1/4 inch (6.35 mm) off the ground.
- 6 Turn the broom around (end-for-end) and slide it back into the broom housing. Make sure that the lugs on the broom drive hub (left side) engage the slots in the broom core.
- 7 Swing the idler arm assembly back into the broom core and re-install the T-Bolt that holds the idler arm in place.
- 8 Close and latch the Main Broom Access Door (33). **NOTE:** Make sure that both latches are secure.

MAIN BROOM MAINTENANCE (CONTINUED)

To Adjust the Main Broom Height...

- 1 Drive the machine to an area with a level floor and set the parking brake.
- 2 Pull the Main Broom Raise / Lower (ON/OFF) Lever (15) back and slide to the left and up to lower and start the main broom. DO NOT move the machine.
- 3 Let the main broom run in place for 1 minute. This allows the broom to polish a "strip" on the floor. After 1 minute, raise the broom, release the parking brake and move the machine so that the polished strip is visible.
- 4 Inspect the polished strip on the floor. If the strip is less than 2 inches (5.08 cm) wide, the broom needs to be adjusted.
- 5 To adjust, loosen the Handle (A) and slide the Stop Bracket (B) up or down to lower or raise the Main Broom. The farther the Lever (15) travels up in the slot, the lower the Main Broom will be. Tighten Handle (A) after adjusting the position of the Stop Bracket (B).
- 6 Repeat steps 1-5 until the polished strip is 2 inches (5.08 cm) wide. The width of the polished strip should be the same at both ends of the broom. If the strip is tapered, move the machine to a different area and repeat steps 1-5. If the polished strip is still tapered, contact your Nilfisk-Advance Dealer for service.



HOPPER DUST CONTROL FILTER

The hopper dust control filter must be cleaned regularly to maintain the efficiency of the vacuum system. Follow the recommended filter service intervals for the longest filter life.

⚠ CAUTION!

Wear safety glasses when cleaning the filter.

Do not puncture the paper filter.

Clean the filter in a well-ventilated area.

To remove the hopper dust control filter...

- 1 Lift the Hopper Cover (18) on top of the hopper. Make sure that the Hopper Cover Prop Rod (21) is in place.
- 2 Inspect the top of the Hopper Dust Control Filter (20) for damage. A large amount of dust on top of the filter is usually caused by a hole in the filter or a damaged filter gasket.
- 3 Lift the red handles on the two latches (one on each side at the front of the frame) to release the shaker frame, then swing the Dust Filter Shaker Assembly (19) up and latch in place with the Shaker Assembly Latch (38).
- 4 Lift the Hopper Dust Control Filter (20) out of the machine.
- 5 **Clean the filter using one of the methods below:**
 - Method "A"**

Vacuum loose dust from the filter. Then **gently** tap the filter against a flat surface (with the dirty side down) to remove loose dust and dirt. **NOTE:** Take care not to damage the metal lip which extends past the gasket.
 - Method "B"**

Vacuum loose dust from the filter. Then blow compressed air (maximum pressure 100 psi) into the clean side of the filter (in the opposite direction of the airflow).
 - Method "C"**

Vacuum loose dust from the filter. Then soak the filter in warm water for 15 minutes, then rinse it under a gentle stream of water (maximum pressure 40 psi). Let the filter dry completely before putting it back into the machine.
- 6 Follow the instructions in reverse order to install the filter. If the gasket on the filter is torn or missing, it must be replaced.

TROUBLESHOOTING

If the possible causes listed below are not the source of trouble, it is a symptom of something more serious. Contact your Nilfisk-Advance Service Center immediately for service.

TRIPPING THE CIRCUIT BREAKERS

The circuit breakers are located on the control panel under the Circuit Breaker Cover (43), they protect electrical circuits and motors from damage due to overload conditions. If a circuit breaker trips, try to determine the cause.

Wheel Drive Motor Circuit Breaker (80 Amp) Possible causes may be:

- 1 Brake sticking or ON (check brake)
- 2 Incline too steep / too long (avoid inclines of more than 5 degrees or prolonged climbing)
- 3 Electrical short circuit (have your Nilfisk-Advance Service Center or qualified electrician check the machine)

Main Broom Motor Circuit Breaker (40 Amp) Possible cause may be:

- 1 Debris wrapped around the broom drive or broom (remove debris)
- 2 Main broom set too low (adjust main broom)
- 3 Electrical short circuit (have your Nilfisk-Advance Service Center or qualified electrician check the machine)

Side Broom Motor Circuit Breaker (10 Amp) Possible causes may be:

- 1 Debris wrapped around the broom drive (remove debris)
- 2 Side broom set too low (adjust side broom)
- 3 Electrical short circuit (have your Nilfisk-Advance Service Center or qualified electrician check the machine)

Dust Control / Shaker Motor Circuit Breaker (15 Amp) Possible causes may be:

- 1 Electrical short circuit (have your Nilfisk-Advance Service Center or qualified electrician check the machine)
- 2 Overloaded or jammed shaker motor (check shaker motor)

Hydraulic Pump Circuit Breaker (60 Amp) Possible causes may be:

- 1 Overloaded or jammed hopper (check hopper)
- 2 Electrical short circuit (have your Nilfisk-Advance Service Center or qualified electrician check the machine)

Auxiliary Circuit 1 Circuit Breaker (6 Amp) Possible cause may be:

- 1 Electrical short circuit (have your Nilfisk-Advance Service Center or qualified electrician check the machine)

Auxiliary Circuit 2 Circuit Breaker (5 Amp) Possible cause may be:

- 1 Electrical short circuit (have your Nilfisk-Advance Service Center or qualified electrician check the machine)

Once the problem has been corrected, push the button in to reset the circuit breaker. If the button does not stay in, wait 5 minutes and try again. If the circuit breaker trips repeatedly, call your Nilfisk-Advance Service Center for service.

TROUBLESHOOTING

If the possible causes listed below are not the source of trouble, it is a symptom of something more serious. Contact your Nilfisk-Advance Service Center immediately for service.

MACHINE WILL NOT MOVE

Possible causes may be:

- 1 Batteries need charging (charge batteries)
 - 2 Wheel Drive Motor Circuit Breaker (14) tripped (reset circuit breaker)
 - 3 Aux. Circuit 2 Circuit Breaker (11) tripped (reset circuit breaker)
 - 4 Parking Brake (24) set (release parking brake)
 - 5 Emergency Quick Disconnect (1) tripped (pull red knob up to reset)
 - 6 Safety Switch (S4) in seat not closed (check seat switch)
-

MAIN BROOM WILL NOT RUN

Possible causes may be:

- 1 Hopper door is not open (open hopper door)
 - 2 Batteries need charging (re-charge batteries)
 - 3 Main Broom Motor Circuit Breaker (13) tripped (reset circuit breaker)
 - 4 Debris wrapped around the broom drive (remove debris)
 - 5 Aux. Circuit 1 Circuit Breaker (9) tripped (reset circuit breaker)
-

SIDE BROOM WILL NOT RUN

Possible causes may be:

- 1 Hopper door is not open (open hopper door)
 - 2 Side Broom Motor Circuit Breaker (10) tripped (reset circuit breaker)
 - 3 Debris wrapped around the broom drive (remove debris)
 - 4 Aux. Circuit 1 Circuit Breaker (9) tripped (reset circuit breaker)
-

HOPPER WILL NOT RAISE

Possible causes may be:

- 1 Hydraulic Pump Circuit Breaker (12) tripped (reset circuit breaker)
 - 2 Aux. Circuit 1 Circuit Breaker (9) tripped (reset circuit breaker)
-

HOPPER DUMP DOOR WILL NOT OPEN

Possible causes may be:

- 1 Hydraulic Pump Circuit Breaker (12) tripped (reset circuit breaker)
 - 2 Aux. Circuit 1 Circuit Breaker (9) tripped (reset circuit breaker)
 - 3 Dump door jammed by debris (remove debris and clean edges of dirt chamber)
-

SHAKER MOTOR WILL NOT RUN

Possible causes may be:

- 1 Dust Control / Shaker Motor Circuit Breaker (8) tripped (reset circuit breaker)
 - 2 Aux. Circuit 1 Circuit Breaker (9) tripped (reset circuit breaker)
-

DUST CONTROL SYSTEM (IMPELLER) WILL NOT RUN

Possible causes may be:

- 1 Dust Control / Shaker Motor Circuit Breaker (8) tripped (reset circuit breaker)
 - 2 Aux. Circuit 1 Circuit Breaker (9) tripped (reset circuit breaker)
-

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS (as installed and tested on the unit)

Model		Retriever 4600B
Model No.		56416000
Current	A	94
Voltage, Batteries	V	6 x 6V = 36V
Battery Capacity	Ah	395@20 hr
Protection Grade		IP30
Sound Power Level (ISO 3744)	dB(A)/20 μ Pa	72
Net Weight (w/o batteries)	lbs/kg	2,040 / 925
Gross Weight (w/batteries)	lbs/kg	2,760 / 1,252
Vibrations at the Hand Controls	m/s ²	<2.5
Vibrations at the Seat	m/s ²	<0.5

OPTIONS AND ACCESSORIES

Part No.	Description
56416573	Overhead Guard Kit
56416601	Battery Lift Out Bar
56416605	Wearpak Kit
56420143	Dual Armrest Kit
56416588	Beacon Kit
56409244	Back-Up Alarm Kit



Nilfisk-Advance, Inc.
14600 21st Avenue North
Plymouth, MN, 55447-3408
www.nilfisk-advance.com
Phone: 800-989-2235
Fax: 800-989-6566
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Plymouth, MN 55447-3408
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