

SCRUBTEC 770 S
SCRUBTEC 770 L
SCRUBTEC 784 S
SCRUBTEC 784 L
SCRUBTEC 795 S
SCRUBTEC 795 L



Nilfisk
ALTO
Why Compromise

Operator's Manual

**MODELS: 05210F, 05210G, 05211F, 05220F, 05220G, 05221F
05230F, 05231F**

U.S. Patent No. 6,760,947; No. 6,105,192; No. RE39,581 (Deluxe Machines)

EN

English (2-30)



READ THIS MANUAL

Parts List (31-67)

READ THIS BOOK

This book has important information for the use and safe operation of this machine. Failure to read this book prior to operating or attempting any service or maintenance procedure to your Nilfisk ALTO machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If your operator(s) cannot read this manual, have it explained fully before attempting to operate this machine.

All directions given in this book are as seen from the operator's position at the rear of the machine.

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OPERATOR SAFETY INSTRUCTIONS

DANGER!

Failure to read and observe all DANGER statements could result in severe bodily injury or death. Read and observe all DANGER statements found in your Owner's Manual and on your machine.

WARNING!

Failure to read and observe all WARNING statements could result in injury to you or to other personnel; property damage could occur as well. Read and observe all WARNING statements found in your Owner's Manual and on your machine.

CAUTION!

Failure to read and observe all CAUTION statements could result in damage to the machine or to other property. Read and observe all CAUTION statements found in our Owner's Manual and on your machine.

DANGER!

Failure to read the Owner's Manual prior to operating or attempting any service or maintenance procedure to your Nilfisk Alto machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If your operator(s) cannot read English, have this manual explained fully before attempting to operate this machine.

DANGER!

Operating a machine that is not completely or fully assembled could result in injury or property damage. Do not operate this machine until it is completely assembled. Inspect the machine carefully before operation.

DANGER!

Machines can cause an explosion when operated near flammable materials and vapors. Do not use this machine with or near fuels, grain dust, solvents, thinners, or other flammable materials. This machine is not suitable for picking up hazardous dust.

DANGER!

Lead acid batteries generate gases which can cause an explosion. Keep sparks and flames away from batteries. Do not smoke around the machine. Charge the batteries only in an area with good ventilation. Make sure that you unplug the AC charger from the wall outlet before operating the machine.

DANGER!

Working with batteries can be dangerous! Always wear eye protection and protective clothing when working near batteries. Remove all jewelry. Do not put tools or other metal objects across the battery terminals, or the tops of the batteries.

DANGER!

Using a charger with a damaged power cord could result in an electrocution. Do not use the charger if the power cord is damaged.

WARNING!

Operating this machine from anywhere other than the back of the machine could result in injury or damage. Operate this machine only from the rear.

WARNING!

This machine is heavy. Get assistance before attempting to transport or move it. Use two able persons to move the machine on a ramp or incline. Always move slowly. Do not turn the machine on a ramp. If operating machine on a gradient over 2%, do not stop, turn or park. Read the "Procedures For Transporting" in this manual before transporting.

WARNING!

Machines can topple over if guided over the edges of stairs or loading docks and cause injury or damage. Stop and leave this machine only on a level surface. When you stop the machine, turn the key "OFF". Set the parking brake.

WARNING!

Maintenance and repairs performed by unauthorized personnel could result in damage or injury. Maintenance and repairs must be performed by authorized Nilfisk Alto personnel only.

WARNING!

Any alterations or modifications of this machine could result in damage to the machine or injury to the operator or other bystanders. Alterations or modifications not authorized by the manufacturer voids any and all warranties and liabilities.

OPERATOR SAFETY INSTRUCTIONS

WARNING!

Electrical components of this machine can "short-out" if exposed to water or moisture. Keep the electrical components of the machine dry. Wipe the machine down after each use. For storage, keep the machine in a dry building.

WARNING!

Operating a machine without observing all labels and instructional information could result in injury or damage. Read all machine labels before attempting to operate. Make sure all of the labels and instructional information are attached or fastened to the machine. Get replacement labels and plates from your Nilfisk Alto distributor.

WARNING!

Wet floor surfaces can be slippery. Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surface. These areas can cause a dangerous condition for the operator or other persons. Always put "Caution" signs around/ near the area you are cleaning.

WARNING!

Improper discharge of waste water may damage the environment and be illegal. The United States Environmental Protection Agency has established certain regulations regarding discharge of waste water. Also, city and state regulations regarding this discharge may be in your area. Understand and follow the regulations in your area. Be aware of the environmental hazards of chemicals that you dispose.

CAUTION!

Use of this machine to move other objects or to climb on could result in injury or damage. Do not use this machine as a step or furniture. Do not ride on this machine.

CAUTION!

Your machine warranty will be voided if anything other than genuine Nilfisk Alto parts are used on your machine. Always use Nilfisk Alto parts for replacement.

INTRODUCTION

Nilfisk ALTO's newly designed Scrubtec 795, 784 & 770 automatic scrubbers are efficient and superior floor cleaning machines. The Scrubtec 795 uses two brushes or pads to scrub a path 97 cm wide. The Scrubtec 784 uses two brushes or pads to scrub a path 84 cm wide. The Scrubtec 770 uses two brushes or pads to scrub a path 71 cm wide. A squeegee wipes the floor while the vacuum motor removes the dirty solution from the floor - all in one pass.

The Scrubtec 795, 784 & 770 automatic scrubbers come complete with six - 6 volt batteries, five battery connector cables, two battery cables, either two brushes or two pad drivers, and one operator's manual.

Machine Specifications

Model	Scrubtec 795S	Scrubtec 784S	Scrubtec 770S
Model Number	05230F	05220F / 05220G	05210F / 05210G
Motor, Vac	1 HP (.74kw) three stage tangential discharge	1HP (.74kw) three stage tangential discharge	1HP (.74kw) three stage tangential discharge
Power Supply	36 volt (6-6V batteries) 242AH, 310AH	36 volt (6-6V batteries) 242AH, 310AH	36 volt (6-6V batteries) 242AH, 310AH
Solution Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Recovery Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Motors, Brush (2)	1 hp PM (.74kw)	1 hp PM (.74kw)	1 hp PM (.74kw)
Motor Traction	.50 hp PM (.37kw)	.50 hp PM (.37kw)	.50 hp PM (.37kw)
Brushes (2)	19 inch (48cm) w/.5" (1.5cm) overlap	17 inch (43cm) w/.5" (1.5 cm) overlap	14 inch (36cm) w/.5" (1.5 cm) overlap
Brush Speed	200 rpm	200 rpm	200 rpm
Brush Pressure	Variable 150 lbs. - 220 lbs.	Variable 150 lbs. - 220 lbs.	Variable 150 lbs. - 220 lbs.
Speed, Forward	Variable to 230 ft./min.	Variable to 230 ft./min.	Variable to 230 ft./min.
Speed, Reverse	Variable to 180 ft./min.	Variable to 180 ft./min.	Variable to 180 ft./min.
Charger	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz
Length	68.28 inches (173 cm)	67 inches (170 cm)	65.0 inches (165 cm)
Width - Machine	40.33 inches (102 cm)	35.70 inches (91 cm)	30.0 inches (76 cm)
Height	43.75 inches (112cm)	43.75 inches (112 cm)	43.75 inches (112 cm)
Cleaning Rate	42,000 sq ft/hr (3,901 sq. m/hr)	35,000 sq ft/hr (3,252 sq. m/hr)	29,700 sq ft./hr (2,750 sq ft./hr)
Cleaning Swath	38 inch (97 cm)	33 inch (84 cm)	28 inch (71 cm)
Grade Cleaning	6° Incline	6° Incline	6° Incline
Weight w/Batteries (310AH)	1025 lbs. 465kg	1015 lbs. 460kg	1005 lbs. 456kg
Shipping Weight w/batteries (310AH)	1328 lbs. 602kg	1318 lbs. 598kg	1308 lbs. 593kg
Noise	76.5 dBA	76.5 dBA	76.5 dBA
Vibration	<2.5 m/s ²	<2.5 m/s ²	<2.5 m/s ²

SPECIFICATIONS:

Model	Scrubtec 795L	Scrubtec 784L	Scrubtec 770L
Model Number	05231F	05221F	05211F
Motor, Vac	1 HP (.74kw) three	1HP (.74kw) three	1HP (.74kw) three
	stage tangential	stage tagential	stage tagential
	discharge	discharge	discharge
Power Supply	36 volt (6-6V batteries)	36 volt (6-6V batteries)	36 volt (6-6V batteries)
	242AH, 310AH	2420AH, 310AH	242AH, 310AH
Solution Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Recovery Tank	30 gallon (114 liter)	30 gallon (114 liter)	30 gallon (114 liter)
Motors, Brush (2)	1 hp PM (.74kw)	1 hp PM (.74kw)	1 hp PM (.74kw)
Motor Traction	.50 hp PM (.37kw)	.50 hp PM (.37kw)	.50 hp PM (.37kw)
Brushes (2)	19 inch (48cm)	17 inch (43cm)	14 inch (36cm)
	w/.5" (1.5cm) overlap	w/.5" (1.5 cm) overlap	w/.5" (1.5 cm) overlap
Brush Speed	200 rpm	200 rpm	200 rpm
Brush Pressure	Variable 140 lbs. - 220 lbs.	Variable 140 lbs. - 220 lbs.	Variable 140 lbs. - 220 lbs.
Speed, Forward	Variable to 230 ft./min.	Variable to 230 ft./min.	Variable to 230 ft./min.
Speed, Reverse	Variable to 180 ft./min.	Variable to 180 ft./min.	Variable to 180 ft./min.
Charger	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz	36V, 21A, 115V/60hz
Length	68.28 inches (173 cm)	67 inches (170 cm)	65.0 inches (165 cm)
Width - Machine	40.33 inches (102 cm)	35.70 inches (91 cm)	30.0 inches (76 cm)
Height	43.75 inches (112cm)	43.75 inches (112 cm)	43.75 inches (112 cm)
Cleaning Rate	42,000 sq ft/hr	35,000 sq ft/hr	29,700 sq ft./hr
	(3,901 sq. m/hr)	(3,252 sq. m/hr)	(2,750 sq ft./hr)
Cleaning Swath	38 inch (97 cm)	33 inch (84 cm)	28 inch (71 cm)
Grade Cleaning	6° Incline	6° Incline	6° Incline
Weight w/Batteries (310AH)	1025 lbs. 465kg	1015 lbs. 460kg	1005 lbs. 456kg
Shipping Weight w/batteries (310AH)	1328 lbs. 602kg	1318 lbs. 598kg	1308 lbs. 593kg
Noise	76.5 dBA	76.5 dBA	76.5 dBA
Vibration	<2.5 m/s2	<2.5 m/s2	<2.5 m/s2

PROCEDURES FOR TRANSPORTING

How To Put The Machine In A Van Or Truck



WARNING:

The machine is heavy. Make sure you use two able persons to assist the machine in climbing the ramp.

1. Make sure the loading ramp is at least eight (8) feet long, and strong enough to support the machine.
2. Make sure the ramp is clean and dry.
3. Put the ramp in position.
4. Remove squeegee assembly, brush housings, & brushes or pad drivers before loading.
5. Turn key switch "ON".
6. Align the machine on a level surface ten (10) feet in front of the ramp.
7. Put the traverse speed switch in the "HI" position.
8. Press one or both forward switches.
9. Push the machine to the top of the ramp.
10. Turn the key switch "OFF".
11. Fasten the machine to the vehicle.

How To Remove The Machine From A Van Or Truck

1. Make sure there are no obstructions in the area.
2. Make sure the unloading ramp is at least eight (8) feet long and strong enough to support the machine.
3. Make sure the ramp is clean and dry.
4. Put the ramp in position.
5. Unfasten the machine.



WARNING:

The machine is heavy. Make sure you use two able persons to assist in moving the machine down the ramp.

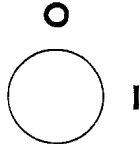
6. Turn the key switch "ON".
7. Carefully and slowly, drive the machine to the top of the ramp by pressing and holding either of the forward switches and the reverse switch.
8. Put the traverse speed switch to the mid range speed setting. As the machine begins to travel down the ramp, maintain a slow downward speed by pressing either of the forward switches.
9. Replace squeegee assembly, brush housings, & brushes or pad drivers after the machine is unloaded and ready to use.

SYMBOLS USED ON SCRUBTEC 770, 784, 795

SYMBOLS USED ON SCRUBTEC 770S, 784S, 795S / 770L, 784L, 795L



Hazard Alert Symbol



On/Off Key Switch



Power



Traverse Speed Control

**SYMBOLS USED ON
SCRUBTEC 770S, 784S, 795S**



Additional Brush Pressure



Brush Up/Down



Solution Control

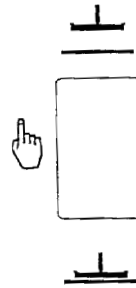


Charge/Battery Meter (Solo)



Charge Indicator (I-Drive)

**SYMBOLS USED ON
SCRUBTEC 770L, 784L, 795L**



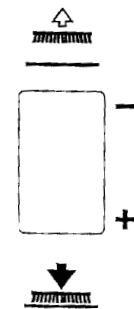
Squeegee Up/Down



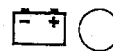
Solution Control



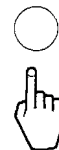
Hour Meter Switch



Brush Up/Down

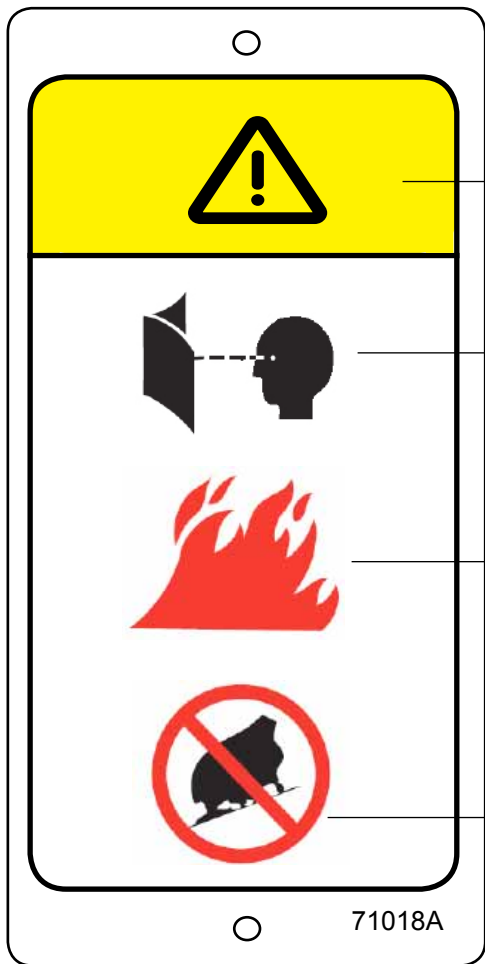


Charge Indicator



One Touch Switch

SYMBOLS USED ON SCRUBTEC 770, 784, 795



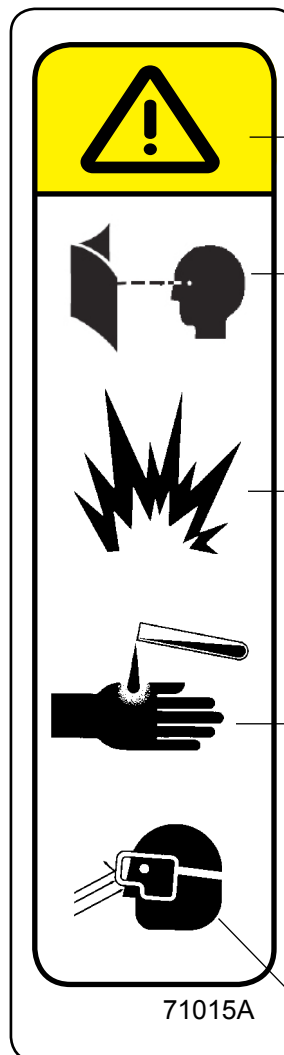
WARNING

READ OPERATOR'S MANUAL BEFORE OPERATING THIS MACHINE

RISK OF FIRE
 • Use only commercially available floor cleaners and waxes intended for machine operation.
 • Do not use flammable materials.

RISK OF INJURY OR DAMAGE TO MACHINE
 • Do not turn, stop or leave machine on a ramp or dock.

71018A



WARNING

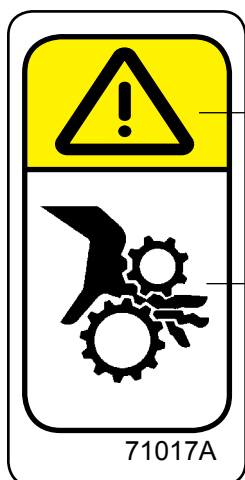
READ OPERATOR'S MANUAL BEFORE OPERATING THIS MACHINE

EXPLOSIVE GASES, CAN CAUSE SEVERE INJURY, DEATH OR DAMAGE TRANSFORMER.
 • Keep flammable materials away from batteries. Charge in a cool well ventilated

BATTERIES CONTAIN SULFURIC ACID. CAN CAUSE SEVERE INJURY.
 • Avoid contact with skin eyes, or clothing. If contact, flush with water. Get medical attention. If internal. contact call physician.

WEAR PROTECTIVE EYE GEAR.

71015A



WARNING

MOVING PARTS. CONTACT CAN CAUSE SEVERE INJURY.
 • Do not place hands or feet under machine when in use.

71017A



WARNING

FALLING PARTS CAN CAUSE SEVERE INJURY.
 • Make sure tank is secure before servicing.

71014A

MACHINE CONTROL PANEL 770S, 784S & 795S

Key Switch (See Figure #1, Item "A")

The key switch turns "ON" the power to the control panel. "0" is "OFF" and "1" is "ON".

Traverse Speed Switch (See Figure #1, Item "B")

The speed control varies from low to high speed. To increase the speed, turn the knob to the right. To decrease the speed, turn the knob to the left.

Brush Up/Down Switch (See Figure #1, Item "C")

The brush switch has two positions: "Up" positions the brushes up; "Down" positions the brushes on the floor. The brush motors start when the brushes are down and the traverse switch is depressed.

Increase Brush Pressure Switch (See Figure #1, Item D)

This switch is used to increase the brush pressure. Increased brush pressure may be required when stripping or cleaning heavily soiled floors. To increase brush pressure, first lower the brushes by pressing the brush up/down switch (Item "C") to the down position. This will lower the brushes to the normal scrub position. To increase brush pressure, press and hold the switch (Item "D") until the desired brush pressure is reached or the brush deck stops moving downward. To reposition the brush pressure to normal scrub, press the brush up/down switch (Item "C") to the up position and after the brush deck is completely raised, then return the switch to the down position for normal scrub.

Solution Control Knob (See Figure #1, Item "E")

The solution control knob regulates the flow of cleaning solution to the floor. To increase the flow turn the knob clockwise. To decrease the flow, turn the knob counter-clockwise.

Forward Switch (See Figure #1, Item "F")

The forward switch turns the traverse motor "on" and if the brush motors are in the down position, it also activates the brush motors and solution control module. Either the right or the left switch can be used.

Reverse Switch (See Figure #1, Item "G")

The reverse switch, when used in conjunction with one of the forward switches, causes the machine to reverse direction. The reverse speed is 70% of the forward speed.

Charge / Battery Meter (Solo) (See Figure #1, Item "H1")

The charge/battery meter indicates the battery is being charged when the charger is plugged into an AC outlet. It also indicates the amount of charge that is left in the batteries while the machine is in use. When the battery charger gets too low the red light will begin flashing and the brush/pad motors will shut off.

Battery Meter / Charge Indicator Light (I-Drive) (See Figure #1, Item "H2")

The battery meter indicates the amount of charge remaining in the batteries while the machine is in use.

When the charger is plugged into an AC Outlet, the charge green indicator light will flash on and off. When the batteries become fully charged, the green indicator light will remain on until the charger is unplugged.

Circuit Breakers (See Figure #1, Item "I"- "M")

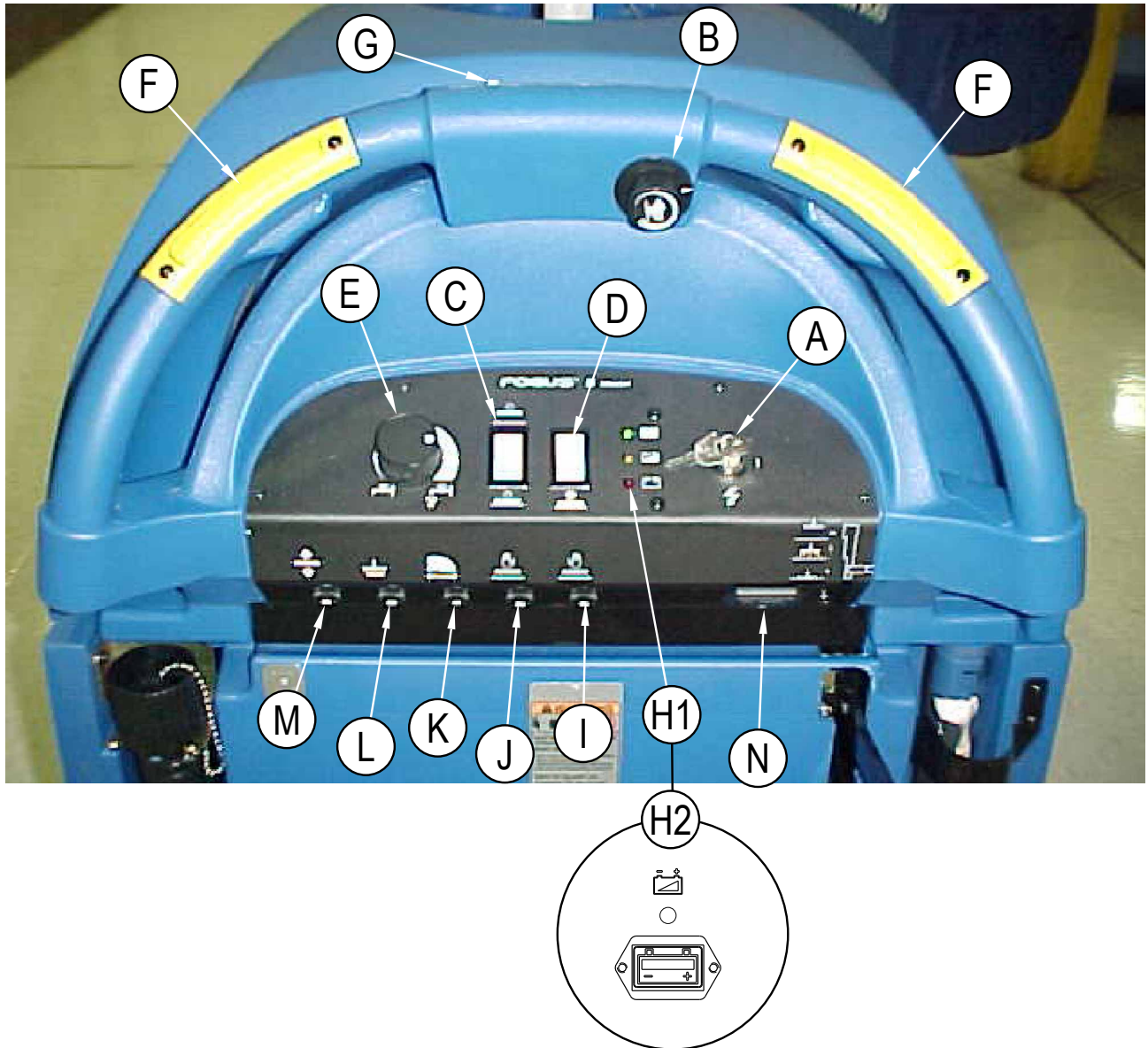
The circuit breaker reset buttons are located on the control panel. The breakers are located as follows: Item I & J - Brush Motors (35A); Item K - Traverse Motor (30A); Item L - Vac Motor (25A); Item M - Actuator Motor, Brush Head (5A)

If a circuit breaker trips, determine which motor is not operating and turn the key switch "OFF". Wait five minutes and push the reset button back in. Turn the key switch "ON", and try again. An authorized service person should be contacted if the breaker trips again.

Hour Meter (See Figure #1, Item "N")

The hour meter indicates the number of hours the machine has operated. It runs only when the machine is moving forward or reverse.

Figure #1



MACHINE CONTROL PANEL 770L, 784L & 795L

Key Switch (See Figure #2 Item "A")

The key switch turns "ON" the power to the control panel. "O" is "OFF" and "I" is "ON".

Traverse Speed Switch (See Figure #2, Item "B")

The speed control varies from low to high speed. To increase the speed, turn the knob to the right. To decrease the speed, turn the knob to the left.

Squeegee Up/Down Switch (See Figure #2, Item "C")

The squeegee switch is used to raise and lower the squeegee and to turn on and off the vacuum motor. The squeegee will lower and the vacuum motor will turn on when the switch is placed in the lower position. To raise the squeegee, place the switch in the up position. The vacuum motor will stop, after a short delay, when the switch is placed in the up position.

The middle switch position is used for the one touch control. The squeegee will raise and lower and the vacuum will turn on and off automatically when the one touch control function is used. **NOTE: The squeegee switch must be in the middle position for the squeegee and vacuum to operate properly with the one touch feature.**

Brush Up/Down Switch (See Figure #2, Item D)

To lower brush head, push the brush switch in the down (+) position. To increase brush pressure, continue to push the brush switch in the down (+) position until the desired pressure is reached or until brush head travel stops. The brush motors will start and solution will flow (provided the solution is turned "ON") when the machine begins to traverse. To raise the brush head, push the brush switch in the up (-) position until the brush head travel stops or desired position is reached.

Solution Flow Control (See Figure #2, Item "E")

The solution flow switch regulates the flow of chemical solution to the floor. To increase the flow, push the solution flow switch in the down (+) position until desired flow is reached. To decrease the flow, push the solution flow switch in the up (-) position until the desired flow is reached. To shut off the solution, push the solution flow switch in the up (-) position until no indicators are visible on the display. **NOTE: DO NOT run dry! NOTE: No solution will flow when the machine does not traverse.**

Forward Switch (See Figure #2, Item "F")

The forward switch turns the traverse motor "on" and if the brush motors are in the down position, it also activates the brush motors and solution control module. Either the right or the left switch can be used.

Reverse Switch (See Figure #2, Item "G")

The reverse switch, when used in conjunction with one of the forward switches, causes the machine to reverse direction. The reverse speed is 70% to the forward speed.

One Touch (See Figure #2, Item "H")

The one touch button is a green button that lowers and raises the brush head and squeegee with one touch. NOTE: For more information about the one touch feature see the section "How to Operate the Machine".

LCD Display (See Figure #2, Item "I")

The main display indicates the state of battery charge, brush head, solution and squeegee status. It will also display machine run hours and error codes. NOTE: When the battery charger gets too low the battery display will begin flashing and the brush/pad motors will shut off.

Display Button (See Figure #2, Item "J")

Pressing the black display button will toggle between the main machine functions and the hour meter. The hour meter indicates the number of hours the machine has operated. It displays brush motor, vacuum motor, traverse motor and total key on hours.)

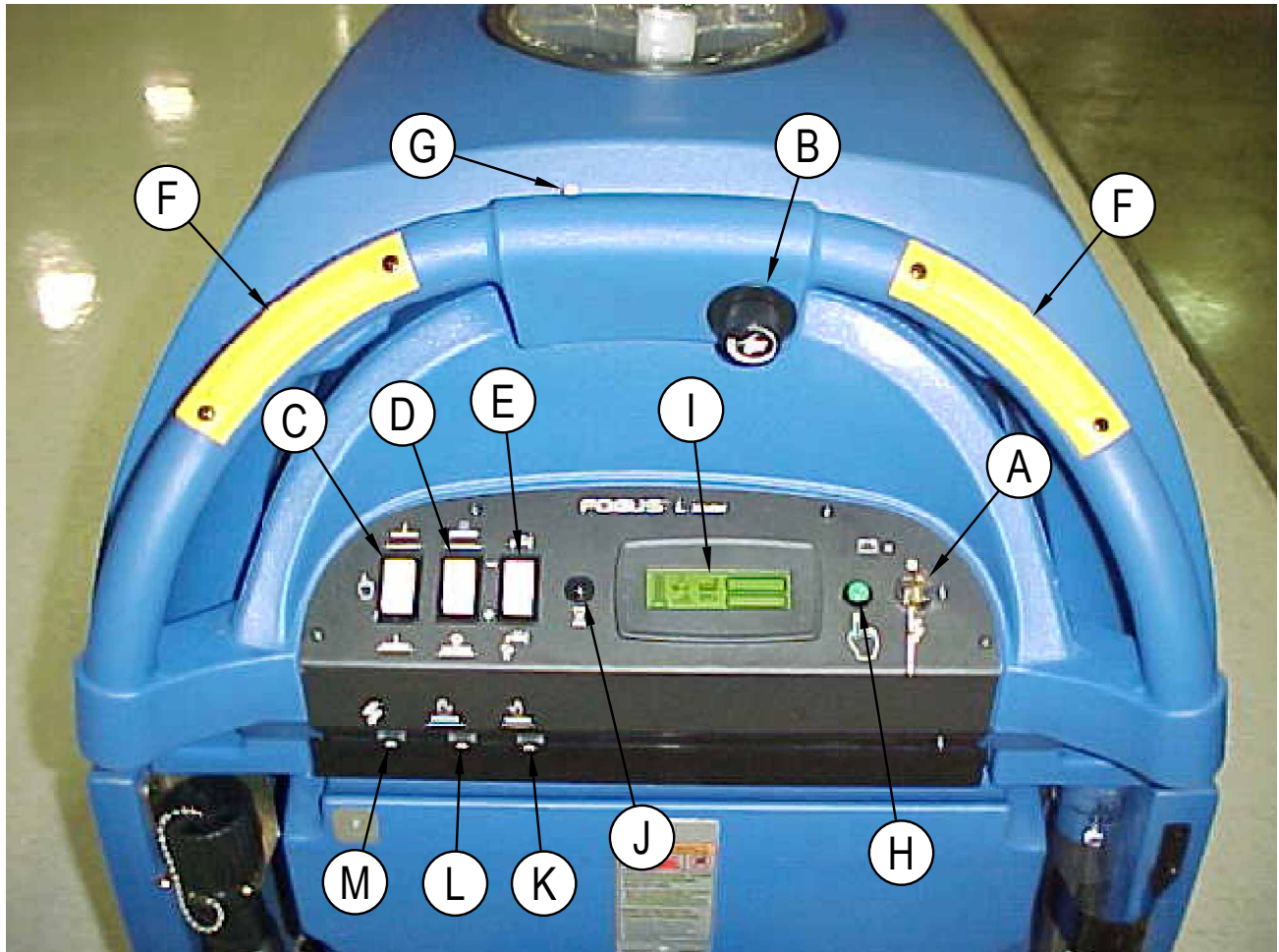
Circuit Breakers (See Figure #2, Item "K", "L", "M")

The circuit breaker reset buttons are located on the control panel. The breakers are located as follows: Item "K" and "L" - Brush Motors (35A); Item "M" - Key Switch (5A).

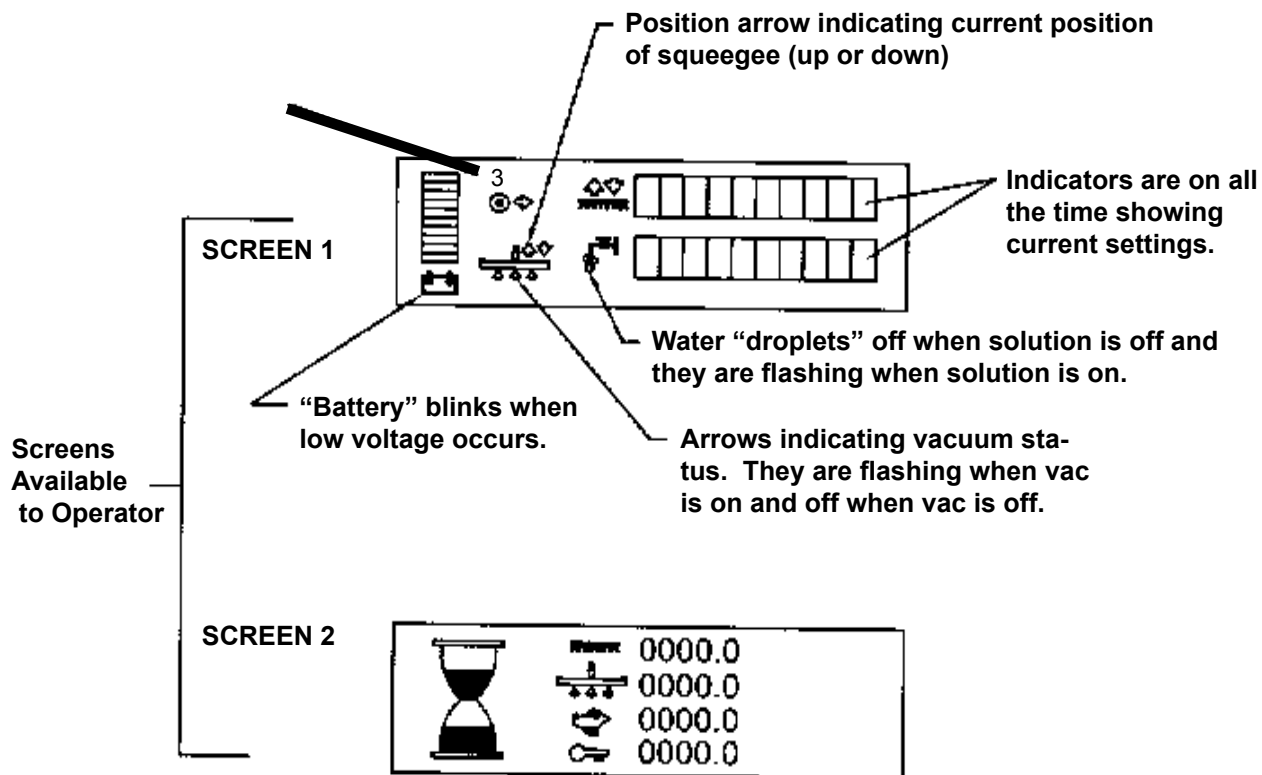
If a circuit breaker trips, determine which motor is not operating and turn the key switch "OFF". Wait five minutes and push the reset button back in. Turn the key switch "ON", and try again. An authorized service person should be contacted if the breaker trips again.

MACHINE CONTROL PANEL 770L, 784L & 795L

Figure #2

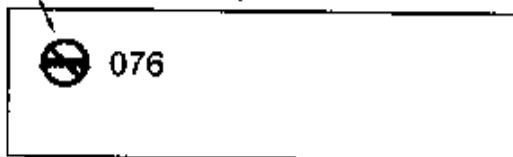


DISPLAY SCREENS FOR SCRUBTEC 770L, 784L, 795L



Example

SCREEN 3 (Diagnostic)



The Diagnostic only. It will not show unless a fault with the machine occurs. When the fault happens the icon and error code will be displayed.

See "Common Error Codes" at end of "Maintenance Section".

MACHINE CONTROLS & FEATURES

Squeegee Lift Handle ("S Class" models only) See Figure #3a, 3b, & 3c.

The squeegee lift handle is located below the control handles on the right side. It is used to raise or lower the squeegee. The vac motor is turned on when the handle is lowered.

Parking Brake (Optional) See Figure #4.

The parking brake prevents movement of the machine. The brake is located on the left hand side of the transaxle motor. Turn the key switch off or disconnect the power to the battery to apply the brake.

There is a mechanical lever located on the brake. This lever is an override. To manually release the brake, rotate the lever toward the rear of machine (counter clockwise). To return the brake to normal or to apply the brake, rotate the lever towards the front of the machine (clockwise). **NOTE: If the lever is left in the override position, the brake will not function with the key switch, and the machine will not operate.**



CAUTION!

Do not activate the brake while the machine is moving.

Float Shut Off See Figure #5.

The shut-off switch for the vac motor is located in the recovery tank. It automatically turns off the vac motor when the recovery tank is full.



Figure #3a

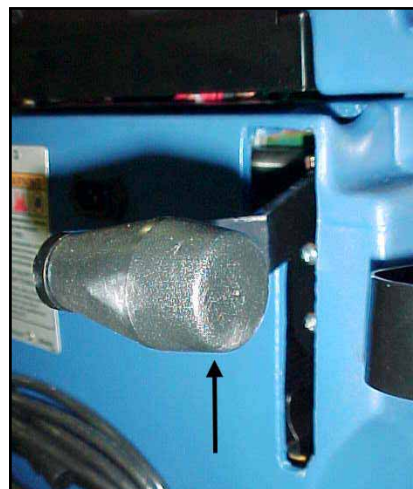


Figure #3b

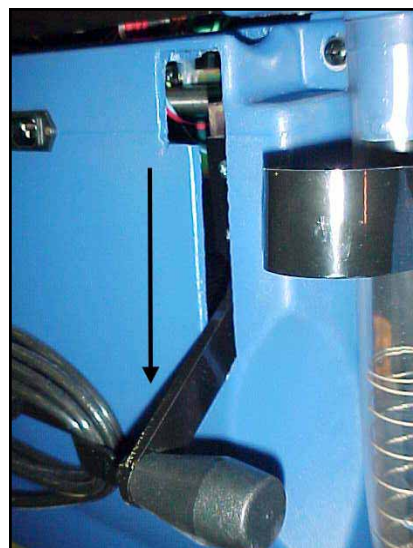


Figure #3c

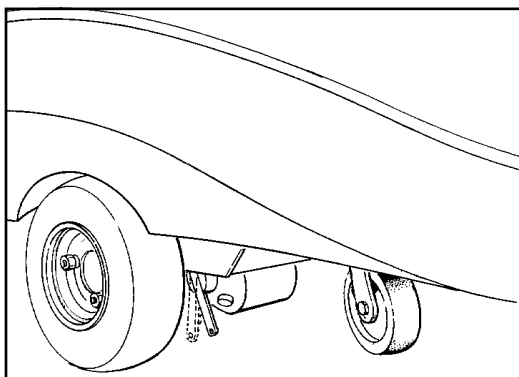


Figure #4



Figure #5

HOW TO PREPARE THE MACHINE FOR OPERATION

How To Install The Batteries

The Scrubtec machines use six 6-volt batteries. The batteries are located in the battery compartment under the recovery tank.

To install the batteries, follow this procedure:

1. Turn key switch off.
2. Make sure both tanks are empty.
3. Disconnect the hoses from the recovery tank (upper tank) & unplug the vac motor and float switch.
4. Remove the tank support bracket.
5. Remove the recovery tank.
6. Place the batteries in the solution tank as shown in figures 6a and 6b.

WARNING!

Lifting batteries without help could result in an injury. Get help to lift the batteries. The batteries are heavy.

WARNING!

Working with batteries can be dangerous. Always wear eye protection and protective clothing when working near batteries. **NO SMOKING!**

7. Connect the battery cables between batteries and install long battery cable assembly as indicated. See figure 6a and 6b.
8. Install the tank, reconnecting hoses and plugging in vac motor and float switch connectors. Install tank support bracket.

NOTE: Charge the batteries before using the machine.

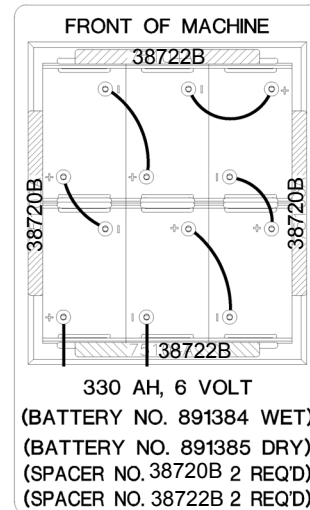


Figure #6a

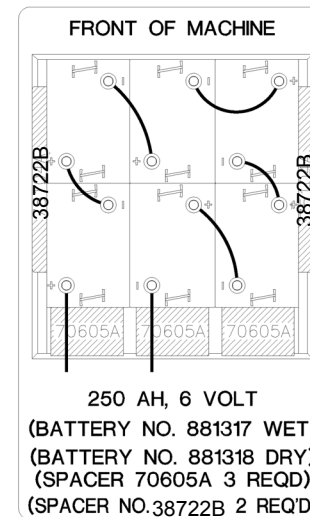


Figure #6b

HOW TO PREPARE THE MACHINE FOR OPERATION

Battery Maintenance

The electrical power to operate the machine comes from the storage batteries. Storage batteries need preventive maintenance.

WARNING!

Working with batteries can be dangerous. Always wear eye protection and protective clothing when working near batteries. NO SMOKING!

To maintain the batteries in good condition, follow these instructions:

1. Keep the electrolyte at the correct level. The correct level is between 1/4" below the bottom of the tube in each cell and above the tops of the plates. Check the level of the electrolyte each time you charge the batteries. See figure #7.

NOTE: Check the level of electrolyte prior to charging the batteries. Be sure the plates in each cell are covered with electrolyte. Do not top off the cells prior to charging the battery. Electrolyte expands during charging. As a result, the electrolyte could overflow from the cells. Always top off the cells with distilled water after charging.

CAUTION!

Irreversible damage will occur to the batteries if the electrolyte level does not cover the plates. Keep the electrolyte at the correct level.

CAUTION!

Machine damage and discharge across the tops of the batteries can occur if the batteries are filled above the bottom of the tube in each cell. Do not fill the batteries up to the bottom of the tube in each cell. Wipe any acid from the machine or the tops of the batteries. Never add acid to a battery after installation.

CAUTION!

Tap water may contain contaminants that will damage batteries. Batteries must be re-filled with distilled water only.

2. Keep the tops of the batteries clean and dry.
Keep the terminals and connectors clean. To clean the top of the batteries, use a damp cloth with a weak solution of ammonia or bicarbonate of soda solution. To clean the terminals and connectors, use a terminal and connector cleaning tool. Do not allow ammonia or bicarbonate of soda to get into batteries.
3. Keep the batteries charged.

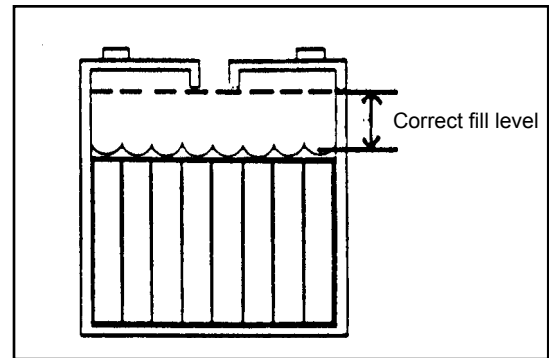


Figure #7

HOW TO PREPARE THE MACHINE FOR OPERATION

How To Charge The Batteries

⚠ WARNING!

Charging the batteries in an area without adequate ventilation could result in an explosion. To prevent an explosion, charge the batteries only in an area with good ventilation.

⚠ WARNING!

Lead acid batteries generate gases which could explode. Keep sparks and flames away from batteries. **NO SMOKING!**

To charge the batteries, follow this procedure:

1. Make sure the key switch is in the "OFF" position.
2. Before charging the batteries, the battery compartment needs to be vented. To vent compartment, tip up the recovery tank until it locks in the open position (see figure #8). To close the tank, pull up on the arm and then slowly lower the tank to the closed position.



Figure # 8

⚠ CAUTION!

Before raising tank, be sure tank is empty.

⚠ WARNING!

Do not operate or perform maintenance on the machine while the recovery tank is in the open position. The tank can be accidentally bumped and it may slam shut.

3. Put the charger on a flat surface. Make sure the vents on the sides are at least two inches away from walls and other objects. Make sure there are no objects near the vents on the bottom of the charger.
4. Disconnect the battery pack connector from the batteries.
5. Connect the DC connector on the charger to the battery pack connector. See figure #8A.
6. Connect the battery charger AC cord located at the rear of the machine to a 10 amp (min) 230V properly grounded wall receptacle.
7. Observe indicator light to ensure the charging process has started. Flashing light(s) indicates that the batteries are being charged. Steady on green light indicates the batteries are fully charged.

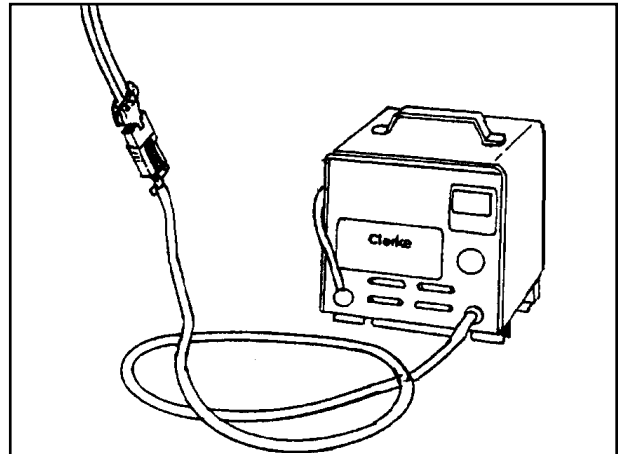


Figure 8A

NOTE: Make sure you plug into a circuit that is not loaded by other equipment. Wall breakers may be tripped and no charge will occur.

⚠ WARNING!

Never charge a GEL battery with an unsuitable battery charger. Carefully follow the instructions given by the manufacturer of the batteries and battery charger.

NOTE: To prevent permanent damage to the batteries, avoid their complete discharge. Never leave the batteries completely discharged, even if the machine is not being used. When recharging the batteries, keep the recovery tank open. After every 20 recharging cycles, check the level of the electrolyte and if necessary top off with distilled water.

HOW TO PREPARE THE MACHINE FOR OPERATION

How To Install The Brushes Or Pad Drivers

To install the brushes or pad drivers on the machine, follow this procedure:

1. Turn the key switch "ON".
2. Put the brush switch in the "UP" position.
3. Turn the key switch "OFF".
4. Go to the front of the machine.
5. Unlatch right and left brush housings and remove them. See figure #9.
6. Put a brush or pad driver under the brush motor plate. See figure #10.
7. Align the lugs on the motor gimbal with the slots in the brush gimbal.
8. Pull the brush up until the gimbal locks.
9. Repeat steps 6, 7, and 8 to install the second brush or pad driver.

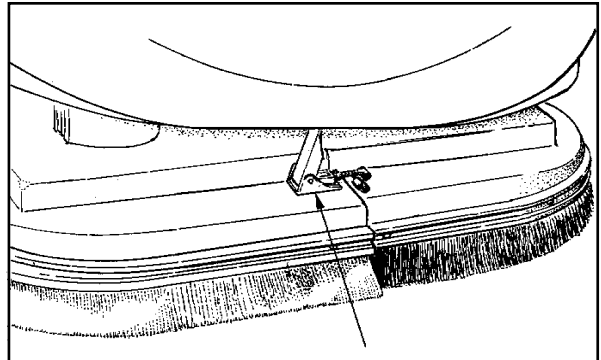


Figure #9

How To Remove The Brushes Or Pad Drivers

To remove the brushes or pad drivers from the machine, follow this procedure:

1. Turn the key switch "ON".
2. Put the brush switch in the "UP" position.
3. Turn the key switch "OFF".
4. Go to the front of the machine.
5. Push down on two sides of the brush or pad driver until the gimbals release.

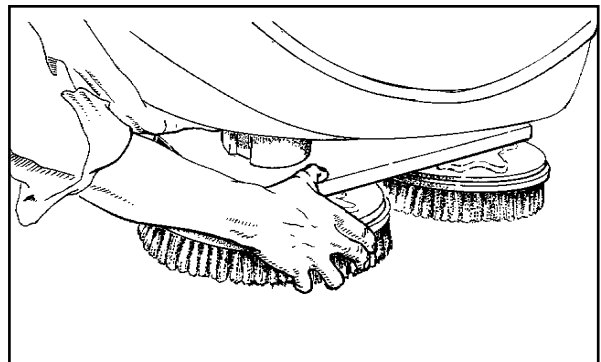


Figure #10

HOW TO OPERATE THE MACHINE

How to Operate the One Touch System (“L Class” models only)

One touch cleaning is a feature on the new Scrubtec Walk-behind Scrubber. The factory defaults for this setting are two bars of brush pressure and four bars for solution flow and squeegee in the down position.

1. Press and release the green button for all cleaning functions to begin, see figure #11, item A.
2. The squeegee and brush head lower to the floor and the vacuum starts. NOTE: The squeegee switch must be in the center position for the squeegee to operate with the one touch feature, see figure #11, item B.
3. The brushes and solution will begin only when you begin to traverse.
4. The cleaning will be at the factory default settings, however you can reprogram these settings to your specifications. See “Reprogramming One Touch” section below.
5. To end cleaning process, press the green button again and solution will stop; brushes will raise; after a short delay squeegee will raise; and the motor will turn off.

NOTE: It is intended that this be done while traversing. If you stop and do it, some solution can be left on the floor.

Reprogramming One Touch

If you do not want to use the factory default settings, you may reprogram the setting by following the procedures below:

1. Place the machine in the desired scrub condition by using the one touch and individual switches.
2. Press and hold the green one touch button until you see the LCD display flash, then release the button. NOTE: The time required should be approximately 5 seconds.
3. When you activate or deactivate the one touch, it will now be set to your preference for cleaning. These settings will remain until you disconnect power or reprogram them. NOTE: When programming one touch, be sure squeegee is in automatic (middle) position, otherwise you may program squeegee either up or down all the time.

How to Return One Touch to Factory Default Settings

To restore the factory settings, follow the procedures below:

1. Press and hold the green one touch button until you see the LCD display flash two times (5 seconds between flashes), see figure 11. **NOTE: The time required for this will be approximately 10 seconds.**
2. The settings should be returned to 4 bars of solution and 2 bars of brush pressure. NOTE: The squeegee vac switch must be in the middle position for default settings to work.

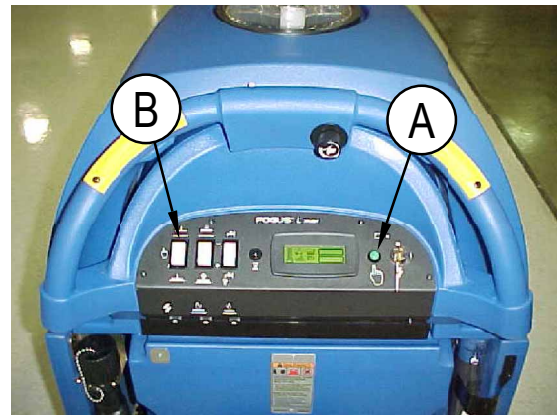


Figure #11

HOW TO OPERATE THE MACHINE

How To Operate the Squeegee (“S Class” models only)

The squeegee wipes the floor while the vacuum motor removes the dirty solution from the floor. Use your right hand to lower or raise the squeegee handle. To operate the squeegee, follow this procedure:

1. To lower the squeegee and start the vac motor move the squeegee lever to the right and down. See figure #12.
2. To raise the squeegee, lift the squeegee lever up. See figure #13.

Note: The center position lets the vac motor continue to run with the squeegee off the floor to avoid drips.

How to Fill The Solution Tank

CAUTION!

Make sure water or solution does not enter the opening for the vacuum motor. See figure #14.

The solution tank can be filled in the front or through the clear drain hose at the rear of the machine. To fill the solution tank follow this procedure:

1. Remove the solution tank lid. See figure #15.
2. Fill the solution tank with water.
3. Add a cleaning chemical to the water. for the correct amount, follow the directions shown on the container.

WARNING!

Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surface. These areas can cause a dangerous condition for the operator or other persons. Always put CAUTION signs near the area you are cleaning.

WARNING!

Machines can ignite flammable materials and vapors. Do not use with or near flammables such as gasoline, grain dust, solvents, and thinners. Only use a cleaning concentration recommended by the chemical manufacturer.

WARNING!

Nilfisk Alto recommends a maximum water temperature of 120°F(49°C)

4. Replace the solution tank lid.
5. When filling the machine from the rear, position the clear drain hose against bracket and insert hose as shown in figure 16. Solution level can be viewed from the back of the machine.

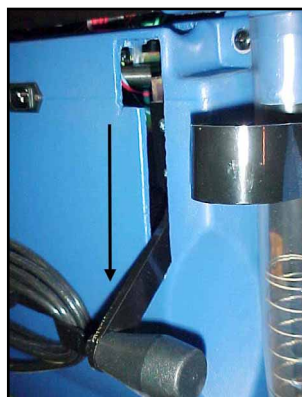


Figure #12



Figure #13

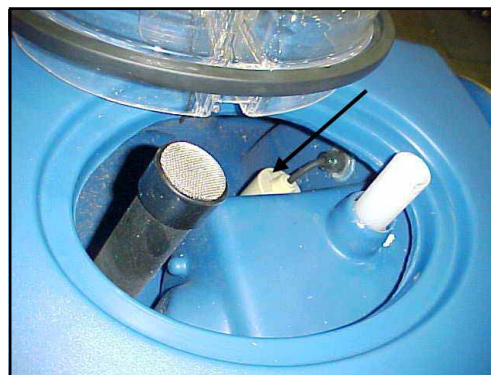


Figure #14



Figure #15

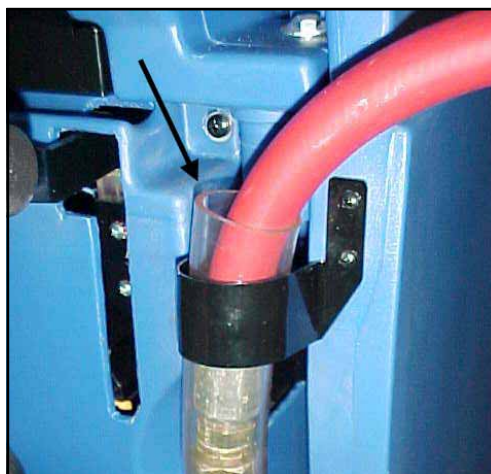


Figure #16

HOW TO OPERATE THE MACHINE

How To Traverse Machine

NOTE: Put the machine in the slow traverse speed (see figure #17). Use the machine in an area that has no furniture and objects until you can do the following:

1. Move the machine in a straight direction, forward and backward.
2. Stop the machine safely.
3. Move the machine in a straight direction after you turn the machine.

To move the machine, follow this procedure:

1. Turn the key switch "ON" position.
2. Put the brush switch in the "UP" position.
3. Raise the squeegee.
4. To go forward, push one or both of the yellow forward switches (see figure #18).
5. To stop the machine, release the yellow forward switches.
6. To go backward, push in on the white reverse button and one of the yellow forward switches at the same time (see figure #19).
7. To turn the machine, push the rear of the machine to the side.
8. When you stop the machine, turn the key switch "OFF".

How to Clean a Floor

WARNING!

Water solutions or cleaning materials used with this type of machine can leave wet areas on the floor surfaces. These areas can cause a dangerous condition for the operator or other persons. Always put CAUTION signs near the area you are cleaning.

To clean a floor, follow this procedure:

1. Put the water and a cleaning chemical in the clean solution tank.
2. Turn the key switch "ON". If one touch feature is used, press the green button and proceed to step 6 (deluxe models only).
3. Lower the squeegee.
4. Put the brush switch in the "DOWN" position.
5. Adjust the flow of clean solution to the flow desired.
6. Move the machine across the floor in the forward direction.
7. Make a 180 degree turn.

NOTE: When you make more passes across the floor, let the brushes clean approximately 2 inches of the area already cleaned by the brushes.

NOTE: During most cleaning procedures, apply and remove the solution in one operation.



Figure # 17



Figure #18



Figure #19

HOW TO OPERATE THE MACHINE

How to Clean a Very Dirty Floor

To clean a very dirty floor, follow this procedure:

1. Apply solution to the floor.
2. Do not lower the squeegee.
3. Do not activate the vacuum motor.
4. Lower the brushes and scrub the floor.
5. Leave the solution on the floor long enough for the solution to begin cleaning the floor.
6. Scrub the floor again with additional solution, picking up all the solution with the squeegee



Figure #20

MAINTENANCE

WARNING!

Maintenance and repairs must be done by authorized personnel only.

WARNING!

Always empty the solution tank and recovery tank before doing any maintenance.

WARNING!

Keep all fasteners tight.

These Maintenance Procedures Must Be Done Every Day

Keep the machine clean, it will need fewer repairs and have longer life.

Do These Procedures When You Begin Your Work Period

1. Turn off key switch.
2. Unplug charger from AC outlet and wrap cord around bracket at rear of machine.
3. Make sure the recovery tank lid is on correctly (see figure #20).
4. Make sure the Screen filter over the vacuum motor is clean and in position (see figure #20).
5. Make sure the valve on the recovery drain hose is clean. Tightly close the valve.
6. Make sure brush housings and skirts are in position on the brush head.
7. Make sure the brushes are in position and installed correctly
8. Check the installation of the squeegee and squeegee hose.

MAINTENANCE

Do These Procedures When You End Your Work

1. Drain the solution tank (Figure #21, item A) and the recovery tank (Figure #21, item B). To drain the tanks, follow this procedure:
 - a. Turn the key switch "OFF".
 - b. Remove the drain hose from the back of the machine.
 - c. Put the end of the hose over a drain or bucket.
 - d. Recovery Tank:
Turn the valve housing to the left (see figure #22). To open the valve completely, turn the housing fully to the left and pull the housing off of the valve.

Solution Tank:
When hose is lowered below water level, the water will drain (see figure 23).
2. Flush the tanks. To flush the tanks, put clean water in the tank through the opening on top of the tank.
3. If a tank or drain hose has an obstruction, use a high pressure water hose to flush the tank or hose. Put the water hose into the drain hose.
4. Leave the tanks and the drain valves open to dry in the air.
5. Check the squeegee blade. Use a cloth to clean the squeegee blade. If the squeegee blade is damaged or worn, turn or replace the blade.
6. Check and clean the recovery lid gasket. Use a mild cleaning solution and rinse the parts in clean water.

Check the batteries and add distilled water as needed. The correct level is within 1/4 inch of the bottom of the tube in each cell.

CAUTION!

Tap water may contain contaminants that will damage batteries. Batteries must be re-filled with distilled water only.

WARNING!

Lead acid batteries generate gases which can cause an explosion. **NO SMOKING.** Always wear eye protection and protective clothing when working near batteries.

Use a clean cloth and wipe the surface of the machine.

Charge the batteries. See the instruction in the section of this book called "How To Charge The Batteries".

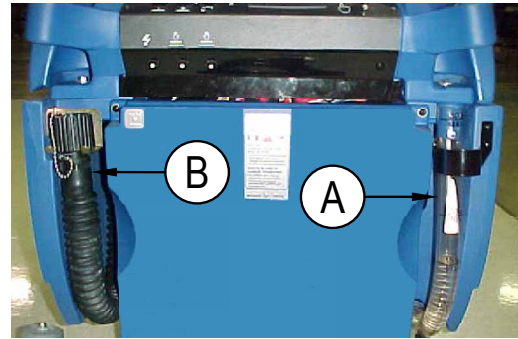


Figure #21



Figure #22



Figure #23

MAINTENANCE

These Maintenance Procedures Must Be Done Every Week:

⚠ WARNING!

Maintenance and repairs must be done by authorized personnel only. Always empty the solution tank and the recovery tank before doing any maintenance. Keep all fasteners tight.

⚠ WARNING!

Always wear eye protection and protective clothing when working near batteries. Do not put tools or other metal objects across the battery terminals or the tops of the batteries.

⚠ CAUTION!

To prevent damage to the machine, and discharge across the tops of the batteries, do not fill the batteries above the bottom of the tube in each cell. Wipe any acid from the machine or the tops of the batteries. Do not add acid to battery after installation.

NOTE: Always turn off key switch before servicing the machine.

⚠ WARNING!

Always wear eye protection and protective clothing when working near batteries. **NO SMOKING!**

1. To inspect batteries, tip up recovery tank until it locks in up position. See Figure #24.
2. Disconnect the batteries. Use a cloth and a solution of ammonia or bicarbonate of soda to wipe the top of the batteries. Clean the battery terminals. Reconnect the batteries.
3. Check the hoses for leaks, obstructions and other damages.
4. Check and clean the filter screen in the solution hose. To clean the screen, follow this procedure:
 - a. Turn the connector to the left.
 - b. Remove and clean the filter screen.
 - c. Install the filter screen in the hose. Turn the connector to the right to connect the hose.
5. Use a grease gun to lubricate the drive wheel and the casters. See figure #25.
6. Check tire pressure. Tire pressure should be about 50 psi (3.45 bar).



Figure #24

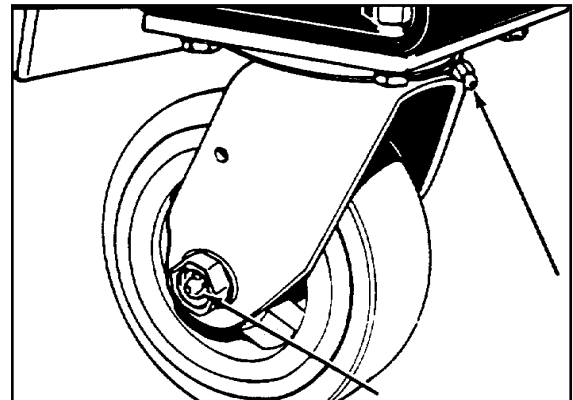


Figure #25

MAINTENANCE

7. Check the squeegee and the scrub brushes or the pad drivers for damage.
8. Check the squeegee and the vacuum hose for damage, leaks and obstructions.

Maintenance For The Squeegee

To remove the squeegee, follow this procedure:

1. Remove the squeegee assembly by loosening the two knobs that attach the squeegee to the machine. Pull the squeegee assembly off. See figure #26.
2. Inspect the squeegee blade.
3. If the blade is worn, turn the blade so that a new edge is in the wiping position.
4. Reinstall squeegee assembly on the machine.

How To Adjust The Squeegee

The following adjustments are set at the factory, however they may require slight adjustment.

Adjusting Squeegee Pressure:

To adjust the pressure, refer to Figure #27. Proper adjustment will produce a uniform flare along the rear blade when the machine is moved forward. To increase pressure, tighten the nuts on each side of the swing arm. To decrease the pressure, loosen the nuts on each side.

Adjusting Squeegee Tilt:

The tilt of the squeegee causes the rear blade to raise up in the center or on the ends, depending on which direction the tilt is changed. For tilt adjustment, refer to figure # 28. Loosen left and right screw "X". In order to bring the rear blade down in the center, tip "Y" down. To bring both ends down, tip "Y" up. Make very small adjustments and try it until a uniform flare is achieved. Changing the tilt may also require readjusting the squeegee pressure.

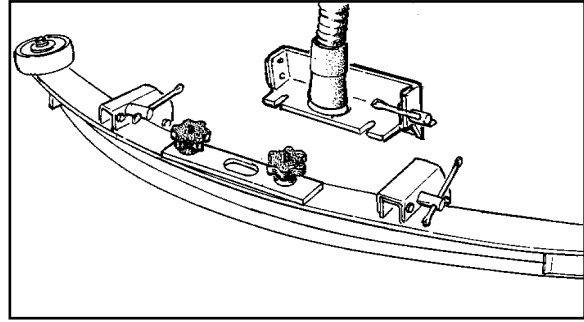


Figure #26

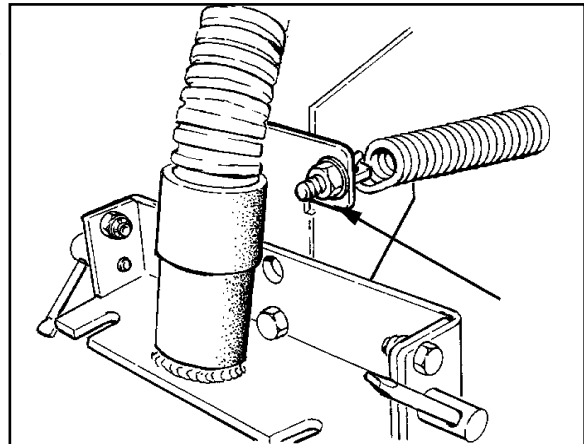


Figure #27

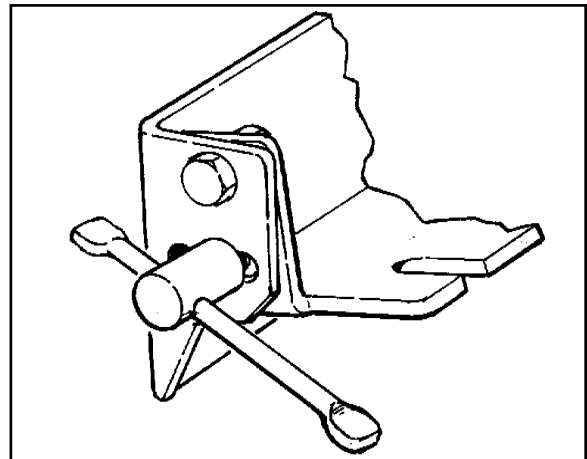


Figure #28

MAINTENANCE

Adjusting Squeegee Blades

When properly installed the front blade should be approximately .12 above the rear blade. See figure #29.



WARNING!

Maintenance and repairs must be done by authorized personnel only.



WARNING!

Electrical repairs must be done by authorized personnel only.

Consult your Nilfisk Alto Authorized Service Person to do the service procedures.

Use only genuine Nilfisk Alto parts.

How to Clean the Solution Line

If the solution line becomes clogged, pull the filter assembly out from behind the brush housing (Figure 30). Turn solution valve off. Remove the filter screen (Figure 31, B) and clean or replace it. Turn solution valve back on (figure 31, A) and push filter assembly back inside frame.

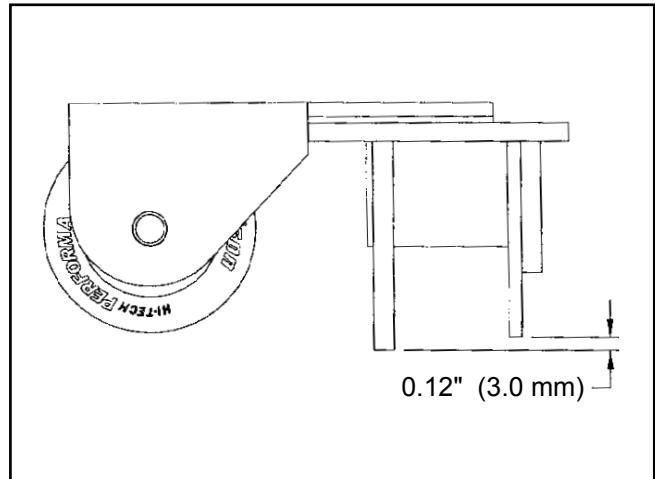


Figure #29

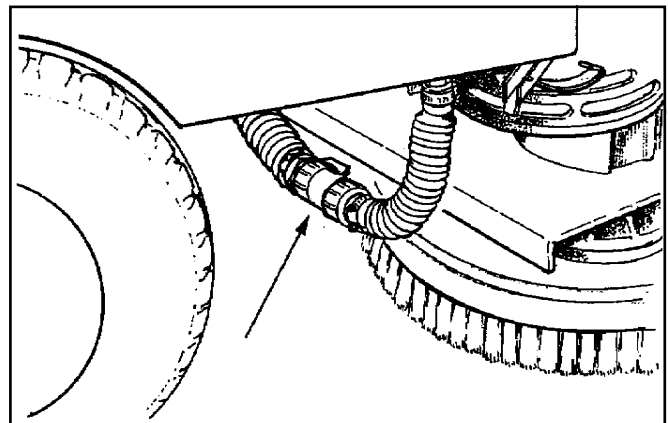


Figure #30

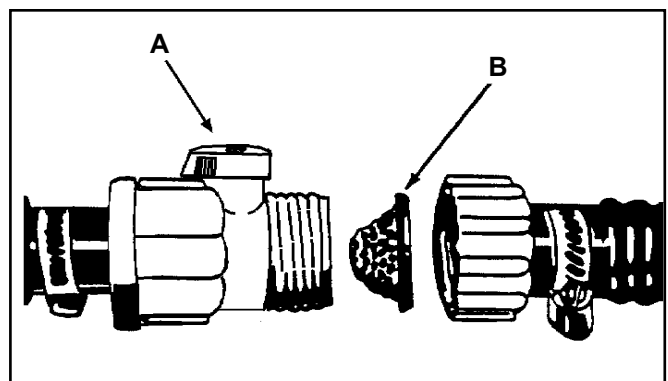


Figure #31

HOW TO CORRECT PROBLEMS IN THE MACHINE

PROBLEM	CAUSE	ACTION
The machine does not remove all the water from the floor.	The squeegee is up	Lower the squeegee.
	The vacuum tank is full.	Drain the tank.
	The screen filter is dirty.	Clean the screen filter.
	There is an obstruction or damage in the squeegee, squeegee hose or standpipe.	Remove the obstruction or repair the damage.
	The vacuum motor is not running.	Check for tripped breaker. Have an authorized service person make repairs.
	The squeegee hose is disconnected.	Connect the hose.
	The squeegee blade is damaged, worn, or incorrectly installed.	Turn or replace the squeegee blade. Correctly install the squeegee blade.
The batteries do not give the normal running time.	The squeegee pressure is not correctly adjusted.	Adjust the pressure of the squeegee.
	The gaskets on the cover of the recovery tank are damaged.	Replace the gaskets.
	The battery terminals are dirty or damaged.	Clean the terminals and connectors. Replace the damaged cables. Charge the batteries.
	The electrolyte level is too low.	Add distilled water to each cell and charge the batteries.
	The batteries are not fully charged.	Charge the batteries for a full 16 hour charge.
	The charger is damaged.	Have an authorized service person repair the charger.
The cleaning is not even.	The battery is defective.	Check voltage of each cell while discharging.
	The batteries are disconnected.	Connect the batteries.
	The scrub brushes or pads are worn.	Replace the scrub brushes or pads.
	There is damage to the brush assembly, casters or the solution valve.	Have an authorized service person make the needed repairs.
The machine does not run.	The brush motors are not running.	Check for tripped breaker, reset. Check for loose connections.
	The solution level is low.	Fill the solution tank. NOTE: If the motors continue to stop consult an authorized service person.
	The machine loses power.	Reset the circuit breaker. Check wire connection to traverse motor. Replace the fuses. Check the batteries connections. Check parking brake override lever position (if installed) NOTE: If the motors continue to stop, consult an authorized service person.

SCRUBTEC 770L / 784L / 795L WB**Common Error Codes**

ERROR CODE	CAUSE	ACTION
3100 3101 3102 3103 3104 3105	Probable short circuit of output device.	Check the traction, brush and vac motor connections on the trio and check wiring from these connectors down to the traction, brush and vac motors.
7600	Open circuit on brush motors or brush motor wiring.	Check the brush motor connection on the trio and check the wiring from this connector down to the brush motor.
7603	Possible short circuit on brush motors or wiring.	
7800	Open circuit on traction motor.	Check the traction motor connection on trio and wiring down to motor.
7802	Traction motor current has exceeded current limit for the fold back time.	Excessive driving up an incline, or machine driven up against an obstacle or step.
9000	Brushes not fitted.	Brushes
2F01	Drive system activated prior to turning key switch "ON".	Release traverse switch and reactivate.

NOTICE: IF ERROR CODE/FAULT OCCURS TURN KEY SWITCH OFF AND THEN BACK ON.

For further codes and explanations, contact a Nilfisk Alto Service Center.

Nilfisk ALTO

Why Compromise

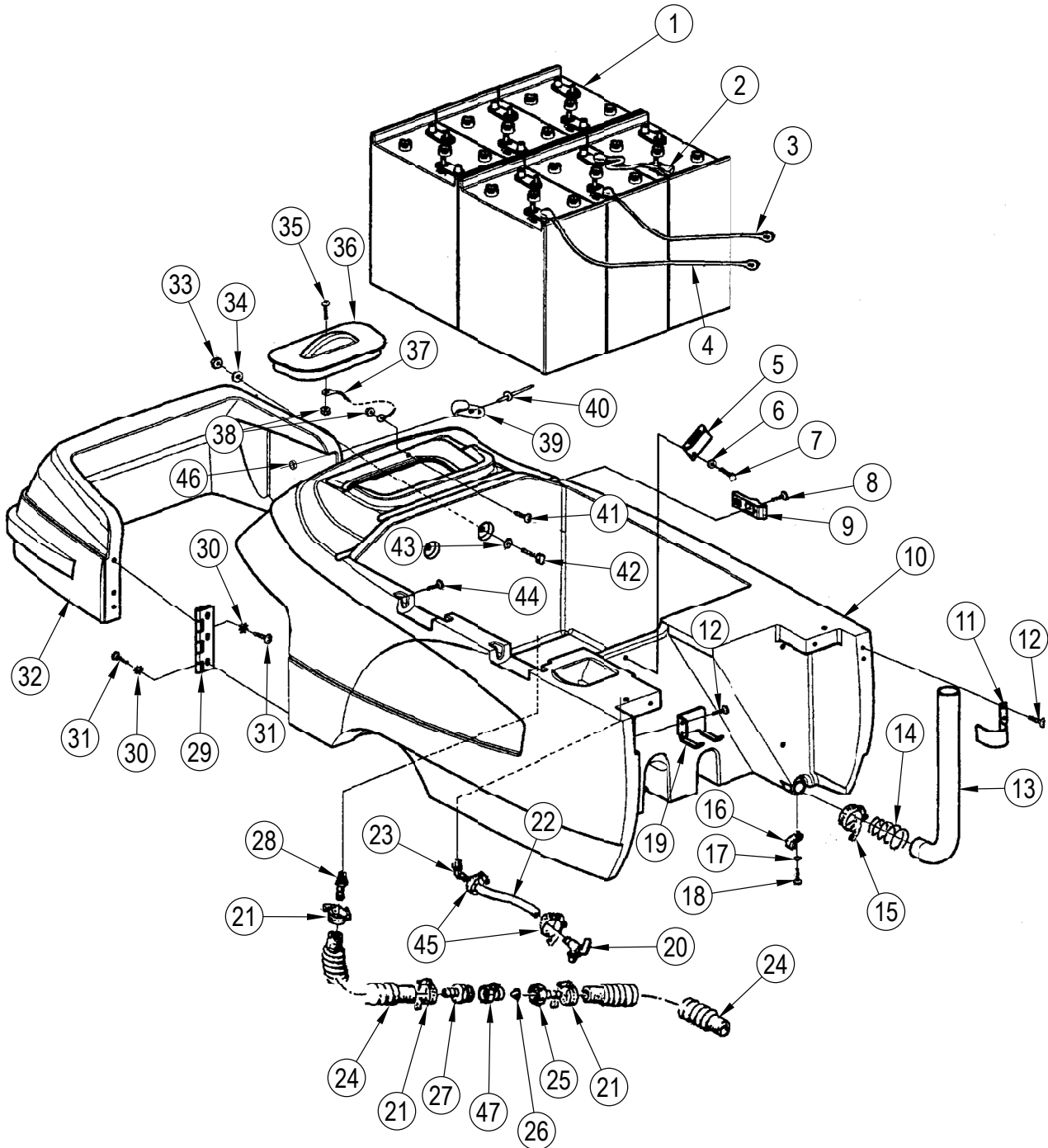
SCRUBTEC 770 S
SCRUBTEC 770 L
SCRUBTEC 784 S
SCRUBTEC 784 L
SCRUBTEC 795 S
SCRUBTEC 795 L

Section II Parts and Service Manual

(70935A)

U.S. Patent No. 6,760,947; No. 6,105,192; No. RE39, 581 (Deluxe Machines)

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Solution Tank Assembly 12/09

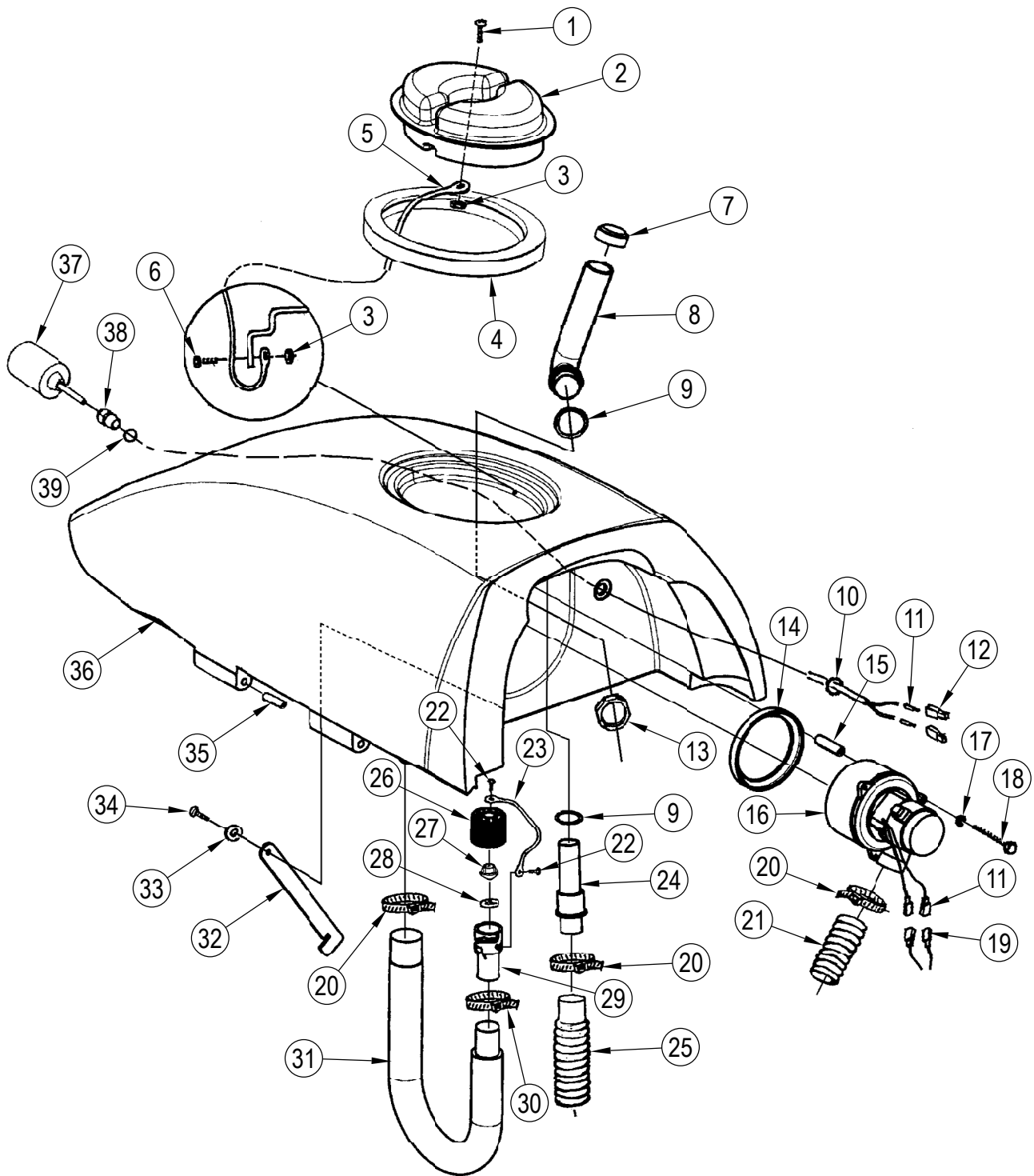


Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Solution Tank Assembly 12/09

Item	Ref. No.	Qty	Description
1	881317	6	Battery - 250 AH - 6 Volt
	891384	6	Battery - 330 AH - 6 Volt
2	842406	3	Series Cable - 9"
3	40613A	1	Battery Cable, Black NOTE 1
4	40612A	1	Battery Cable, Red NOTE1
5	61713A	1	Tank Support Bracket
6	170892	2	Washer, Lock 1/4
7	170915	2	Screw, 1/4-20 x 3/4 Hex
8	962027	2	Screw, 8-32 x 1/2 PN
9	50966A	1	Latch
10	30590A	1	Solution Tank
11	60480A	1	Hose Bracket
12	80108A	4	Screw, 10-24 x 1/2 PN
13	30598A	1	Drain Hose
14	51346A	1	Spring, Hose
15	872010	1	Hose Clamp
16	98465A	1	Clamp, Metal
17	980657	1	Washer, Lock 1/4
18	962139	1	Screw, 1/4-20 x 5/8 Hex
19	61590A	1	Hose Hanger Bracket
20	59614A	1	Battery Drain Valve
21	53571A	4	Hose Clamp
22	30453A	1	Hose
23	822802	1	Elbow
24	30445A	2	Solution Hose
25	50358A	1	Connector
26	838517	1	Filter Screen
27	830214	1	Hose Adapter
28	50359A	1	Solution Adapter
29	53568A	1	Hinge
30	980614	6	Washer, 1/4 External
31	85395A	6	Screw, 1/4-20 x 1/2 PN
32	30655A	1	Front Cover
33	81105A	2	Nut, 3/8-16 ESNA
34	980645	2	Washer, 3/8 Flat
35	962798	1	Screw, 10-24 x 1/2 PN
36	30498A	1	Solution Lid
37	38020A	1	Strap
38	920296	2	Nut, 10-24 ESNA
39	50966A	1	Keeper, Latch
40	930090	2	Rivet, 5/32 x 9.16 (Prior to DL0055)
	85614A	2	Screw, 8-32 x 3/4 PN (starting w/DL0055)
41	962666	1	Screw, 10-24 x 3/4 PN
42	962522	2	Screw, 3/8-16 x 2 Hex
43	87054A	2	Washer, 3/8 Fender
44	80289A	2	Screw, 10 x 1/2 Tapping PN
45	50248A	2	Clamp, Hose
46	81109A	2	Nut, 8-32 SS Elastic Lock
47	54088A	1	Valve, Shut-off

NOTE 1: Only used on the following models: 05210G, 05220G.

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Recovery Tank Assembly 12/09

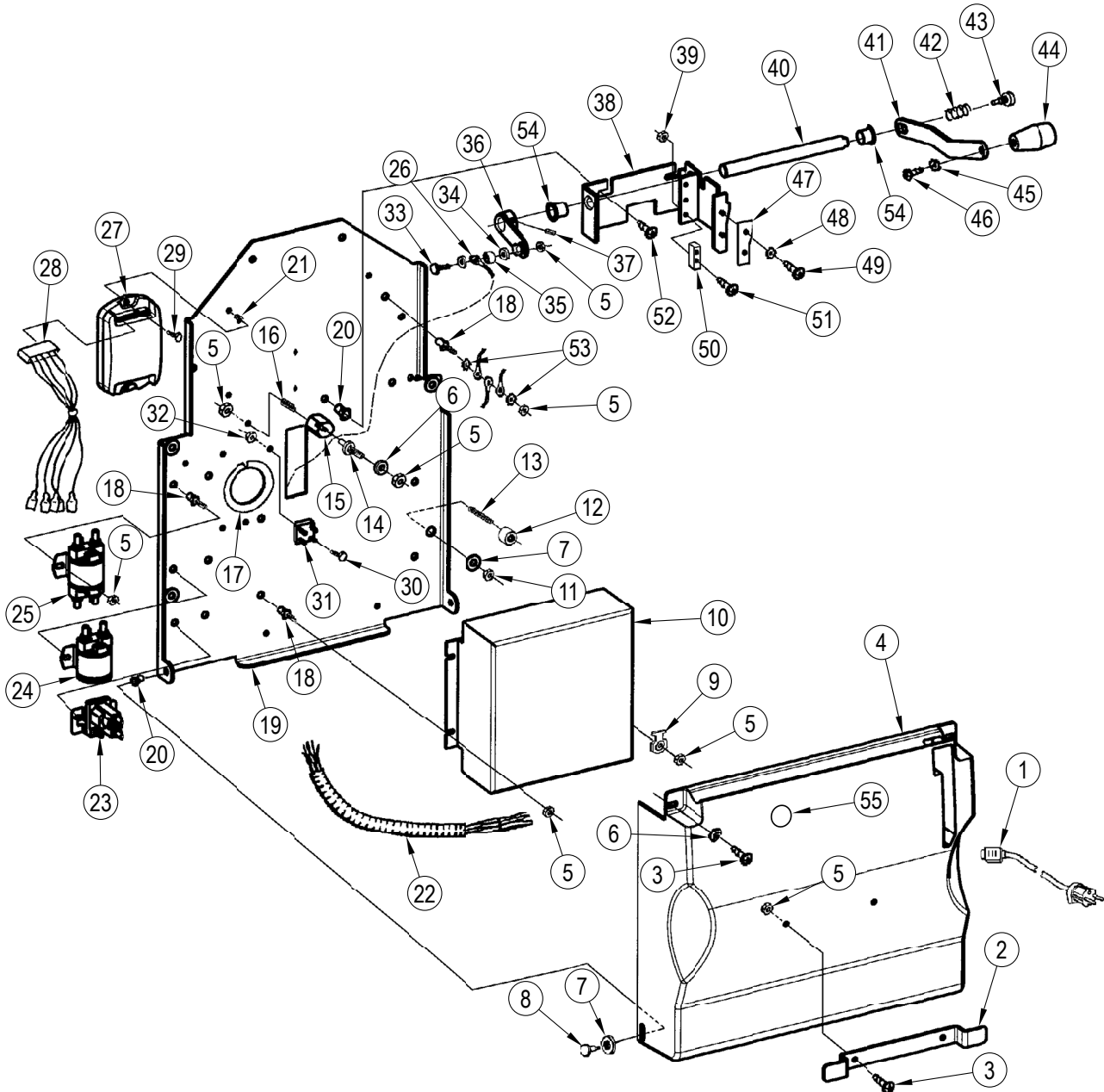


Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Recovery Tank Assembly 12/09

Item	Ref. No.	Qty	Description
1	962798	1	Screw, 10-24 x 1/2 PN
2	30057A	1	Recovery Lid
3	920296	2	Nut, 10-24 ESNA
4	30065B	1	Gasket, Lid
5	38020A	1	Strap
6	962666	1	Screw, 10-24 x 3/4 PN
7	58069A	1	Vac Filter
8	39338B	1	Stand Tube
9	837304	2	O-Ring
10	82100A	1	Locknut
11	41809A	4	Contact
12	43402A	2	Housing, Blue
13	920797	1	Nut
14	643418	1	Gasket, Vac
15	58533A	3	Vac Motor Spacer
16	45019A	1	Vac Motor (order 2 each #11 and #19)
[]	40830A	2	Brushes, Carbon
17	87026A	3	Washer, 1/4 Flat
18	85728A	3	Screw, 1/4-20 x 4 Hex
19	43401A	2	Housing, Black
20	872010	3	Clamp
21	674110	1	Vac Exhaust Hose
22	962957	2	Screw, 10-16 x 1/2 PN
23	52206A	1	Chain
24	30620A	1	Squeegee Adapter
25	35192A	1	Squeegee Hose
26	30227A	1	Drain Housing
27	30226A	1	Drain Plug
28	52560A	1	O-Ring
29	30225A	1	Drain Body
30	832002	1	Drain Valve Clamp
31	35165A	1	Recovery Drain Hose
32	61591A	1	Recovery Tank Support
33	87622A	1	Washer, Nylon
34	80043A	1	Shoulder Screw
35	30068A	2	Hinge Pin (included with item #36)
36	30673A	1	Tank, Recovery, 770 S
	30697A	1	Tank, Recovery, 770 L
	30698A	1	Tank, Recovery, 784 S
	30699A	1	Tank, Recovery, 784 L
	30700A	1	Tank, Recovery, 795 S
	30701A	1	Tank, Recovery, 795 L
37	40002A	1	Float Switch (includes items, #38 & 2 ea. #11& #12)
38	56459A	1	Strain Relief (included in item #37)
39	87612A	1	Seal

[] = Not Shown

Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Electrical Panel Assembly / Solo Speed Controller 12/09



Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Electrical Panel Assembly / Solo Speed Controller 12/09

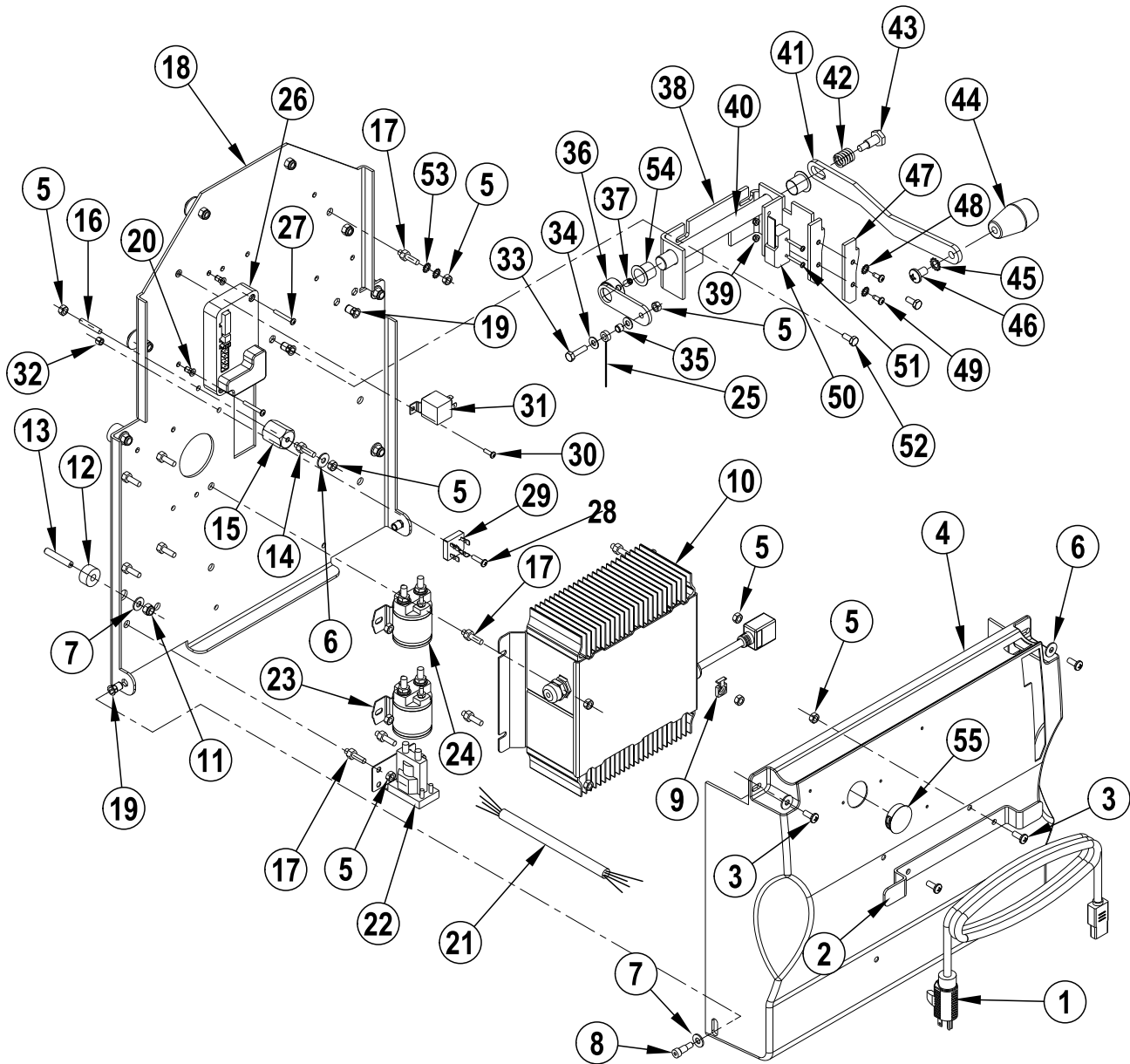
Item	Ref. No.	Qty	Description
1	40838A	1	Cord, Charger NOTE1
2	61598A	1	Bracket, Cord Wrap NOTE1
3	85391A	4	Screw, 1/4-20 x 5/8 PN
4	30594A	1	Rear Cover
5	81104A	16	Nut, ESNA 1/4-20
6	87007A	3	Washer, 1/4 Flat
7	980651	6	Washer, 5/16 Flat
8	80030A	2	Shoulder Bolt
9	52548A	1	Screw Tab NOTE 1
10	40739B	1	Charger, Battery NOTE 1
11	920110	4	Nut, ESNA 5/16-18
12	53569A	4	Spacer
13	80285A	4	Screw, Set 5/16-18 x 1 3/4
14	83302A	1	Stud, 1/4-20
15	854849	1	Insulator
16	170781	1	Screw, Set 1/4-20 x 3/4
17	193951	1	Trim, 8"
18	83307A	11	Stud, 1/4-20
19	61589A	1	Electrical Panel
20	54764A	4	Insert, 1/4-20
21	54763A	2	Insert, 8-32
22	40736A	1	Main Wiring Harness, Std.
23	40125A	1	Contact, Vacuum
24	41801A	1	Contact, Brush
25	41802A	1	Contact, Main
26	61682A	1	Cable, Upper
27	40735A	1	Controller, Solo
28	40759A	1	Traverse Harness
29	80254A	2	Screw, 8-32 x 1
30	962666	1	Screw, 10-24 x 3/4
31	912287	1	Rectifier
32	920296	1	Nut, ESNA 10-24
33	85700A	1	Screw, 1/4-20 x 1
34	87026A	2	Washer, 1/4 Flat
35	608210	1	Spacer
36	65628A	1	Lever, Cable
37	962304	2	Screw, Set 5/16-18 x 1/2 (must use red Loctite)
38	61584A	1	Squeegee Lift Bracket
39	920056	2	Nut, ESNA #6-32
40	61586A	1	Shaft
41	61585A	1	Squeegee Lift Lever
42	438360	1	Spring
43	960510	1	Shoulder Screw
44	52557A	1	Squeegee Knob
45	980666	1	Washer, 3/8 External
46	85389A	1	Screw, 3/8-16 x 5/8
47	68643A	1	Wear Plate
48	980675	2	Washer
49	962546	2	Screw, 10-24 x 1/2
50	47388A	1	Switch
51	962980	2	Screw, 6-32 x 1
52	962139	2	Screw, 1/4-20 x 5/8
53	980614	2	Washer, 1/4 External
54	902731	2	Nylon Bearing
55	54436A	1	Plug, Hole 1 3/8
[]	40856A	1	Cable-Electrical Panel NOTE 2
[]	40855A	1	Cable-Battery NOTE 2

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NOTE 1: Only used on the following models: 05210G, 05220G.

NOTE 2: Only used on the following models: 05210F, 05211F, 05220F, 05221F, 05230F, 05231F

Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Electrical Panel Assembly / I-Drive Speed Controller 12/09



Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Electrical Panel Assembly / I-Drive Speed Controller 12/09

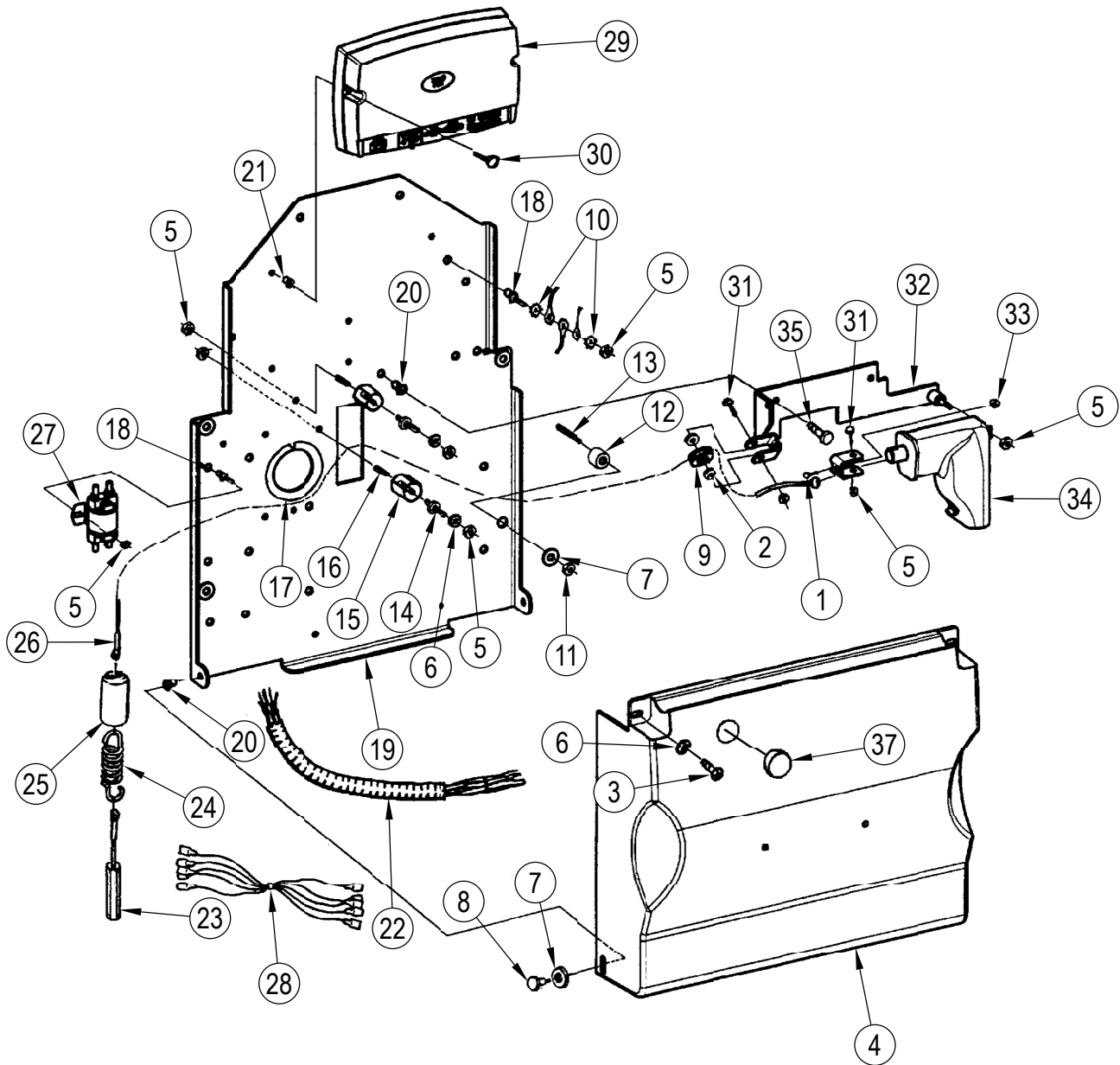
Item	Ref. No.	Qty	Description
1	40838A	1	Cord, Charger NOTE 1
2	61598A	1	Bracket, Cord Wrap NOTE 1
3	85391A	4	Screw, 1/4-20 x 5/8 PN (QTY of 2 on models without onboard charger)
4	30594A	1	Rear Cover
5	81104A	16	Nut, ESNA 1/4-20 (QTY of 9 on models without onboard charger)
6	87007A	3	Washer, 1/4 Flat
7	980651	6	Washer, 5/16 Flat
8	80030A	2	Shoulder Bolt
9	52548A	1	Screw Tab NOTE 1
10	40739B	1	Charger, Battery NOTE 1
11	920110	4	Nut, ESNA 5/16-18
12	53569A	4	Spacer
13	80285A	4	Screw, Set 5/16-18 x 1 3/4
14	83302A	1	Stud, 1/4-20
15	854849	1	Insulator
16	170781	1	Screw, Set 1/4-20 x 3/4
17	83307A	11	Stud, 1/4-20
18	61589C	1	Electrical Panel
19	54764A	4	Insert, 1/4-20
20	54763A	2	Insert, 8-32
21	40288A	1	Main Wiring Harness, Std.
22	40125A	1	Contacto, Vacuum
23	41801A	1	Contacto-Brush
24	41801A	1	Contacto-Main
25	61682A	1	Cable, Upper
26	41019A	1	Controller I-Drive
[]	41021A	1	Traverse Harness
27	80380A	2	Screw 8-32 x 1.25
28	962666	1	Screw, 10-24 x 3/4
29	912287	1	Rectifier
30	962727	1	Scr 8-32 x .50
31	41007A	1	Relay-Traverse power
32	920296	1	Nut, ESNA 10-24
33	85700A	1	Screw, 1/4-20 x 1
34	87026A	2	Washer, 1/4 Flat
35	608210	1	Spacer
36	65628A	1	Lever, Cable
37	962304	2	Screw, Set 5/16-18 x 1/2 (must use red Loctite)
38	61584A	1	Squeegee Lift Bracket
39	920056	2	Nut, ESNA #6-32
40	61586A	1	Shaft
41	61585A	1	Squeegee Lift Lever
42	438360	1	Spring
43	960510	1	Shoulder Screw
44	52557A	1	Squeegee Knob
45	980666	1	Washer, 3/8 External
46	85389A	1	Screw, 3/8-16 x 5/8
47	68643A	1	Wear Plate
48	980675	2	Washer
49	962546	2	Screw, 10-24 x 1/2
50	47374A	1	Switch
51	962980	2	Screw, 6-32 x 1
52	962139	2	Screw, 1/4-20 x 5/8
53	980614	2	Washer, 1/4 External
54	902731	2	Nylon Bearing
55	54436A	1	Plug, Hole 1 3/8
[]	40856A	1	Cable-Electrical Panel NOTE 2
[]	40855A	1	Cable-Battery NOTE 2

[] = Not Shown

NOTE 1: Only used on the following models: 05210G, 05220G.

NOTE 2: Only used on the following models: 05210F, 05211F, 05220F, 05221F, 05230F, 05231F

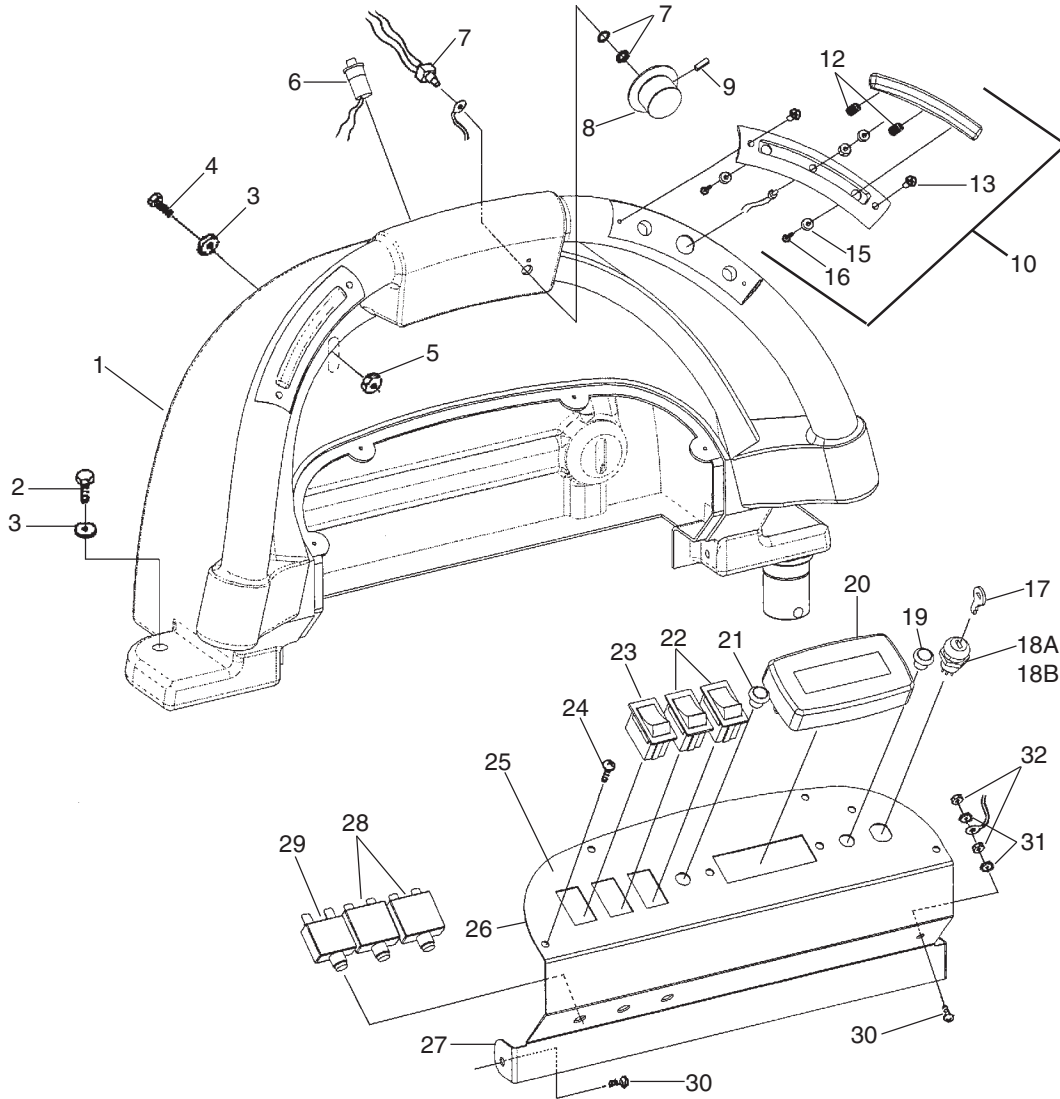
Nilfisk ALTO
SCRUBTEC 770 L / 784 L / 795 L
Electrical Panel Assembly Drawing 2/07
Drawing # 10855E



Nilfisk ALTO
SCRUBTEC 770 L / 784 L / 795 L
Electrical Panel Assembly Parts List 2/07
Drawing # 10855E

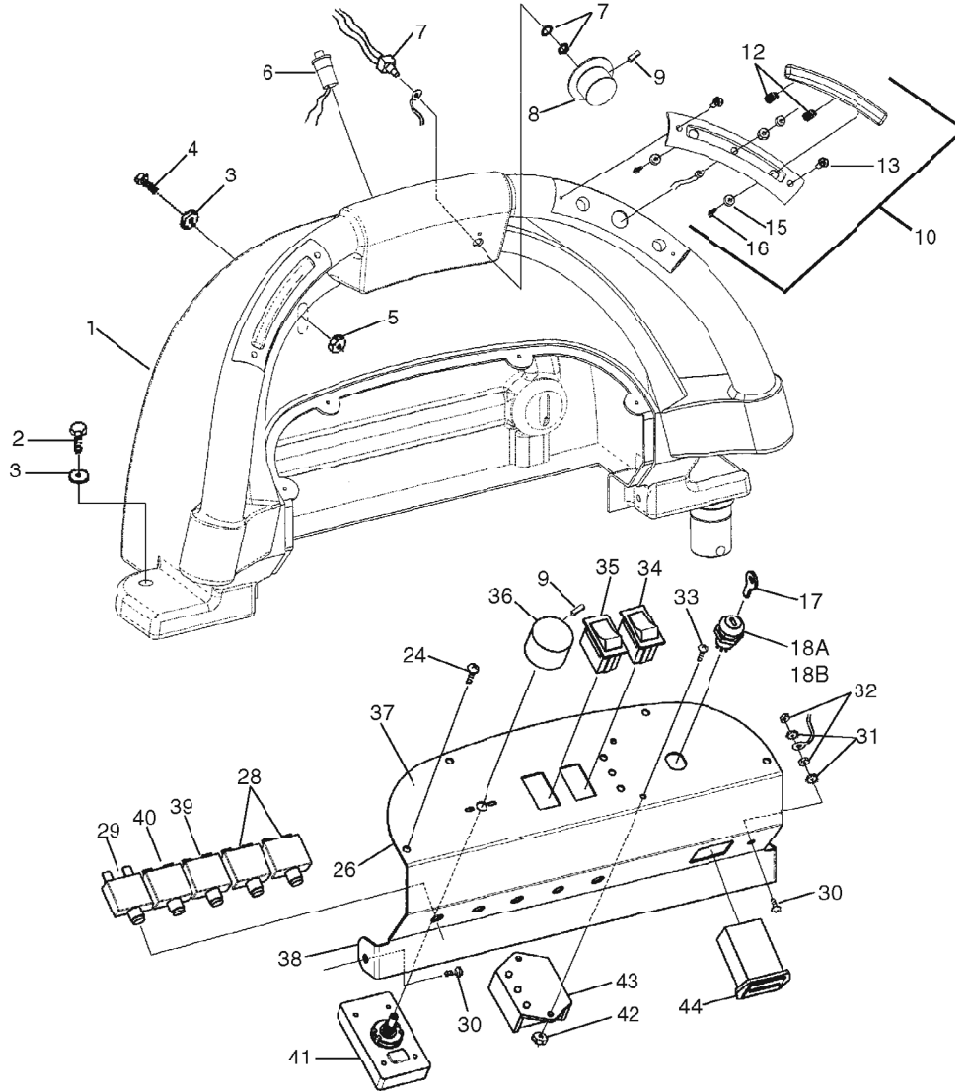
Item	Ref. No.	Qty	Description
1	962798	1	Screw
2	87624A	2	Washer, Pulley
3	85391A	2	Screw, 1/4-20 x 5/8 PN
4	30626A	1	Rear Cover
5	81104A	10	Nut, ESNA 1/4-20
6	87007A	4	Washer, 1/4 Flat
7	980651	6	Washer, 5/16 Flat
8	80030A	2	Shoulder Bolt
9	57275A	1	Pulley
10	980614	2	Washer, 1/4 External Lk
11	920110	4	Nut, ESNA 5/16-18
12	53569A	4	Spacer
13	80285A	4	Screw, Set 5/16-18 x 1 3/4
14	83302A	2	Stud, 1/4-20
15	854849	2	Insulator
16	170781	2	Screw, Set 1/4-20 x 3/4
17	193951	1	Trim, 8"
18	83307A	3	Stud, 1/4-20
19	61589A	1	Electrical Panel
20	54764A	2	Insert, 1/4-20
21	54763A	2	Insert, 8-32
22	40742A	1	Main Wiring Harness, Dix
23	61680A	1	Cable, Spring
24	53424A	1	Spring, Cable
25	58409A	1	Sleeve, Spring
26	61681A	1	Cable, Upper
27	41802A	1	Contactora
28	40854A	1	Harness, Interface
29	40743B	1	Controller, Trio
30	80105A	2	Screw, 8-32 x 1 1/4
31	86004A	2	Screw, 1/4-20 x 1 1/2
32	61595A	1	Bracket, Actuator
33	920296	1	Nut
34	40745A	1	Actuator, Squeegee
35	962139	2	Screw, 1/4-20 x 5/8 Hex
36	69872A	1	Bracket, Pulley
37	54436A	1	Plug, Hole 1 3/8"

Nilfisk ALTO
SCRUBTEC 770L / 784L / 795L
Control Panel Assembly 12/09



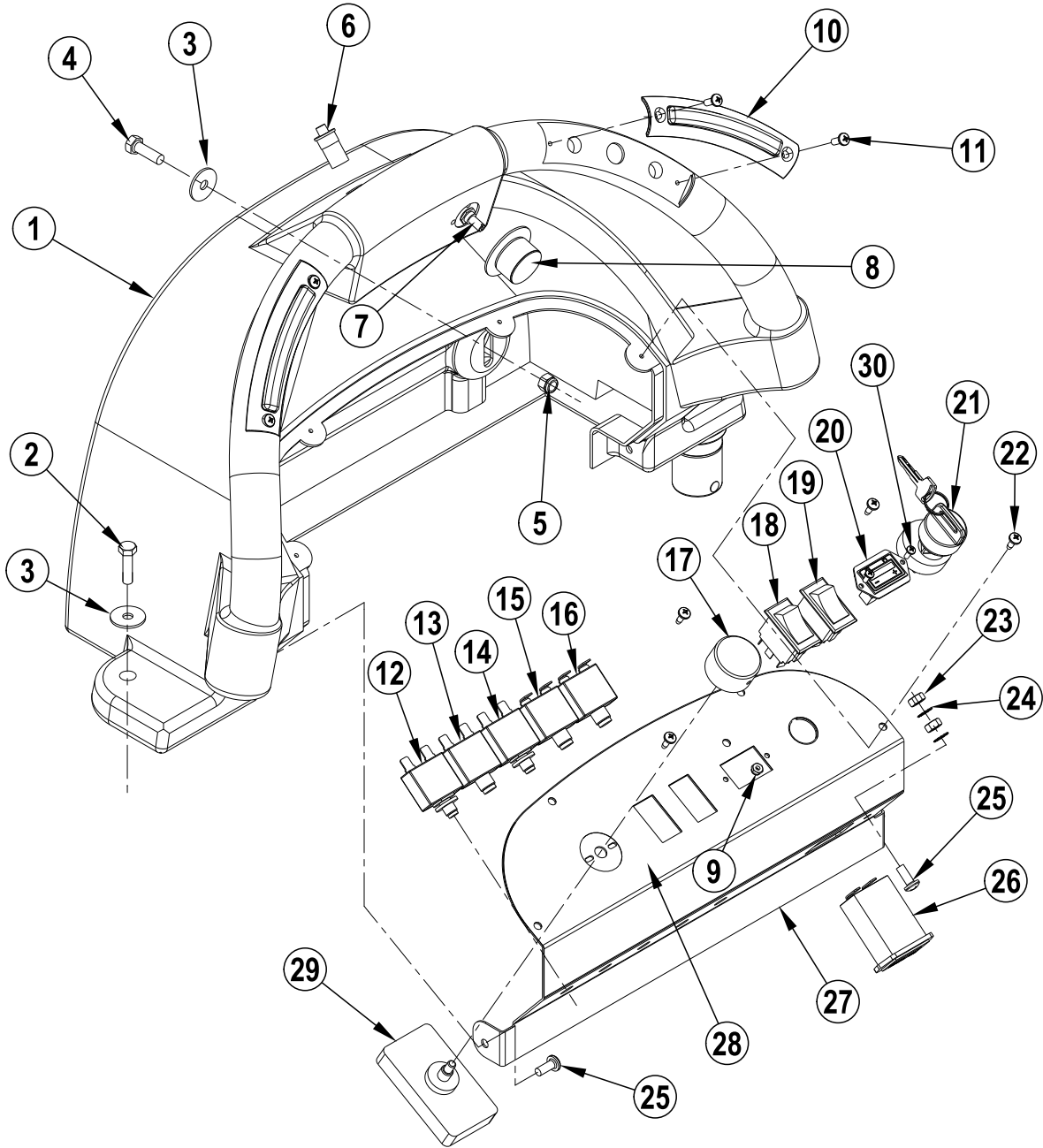
Item	Ref. No.	Qty	Description	Item	Ref. No.	Qty	Description
1	30592A	1	Control Handle	24	962957	4	Screw, 10-16 x 1/2
2	85815A	2	Screw, 5/16-18 x 1 1/2	25	*see table	1	Label, Control
3	980205	6	Washer, 5/16 Flat	26	34264A	1	Gasket
4	85813A	4	Screw, 5/16-18 X 1	27	*see table	1	Panel, Control "L"
5	920110	4	Nut, LK 5/16-18	28	41431B	2	Circuit Breaker, 35A
6	52556A	1	Reverse Switch	29	41423B	1	Circuit Breaker, 5A
7	40750A	1	Traverse Potentiometer "L"	30	85391A	3	Screw, 1/4-20 x 5/8
8	50962A	1	Knob, Traverse	31	980614	2	Washer, 1/4 External
9	962262	2	Screw, Set 8-32 x 1/2 (included w/# 8 & 36)	32	920208	2	Nut, 1/4-20
10	11131A	2	Switch Asm.				40883A
12	50961A	4	Spring, Switch	17	53831A	x	Key (included with #18A)
13	80104A	4	Screw, 10-32 x 1/2 Oval	18A	40883A	x	Switch, Key
15	980608	4	Washer, #6 Flat	25	70885A	x	Label, Control
16	962330	4	Screw, 6-32 x 3/8 Pan	27	61597A	x	Panel, Control
17	*see table	1	Key (included w/ # 18)				40786A
18A	40883A	1	Switch, Key (*see table below)	17	40786K	x	Key (included with #18B)
18B	40786A	1	Switch, Key (*see table below)	18B	40786A	x	Switch, Key
19	40748A	1	Switch, Green Push Button	25	70962A	x	Label, Control
20	40880A	1	LCD Display	27	61739A	x	Panel, Control
21	40758A	1	Switch, Black Push Button	NI	40786S	1	Spacer, Key Switch
22	40168B	2	Switch, Momentary Rocker				
23	40747A	1	Switch, 3 Position Rocker				

Nilfisk ALTO
SCRUBTEC 770S / 784S / 795S
Control Panel Assembly / Solo Speed Controller 12/09



Item	Ref. No.	Qty	Description	Item	Ref. No.	Qty	Description
1	30592A	1	Control Handle	32	920208	2	Nut, 1/4-20
2	85815A	2	Screw, 5/16-18 x 1 1/2	33	962968	2	Screw, 10-24 x 1/2
3	980205	6	Washer, 5/16 Flat	34	40749A	1	Switch, Momentary Rocker
4	85813A	4	Screw, 5/16-18 X 1	35	47381B	1	Switch, Mantain Rocker
5	920110	4	Nut, LK 5/16-18	36	55502A	1	Knob, Control
6	52556A	1	Reverse Switch	37	*see table	1	Label, Control
7	40738A	1	Traverse Potentiometer "S"	38	*see table	1	Panel, Control
8	50962A	1	Knob, Traverse	39	41448B	1	Circuit, Breaker, 30A
9	962262	4	Screw, Set 8-32 x 1 1/2 (included w/# 8 & 36)	40	41422B	1	Circuit, Breaker, 25A
10	11131A	2	Switch Asm.	41	44308B	1	Solution Modulator
12	50961A	4	Spring, Switch	42	920296	2	Nut, Lk 10-24
13	80104A	4	Screw, 10-32 x 1/2 Oval	43	40898A	1	Meter, Battery/Charger
15	980608	4	Washer, #6 Flat	44	912226	1	Meter, Hour
16	962330	4	Screw, 6-32 x 3/8 Pan				40883A
17	*see table	1	Key (included w/ # 18)	17	53831A	x	Key (included with #18A)
18A	40883A	1	Switch, Key (*see table below)	18A	40883A	x	Switch, Key
18B	40786A	1	Switch, Key (*see table below)	37	70852A	x	Label, Control
24	962957	4	Screw, 10-16 x 1/2	38	61588A	x	Panel, Control
26	34264A	1	Gasket				40786A
28	41431B	2	Circuit Breaker, 35A	17	40786K	x	Key (included with #18B)
29	41423B	1	Circuit Breaker, 5A	18B	40786A	x	Switch, Key
30	85391A	3	Screw, 1/4-20 x 5/8	37	70961A	x	Label, Control
31	980614	2	Washer, 1/4 External	38	61720A	x	Panel, Control
				NI	40786S	1	Spacer, Key Switch

Nilfisk ALTO
SCRUBTEC 770S / 784S / 795S
Control Panel Assembly / I-Drive Speed Controller 12/09

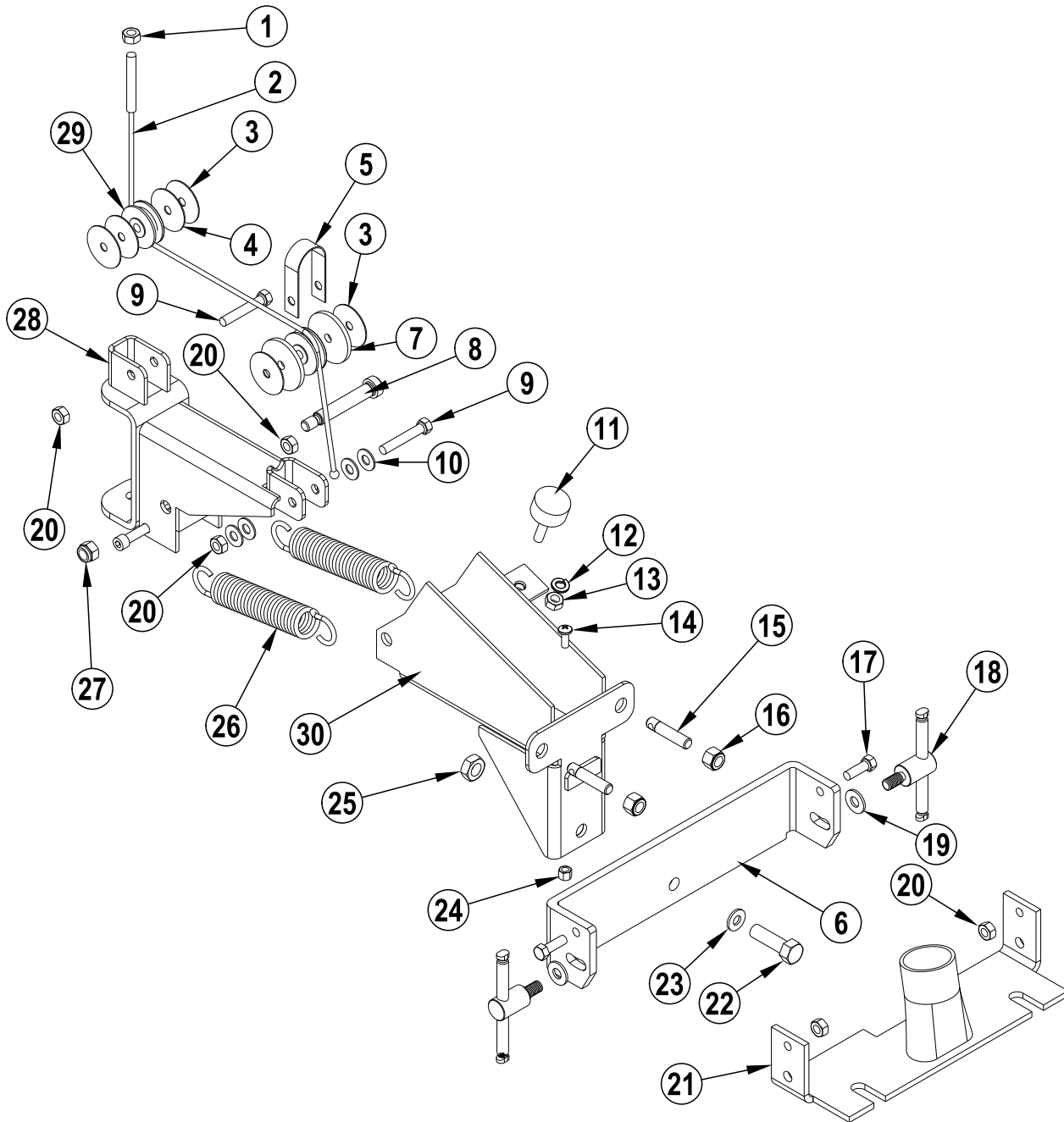


Nilfisk ALTO
SCRUBTEC 770S / 784S / 795S
Control Panel Assembly / I-Drive Speed Controller 12/09

Item	Ref. No.	Qty	Description
1	30592A	1	Control Handle
2	85815A	2	Screw, 5/16-18 x 1 1/2
3	980205	6	Washer, 5/16 Flat
4	85813A	4	Screw, 5/16-18 X 1
5	920110	4	Nut, LK 5/16-18
6	52556A	1	Reverse Switch
7	40738A	1	Traverse Potentiometer "S"
8	50962A	1	Knob, Traverse
9	920056	2	Nut 6-32 Elastic Stop
10	11131A	2	Switch Asm.
12	41423B	1	Circuit Breaker-5A (brush actuator motor)
13	41422B	1	Circuit Breaker-22A (vac motor)
14	41448B	1	Circuit Breaker-30A (traverse motor)
15	41431B	1	Circuit Breaker-35A (brush motor)
16	41431B	1	Circuit Breaker-35A (brush motor)
17	55502A	1	Knob, Control
18	47381B	1	Switch-Maintain Rocker (brush UP/DOWN)
19	40749A	1	Switch-Momentary Rocker (brush pressure)
20	41008A	1	Display-Tru-Charge
21	40786A	1	Switch, Key
[]	40786K	A/R	Key (for 40786A)
4	40786S	1	Spacer-Key Switch
22	962957	4	Screw, 10-16 x 1/2
23	920208	2	Nut 1/4-20
24	980614	2	Washer-External
25	85391A	3	Scr 1/4-20 x .625
26	912226	1	Hour Meter
27	61720B	1	Panel-Control
[]	34264A	3	Gasket
28	70961B	1	Label-Console
29	44308B	1	Solution Modulator
30	85313C	2	Scr 6-32 x .38

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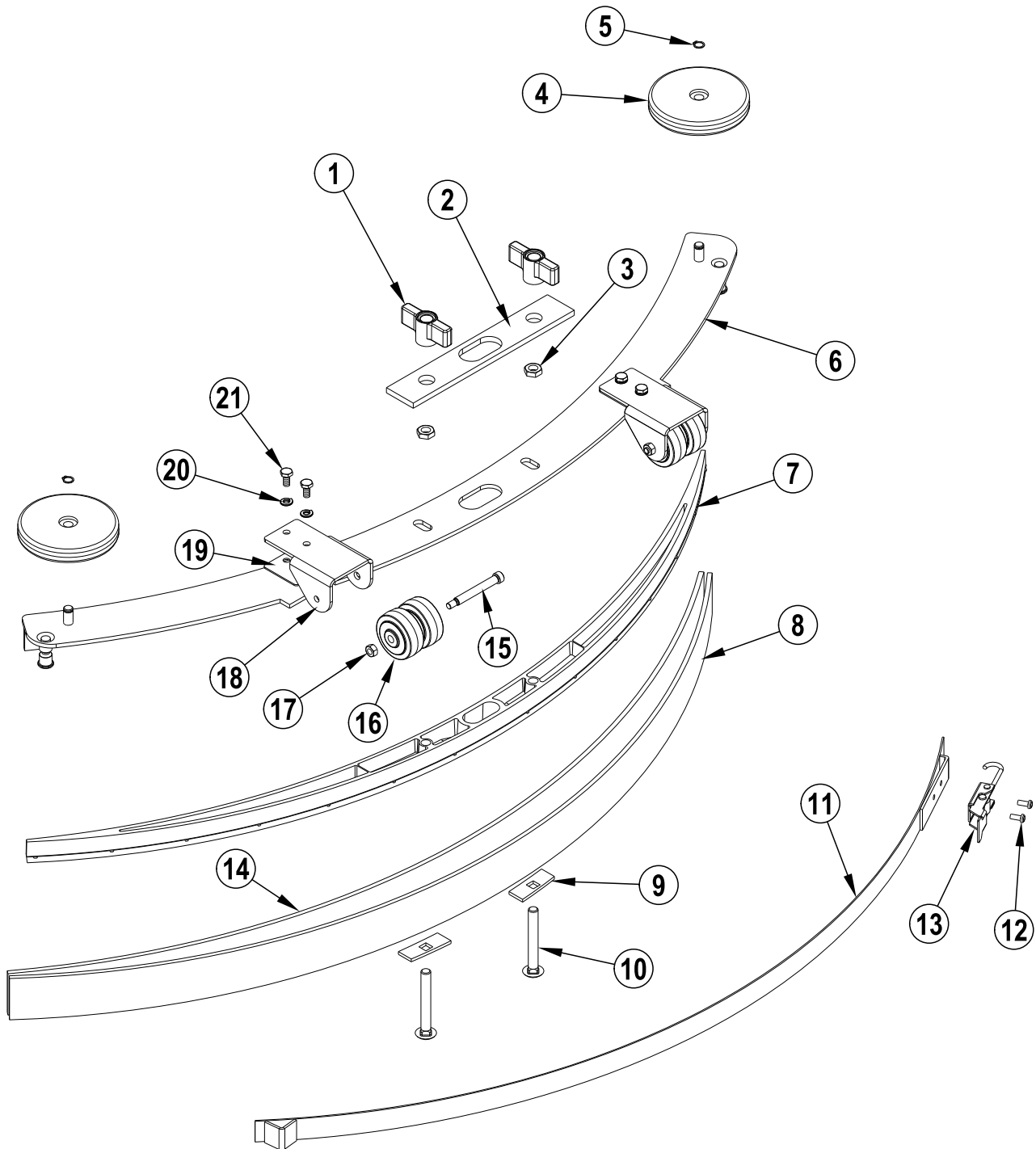
Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Squeegee Swing Arm Assembly 12/09



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Squeegee Swing Arm Assembly 12/09

Item	Ref. No.	Qty	Description
1	81303A	1	Nut, ¼-28
2	61679A	1	Cable, Lower
3	87625A	4	Washer, Nylon 1¼x¼x1/32
4	87623A	2	Washer, Nylon 1¼x¼x1/8
5	38021A	1	Strap
6	60678C	1	Pivot Bracket
7	87624A	2	Washer, Nylon 1½x¼x1/8
8	80015A	1	Screw, Shoulder
9	86004A	2	Screw 1/4-20 x 1½
10	87026A	4	Washer
11	51613A	1	Bumper
12	980657	1	Washer, ¼ Lock
13	920208	1	Nut, Hex ¼-20
14	962798	1	Screw, 10-24 x .50
15	68016A	2	Stud
16	920256	2	Nut, Hex
17	170915	2	Screw, SS Hex
18	64905A	3	T Handle
19	980651	2	Washer, Flat .312
20	81104A	5	Nut, Hex ESNA SS
21	61267A	1	Tube Bracket
22	85730A	1	Screw, .375-16 x 1¼
23	87031A	1	Washer, 3/8 Flat
24	920296	1	Nut, 10-24 ESNA SS
25	81105A	1	Nut, ESNA SS
26	53423A	2	Spring, Squ. Pressure
27	920110	1	Nut, ESNA
28	60452A	1	Swing Arm, Front
29	57275A	2	Pulley
30	60332A	1	Swing Arm, Rear

Nilfisk ALTO
SCRUBTEC 770 / 784
Squeegee Assembly 12/09

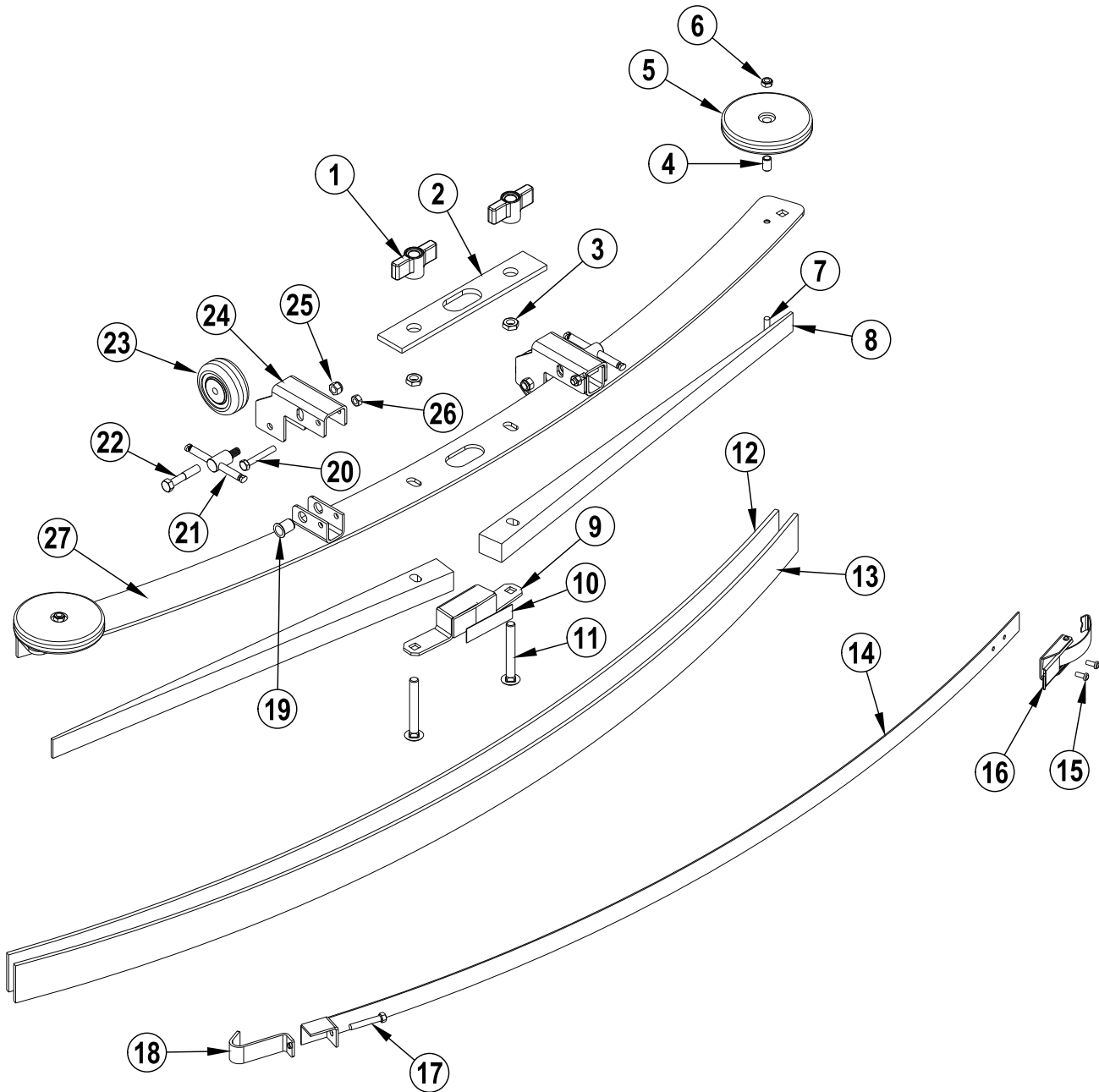


Nilfisk ALTO
SCRUBTEC 770 / 784
Squeegee Assembly 12/09

Item	Ref. No.	Qty	Description
	10803KL		Squeegee Asm.
1	25201B	2	Knob
2	34260B	1	Squeegee Gasket
3	81301A	2	Nut, 3/8-16 Jam SS
4	30048A	2	Wheel, Gide 4" Diam.
5	53185A	2	Ring, 3/8 ID Snap
6	60272B	1	Channel, Sq. Weldment
7	30058A	1	Spacer, Squeegee
8	30069L	1	Blade, Rear Linatex (STD)
[]	30557A	1	Blade-Rear Gum Rubber (OPT)
9	80280A	2	Nut, Squeegee,Backup
10	80011A	2	Screw, 3/8-16 x 3
11	60252A	1	Strap, Clamp Sq. Ret.
12	930086	2	Rivet, 3/16 x .450 Alum.
13	50835A	1	Latch, Sq. Clamp
14	30717L1	1	Blade, Front Linatex (STD)
[]	30091A	1	Blade-Front Urethane (OPT)
15	60254A	2	Bolt, Shoulder 5/16 x 2 ¼
16	30049B	4	Wheel, Squeegee
17	81104A	2	Nut, ¼ -20
18	60243A	2	Bracket, Sq. Wheel
19	60358A	2	Shim, Squeegee Wheel
20	980657	4	Washer, ¼ Lock
21	962720	4	Screw, ¼ -20 x ½ Hex

NOTE: When changing squeegee blades, it might be necessary to loosen screw #10; install and secure blades with clamp #13; then retighten screw #10. This will allow for different thickness.

Nilfisk ALTO
SCRUBTEC 795
Squeegee Assembly 12/09



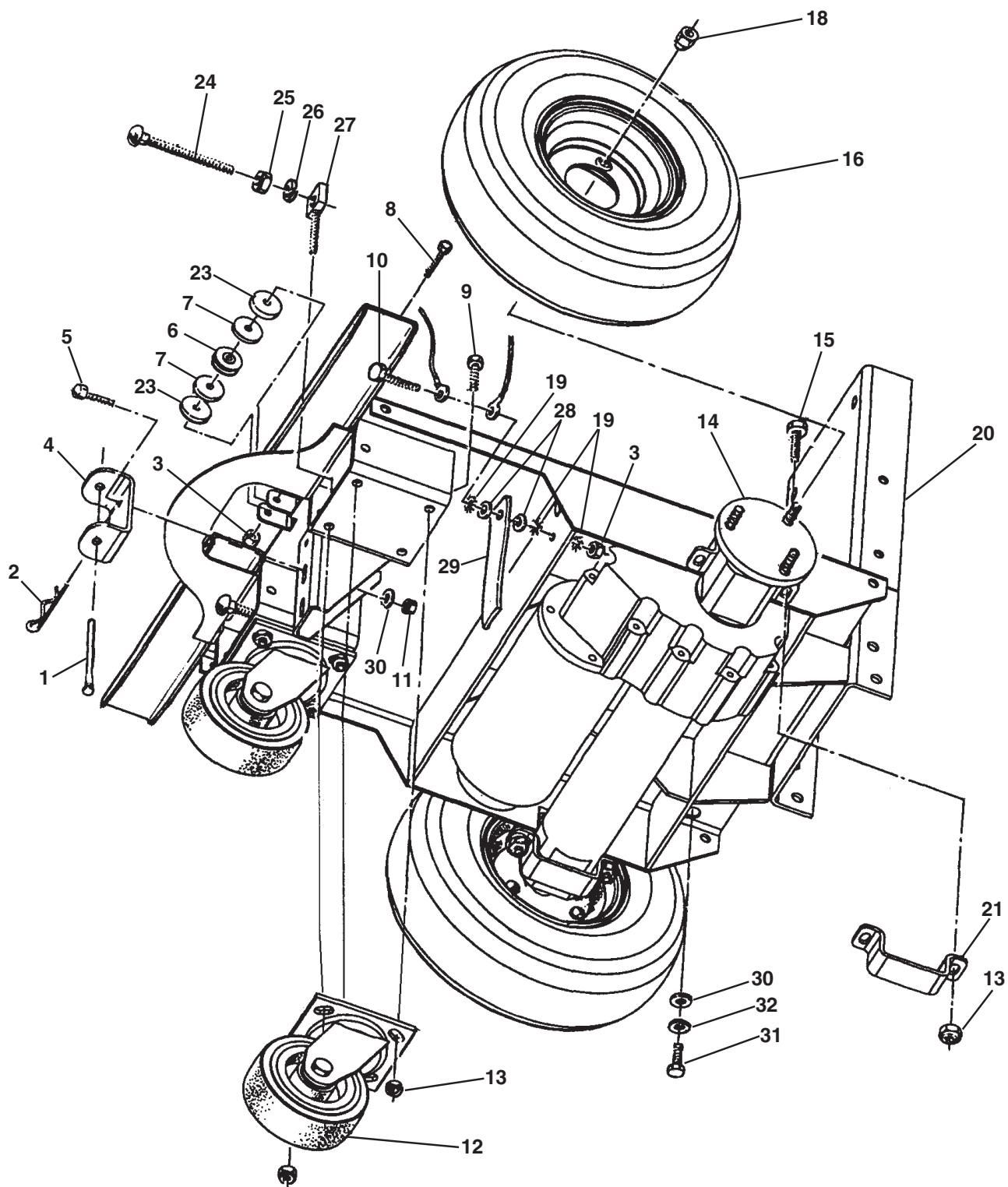
**Nilfisk ALTO
SCRUBTEC 795
Squeegee Assembly 12/09**

Item	Ref. No.	Qty	Description
	10817KL	1	Squeegee Assy (STD)
1	25201B	2	Knob
2	34260B	1	Squeegee Gasket
3	81301A	2	Nut, Jam SS
4	60248A	2	Sleeve
5	30048A	2	Guide Wheel
6	81217A	2	Nut, 1/4-20 ESNA
7	80316A	2	Screw, 1/4-20 x 1 Flat SS
8	38715A	2	Spacer (38)
9	62712A	1	Air Duct
10	37016A	1	Grip Pad
11	80011A	2	Screw, .375-16 x 3.00
12	30718L2	1	Blade, Inner Linatex (STD)
*	30718A	1	Blade-Front Gum Rubber (OPT)
*	30954A	1	Blade-Front Urethane (OPT)
13	30935L	1	Blade, Outer Linatex (STD)
*	30935A	1	Blade-Rear Gum Rubber (OPT)
14	62444A	1	Clamp, Weld
15	170932	2	Rivet
16	55722A	1	Squeegee Strap Latch
17	86004A	1	Screw, .25-20 x 1.50 Hex
18	62421A	1	End Clamp
19	54766A	2	Insert, Threaded 5/16-24
20	85702A	2	Screw, .25-20 x 1.75
21	64905A	2	T-Handle
22	85816A	2	Screw, .312-18 x 1.75
23	59971A	2	Wheel
24	65975A	2	Wheel Mount Bracket
25	920110	3	Nut, ESNA
26	81104A	6	Nut, Hex ESNA SS
27	69675A	1	Squeegee Base

* = Optional, Not Included

NOTE: When changing squeegee blades, it might be necessary to loosen screw #11; install and secure blades with clamp #14; then retighten screw #11. This will allow for different thickness.

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Traverse System Assembly 2/05



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Traverse System Assembly 2/05

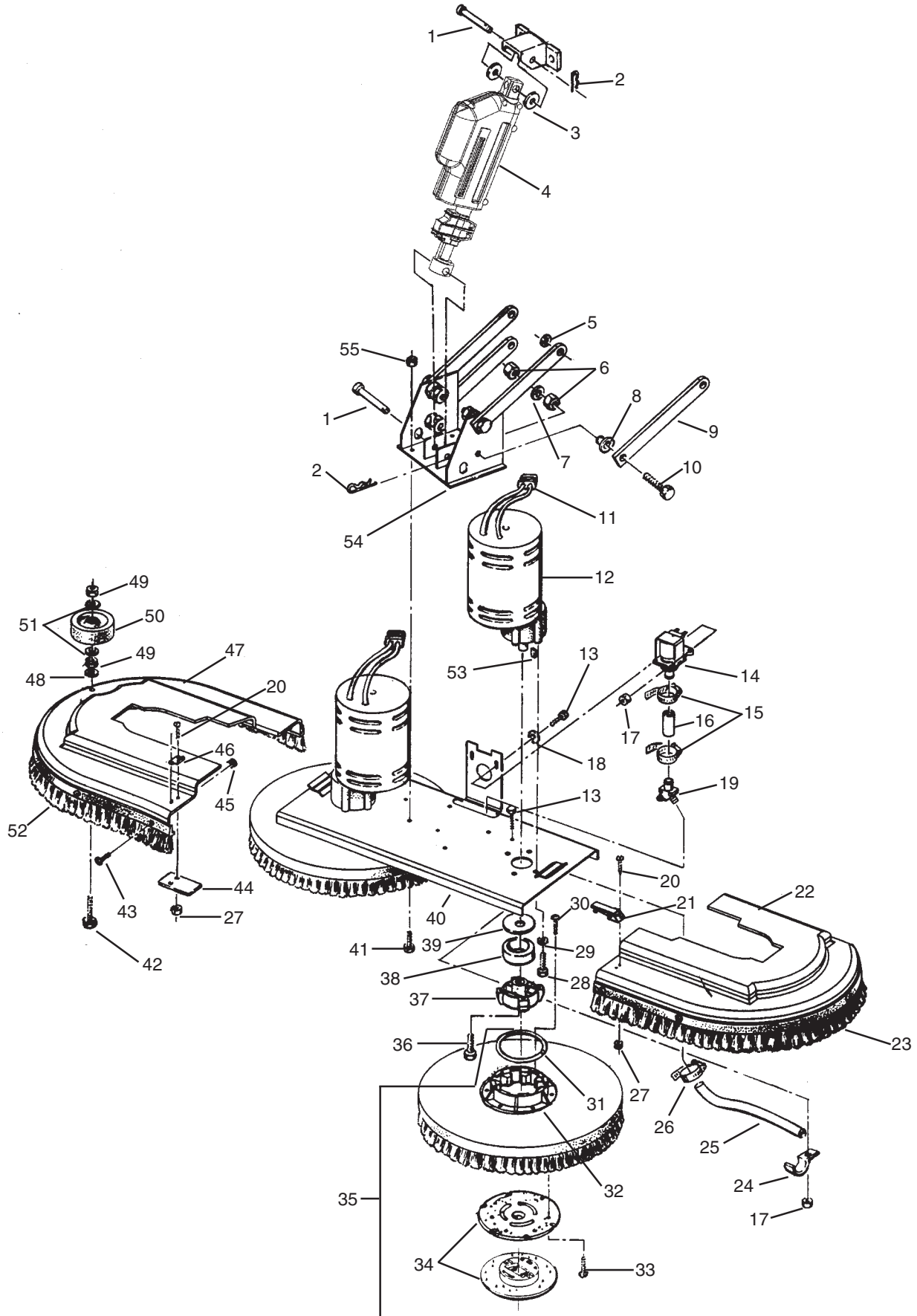
Item	Ref. No.	Qty	Description
1	66531A	1	Swing Arm Pin
2	836711	1	Hair Pin
3	81104A	2	Nut, .25-20 ESNA
4	69877A	1	Swing Bracket
5	85811A	2	Screw, .312-18 x .75
6	57275A	1	Cable Pulley
7	87623A	2	Washer, Nylon 1¼x¼IDx.120
8	86004A	1	Screw, .25-20 x 1.50
9	962288	6	Screw, .375-16 x 1
10	85700A	1	Screw, .25-20 x 1
11	920110	2	Nut, .312-16 ESNA
12	899769	2	Caster Assembly
13	81105A	12	Nut, .375-16 ESNA
14	59116A	1	Transaxle-Imperial NOTE 1
	59116E	1	Transaxle-Imperial NOTE 2
15	85730A	4	Screw, Hex
16	59969A	2	Wheel Assembly
[]	30039A	1	Innertube
	59955A	2	Wheel, Foam Filled (opt.)
18	81221A	6	Lug Nut, 50-20 UNF
19	980614	3	Washer, Star Lock .25
20	61594A	1	Main Frame
21	65963A	2	Transaxle Mount
23	87625A	2	Washer, Nylon 1¼x¼IDx3/32
24	80011A	2	Screw, 3/8-16 x 3
25	81207A	2	Nut, 3/8-16
26	170883	2	Washer, Lock 3/8
27	58419A	2	Stud, 3/8M x 3/8F
28	980205	2	Washer, .25 Fender
29	69639A	1	Strap, Static
30	980645	6	Washer, Flat 3/8
31	962244	4	Screw, 3/8-16 x ¾
32	980638	4	Lockwasher 3/8
[]	32417B	2	Wheel Cover NOTE 2

[] = Not Shown

NOTE 1: Only used on the following models: 05210G, 05220G.

NOTE 2: Only used on the following models: 05210F, 05211F, 05220F, 05221F, 05230F, 05231F.

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Brush Head Assembly Drawing 2/05



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Brush Head Assembly Parts List 11/07

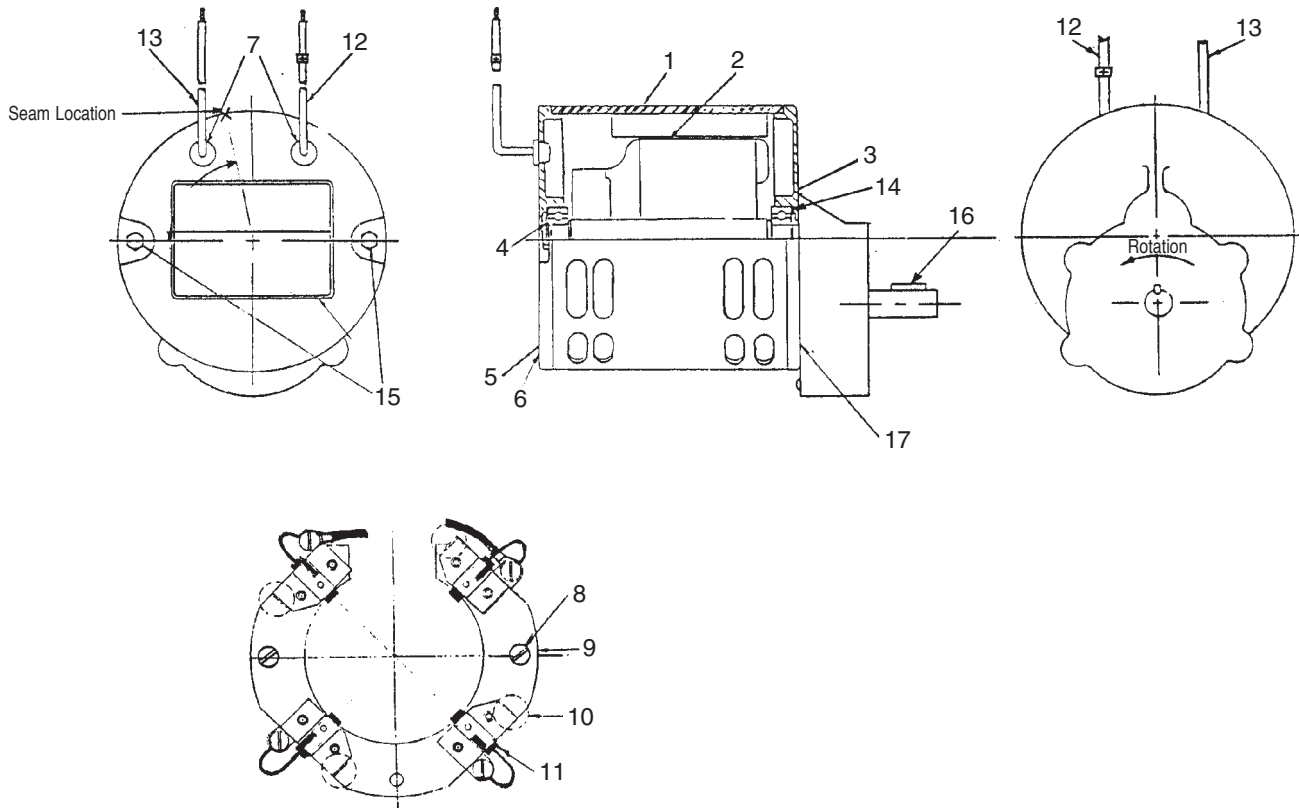
Item	Ref. No.	Qty	Description	Item	Ref. No.	Qty	Description
1	82501A	2	Pin	35	11427B	2	Poly Brush Assembly-14 (770)
2	766780	2	Hair Pin		11424B	2	Poly Brush Assembly-17 (784)
3	38723A	2	Nylon Spacer		11434B	2	Poly Brush Assembly-19 (795)
4	52497A	1	Actuator & Tube Asm. (S)		11426B	2	Grit Brush Assembly-14 (770)
	52499A	1	Actuator & Tube Asm. (L)		11425B	2	Grit Brush Assembly-17 (784)
[]	40910a	1	Potentiometer (Circuit Board)		11433B	2	Grit Brush Assembly-19 (795)
[]	40866A	1	Housing-Potentiometer		17521C	2	Pad Driver Assembly-14 (770)
5	980673	4	Washer NOTE 1		17520C	2	Pad Driver Assembly-17 (784)
6	920278	16	Nut, Jam 50-20		17524B	2	Pad Driver Assembly-19 (795)
7	980626	8	Washer, Lock .50	36	962714	2	Screw, .312-18x.75 Soc.
8	67705B	8	Sleeve Bearing	37	34400B	2	Gimbal, Male
9	63032A	4	Linkage Bar	38	61658A	2	Gimbal Collar
10	85838A	8	Screw, .50-201.50	39	59856A	2	Rubber Washer
11	41601A	4	Connector	40	66232A	1	Brush Plate-28
	40645A	4	Housing		61587A	1	Brush Plate-33
12	45036B	2	Brush Motor 1.00 HP NOTE 3		66234A	1	Brush Plate-38
13	170915	4	Screw, Hex	41	85811A	4	Screw, .312-18x.75 Hex
14	48703A	1	Electric Valve	42	85610A	1	Screw, .375-16x2.5 SS Pn
15	50248A	2	Hose Clamp	43	85616A	11	Screw, 10-22x.62 Pn SS (795)
16	30455A	1	Hose	44	69186A	1	Latch Tab
17	81104A	5	Nut, .25-20 ESNA	45	82004A	12	"T" Nut 10-32 (795)
18	87007A	2	Washer, Flat .25	46	55451A	1	Keeper
19	38014A	1	Solution Splitter	47	30575A	1	Right Brush Housing (770)
20	962992	4	Screw, 8-32x.62 SS		30584A	1	Right Brush Housing (784)
21	55721A	1	Latch		30247A	1	Right Brush Housing (795)
22	30574A	1	Left Brush Housing (770)	48	980638	1	Lockwasher
	30583A	1	Left Brush Housing (784)	49	920248	2	Nut, .375-16 Jam Thin ESNA
	30355A	1	Left Brush Housing (795)	50	59950A	1	Guide Wheel
23	38246A	1	Left Skirt (795)	51	980645	2	Washer, Flat .375
24	782002	2	Clamp	52	38247A	1	Right Skirt (795)
25	30453A	2	Brush Hose	53	915102	2	Key
26	722021	2	Hose Clamp	54	65966A	1	Brush Head Mount
27	81109A	4	Nut, 8-32 ESNA SS	55	920110	6	Nut, .312-18 ESNA
28	962244	8	Screw, .375-16x.75	[]	77091A	2	Label, Moving Parts NOTE 2
29	980638	8	Washer, Lock .375				
30	962495	6	Screw, .25-20x1.00Pn Hd				
31	838301	2	Brush Holder Spring				
32	833802	2	Gimbal, Female				
33	962737	6	Screw, 10-16x.88 (Pad Driver Only)				
34	56941A	2	Center-Lock Asm. (Pad Driver Only)				

NOTE 1: Used only as required to square up linkage bars #9 to the frame.

NOTE 2: Attach to Brush Motor.

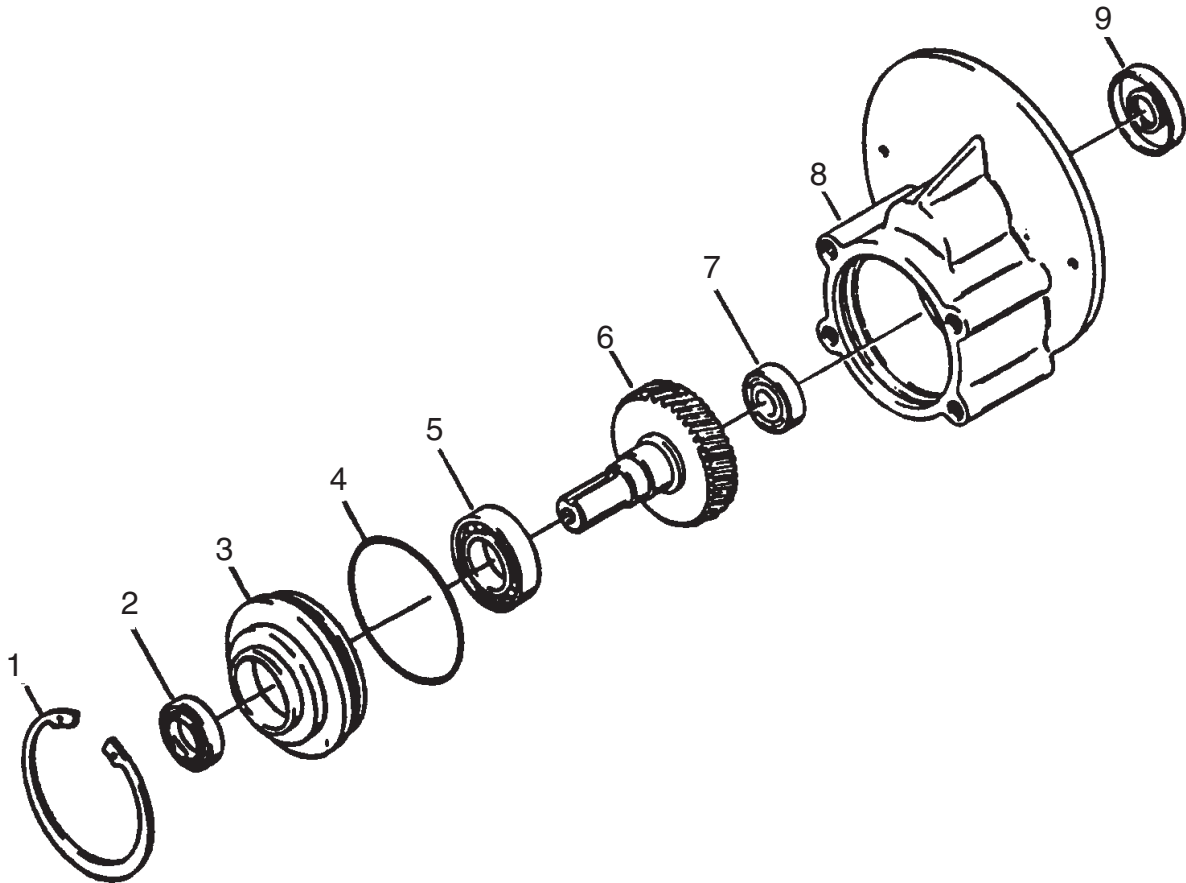
NOTE 3: Includes Item #11

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Brush Motor #45036A 2/05



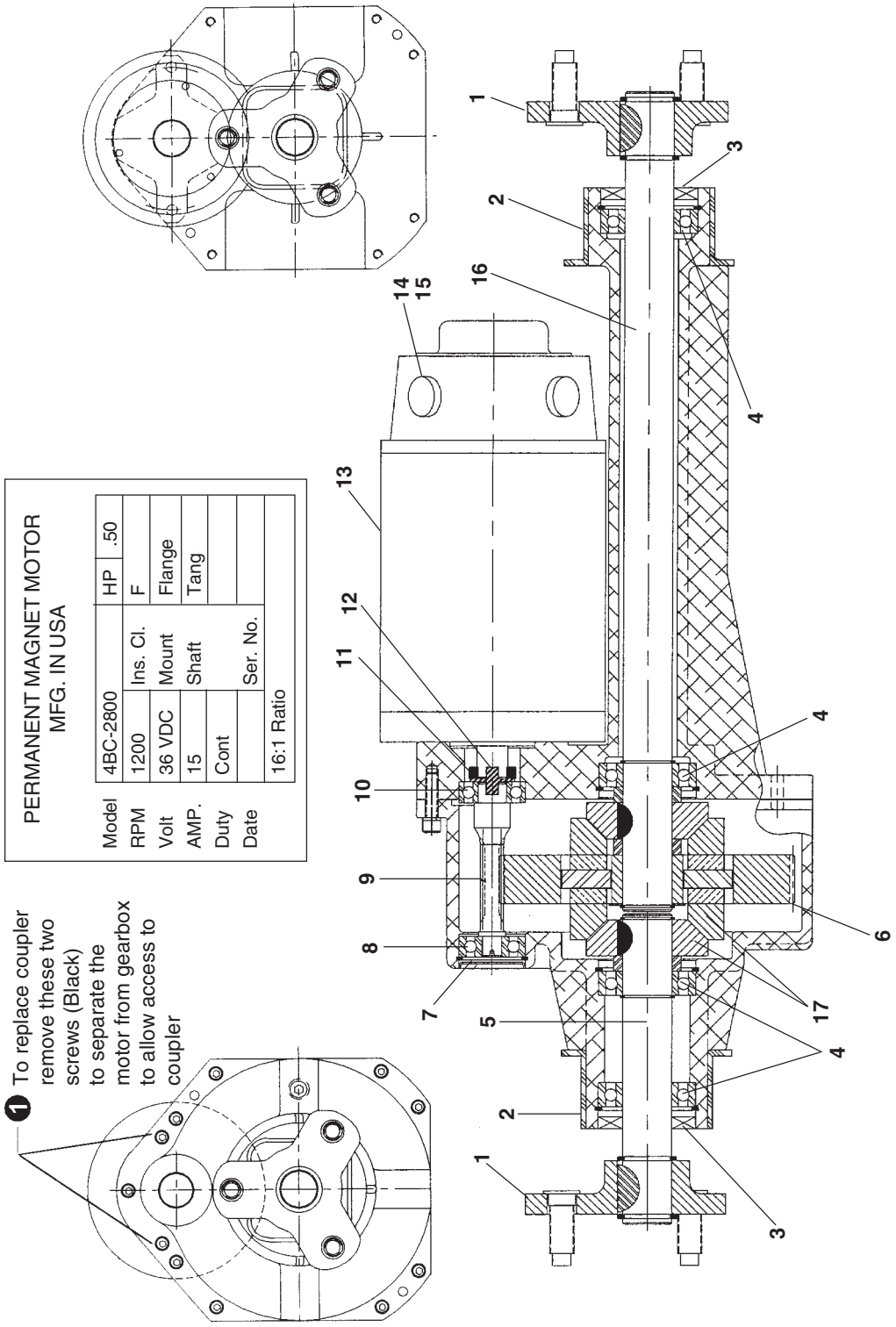
Item	Ref. No.	Qty	Description
1	46734A	1	Stator Assembly (w/Magnets & Clips)
2	40318A	1	Armature Asm.(w/B.E. & F.E. bearings)
3	902654	1	Bearings B.E.
4	902550	1	Bearing F.E.
5	51840A	1	Commutator Bracket Assembly (w/Brush BRD Assembly Leads)
6	50520A	1	Commutator Bracket
7	56480A	2	Strain Relief
8	962546	2	Brush Board Screw
9	50517A	1	Brush Board Asm. (w/springs & brushes)
10	448396	4	Brush Spring
11	40826A	4	Brush Assembly
12	55657A	1	Lead Assembly, Positive
13	55656A	1	Lead Assembly, Negative
14	59805A	1	Helical Washer
15	50515A	2	Thru Bolt
16	80501A	1	Shaft Key
17	54238A	1	B.E. Bracket Assembly (Gear Box)

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Gear Box #54238A 2/05



Item	Ref. No.	Qty	Description
1	57846A	1	Ring, Snap
2	507641	1	Seal, Oil, Small
3	52050A	1	Cap End
4	56668A	1	O'Ring
5	51176A	1	Bearing, Large
6	58316A	1	Shaft & Gear, Gearbox
7	902605	1	Bearing, Small
8	54883A	1	Housing
9	58144A	1	Seal, Oil Large
NI		4oz.	Darina Grease

Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Imperial Transaxle Parts 2/05
PN 59116A



Nilfisk ALTO
SCRUBTEC 770 / 784 / 795
Imperial Transaxle Parts 2/05
PN 59116A

Item	Ref. No.	Qty	Description
1	10357A	2	Wheel Flange Kit (includes Flange, Studs, Key, Snap Rings & Shims)
2	36508A	2	Rubber Mount
3	53374A	2	Axle Oil Seal
4	53375A	4	Axle Bearing
5	53376A	1	Short Axle
6	53377A	1	Output Gear
7	53378A	1	Input Plug
8	53379A	1	Outer Pinion Bearing
9	53380A	1	Pinion
10	53381A	1	Inner Pinion Bearing
11	52663A	1	Steel Ring, Coupler
12	69195A	1	Rubber Coupler
13	45048A	1	Motor
14	51720A	4	Brushes w/Springs
14	40784A	1	Brush, Carbon Set (4 - 51720A & 4 - 30074A)
15	30074A	4	Motor Brush Cap (internal Threads)
	53382A	4	Motor Brush Cap (External Threads)
16	53383A	1	Long Axle
	54282A	1	Gearbox Asm w/o motor
17	53435A	4	Miter Gear
			Parking Brake Spare Parts
	53384A	1	Pad, Friction
	53385A	1	Hub, Shaft
	80121A	1	Key, 4 MM - Hub
	80122A	1	Set Screw, M3 - Hub

ACCESSORIES

Description	Part No.
Power Wand System Kit	10892A
Soft Caster Asm.	52127A
Drive Wheel, Foam Filled	59955A
Imperial Electric Parking Brake Kit	10684B
Clarke Battery Maintenance System (CBMS)	53390A
Chemical Mixing System	11081A
Chemical Mixing System Spare Tank	11037A

OPTIONAL SQUEEGEE BLADES

Machine	Part No.	Description
28, 33	30069L	Rear Linatex
28, 33	30717L1	Front Linatex
28, 33	30557A	Rear Gum Rubber
28, 33	30091A	Front Urethane
38	30935L	Rear Linatex
38	30718L2	Front Linatex
38	30935A	Rear Gum Rubber
38	30718A	Front Gum Rubber
38	30954A	Front Ribbed Urethane

BRUSHES:

Size	Description	Part No.
17"	Poly	11424B
17"	Grit-Heavy	11425B
17"	Grit-Medium	11430B
17"	Grit-Lite	10384A
17"	Soft Nylon	10875A
14"	Poly	11427B
14"	Grit-Heavy	11426B
14"	Grit-Medium	11431B
14"	Grit-Lite	10383A
14"	Soft Nylon	10874A
19"	Poly	11434B
19"	Grit-Heavy	11433B
19"	Grit-Medium	11432B
19"	Grit-Lite	10385A
19"	Soft Nylon	11435B

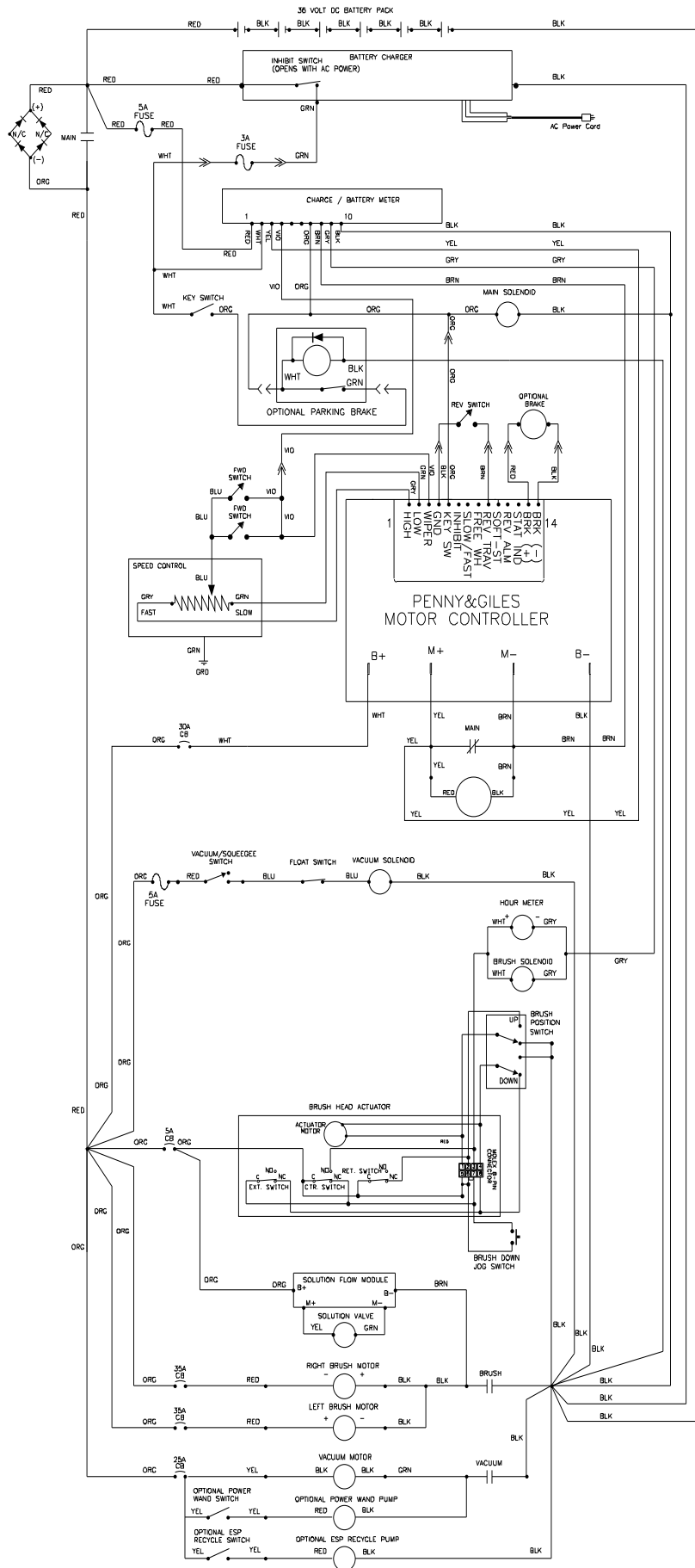
PAD DRIVERS:

Size	Part No.
19"	17524B
17"	17520C
14"	17521C

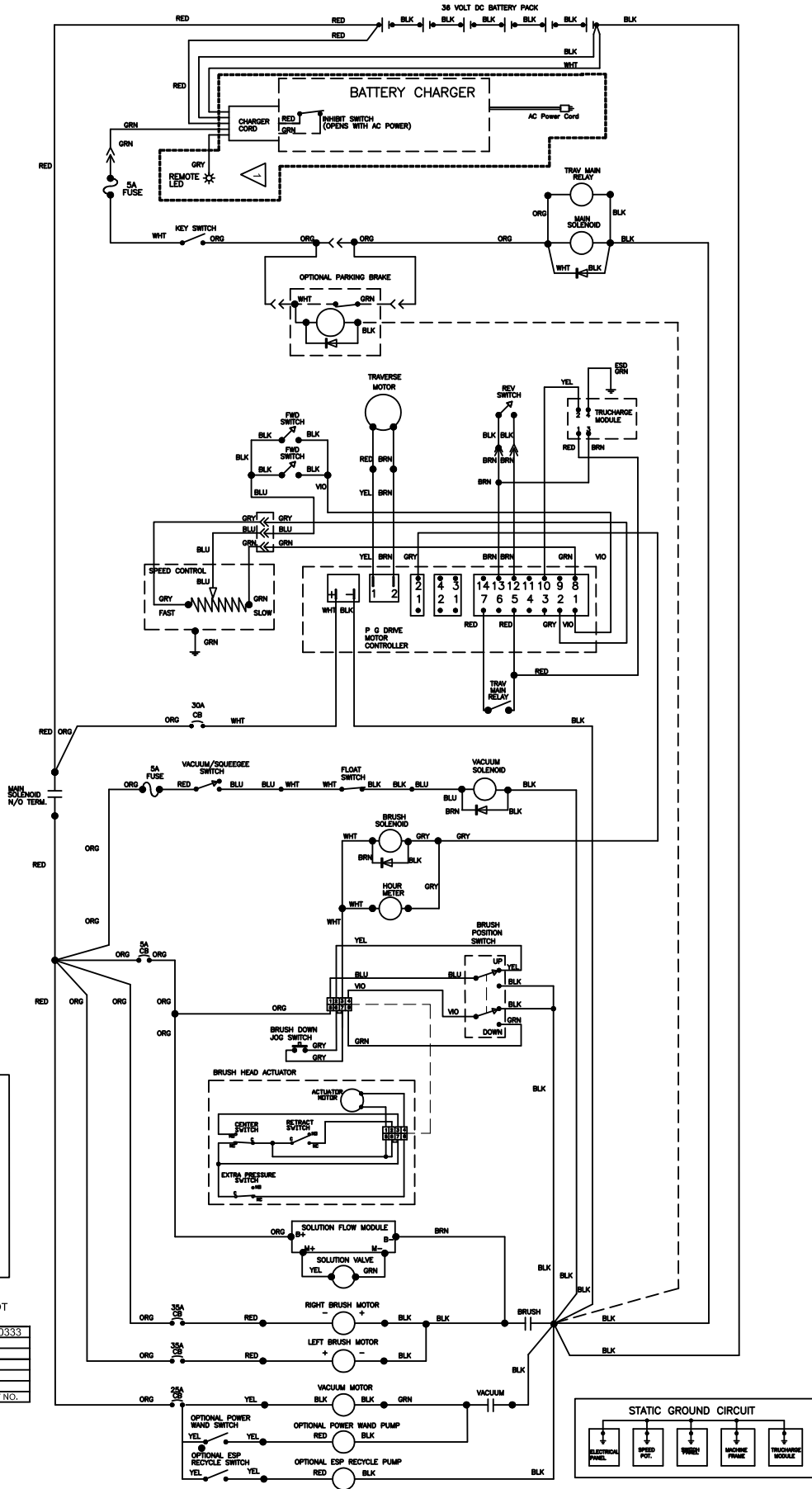
Nilfisk ALTO

SCRUBTEC 770 S / 784 S / 795 S

Electrical Schematic (Solo Controller) 9/05



Nilfisk ALTO
SCRUBTEC 770 S / 784 S / 795 S
Electrical Schematic (I-Drive Controller) 12/09



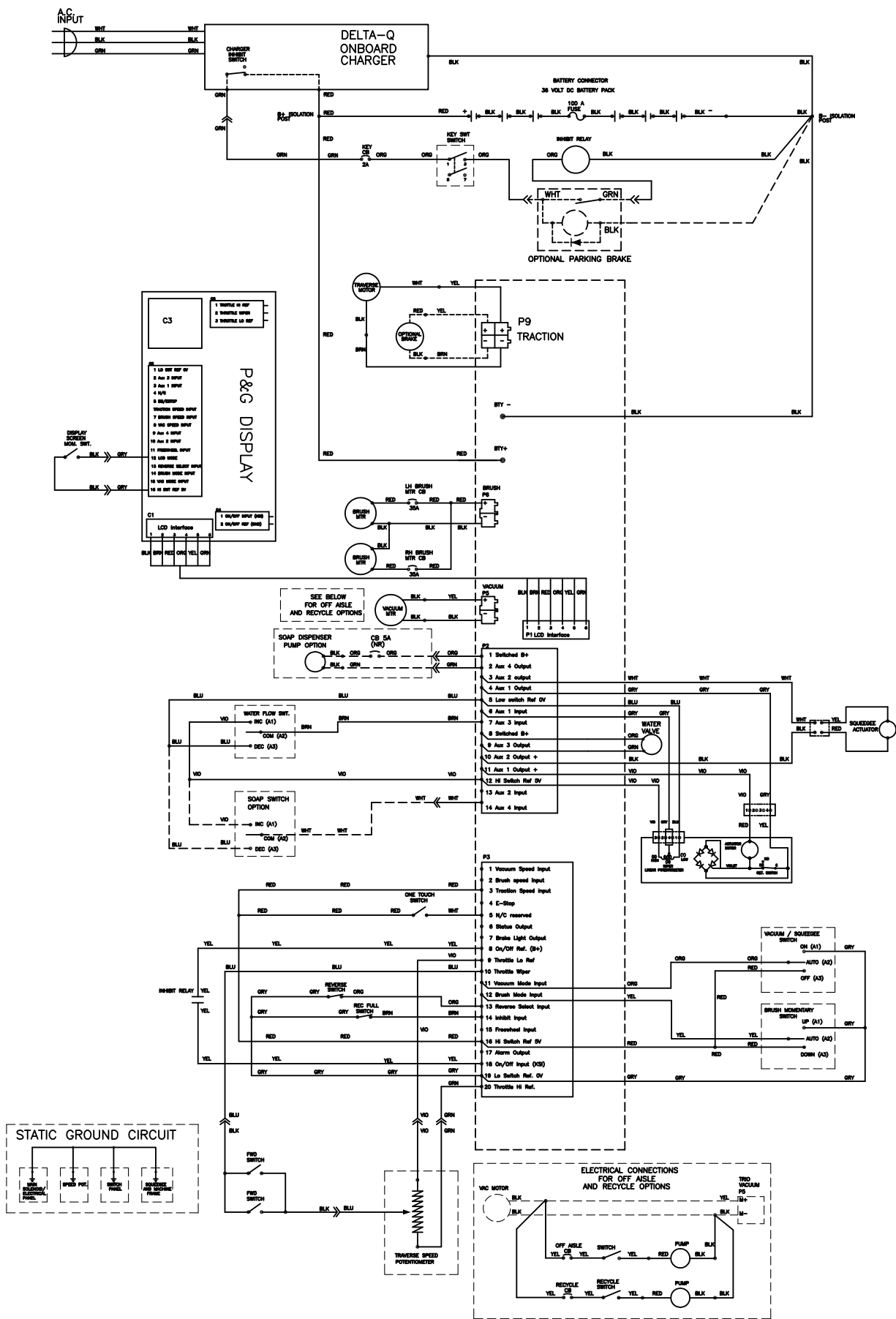
**PENNY & GILES
CONTROL CONNECTIONS**

14	INHIBIT 2
13	0 VOLT
12	REV SWT
11	AUX 3 OUT
10	STATUS IND.
9	BELLY SWT
8	THROTTLE LOW
7	FUSED 30V OUT
6	INHIBIT 1
5	KEY SW
4	SLOW/FAST SWT
3	AUX 2 OUT
2	THROTTLE HIGH
1	THROTTLE WIPER

ON BOARD CHARGER NOT USED ON MOLDELS.

FOCUS S33	56380333
MODEL	PART NO.

Nilfisk ALTO SCRUBTEC 770 L / 784 L / 795 L Electrical Schematic 9/05





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

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

Samsvarserklæring
Vaatimustenmukaisuusvakuutus
Atitikties deklaracija
Osvědčení o shodě
Certifikát súladu

Modell/ Modèle/ Model/ Malli/ Modelo/ Μοντέλο/ Modelo/ Modelis/Модель: Floor Treatment Machines

Type/ Τυππί/ Τίπο/ Τύπος/ Tüüp/ Tipas/ Tips/ Тип/ Típus/ Тип/ Tip: Scrubtec Boost 70, Scrubtec 770 L, Scrubtec 784 L, Scrubtec 795 L, Scrubtec 770 S, Scrubtec 784 S and Scrubtec 795 S

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

EC Machinery Directive 98/37/EC
EC Low Voltage Directive 73/23/EEC, 93/68/EEC, 06/95/EEC
EC EMC Directive 89/336/EEC

EN 12100-1, EN 12100-2, EN 294, EN 349
EN 60335-1, EN 60335-2-72
EN 61000, EN 50366, EN 55012

10.22.2009

Year of Affixing the CE marking 2009

Don Legatt, Engineering Director
Nilfisk-Advance, Inc.
14600 21st Avenue North
Plymouth, MN 55447 USA

Nilfisk-Alto
Industrivej 1
9560 Hadsund, Denmark

Nilfisk ALTO LIMITED U.S. WARRANTY

This Nilfisk ALTO Industrial/Commercial Product is warranted to be free from defects in materials and workmanship under normal use and service, when operated and maintained in accordance with Nilfisk ALTO's Maintenance and Operations instructions. The warranty period is subject to the conditions stated below.

3 YEARS FOR PARTS AND 1 YEAR FOR SERVICE LABOR (See exceptions below)

Motors must be inspected for carbon motor brush wear at six-month intervals by an authorized Nilfisk ALTO repair station. Failure to comply with the six-month inspection requirement or failure to replace worn motor brushes identified during the inspection will void the warranty on the motors. Cost of the six-month inspection and replacement of carbon motor brushes is the responsibility of the purchaser. In the event of a warranty claim on the motors, proof of inspection and any required motor brush replacement must be provided. This warranty is extended only to the original purchaser for use of the product. It does not cover normal wear parts such as electrical cable, rubber parts, hoses and motor brushes.

BATTERY WARRANTY

In addition to the items above, any original equipment Nilfisk ALTO Battery which becomes unserviceable under normal use within a period of ninety (90) days from date of sale to the original user will be repaired or replaced with one of equal specification at our option, F.O.B. any authorized Nilfisk ALTO Sales or Service Branch, with no charge to the user, except transportation costs. After expiration of the above ninety (90) day period, any battery which fails under normal use will be adjusted to the original user with a new battery of equal specification on an eighteen (18) months pro rate basis from the date of purchase. Adjustment will be determined using the then current list price, plus transportation costs.

Warranty is rendered null and void if battery is not kept filled to the proper level with DISTILLED WATER.

Nilfisk ALTO: POLYDUR® AUTOMATIC SCRUBBER SOLUTION AND RECOVERY TANK EIGHT-YEAR

U.S. GUARANTEE

Your new Nilfisk ALTO machine has polydur Solution and Recovery Tanks. Polydur is a rotationally molded, low-density linear polyethylene that won't crack or dent, and withstands most corrosives and temperature extremes. Nilfisk ALTO backs up your Polydur tanks with an eight-year guarantee. If a tank breaks or leaks under normal use within eight years of the date of purchase, it will be replaced free.

Nilfisk ALTO UNIBODY FRAME FIVE-YEAR U.S. WARRANTY

Nilfisk ALTO warrants the frame for a period of five years against defects in materials and workmanship under normal use and service.

STATED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED

Nilfisk ALTO's liability under this warranty is limited to repair of the product and/or replacement of parts and is given to purchaser in lieu of all other remedies, including INCIDENTAL AND CONSEQUENTIAL DAMAGES.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SPECIFIED HEREIN. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. NO WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY, SHALL BE IMPLIED. A warranty registration card is provided with your Nilfisk ALTO product. Return the card to assist Nilfisk ALTO in providing the performance you expect from your new floor machine.

If a difficulty develops with the product, you should: a) Contact the nearest authorized Nilfisk ALTO repair location or contact Nilfisk-Advance for the nearest authorized Nilfisk ALTO repair location. Only these locations are authorized to make repairs to the product under this warranty. (b) Return the product to the nearest Nilfisk ALTO repair location. Transportation charges to and from the repair location must be prepaid by the purchaser. Nilfisk ALTO will repair the product and/or replace any defective parts with out charge within a reasonable time after receipt of the product.

**Nilfisk ALTO reserves the right to make changes or improvements to its machine without notice.
Always use genuine Nilfisk ALTO Parts for repair.**

Nilfisk ALTO

Why Compromise

Nilfisk ALTO

Why Compromise

Division of Nilfisk-Advance A/S

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