



PARTS & OPERATING MANUAL

S-SERIES, 22-GALLON MID-SIZE AUTO SCRUBBERS

PLEASE READ THIS BOOK

This operator's book has important information for the use and safe operation of this machine. Read this book carefully before starting the machine. Keep this book near the machine, protected from liquids and other substances that can cause damage to it. If you do not follow the instructions, you can cause an injury or damage equipment, furniture or buildings.

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Pacific Floorcare®
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Muskegon, MI 49442-6252

Carefully inspect all components to ensure that there is no concealed freight damage. If such damage is discovered, file a "CONCEALED DAMAGE REPORT" immediately with the delivering carrier.




The contents of this manual are based on the latest product information available at the time of publication. Pacific Floorcare reserves the right to make changes or improvements without being obliged to apply changes to the machines previously sold.















Thank you for purchasing a Pacific Floorcare product. Warranty registration will allow us to better serve you over the lifetime of the product. For quick and easy registration, go to: www.pacificfloorcare.com/Register Product.

SAFETY PRECAUTIONS












This machine is intended for commercial use. Only use recommended pads or brushes and commercially approved floor cleaning chemical intended for machine application.

The following symbols will be used to warn you of hazards or unsafe practices which could result in personal injury or death:

-  **CAUTION:** INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY.
 -  **WARNING:** INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.
 -  **DANGER:** INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.
-

-  **WARNING:** **Fire or explosion hazard: Never use flammable liquids or operate machine in or near flammable liquids, vapors or combustible dusts.**
This machine is not equipped with explosion proof motors. The electric motors will spark upon start up and during operation which could cause a flash fire or explosion if machine is used in an area where flammable vapors/liquids or combustible dusts are present
-  **WARNING:** **Do not pick up flammable or reactive materials.**
-  **WARNING:** **Batteries emit hydrogen gas. Keep sparks and open flame away. Keep battery compartment open when charging. Perform this procedure in a well ventilated area.**
-  **WARNING:** **Electrical hazard. Disconnect battery cables before servicing.**
-  **CAUTION:** **Spinning brush. Keep hands away. Turn off power before working on machine.**
-  **CAUTION:** **Do not operate machine unless trained and authorized.**
- NOTE:** **Do not operate machine unless operator manual is read and understood.**
-  **CAUTION:** **Do not operate machine if it is not in proper operating condition.**
-  **CAUTION:** **When using the machine, go slow on inclines and slippery surfaces.**
-  **CAUTION:** **When using the machine, wear non-slip shoes.**
-  **CAUTION:** **When using the machine, reduce speed when turning.**
- NOTE:** **When using the machine, report machine damage or faulty operation immediately to your supervisor.**
-  **CAUTION:** **When using the machine, never allow children to play on or around it.**
-  **CAUTION:** **When using the machine, follow mixing and handling instructions on chemical containers.**
-  **WARNING:** **When using the machine, do not use the machine as a means for transport.**
-  **CAUTION:** **Use Bromine only in your TTS recovery tank treatment system! Do not use chlorine. Chlorine can interact with ammonia based detergents to cause harmful fumes.**

SAFETY PRECAUTIONS

- NOTE:** Do not allow the brush/pad to operate while the machine is stationary to avoid damage to the floor.
-  **CAUTION:** Do not bump into shelves or scaffoldings, especially where there is a risk of falling objects.
-  **CAUTION:** Before leaving or servicing a machine, stop it on a level surface.
- NOTE:** Before leaving or servicing a machine, turn off the unit and remove the key.
-  **CAUTION:** When servicing the machine, avoid moving parts. Do not wear loose jackets, shirts or sleeves
-  **WARNING:** When servicing the machine, do not wear jewelry when working near electrical components.
-  **WARNING:** When servicing the machine, disconnect battery connections before beginning work.
- NOTE:** Do not power spray or hose off the machine. Electrical malfunction may occur.
-  **WARNING:** When servicing the machine, do not work under the lifted machine without supporting it with safety stands.
- NOTE:** When servicing the machine, use manufacturer supplied or approved replacement parts.
- NOTE:** All repairs must be performed by a qualified service person.
-  **CAUTION:** When servicing the machine, do not modify the machine from its original design.
- NOTE:** When transporting the machine, turn the machine off.
-  **CAUTION:** When transporting the machine, do not lift the machine when batteries are installed.
-  **CAUTION:** When transporting the machine, get assistance when lifting the machine.
- NOTE:** Use a recommended ramp with a maximum of a 12° maximum incline when loading or unloading into/off truck or trailer.
- NOTE:** When transporting the machine, use tie down straps to secure the machine to the truck or trailer.
- NOTE:** When transporting the machine, put the scrub head in the lowered position. Make sure the unit is off before doing so.
-  **WARNING:** Do not charge the batteries if the battery charger cable or plug is damaged.
-  **WARNING:** When charging batteries, do not smoke near the machine.
- NOTE:** When storing the machine, always store it indoors in an area where the temperature is between 32° and 104°F (0° and 40°C)
- NOTE:** Replace any and all safety labels located on the machine if they are missing or become damaged or illegible.

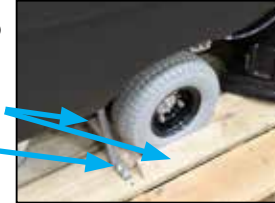
MACHINE PREPARATION

UNPACKING & BATTERY INSTALLATION

UNPACKING THE MACHINE

1. Remove the outer packaging.
2. The machine is fastened to the pallet with tie down brackets. Remove the brackets with a 3/8-inch socket head tip in a cordless screwdriver.
3. The machine is also held in place with four cleats. Remove the cleats with a phillips tip in a cordless screwdriver.
4. Raise the scrub head of scrubber and put it in the transport position.
5. Using a ramp, push the machine backwards down from the pallet.
5. Keep the pallet and brackets for any future transport needs.

Cleats
Tie down bracket

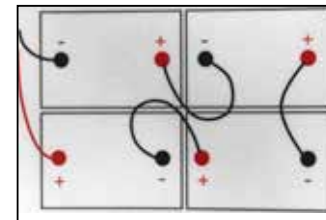


BATTERY INSTALLATION

The machine will be supplied with a battery charger and either four 6V wet or AGM batteries. The batteries must be housed in the battery compartment beneath the recovery tank.

To insert batteries:

1. Lift the recovery water tank, opening it as far as it will go using the side handle.
2. The batteries must be lowered into the compartment using lifting and transportation means suitable for the weight and dimensions.
3. They must be connected together in series, to obtain overall voltage of 24V on the lugs.



Battery Connection
Diagram



Recovery tank shown in fully
open position

NOTE: Fully charge the batteries before using the machine.

BATTERY TYPE

To power the machine you can use either wet batteries or AGM batteries. Other types must not be used.

The maximum dimensions and the weight are:

Width: 7 1/8 in (181 mm)
Length: 10 3/8 in (264 mm)
Height: 11 5/8 in (295 mm)
Weight: 72 lb (33 kg)

NOTE: The on-board charger has been programmed to work with the batteries that Pacific Floorcare provides. Using other battery types not specified for the S-Series mid-size scrubber by Pacific Floorcare may impair performance of the unit and will affect the life of the batteries.

NOTE: Your charger must be set according to the type of battery you install. Read charging section of manual for further instructions on how to set your charger correctly for your battery type.

MACHINE PREPARATION

BATTERY POWER LEVEL INDICATORS

The battery power level gage is located on the upper control panel. The gage has a series of LEDs to indicate the amount of power left in the batteries. When the batteries have a full charge, all LEDs are lit. As the batteries are discharged, the LEDs will begin to go out from right to left. To maximize the life of the batteries, do not allow the LEDs to go beyond the discharge level as described below.

To maximize the life of the batteries, only recharge the batteries when the machine is operated for a total of 30 minutes or more and always recharge the batteries immediately after usage when LEDs are indicating charging is required as described below.

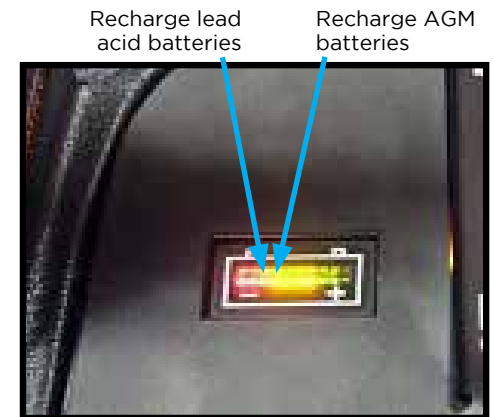
BATTERY POWER LEVEL INDICATOR

The battery power level gage is located on the upper control panel. The gage has red, yellow and green LEDs to indicate the amount of power left in the batteries.

On lead acid battery-equipped units, when the discharge level reaches the first red LED, it is a good time to finish your scrubbing application and recharge the unit. If you do choose to continue scrubbing, when the last red LED begins to flash, the unit will shut down the brush motor but leave the vacuum and traction drive operational to perform final water recovery and transport back to storage. This function not only serves as an indicator that your battery level has reached a point where recharging is required, but also protects the batteries from being fully discharged.

AGM battery-equipped units should not be used after the last yellow LED goes out leaving only red LEDs. Using the unit beyond this point can reduce the life of the batteries.

NOTE: The battery power level gage also displays fault codes. The LEDs will flash specific fault codes if a fault is detected. See Troubleshooting section for LED fault codes.



Battery Level Indicator

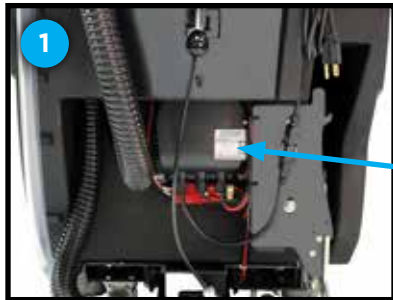
MACHINE PREPARATION

USING YOUR ON-BOARD CHARGER

CHARGING THE BATTERIES WITH AN ON-BOARD CHARGER

Before using your S-Series mid-size scrubber for the first time, fully charge your batteries.

- 1 These units can be equipped with an on-board charger.
- 2 The on-board charger is equipped with a 9 foot long cord that can be plugged directly into a 120V outlet. Do not use an extension cord. This will void the warranty on the charger.
- 3 The cord wrap on the unit has a quick-release hook. The lower hook allows the user to slip the cord off and then the cord can be lifted off the upper hook, all without having to unravel the entire cord.



On-board charger



On-board charger cord wrap



Quick release hook

The on-board charger has charging indication LEDs - the red LED means it has just started the charging cycle, the yellow LED indicates that it has reached the second phase of charging and green LED means the unit is fully charged.



Charging indication LEDs

Green indicates charge cycle is complete

Yellow indicates charge cycle is in the second phase

Red indicates charge cycle has just begun

After charging is complete, wrap the cord of your on-board charger securely to ensure the cord is not damaged.

MACHINE PREPARATION

SETTING THE DIP SWITCHES ON YOUR ON-BOARD CHARGER FOR YOUR BATTERY TYPE



Both the on-board and off-board chargers are able to charge wet, lead acid or maintenance-free AGM batteries. As your unit leaves Pacific Floorcare's factory, the charger is set up to match the type of battery chosen in the original machine order. Should you choose to change from the original battery type, the charger can be changed by re-setting the dip switches.

NOTE: The on-board charger has been programmed to work with the batteries that Pacific Floorcare provides. Using other battery types not specified for the S-Series mid-size scrubber by Pacific Floorcare may impair performance of the unit and will affect the life of the batteries.

To access the dip switches, use a small screw driver to lift the corner of the label on the on-board charger and peel back partially to reveal them. Set the dip switches as shown below for the specific battery type being used in your machine.

Use small screw driver to lift label off charger



BATTERY TYPE	871301 TROJAN 260AH LEAD ACID
DIP SWITCHES	OFF (L)
	OFF (L)
	OFF (L)
	ON (R)



BATTERY TYPE	FULL RIVER 250AH AGM
DIP SWITCHES	OFF (L)
	OFF (L)
	OFF (L)
	OFF (L)

MACHINE PREPARATION

USING YOUR OFF-BOARD CHARGER

CHARGING THE BATTERIES WITH AN OFF-BOARD CHARGER

Before using your S-Series mid-size scrubber for the first time, fully charge your batteries.

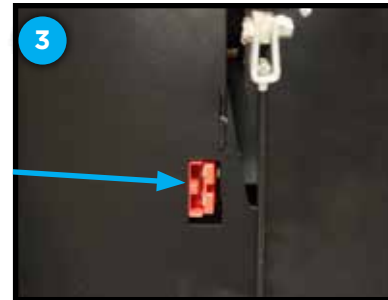
- 1 These units can be equipped with an off-board charger.
- 2 The off-board charger has both a standard 120V power cord and a cord with an “Anderson connector”.
- 3 There is also an Anderson connector on-board the S-Series mid-size scrubber located on the lower control panel at the rear of the machine.
- 4 With the 120V cord plugged into the wall, connect the two Anderson connectors and the batteries to begin charging.



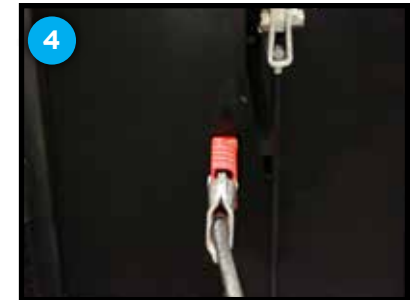
Off-board charger



Anderson connector located on charger cable



Anderson connector located on lower, rear panel



Charger connected to machine

The off-board charger has charging indication LEDs. The primary LED is green and if blinking slowly, then the batteries are still below 80% of full charge. If blinking fast, then the batteries are above 80% of full charge while if solid green, the batteries are fully charged. There is a red “fault” LED as well. In the rare occurrence that this LED comes on, check the charger operator manual for troubleshooting guidance.

Primary indicator light

Fault light



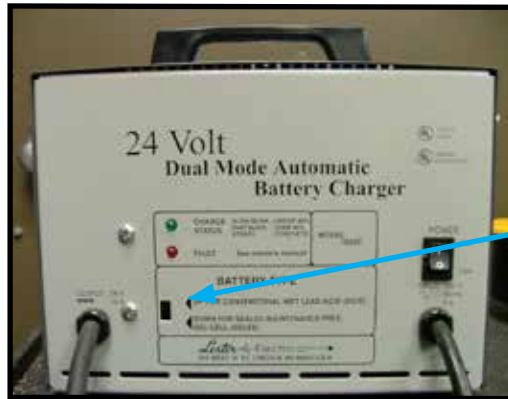
Charging indication LEDs
(charger appearance may vary)

MACHINE PREPARATION

SETTING THE DIP SWITCHES ON YOUR OFF-BOARD CHARGER FOR YOUR BATTERY TYPE

The off-board charger is able to charge wet, lead acid or maintenance-free AGM batteries. As your unit leaves Pacific Floorcare's factory, the charger is set up to match the type of battery chosen in the original machine order. Should you choose to change from the original battery type to the other, the charger can be changed by re-setting the dip switch.

To re-set the dip switch, slide the switch up for wet, lead acid batteries (battery part number 871301) or down for sealed, maintenance free AGM batteries (battery part number 871302).



Front view of off-board charger
(charger appearance may vary)



Close up of dip switch

MACHINE PREPARATION SOLUTION TANK

To prepare the machine for cleaning, the unit must be filled with cleaning solution.

- 1 Water and cleaning agent can be added to the S-Series mid-size scrubber's rear hose fill port located to the left of the control panel.
- 2 There is also a front fill port that is able to accept hose or bucket filling.
- 3 The S-Series mid-size scrubber comes equipped with a fill port strainer to block debris from falling into the solution tank.

Liquid detergent should be added to the tank in the concentration and manner specified by the manufacturer for an twenty two (22) gallon solution tank. The formation of excess foam could damage the vacuum motor, so be sure to use only the correct amount of detergent. Water temperature should not exceed 120°F (50°C).

NOTE: Always use low-foam detergent. Introduce a small amount of defoaming liquid in the recovery tank before starting work to prevent foam from being generated. Never use pure acids.

- 4 It is easy to gage the solution level by watching the fog-free solution sight gage at the rear of the machine. Additionally, marks on the tank provide solution level indicators as a guide.
- 5 The bottom of the front fill port is also a full level indicator. Once you are able to see water at the base of the opening, you have reached the full level.
- 6 The sight gage hose performs double-duty as the solution drain hose as well. You simply slide the hose off the press fitting and lower the hose to a drain or mop sink.



Rear hose fill port



Front fill port



Sight gage hose



Sight gage hose released from
press fitting

Solution level indicators

MACHINE PREPARATION

SOLUTION TANK - AUTO-OFF SOLUTION FILL SYSTEM OPTION

If your machine is equipped with the auto-off solution fill system option, connect the male end of the quick-connector to your 1/2-inch inner diameter fill hose. Once your fill hose is set up, leave the faucet for that hose open - the connector will act as a stop.

- 1 When it is time to fill your machine, click the hose onto the female quick-connector at the back of the machine and the unit will begin to fill with water.
- 2 Once the machine is full, the automatic fill port will shut off the water flow. Then just disconnect the hose and you are ready to add detergent.



Male quick-connect shown on fill hose



Auto-off solution fill system connected to scrubber

MACHINE PREPARATION

ATTACHING CLEANING PADS TO YOUR PAD DRIVERS - DISK HEAD

If using floor pads with your pad drivers:

- 1 Remove the pad drivers by locating the automatic off switch on the lower control panel at the rear of the machine. Depress position “A” for 1 second and then depress position “B” to “click-off” the pad drivers.
- 2 Place your pad drivers on a work surface and remove the center lock fitting from the pad drivers. To do so, squeeze the center lock wires inward and lift the center lock off the pads.
- 3 Connect the cleaning pad to the disk pad drivers by centering them on the drivers.
- 4 Squeeze center lock wires inward and press center lock down, tab side first, compressing the pad and then release the wires so that they lock in place holding the pad. Repeat for the other pad driver.

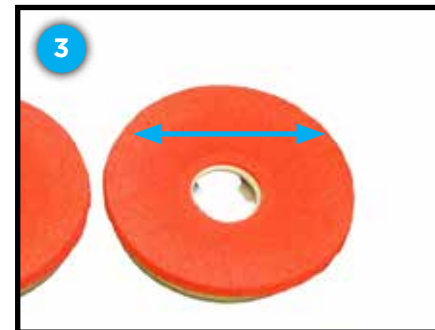
NOTE: The S-Series pad drivers are tufted pad drivers. Do not use a pad driver on the floor without a pad in place. This will cause damage to your floor.



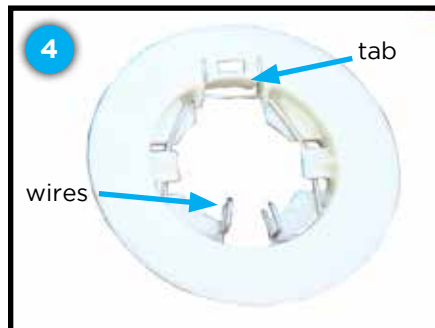
Depress position “A” for 1 second then depress position “B”



Disconnect center lock fitting & lay next to the pad driver



Center pad on pad driver



Close up showing center lock tab & wires



Squeeze center lock wires inward, press down onto pad & release wires

MACHINE PREPARATION

ATTACHING YOUR PAD DRIVERS OR BRUSHES TO THE S-SERIES MID-SIZE SCRUBBER - DISK HEAD

The pad drivers or brushes are attached by using the automatic on/off system. This valuable ingenuity removes the need for operators to kneel or strain to attach the pad drivers or brushes.

First, start by placing the pad drivers or brushes on the floor in front of the S-Series mid-size scrubber.

- 1 Turn the unit on using the power key switch.
- 2 Push or drive it into position so that the unit's scrub head is centered over the pad drivers or brushes.
- 3 Utilize the foot pedal to lower the scrub deck down onto the pad drivers or brushes by depressing the pedal while shifting it to the right. Once clear of the lower notch, lifting your foot will lower the scrub deck. Make sure that the shroud completely covers the pad drivers or brushes in the lowered position. Should the shroud be resting on a portion of the pad drivers or brushes, the head isn't centered and will not attach properly.
- 4 The operation is completed by quickly pulsing the activation trigger. This will "click on" the pad drivers or brushes. If the pad drivers or brushes do not quickly engage, do not continue pressing the activation trigger. Realign the scrub deck and try procedure again. When you have the scrub deck aligned properly, you should see a noticeable drop of the scrub deck when lowered and the bristle skirt on the shroud should almost be touching the floor.



Turn unit on using key switch



Position scrub head over pad drivers or brushes



Lower the scrub head using the foot pedal



Quickly pulse the activation trigger

MACHINE PREPARATION

ATTACHING YOUR PAD - ORBITAL HEAD

ATTACHING A PAD TO YOUR ORBITAL PAD DRIVER

The orbital unit can be used for daily cleaning; however it specializes in chemical-free finish removal for low-cost finish maintenance programs. The following directions show how to prepare the machine for both applications.

For cleaning, the orbital unit is fit with a rectangular, 28 in (711 mm) x 14 in (356 mm) pad. The head comes standard with a rectangular pad drive plate with a Mighty-Lok® connection system.

- 1 To attach the pad, align the front corners of the pad to the front corners of the orbital drive plate and press to attach.
- 2 Use the foot pedal to lower the scrub deck down onto the pad ensuring alignment from front-to-back and side-to-side.
- 3 When the head is properly set onto the pad, you are ready for cleaning.



Align the front corners of the pad and press to adhere



Lower the scrub head using the foot pedal



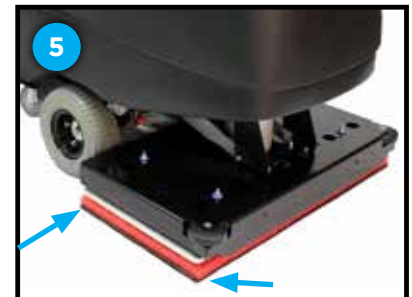
Proper alignment of pad

For chemical-free finish removal, it requires the addition of a specialized surface preparation pad. The application still requires the attachment of a traditional cleaning pad first. This pad acts as a “backer pad” which compensates for low and high spots in the floor.

- 4 Align the Velcro pad retainer along one length of the red, backer pad and press down. This will leave a 2” gap along one side of the backer pad. Then place the surface prep pad on top of the pad retainer, centering it from front-to-back & side-to-side with the red pad. The 2” gap left by the pad retainer needs to be at the front of the machine so that water can fully saturate the pad. Align your pad assembly with all corners of the pad driver and press upward. The red backer pad should be in closest contact with the pad driver.
- 5 Finish the operation by using the foot pedal to lower the scrub deck down onto the surface preparation pad, once again ensuring alignment from front-to-back and side-to-side. When the head is properly set onto the pad, you are ready for your finish maintenance program.



Red backer pad & Velcro pad retainer (black) alignment shown above with surface prep pad (brown) pulled away



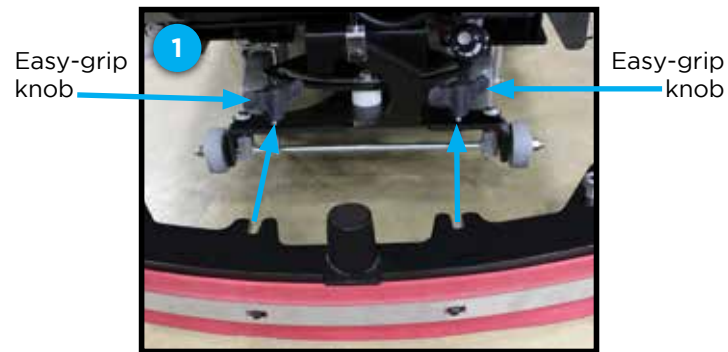
Proper alignment of pad

MACHINE PREPARATION

CONNECTING THE SQUEEGEE AND ADJUSTING SQUEEGEE HEIGHT

Prior to shipping from the factory, the squeegee assembly is removed from the unit. To connect your squeegee assembly to the machine:

- 1 Align the squeegee assembly retention slots with the easy-grip knobs then tighten until secure.
- 2 Attach the recovery hose to the squeegee assembly neck. Make sure to route the hose so that it won't interfere with the swing of the squeegee assembly.



Positioning the squeegee assembly to mount onto the squeegee frame



After aligning assembly, tighten the easy-grip knobs and attach the recovery hose

- 3 The squeegee blade assembly height is factory set at the optimum water recovery position with the squeegee wheels being approximately 1/32 inch (1 mm) off the ground allowing the recovery blade to deflect as shown below.
- 4 If for some reason your squeegee blade height must be adjusted, it is done so by turning the left button screw located on the squeegee frame assembly clockwise to raise the left squeegee wheel and counter-clockwise to lower the wheel. The same is true for the right button screw/squeegee wheel.



Close up of squeegee assembly and blade deflection



Button screw to raise and lower squeegee assembly wheels

MACHINE PREPARATION

RECOVERY TANK PREPARATION & PLASTIC BAG HOLDER

TREATING YOUR RECOVERY TANK

Your S-Series mid-size scrubber has been designed with a debris tray and the TTS tank treatment system. TTS is a treatment system that utilizes Bromine tablets, typically used in pools and spas, to kill the bacteria in the tank that cause odors. To ensure that TTS is prepared to treat your recovery tank:

- 1 Lift the recovery tank lid to the open position and locate the debris tray.
- 2 Lift the debris tray out and turn it over so that you are able to pinch the two tabs protruding from the underside of the debris tray together to release the TTS Bromine puck holder.
- 3 Check the size of the Bromine puck. Replace the Bromine puck when it is approximately 25% of it's original size.
- 4 Press the TTS holder and bromine puck back into the debris tray.

⚠ CAUTION: Use Bromine only! Do not use chlorine. Chlorine can interact with ammonia based detergents to cause harmful fumes.



TTS is located in the debris tray inside the recovery tank



Remove the debris tray



Check the TTS bromine puck



Press the TTS holder and bromine puck back into the debris tray

PICKING UP LARGER DEBRIS DURING THE CLEANING PROCESS

Your S-Series mid-size scrubber has been designed with two hooks molded into the handle that can be used to hang a plastic bag to put larger pieces of debris that you come across during the cleaning process or that obstruct the squeegee assembly and cause streaking. Simply slide a handle of the plastic bag over each of the hooks.



Plastic bag hooks indicated above

MACHINE OPERATION OPERATIONAL CONTROLS

The machine operation and controls were designed to minimize operator training and decrease the need for adjustments during operation. Additionally, once in operation, Pacific Floorcare's goal was to provide an ergonomic, easy to use system. Due to this focus, the S-Series mid-size scrubber's key operational controls are all within reach so that the operator doesn't have to remove their hands to perform the operation - a key to safe, trouble-free, highly productive cleaning.

TURNING THE UNIT ON/OFF

The machine is powered on through a key switch on the upper control panel. Turn the key to the ON position. You will see the battery meter on the left side of the upper control panel light up to show the battery charge level.

The key switch is a proven way to eliminate unwanted operation. Simply remove the key and safely store it away when you have completed scrubbing.



S-Series key switch

SETTING DESIRED SOLUTION FLOW RATE

For units that aren't equipped with a chemical injection system, the next step is to set the unit to the desired solution flow. This control feature is located at the lower rear of the machine and can be adjusted from low to high flow spanning a range of 0 to .55 gallons (0 to 2.1 L) per minute.



Solution flow adjustment knob

MACHINE OPERATION

ON-BOARD CHEMICAL INJECTION SYSTEM

If your S-Series mid-size scrubber is equipped with the on-board chemical injection system, the following instructions will walk you through the easy process of setting up and operating this system.

- 1 Lift the recovery water tank, opening it as far as it will go using the side handle.
- 2 Place your 1-gallon chemical container in the holder inside the machine's battery compartment and remove the cap. The chemical holder will accept round, square or rectangular shaped containers.
- 3 Insert the chemical injection system's leader hose into the container, ensuring that the end is resting on the bottom of the container, and screw down the system's universal cap.



Recovery tank shown in fully open position



1-gallon chemical bottle in holder, preparing to insert leader hose



Strainer on leader hose



Chemical bottle connected properly to chemical injection system

Once the container is in place, it is time to set your mix ratio on the control panel.

- 4 Review the chemical's prescribed mix ratio in ounces per gallon and then set the dial on the scrubber's lower control panel to match. There are 12 settings on the dial (including off), but if you don't see a match, use the one that most closely matches the chemical's suggested mix ratio.



Chemical injection chemical mix ratio dial being set

MACHINE OPERATION ON-BOARD CHEMICAL INJECTION SYSTEM

- 4 Once the chemical mix ratio is selected, set your desired solution flow rate to low, medium or high based on your cleaning needs and the chemical injection system will automatically mix your chemical for you. A solid green LED indicates the system is powered and working properly.

Solution flow rate dial



Close up of chemical injection system dials

HEAD SIZE & TYPE	NOMINAL WATER FLOW (GPM/LPM)		
	LOW	MED	HIGH
24-inch (610 mm) dual disk	.1 gal (.38 l)	.26 gal (1 l)	.48 gal (1.8 l)
28-inch (711 mm) dual disk	.12 gal (.45 l)	.3 gal (1.1 l)	.56 gal (2.1 l)
28 x 14-inch (711 x 356 mm) orbital	.12 gal (.45 l)	.3 gal (1.1 l)	.56 gal (2.1 l)
32-inch (813 mm) dual disk	.14 gal (.53 l)	.35 gal (1.3 l)	.6 gal (2.3 l)

*Flow tolerances are approximately plus or minus 20%

To purge an old detergent, set the detergent to the highest chemical mix ratio and run until the leader hose line is empty.

If the detergent is not priming, temporarily set the detergent to a higher setting until detergent appears on the floor.

MACHINE OPERATION

OPERATIONAL CONTROLS

Once the machine is powered on and the solution flow is set, it takes three simple steps to operate the machine: lower the scrub deck, lower the squeegee and engage the activation trigger. These steps are visually shown on the lower control panel by the S-Series mid-size scrubber's "1, 2, 3-Step" on-board operation guide. Following are the detail steps of how scrubbing and recovery functions are activated.



On-board "1, 2, 3-Step" operation guide

LOWERING THE SCRUB DECK

The scrub deck is lowered using the foot pedal at the rear of the unit.

- 1 Place your foot on the pedal and depress the lever while shifting it to the right. Once clear of the lower notch, lifting your foot will lower the scrub deck into the operating position.
- 2 The S-Series mid-size scrubbers have three down pressure settings.
 - The 24-inch (610 mm) disk unit has settings of 50, 100 & 140 lb (23, 45 & 64 kg)
 - The 28-inch (711 mm) & 32-inch (813 mm) disk scrubbers have settings of 70, 110 & 150 lb (32, 50 & 68 kg)
 - The 28-inch (711 mm) orbital scrubber has settings of 70, 110 & 160 lb (32, 50 & 73 kg)

When the unit is set into operating position with the foot pedal, it is in the lower down pressure position. This position is typically used for daily cleaning of normal soils. However, should you have tough soils or want to perform chemical-free finish removal, you can engage higher down pressure settings. To engage the medium down pressure setting, lift the foot pedal lever so that the hook is secured in the cutout in the foot lever. To engage high down pressure, lift the foot lever to the upper notch position so that the bottom of the lever is locked on the hook of the bracket. To disengage medium or high down pressure, simply lift and shift the lever to the right and lower into normal operating position.



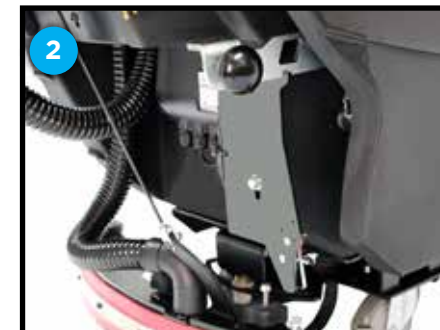
Lowering scrub head using foot pedal



Lower down pressure setting



Medium down pressure when lever is hooked in mid-position



High down pressure setting when lever is lifted to top position

MACHINE OPERATION

OPERATIONAL CONTROLS

LOWERING THE SCRUB DECK

The scrub deck is lowered using the foot pedal at the rear of the unit.

- 3 The disk scrub head is equipped with a self-adjusting shroud with bristle skirt that virtually eliminates overspray and increases ease of use.

LOWERING THE SQUEEGEE

- 4 To lower the squeegee, lift the squeegee lever and shift it left to clear the notch. Once clear, lower the squeegee into the recovery position. In doing so, the S-Series mid-size scrubber's vacuum motor will activate.



Self-adjusting head shroud with bristle skirt



Lowering the squeegee assembly

MACHINE OPERATION

OPERATIONAL CONTROLS

ACTIVATING THE SCRUBBER

- 1 To begin scrubbing, engage the handle trigger. The trigger activates solution flow, the brush motor and traction drive. This unique, ergonomic design accommodates different operator heights by allowing the user to activate the trigger from any position on the handle.
- 2 The speed control and reverse switch are purposely located so that the operator doesn't have to let go of the machine with either hand to perform the function. Speed control is easily thumb adjusted and the reverse can be depressed with your fingers on the back side of the control housing.
- 3 This one-handed reverse feature allows the operator to lift the squeegee with the other hand – a small element with big rewards when in tight spaces.



Activating the handle trigger



Speed control adjustment



Reverse switch is easily reached with fingertip

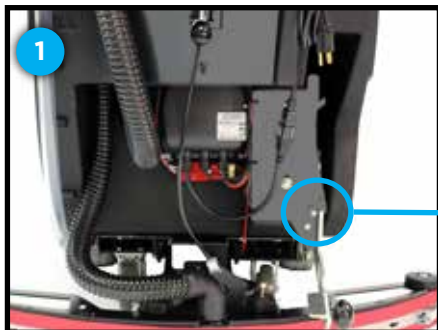
MACHINE OPERATION

OPERATIONAL CONTROLS

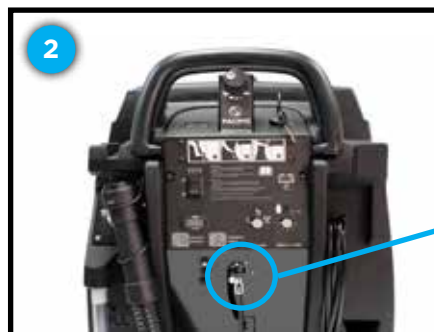
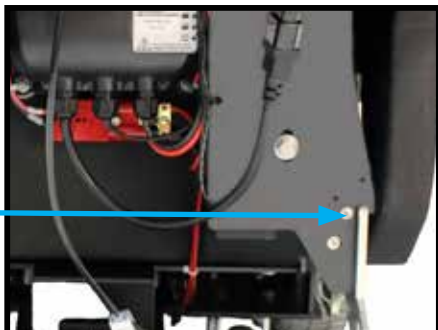
TRANSPORT MODE

The scrub deck and squeegee must be in the raised position for transport.

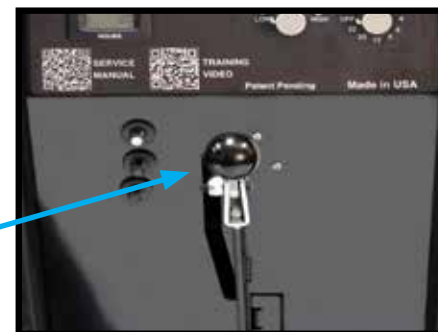
- 1 The scrub deck is raised into transport position by placing your foot on the foot pad and depressing the lever until it clears the lower notch. Once clear, shift the lever to the left and place it into the lower notch.
- 2 To raise the squeegee, lift the squeegee lever high enough to clear the notch, shift it to the right and lower it into the resting position. The vacuum fan will continue to run for 10 seconds in order to evacuate the recovery hose.



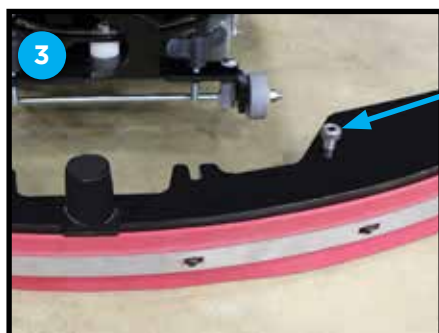
Scrub deck in transport/storage position



Squeegee assembly in raised/storage position



- 3 Easily transport machines in, out or through facilities with the S-Series mid-size scrubber's unique squeegee hanger feature. Simply remove the squeegee assembly (see Page 14) while leaving the recovery hose attached, lift the squeegee to a vertical position on the right side of the machine and place the squeegee tab into the squeegee hanger.



Squeegee hanger tab



Squeegee hanger recess on scrubber



Squeegee assembly in transport position

MAINTENANCE SCHEDULE FOR SERVICE

MAINTENANCE	DAILY	WEEKLY	MONTHLY	EVERY SIX MONTHS	100 HOURS	200 HOURS
Clean squeegee assembly. Check blades for wear or damage. Check if adjustment needed to squeegee height	X					
Clean out recovery tank inside and out and float shut off assembly. Check both for damage. Leave recovery tank open during storage	X					
Empty and clean out debris tray in the recovery tank	X					
Empty any debris from front fill port strainer	X					
Clean pads / brushes and check for wear or chemical build up	X					
Check handles, knobs and switches for damage	X					
Charge batteries (if machine used longer than 30 minutes)	X					
Check hoses for wear, blockages or damage	X					
Check on-board chemical container level (if scrubber is equipped with on-board chemical injection system)	X					
Clean outside of solution tank and clean inline solution filter. Check both for damage		X				
Check wet battery water level and add distilled water if necessary		X				
Check splash guard around scrub head for damage (disk models only)		X				
Thoroughly clean entire machine		X				
Check Bromine puck in TTS. Replace if it's 25% of it's original size		X				
Visually inspect HEPA filter			X			
Check linkages and connectors for wear / damage			X			
Check all bearings and wheels for noise or loose hardware			X			
Check recovery tank lid gasket for wear or damage			X			
Check batteries for cracks, corrosion or signs of overheating			X			
Check all screws and nuts. Tighten if necessary			X			
Inspect isolators (orbital units only)				X		
Check for loose wires or connections				X		
Clean batteries and terminals					X	
Blow out dust in motors						X
Clean pivot points on squeegee and scrub deck linkages						X

NOTE: With regular maintenance, the lifetime of your machine and its safe operation are extended and ensured. Scheduled maintenance should be performed by qualified personnel or by an authorized service center.



WARNING:

These maintenance procedures must be performed with the machine off and the batteries disconnected. Make sure to read all safety instructions prior to performing maintenance.

MAINTENANCE END OF SHIFT

Once you've completed your daily scrubbing, project work or finish maintenance, proper end of use maintenance can greatly extend the machine's life, improve performance, enhance sanitization and lower the machine's long-term operational costs. There are four key areas we will review and demonstrate: the recovery tank, squeegee assembly, battery maintenance and charging, ending with pad and brush maintenance.

RECOVERY TANK

At the end of the job, the recovery tank needs to be emptied and rinsed out. To drain the recovery tank, utilize the recovery tank drain hose at the rear of the machine.

- 1 The drain hose has a press-fit cap that is removed for the draining process.
- 2 The hose is also equipped with a restriction collar that can be bent or squeezed to reduce splashing and spraying during the operation.
- 3 As the recovery tank drains, lift the recovery tank lid to the fully open position. When almost empty, begin to rinse out the sediment from the bottom of the tank with a clean water hose. After the tank is thoroughly rinsed and drained, leave the tank lid open to dry. This is a great time to inspect and clean the vacuum mesh filter screen and ball float system. This can be removed for cleaning by unscrewing the filter screen and rinsing it with a hose or faucet.
- 4 Empty and clean the debris tray after every use. Operating the machine without the debris tray can lead to a clogged outlet hose or facility drain

The full access tank is designed for periodic deep cleaning and sanitizing. Once thoroughly rinsed, the operator can use a cleaner and sanitizer with a cloth or sponge to completely sanitize the recovery tank. This reduces the mold and mildew that can form over time.



Recovery tank drain hose



Drain hose has a press-fit cap and restriction collar



Vacuum mesh filter screen and ball float system indicated above



Empty debris tray and clean out

MAINTENANCE

END OF SHIFT

SQUEEGEE ASSEMBLY

The squeegee system is crucial to high-performance cleaning. It is the last thing that touches the floor so proper maintenance is important for making it perform at its peak.

- 1 Remove the squeegee assembly from the machine by loosening the easy-grip knobs and detaching the recovery hose at the back of the machine. Take the squeegee to a drain or utility sink and thoroughly rinse the underside of the squeegee frame and squeegee blades. Make sure that all particles and debris have been removed. Inspect the neck of the squeegee assembly for debris. If found, clear the debris and rinse it out.
- 2 Inspect the front and rear squeegee blades. If the blade edges are not clearly defined or worn halfway through the thickness of the blade, then it is time for replacement or to be flipped to another edge. The S-Series mid-size scrubber's squeegee blades have four usable edges.
- 3 Blade exchange is completely tool-free for fast, easy maintenance. To remove the rear blade, release the over-center latch and slide the squeegee retainer off the hook on the other side.
- 4 The blade can be removed for replacement or flipped length wise or top to bottom to utilize another blade edge.

To re-attach the blade, align the blade holes with the squeegee frame guides from one end to the other. Slide the retainer over the hook and press the retainer latch into position on the far end following the guides. Engage the latch to finish the operation.

The front-blade exchange is completed in a similar fashion to the rear blade by removing the front blade retainer, attaching a new blade using the guides and re-engaging the squeegee retainer.

When squeegee assembly and blade maintenance is complete, re-attach the squeegee assembly by aligning the assembly, tightening the easy grip knobs and re-attaching the hose.



Loosen the two easy-grip knobs and detach recovery hose to lift away the squeegee assembly



To flip or replace squeegee blades, release over-center latch



Slide the squeegee retainer off the hook on the other side



Remove the blade and either flip to fresh edge or replace

MAINTENANCE

END OF SHIFT

BATTERY MAINTENANCE

Based on research and experience, batteries are the number one nuisance issue and drive a high cost of ownership if not properly maintained. With the S-Series mid-size scrubber, you can select from two types of batteries: wet, lead acid or sealed, maintenance-free AGM.

WET, LEAD ACID BATTERY MAINTENANCE

Wet batteries, by definition, need water to store energy and protect the internal lead plates. According to the supplier, here are important things to remember for a proper battery watering process:

1. Do not let the plates get exposed to air. This will corrode the plates
2. Do not fill the water level to the cap. This causes the battery to overflow acid, consequently losing capacity and causing a corrosive mess
3. Use distilled or deionized water only

STEP BY STEP BATTERY WATERING PROCEDURE

Battery watering frequency depends upon usage, but the best practice would be to check weekly. Batteries should be fully charged prior to watering. Refer to the Charging segment of this manual for charging instructions. Once charging is completed, open the vent caps and look inside the fill wells. Add distilled water until the electrolyte level is approximately 1/8 in (3.2 mm) below the bottom of the fill well. Clean and replace the vent caps.

⚠ WARNING: Fire or explosion hazard. Batteries emit Hydrogen gas. Keep sparks and open flame away. Keep battery compartment open when charging.

⚠ CAUTION: For safety, when cleaning batteries, wear protective gloves and eye protection. Avoid contact with battery acid.

HYDROLINK® BATTERY WATERING SYSTEM

HydroLink® is a series of specialized battery caps, tubes and a hand pump that formulates a single-point battery watering. There is no need to check or fill individual battery cells with this accessory.

HydroLink® comes with an independent, non-mechanical water level indicator that is simple to read. A white indicator means that the battery needs water and a black indicator means that the battery has enough water.

After the batteries are charged and the operator has identified that the batteries are low with the indicator, place the feed hose into a reservoir of distilled water and compress the hand-pump until it becomes hard to squeeze. This indicates that all the battery cells are filled to the proper level.



HydroLink® battery watering system

MAINTENANCE END OF SHIFT

BATTERYSHIELD™ AUTOMATIC WET BATTERY PROTECTION SYSTEM

If your scrubber is equipped with BatteryShield technology, your scrubber will provide you “real time” notification when your wet batteries need to be watered.

After your machine is charged and you turn the key switch on, BatteryShield will check your water levels for you. You can locate the BatteryShield optical sensor on the HydroLink® cap on your battery pack and the LED on the back panel of your scrubber.



BatteryShield optical sensor on
Trojan battery



BatteryShield LED on back panel



HydroLink battery cap light pipe
circled above

When your LED remains unlit, it means that your batteries have an acceptable water level. If BatteryShield senses that your batteries need to be watered, the LED will indicate this with a solid, red light and BatteryShield will not allow your brush motor to function, therefore preventing further use of the scrubber until the batteries are filled with distilled water using the HydroLink single-point battery watering system. After filling your batteries, cycle the key switch off then on and your BatteryShield system will be reset.

BatteryShield has been programmed to check the water levels of your batteries after a full charge, so your unit will most likely be in your janitor's closet or storage area but if by chance it detects low water during the cleaning operation, it will only shut down the brush motor preventing the operator from doing any further cleaning. The vacuum motor and transaxle drive motor will still be operable so that any remaining solution can be recovered and the unit can be transported back to an area where the batteries can be watered.

If your LED has a blinking, red light it means that a HydroLink light pipe needs to be cleaned. **Note: Failure to clean your light pipe will limit BatteryShields' ability to read the low water condition and may reduce the life of your batteries.**

⚠ CAUTION: For safety, when cleaning batteries, wear protective gloves and eye protection. Avoid contact with battery acid.

Remove the HydroLink battery cap that has the BatteryShield optical sensor attached to it. **Do not remove the BatteryShield sensor from the HydroLink cap.** Use a clean, damp cloth to wipe the pointed tip and shaft of the light pipe. Snap the HydroLink cap back into place on the battery. Cycle the key switch. The BatteryShield LED should stop blinking if light tube has been cleaned effectively. If repeated attempts to clean the light pipe are unsuccessful, a new HydroLink cap will be required.

MAINTENANCE

END OF SHIFT

PAD DRIVER AND BRUSH MAINTENANCE

This portion of maintenance is simple and quick, but key to keeping your S-Series mid-size scrubber performing at peak levels. Remove the pad drivers or brushes to check for wear.

- 1 To remove the pad drivers or brushes from your disk unit, locate the automatic off switch on the lower control panel at the rear of the machine. Depress position “A” for 1 second and then depress position “B”.
- 2 This will “click-off” the pad drivers or brushes.
- 3 For the orbital unit, simply pull off the pad taking care to follow proper safety precautions as indicated on your chemical product label in regards to coming in contact with solution.

Should the pad or brush show ample wear and have reached their replacement point, simply discard the pad or brush and replace it at the beginning of your next shift. Brushes should be replaced when the bristle length reaches 3/4 in (19 mm).

Alternatively, if not worn out, you can extend the life of your pad driver, pad or brush by rinsing out any captured debris or sediment and then hanging it to dry between shifts - a simple step that can lower your cost to clean.



Depress position “A” for 1 second
then depress position “B”



Cleaning tools released by auto on/
off feature



Starting at the front corners of the
pad, pull it down & off the
pad driver

PERIODIC MAINTENANCE

CHANGING BATTERIES

To change the batteries in your S-Series mid-size scrubber, move the machine to an area with a level surface, turn off the power switch and remove the key. If using an off-board charger, make sure that it is located near your machine and that your location is close to an electrical outlet for charging after installation.

- 1 To access the battery compartment, tilt the recovery tank to the fully open position. Using proper open-ended wrench, disconnect the main ground cable first and secure terminal away from the batteries. Disconnect main positive cable and secure terminal away from the batteries. Loosen all terminals on the jumper cables and remove. Attach a suitable battery lifting device and lift the batteries from the machine.
- 2 Reverse the order of the instructions above to install new batteries by orienting and connecting the batteries as shown in the Battery connection diagram. After installation is complete, be sure to charge your batteries before operating the machine.

NOTE: If changing battery types from wet, lead acid to AGM or vice versa, see Machine Preparation section for instructions on setting the dip switches on your machines battery charger before beginning the charge cycle to avoid damaging or undercharging your batteries.

WARNING: Batteries are a potential environmental hazard. Consult a battery supplier for safe disposal methods.

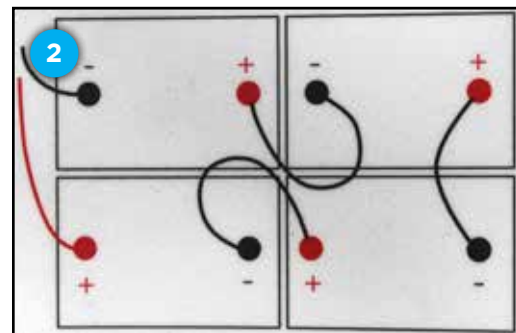
WARNING: Wear protective gloves and eye protection when handling batteries or battery cables. Avoid contact with battery acid.

WARNING: Disconnect battery connections before working on the machine.

WARNING: Short-circuiting or accidentally connecting battery posts or other metallic parts of the machine with a metal or conductive tool can cause serious personal injury. Use proper tools and take precautions to not accidentally short circuit battery terminals.



Fully open position allowing access to battery compartment



Battery connection diagram

PERIODIC MAINTENANCE

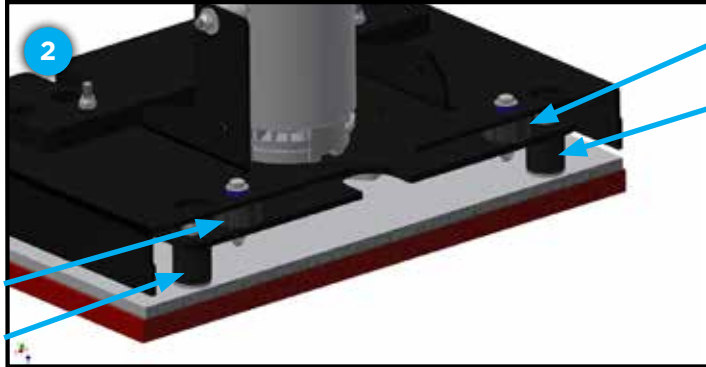
CHECKING THE ISOLATORS ON YOUR S-28 ORBITAL UNIT

Your S-28 orbital scrubber is equipped with an hour meter that is located on the upper control panel.

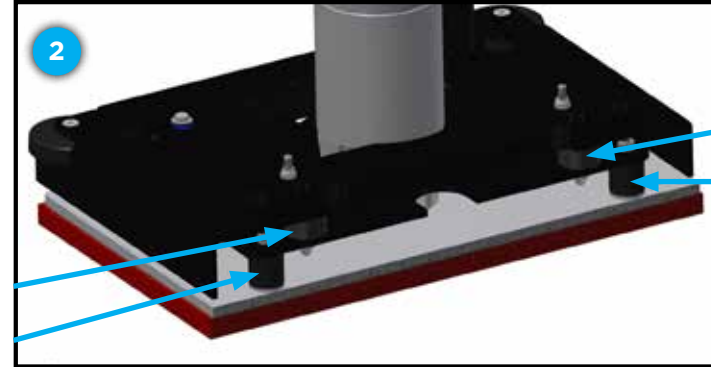
- 1 After 300 hours, it is time to check the eight isolators located in the scrub head of the unit.
- 2 Using a flashlight, do a visual inspection of the isolators by looking through the openings in the scrub head and checking for wear or damage to four isolators in the front and four in the rear of the scrub head. The locations of the isolators are shown below.

If any of your isolators show signs of wear, degradation or damage, contact an authorized service center or Pacific Floorcare technical service to find a local authorized service center to replace all eight isolators.

After satisfactory inspection or replacement, press and hold the gray button on the hour meter to reset to another 300 hour period.



Cross section view of FRONT of orbital scrub head with isolator locations indicated with arrows



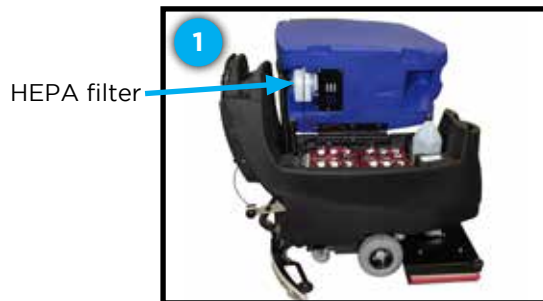
Cross section view of REAR of orbital scrub head with isolator locations indicated with arrows

PERIODIC MAINTENANCE INSPECTING THE HEPA FILTER

Your S-Series mid-size scrubber is equipped with a HEPA filter.

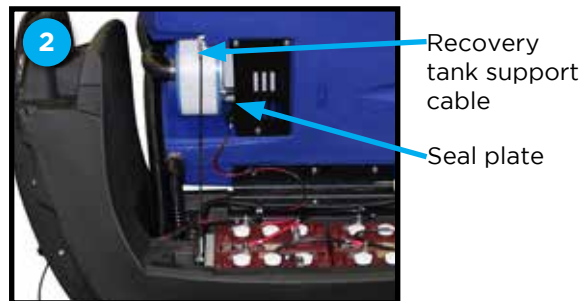
- 1 You can locate the HEPA filter by lifting the recovery water tank, opening it as far as it will go using the side handle.
- 2 Loosen one of the recovery tank support cable bolts using a 7/16-inch socket head driver so that the tank will swing fully open to give you access to the HEPA filter.
- 3 Loosen the vacuum hose clamp located at the top of the HEPA filter with a 5/16-inch socket head driver and pull the cuff off of the HEPA filter.
- 4 Visually inspect the inside of the filter every 200 hours of machine operation. Heavy build up on the filter, which can cause loss of squeegee performance, indicates the need to replace the filter. Also inspect the outside of the filter for physical damage or holes.

When reattaching the filter, ensure the large diameter is fully engaged with the seal plate.

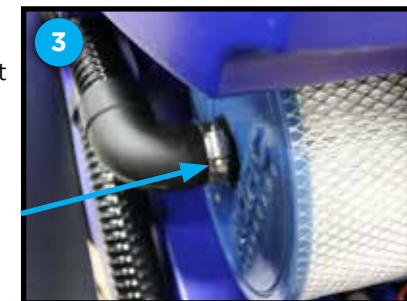


HEPA filter

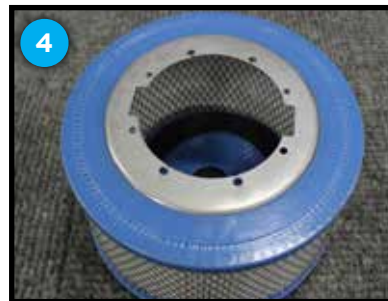
Recovery tank shown in fully open position



Disconnect at either point to loosen cable



Vacuum hose clamp



Inspect the HEPA Filter

TRANSPORTING YOUR UNIT

Your S-Series mid-size scrubber was designed so that it could easily be transported on a route cleaning program.

- 1 Easily transport machines in, out or through facilities with the S-Series mid-size scrubber's unique squeegee hanger feature. Simply remove the squeegee assembly (see Page 14) while leaving the recovery hose attached, lift the squeegee to a vertical position on the right side of the machine and place the squeegee tab into the squeegee hanger.
- 2 The machine has a tie down holes on each side of the main frame.
- 3 It can also be strapped down to a trailer or truck bed using tie down straps inserted between the recovery tank and solution tank

NOTE: When transporting the machine, turn the machine off.



CAUTION: When transporting the machine, do not lift the machine when batteries are installed.



CAUTION: When transporting the machine, get assistance when lifting the machine.

NOTE: Use a recommended ramp with a maximum of a 12° incline when loading or unloading into/off truck or trailer.

NOTE: When transporting the machine, use tie down straps to secure the machine to the truck or trailer

NOTE: When transporting the machine, put the scrub head in the lowered position. Make sure the unit is off before doing so.

NOTE: Do not allow the orbital head to rest on a hard surface without a pad attached. This will cause damage to the Mighty-Lok® face.



Squeegee assembly in transport position



Tie down location on main frame



Tie down locations between recovery tank and solution tank

TROUBLESHOOTING

OPERATOR TOP FIVE TROUBLESHOOTING LIST

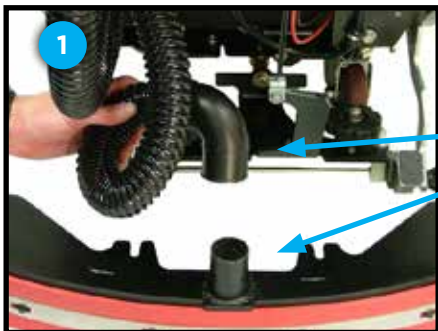
Because cleaning equipment can encounter a wide array of environments and debris, various issues can arise that can be quickly fixed with some easy troubleshooting by the operator. Because there are so many scenarios, we've generated the top five troubleshooting list that addresses the most common issues.

1. MACHINE ISN'T PICKING UP WATER OR IS LEAVING A FILM ON THE FLOOR

If your machine isn't picking-up water, there are a few key areas of the machine to check. If the vacuum seems to have a higher pitch than normal, the ball float in the recovery tank has tripped because the recovery tank is full and needs to be drained. Once drained, check that the water recovery is working. If it is, then you've identified and corrected the issue.

- 1 If still not picking-up water, then it is likely you have a clog in the recovery hose. Start by checking the recovery hose at the lower elbow connected to the squeegee assembly.
- 2 Then, check the upper elbow and the recovery tank orifice. If debris is found, clear the clog with your hands or a tool. Should you have a hose available, rinse the recovery hose and tank orifice to ensure all the debris is removed.
- 3 If a clog isn't identified in the recovery hose, check the squeegee neck by loosening the easy grip knobs, removing the squeegee assembly and flipping it over. Clear the debris, and again, if a hose is available, rinse the squeegee opening.
- 4 If still not recovering properly, check your rear squeegee blade edge for wear or debris. If debris is present, clean the blade. If the edge is worn to half the blade thickness, flip to a new blade edge or order a replacement blade.
- 5 Remove and visually inspect the inside of the HEPA filter. Major discoloration or build up can cause reduced vacuum performance. Replace HEPA filter if necessary.

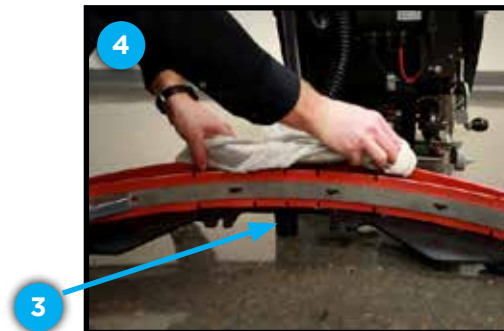
Finally, should you still have recovery issues, contact your distributor or Pacific Floorcare for technical support.



Lower elbow of recovery hose and squeegee assembly neck



Upper elbow of recovery hose and recovery tank orifice



After checking for wear, wipe the blade or flip it to a new edge



Remove the HEPA filter and visually inspect it. Replace if necessary

TROUBLESHOOTING

OPERATOR TOP FIVE TROUBLESHOOTING LIST

2. MACHINE RUN TIME HAS DECREASED

If the machine run time has decreased, there are three potential issues that must be checked: The charger may not be plugged in or working, the wet, lead acid batteries may need watering or the batteries need to be replaced.

First, check the charger by plugging it in.

- 1 If an on-board charger, check the three LEDs. If none are on, then you likely have a faulty charger and it will need to be replaced. However, if the lights are on and the red or yellow light is on, then the batteries aren't fully charged and the charge cycle needs to be completed. If the green light is on, then the charger is working and the next step is to consider the batteries.
- 2 If an off-board charger, check the charge status LED. If it is not lit or blinking, then you likely have a faulty charger and it will need to be replaced. However, if the light is on and is blinking then the batteries aren't fully charged and the charge cycle needs to be completed. Also, check for the fault LED to be lit and if so, review the manual that comes with your off-board charger for fault details.

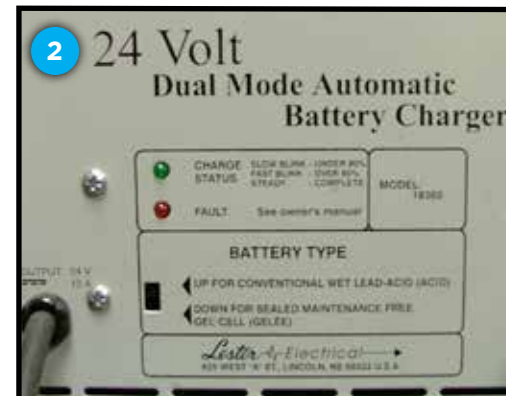
If the batteries are wet, lead acid batteries, check the water levels in the battery cells. If they require watering, refer to the Battery Watering segment of this manual.

If the batteries don't require watering and are over 18 months old, you've likely started to reach a point in the battery's life where their capacity is starting to decline. If you are able to meet your run time requirements, then you still have some useful life left. However, if the capacity has reduced the run time to below your requirements, then it is time to replace the batteries. See Changing Batteries segment of this manual for further instructions on how to replace your batteries.

If none of these factors are present and you are still not getting expected run times, contact your distributor or Pacific Floorcare for technical support.



On-board charger LEDs



Off-board charger LEDs
(charger appearance may vary)

TROUBLESHOOTING

OPERATOR TOP FIVE TROUBLESHOOTING LIST

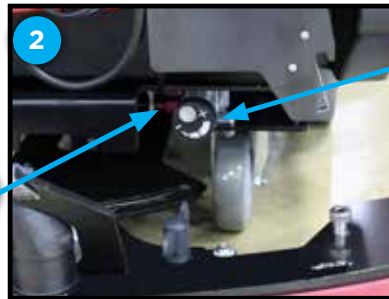
3. MACHINE WON'T DISPENSE WATER

- 1 First, when this issue occurs, check the solution tank sight gage for water level. If empty, fill the tank with cleaning solution.
- 2 Check the solution flow adjustment knob and ensure that the knob is adjusted to the solution flow level you desire.
- 3 If there is solution in the sight gage and the solution flow adjustment knob is properly positioned, then the filter is likely clogged with debris and needs to be cleaned. Start by draining the solution tank. Unscrew the inline filter, located on the underside of the unit between the wheels and the casters, and clean out the debris. Once clean, re-attach the filter and tighten it until snug. Ensure the screen filter element is aligned properly with the body of the filter during reassembly. Fill the solution tank and check for solution flow. If solution is flowing, you've identified the issue and you can return to cleaning.
- 4 Check the wire connections to the valve.
- 4 Check to make sure that the ball valve is open. The handle of the ball valve should be in line with the solution flow direction.

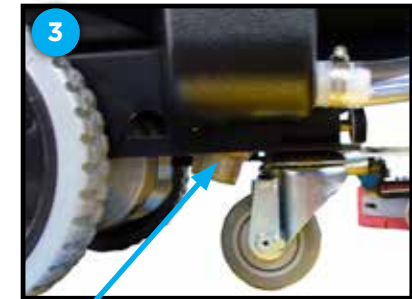
If none of the actions listed above fix the solution flow, contact your distributor or Pacific Floorcare for technical support.



Check sight gage hose for solution level



Solution flow adjustment knob and wire connections



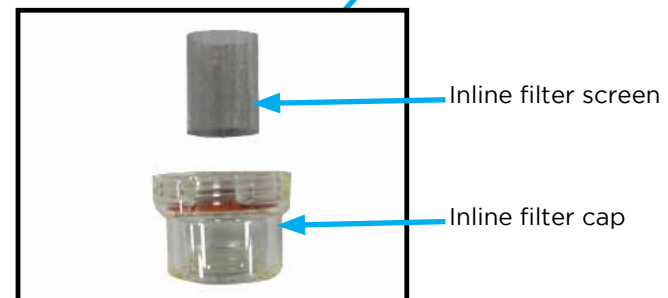
Sight gage hose



Check solution pump (circled) for vibration from rear of unit



Check to make sure that the ball valve is open



Inline filter screen

Inline filter cap

Sight gage hose

TROUBLESHOOTING

OPERATOR TOP FIVE TROUBLESHOOTING LIST

4. RECOVERY TANK NOT DRAINING

If your recovery tank is not draining, there is a clog somewhere in the draining system. The two main areas of potential clogging are at the tank drain or at the restriction collar on the drain hose.

- 1 Start by checking the restriction collar being sure to keep the hose well above the top of the recovery tank so that the water doesn't splash out once the debris is cleared. If the clog is located here, clear the clog with your hand or a tool and then drain as normal.
- 2 If the clog is not located at the restriction collar, then it is likely in the recovery tank at the drain opening. In this case, we suggest that the operator put rubber gloves on prior to submerging their hand to check for the clog. Once the clog is found, clear the drain and then empty as normal.

In the unlikely event that the clog is in another part of the drain hose, we encourage utilizing a water hose to back flush the clog from the recovery hose. Of course, a long thin tool of some kind can be used as well, but be extremely careful not to puncture the hose wall.

If a clog isn't found in the system, contact your distributor or Pacific Floorcare for technical support.



Check for clog in the restriction collar



Drain opening

Check for clog in the recovery tank at the drain opening

TROUBLESHOOTING

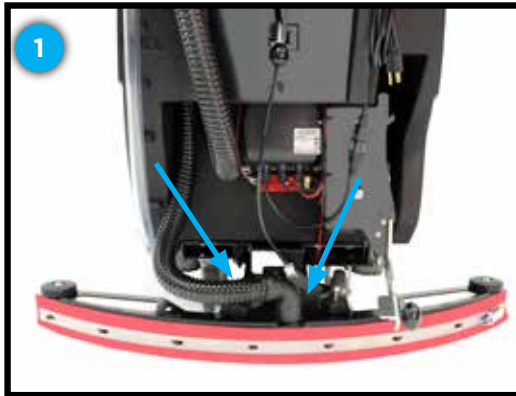
OPERATOR TOP FIVE TROUBLESHOOTING LIST

5. SQUEEGEE ISN'T PICKING UP WATER IN TIGHT TURNS

The squeegee is designed to swing fully from left to right to the point where the squeegee system almost touches the casters. Should it be stopping well short of this, then it is likely that the recovery hose is not routed properly and has become an obstruction.

- 1 To fix this, check the routing of the recovery hose to be sure that it is not impeding the squeegee assembly from swinging.

If this isn't the issue, contact your distributor or Pacific Floorcare for technical support.



Properly routed recovery hose

TROUBLESHOOTING GUIDE

ISSUE	POTENTIAL CAUSE	PROPOSED SOLUTION
Insufficient water to the brushes	Solution flow setting is too low	Make sure the solution control valve is open by adjusting the solution flow knob
	Solution tank is empty	Check the sight gage for solution level. If low or empty, add water and detergent
	Inline solution filter may be clogged	Remove inline filter cap & screen to check for clog. Rinse and put back in place
	Solution dispensing tubes may be clogged, kinked or damaged	Visually inspect tubes
	Solution dispensing pump is not running in chemical injection system	Make sure pump is running by feeling for slight vibration. Replace pump if necessary
	Ball valve at the outlet of the solution tank is closed	Open valve. Indicated by the handle in line with the solution flow direction
Squeegee isn't drying the floor well	Squeegee blades may be dirty or worn	Remove the squeegee assembly, rinse it off and wipe the blades down. Inspect edges for damage or wear. Flip or replace blades as needed
	Recovery hose may not be secure at connections	Make sure upper recovery hose elbow is secure at the recovery tank orifice. Make sure that lower recovery hose elbow is secure on squeegee assembly neck
	Recovery hose or squeegee assembly may be obstructed	Remove recovery hose and run water through it to check for any clogs. Remove squeegee assembly and check for a clog in the neck of the assembly
	Recovery hose may be damaged	Check for damage. Replace if damage found
	Squeegee assembly height may be out of adjustment	Check the squeegee height. See Machine Preparation segment of manual for squeegee height adjustment instructions
	Ball float may be damaged or clogged and it is obstructing air flow	Check to see that the ball float is moving freely and is clean
	Recovery tank is full	Empty recovery tank
	Recovery tank lid is not sealing	Make sure that the lid is in the proper position and that there isn't damage to the gasket. Replace gasket if damage found
	Drain hose cap may be loose	Make sure cap is clean and has been pressed in tightly
	Batteries may be discharged	Check battery indicator and if necessary, recharge batteries
	HEPA filter is clogged	Visually inspect the inside of the filter and replace if necessary
Machine will not turn on	Key switch may be faulty	Contact a service center to have tested
	Batteries may be discharged	Charge your batteries until charger indicates cycle is complete
	Batteries may be faulty	Replace batteries
	Battery cable(s) may be loose	Check connections and tighten if necessary

TROUBLESHOOTING GUIDE

ISSUE	POTENTIAL CAUSE	PROPOSED SOLUTION
Machine isn't cleaning satisfactorily	Pad or brush may be worn	Inspect & replace if necessary. Brushes should be replaced when the bristles reach a length of 3/4 in (19 mm)
Excessive foam is being produced in the recovery tank	Detergent used is not a low foaming detergent	Check bottle label. Use low foaming detergent or add a small quantity of defoamer to the recovery tank. More foam is generated when a floor is lightly soiled. Use less detergent if this is the case
	Detergent dispensing setting is too high on chemical injection system	Turn the detergent setting to a lower ratio/flow rate
Brush motor will not activate	Scrub head is still in the transport/storage position	Lower scrub head to operating position
	Batteries are discharged to the point that the brush motor is shut down	Recharge the batteries
	Brush motor or wiring may be faulty	Contact a service center for testing
	Brush motor circuit breaker has been tripped	Reset brush motor circuit breaker on back panel of scrubber
	Brush motor relay may be faulty	Contact a service center for testing
	Scrub head switch may be faulty	Contact a service center for testing
	Handle switch may be faulty	Contact a service center for testing
	BatteryShield LED is lit indicating the batteries need water	Use the HydroLink system to fill the batteries with distilled water
Vacuum motor will not turn on	Squeegee is still in transport/storage position	Lower squeegee to operating position
	Vacuum motor relay may be faulty	Contact a service center for testing
	Vacuum motor or wiring may be faulty	Contact a service center for testing
Vacuum motor will not turn off	Still in delay mode	Wait ten (10) seconds
	Faulty vac relay	Contact a service center for testing
Traction drive does not activate	Traction drive motor circuit breaker has been tripped	Reset traction drive motor circuit breaker on back panel of scrubber
	Speed control knob is turned too far to the left	Rotate knob to the right
	Traction drive motor or wiring may be faulty	Contact a service center for testing
	Traction drive motor controller may be faulty	Contact a service center for testing
Run time is short	Batteries are discharged	Recharge the batteries for a full cycle
	Wet batteries may need to be watered	See End of Shift Maintenance segment of manual
	Batteries are defective	Replace batteries
	Battery charger is defective	Repair or replace charger
	Scrub head is locked in high down pressure setting	Change scrub head setting from high down pressure setting to normal operation setting
	Charger is set to incorrect battery type	Verify dip switch setting is correct on charger using Setting the Dip Switches segment in the Machine Preparation segment of this manual

TROUBLESHOOTING GUIDE

BATTERY POWER LEVEL INDICATOR FAULT CODES

TRANSAXLE DRIVE UNITS		
CODE (FLASHING LEDs)	POTENTIAL CAUSE	PROPOSED SOLUTION
One	Low voltage shut-off. Brush motor shut down	Recharge batteries
		Check battery connections
Two	Battery charge level getting low	Recharge batteries
Three	Traction drive motor tripped	Remove overload condition and reset
	Traction drive motor has short circuited	Contact a service center for testing
Four	Battery lockout has occurred	Recharge batteries right away
Eight	Controller tripped	Contact a service center for testing
Ten	High battery voltage reading	Check battery connections
None	Indicator is in sleep mode	Turn power key off then on to restore
Sequencing lights	Activation handle is engaged	Release activation bail

SUGGESTED SERVICE PART LISTING

SUB-ASSEMBLY	DESCRIPTION	PART NUMBER	S-24 QTY	S-28 DISK QTY	S-32 QTY	S-28 ORBITAL QTY	OPTIONS QTY
Charger, On-board	Cord, 9 ft (3 m)	908128*	1	1	1	1	
Charger, On-board	Charger, on-board, 24VDC	852407	1	1	1	1	
BatteryShield®	Sensor assy, BatteryShield	878520					1
BatteryShield®	Relay, BatteryShield	911685					1
Chemical Injection	Pump, solution	877005					1
Chemical Injection	Pump, detergent	877002					1
Chemical Injection	Controller, solution	872401					1
Chemical Injection	Valve, check, .188x.5 barb	879402					1
Chemical Injection	Cap, 38 mm	871501					1
Chemical Injection	Filter, inline	S764P2					1
Controls	Circuit breaker, 35 amp	911681		2	2		
Controls	Circuit breaker, 30 amp	911622	2	1	1	2	
Controls	Switch, snap, with roller	911646	1	1	1	1	
Controls	Switch, key	911647	1	1	1	1	
Controls	Key, set of two	855012	1	1	1	1	
Controls	Switch, push, on/off	911649	1	1	1		
Controls	Pot, speed	911664	1	1	1	1	
Controls	Switch, push, reverse	911653	1	1	1	1	
Controls	Cable, lift, clevis	852401	1	1	1	1	
Electronics	Controller, traction	879101	1	1	1	1	
Electronics	Contact, 24VDC, 100 amp	912401	1	2	2	1	
Electronics	Contact, 24VDC, 70 amp	912402	2	2	2	1	
Frame	Wheel, traction, 9 in (229 mm)	879703					2
Frame	Wheel, traction, 8.74 in (222 mm)	879705	2	2	2	2	
Frame	Caster, 4 in (102 mm)	875017*	2	2	2	2	
Frame	Filter, 80 mesh	843319	1	1	1	1	
Frame	Valve kit, solenoid, 24VDC	855014	1	1	1	1	
Frame	Knob, adjust, .25 bore	855001	1	1	1	1	

*Indicates wear item

SUGGESTED SERVICE PART LISTING

SUB-ASSEMBLY	DESCRIPTION	PART NUMBER	S-24 QTY	S-28 DISK QTY	S-32 QTY	S-28 ORBITAL QTY	OPTIONS QTY
Head	Belt, v-groove	903046*	1				
Head	Bearing, .75-inch, sealed	902053	4				
Head	Guide, driver	853803*	1	1	1		
Head	Guide, pad	853804*		2	2		
Head	Guide, pad, plastic	873801*	2				
Head	Wheel, guide	859703		1	1		
Head	Mount, isolator	855604				4	
Head	Motor, 2200 rpm	875205	1			1	
Head	Motor, gear, brush	875201		2	2		
Head	Bearing, .50 inch, sealed	902035	6				
Head	Hub, driver, brush	854302		2	2		
Head	Center lock, replacement	875113*	2	2	2		
Head	Plate, clutch, with screws	876614	2	2	2		
Recovery	Filter, HEPA	873304*	1	1	1	1	
Recovery	Hose, drain, capped	854101*	1	1	1	1	
Recovery	Gasket, cover, press-in	873401	1	1	1	1	
Recovery	Float, ball	223370	1	1	1	1	
Recovery	Hose, vacuum	854103	1	1	1	1	
Recovery	Motor, vacuum, 24VDC, 3 stg	875202	1	1	1	1	
Recovery	Foam, noise, vacuum, short	853309	1	1	1	1	
Recovery	Gasket, foam, vacuum	873314	1	1	1	1	
Recovery	Hose, squeegee, 90° cuff	874101*	1	1	1	1	
Recovery	Puck, Bromine, 4pk	877007*	1	1	1	1	
Recovery	Tray, debris	879201*	1	1	1	1	
Recovery	Tray, puck	879202	1	1	1	1	
Solution	Switch, snap, bent lever	911682	1	1	1	1	
Squeegee Linkage	Strap, static	878504*	1	1	1	1	
Squeegee Linkage	Bearing, rod end, .50 fem	902051	1	1	1	1	

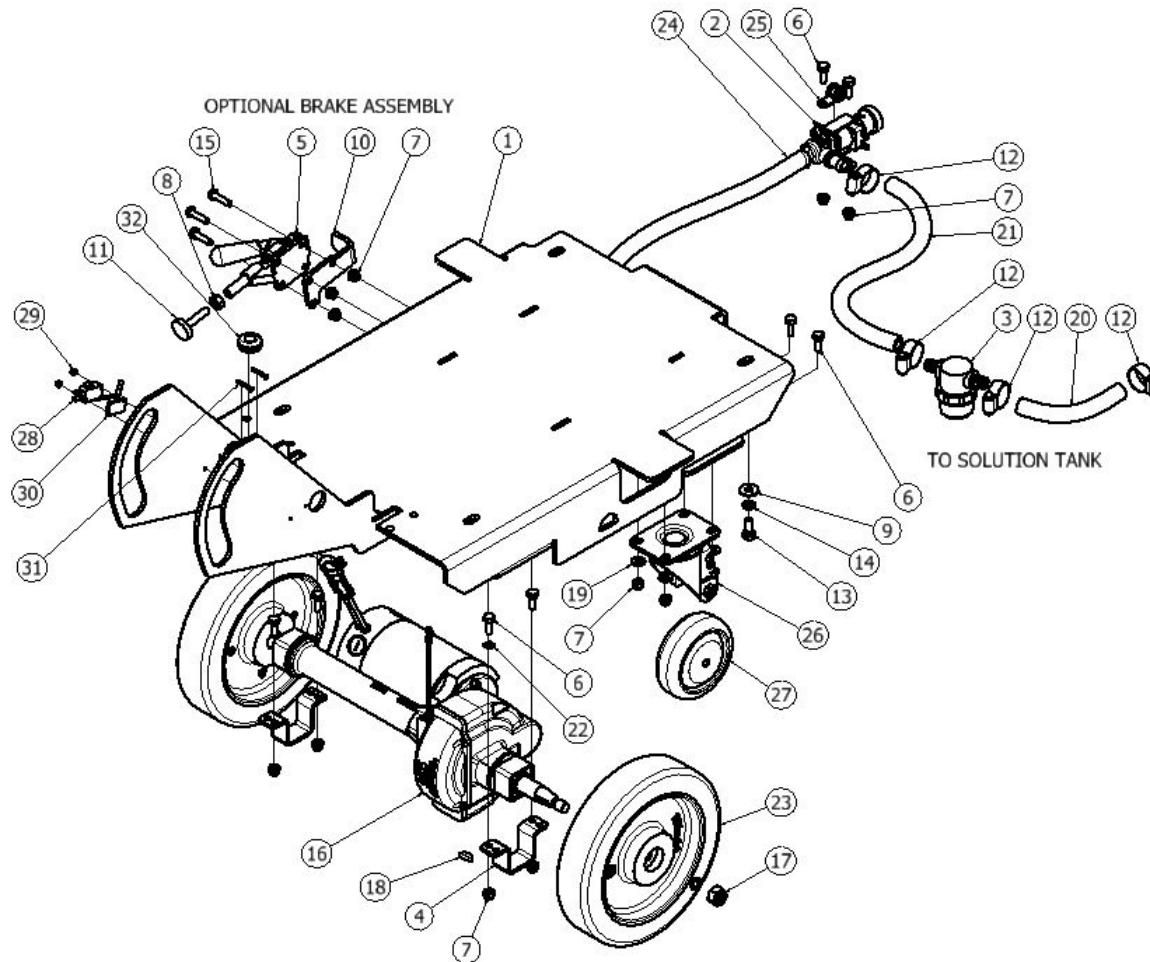
*Indicates wear item

SUGGESTED SERVICE PART LISTING

SUB-ASSEMBLY	DESCRIPTION	PART NUMBER	S-24 QTY	S-28 DISK QTY	S-32 QTY	S-28 ORBITAL QTY	OPTIONS QTY
Squeegee	Blade, rear, 35 in (889 mm) Linatex	870701*	1				
Squeegee	Blade, rear, 35 in (889 mm) urethane	870707*	-->				1
Squeegee	Blade, front, 35 in (889 mm) Linatex	870702*	1				
Squeegee	Blade, front, 35 in (889 mm) urethane	870708*	->				1
Squeegee	Blade, rear, 40 in (1,016 mm) Linatex	870703*		1		1	
Squeegee	Blade, rear, 40 in (1,016 mm) urethane	870709*		-->		-->	1
Squeegee	Blade, front, 40 in (1,016 mm) Linatex	870704*		1		1	
Squeegee	Blade, front, 40 in (1,016 mm) urethane	870710*		->		->	1
Squeegee	Blade, rear, 44.5 in (1,130 mm) Linatex	870705*			1		
Squeegee	Blade, rear, 44.5 in (1,130 mm) urethane	870711*			-->		1
Squeegee	Blade, front, 44.5 in (1,130 mm) Linatex	870706*			1		
Squeegee	Blade, front, 44.5 in (1,130 mm) urethane	870712*			->		1
Squeegee	Clamp, over-center, band	852002	2	2	2	2	
Squeegee	Wheel, guide	859703	2	2	2	2	

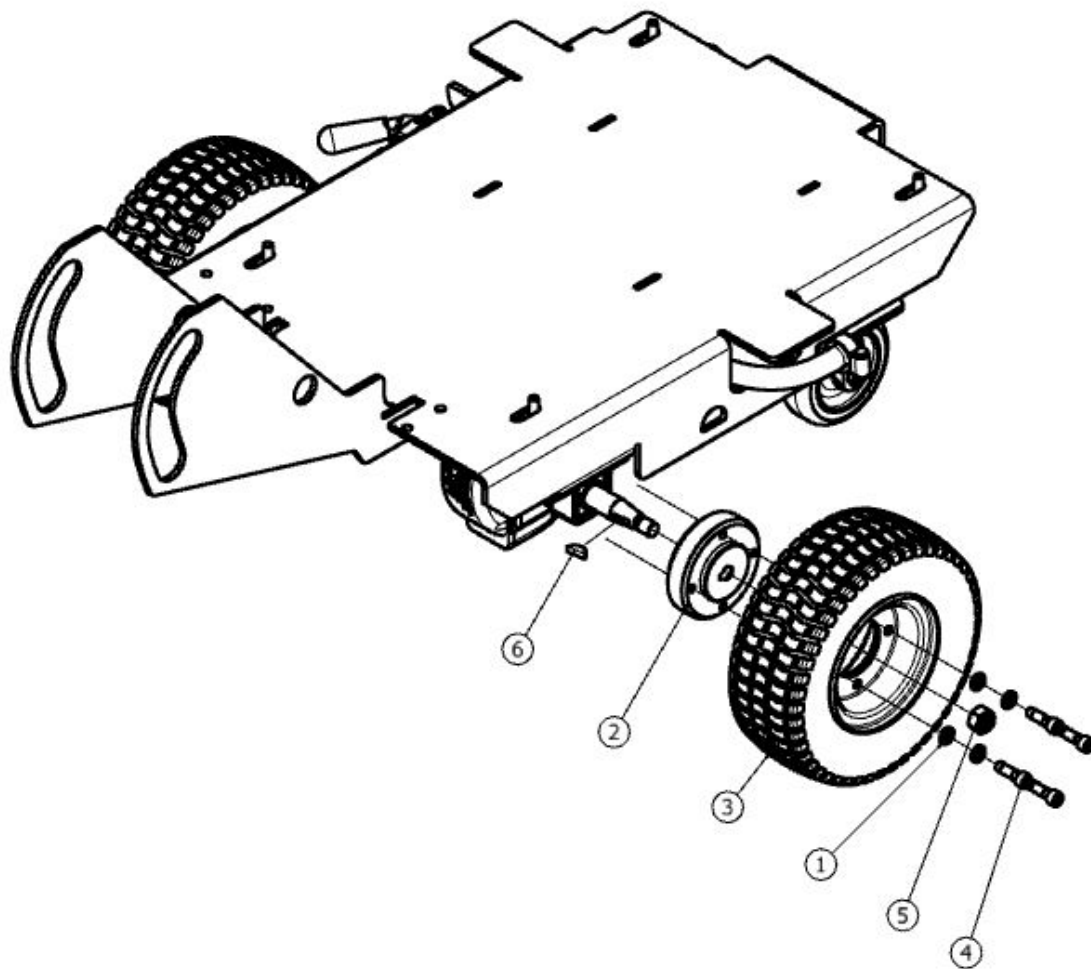
*Indicates wear item

FRAME ASSEMBLY WITH URETHANE WHEELS



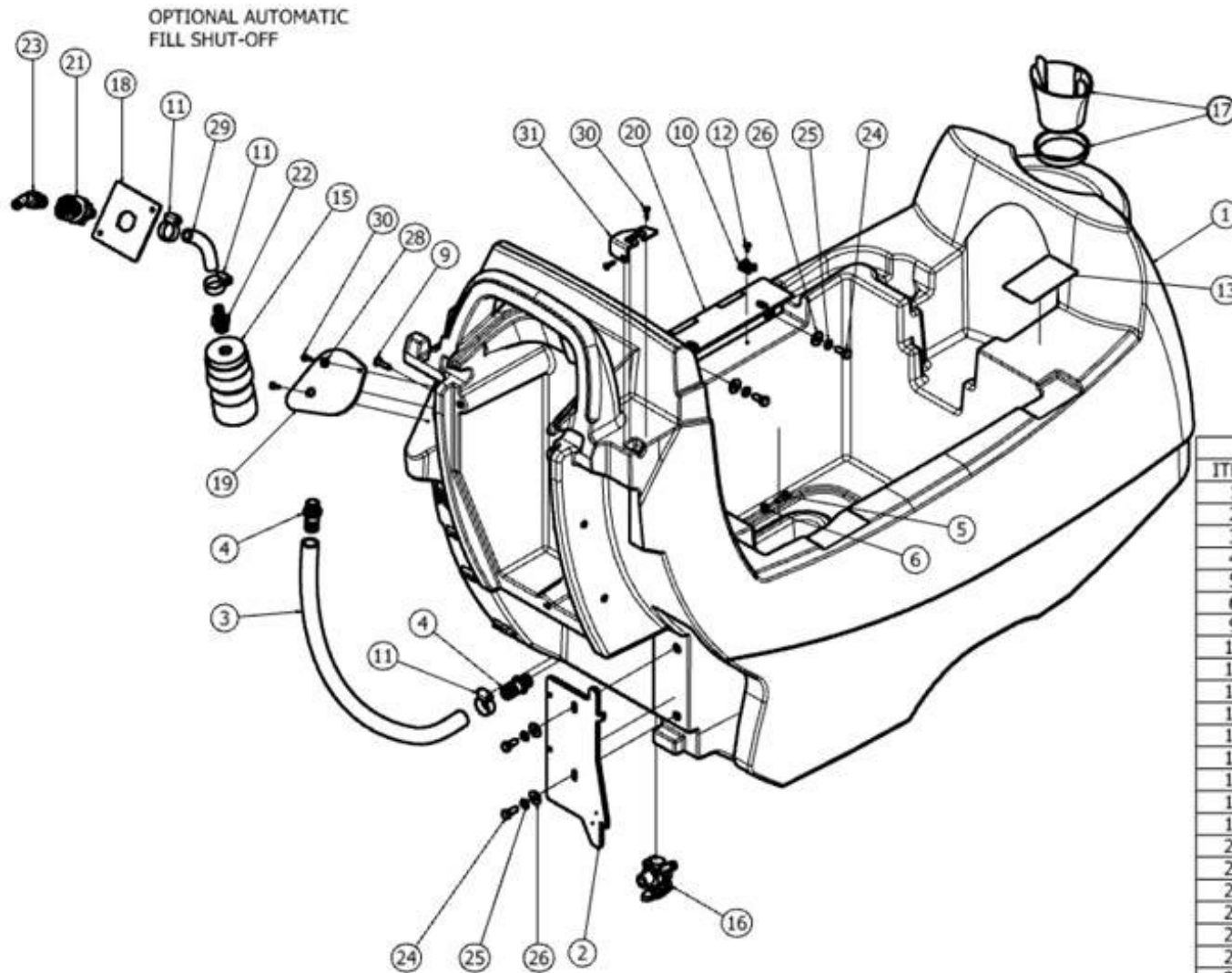
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	873201	FRAME, SCRUBBER, 20 TRACT
2	1	855014	KIT VALVE SCRUBBER REPLMNT
3	1	843319	FILTER, SCREEN, BOWL
4	2	850807	BRACKET, RETAINING, TRANS
5	1	852001	CLAMP, BRAKE, OVER-CENTER
6	14	W189D	SCREW, HEX, 1/4-20 X .75, SS, PATCH
7	17	920011	NUT, NYLOCK, 1/4-20, ZINC
8	1	W405D	NUT, HEX, LOCK, .31 - 18
9	4	W243D	WASHER, FLAT, 5/16, SS
10	1	850810	BRACKET, STOP, BRAKE
11	1	858401	PAD, STUD, THREADED
12	4	S453P	CLAMP, HOSE, WORM
13	4	962269	SCREW, HEX, .31-18 X .75, SS
14	8	980094	WASHER, SPLIT LOCK, .31, SS
15	3	962221	SCREW, HEX, .25-20 X 1.0, SS
16	1	879203	TRANSAXLE, 24VDC
	1	870919	BRUSH KIT REPL FOR TRANSAXLE 879203
	1	875204	MOTOR REPL FOR TRANSAXLE 879203
17	2	920648	NUT, M12, NYLOCK
18	2	915007	KEY, WOODRUFF, 5MM
19	8	W104D	WASHER, FLAT, .25
20	1	224130 - 5.12"	TUBING, 1/2"
21	1	224130 - 14.0"	TUBING, 1/2"
22	1	980029	WASHER, LOCK, STAR, EXTERNAL
23	2	879705	WHEEL, URETHANE, 222MM
24	1	224130 - 20.0"	TUBING, 1/2"
25	1	852101	CLAMP, WIRE, P-SHAPED
26	2	877502	RIG CASTER 4INCH WITH AXLE
27	2	879711	WHEEL CASTER 4INCH
	2	875017	KIT CASTER 4 INCH REPLACEMENT
28	1	911682	SWITCH, SNAP, BENT LEVER
29	2	W385D	NUT, NYLOCK, #4-40, ZINC
30	1	856608	PLATE, MOUNTING
31	2	962273	SCREW, PAN, #4-40 X .88, ZINC
32	1	873804	GROMMET .50ID .81HOLE .25THK

FRAME ASSEMBLY WITH FOAM-FILLED WHEELS



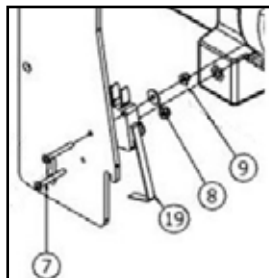
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	8	980094	WASHER, SPLIT LOCK, .31, SS
2	2	874301	HUB, ADAPTER, WHEEL, FOAM
3	2	879703	WHEEL, 9 X 3.5 INCH, FOAM
4	8	962279	SCREW, SOCKET CAP, .31X1.0, SS
5	2	920648	NUT, M12, NYLOCK
6	2	915007	KEY, WOODRUFF, 5MM

SOLUTION TANK ASSEMBLY



PARTS LIST

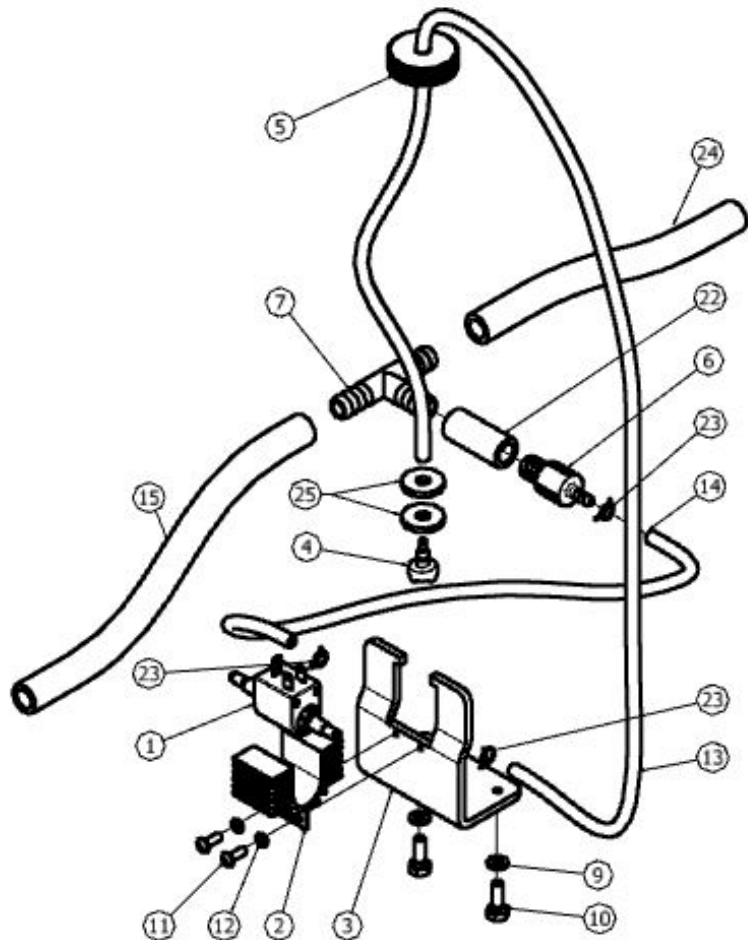
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	878601	TANK, SOLUTION, 22 GAL
2	1	870805	BRACKET, SUPPORT, LEVER
3	1	879004	TUBE, SIGHT, REPLACEMENT
4	2	853303	FITTING, STR, BM12, PM08
5	1	W189D	SCREW, HEX, 1/4-20 X .75, SS, PATCH
6	1	920037	NUT, THIN JAM, 1/4-20, ZINC
9	1	962455	SCREW, TRUSS, .25-20 X 1.0
10	4	225670	PAD, WIRE TIE
11	3	S453P	CLAMP, HOSE, WORM
12	4	962271	SCREW, PAN, #10 X .38L, ZINC
13	1	875103	LABEL, INSTRUCTION, BATTERY
15	1	873303	FLOAT, SHUT-OFF
16	1	879401	VALVE, SHUT-OFF, BALL
17	1	875011	KIT, STRAINER, PORT, FILL
18	1	876605	PLATE, COVER, FILL PORT
19	1	872304	COVER, PORT, FILL
20	1	874501	HINGE, TANK, RECOVERY
21	1	873307	FITTING, QD, COLDER, FEMALE
22	1	223343	FITTING, STR, BM08, PM08
23	1	873306	FITTING, ELBOW, QD
24	5	962269	SCREW, HEX, .31-18 X .75, SS
25	5	980094	WASHER, SPLIT LOCK, .31, SS
26	5	W243D	WASHER, FLAT, 5/16, SS
28	1	W401D	WASHER, FLAT, #10
29	1	224130 - 4"	TUBING, 1/2"
30	4	962460	SCREW, #8X.75, PHIL TRUSS SS
31	1	870819	BRACKET, RETENTION, HANGER



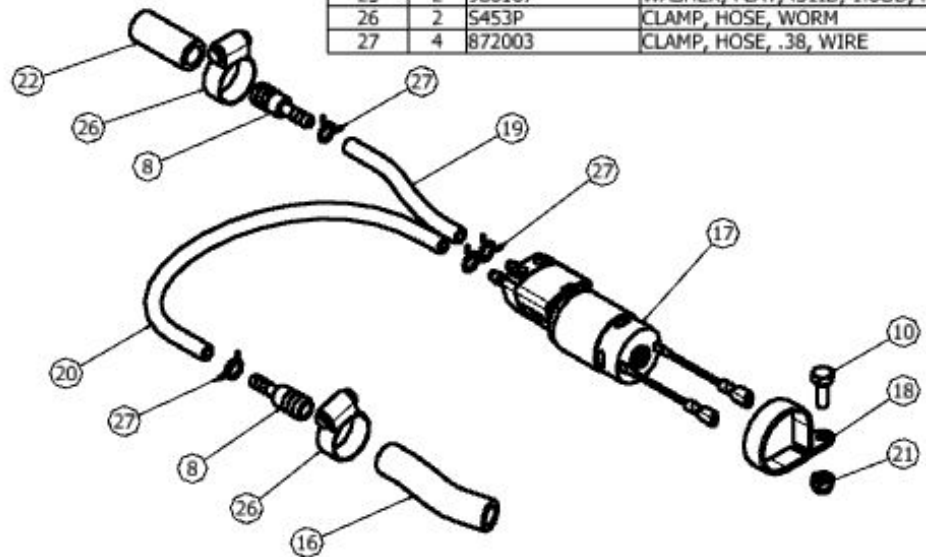
Head switch location for all machines built prior to March 13, 2015 and before serial #102090

7	2	962273	SCREW, PAN, #4-40 X .88, ZINC
8	2	980682	WASHER, FLAT, #4, ZINC
9	2	W385D	NUT, NYLOCK, #4-40, ZINC
19	1	911682	SWITCH, SNAP, BENT LEVER

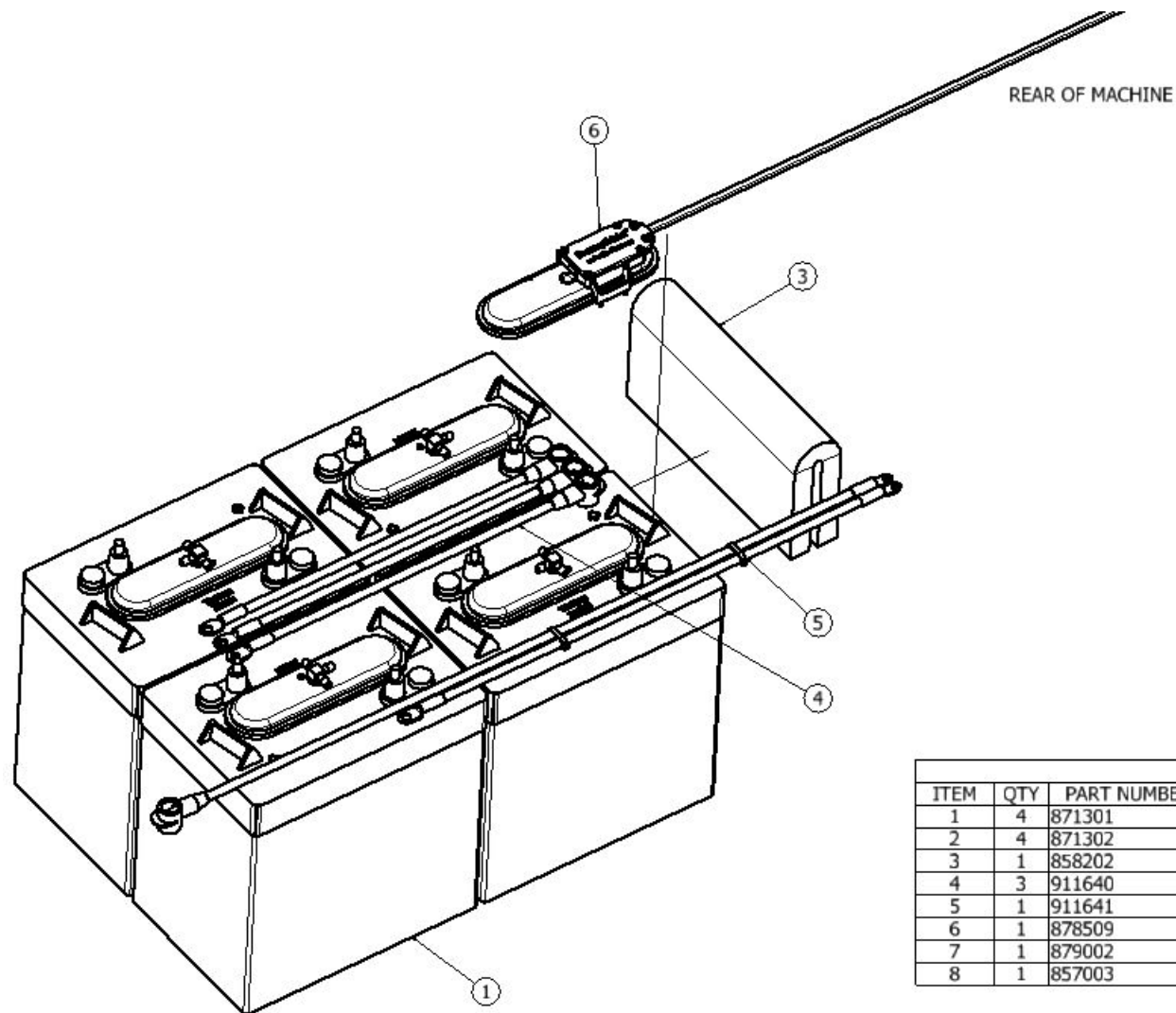
ON-BOARD CHEMICAL INJECTION ASSEMBLY (OPTIONAL)



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	877002	PUMP, 24VDC, SOLENOID, EMX08
2	1	870810	BRACKET, HEAT SINK
3	1	870811	BRACKET, MTG, HEAT SINK
4	1	S764P2	FILTER, STRAINER
5	1	871501	CAP, 38MM, WITH HOLE
6	1	879402	VALVE, CHECK, .188 X .50 BARB
7	1	873308	FITTING, TEE, 0.50 INCH
8	2	853301	FITTING, REDUCER, BM08, BM04
9	2	980002	WASHER, LOCK, SPLIT, .25
10	3	W189D	SCREW, HEX, 1/4-20 X .75, SS, PATCH
11	2	962363	SCREW, PAN, #10-32 X .50, SS
12	2	980022	WASHER, LOCK, SPLIT, #10
13	1	879003 - 42.0"	TUBING, 3/16"
14	1	879003 - 10.0"	TUBING, 3/16"
15	1	224130 - 1.62"	TUBING, 1/2"
16	1	224130 - 3.38"	TUBING, 1/2"
17	1	877005	PUMP, GEAR, 24VDC
18	1	872001	CLAMP, P-SHAPED, 1.5 DIA
19	1	224130	TUBING, 1/2"
20	1	224130	TUBING, 1/2"
21	1	920011	NUT, NYLOCK, 1/4-20, ZINC
22	2	224130	TUBING, 1/2"
23	3	872002	CLAMP, HOSE, .31, WIRE
24	1	224130	TUBING, 1/2"
25	2	980107	WASHER, FLAT, .31ID, 1.00D, .12THK, SS
26	2	S453P	CLAMP, HOSE, WORM
27	4	872003	CLAMP, HOSE, .38, WIRE

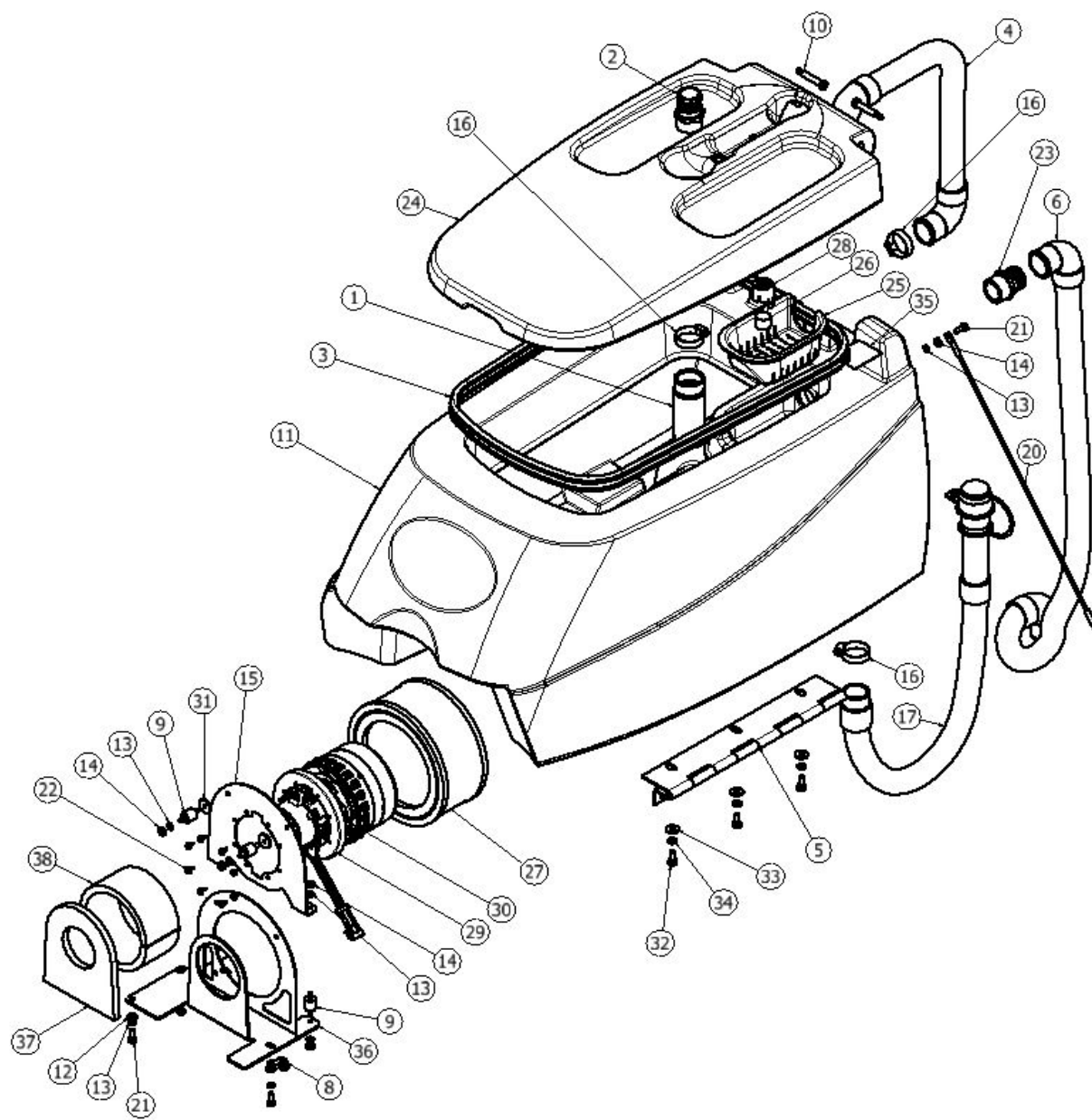


BATTERY ASSEMBLY



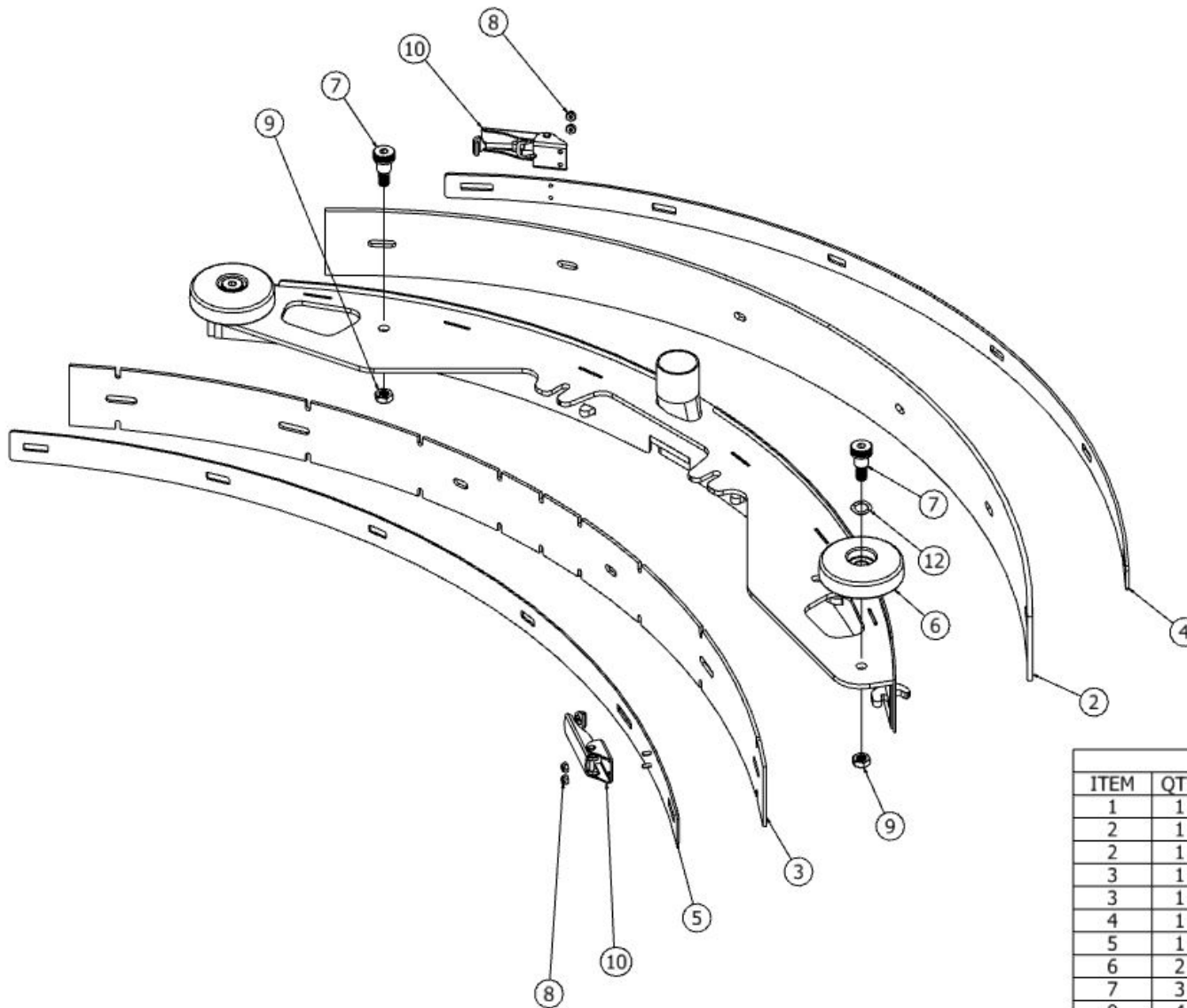
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	871301	BATTERY, 6V, 260AH, LA
2	4	871302	BATTERY, 6V, 250AH, MF (NOT SHOWN, OPTIONAL)
3	1	858202	FOAM, SPACER, BATTERY
4	3	911640	HARNESS, CONN, BATTERY
5	1	911641	HARNESS, CONN, BATTERY
6	1	878509	SENSOR ASSY, BATTERYSHIELD (OPTIONAL)
7	1	879002	TUBE & PUMP ASSY (NOT SHOWN, OPTIONAL)
8	1	857003	PUMP ASSY HAND HYDROLINK (NOT SHOWN, OPTIONAL)

RECOVERY TANK ASSEMBLY



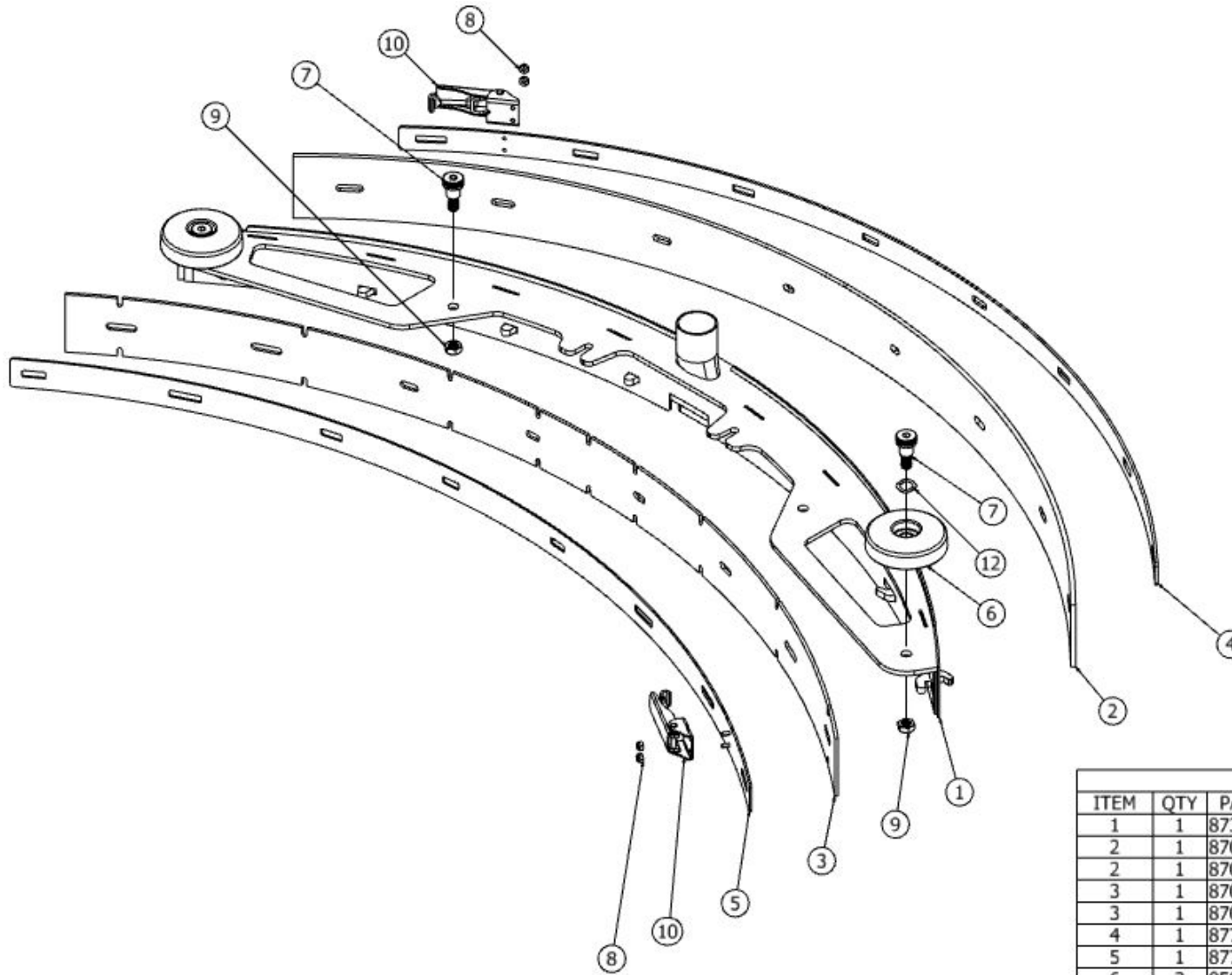
PARTS LIST			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	223370	FLOAT, SHUTOFF
2	1	853304	FITTING, STR, BM24, PM20
3	1	873401	GASKET, COVER, PRESS-IN
4	1	854103	HOSE, VACUUM, 1.5INCH
5	1	874501	HINGE, TANK, RECOVERY
6	1	874101	HOSE, SQUEEGEE, 90 CUFF
7	1	874102	HOSE SQUEEGEE MID CHEM RESIST
8	1	852101	CLAMP, WIRE, P-SHAPED
9	4	855603	MOUNT, RUBBER, .25-20
10	2	962462	SCREW, SHOULDER, .38 X 1.75, SS
11	1	878602	TANK, RECOVERY, 22 GAL
12	3	W104D	WASHER, FLAT, .25
13	12	980002	WASHER, LOCK, SPLIT, .25
14	9	920037	NUT, THIN JAM, 1/4-20, ZINC
15	1	870806	BRACKET, MTG, ISOLATOR
16	3	S611A	CLAMP, HOSE, WORM
17	1	854101	HOSE, DRAIN, CAPPED
18	1	854104	HOSE DRAIN CAPPED CHEM RESIST
19	1	851501	CAP HOSE DRAIN - REPL FOR 854101
20	1	872412	CABLE RETENTION MID LONG
21	4	W189D	SCREW, HEX, 1/4-20 X .75, SS, PATCH
22	8	964224	SCREW, PAN, #10 X .5, SELF TAPPING
23	1	853308	FITTING, MODIFIED
24	1	872301	COVER, TANK, RECOVERY
25	1	879201	TRAY, DEBRIS
26	1	877007	PUCK, BROMINE (4-PACK)
27	1	873304	FILTER, HEPA, MID
28	1	879202	TRAY, PUCK
29	1	875602	MOUNT, FILTER, WITH GASKET
30	2	875202	MOTOR, VACUUM, 24VDC, 3-STAGE
31	2	980106	WASHER, FLAT, .25ID, 1.00D, .12THK, SS
32	3	962269	SCREW, HEX, .31-18 X .75, SS
33	3	W243D	WASHER, FLAT, 5/16, SS
34	3	980094	WASHER, SPLIT LOCK, .31, SS
35	1	875110	LABEL, INSTRUCT, BROMINE
36	1	872303	COVER, MTG, VACUUM
37	1	873314	GASKET, FOAM, VACUUM
38	1	853309	FOAM NOISE SHORT

SQUEEGEE ASSEMBLY, S-24



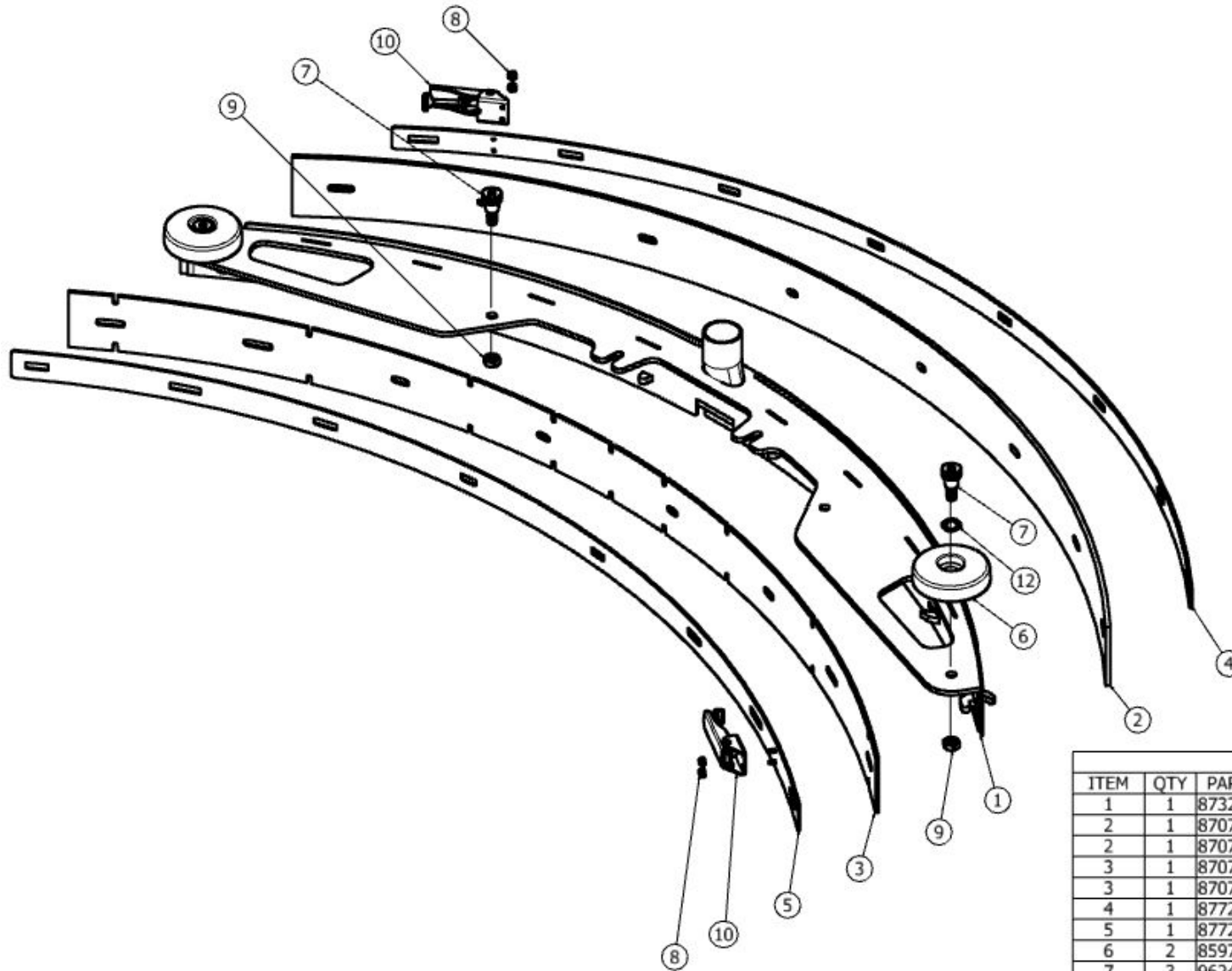
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	873203	FRAME, SQUEEGEE, 35 INCH
2	1	870701	BLADE, REAR, 35INCH (LINATEX)
2	1	870707	BLADE, REAR, 35INCH (URETHANE)
3	1	870702	BLADE, FRONT, 35INCH (LINATEX)
3	1	870708	BLADE, FRONT, 35INCH (URETHANE)
4	1	877203	RETAINER, REAR, 35 INCH
5	1	877204	RETAINER, FRONT, 35 INCH
6	2	859703	WHEEL, GUIDE
7	3	962465	SCREW, SHOULDER, .50 X .50
8	4	920034	NUT, NYLOCK, #6-32, SS
9	3	920035	NUT, NYLOCK, .38-16, SS
10	2	852002	CLAMP, OVER-CENTER, BAND
11	1	878516	NARROW AISLE SQUEEGEE ASSY, 30INCH WIDE
12	2	980093	WASHER, WAVE, .50INCH

SQUEEGEE ASSEMBLY, S-28



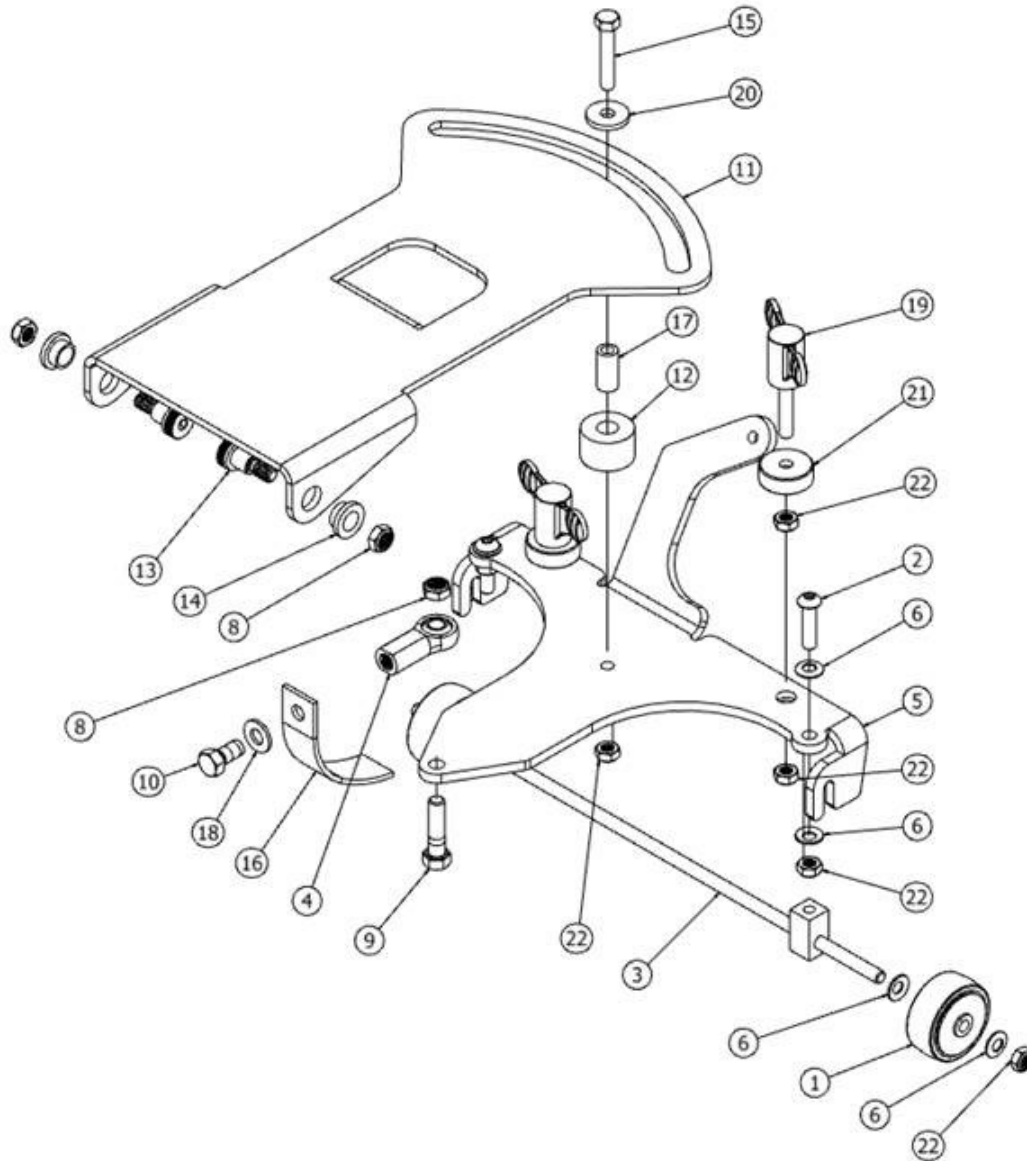
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	873204	FRAME, SQUEEGEE, 40 INCH
2	1	870703	BLADE, REAR, 40INCH (LINATEX)
2	1	870709	BLADE, REAR, 40INCH (URETHANE)
3	1	870704	BLADE, FRONT, 40INCH (LINATEX)
3	1	870710	BLADE, FRONT, 40INCH (URETHANE)
4	1	877201	RETAINER, REAR, 40 INCH
5	1	877202	RETAINER, FRONT, 40 INCH
6	2	859703	WHEEL, GUIDE
7	3	962465	SCREW, SHOULDER, .50 X .50
8	4	920034	NUT, NYLOCK, #6-32, SS
9	3	920035	NUT, NYLOCK, .38-16, SS
10	2	852002	CLAMP, OVER-CENTER, BAND
11	1	878507	NARROW AISLE SQUEEGEE ASSY, 35 INCH
12	2	980093	WASHER, WAVE, .50INCH

SQUEEGEE ASSEMBLY, S-32



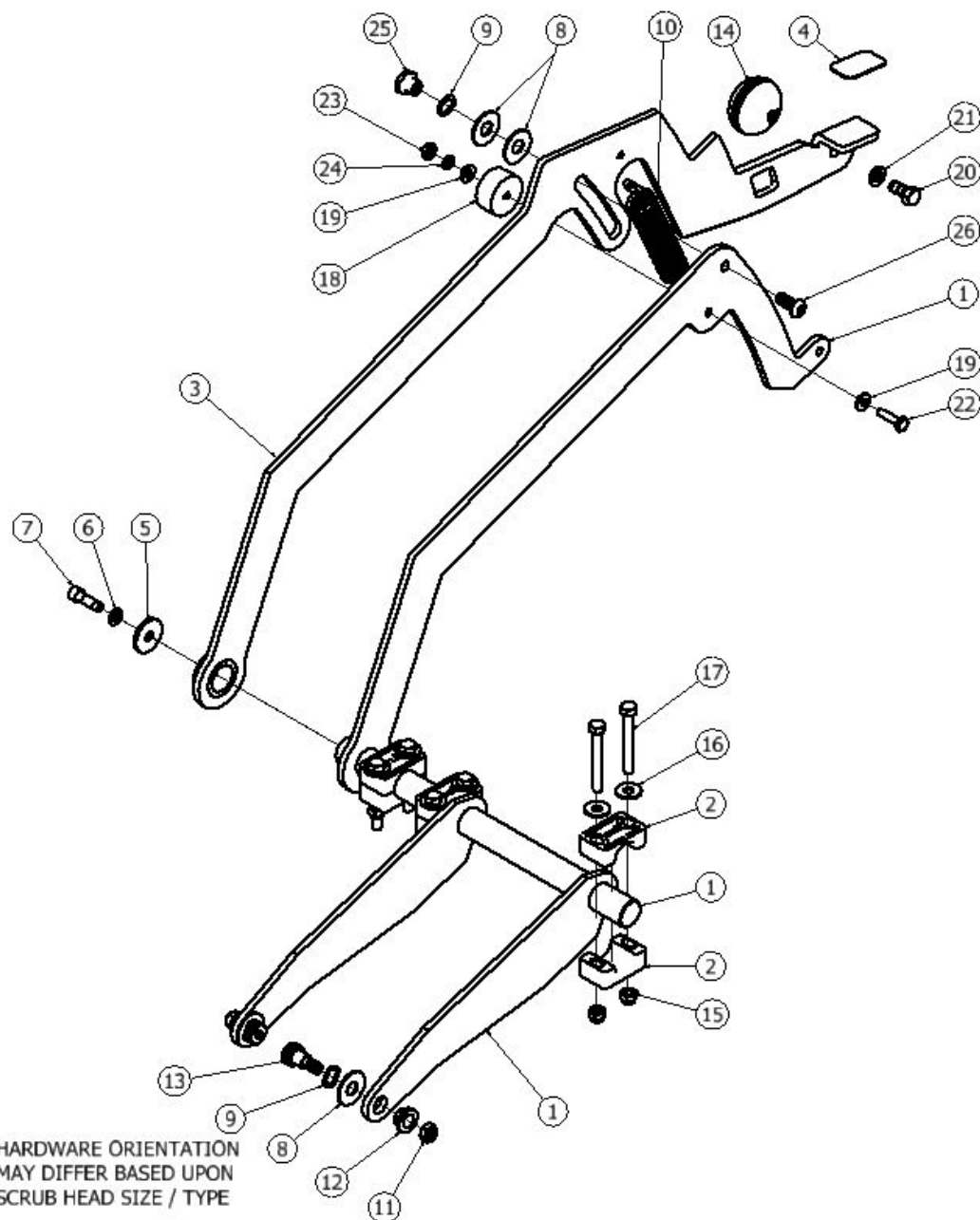
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	873205	FRAME, SQUEEGEE, 44.5 INCH
2	1	870705	BLADE, REAR, 44.5INCH (LINATEX)
2	1	870711	BLADE, REAR, 44.5INCH (URETHANE)
3	1	870706	BLADE, FRONT, 44.5INCH (LINATEX)
3	1	870712	BLADE, FRONT, 44.5INCH (URETHANE)
4	1	877205	RETAINER, REAR, 44.5 INCH
5	1	877206	RETAINER, FRONT, 44.5 INCH
6	2	859703	WHEEL, GUIDE
7	3	962465	SCREW, SHOULDER, .50 X .50
8	4	920034	NUT, NYLOCK, #6-32, SS
9	3	920035	NUT, NYLOCK, .38-16, SS
10	2	852002	CLAMP, OVER-CENTER, BAND
11	1	878508	NARROW AISLE SQUEEGEE ASSY, 40 INCH
12	2	980093	WASHER, WAVE, .50INCH

SQUEEGEE LINKAGE ASSEMBLY



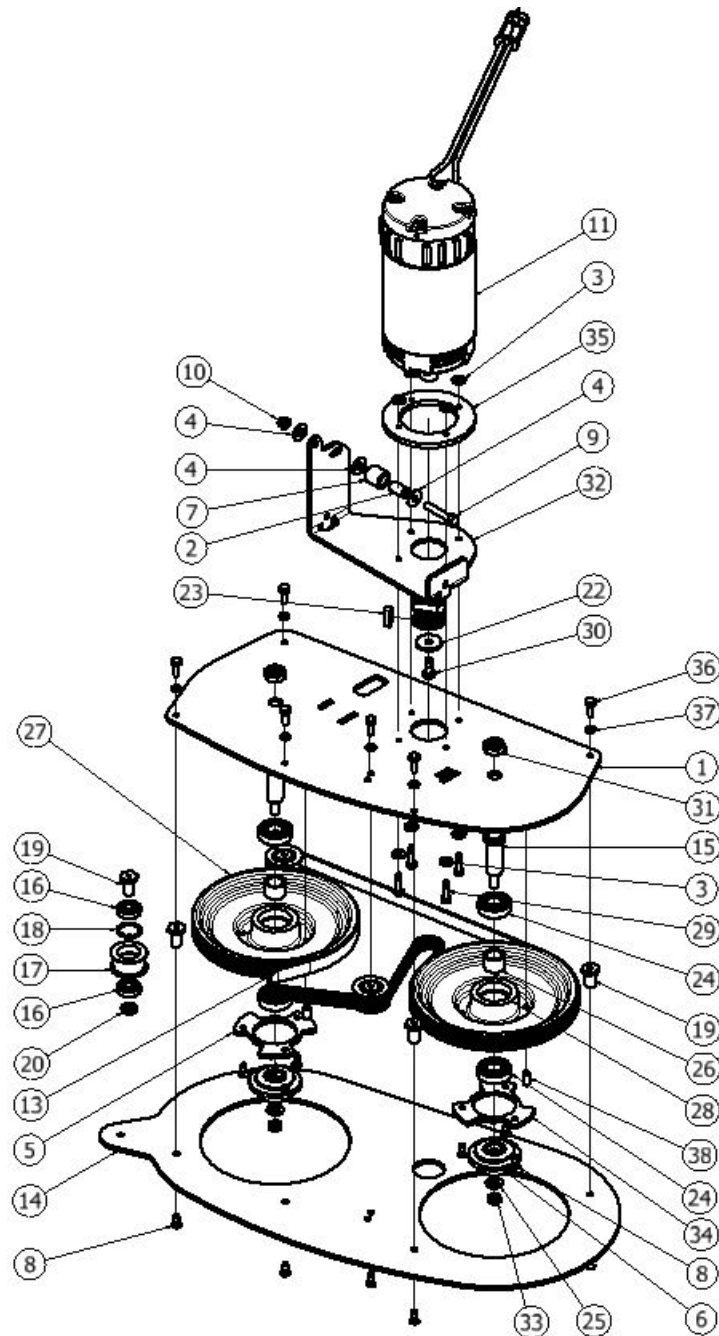
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	849709	WHEEL, 2 OD, .31 ID
2	2	962464	SCREW, BUTTON, .31-18 X 1.25, ZINC
3	1	850501	AXLE, WHEEL, SQUEEGEE
4	1	902051	BEARING, ROD END, .38 FEM
5	1	870802	BRACKET, LINK, SQUEEGEE
6	8	980105	WASHER, PLASTIC, THRUST
8	3	920035	NUT, NYLOCK, .38-16, SS
9	1	962075	SCREW, HEX, 3/8-16 X 1.5, SS
10	1	962028	SCREW, HX, .38-24X.75,SS,PTCH
11	1	870803	BRACKET, SWING, SQUEEGEE
12	1	877501	GUIDE, ROLLER, SQUEEGEE
13	2	962465	SCREW, SHOULDER, .50 X .50
14	2	871101	BUSHING, FLANGE, .50IN
15	1	962270	SCREW, HEX, 5/16-18X1.75,SS
16	1	878504	STRAP, GROUNDING, STATIC
17	1	878204	SPACER, GUIDE, SQUEEGEE
18	1	980003	WASHER, FLAT, .38
19	2	875003	KNOB, THREADED, .31-18 X 1.5
20	1	980107	WASHER, FLAT, .31ID, 1.00D, .12THK, SS
21	2	877207	RETAINER, FRAME, SQUEEGEE
22	9	920040	NUT, .31-18, NYLOCK, SS, LOW

HEAD LIFT ASSEMBLY



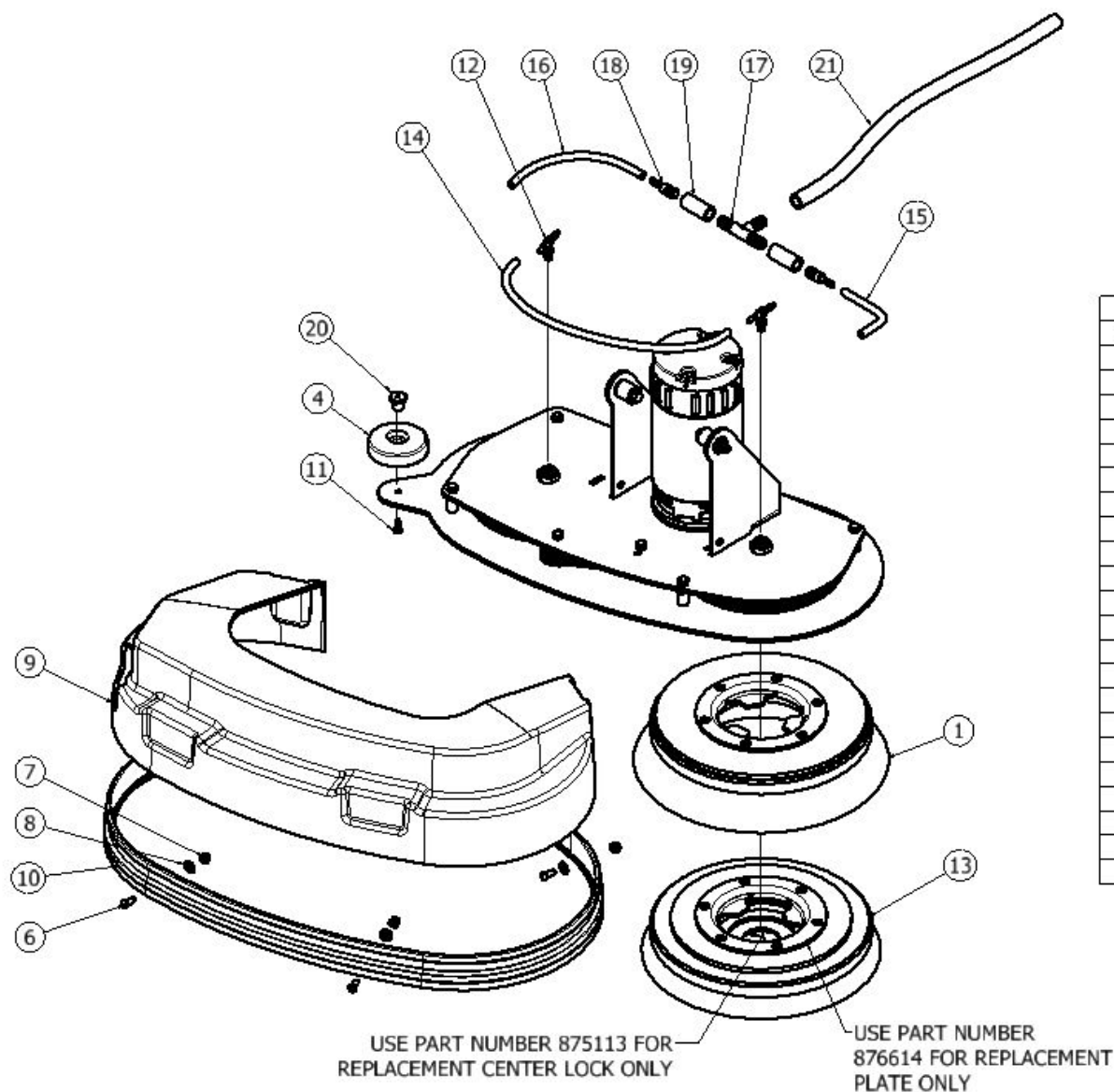
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	870801	BRACKET, LIFT, HEAD
2	6	875601	MOUNT, BEARING, PLASTIC
3	1	875106	LEVER, DOWNPRESSURE
4	1	875105	LABEL, FOOT, GRIP, LARGE
5	1	980108	WASHER, FLAT, .31ID, 1.25OD, .12THK, SS
6	1	980094	WASHER, SPLIT LOCK, .31, SS
7	1	962279	SCREW, SOCKET CAP, .31X1.0, SS
8	4	980612	WASHER, NYL, .50 X 1.25 X .062
9	3	980093	WASHER, WAVE, .50INCH
10	1	878301	SPRING, EXTENSION
11	3	920035	NUT, NYLOCK, .38-16, SS
12	2	871101	BUSHING, FLANGE, .50IN
13	3	962465	SCREW, SHOULDER, .50 X .50
14	1	875002	KNOB, PLASTIC, LARGE
15	6	920012	NUT, NYLOCK, 5/16-18, ZINC
16	6	W243D	WASHER, FLAT, 5/16, SS
17	6	962463	SCREW, HEX, .31-18 X 2.5, SS, FULL THD
18	1	858205	SPACER, RUBBER
19	2	W104D	WASHER, FLAT, .25
20	1	962028	SCREW, HX, .38-24X.75,SS,PTCH
21	1	980009	WASHER, SPLIT LOCK, 3/8, SS
22	1	962221	SCREW, HEX, .25-20 X 1.0, SS
23	1	920037	NUT, THIN JAM, 1/4-20, ZINC
24	1	980002	WASHER, LOCK, SPLIT, .25
25	1	878207	SPACER LIFT ARM
26	1	964256	SCREW .38-16X.88 BUTT SCK ZNC PTCH

HEAD ASSEMBLY (DRAWING 1 OF 2), S-24



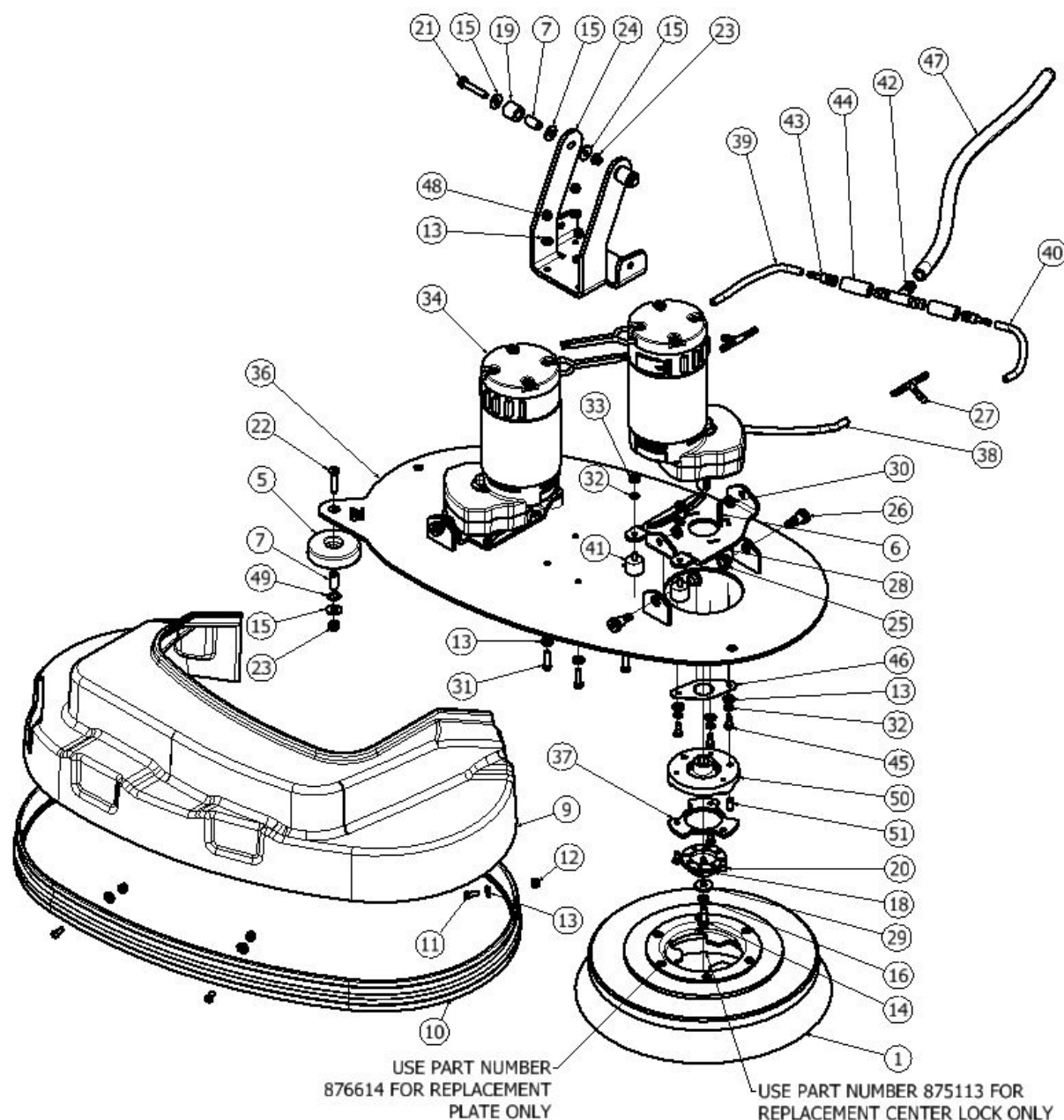
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	876602	PLATE, MTG, 24 INCH
2	3	858203	SPACER, WHEEL, GUIDE
3	12	W104D	WASHER, FLAT, .25
4	9	W243D	WASHER, FLAT, 5/16, SS
5	1	853803	GUIDE, DRIVER
6	2	873801	GUIDE, PAD, PLASTIC
7	3	857501	ROLLER, PLASTIC
8	13	962274	SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH
9	3	962270	SCREW, HEX, 5/16-18X1.75, SS
10	3	920012	NUT, NYLOCK, 5/16-18, ZINC
11	1	855204	MOTOR, 24V, 2200 RPM, .75HP
12	1	850906	BRUSH CARBON KIT 4 PC 855204 & 875201
13	1	903046	BELT, V-GROOVE, STRETCH
14	1	876606	PLATE, COVER, 24 INCH
15	2	877701	SHAFT, PULLEY, HEAD
16	6	902035	BEARING, .5 ID, 1.1875 OD
17	3	876901	PULLEY, IDLER
18	3	877302	RING, RETAINING, INT, 1.12 DIA
19	6	878201	SPACER, IDLER
20	3	878202	SPACER, IDLER, PLAIN
21	1	876902	PULLEY, MOTOR, DRIVE
22	1	980108	WASHER, FLAT, .31ID, 1.25OD, .12THK, SS
23	1	915006	KEY, 8MM X 7MM X 28MM
24	4	902053	BEARING, .75 ID, DBL SEAL
25	2	980003	WASHER, FLAT, .38
26	2	878203	SPACER, BEARING
27	1	874306	HUB, PULLEY, MACH GROOVED
28	1	874305	HUB, PULLEY, MACH FLAT
29	4	964008	SCREW, HEX, M6 X 25, SS, PATCH
30	1	964060	SCREW, HEX, M8-1.25 X 20, SS
31	2	920039	NUT, .62-18, NYLOCK, LOW
32	1	870814	BRACKET, SUPPORT, 24XM
33	2	920035	NUT, NYLOCK, .38-16, SS
34	1	873802	GUIDE, DRIVER, RH
35	1	878206	SPACER, MOTOR, 24INCH
36	6	W189D	SCREW, HEX, 1/4-20 X .75, SS, PATCH
37	6	980002	WASHER, LOCK, SPLIT, .25
38	2	857009	PLUNGER BALL PRESS-IN

HEAD ASSEMBLY (DRAWING 2 OF 2), S-24



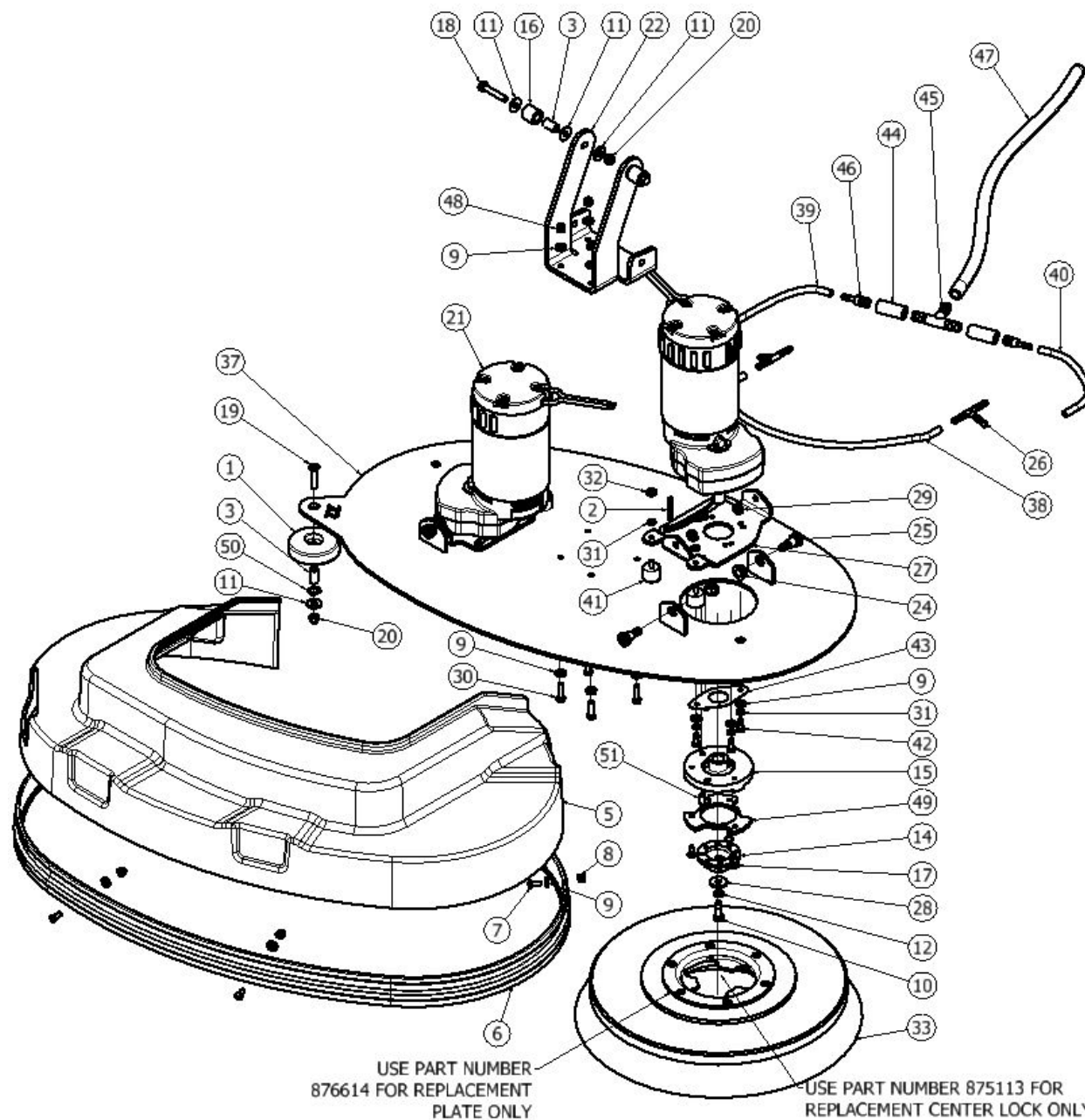
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	870902	BRUSH, POLY, 12 INCH
1	2	870908	BRUSH, NYLON, 12 INCH
1	2	870909	BRUSH, GRIT, 12 INCH
4	1	859703	WHEEL, GUIDE
	1	875019	KIT SKIRT REPLACEMENT (ITEMS 6 - 10)
6	4	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
7	4	920665	NUT, NYLOCK, 1/4-20, SS
8	12	W104D	WASHER, FLAT, .25
9	1	872305	SHROUD, HEAD, 24INCH
10	1	858503	SKIRT, BRISTLE
11	13	962274	SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH
12	2	873302	FITTING, TEE, PM02XBM04
13	2	875901	DRIVER, PAD, 12INCH, BRISTLE
14	1	204179 - 16.0"	TUBING, 1/4"
15	1	204179 - 9.75"	TUBING, 1/4"
16	1	204179 - 8.25"	TUBING, 1/4"
17	1	873308	FITTING, TEE, 0.50 INCH
18	2	853301	FITTING, REDUCER, BM08, BM04
19	2	224130 - 1.75"	TUBING, 1/2"
20	1	878205	SPACER, WHEEL, GUIDE
21	1	224130 - 20.0"	TUBING, 1/2"
22	2	857009	PLUNGER BALL PRESS-IN

HEAD ASSEMBLY, S-28 DISK



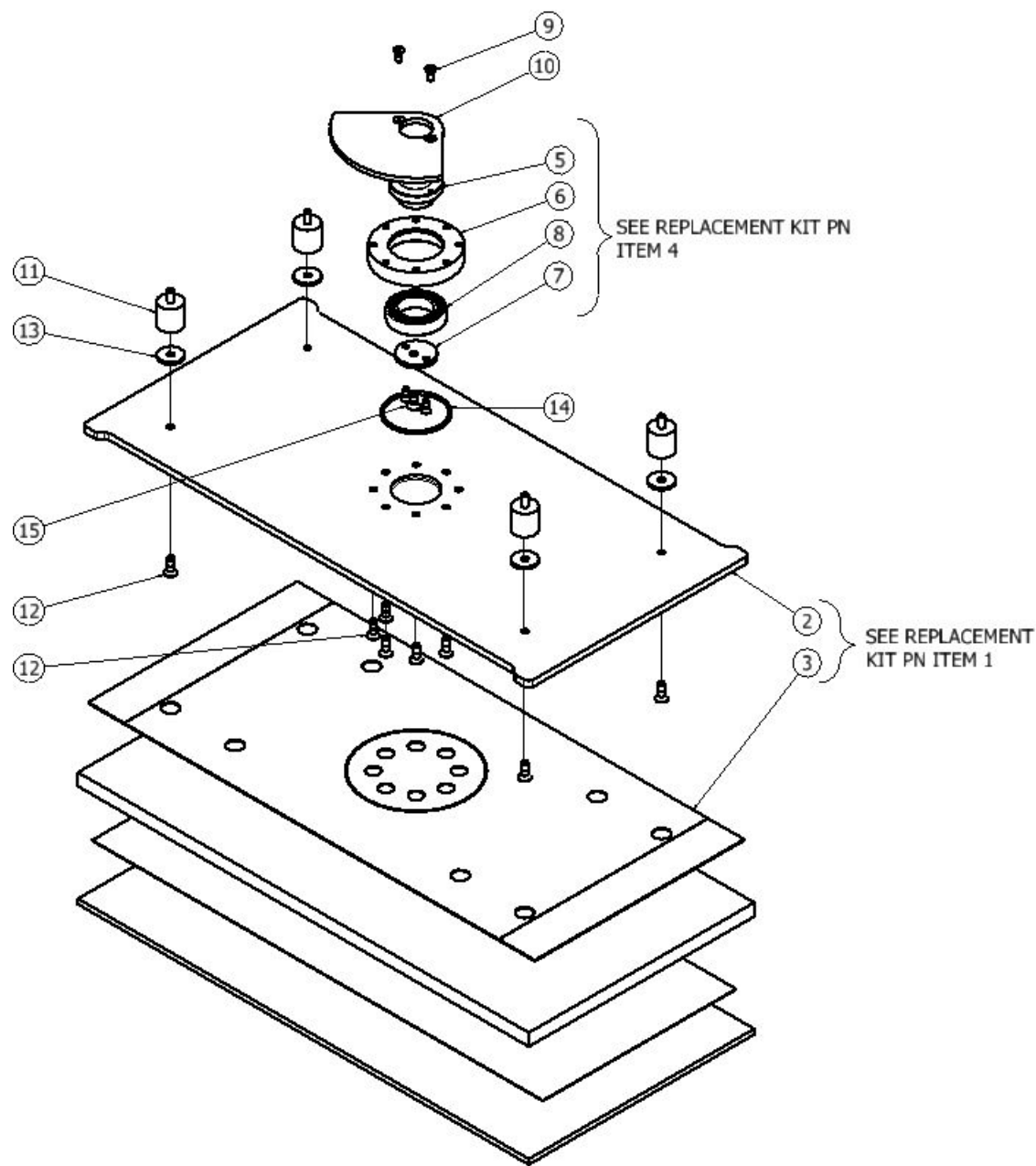
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	870901	BRUSH, POLY, 14 INCH
1	2	870904	BRUSH, NYLON, 14 INCH
1	2	870906	BRUSH, GRIT, 14 INCH
1	2	875902	DRIVER, PAD, 14 INCH
5	1	859703	WHEEL, GUIDE
6	2	915008	KEY, SQUARE, 5MM X 5 X 40MM
7	3	858203	SPACER, WHEEL, GUIDE
8	1	875020	KIT SHROUD S28 REPLACEMENT (ITEMS 9 - 13)
9	1	872302	SHROUD, HEAD, 28INCH
10	1	878502	SKIRT, BRISTLE
11	4	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
12	4	920665	NUT, NYLOCK, 1/4-20, SS
13	20	W104D	WASHER, FLAT, .25
14	2	962466	SCREW, HEX, M8-1.25 X 25, SS, PATCH
15	7	W243D	WASHER, FLAT, 5/16, SS
16	2	980094	WASHER, SPLIT LOCK, .31, SS
17	1	853803	GUIDE, DRIVER
18	2	853804	GUIDE, PAD, PLASTIC
19	2	857501	ROLLER, PLASTIC
20	6	962274	SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH
21	2	962270	SCREW, HEX, 5/16-18X1.75, SS
22	1	962266	SCREW, FLAT, SOCKET, .31-18 X 1.5, SS
23	3	920012	NUT, NYLOCK, 5/16-18, ZINC
24	1	870804	BRACKET, SUPPORT, HEAD
25	4	871101	BUSHING, FLANGE, .50IN
26	4	962465	SCREW, SHOULDER, .50 X .50
27	2	873301	FITTING, TEE, .25INCH
28	2	876604	PLATE, MOUNTING, GIMBLE
29	2	980107	WASHER, FLAT, .31ID, 1.00D, .12THK, SS
30	4	920035	NUT, NYLOCK, .38-16, SS
31	4	962221	SCREW, HEX, .25-20 X 1.0, SS
32	12	980002	WASHER, LOCK, SPLIT, .25
33	4	920037	NUT, THIN JAM, 1/4-20, ZINC
34	2	875203	MOTOR GEAR BRUSH MRP15 SERVICE
35	1	850906	BRUSH CARBON KIT 4 PC 855204 & 875201
36	1	876601	PLATE, MTG, 28INCH
37	1	873802	GUIDE, DRIVER, RH
38	1	204179 - 15.2"	TUBING, 1/4"
39	1	204179 - 6.0"	TUBING, 1/4"
40	1	204179 - 5.5"	TUBING, 1/4"
41	4	875603	BUMPER, RUBBER, WITH STUD
42	1	873308	FITTING, TEE, 0.50 INCH
43	2	853301	FITTING, REDUCER, BM08, BM04
44	2	224130 - 1.75"	TUBING, 1/2"
45	8	964448	SCREW, HEX, M6 X 16, SS, PATCH
46	2	870818	BRACKET, RETAINING, SEAL
47	1	224130 - 20.0"	TUBING, 1/2"
48	4	920011	NUT, NYLOCK, 1/4-20, ZINC
49	1	980093	WASHER, WAVE, .50INCH
50	2	854302	HUB, DRIVER, BRUSH
51	2	857009	PLUNGER BALL PRESS-IN

HEAD ASSEMBLY, S-32



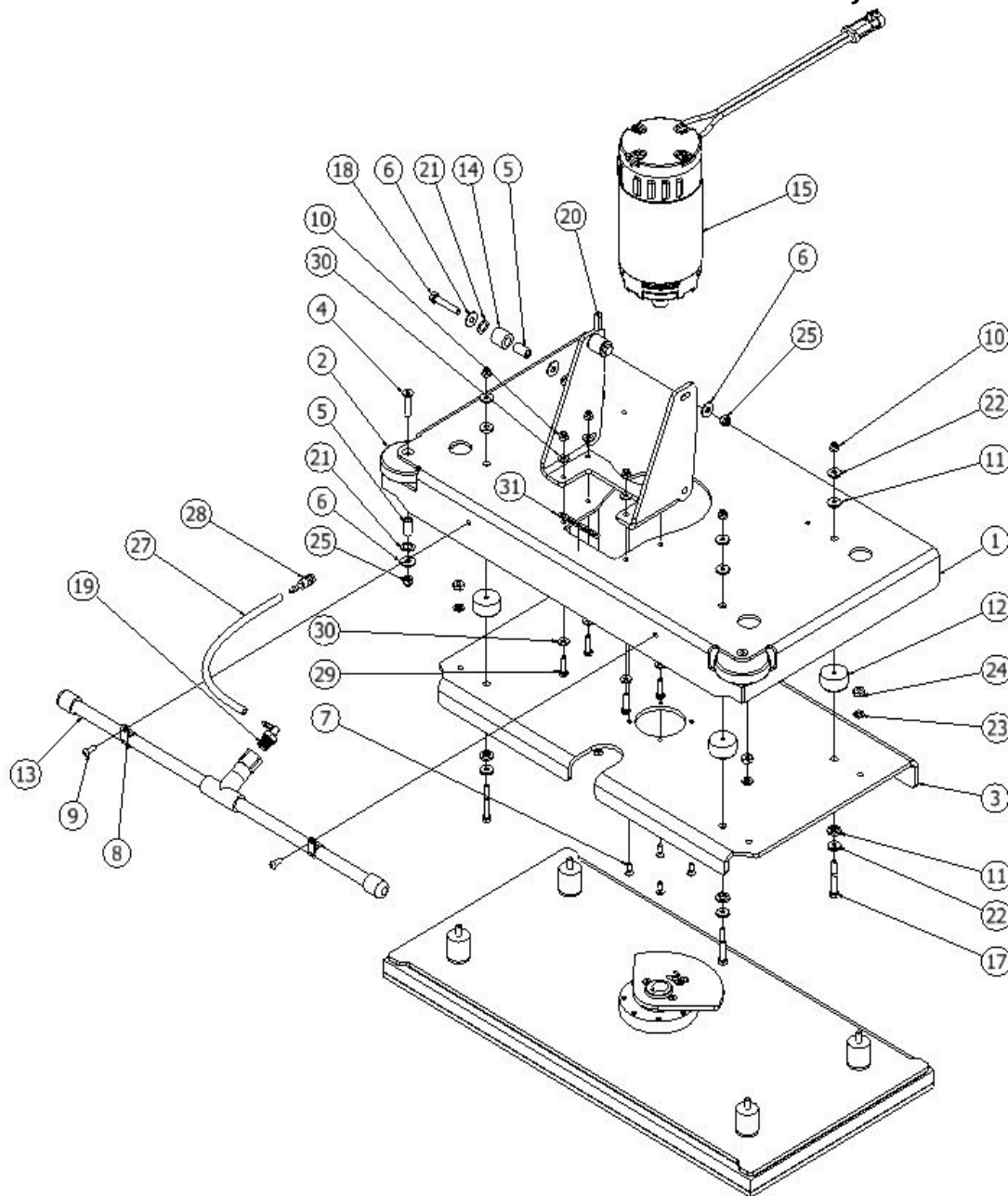
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	859703	WHEEL, GUIDE
2	2	915008	KEY, SQUARE, 5MM X 5 X 40MM
3	3	858203	SPACER, WHEEL, GUIDE
4	1	875021	KIT SHROUD S32 REPLACEMENT (ITEMS 4 - 8)
5	1	872306	SHROUD, HEAD, 32INCH
6	1	878502	SKIRT, BRISTLE
7	4	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
8	4	920665	NUT, NYLOCK, 1/4-20, SS
9	20	W104D	WASHER, FLAT, .25
10	2	962466	SCREW, HEX, M8-1.25 X 25, SS, PATCH
11	7	W243D	WASHER, FLAT, 5/16, SS
12	2	980094	WASHER, SPLIT LOCK, .31, SS
13	1	853803	GUIDE, DRIVER
14	2	853804	GUIDE, PAD, PLASTIC
15	2	854302	HUB, DRIVER, BRUSH
16	2	857501	ROLLER, PLASTIC
17	6	962274	SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH
18	2	962270	SCREW, HEX, 5/16-18X1.75, SS
19	1	962266	SCREW, FLAT, SOCKET, .31-18 X 1.5, SS
20	3	920012	NUT, NYLOCK, 5/16-18, ZINC
21	2	875203	MOTOR GEAR BRUSH MRP15 SERVICE
22	1	870804	BRACKET, SUPPORT, HEAD
23	1	850906	BRUSH CARBON KIT 4 PC 855204 & 875201
24	4	871101	BUSHING, FLANGE, .50IN
25	4	962465	SCREW, SHOULDER, .50 X .50
26	2	873301	FITTING, TEE, .25INCH
27	2	876604	PLATE, MOUNTING, GIMBLE
28	2	980107	WASHER, FLAT, .31ID, 1.0OD, .12THK, SS
29	4	920035	NUT, NYLOCK, .38-16, SS
30	4	962221	SCREW, HEX, .25-20 X 1.0, SS
31	12	980002	WASHER, LOCK, SPLIT, .25
32	4	920037	NUT, THIN JAM, 1/4-20, ZINC
33	2	870903	BRUSH, POLY, 16 INCH
33	2	870905	BRUSH, NYLON, 16 INCH
33	2	870907	BRUSH, GRIT, 16 INCH
33	2	875910	DRIVER, PAD, 16 INCH
37	1	876603	PLATE, MTG, 32INCH
38	1	204179 - 17.2"	TUBING, 1/4"
39	1	204179 - 7.0"	TUBING, 1/4"
40	1	204179 - 6.5"	TUBING, 1/4"
41	4	875603	BUMPER, RUBBER, WITH STUD
42	8	964448	SCREW, HEX, M6 X 16, SS, PATCH
43	2	870818	BRACKET, RETAINING, SEAL
44	2	224130 - 1.75"	TUBING, 1/2"
45	1	873308	FITTING, TEE, 0.50 INCH
46	2	853301	FITTING, REDUCER, BM08, BM04
47	1	224130 - 20.0"	TUBING, 1/2"
48	4	920011	NUT, NYLOCK, 1/4-20, ZINC
49	1	873802	GUIDE, DRIVER, RH
50	1	980093	WASHER, WAVE, .50INCH
51	2	857009	PLUNGER BALL PRESS-IN

HEAD ASSEMBLY, LOWER, S-28 ORBITAL



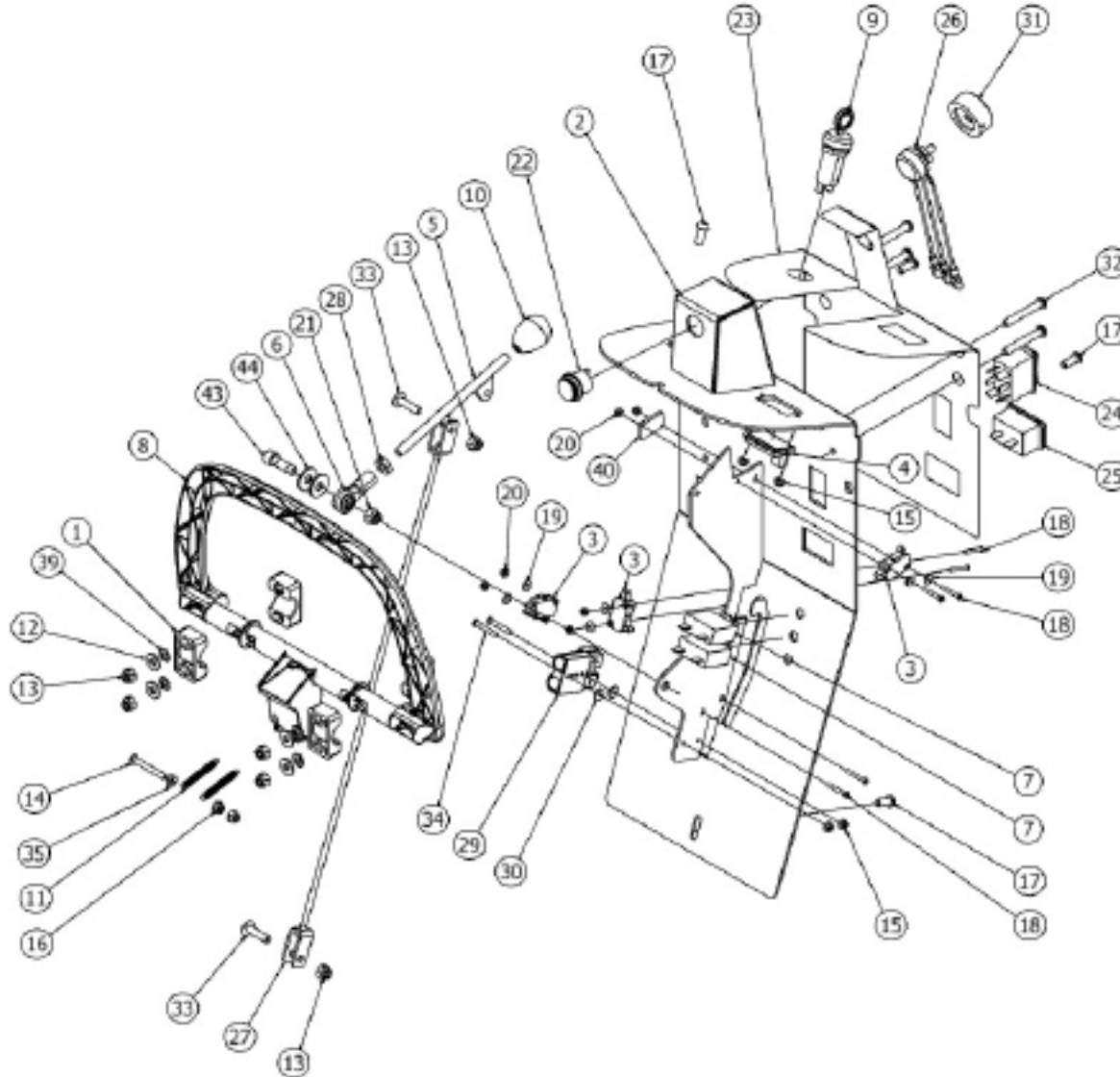
PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	1	875009	KIT, PLATE, REPL, ORBIT	
2	1		PLATE, ORBITAL, 28 INCH	
3	1		PAD, MIGHTYLOK ADH, 14X28	
4	1	875010	KIT, BEARING, REPL, ORBIT	
5	1		COLLAR, SHAFT, ECCENTRIC	
6	1		RING, RETAINER, BEARING	
7	1		PLATE, RETAINING, BEARING	
8	1		BEARING, 40MM, SEALED	
9	4	962274	SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH	
10	1	876608	PLATE, BALANCE, 28 INCH	
11	4	855604	MOUNT, ISOLATOR, .31THD	
12	12	962278	SCREW, SOCKET, FLT, .31-18X.88, SS, PATCH	
13	4	980108	WASHER, FLAT, .31ID, 1.25OD, .12THK, SS	
14	1	875801	O-RING, EPDM, 233	
15	1	964447	SCREW, FLT, M8 X 16, SS	
	1	545909	PAD GREEN TURF 14X28	
	1	875903	PAD MIGHTYLOK ADH 14X28	
	1	875904	PAD SPP 14X28 10/CASE	
	1	875905	PAD RED 14X28INCH 10/CASE	
	1	875921	PAD WHITE 14X28 10/CASE	
	1	875923	PAD BLACK 14X28 10/CASE	
	1	545905	PAD VELCRO 28 INCH ORBITAL(2 pcs)	

HEAD ASSEMBLY, UPPER, S-28 ORBITAL



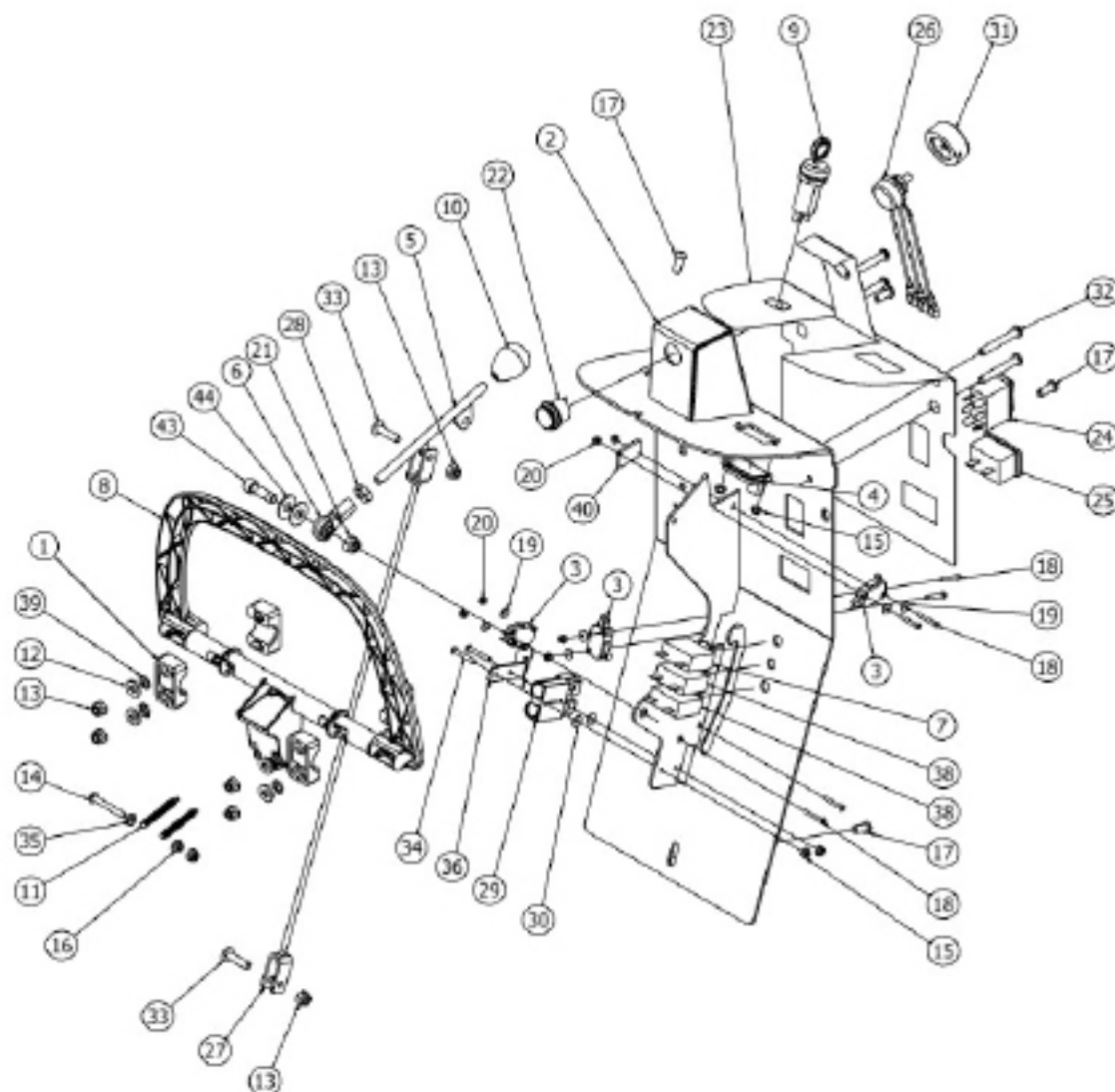
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	870812	BRACKET, MTG, HEAD, ORBITAL
2	2	859703	WHEEL, GUIDE
3	1	876609	PLATE, MOUNTING, MOTOR
4	2	962266	SCREW, FLAT, SOCKET, .31-18 X 1.5, SS
5	4	858203	SPACER, WHEEL, GUIDE
6	8	W243D	WASHER, FLAT, 5/16, SS
7	4	964009	SCREW, SCK, FLT, M6-1 X 20, SS, PATCH
8	2	852003	CLAMP, P-SHAPED, .62 DIA
9	2	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
10	10	920665	NUT, NYLOCK, 1/4-20, SS
11	8	851101	BUSHING, RUBBER
12	4	858205	SPACER, RUBBER
13	1	879001	TUBE ASSY, WATER, PVC
14	2	857501	ROLLER, PLASTIC
15	1	875205	MOTOR, 24V, 2200 RPM, .75HP
16	1	850906	BRUSH CARBON KIT 4 PC 855204 & 875201
17	4	W117D	SCREW, HEX, .25-20 X 2.0, SS
18	2	962270	SCREW, HEX, 5/16-18X1.75,SS
19	1	853307	FITTING, ELBOW, PM06, BM04
20	1	915006	KEY, 8MM X 7MM X 28MM
21	4	980093	WASHER, WAVE, .50INCH
22	8	980104	WASHER, RUBBER
23	4	980094	WASHER, SPLIT LOCK, .31, SS
24	4	W405D	NUT, .31-18, JAM, SS
25	4	920012	NUT, NYLOCK, 5/16-18, ZINC
26	1	870813	BRACKET, SUPPORT, HEAD
27	1	204179	TUBING, 1/4"
28	1	853301	FITTING, REDUCER, BM08, BM04
29	4	962221	SCREW, HEX, .25-20 X 1.0, SS
30	8	W104D	WASHER, FLAT, .25
31	1	855116	LABEL PATENT ORBITAL HEAD

CONTROLS ASSEMBLY, S-24



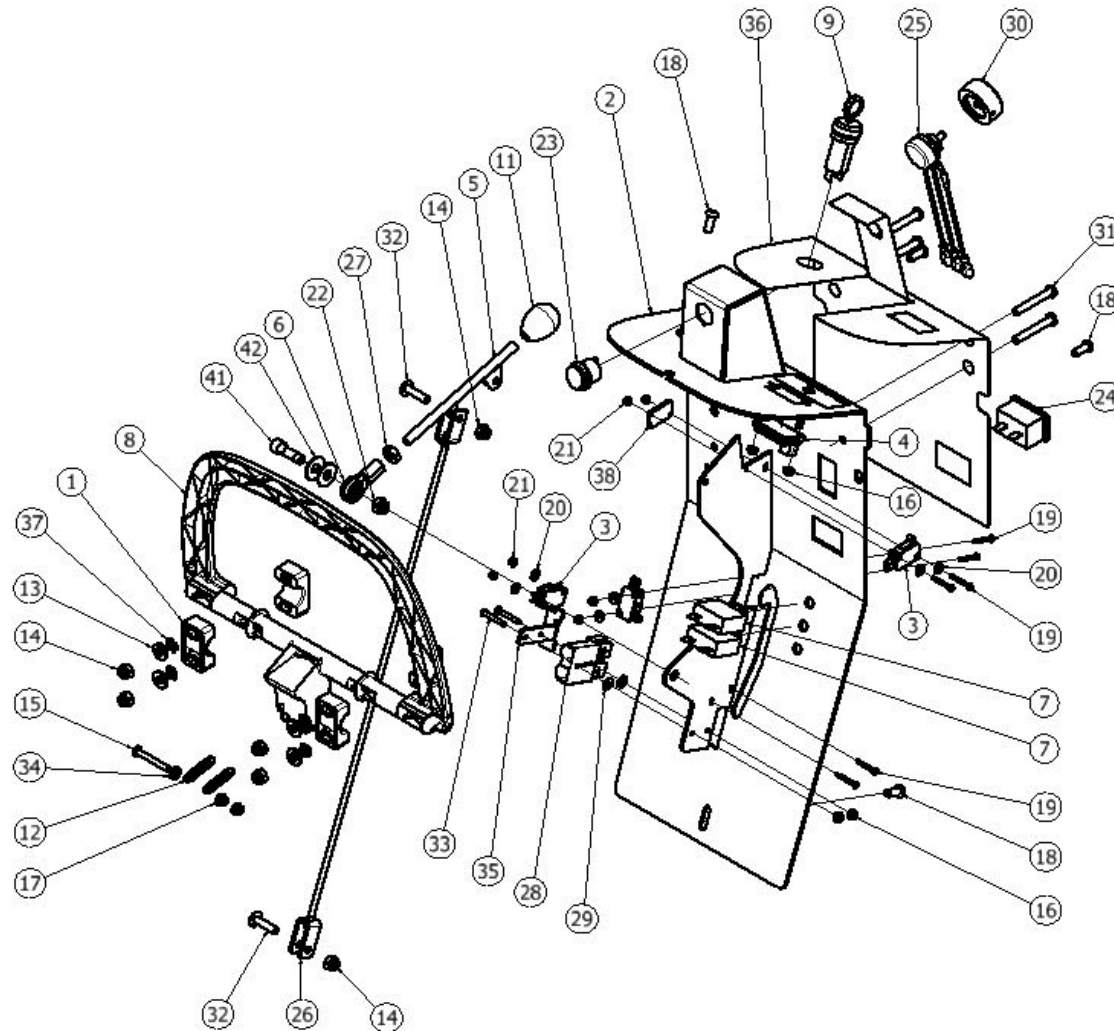
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	855601	MOUNT, BEARING, PLASTIC
2	1	877101	PANEL, CONTROLS
3	3	911646	SWITCH, SNAP, WITH ROLLER
4	1	911621	METER, BATTERY
5	1	855106	LEVER, LIFT, SQUEEGEE
6	1	902050	BEARING, ROD END, .31-24
7	1	911622	CIRCUIT BREAKER, 30 AMPS
8	1	851301	BAIL, MOLDED
9	1	911647	SWITCH, KEY
9.1	1	855012	KEY REPLMNT SCRUB 2-SET FOR 911647
10	1	855004	KNOB, OVAL, .31-18
11	2	858302	SPRING, EXTENSION
12	4	W1040	WASHER, FLAT, .25
13	6	920011	NUT, NYLOCK, 1/4-20, ZINC
14	1	962146	SCREW, PAN, #10-32 X 1.5, FULL, ZINC
15	4	920034	NUT, NYLOCK, #6-32, SS
16	2	920666	NUT, NYLOCK, #10-32, SS
17	4	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
18	6	962273	SCREW, PAN, #4-40 X .88, ZINC
19	6	980682	WASHER, FLAT, #4, ZINC
20	6	W3850	NUT, NYLOCK, #4-40, ZINC
21	1	920012	NUT, NYLOCK, 5/16-18, ZINC
22	1	911653	SWITCH, ROUND, ON - MOM
23	1	875102	LABEL, CONTROL, TRACTION
24	1	911649	SWITCH, ROCKER, AUTO ON-OFF
25	1	911661	METER, HOUR, DIGITAL
26	1	911664	POTENTIOMETER ASSY, SK
27	1	852401	CABLE, LIFT, CLEVIS
28	1	920038	NUT, HEX, .31-24, SS
29	1	911645	HARNES, CHARGER, POST
30	2	980033	WASHER, FLAT, #6, SS
31	1	855001	KNOB, ADJUST, .25 BORE
32	4	962264	SCREW, BUTTON, SOCKET, .25 X 1.75, SS
33	2	962455	SCREW, TRUSS, .25-20 X 1.0
34	2	W1320	SCREW, PAN, #6-32 X 1.0, ZINC
35	1	920013	NUT, #10-32, ZINC
36	1	850806	BRACKET, PLUG
39	4	980029	WASHER, LOCK, STAR, EXTERNAL
40	1	856608	PLATE, MOUNTING
41	1	911674	HARNES, POWER, 24 INCH
42	1	911677	HARNES, SIGNAL, 24 INCH
43	1	962279	SCREW, SOCKET CAP, .31X1.0, SS
44	2	W2430	WASHER, FLAT, 5/16, SS

CONTROLS ASSEMBLY, S-28 & S-32 DISK



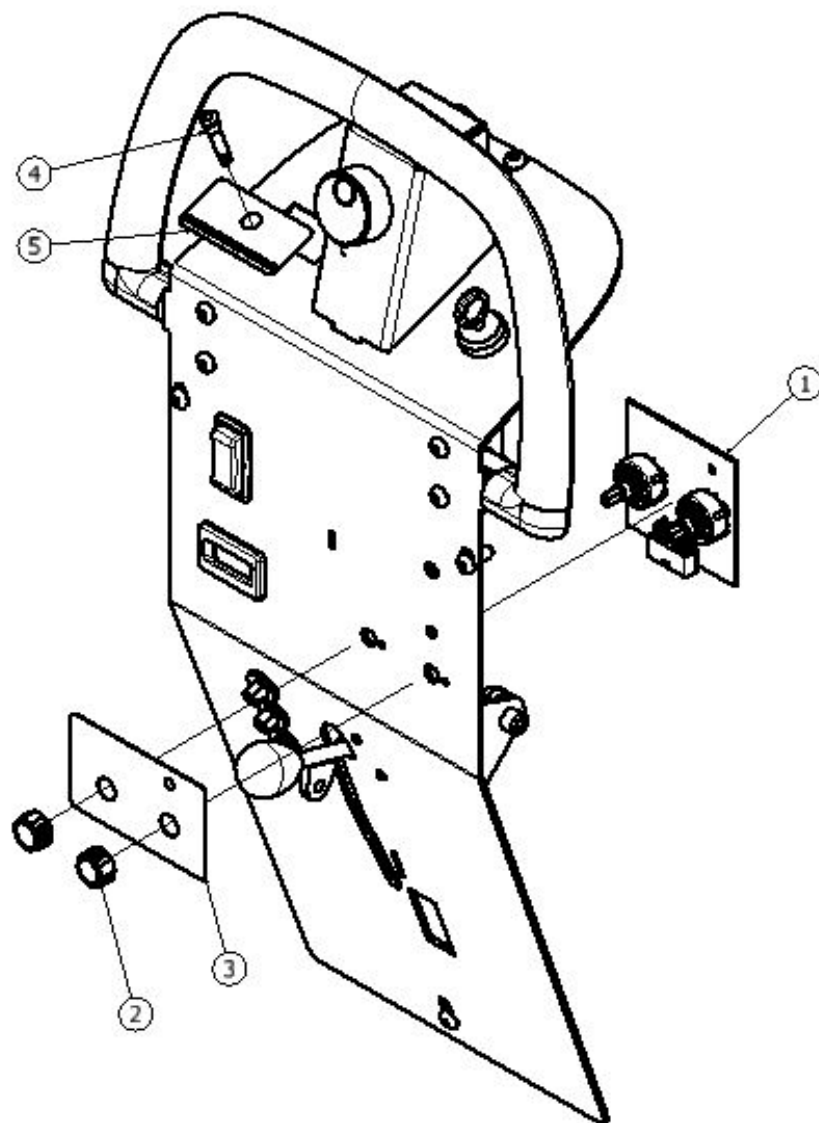
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	855601	MOUNT, BEARING, PLASTIC
2	1	827101	PANEL, CONTROLS
3	3	911646	SWITCH, SNAP, WITH ROLLER
4	1	911621	METER, BATTERY
5	1	855106	LEVER, LIFT, SQUEEGEE
6	1	902050	BEARING, ROD END, .31-24
7	1	911622	CIRCUIT BREAKER, 30 AMPS
8	1	851301	BAIL, MOLDED
9	1	911647	SWITCH, KEY
9.1	1	855012	KEY REPLMNT SCRUB 2-SET FOR 911647
10	1	855004	KNOB, OVAL, .31-18
11	2	858302	SPRING, EXTENSION
12	4	W1040	WASHER, FLAT, .25
13	6	920011	NUT, NYLOCK, 1/4-20, ZINC
14	1	962146	SCREW, PAN, #10-32 X 1.5, FULL, ZINC
15	4	920034	NUT, NYLOCK, #6-32, SS
16	2	920666	NUT, NYLOCK, #10-32, SS
17	4	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
18	6	962273	SCREW, PAN, #4-40 X .88, ZINC
19	6	960582	WASHER, FLAT, #4, ZINC
20	6	W385D	NUT, NYLOCK, #4-40, ZINC
21	1	920012	NUT, NYLOCK, 5/16-18, ZINC
22	1	911653	SWITCH, ROUND, ON - MOM
23	1	875102	LABEL, CONTROL, TRACTION
24	1	911649	SWITCH, ROCKER, AUTO ON-OFF
25	1	911661	METER, HOUR, DIGITAL
26	1	911664	POTENTIOMETER ASSY, 5K
27	1	852401	CABLE, LIFT, CLEVIS
28	1	920038	NUT, HEX, .31-24, SS
29	1	911645	HARNES, CHARGER, POST
30	2	960033	WASHER, FLAT, #6, SS
31	1	855001	KNOB, ADJUST, .25 BORE
32	4	962264	SCREW, BUTTON, SOCKET, .25 X 1.75, SS
33	2	962455	SCREW, TRUSS, .25-20 X 1.0
34	2	W132D	SCREW, PAN, #6-32 X 1.0, ZINC
35	1	920013	NUT, #10-32, ZINC
36	1	850806	BRACKET, PLUG
37	1	875101	LABEL, CONTROL, TRACTION
38	2	911681	BREAKER, CIRCUIT, 35 AMPS
39	4	960029	WASHER, LOCK, STAR, EXTERNAL
40	1	856608	PLATE, MOUNTING
41	1	911675	HARNES, POWER, 28 & 32 INCH
42	1	911678	HARNES, SIGNAL, 28 & 32 INCH
43	1	962279	SCREW, SOCKET CAP, .31X1.0, SS
44	2	W243D	WASHER, FLAT, 5/16, SS

CONTROLS ASSEMBLY, S-28 ORBITAL



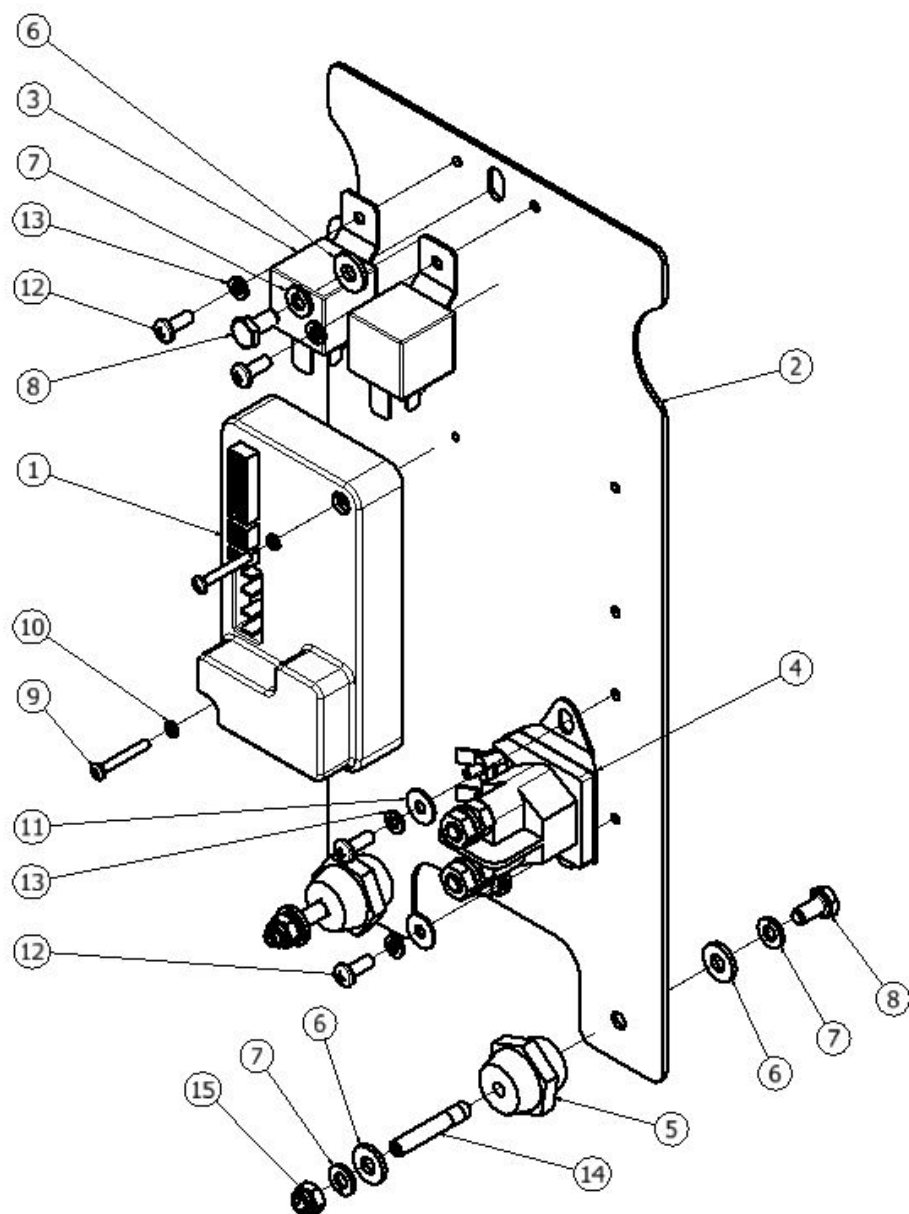
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	855601	MOUNT, BEARING, PLASTIC
2	1	877101	PANEL, CONTROLS
3	3	911646	SWITCH, SNAP, WITH ROLLER
4	1	911621	METER, BATTERY
5	1	855106	LEVER, LIFT, SQUEEGEE
6	1	902050	BEARING, ROD END, .31-24
7	1	911622	CIRCUIT BREAKER, 30 AMPS
8	1	851301	BAIL, MOLDED
9	1	911647	SWITCH, KEY
	1	855012	KEY REPLMNT SCRUB 2-SET FOR 911647
11	1	855004	KNOB, OVAL, .31-18
12	2	858302	SPRING, EXTENSION
13	4	W104D	WASHER, FLAT, .25
14	6	920011	NUT, NYLOCK, 1/4-20, ZINC
15	1	962146	SCREW, PAN, #10-32 X 1.5, FULL, ZINC
16	4	920034	NUT, NYLOCK, #6-32, SS
17	2	920666	NUT, NYLOCK, #10-32, SS
18	4	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
19	6	962273	SCREW, PAN, #4-40 X .88, ZINC
20	6	980682	WASHER, FLAT, #4, ZINC
21	6	W385D	NUT, NYLOCK, #4-40, ZINC
22	1	920012	NUT, NYLOCK, 5/16-18, ZINC
23	1	911653	SWITCH, ROUND, ON - MOM
24	1	911661	METER, HOUR, DIGITAL
25	1	911664	POTENTIOMETER ASSY, 5K
26	1	852401	CABLE, LIFT, CLEVIS
27	1	920038	NUT, HEX, .31-24, SS
28	1	911645	HARNESS, CHARGER, POST
29	2	980033	WASHER, FLAT, #6, SS
30	1	855001	KNOB, ADJUST, .25 BORE
31	4	962264	SCREW, BUTTON, SOCKET, .25 X 1.75, SS
32	2	962455	SCREW, TRUSS, .25-20 X 1.0
33	2	W132D	SCREW, PAN, #6-32 X 1.0, ZINC
34	1	920013	NUT, #10-32, ZINC
35	1	850806	BRACKET, PLUG
36	1	875101	LABEL, CONTROL, TRACTION
37	4	980029	WASHER, LOCK, STAR, EXTERNAL
38	1	856608	PLATE, MOUNTING
39	1	911676	HARNESS, POWER, 28 ORBITAL
40	1	911679	HARNESS, SIGNAL, 28 ORBITAL
41	1	962279	SCREW, SOCKET CAP, .31X1.0, SS
42	2	W243D	WASHER, FLAT, 5/16, SS
43	1	855115	LABEL BATTERYSHIELD WITH QR CODE

CONTROLS ASSEMBLY, BATTERYSHIELD® & CHEMICAL INJECTION SYSTEM (OPTIONAL)



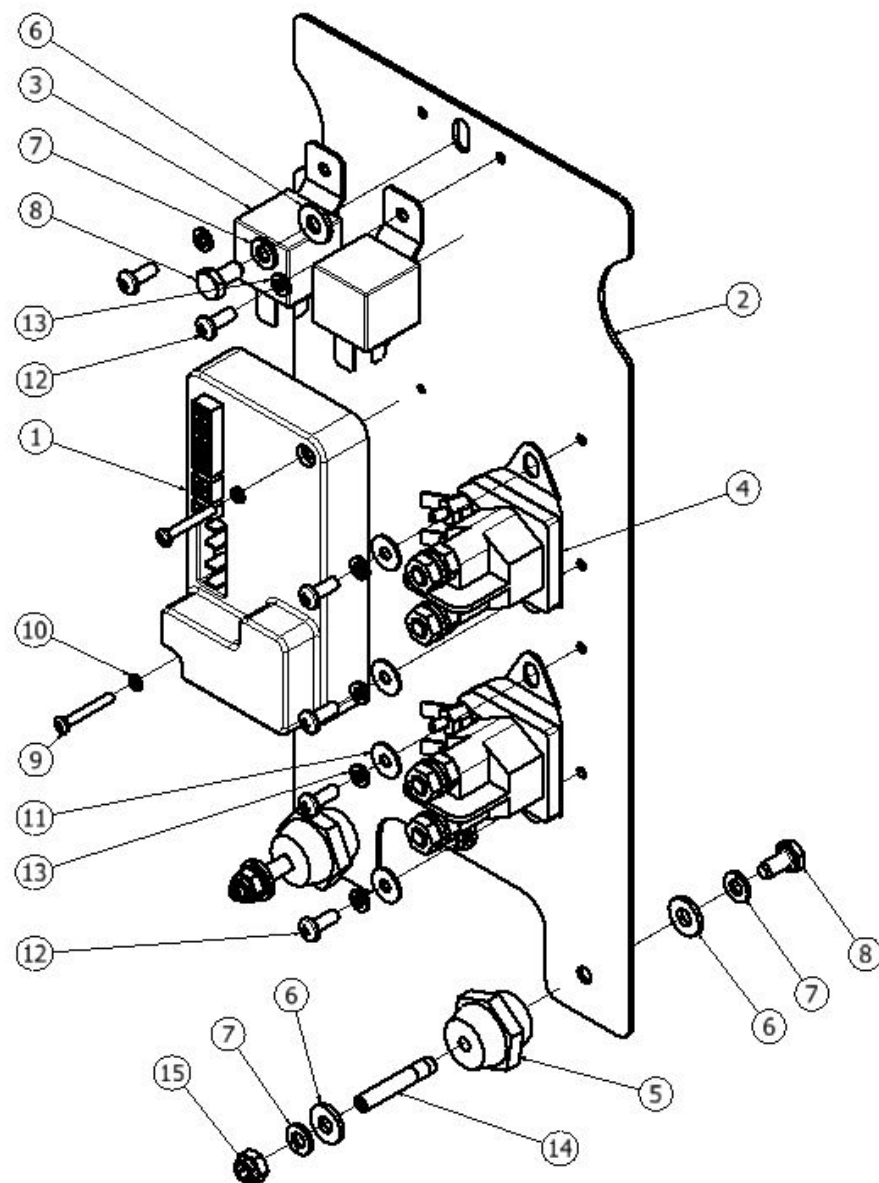
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	872401	CONTROLLER, DISPENSING
2	2	875001	KNOB, .25 BORE, SMALL
3	1	875104	LABEL, CONTROL, SOLUTION
4	1	875107	LED, RED, 24VDC
5	1	855115	LABEL BATTERYSHIELD WITH QR CODE
6	1	911684	HARNESS, BATTERYSHIELD
7	1	911680	HARNESS, SOLUTION CONTROL
8	1	855012	KEY REPLMNT SCRUB 2-SET FOR 911647

ELECTRONICS ASSEMBLY, S-24



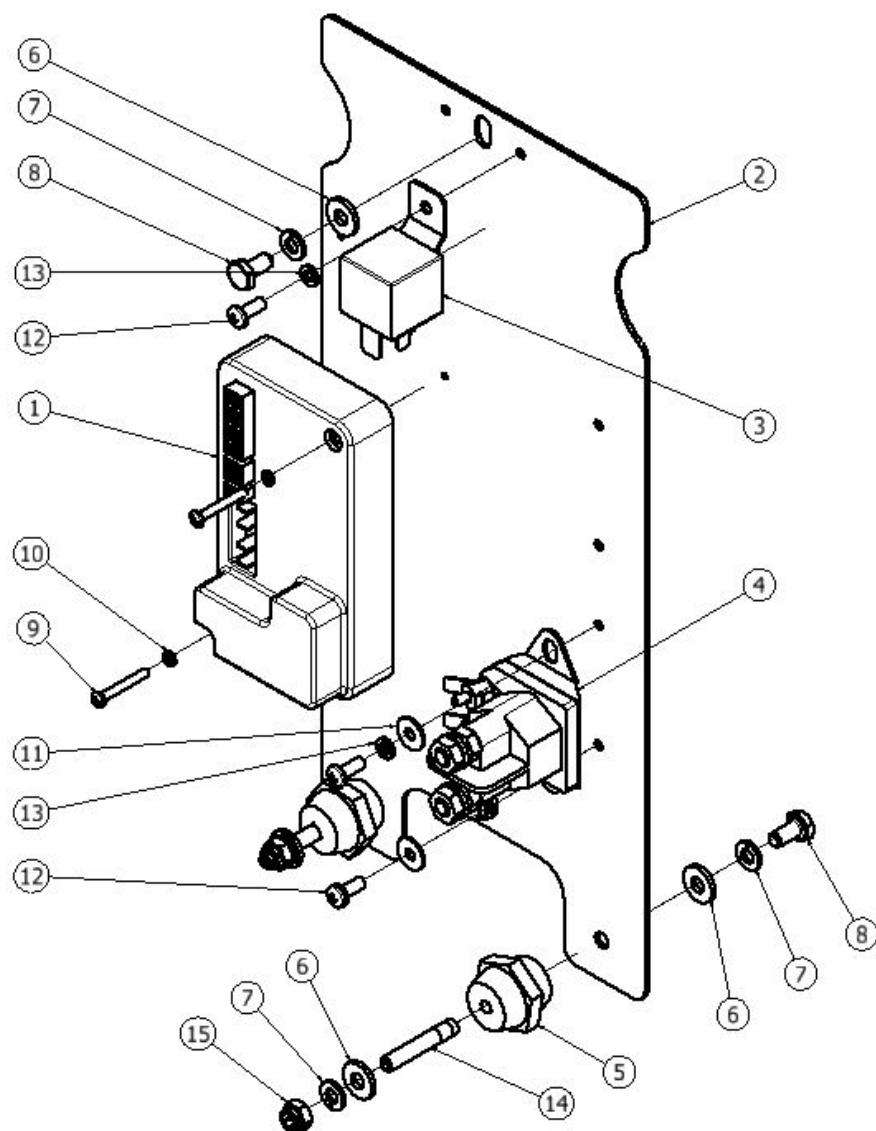
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	879101	CONTROLLER, I-DRIVE, MID
2	1	879801	PANEL, ELECTRONICS
3	2	912402	CONTACTOR, 24VDC, 70A
4	1	912401	CONTACTOR, 24V, 100A
5	2	858501	STAND-OFF, INSULATED, .25-20
6	6	W104D	WASHER, FLAT, .25
7	6	980002	WASHER, LOCK, SPLIT, .25
8	4	W169D	SCREW, HEX, .25-20 X .50
9	2	W323D	SCREW, PAN, #6-32 X 1.0, ZINC
10	4	980025	WASHER, SPLIT LOCK, #6, ZINC
11	4	W401D	WASHER, FLAT, #10
12	6	962363	SCREW, PAN, #10-32 X .50, SS
13	6	980022	WASHER, LOCK, SPLIT, #10
14	2	962276	SCREW, SET, .25-20 X 1.25, ZINC, PATCH
15	2	924083	NUT .25-20 FLEX LOCK ZINC

ELECTRONICS ASSEMBLY, S-28 & S-32 DISK



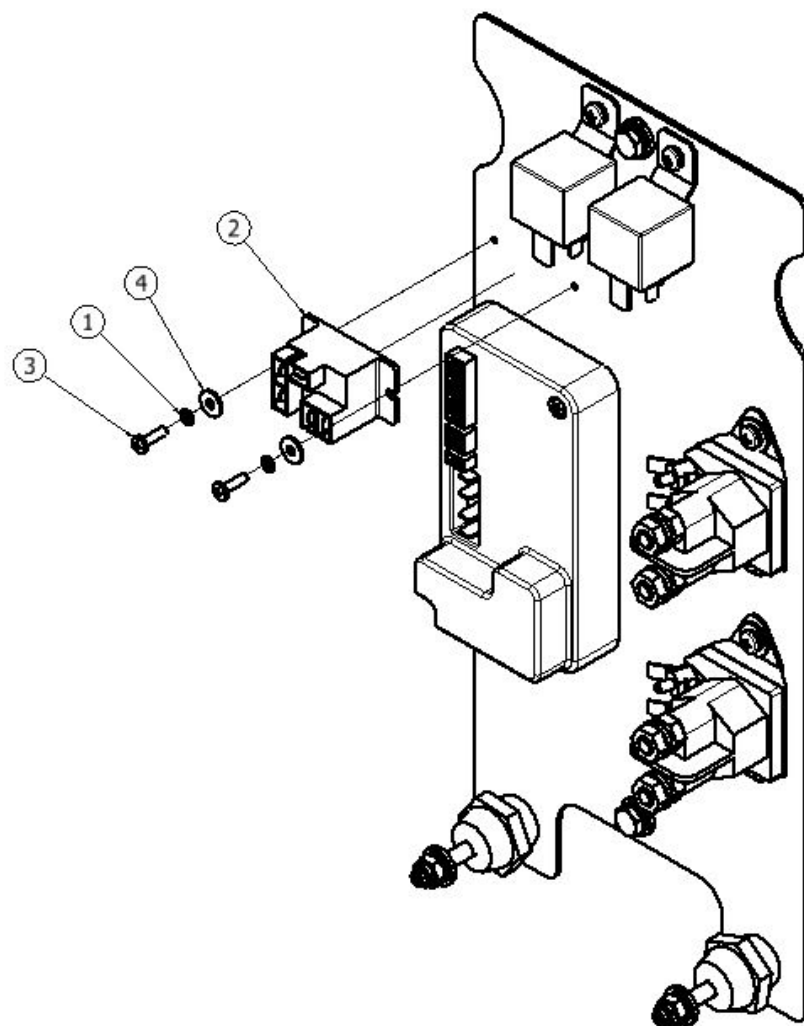
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	879101	CONTROLLER, I-DRIVE, MID
2	1	879801	PANEL, ELECTRONICS
3	2	912402	CONTACTOR, 24VDC, 70A
4	2	912401	CONTACTOR, 24V, 100A
5	2	858501	STAND-OFF, INSULATED, .25-20
6	6	W104D	WASHER, FLAT, .25
7	6	980002	WASHER, LOCK, SPLIT, .25
8	4	W169D	SCREW, HEX, .25-20 X .50
9	2	W323D	SCREW, PAN, #6-32 X 1.0, ZINC
10	4	980025	WASHER, SPLIT LOCK, #6, ZINC
11	4	W401D	WASHER, FLAT, #10
12	6	962363	SCREW, PAN, #10-32 X .50, SS
13	6	980022	WASHER, LOCK, SPLIT, #10
14	2	962276	SCREW, SET, .25-20 X 1.25, ZINC, PATCH
15	2	924083	NUT .25-20 FLEX LOCK ZINC

ELECTRONICS ASSEMBLY, S-28 ORBITAL



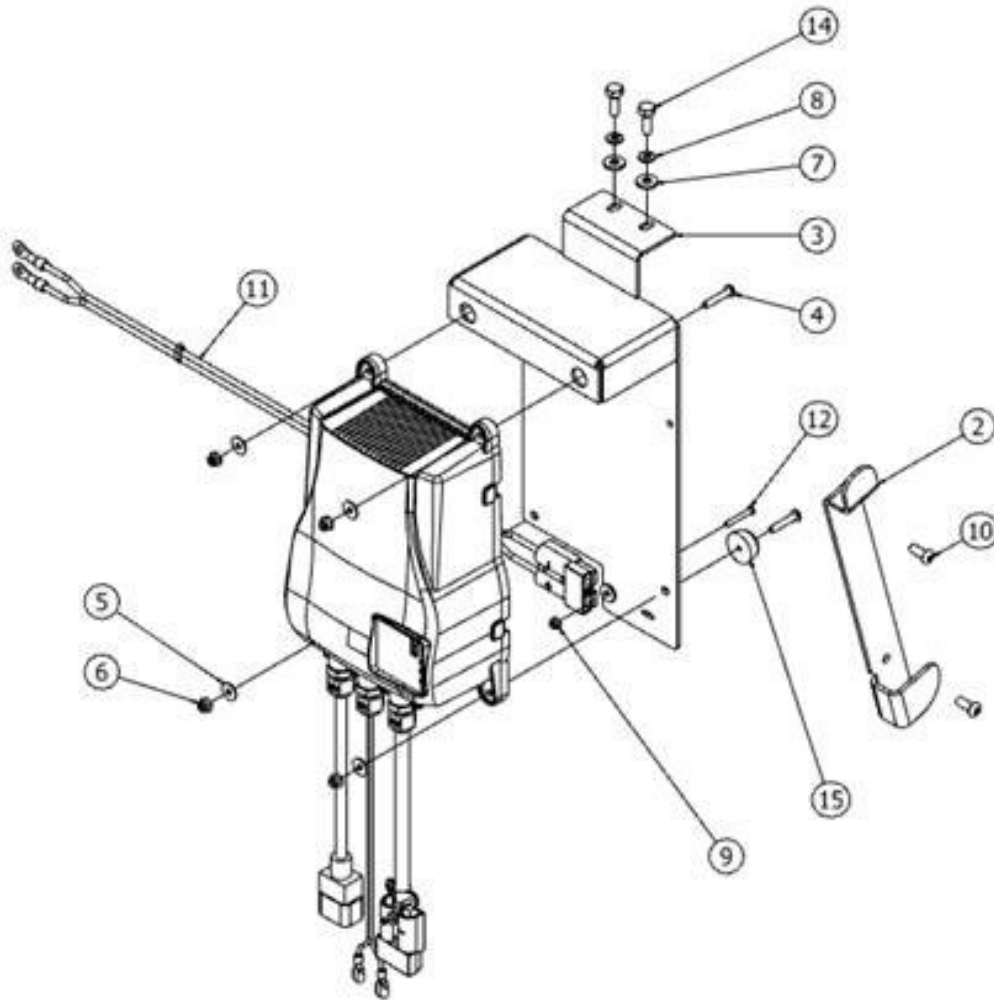
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	879101	CONTROLLER, I-DRIVE, MID
2	1	879801	PANEL, ELECTRONICS
3	2	912402	CONTACTOR, 24VDC, 70A
4	1	912401	CONTACTOR, 24V, 100A
5	2	858501	STAND-OFF, INSULATED, .25-20
6	6	W104D	WASHER, FLAT, .25
7	6	980002	WASHER, LOCK, SPLIT, .25
8	4	W169D	SCREW, HEX, .25-20 X .50
9	2	W323D	SCREW, PAN, #6-32 X 1.0, ZINC
10	4	980025	WASHER, SPLIT LOCK, #6, ZINC
11	4	W401D	WASHER, FLAT, #10
12	6	962363	SCREW, PAN, #10-32 X .50, SS
13	6	980022	WASHER, LOCK, SPLIT, #10
14	2	962276	SCREW, SET, .25-20 X 1.25, ZINC, PATCH
15	2	924083	NUT .25-20 FLEX LOCK ZINC

ELECTRONICS ASSEMBLY, BATTERYSHIELD™



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	980025	WASHER, SPLIT LOCK, #6, ZINC
2	1	911685	RELAY, 24VDC, BATTERYSHIELD
3	2	W315D	SCREW, PAN, #6-32 X .50, BLK
4	2	980033	WASHER, FLAT, #6, SS

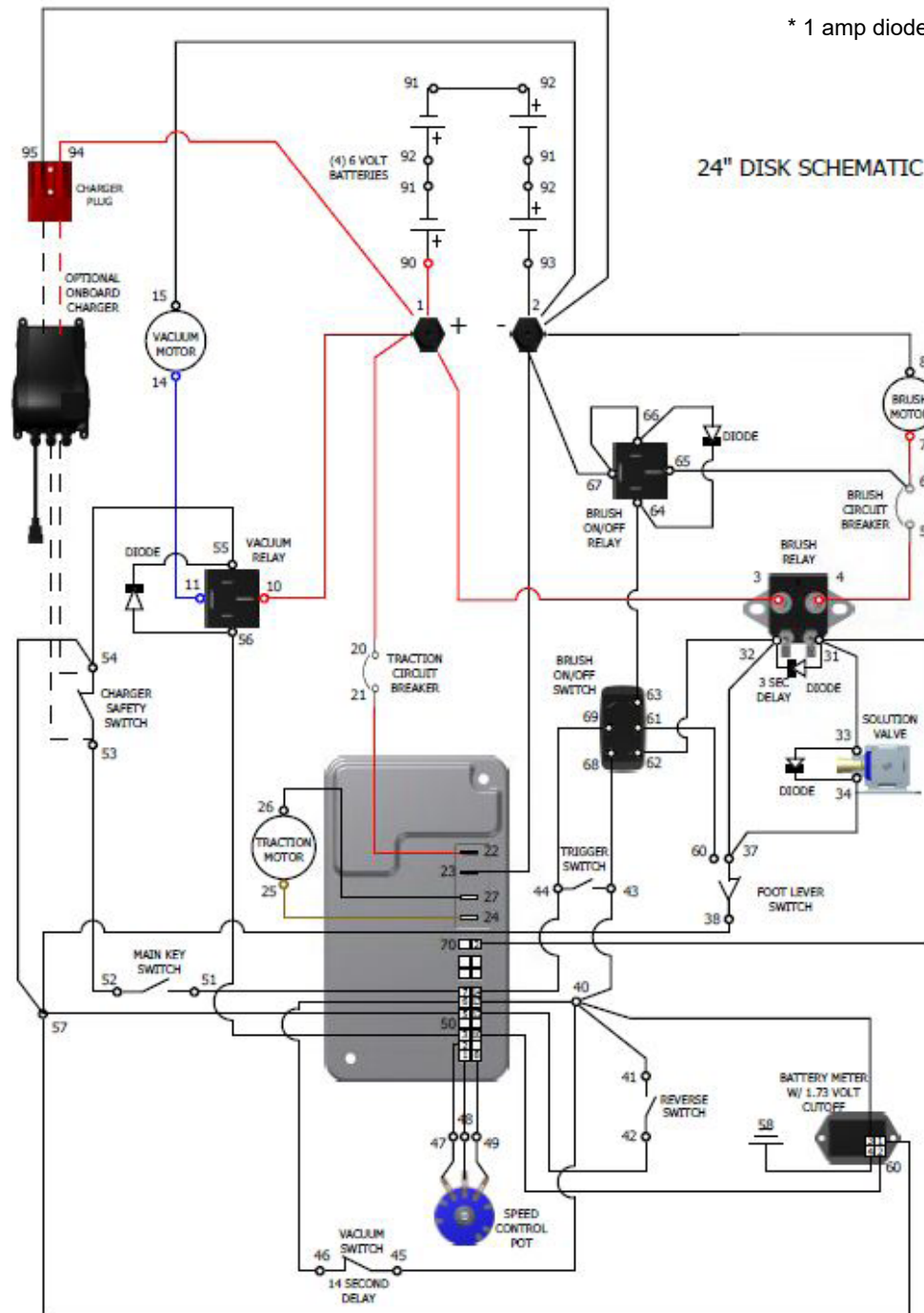
CHARGER ASSEMBLY, ON-BOARD



PARTS LIST			
ITEM	QTY	PART NUMBE	DESCRIPTION
1	1	852407	CHARGER, 24V, ONBRD, CULUS
2	1	850805	BRACKET, MTG, CORD
3	1	870817	BRACKET, MTG, CHARGER
4	4	962186	SCREW, PAN, #10-32 X 1.0, SS
5	6	W401D	WASHER, FLAT, #10
6	4	920666	NUT, NYLOCK, #10-32, SS
7	2	W104D	WASHER, FLAT, .25
8	2	980002	WASHER, LOCK, SPLIT, .25
9	1	920034	NUT, NYLOCK, #6-32, SS
10	2	962263	SCREW, BUTT, SOCK, .25-20X.62, SS BO
11	1	911645	HARNESS, CHARGER, POST
12	1	W323D	SCREW, PAN, #6-32 X 1.0, ZINC
13	1	908128	CORD, 3M, 3X18SJT, 5-15, IEC C-13
14	2	W189D	SCREW, HEX, 1/4-20 X .75, SS, PATCH
15	2	501210	BUMPER

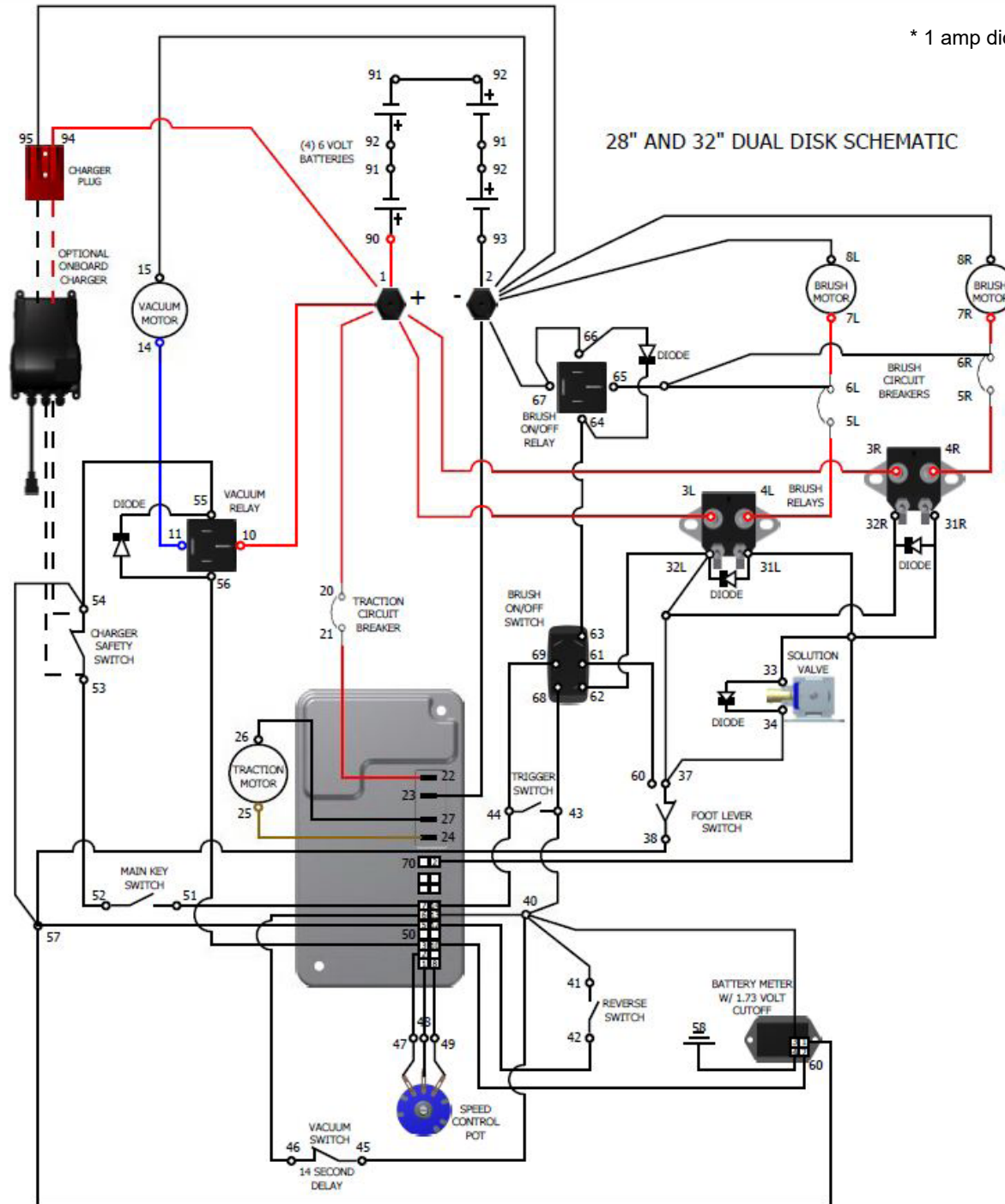
WIRING DIAGRAM, S-24

* 1 amp diode part #: 7250008



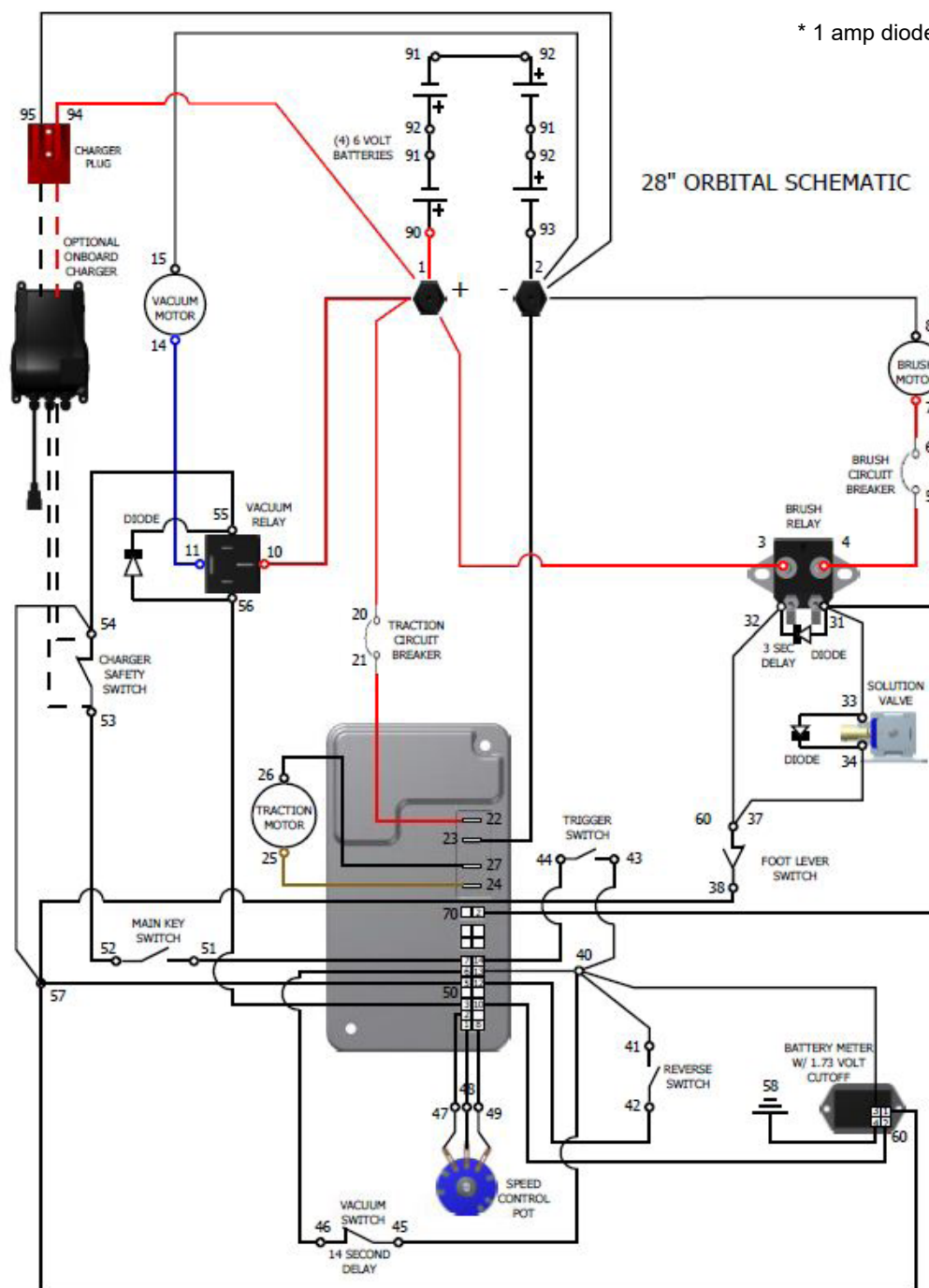
WIRING DIAGRAM, S-28 & S-32 DISK

* 1 amp diode part #: 7250008

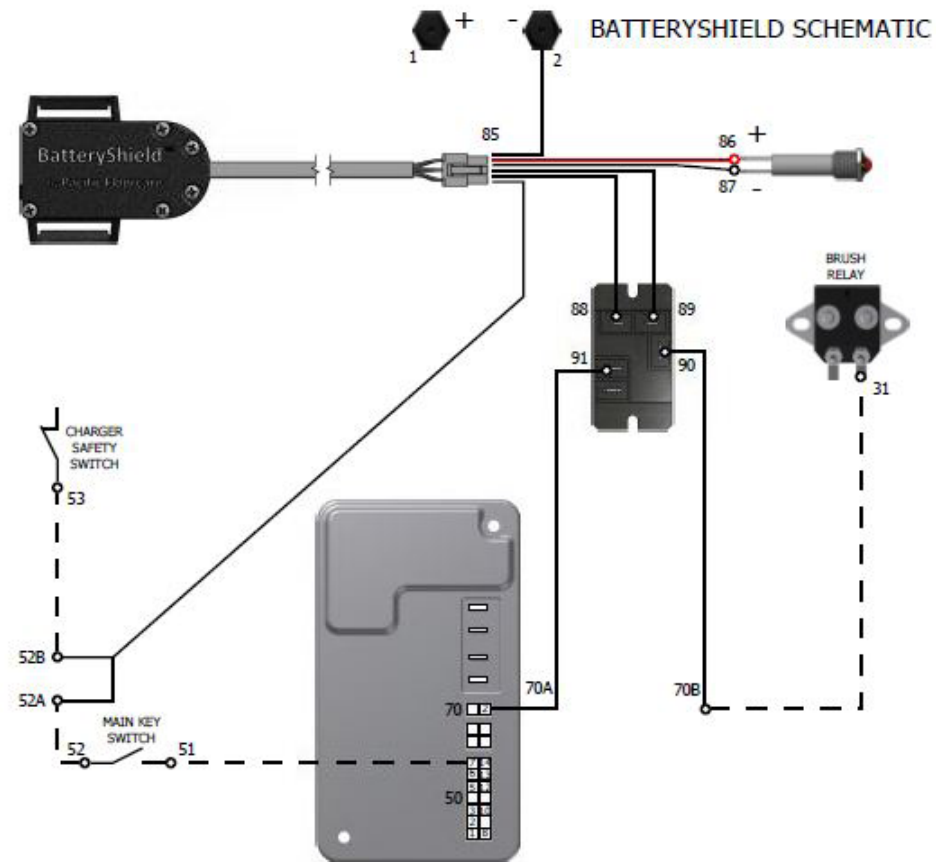


WIRING DIAGRAM, S-28 ORBITAL

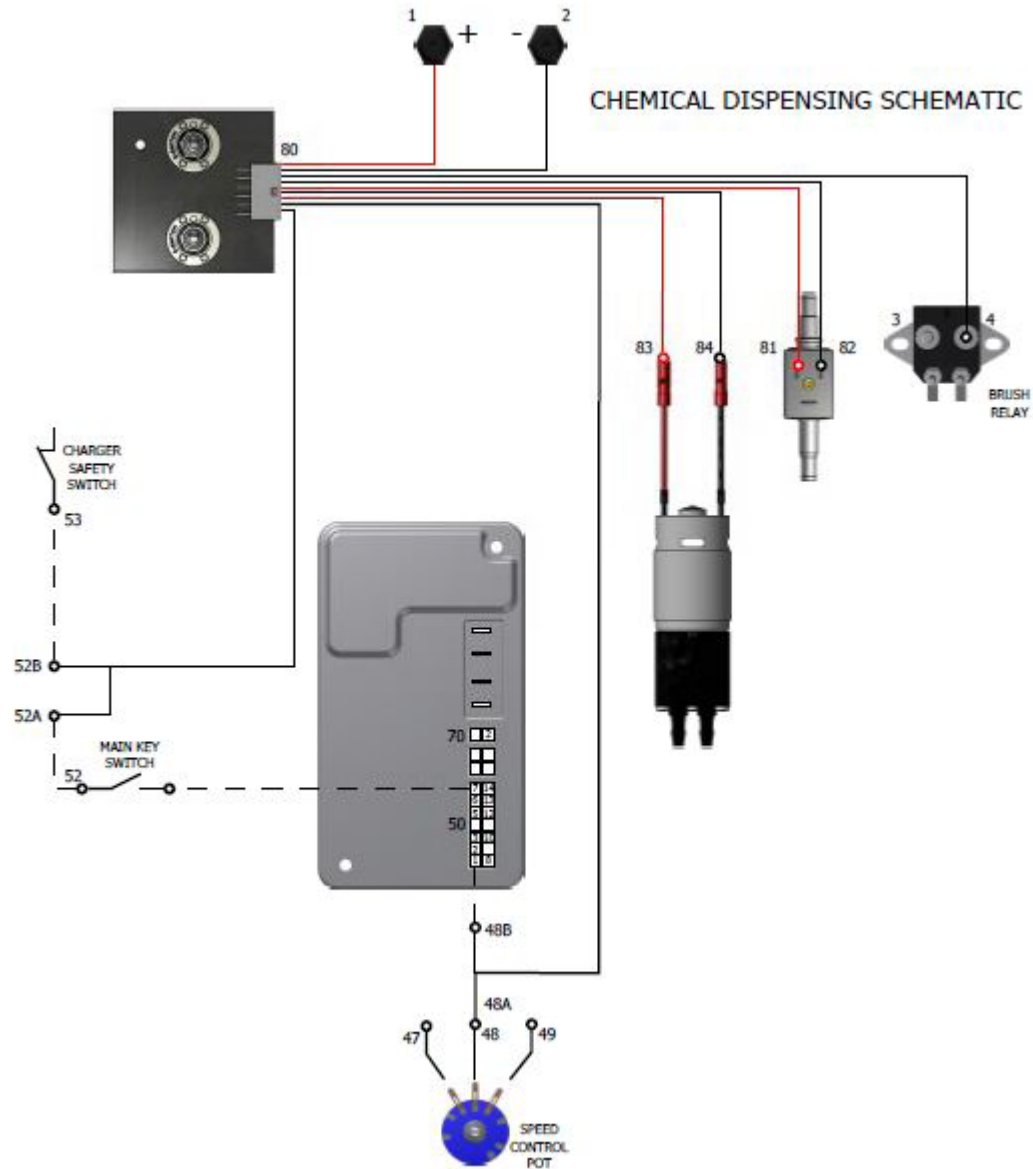
* 1 amp diode part #: 7250008



WIRING DIAGRAM, BATTERYSHIELD (OPTIONAL)



WIRING DIAGRAM, ON-BOARD CHEMICAL INJECTION SYSTEM (OPTIONAL)



WARRANTY POLICY

S-SERIES MID-SIZE AUTO SCRUBBERS

The Pacific Floorcare S-Series mid-size auto scrubbers have been manufactured, tested and inspected in accordance with specific engineering requirements. These machines are warranted to be free from defects in workmanship and materials for periods as follows from the date of purchase.

- Ten (10) Years - Rotationally molded components
- Three (3) Years - Parts (excluding wear items)
- Two (2) Years or 1,200 Hours - Isolators
- One (1) Year - Labor

Travel time for warranty repair is authorized for a period of ninety (90) days following the date of sale to the end user, with a maximum of three (3) hours per claim.

This warranty extends to the original user/purchaser and only when used, operated and maintained in accordance with Pacific Floorcare Operating and Maintenance instructions.

This warranty does not apply to certain wear parts and accessories of the machine such as carbon motor brushes, floor brushes or pad drivers, belts, hoses, squeegee blades, etc., nor does it apply to damage or failure caused by improper use, abuse or neglect. Warranty credit or replacement of return parts including motors, switches, etc., is subject to incoming inspection of those items.

To secure repair under this warranty, the following procedure should be taken:

1. After the expiration of the ninety (90) day travel time warranty period, the customer is responsible for warranty travel payment or the inoperative machine or warranted parts must be delivered to the authorized dealer with shipping and delivery charges prepaid. If unable to locate the Dealer, you may contact Pacific Floorcare at the address listed herein for the location of the nearest Pacific Floorcare repair center or agent or for other instructions pertaining to your warranty difficulty.
2. Upon compliance with the above warranty procedure, all warranted repairs will be completed at no additional charge or cost to the user.
3. Only Pacific Floorcare or its authorized dealers and agents may make no charge warranty repairs on this product. All others do so at their own risk.

This warranty limits Pacific Floorcare liability to the repair of the product and/or warranted parts replacement and does not include incidental or consequential damages arising from the use of a Pacific Floorcare machine whether defective or not.

BATTERY WARRANTY

In addition to the terms above, any original equipment Pacific Floorcare 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 Pacific Floorcare or Service Branch, with no charge to user, except transportation costs. After the 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 a twelve (12) month pro rata 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 maintenance is not performed regularly.

This warranty is in lieu of all other expressed or implied warranties and is extended to the original purchaser/user.



PACIFIC
FLOORCARE

PURPOSE BUILT.™

2259 S. SHERIDAN DRIVE
MUSKEGON, MICHIGAN 49442-6252
800-968-1332

FAX 800-863-9536