



PACIFIC[®]
F L O O R C A R E

S-24 / S-28 / S-32

22 GALLON MID-SIZE AUTOSCRUBBER



Thank you for purchasing a Pacific Floorcare product. Carefully inspect all components for freight damage. If such damage is discovered, file a “CONCEALED DAMAGE REPORT” immediately with the delivering carrier.

Read this manual carefully and keep it near the machine, protected from liquids and other damaging substances. Failure to follow the instructions may result in injury or damage to equipment and property.

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.

New manuals can be downloaded from: www.pacificfloorcare.com/manuals

22 GALLON AUTOSCRUBBER SPECIFICATIONS

| Features | Specifications | |
|--|---|---|
| Model: | S-24 (Disk) | S-28 (Orbital) |
| Solution Delivery System | | |
| Solution capacity: | 22 gal / 83 l | 22 gal / 83 l |
| Solution control: (Standard) | 0-.55 gpm / 0-2.1 lpm, Variable knob adjustment | 0-.55 gpm / 0-2.1 lpm, Variable knob adjustment |
| Solution control: (w/ Chemical Injection) | Low, Med & High flow settings (.10, .25 & .45 gpm / .38, .95 & 1.7 lpm) Speed Sensitive Flow or Constant Output Flow Control | Low, Med & High flow settings (.10, .25 & .45 gpm / .38, .95 & 1.7 lpm) Speed Sensitive Flow or Constant Output Flow Control |
| Scrubbing System | | |
| Cleaning path: | 24 in / 610 mm | 28 in / 711 mm |
| Pad/brush size: | (2) 12 in / 305 mm | (1) 28 x 14 in / 711 x 356 mm |
| Productivity (per hour)-Theoretical max: | 26,400 ft | 30,800 ft |
| Productivity (per hour)-Average coverage rate:* | 19,525 ft | 22,425 ft |
| Brush Drive System | | |
| Brush motor horsepower (each): | (1) 1 hp / 750 W | (1) 1 hp / 750 W |
| Brush rpm: | 360 rpm | 2,200 rpm |
| Brush/pad pressure: | 50, 100 & 140 lb / 23, 45 & 64 kg | 70, 110 & 160 lb / 32, 50 & 73 kg |
| Brush/pad attachment/removal: | Automatic on/off | Manual |
| Recovery System | | |
| Recovery tank accessibility: | Full clean out access | Full clean out access |
| Recovery tank capacity: | 25 gal / 95 l (3 gal / 11.4 l demisting chamber) | 25 gal / 95 l (3 gal / 11.4 l demisting chamber) |
| Vacuum motor: | .7 hp / 522 W, 3-stage | .7 hp / 522 W, 3-stage |
| Vac motor cfm / cmm: | 71 cfm / 2.0 cmm | 71 cfm / 2.0 cmm |
| Vac motor water-lift: | 71 in / 180 cm | 71 in / 180 cm |
| Standard / Narrow Aisle Squeegee width: | 35 / 30 in (89 / 76 cm) | 40 / 35 in (102 / 89 cm) |
| Drive System | | |
| Drive Type: | Transaxle Drive | Transaxle Drive |
| Motor horsepower: | .5 hp / 373 W | .5 hp / 373 W |
| Battery System | | |
| System voltage: | 24 V | 24 V |
| Battery amp hour rating: | (4) 6V: 260 AH (wet) / 250 AH (MF) | (4) 6V: 260 AH (wet) / 250 AH (MF) |
| Battery run time: | Up to 5.5 hours | Up to 5.5 hours |
| Charger description: | On-board (standard) Off-board (optional) | On-board (standard) Off-board (optional) |
| Machine specifications | | |
| Product length: | 54 in / 137 cm | 52 in / 132 cm |
| Product width (without squeegee): | 26 in / 66 cm | 28 in / 71 cm |
| Product height: | 44 in / 112 cm | 44 in / 112 cm |
| Product weight (with batteries): | 650 lb / 295 kg | 665 lb / 302 kg |
| Sound level (operator's ear): | 65 dBA | 63 dBA |
| Construction: | Rotationally molded polyethylene tanks, powder coated steel frame | Rotationally molded polyethylene tanks, powder coated steel frame |
| *Productivity calculations utilize key factors from ISSA 540 cleaning times handbook | | |
| Note: Specifications subject to change without notice | | |

22 GALLON AUTOSCRUBBER SPECIFICATIONS

| Features | Specifications | |
|--|---|---|
| Model: | S-28 (Disk) | S-32 (Disk) |
| Solution Delivery System | | |
| Solution capacity: | 22 gal / 83 l | 22 gal / 83 l |
| Solution control: (Standard) | 0-.55 gpm / 0-2.1 lpm, Variable knob adjustment | 0-.55 gpm / 0-2.1 lpm, Variable knob adjustment |
| Solution control: (w/ Chemical Injection) | Low, Med & High flow settings (.10, .25 & .45 gpm / .38, .95 & 1.7 lpm) Speed Sensitive Flow or Constant Output Flow Control | Low, Med & High flow settings (.10, .25 & .45 gpm / .38, .95 & 1.7 lpm) Speed Sensitive Flow or Constant Output Flow Control |
| Scrubbing System | | |
| Cleaning path: | 28 in / 711 mm | 32 in / 813 mm |
| Pad/brush size: | (2) 14 in / 356 mm Disks | (2) 16 in / 406 mm Disks |
| Productivity (per hour)-Theoretical max: | 30,800 ft | 35,200 ft |
| Productivity (per hour)-Average coverage rate:* | 22,425 ft | 25,125 ft |
| Brush Drive System | | |
| Brush motor horsepower (each): | (2) 1 hp / 750 W | (2) 1 hp / 750 W |
| Brush rpm: | 300 rpm | 300 rpm |
| Brush/pad pressure: | 70, 110 & 150 lb / 32, 50 & 68 kg | 70, 110 & 150 lb / 32, 50 & 68 kg |
| Brush/pad attachment/removal: | Automatic on/off | Automatic on/off |
| Recovery System | | |
| Recovery tank accessibility: | Full clean out access | Full clean out access |
| Recovery tank capacity: | 25 gal / 95 l (3 gal / 11.4 l demisting chamber) | 25 gal / 95 l (3 gal / 11.4 l demisting chamber) |
| Vacuum motor: | .7 hp / 522 W, 3-stage | .7 hp / 522 W, 3-stage |
| Vac motor cfm / cmm: | 71 cfm / 2.0 cmm | 71 cfm / 2.0 cmm |
| Vac motor water-lift: | 71 in / 180 cm | 71 in / 180 cm |
| Standard / Narrow Aisle Squeegee width: | 40 / 35 in (102 / 89 cm) | 44.5 / 40 in (113 / 102 cm) |
| Drive System | | |
| Drive Type: | Transaxle Drive | Transaxle Drive |
| Motor horsepower: | .5 hp / 373 W | .5 hp / 373 W |
| Battery System | | |
| System voltage: | 24 V | 24 V |
| Battery amp hour rating: | (4) 6V: 260 AH (wet) / 250 AH (MF) | (4) 6V: 260 AH (wet) / 250 AH (MF) |
| Battery run time: | Up to 4.5 hours | Up to 4.0 hours |
| Charger description: | On-board (standard) Off-board (optional) | On-board (standard) Off-board (optional) |
| Machine specifications | | |
| Product length: | 56 in / 142 cm | 58 in / 147 cm |
| Product width (without squeegee): | 30 in / 76 cm | 34 in / 86 cm |
| Product height: | 44 in / 112 cm | 44 in / 112 cm |
| Product weight (with batteries): | 660 lb / 299 kg | 665 lb / 302 kg |
| Sound level (operator's ear): | 65 dBA | 65 dBA |
| Construction: | Rotationally molded polyethylene tanks, powder coated steel frame | Rotationally molded polyethylene tanks, powder coated steel frame |
| *Productivity calculations utilize key factors from ISSA 540 cleaning times handbook | | |
| Note: Specifications subject to change without notice | | |

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SAFETY INFORMATION

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

WARNING: A potentially hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION: A potentially hazardous situation that, if not avoided, could result in moderate injury or serious property damage.

NOTE: Information that will prevent premature equipment failure or minor property damage.

WARNING: This product can expose you to chemicals including lead and lead compounds which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

WARNING: This machine is not equipped with explosion proof motors. Never use near flammable or reactive materials, liquids, vapors or combustible dusts. Electric motors spark internally during operation and could cause a flash fire or explosion.

WARNING: Batteries emit hydrogen and oxygen gas.

- Keep sparks and open flame away.
- Do not smoke near the machine.
- Charge batteries in a well-ventilated area with the battery compartment open.

WARNING: Do not plug in the charger cable if wall cord or battery harness is damaged.

WARNING: Disconnect battery cables before servicing.

WARNING: Do not wear jewelry when working near moving or electrical components.

WARNING: Do not use the machine as a means for transport.

WARNING: Never allow children to play on or around machine.

WARNING: Do not bump into shelves or scaffoldings, especially where there is a risk of falling objects.

WARNING: Support the machine on safety stands before working underneath.

WARNING: Do not operate the machine:

- Unless trained and authorized.
- Unless operator manual has been fully read and understood.
- While using cell phones or other electronic devices.
- Under the influence of drugs or alcohol.
- With any part of the machine not functioning properly.
- In areas where flammable vapors, liquids, or combustible dusts are present.
- In low light areas where the operators vision is impaired.
- In areas with possible falling objects.

WARNING: Before operating the machine:

- Check the machine and batteries for fluid leaks.
- Check the steering and brake systems for proper operation.

WARNING: While operating the machine:

- Operate the machine only as described in this manual.
- Allow the machine to fully stop before getting off.
- Keep all body parts inside the machine while moving.
- Do not carry passengers on the machine.
- Follow all safety instructions and guidelines specific to your facility or environment.

SAFETY INFORMATION CONTINUED

- CAUTION:** Keep hands away from spinning brushes.
- CAUTION:** Do not modify the machine from its original design.
- CAUTION:** Wear non-slip shoes when operating machine.
- CAUTION:** Reduce speed when turning or operating on inclines and slippery surfaces.
- CAUTION:** Use Bromine only in your tank treatment system! Do not use chlorine. Chlorine can interact with ammonia-based detergents and cause harmful fumes.
- CAUTION:** Follow mixing and handling instructions on chemical containers.
- CAUTION:** Remove the batteries, use a jack, and get assistance before lifting the machine.
- CAUTION:** Park and service the machine on a level surface and remove the key.
- CAUTION:** Always wear protective clothing, gloves and goggles when handling and charging batteries.
- CAUTION:** Avoid moving parts and do not wear loose jackets, shirts or sleeves when servicing.
-
- NOTE:** Do not hose down or use a power-spray on the machine. Electrical malfunction may occur.
- NOTE:** All repairs must be performed by a qualified service technician using approved replacement parts.
- NOTE:** To avoid damaging the floor, do not allow the brush/pad to operate while the machine is stationary.
- NOTE:** Use a ramp with no more than a 12% incline when loading or unloading the machine.
- NOTE:** Use tie down straps to secure the machine to the truck or trailer during transport.
- NOTE:** Discontinue use and report machine damage or faulty operation immediately.
- NOTE:** Store the machine indoors where the temperature is between 32° and 104°F (0° and 40°C).
- NOTE:** Do not lower the orbital head without a pad. Doing so damages the Mighty-Lok® face.
- NOTE:** Failure to clean the BatteryShield® light pipe will limit the system's ability to read the water level and will reduce battery life.
- NOTE:** Do not use an extension cord. This will void the warranty on the charger.
- NOTE:** Batteries designed for automotive or marine and RV use are not suited for use in floor scrubbers.
- NOTE:** Use of an unapproved water supply or modification of an approved water supply can lead to battery system failure.
- NOTE:** Ensure battery charging and storage locations comply with OSHA and any governing agencies' standards based on your particular location and application.
- NOTE:** When loading/unloading machine for transport:
- Fully drain the Solution and Recovery tanks before loading.
 - Transport the machine with the scrub head in the lowered.
 - Ensure the ramp and truck/trailer are properly rated for the weight of the machine.
 - Do not lower the Orbital Scrub Head without a pad installed.
 - Chock the wheels and tie down the machine.

UNPACKING THE MACHINE

1. Remove outer cardboard packaging.
2. Remove the shrink wrap securing the ramp and allow the ramp (not shown) to lower to the ground.
3. Using a #2 Philips driver, remove the screws from the front and rear wood wheel chocks.
4. Using a 3/8" socket and driver or wrench, remove the screws from the tie-down straps located at each corner of the machine.
5. Raise the scrub head to the transport position.
6. Carefully maneuver the machine down the ramp.
7. Install the rear squeegee assembly.



TRANSPORTING THE MACHINE

CAUTION: Remove the batteries and use mechanical assistance to lift machine manually.

NOTE: Fully drain the Solution and Recovery tanks before loading.

NOTE: Ensure the ramp and truck/trailer are properly rated for the weight of the machine.

NOTE: Use a ramp with no more than a 12% incline to load and unload the machine.

NOTE: Transport the machine with the scrub head in the lowered position.

NOTE: Do not lower the Orbital Scrub Head without a pad installed. Doing so will damage the Mighty-Lok® face.

NOTE: Remove and store the rear squeegee assembly before transporting the machine.



Run tie down straps between the Recovery and Solution tanks.

Tie down holes on both sides of the main frame.

Two (2) tie-down points have been provided to allow the machine to be secured during transportation.

Ensure the machine is properly secured with suitable tie-down straps before transporting the machine.

SERVICING LEAD ACID BATTERIES (NON-HYDROLINK® MODELS)

REQUIRED EQUIPMENT

- Eye protection
- Acid resistant gloves
- Distilled water
- Baking soda to neutralize acid spills

SAFETY

NEVER:

- Add acid to a battery.
- Smoke near batteries.
- Charge a frozen battery.
- Leave an acid spill unattended.
- Store batteries unless they are fully charged.
- Charge a battery when the temperature is above 122°F (50°C).
- Charge a flooded battery without securing vent caps on the cells.
- Place objects on top of batteries, which can cause a short circuit.

ALWAYS:

- Neutralize acid spills with baking soda and water.
- Use insulated tools to verify connections are tight.

WATERING

- If contact with electrolyte (sulfuric acid) occurs, flush with large amounts of water.
- Use only distilled water (tap water can contain contaminants that will damage the battery).
- Remove the caps and place them upside down to check electrolyte levels.
- For discharged or partially charged batteries, add just enough water to cover the plates.
- Fully charge the batteries.
- Add distilled water to a level of 1/8" (0.125") below the vent well.

CLEANING & INSPECTION

- Fluid on the top of a battery may mean it is being over-watered or overcharged.
- Check cleanliness and keep terminals and connectors free of corrosion.
- Clean with a solution of one cup baking soda to one gallon of water.
- Do not allow cleaning solution to get inside the battery.
- Rinse with water and dry with a clean cloth.
- Keep the area around batteries clean and dry.
- Properly secure all vent caps.
- Check battery cables and connections. Replace any damaged cables and tighten any loose connections.



SERVICING LEAD ACID BATTERIES WITH HYDROLINK® WATERING SYSTEM

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm, and during charging, strong inorganic acid mists containing sulfuric acid are involved, a chemical known to the State of California to cause cancer. Wash hands after handling. For more information go to www.P65Warnings.ca.gov.



1. Position the container of distilled water below the level of the top of the batteries to prevent siphoning.
2. Place the end of the watering system hose in the distilled water and squeeze the bulb to fill the system.
3. Remove the dust cover from the Hydrolink® snake connected to the batteries.
4. Connect the coupler on the Hydrolink® snake to the coupler on the watering system using the quick disconnect fittings.
5. While squeezing the hand pump, observe the flow indicator (spinning red balls). As the batteries begin to fill, the spinning of the flow indicator balls will slow. Batteries are full when the flow indicators completely stop spinning.

NOTE: Battery systems may take more than 1/2 gallon of water once the BatteryShield® light has illuminated. Failure to actuate the hand pump until the flow indicator stops spinning will result in batteries being under or unevenly serviced which will reduce battery life.

6. When the flow indicator stops, and not before, immediately disconnect the couplers by depressing the push button on the watering system coupler.

NOTE: Leaving the watering system connected could result in the batteries being over filled. Disconnecting the watering system before the flow indicator stops spinning will result in batteries being under serviced and battery life will be reduced.

7. Replace the dust cover on the Hydrolink® snake.



BATTERYSHIELD® AUTOMATED WET BATTERY PROTECTION SYSTEM

Machines equipped with BatteryShield® technology have a sensor installed on one of the battery caps and a red LED indicator located on the Control Panel. This sensor monitors the water level in the batteries and the LED communicates to the operator that the batteries require servicing. When the BatteryShield® LED is lit, the scrub head is disabled until battery servicing has been performed.



- When the key switch is turned on, the BatteryShield® system will check the water level of the batteries.
 - If the LED turns off, there is sufficient water in the batteries.
 - If the LED remains on (without flashing), the batteries require servicing and the scrub head will not run.
 - If the LED flashes intermittently, the BatteryShield® light pipe must be cleaned (instructions below).

NOTE: Failure to clean the BatteryShield® light pipe will limit the system's ability to read the water level and will reduce battery life.

- If the BatteryShield® LED indicates the need for servicing, turn off the key switch and service the batteries as described above.
- After completing the Hydrolink® watering system procedure, turn the key switch back on and verify the LED turns off.

CLEANING THE BATTERYSHIELD® SENSOR LIGHT PIPE

CAUTION: Always wear protective clothing, gloves and goggles when handling and charging batteries.

NOTE: All repairs must be performed by a qualified service technician using approved replacement parts.

1. Locate and remove the battery cap with the BatteryShield® sensor module.

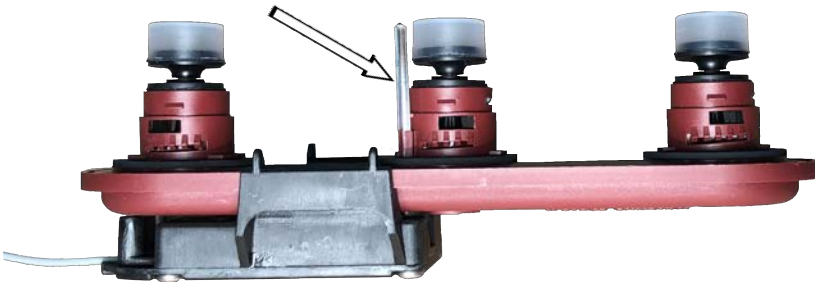
NOTE: Never remove the BatteryShield® sensor from the battery cap. Doing so will cause the BatteryShield® system to function improperly.

NOTE: Take care not to damage the battery cap floats or the BatteryShield® sensor light pipe.

2. Thoroughly wipe the clear BatteryShield® light pipe with a clean rag, giving special attention to the tip.
3. With the battery cap still removed, cycle the key switch on to verify that the BatteryShield® LED remains on.
4. Turn off the key switch.
5. Carefully install the battery cap.

NOTE: Whenever the battery cap is removed, ensure the Hydrolink® snake port is fully seated in the cap when maintenance is complete.

6. Complete the Hydrolink® watering procedure described above.
7. Turn on the key switch and verify the light remains off.
8. The machine is ready for use.



CHARGING

WARNING: Batteries emit hydrogen and oxygen gas.



- Keep sparks and open flame away.
- Do not smoke near the machine.
- Charge batteries in a well-ventilated area with the battery compartment open.

WARNING: Do not wear jewelry when working near moving or electrical components.



WARNING: Do not plug in the charger cable if wall cord or battery harness is damaged.



NOTE: Do not use an extension cord with the battery charger. This will void the charger warranty.

NOTE: Ensure battery charging and storage locations comply with OSHA and any governing agencies' standards based on your particular location and application.

NOTE: Seat assembly must remain open while charging to prevent damage to the charger power cord.

ON-BOARD CHARGING

The charger status LED's (used to indicate the charger's status while plugged in) can be viewed through the view window located on the vertical kick panel below the seat.

| LED INDICATION | MEANING |
|------------------------------|--|
| GREEN flashing (2 seconds) | Charger is set for AGM batteries |
| YELLOW flashing (continuous) | Unsuitable battery connected or output short circuit |
| RED flashing (2 seconds) | Charger is set for Lead Acid batteries |
| RED flashing (continuous) | Safety timer exceeded or internal short circuit |
| Solid GREEN | The unit is fully charged |
| Solid YELLOW | Phase 2 of charging is in progress |
| Solid RED | Charging cycle has begun |

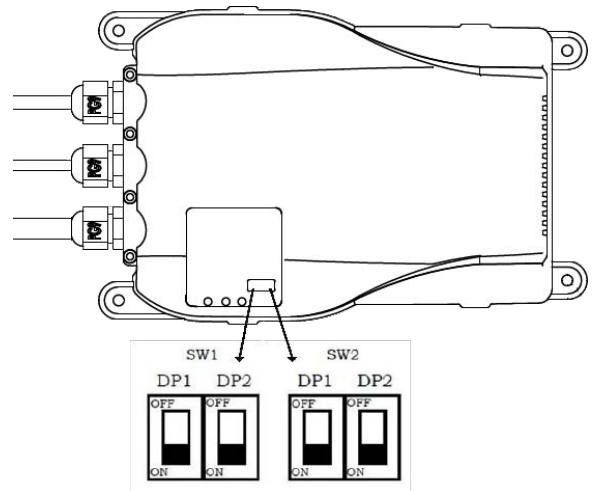
CHARGER SETTINGS

SW1: Sets the current profile of the charger to the particular battery that is installed.

| SW1 | | |
|-----|-----|---------------------|
| DP2 | DP1 | APPLICATION |
| OFF | ON | LEAD-ACID BATTERIES |
| OFF | OFF | AGM FULLRIVER |
| ON | OFF | AGM DISCOVERY |
| ON | ON | GEL |

SW2: Set the current level of the charger based on the amp-hour rating for the particular batteries installed.

| SW2 | | |
|-----|-----|------------------|
| DP2 | DP1 | CHARGING CURRENT |
| ON | ON | 15A |
| ON | OFF | 20A |
| OFF | ON | 25A - XCF |
| OFF | OFF | 25A |



| CHARGING CURRENT | BATTERY AMP HOUR RANGE (5h) | BATTERY AMP HOUR RANGE (20h) |
|------------------|-----------------------------|------------------------------|
| 15A | 100-150 Ah | 130-180 Ah |
| 20A | 120-195 Ah | 150-240 Ah |
| 25A | 180-258 Ah | 220-315 Ah |

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OFF-BOARD CHARGER

WARNING: This product can expose you to chemicals including lead and lead compounds which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



WARNING: Batteries emit hydrogen and oxygen gas.



- Keep sparks and open flame away.
- Do not smoke near the machine.
- Charge batteries in a well-ventilated area with the battery compartment open.

WARNING: Do not plug in the charger cable if wall cord or battery harness is damaged.



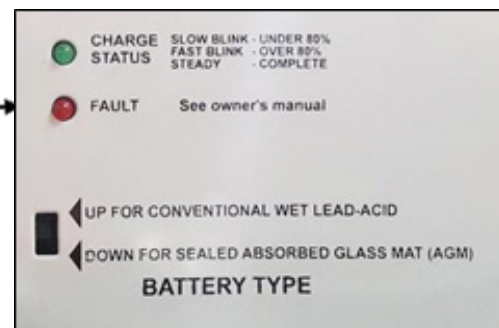
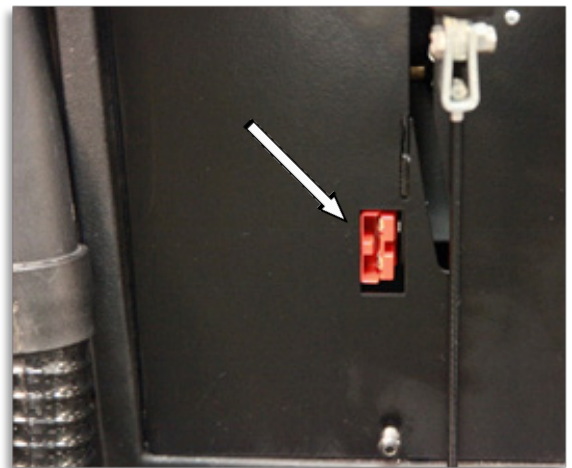
NOTE: Ensure battery charging and storage locations comply with OSHA and any governing agencies' standards based on your particular location and application.

Set the **Battery Type** switch to match the battery configuration of the machine.

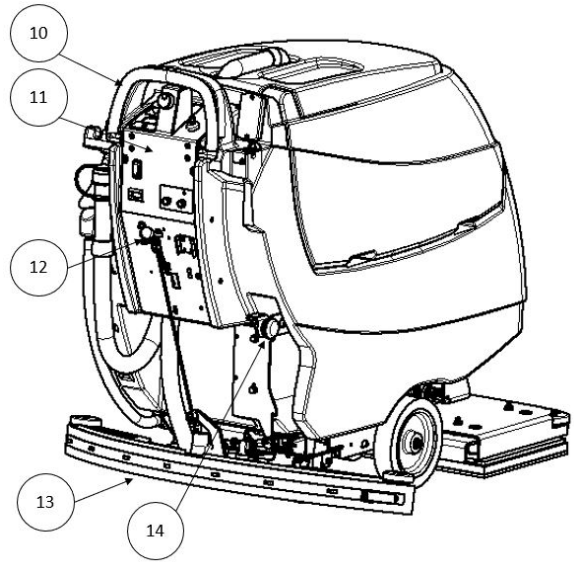
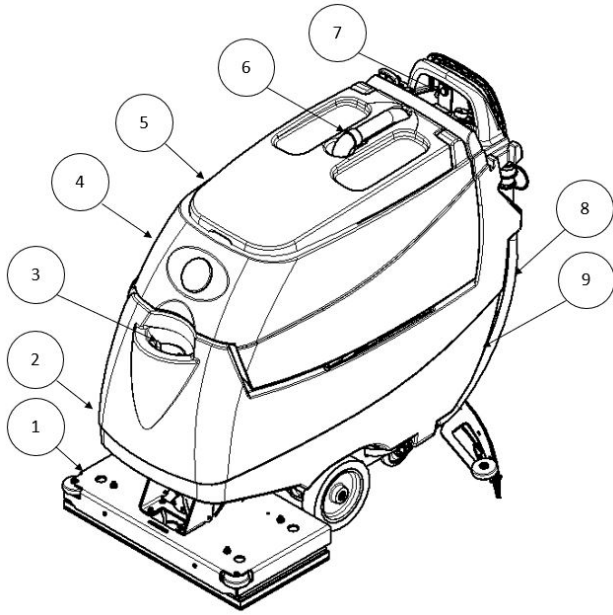
- Up for Lead Acid batteries.
 - Down for sealed, maintenance-free AGM batteries
1. Connect the charger to the wall outlet.
 2. Connect the red plug (pictured below) to the battery harness below the control panel at the rear of the machine.

Off-board status LEDs:

- Primary (green) LED:
 - Blinking slowly: Batteries are below 80% of full charge.
 - Blinking rapidly: Batteries are above 80% of full charge.
 - Solid: Batteries are fully charged.
- Fault (red) LED:
 - See the charger manual for fault information.



OPERATION MACHINE OVERVIEW



- 1. SCRUB HEAD
- 2. SOLUTION TANK
- 3. FILL PORT
- 4. RECOVERY TANK
- 5. RECOVERY TANK LID

- 6. RECOVERY HOSE
- 7. REVERSE SWITCH
- 8. RECOVERY DRAIN HOSE
- 9. SOLUTION SIGHT TUBE

- 10. DRIVE BAIL
- 11. CONTROL PANEL
- 12. SQUEEGEE LIFT LEVER
- 13. SQUEEGEE ASSEMBLY
- 14. HEAD LIFT LEVER

CONTROL PANEL



- A. CIRCUIT BREAKERS
- B. A/B SWITCH (DISK MODELS ONLY)
- C. BATTERYSHIELD LED (OPTIONAL)
- D. BATTERY LEVEL INDICATOR
- E. SOLUTION FLOW CONTROL

- F. DRIVE BAIL
- G. SPEED CONTROL
- H. KEY SWITCH
- I. HOUR METER (OPTIONAL)

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PRE-USE SETUP

TURNING THE UNIT ON/OFF

The key switch is located on the control panel. When the machine is not in use, remove the key and store it in a secure location.

CIRCUIT BREAKERS

The circuit breakers on the control panel protect the components from high amp-draw. In particular, the scrub head circuit will draw too many amps when overloaded by improper application setup. Solution flow, floor surface, and down-pressure should be considered when operating the machine (example: high down-pressure on a rough floor with no solution flow will overload the circuit). Repeatedly tripping the breaker will cause the need for replacement.

BATTERY POWER LEVEL & FAULT INDICATOR

When switched to the ON position, the Battery Power Level Indicator illuminates indicating the battery charge level. A full charge is indicated when all LEDs are lit. As the power level decreases, the LEDs go out from right to left.


When the battery charge is depleted, the last red LED will flash and the brush motor will turn off. The vacuum and traction drive will continue to function allowing final water recovery and transport to the charging station.

NOTE: Using AGM battery-equipped units after the last yellow LED goes out can reduce the life of the batteries.

NOTE: After a full charge, operate the machine for at least 30 minutes before recharging the batteries again. Do not leave the batteries discharged overnight.

A flashing **Battery Power Level Indicator** indicates a detected fault. The following is a list of fault codes:

1 Bar

 The battery needs to be charged or there is a faulty connection to the battery.

2 Bar

 Check the connection to the motor.

3 Bar

 The motor has a short circuit.

6 Bar

 The controller is being inhibited from driving.

7 Bar

 Throttle fault, check the connection.


8 Bar

 Controller fault, check connections

9 Bar

 Parking brake fault, check the motor connections.

10 Bar

 Excessive voltage, check the battery connections.

DRIVE SYSTEM

DRIVING OPERATION

1. Turn the machine on using the key switch located on the right side of the steering column.
2. Set the desired maximum speed using the Speed Control selector on the Control Panel.
3. Maintain control of the machine at all times during operation.
4. Depress the Bail to engage the scrub head and drive system.
5. Depress the Reverse Button to drive the machine backwards.

OPTIONAL SCRUBSMART TELEMETRY SYSTEM

The 22-gallon autoscrubber can be ordered with our ScrubSmart telemetry system, powered by Trackunit®. This system is used for asset tracking and reporting. For more information on this system and its reporting capabilities, contact your distributor or Pacific Floorcare Customer Service.

Telemetry-equipped machines have a keypad mounted on the upper right side of the control panel. After turning on the key switch, enter the operator code. **Failure to enter a valid operator code will prevent the machine from functioning.** Operator codes are generated and administered by your Pacific Distributor or your company's management.



SOLUTION DISTRIBUTION

FILLING THE SOLUTION TANK

Use liquid detergent in the concentration and manner specified by the manufacturer for a 22-gallon solution tank. Excess foam will damage the vacuum motor. In addition to properly-mixed low-foam detergent, use a small amount of de-foaming liquid in the recovery tank. Never use pure acids.

NOTE: The front fill port strainer blocks debris from falling into the tank. Keep the solution tank free from debris to prevent filter clogs and reduced solution flow.

1. Add water and cleaning agent via the front or rear fill port. Water temperature should not exceed 120°F (50°C).
2. Monitor the solution level through the sight tube and the marks on the tank at the rear of the machine.
3. To drain the tank, slide the solution sight tube off of the upper fitting and lower to a drain or mop sink.



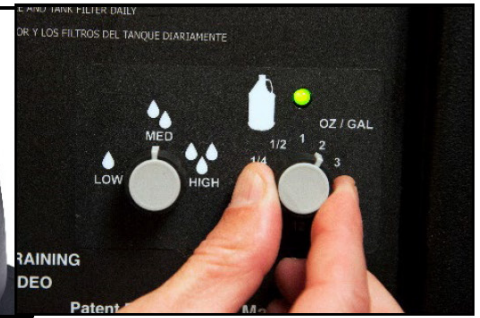
SOLUTION FLOW: NON-CHEMICAL INJECTION MODELS

The Solution Control Knob is located on the top left corner of the control panel. The valve electrically turns on and off with the Scrub Head. The knob controls how much solution passes through the valve when activated.



OPTIONAL CHEMICAL INJECTION MODELS

1. Place a 1-gallon chemical container in the holder in the battery compartment and remove the cap.
2. Insert the leader hose so that the end is resting on the bottom of the container and screw on the cap.



3. Match the mix ration dial on the control panel to the setting (in ounces per gallon) prescribed on the chemical's container.
4. Set the solution flow rate to low, medium, or high.
5. A solid green LED indicates that the system is automatically mixing the chemical while the machine operates.

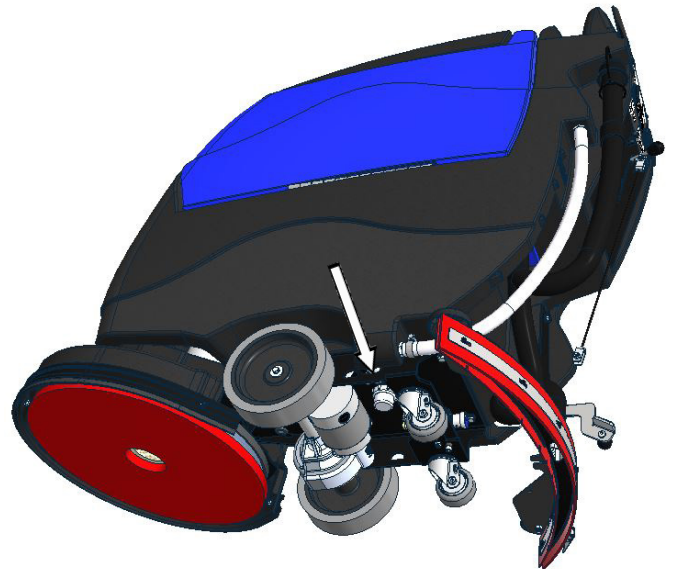
NOTE: If the detergent is not priming, temporarily select a higher setting until detergent appears on the floor.

NOTE: To purge old detergent, set the mixture dial to the highest ration and run until the leader hose line is empty.

INSPECTION & CLEANING

NOTE: If excessive debris is present, drain and flush the solution tank.

1. Close the shutoff valve.
2. Remove the filter bowl and screen.
3. Clean and rinse any debris in the filter assembly.



SCRUB DECK SETUP

HEAD LIFT

1. Depress the foot lever (located at the lower right rear corner of the machine) and shift it to the right.
2. Once clear of the notch, allow the lever to rise while the head lowers into the operating position.
3. Disk machines are equipped with a self-adjusting shroud and bristle skirt that virtually eliminates over-spray.

SELECTING DOWN PRESSURE

- Standard: For daily cleaning of normal soils and PAC pad and chemical processes.
- Heavy: For toughest soils or chemical-free finish removal.



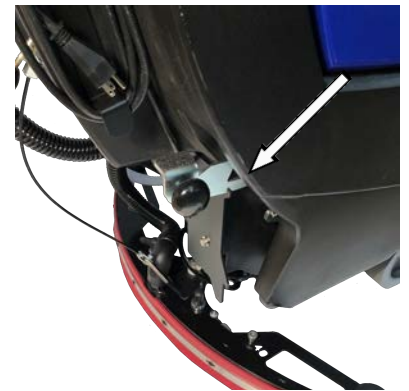
Scrub Head Raised



Scrub Head Lowered



Heavy Down Pressure



Maximum Down Pressure

| SCRUB HEAD DOWN PRESSURE | | | |
|--------------------------|------------------|------------------|------------------|
| | 24" DISK | 28" ORBITAL | 28" & 32" DISK |
| STANDARD | 50 lbs (23kgs) | 70 lbs (32 kgs) | 70 lbs (32 kgs) |
| MEDIUM | 100 lbs (45 kgs) | 110 lbs (50 kgs) | 110 lbs (50 kgs) |
| HEAVY | 140 lbs (64 kg) | 160 lbs (73 kgs) | 150 lbs (68 kgs) |

ORBITAL PADS & CHEMICAL-FREE FINISH REMOVAL (CFR)

NOTE: Do not operate the Orbital Scrub Head without a pad installed. Operating the head without a pad will damage the Mighty-Lok® face.

STANDARD OPERATION

1. Align the corners of the pad to the corners of the aluminum plate with Mighty-Lok® face and press to attach.
2. Lower the scrub deck onto the pad.
3. Ensure the pad is properly aligned front-to-back and right-to-left. Water should drip directly onto the top of the pad.



CHEMICAL-FREE FINISH REMOVAL (CFR) PAD ASSEMBLY & OPERATION

In addition to the traditional cleaning pad, a specialized surface preparation pad is required for chemical-free finish removal. The standard red scrub pad acts as a “backer” and compensates for variances in the floor.

1. Place the black retainer pad 2” back from the front of the red scrub pad.
2. Align the maroon CFR pad with the red scrub pad.
3. Ensure the pads are aligned so that the black pad is justified towards the back of the machine, so that the gap described in Step 1 is towards the front of the machine.
4. Install the pads in accordance with the instructions above for standard operation.
5. Fill the Solution Tank with clean water.
6. Set the Solution Flow to the medium setting. Adjust as needed to obtain the optimum finish removal using the least amount of water for effective rinsing.
7. Set the Speed Control to the medium setting.
8. Lower the Scrub Head to the Heavy Down Pressure setting.



DISK MACHINE PAD DRIVERS & BRUSHES

PAD & BRUSH INSTALLATION

NOTE: Do not operate the Disk Scrub Head without a pad installed on the pad driver. Operating the head without a pad will damage the floor.

1. Turn the key switch on and rotate the speed control knob to the full slow position.
2. Place the pad drivers or brushes on the floor in front of the scrub head.
3. Push or drive the machine into position centering the scrub head over the pad drivers or brushes.
4. Lower the scrub deck onto the pad drivers or brushes.

NOTE: When properly aligned, the scrub deck shroud bristle skirt should almost be touching the floor.

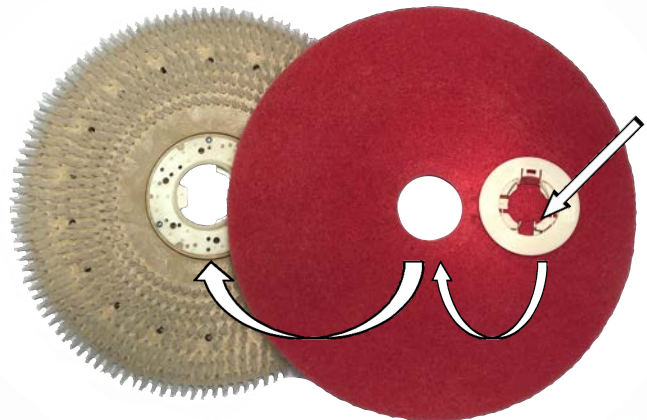
5. Quickly squeeze and release the Bail to engage the pad driver or brushes.

NOTE: If the pad drivers or brushes do not quickly engage, return to step two and try again.



PAD & BRUSH REMOVAL

1. Toggle the “Brush On/Off” switch to position “A” for 1 second and then immediately to position “B”. The brush will spin in position “A” and abruptly stop in position “B”, releasing the pad drivers.
2. Remove the center lock fitting by squeezing the wires inward and pulling the center lock away.
3. To connect the cleaning pad to the drivers, center the pad on the driver, squeeze the center lock wires inward, and press down (tab side first). Press the pad and release the wires so that they lock in place.

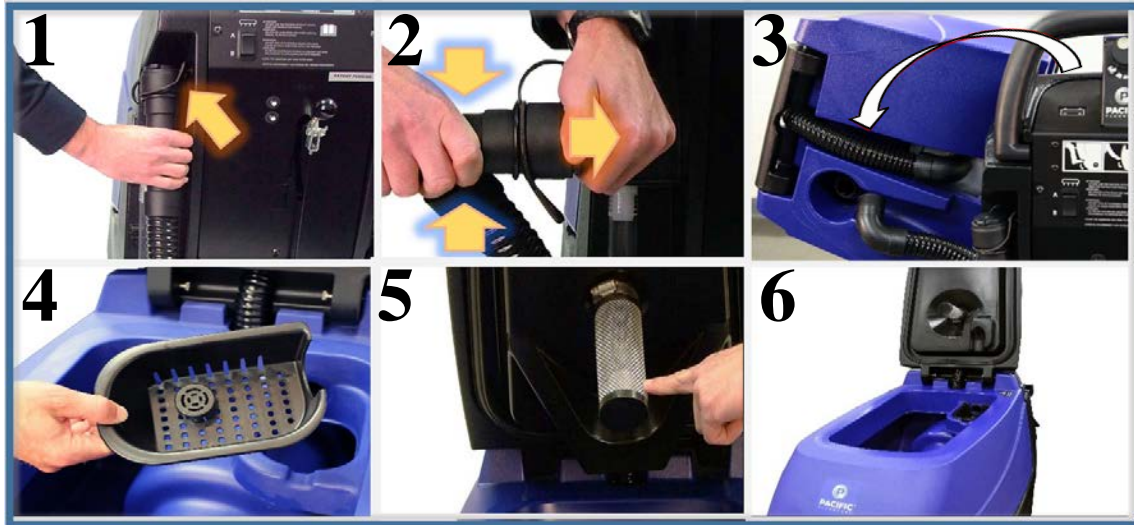


RECOVERY SYSTEM

RECOVERY TANK

To drain and rinse the recovery tank:

1. Lift the hose off the holder and lower the hose end to the desired drain location.
2. Remove the press-fit cap from the drain hose and squeeze the restriction collar to control the flow.
3. As the tank drains, lift the recovery tank lid to the fully open position.
4. Thoroughly clean and rinse out the sediment from the bottom of the tank with a clean water hose.
 - Periodically use cleaner and sanitizer with a cloth or sponge to prevent mold and mildew.
5. Inspect and clean the debris tray and the vacuum mesh filter screen and ball float system.
6. Leave the lid open to dry

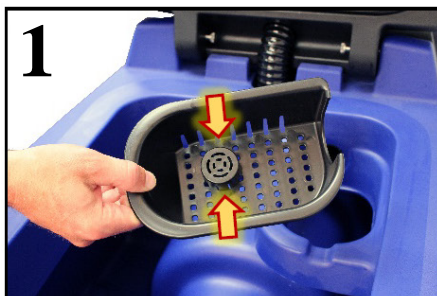


OPTIONAL TANK TREATMENT

The Tank Treatment System (TTS) utilizes Bromine tablets (typically used in pools and spas) to kill the odor-causing bacteria in the tank. To ensure that the TTS is prepared to treat your recovery tank:

1. Lift the debris tray out and pinch the two tabs sticking through the underside of the tray.
2. Check the size of the Bromine puck. Replace it when it is approximately 25% of its original size.
3. 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.



SQUEEGEE SYSTEM

Squeegee Blades and system should be inspected and maintained regularly to achieve peak machine performance.

REMOVAL & INSTALLATION

Install: Align the slots in the squeegee assembly with the easy-grip knobs, attach the vacuum hose, and tighten the knobs.

Remove: Loosen the easy-grip knobs, remove the vacuum hose, and remove the assembly.



SQUEEGEE USE

With the Key Switch turned on, lower the Squeegee Lift Lever to activate the Vacuum Motor. Raising the Squeegee Lift Lever will deactivate the Vacuum Motor to shut off after a 10 second delay. This delay ensures all of the recovered water is pulled into the Recovery Tank.



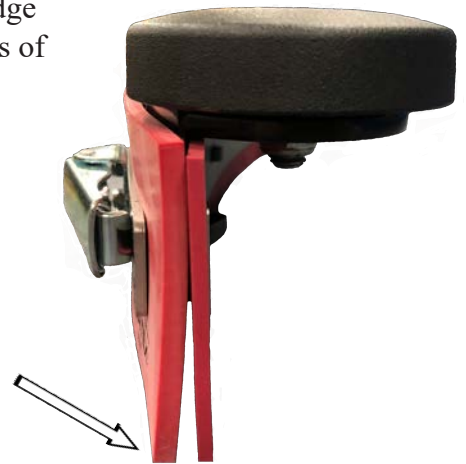
SQUEEGEE ADJUSTMENT

Improper adjustment of the squeegee blades will reduce the systems ability to properly pick up water. The leading edge of the rear squeegee blade should contact the floor at a 45° angle (similar to the image shown below). The height of the squeegee system is adjusted using the two cap head screws located next to the easy-grip knobs. Raise (by turning the screws clockwise) or lower (by turning the screws counter-clockwise) until the proper blade deflection is achieved. When the system is adjusted properly, the small gray wheels on the squeegee system should be approximately 1/32" off of the floor.



INSPECTION & CLEANING

1. Inspect both squeegee blades. Blades edges are considered worn if the edge is not clearly defined or if the edge is worn halfway through the thickness of the blade. Blades can be flipped and rotated to use all four edges.
2. Thoroughly clean the blades, frame, and neck of any debris.



SQUEEGEE BLADE REPLACEMENT

1. Release the over-center latch and slide the band clamp off the hook on the other side.
NOTE: Blades can be flipped and rotated so as to use all four edges.
2. Blade installation is the reverse of the removal.



RECOMMENDED MAINTENANCE

| SYSTEM | REFERENCE SECTION | DAILY | WEEKLY | MONTHLY | BIANNUALLY |
|---|-----------------------|-------|--------|---------|------------|
| CONTROL PANEL | | | | | |
| INSPECT ALL CONTROLS AND HARDWARE FOR SECURITY AND SERVICEABILITY | PARTS DIAGRAMS | X | | | |
| VERIFY PROPER OPERATION OF ALL CONTROLS | ALL | X | | | |
| SOLUTION DISTRIBUTION | | | | | |
| VERIFY SOLUTION FLOWS AND ADJUSTS AS EXPECTED | SOLUTION DISTRIBUTION | X | | | |
| CLEAN AND INSPECT IN-LINE FILTER | SOLUTION DISTRIBUTION | | | X | |
| FLUSH TANK WITH FRESH WATER | SOLUTION DISTRIBUTION | | | X | |
| SCRUB DECK | | | | | |
| RINSE BRUSHES & PADS | SCRUB DECK SETUP | X | | | |
| RINSE & DRY SCRUB DECK | SCRUB DECK SETUP | X | | | |
| CLEAN MOTOR VENTS | PARTS DIAGRAMS | | | X | |
| INSPECT ISOLATORS *(ORBITAL ONLY) | PARTS DIAGRAMS | | | | X |
| INSPECT LIFT LINKAGE & PIVOT BLOCKS | SCRUB DECK SETUP | | | | X |
| RECOVERY SYSTEM | | | | | |
| RINSE & AIR DRY RECOVERY TANK | RECOVERY SYSTEM | X | | | |
| CLEAN & INSPECT DEBRIS TRAY | RECOVERY SYSTEM | X | | | |
| VERIFY DRAIN HOSE CAP IS SEALED TIGHT WHEN INSTALLED | RECOVERY SYSTEM | X | | | |
| INSPECT LID SEAL | RECOVERY SYSTEM | | X | | |
| INSPECT / REPLACE BROMINE PUCK *(IF EQUIPPED) | RECOVERY SYSTEM | | X | | |
| INSPECT HEPA FILTER *(IF EQUIPPED) | RECOVERY SYSTEM | | | | X |
| CLEAN & SANITIZE RECOVERY TANK | RECOVERY SYSTEM | | | X | |
| BATTERIES AND CHARGER | | | | | |
| INSPECT TERMINALS & CABLES FOR SECURITY, CORROSION, OR DAMAGE | BATTERIES | | | X | |
| SERVICE LEAD ACID BATTERIES *(IF EQUIPPED) | BATTERIES | | X | | |
| CLEAN ONBOARD CHARGER VENTS *(IF EQUIPPED) | PARTS DIAGRAMS | | | X | |
| CLEAN BATTERYSHIELD* LIGHT PIPE *(IF EQUIPPED) | BATTERIES | | | | X |
| PERFORM BATTERYSHIELD* OPERATIONAL CHECKS *(IF EQUIPPED) | BATTERIES | | | | X |
| SQUEEGEE ASSEMBLY | | | | | |
| CLEAN & INSPECT SQUEEGEE ASSEMBLY & BLADES | RECOVERY SYSTEM | X | | | |
| INSPECT VACUUM HOSE | RECOVERY SYSTEM | | X | | |
| CHASSIS AND UNDERCARRIAGE | | | | | |
| CLEAN & INSPECT WHEELS & CASTERS | PARTS DIAGRAMS | | | X | |
| CLEAN & INSPECT LINKAGES, CHASSIS & HARDWARE | PARTS DIAGRAMS | | | X | |
| CLEAN & INSPECT VISIBLE WIRES FOR DAMAGE & SECURITY | PARTS DIAGRAMS | | | | X |

RECOMMENDED SERVICE PARTS

(PAGE 1 OF 3)

| PART NUMBER | DESCRIPTION | DIAGRAM CATEGORY | WEAR ITEM | S-24 | S-28 DISK | S-32 | S-28 ORB | OPTIONAL |
|-------------|---------------------------------------|--------------------|-----------|------|-----------|------|----------|----------|
| 903046 | BELT, V-GROOVE, STRETCH | SCRUB HEAD | X | X | | | | |
| 870702 | BLADE, FRONT, 35INCH (LINATEX) | SQUEEGEE | X | X | | | | |
| 870708 | BLADE, FRONT, 35INCH (URETHANE) | SQUEEGEE | X | X | | | | |
| 870704 | BLADE, FRONT, 40INCH (LINATEX) | SQUEEGEE | X | | X | | X | |
| 870710 | BLADE, FRONT, 40INCH (URETHANE) | SQUEEGEE | X | | X | | X | |
| 870706 | BLADE, FRONT, 44.5INCH (LINATEX) | SQUEEGEE LINK | X | X | X | X | X | |
| 870712 | BLADE, FRONT, 44.5INCH (URETHANE) | SQUEEGEE LINK | X | X | X | X | X | |
| 870701 | BLADE, REAR, 35INCH (LINATEX) | SQUEEGEE | X | X | | | | |
| 870707 | BLADE, REAR, 35INCH (URETHANE) | SQUEEGEE | X | X | | | | |
| 870703 | BLADE, REAR, 40INCH (LINATEX) | SQUEEGEE | X | | X | | X | |
| 870709 | BLADE, REAR, 40INCH (URETHANE) | SQUEEGEE | X | | X | | X | |
| 870705 | BLADE, REAR, 44.5INCH (LINATEX) | SQUEEGEE LINK | X | X | X | X | X | |
| 870711 | BLADE, REAR, 44.5INCH (URETHANE) | SQUEEGEE LINK | X | X | X | X | X | |
| 911681 | BREAKER, CIRCUIT, 35 AMPS | CONTROLS | | | X | X | | |
| 850906 | BRUSH CARBON KIT 4 PC 855204 & 875201 | SCRUB HEAD | X | X | X | X | X | |
| 870919 | BRUSH KIT REPL FOR TRANSAXLE 879203 | FRAME ASSEMBLY | X | X | X | X | X | |
| 870909 | BRUSH, GRIT, 12 INCH | SCRUB HEAD | X | X | | | | |
| 870906 | BRUSH, GRIT, 14 INCH | SCRUB HEAD | X | | X | | | |
| 870907 | BRUSH, GRIT, 16 INCH | SCRUB HEAD | X | | | X | | |
| 870908 | BRUSH, NYLON, 12 INCH | SCRUB HEAD | X | X | | | | |
| 870904 | BRUSH, NYLON, 14 INCH | SCRUB HEAD | X | | X | | | |
| 870905 | BRUSH, NYLON, 16 INCH | SCRUB HEAD | X | | | X | | |
| 870902 | BRUSH, POLY, 12 INCH | SCRUB HEAD | X | X | | | | |
| 870901 | BRUSH, POLY, 14 INCH | SCRUB HEAD | X | | X | | | |
| 852401 | CABLE, LIFT, CLEVIS | CONTROLS | | X | X | X | X | |
| 871501 | CAP, 38MM, WITH HOLE | CHEMICAL INJECTION | X | | | | | X |
| 911622 | CIRCUIT BREAKER, 30 AMPS | CONTROLS | | X | X | X | X | |
| 912401 | CONTACTOR, 24V, 100A | ELECTRONICS | | X | X | X | X | |
| 912402 | CONTACTOR, 24VDC, 70A | ELECTRONICS | | X | X | X | X | |
| 875902 | DRIVER, PAD, 14 INCH | SCRUB HEAD | X | | X | | | |

RECOMMENDED SERVICE PARTS

(PAGE 2 OF 3)

| PART NUMBER | DESCRIPTION | DIAGRAM CATEGORY | WEAR ITEM | S-24 | S-28 DISK | S-32 | S-28 ORB | OPTIONAL |
|-------------|--------------------------------|--------------------|-----------|------|-----------|------|----------|----------|
| 875910 | DRIVER, PAD, 16 INCH | SCRUB HEAD | X | | | X | | |
| 873304 | FILTER, HEPA, MID | RECOVERY TANK | X | X | X | X | X | |
| 843319 | FILTER, SCREEN, BOWL | FRAME ASSEMBLY | X | X | X | X | X | |
| S764P2 | FILTER, STRAINER | CHEMICAL INJECTION | X | | | | | X |
| 223370 | FLOAT, SHUTOFF | RECOVERY TANK | | X | X | X | X | |
| 873314 | GASKET, FOAM, VACUUM | RECOVERY TANK | | X | X | X | X | |
| 853803 | GUIDE, DRIVER | SCRUB HEAD | X | X | X | X | | |
| 873802 | GUIDE, DRIVER, RH | SCRUB HEAD | X | X | X | X | | |
| 853804 | GUIDE, PAD, PLASTIC | SCRUB HEAD | X | | X | X | | |
| 873801 | GUIDE, PAD, PLASTIC | SCRUB HEAD | X | X | | | | |
| 854101 | HOSE, DRAIN, CAPPED | RECOVERY TANK | X | X | X | X | X | |
| 874101 | HOSE, SQUEEGEE, 90 CUFF | RECOVERY TANK | X | X | X | X | X | |
| 854103 | HOSE, VACUUM, 1.5INCH | RECOVERY TANK | | X | X | X | X | |
| 854302 | HUB, DRIVER, BRUSH | SCRUB HEAD | X | | X | X | | |
| 874305 | HUB, PULLEY, MACH FLAT | SCRUB HEAD | X | X | | | | |
| 874306 | HUB, PULLEY, MACH GROOVED | SCRUB HEAD | X | X | | | | |
| 875017 | KIT CASTER 4 INCH REPLACEMENT | FRAME ASSEMBLY | X | X | X | X | X | |
| 875010 | KIT, BEARING, REPL, ORBIT | SCRUB HEAD | X | | | | X | |
| 875009 | KIT, PLATE, REPL, ORBIT | SCRUB HEAD | X | | | | X | |
| 875202 | MOTOR, VACUUM, 24VDC, 3-STAGE | RECOVERY TANK | | X | X | X | X | |
| 555901 | PAD 12" BLACK STRIP CASE 5 | SCRUB HEAD | X | X | | | | |
| 555941 | PAD 12" RED SCRUB CASE 5 | SCRUB HEAD | X | X | | | | |
| 555951 | PAD 12" WHITE POLISH CASE 5 | SCRUB HEAD | X | X | | | | |
| 555902 | PAD 14" BLACK STRIP CASE 5 | SCRUB HEAD | X | | X | | | |
| 555942 | PAD 14" RED SCRUB CASE 5 | SCRUB HEAD | X | | X | | | |
| 555952 | PAD 14" WHITE POLISH CASE 5 | SCRUB HEAD | X | | X | | | |
| 555909 | PAD 14"X28" BLACK STRIP CASE 5 | SCRUB HEAD | X | | | X | | |
| 555929 | PAD 14"X28" MAROON CFR CASE 10 | SCRUB HEAD | X | | | X | | |
| 555949 | PAD 14"X28" RED SCRUB CASE 5 | SCRUB HEAD | X | | | X | | |

RECOMMENDED SERVICE PARTS

(PAGE 3 OF 3)

| PART NUMBER | DESCRIPTION | DIAGRAM CATEGORY | WEAR ITEM | S-24 | S-28 DISK | S-32 | S-28 ORB | OPTIONAL |
|-------------|-----------------------------------|------------------|-----------|------|-----------|------|----------|----------|
| 555969 | PAD 14"X28" TURF CASE 4 | SCRUB HEAD | X | | | X | | |
| 555959 | PAD 14"X28" WHITE POLISH CASE 5 | SCRUB HEAD | X | | | X | | |
| 555903 | PAD 16" BLACK STRIP CASE 5 | SCRUB HEAD | X | | | | X | |
| 555943 | PAD 16" RED SCRUB CASE 5 | SCRUB HEAD | X | | | | X | |
| 555953 | PAD 16" WHITE POLISH CASE 5 | SCRUB HEAD | X | | | | X | |
| 875903 | PAD, MIGHTYLOK ADH UNIVERSAL | SCRUB HEAD | X | | | | X | |
| 875906 | PAD, RETAINER, 12X28 | SCRUB HEAD | X | | | | X | |
| 857003 | PUMP ASSY HAND HYDROLINK | BATTERIES | X | | | | | X |
| 858503 | SKIRT, BRISTLE | SCRUB HEAD | X | X | | | | |
| 878502 | SKIRT, BRISTLE | SCRUB HEAD | X | | X | X | | |
| 911647 | SWITCH, KEY | CONTROLS | | X | X | X | X | |
| 911649 | SWITCH, ROCKER, AUTO ON-OFF | CONTROLS | | X | X | X | | |
| 911653 | SWITCH, ROUND, ON - MOM | CONTROLS | | X | X | X | X | |
| 911682 | SWITCH, SNAP, BENT LEVER | FRAME ASSEMBLY | | X | X | X | X | |
| 911646 | SWITCH, SNAP, WITH ROLLER | CONTROLS | | X | X | X | X | |
| 879201 | TRAY, DEBRIS | RECOVERY TANK | X | X | X | X | X | |
| 879202 | TRAY, PUCK | RECOVERY TANK | X | X | X | X | X | |
| 855022 | KIT-GUIDE WHEEL REPL, ANTI-RATTLE | SCRUB HEAD | X | X | X | X | X | |
| 879705 | WHEEL, URETHANE, 222MM | FRAME ASSEMBLY | | X | X | X | X | |

TROUBLESHOOTING GUIDE

(PAGE 1 OF 2)

| ISSUE | POTENTIAL CAUSE | PROPOSED SOLUTION | MANUAL SECTION |
|-------------------------------------|--|--|-----------------------|
| INSUFFICIENT WATER TO SCRUB HEAD | SOLUTION FLOW SETTING IS TOO LOW | ADJUST SOLUTION CONTROL | SOLUTION DISTRIBUTION |
| | SOLUTION TANK IS EMPTY | ADD WATER/SOLUTION TO THE TANK | SOLUTION DISTRIBUTION |
| | IN-LINE SOLUTION FILTER IS CLOGGED | REMOVE AND CLEAN THE FILTER | SOLUTION DISTRIBUTION |
| | SOLUTION TUBE IS CLOGGED, KINKED, OR DAMAGED | INSPECT TUBES | PARTS DIAGRAMS |
| | SOLUTION SHUT OFF VALVE IS CLOSED | OPEN VALVE | SOLUTION DISTRIBUTION |
| | SOLUTION SOLENOID VALVE MAY BE FAULTY | VERIFY OPERATION AND REPLACE IF NECESSARY | PARTS DIAGRAMS |
| POOR WATER RECOVERY | RECOVERY TANK IS FULL | EMPTY RECOVERY TANK | RECOVERY SYSTEM |
| | DIRTY OR WORN SQUEEGEE BLADES | INSPECT AND ROTATE OR REPLACE AS REQUIRED | RECOVERY SYSTEM |
| | RECOVERY HOSE LOOSE OR DAMAGED | INSPECT AND REPAIR | PARTS DIAGRAMS |
| | RECOVERY HOSE OR SQUEEGEE ASSEMBLY HAS AN OBSTRUCTION | CLEAR OBSTRUCTIONS FROM RECOVERY SYSTEM | PARTS DIAGRAMS |
| | SQUEEGEE ASSEMBLY MAY BE OUT OF ADJUSTMENT | ADJUST AS NECESSARY | RECOVERY SYSTEM |
| | STUCK OR DAMAGED BALL FLOAT | INSPECT AND REPAIR/REPLACE | RECOVERY SYSTEM |
| | RECOVERY TANK LID IS NOT SEALING PROPERLY | INSPECT RECOVERY LID GASKET. REPAIR OR REPLACE IF NEEDED | PARTS DIAGRAM |
| | DRAIN HOSE CAP IS NOT INSTALLED PROPERLY | INSTALL DRAIN HOSE SECURELY | RECOVERY SYSTEM |
| | LOW BATTERY VOLTAGE | CHARGE BATTERIES | CHARGING |
| MACHINE WILL NOT TURN ON | FAULTY KEY SWITCH | DIAGNOSE AND REPLACE | WIRING DIAGRAMS |
| | DISCHARGED BATTERIES | CHARGE BATTERIES | CHARGING |
| | LOOSE OR DAMAGED WIRE | REPAIR | WIRING DIAGRAMS |
| MACHINE NOT CLEANING FLOOR PROPERLY | WORN PAD OR BRUSH | INSPECT AND REPLACE AS REQUIRED | SCRUB DECK SETUP |
| | WRONG PAD OR BRUSH FOR APPLICATION | CONTACT YOUR LOCAL DISTRIBUTOR FOR RECOMMENDED APPLICATION | SCRUB DECK SETUP |
| | INSUFFICIENT CLEANING SOLUTION FOR APPLICATION | ADJUST THE MIXTURE AS REQUIRED | SOLUTION DISTRIBUTION |
| EXCESSIVE FOAM IN RECOVERY TANK | IMPROPER DETERGENT TYPE | USE A LOW-FOAM DETERGENT OR ADD A DEFOAMING AGENT TO THE RECOVERY TANK. READ ALL CHEMICAL LABELS THOROUGHLY BEFORE USE | RECOVERY SYSTEM |
| | MIXTURE SETTING TOO HIGH ON OPTIONAL CHEMICAL INJECTION SYSTEM | USE A LOW-FOAM DETERGENT OR ADD A DEFOAMING AGENT TO THE RECOVERY TANK. READ ALL CHEMICAL LABELS THOROUGHLY BEFORE USE | RECOVERY SYSTEM |
| VACUUM MOTOR WILL NOT RUN | SQUEEGEE LIFT LEVER IS STILL RAISED | LOWER SQUEEGEE LEVER | RECOVERY SYSTEM |
| | VACUUM RELAY MAY BE FAULTY | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE | WIRING DIAGRAMS |
| | VACUUM SWITCH OR WIRING MAY BE FAULTY | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE | WIRING DIAGRAMS |
| VACUUM MOTOR WILL NOT TURN OFF | STILL IN DELAY MODE | ALLOW 10 SECONDS FOR VACUUM TO SHUT DOWN | RECOVERY SYSTEM |
| | VACUUM RELAY MAY BE FAULTY | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE | WIRING DIAGRAM |

TROUBLESHOOTING GUIDE

(PAGE 2 OF 2)

| ISSUE | POTENTIAL CAUSE | PROPOSED SOLUTION | MANUAL SECTION |
|---------------------------------------|---|---|-----------------------|
| SCRUB HEAD WILL NOT RUN | SCRUB HEAD IS STILL RAISED | LOWER SCRUB HEAD | SCRUB DECK SETUP |
| | BATTERYSHIELD® LED IS ILLUMINATED AND HAS DISABLED THE SCRUB HEAD (IF EQUIPPED) | SERVICE THE BATTERIES | BATTERIES |
| | BATTERIES ARE DISCHARGED BELOW THRESHOLD VOLTAGE | CHARGE BATTERIES | CHARGING |
| | BRUSH MOTOR CIRCUIT BREAKER HAS TRIPPED | SEE NEXT TOPIC ON THIS TABLE | TROUBLESHOOTING TABLE |
| | SCRUB HEAD LIFT ARM SWITCH MAY BE STUCK OR FAULTY | INSPECT AND REPAIR SWITCH AS REQUIRED | PARTS DIAGRAMS |
| | TRIGGER SWITCH IN HANDLE MAY BE FAULTY | INSPECT AND REPAIR AS REQUIRED | PARTS DIAGRAMS |
| | SOLUTION SOLENOID VALVE MAY HAVE AN INTERNAL SHORT | DISCONNECT WIRES FROM SOLENOID VALVE AND TRY RUNNING THE SCRUB HEAD AGAIN. REPLACE SOLENOID IF REQUIRED | WIRING DIAGRAM |
| | BATTERYSHIELD® RELAY MAY BE FAULTY (IF EQUIPPED) | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE | WIRING DIAGRAM |
| SCRUB HEAD CIRCUIT BREAKER IS TRIPPED | INADEQUATE SOLUTION FOR APPLICATION | INCREASE SOLUTION TO SCRUB HEAD | PRE-USE SETUP |
| | SCRUB HEAD IS SET TO HEAVY DOWN PRESSURE | REDUCE DOWN PRESSURE SETTING | PRE-USE SETUP |
| | PAD IS TOO AGGRESSIVE FOR APPLICATION | CONTACT YOUR LOCAL DISTRIBUTOR FOR RECOMMENDED APPLICATION | PRE-USE SETUP |
| | FAULTY OR SHORTED WIRE | REPAIR | WIRING DIAGRAM |
| | WEAK CIRCUIT BREAKER | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE. BREAKER SHOULD NOT TRIP BELOW ITS STATED RATING | PARTS DIAGRAMS |
| MACHINE WILL NOT DRIVE | CIRCUIT BREAKER MAY BE TRIPPED | INSPECT AND RESET. IF PROBLEM PERSISTS CONTACT SERVICE TECHNICIAN | PRE-USE SETUP |
| | BATTERY METER IS FLASHING A FAULT CODE | REFERENCE FAULT CODE AND TROUBLESHOOT AS REQUIRED | PRE-USE SETUP |
| | BATTERIES DISCHARGED TOO LOW | CHARGE BATTERIES | CHARGING |
| | SPEED CONTROL KNOB TURNED ALL THE WAY DOWN | INCREASE SPEED SETTING | DRIVE SYSTEM |
| | FAULTY CONTROLLER | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE | WIRING DIAGRAM |
| | FAULTY WIRING | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE | WIRING DIAGRAM |
| RUN TIME IS SHORT | BATTERIES ARE LOW ON WATER (LEAD ACID ONLY) | SERVICE BATTERIES | BATTERIES |
| | CHARGER IS NOT SET PROPERLY FOR BATTERY TYPE | SET CHARGER TO BATTERY SPECIFICATIONS | CHARGING |
| | SCRUB HEAD IS IN HEAVY DOWN PRESSURE | REDUCE SCRUB HEAD PRESSURE | PRE-USE SETUP |
| | BATTERY CHARGER IS NOT ABLE TO FINISH CHARGE CYCLE | CONFIRM A STEADY GREEN LED AFTER THE CHARGE CYCLE (BEFORE UNPLUGGING FROM THE OUTLET) | CHARGING |
| | BATTERIES ARE DEFECTIVE OR AT THE END OF THEIR LIFE | CONTACT SERVICE TECHNICIAN TO TROUBLESHOOT AND ISOLATE | BATTERIES |

- 1 If the scrub head is not working when lowered, be aware that BatteryShield® intentionally disables the scrub head when the batteries need water. Refer to the BatteryShield® Automatic Wet Battery Protection System portion of this manual.
2. For machines equipped with BatteryShield®, refer to the BatteryShield® Automatic Wet Battery Protection System portion of this manual before proceeding.
3. If a yellow LED is flashing on the battery charger, verify continuity between the charger and the batteries. Refer to the On-Board Charger section of this manual.
4. A circuit breaker is designed to prevent overloading a component/system. If a circuit breaker continues to trip, verify the system is not being overloaded or that the wiring is not damage.

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BATTERIES, BATTERYSHIELD® & HYDROLINK®

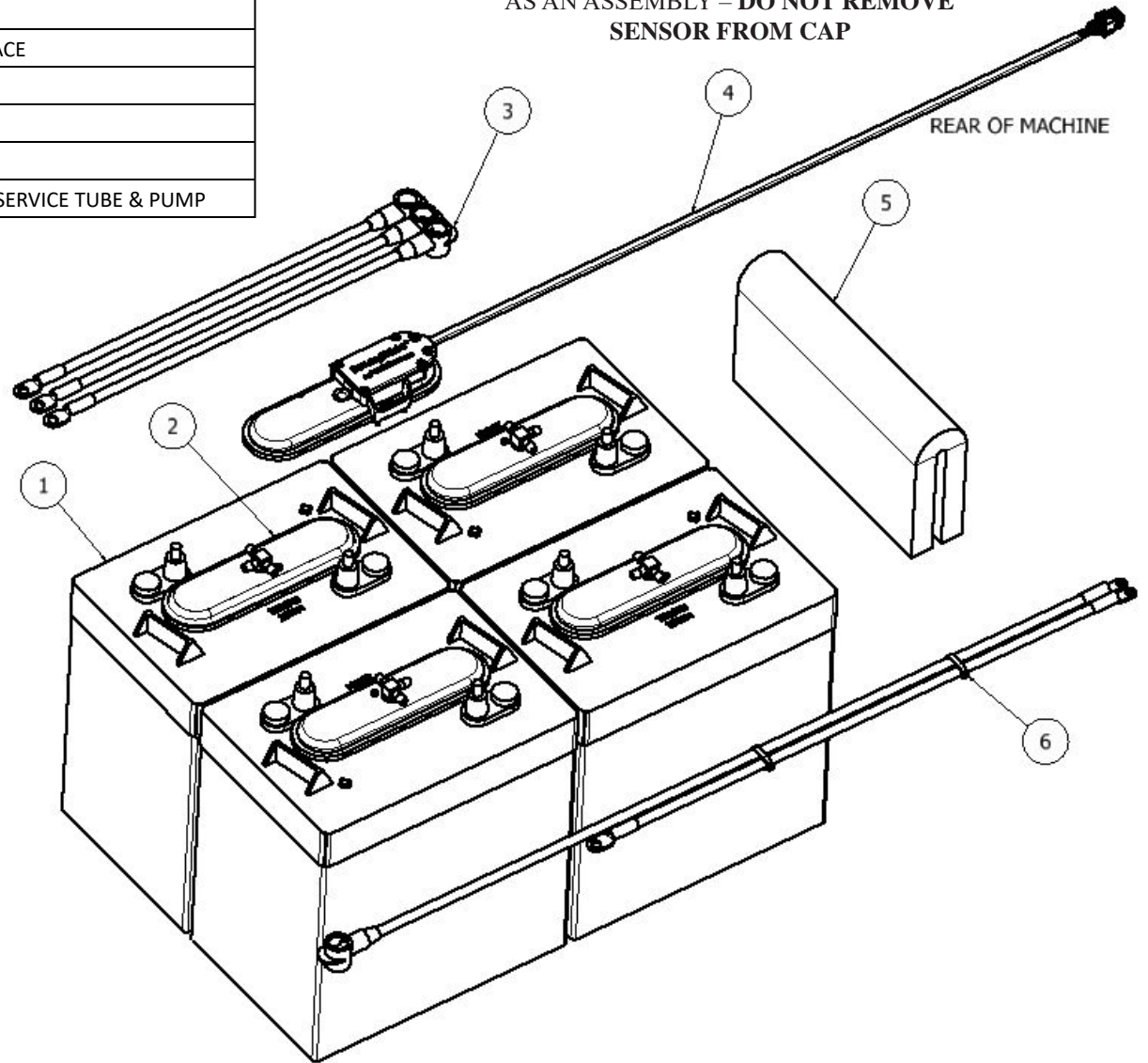
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---|
| 1* | 4 | 871301 | BATTERY, 6V, 260AH, LA |
| 1* | 4 | 871302 | BATTERY, 6V, 250AH, MF (NOT SHOWN, OPTIONAL) |
| 2 | 3 | 855605 | MANIFOLD INDIV HYDROLINK (BATT CAP) |
| 3 | 3 | 911640 | HARNESS, CONN, BATTERY |
| 4 | 1 | 878520 | SENSOR ASSY BATTERYSHIELD FIELD REPLACE |
| 5 | 1 | 858202 | FOAM, SPACER, BATTERY |
| 6 | 1 | 911641 | HARNESS, CONN, BATTERY |
| 7 | 1 | 857003 | PUMP ASSY HAND HYDROLINK |
| 8 | 1 | 879002 | COMPLETE SETS MANIFOLDS (BATT CAP), SERVICE TUBE & PUMP |

BATTERYSHIELD® SENSOR IS MATED AND CALIBRATED TO THE MANIFOLD (BATTERY CAP) FROM THE FACTORY. SENSOR AND CAP MUST BE REPLACED AS AN ASSEMBLY – **DO NOT REMOVE SENSOR FROM CAP**

*Item 1 is based on machine model.

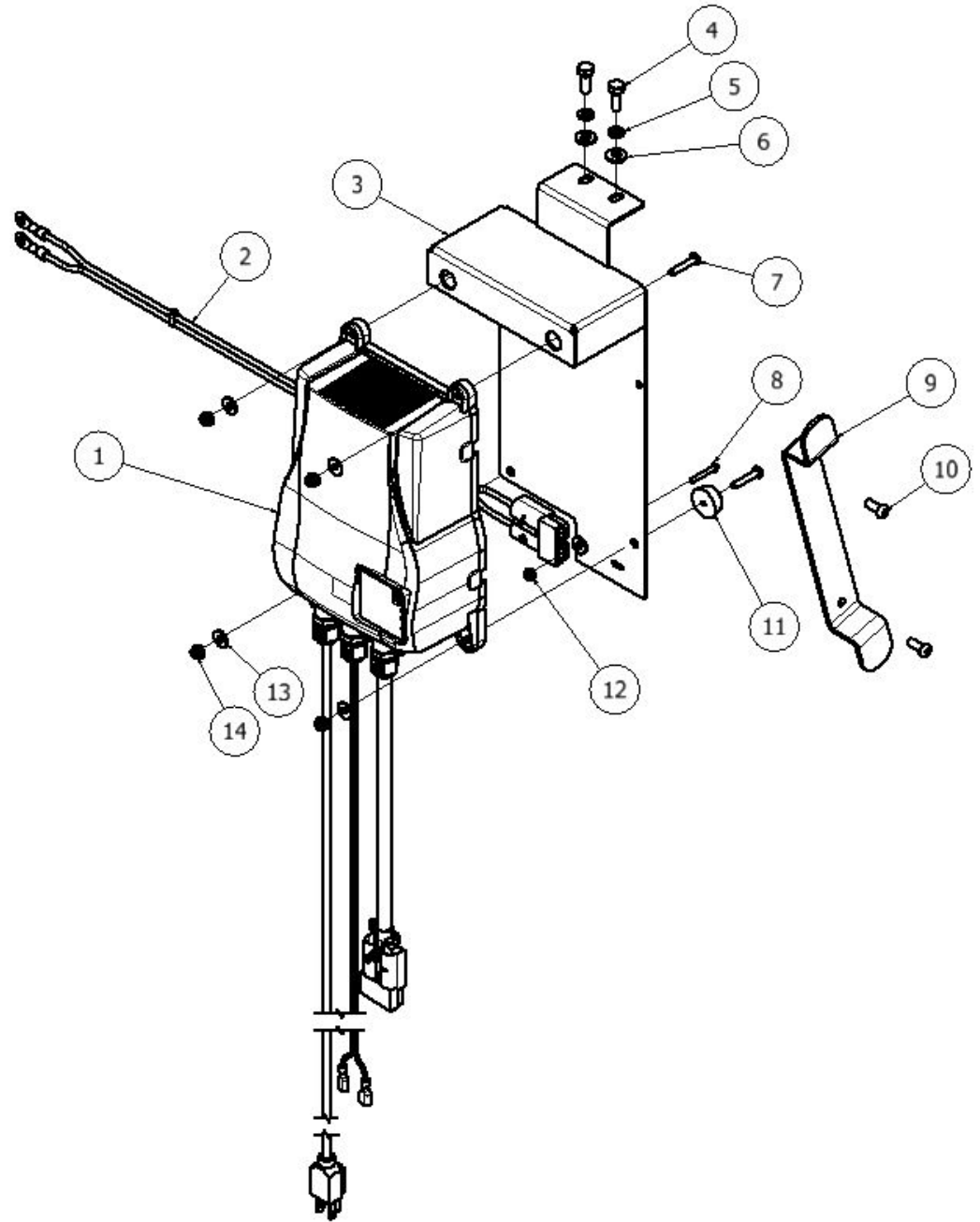
**Items 2 & 4 not used with maintenance-free batteries or machines ordered without optional BatteryShield®.

***Item 8 not shown.



OPTIONAL ONBOARD CHARGER

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

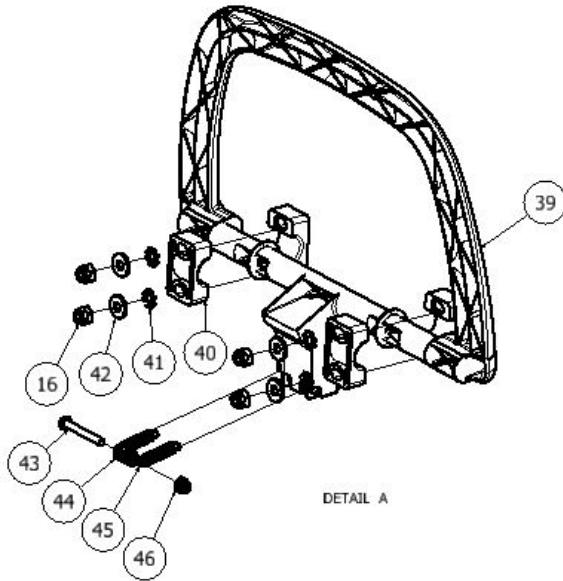


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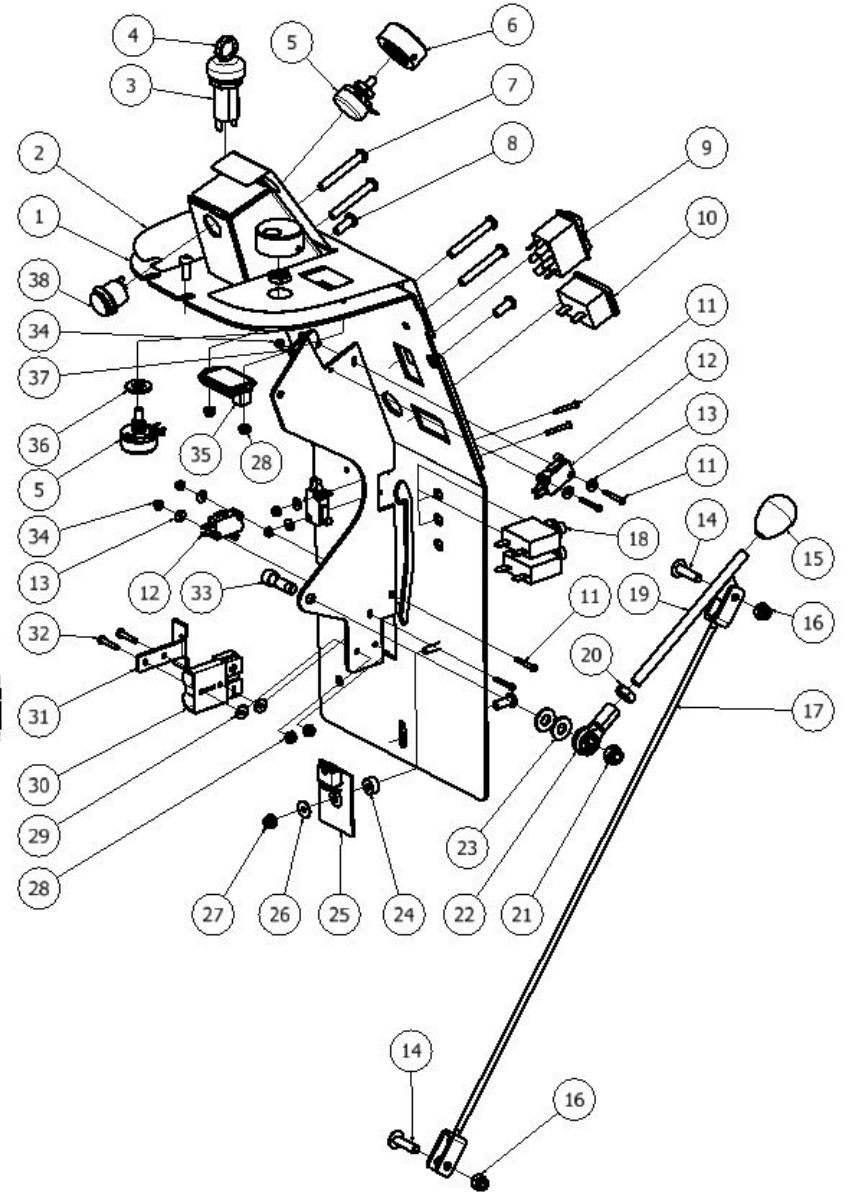
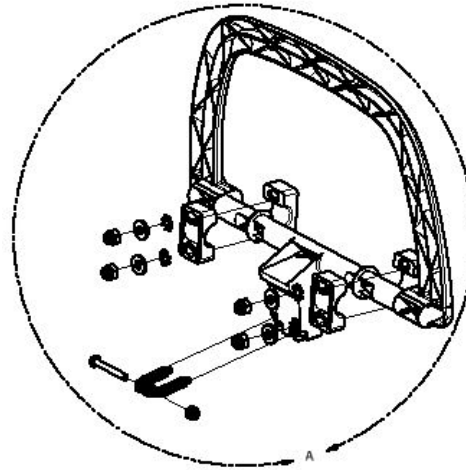
CONTROLS

S-24 DISK

(See additional diagrams for models equipped with BatteryShield®, chemical injection, or ScrubSmart® telemetry systems.)



DETAIL A



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CONTROLS S-24 DISK

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---------------------------------------|
| 1 | 1 | 877101 | PANEL, CONTROLS |
| 2 | 1 | 875124 | LABEL CONTROL 22GAL DISK |
| 3 | 1 | 911647 | SWITCH KEY |
| 4 | 1 | 855012 | KEY REPLMNT SCRUB 2-SET FOR 911647 |
| 5 | 2 | 911664 | POTENTIOMETER ASSY, 5K |
| 6 | 2 | 855001 | KNOB, ADJUST, .25 BORE |
| 7 | 4 | 962264 | SCREW, BUTTON, SOCKET, .25 X 1.75, SS |
| 8 | 4 | 962263 | SCREW, BUTT, SOCK, .25-20X.62, SS BO |
| 9 | 1 | 911649 | SWITCH, ROCKER, AUTO ON-OFF |
| 10 | 1 | 911661 | METER, HOUR, DIGITAL |
| 11 | 6 | 962273 | SCREW, PAN, #4-40 X .88, ZINC |
| 12 | 3 | 911646 | SWITCH, SNAP, WITH ROLLER |
| 13 | 6 | 980682 | WASHER, FLAT, #4, ZINC |
| 14 | 2 | 962455 | SCREW, TRUSS, .25-20 X 1.0 |
| 15 | 1 | 855004 | KNOB, OVAL, .31-18 |
| 16 | 6 | 920011 | NUT, NYLOCK, 1/4-20, ZINC |
| 17 | 1 | 852401 | CABLE, LIFT, CLEVIS |
| 18 | 2 | 911622 | CIRCUIT BREAKER, 30 AMPS |
| 19 | 1 | 855106 | LEVER, LIFT, SQUEEGEE |
| 20 | 1 | 920038 | NUT, HEX, .31-24, SS |
| 21 | 1 | 920012 | NUT, NYLOCK, 5/16-18, ZINC |
| 22 | 1 | 902050 | BEARING, ROD END, .31-24 |
| 23 | 2 | W243D | WASHER, FLAT, 5/16, SS |
| 24 | 3 | 878208 | SPACER PLASTIC #10 X .25 THICK |
| 25 | 1 | 872413 | CONTROLLER FLOW WATER |
| 26 | 1 | W401D | WASHER, FLAT, #10 |
| 27 | 1 | 920001 | NUT, NYLOCK, #10-32, ZINC |
| 28 | 4 | 920034 | NUT, NYLOCK, #6-32, SS |
| 29 | 6 | 980033 | WASHER, FLAT, #6, SS |
| 30 | 1 | 911645 | HARNESS, CHARGER, POST |
| 31 | 1 | 850806 | BRACKET, PLUG |

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--------------------------------------|
| 32 | 6 | W132D | SCREW PAN #6-32 X 1.0 ZINC |
| 33 | 1 | 962279 | SCREW, SOCKET CAP, .31X1.0, SS |
| 34 | 6 | W385D | NUT, NYLOCK, #4-40, ZINC |
| 35 | 1 | 911621 | METER, BATTERY |
| 36 | 1 | 980003 | WASHER, FLAT, .38 |
| 37 | 1 | 856608 | PLATE, MOUNTING |
| 38 | 1 | 911653 | SWITCH, ROUND, ON – MOM |
| 39 | 1 | 851301 | BAIL, MOLDED |
| 40 | 4 | 855601 | MOUNT, BEARING, PLASTIC |
| 41 | 4 | 980029 | WASHER, LOCK, .25, STAR, EXT |
| 42 | 4 | W104D | WASHER, FLAT, .25 |
| 43 | 1 | 962146 | SCREW, PAN, #10-32 X 1.5, FULL, ZINC |
| 44 | 1 | 920013 | NUT, #10-32, ZINC |
| 45 | 2 | 858302 | SPRING, EXTENSION |
| 46 | 2 | 920666 | NUT, NYLOCK, #10-32, SS |
| 47 | 1 | 911674 | HARNESS, POWER, 24 INCH |
| 48 | 1 | 911677 | HARNESS, SIGNAL, 24 INCH |
| 49 | 1 | 911722 | HARNESS SOLUTION FLOW S-SERIES |

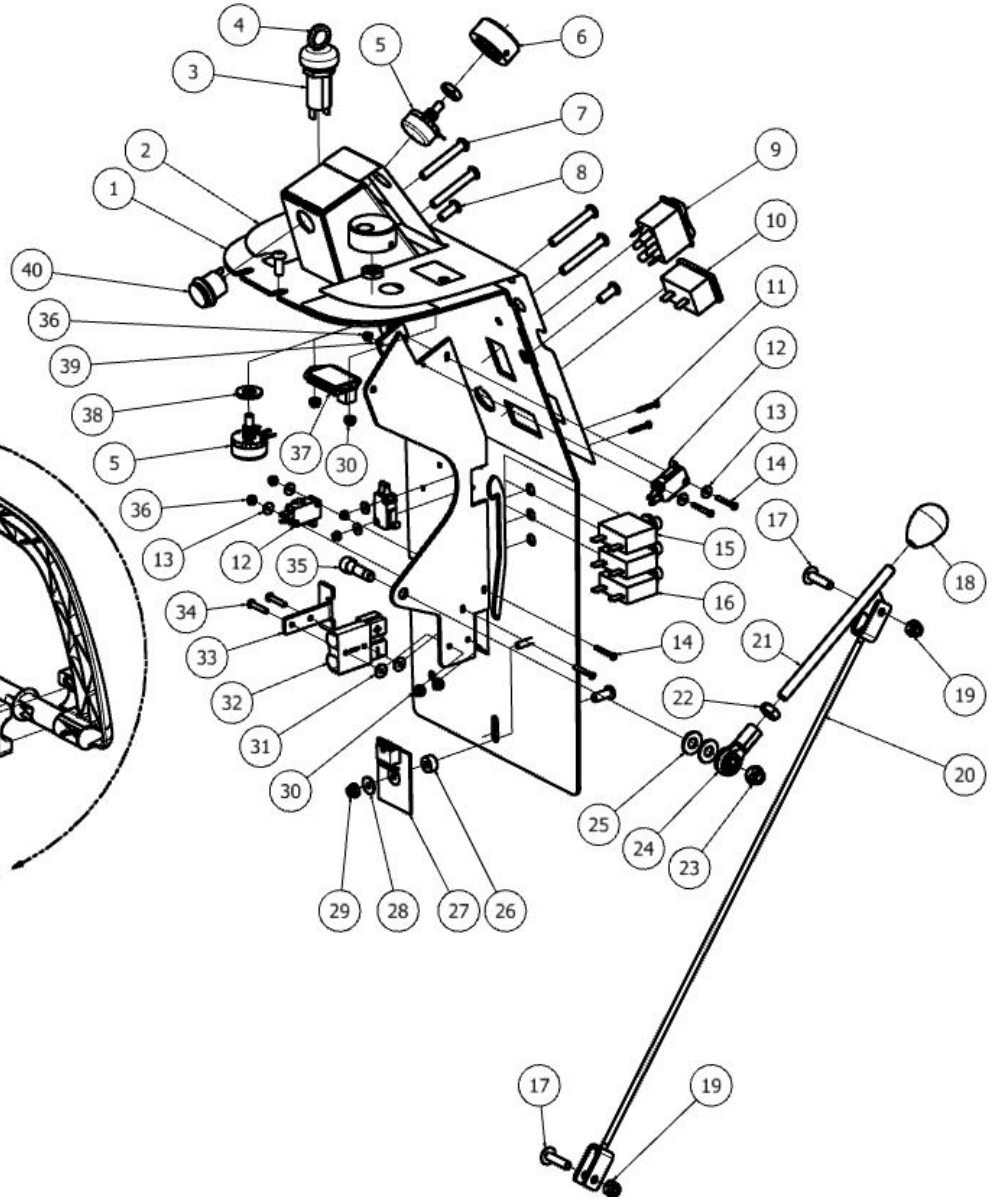
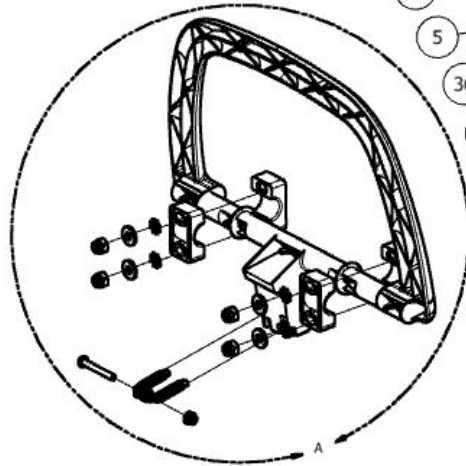
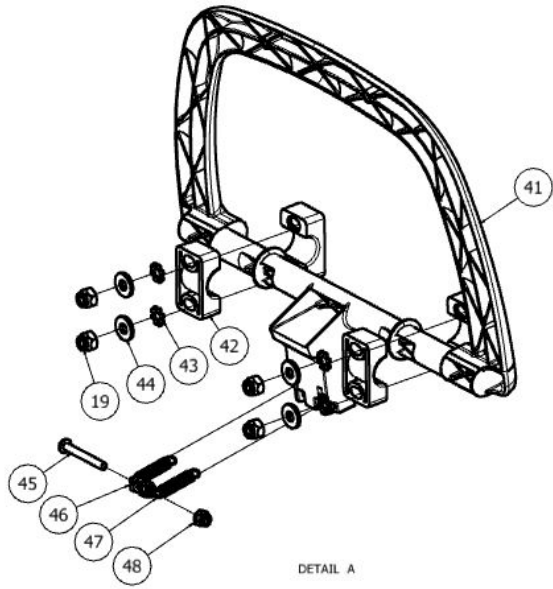
*Items 47–49 not shown.

**Machines equipped with an off-board charging port use item 30 and the associated switch (items 11–13 & 34). Machines without the off-board charging port use item 31 in place.

CONTROLS

S-28 & S-32 DISK

(See additional diagrams for models equipped with BatteryShield®, chemical injection, or ScrubSmart® telemetry systems.)



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CONTROLS S-28 & S-32 DISK

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---------------------------------------|
| 1 | 1 | 877101 | PANEL, CONTROLS |
| 2 | 1 | 875124 | LABEL CONTROL 22GAL DISK |
| 3 | 1 | 911647 | SWITCH KEY |
| 4 | 1 | 855012 | KEY REPLMNT SCRUB 2-SET FOR 911647 |
| 5 | 2 | 911664 | POTENTIOMETER ASSY, 5K |
| 6 | 2 | 855001 | KNOB, ADJUST, .25 BORE |
| 7 | 4 | 962264 | SCREW, BUTTON, SOCKET, .25 X 1.75, SS |
| 8 | 4 | 962263 | SCREW BHCS .25-20 X .63 SS BL |
| 9 | 1 | 911649 | SWITCH, ROCKER, AUTO ON-OFF |
| 10 | 1 | 911661 | METER, HOUR, DIGITAL |
| 11 | 2 | 962209 | SCREW PHPS 4-40 X .75 SS BL |
| 12 | 3 | 911646 | SWITCH, SNAP, WITH ROLLER |
| 13 | 6 | 980682 | WASHER, FLAT, #4, ZINC |
| 14 | 4 | 962273 | SCREW, PAN, #4-40 X .88, ZINC |
| 15 | 1 | 911622 | CIRCUIT BREAKER, 30 AMPS |
| 16 | 2 | 911681 | BREAKER, CIRCUIT, 35 AMPS |
| 17 | 2 | 962455 | SCREW, TRUSS, .25-20 X 1.0 |
| 18 | 1 | 855004 | KNOB, OVAL, .31-18 |
| 19 | 6 | 920011 | NUT, NYLOCK, 1/4-20, ZINC |
| 20 | 1 | 852401 | CABLE, LIFT, CLEVIS |
| 21 | 1 | 855106 | LEVER, LIFT, SQUEEGEE |
| 22 | 1 | 920038 | NUT, HEX, .31-24, SS |
| 23 | 1 | 920012 | NUT, NYLOCK, 5/16-18, ZINC |
| 24 | 1 | 902050 | BEARING, ROD END, .31-24 |
| 25 | 2 | W243D | WASHER, FLAT, 5/16, SS |
| 26 | 3 | 878208 | SPACER PLASTIC #10 X .25 THICK |
| 27 | 1 | 872413 | CONTROLLER FLOW WATER |
| 28 | 1 | W401D | WASHER, FLAT, #10 |
| 29 | 1 | 920001 | NUT, NYLOCK, #10-32, ZINC |
| 30 | 4 | 920034 | NUT, NYLOCK, #6-32, SS |
| 31 | 6 | 980033 | WASHER, FLAT, #6, SS |

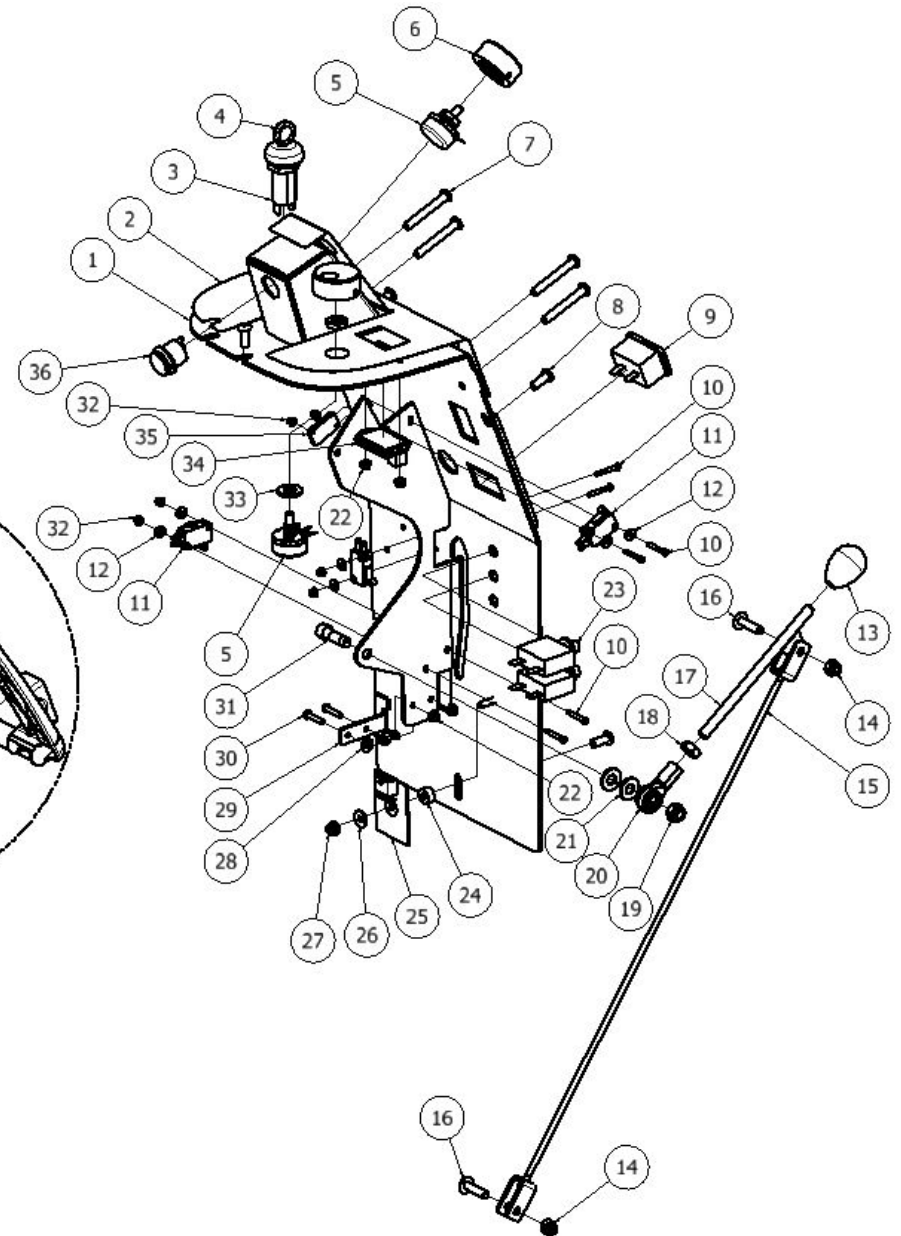
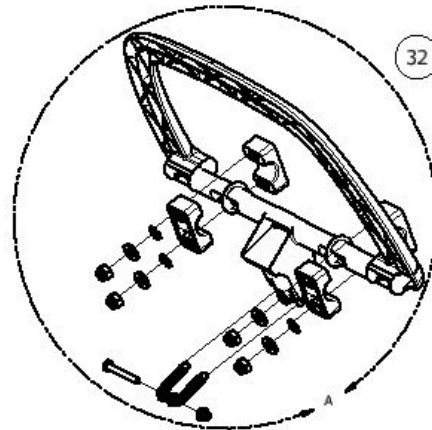
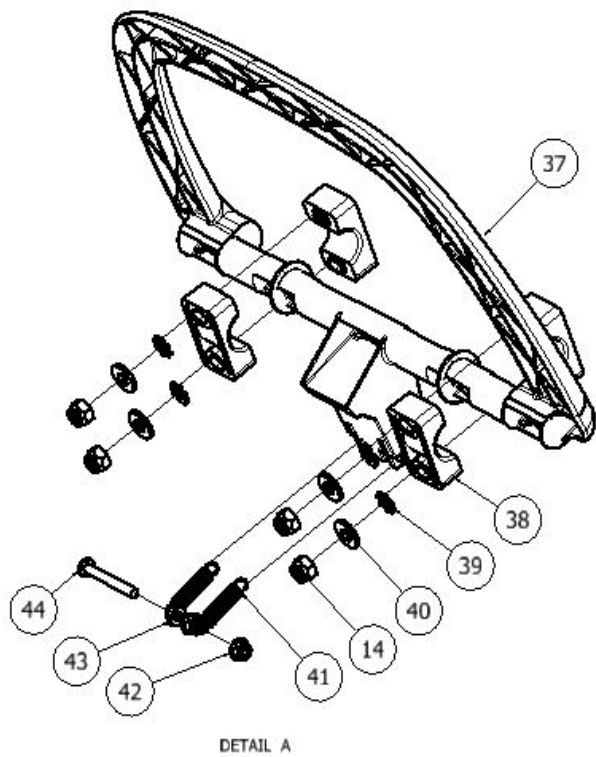
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--------------------------------------|
| 32 | 1 | 911645 | HARNESS, CHARGER, POST |
| 33 | 1 | 850806 | BRACKET, PLUG |
| 34 | 6 | W132D | SCREW PAN #6-32 X 1.0 ZINC |
| 35 | 1 | 962279 | SCREW, SOCKET CAP, .31X1.0, SS |
| 36 | 6 | W385D | NUT, NYLOCK, #4-40, ZINC |
| 37 | 1 | 911621 | METER, BATTERY |
| 38 | 1 | 980003 | WASHER, FLAT, .38 |
| 39 | 1 | 856608 | PLATE, MOUNTING |
| 40 | 1 | 911653 | SWITCH, ROUND, ON – MOM |
| 41 | 1 | 851301 | BAIL, MOLDED |
| 42 | 4 | 855601 | MOUNT, BEARING, PLASTIC |
| 43 | 4 | 980029 | WASHER, LOCK, .25, STAR, EXT |
| 44 | 4 | W104D | WASHER, FLAT, .25 |
| 45 | 1 | 962146 | SCREW, PAN, #10-32 X 1.5, FULL, ZINC |
| 46 | 1 | 920013 | NUT, #10-32, ZINC |
| 47 | 2 | 858302 | SPRING, EXTENSION |
| 48 | 2 | 920666 | NUT, NYLOCK, #10-32, SS |
| 49 | 1 | 911675 | HARNESS, POWER, 28 & 32 INCH |
| 50 | 1 | 911678 | HARNESS, SIGNAL, 28 & 32 INCH |
| 51 | 1 | 911722 | HARNESS SOLUTION FLOW S-SERIES |

*Items 49–51 not shown.

**Machines equipped with an off-board charging port use item 31 and the associated switch (items 12-14 & 36). Machines without the off-board charging port use item 33 in place.

CONTROLS S-28 ORBITAL

(See additional diagrams for models equipped with BatteryShield®, chemical injection, or ScrubSmart® telemetry systems.)



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CONTROLS S-28 ORBITAL

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---------------------------------------|
| 1 | 1 | 877101 | PANEL, CONTROLS |
| 2 | 1 | 875125 | LABEL CONTROL 22GAL ORB |
| 3 | 1 | 911647 | SWITCH KEY |
| 4 | 1 | 855012 | KEY REPLMNT SCRUB 2-SET FOR 911647 |
| 5 | 2 | 911664 | POTENTIOMETER ASSY, 5K |
| 6 | 2 | 855001 | KNOB, ADJUST, .25 BORE |
| 7 | 4 | 962264 | SCREW, BUTTON, SOCKET, .25 X 1.75, SS |
| 8 | 4 | 962263 | SCREW, BUTT, SOCK, .25-20X.62, SS BO |
| 9 | 1 | 911661 | METER, HOUR, DIGITAL |
| 10 | 6 | 962273 | SCREW, PAN, #4-40 X .88, ZINC |
| 11 | 3 | 911646 | SWITCH, SNAP, WITH ROLLER |
| 12 | 6 | 980682 | WASHER, FLAT, #4, ZINC |
| 13 | 1 | 855004 | KNOB, OVAL, .31-18 |
| 14 | 6 | 920011 | NUT, NYLOCK, 1/4-20, ZINC |
| 15 | 1 | 852401 | CABLE, LIFT, CLEVIS |
| 16 | 2 | 962455 | SCREW, TRUSS, .25-20 X 1.0 |
| 17 | 1 | 855106 | LEVER, LIFT, SQUEEGEE |
| 18 | 1 | 920038 | NUT, HEX, .31-24, SS |
| 19 | 1 | 920012 | NUT, NYLOCK, 5/16-18, ZINC |
| 20 | 1 | 902050 | BEARING, ROD END, .31-24 |
| 21 | 2 | W243D | WASHER, FLAT, 5/16, SS |
| 22 | 4 | 920034 | NUT, NYLOCK, #6-32, SS |
| 23 | 2 | 911622 | CIRCUIT BREAKER, 30 AMPS |
| 24 | 3 | 878208 | SPACER PLASTIC #10 X .25 THICK |
| 25 | 1 | 872413 | CONTROLLER FLOW WATER |
| 26 | 1 | W401D | WASHER, FLAT, #10 |
| 27 | 1 | 920001 | NUT, NYLOCK, #10-32, ZINC |
| 28 | 6 | 980033 | WASHER, FLAT, #6, SS |
| 29 | 1 | 850806 | BRACKET, PLUG |
| 30 | 6 | W132D | SCREW PAN #6-32 X 1.0 ZINC |
| 31 | 1 | 962279 | SCREW, SOCKET CAP, .31X1.0, SS |

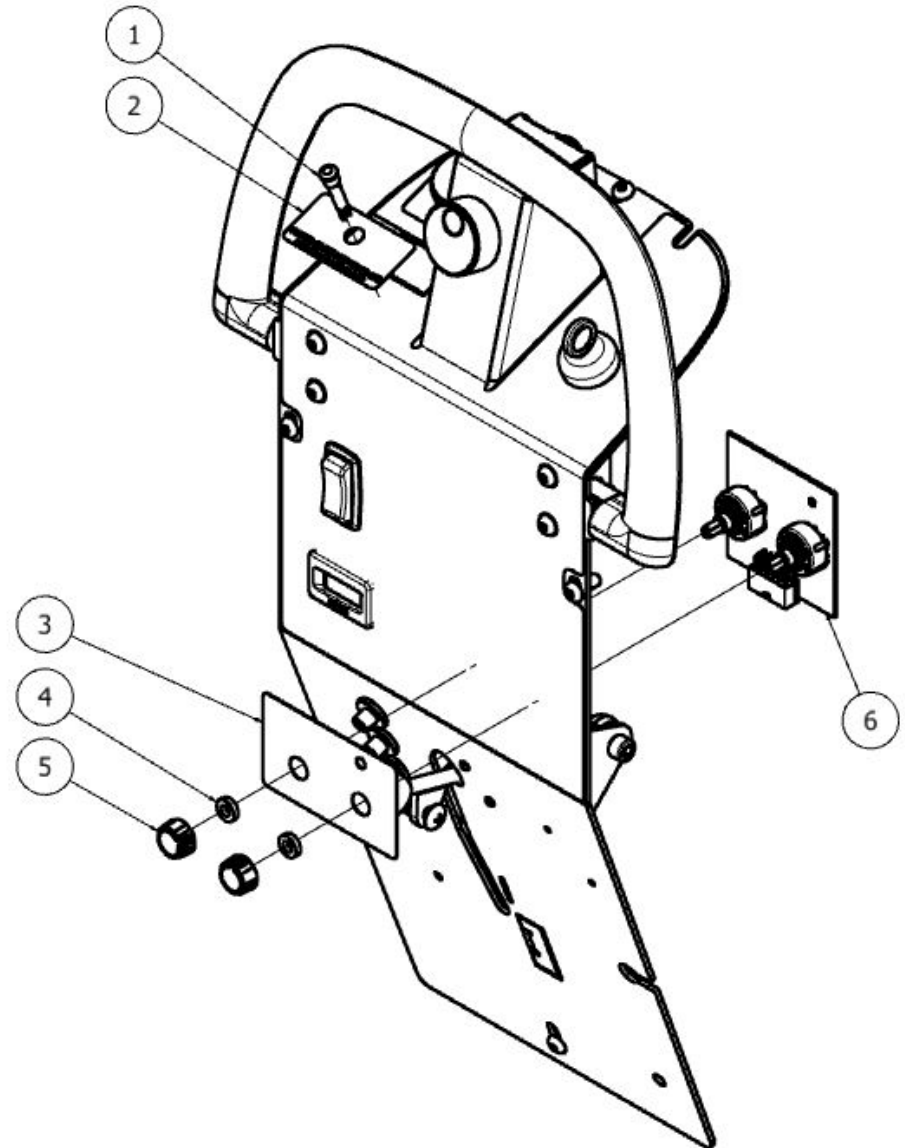
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--------------------------------------|
| 32 | 6 | W385D | NUT, NYLOCK, #4-40, ZINC |
| 33 | 1 | 980003 | WASHER, FLAT, .38 |
| 34 | 1 | 911621 | METER, BATTERY |
| 35 | 1 | 856608 | PLATE, MOUNTING |
| 36 | 1 | 911653 | SWITCH, ROUND, ON - MOM |
| 37 | 1 | 851301 | BAIL, MOLDED |
| 38 | 4 | 855601 | MOUNT, BEARING, PLASTIC |
| 39 | 4 | 980029 | WASHER, LOCK, .25, STAR, EXT |
| 40 | 4 | W104D | WASHER, FLAT, .25 |
| 41 | 2 | 858302 | SPRING, EXTENSION |
| 42 | 2 | 920666 | NUT, NYLOCK, #10-32, SS |
| 43 | 1 | 920013 | NUT, #10-32, ZINC |
| 44 | 1 | 962146 | SCREW, PAN, #10-32 X 1.5, FULL, ZINC |
| 45 | 1 | 911645 | HARNESS, CHARGER, POST |
| 46 | 1 | 911676 | HARNESS, POWER, 28 ORBITAL |
| 47 | 1 | 911679 | HARNESS, SIGNAL, 28 ORBITAL |
| 48 | 1 | 911722 | HARNESS SOLUTION FLOW S-SERIES |
| 49 | 1 | 911684 | HARNESS, BATTERYSHIELD |

*Items 45-49 not shown.

CONTROLS OPTIONAL BATTERYSHIELD® & CHEMICAL INJECTION CONTROLS

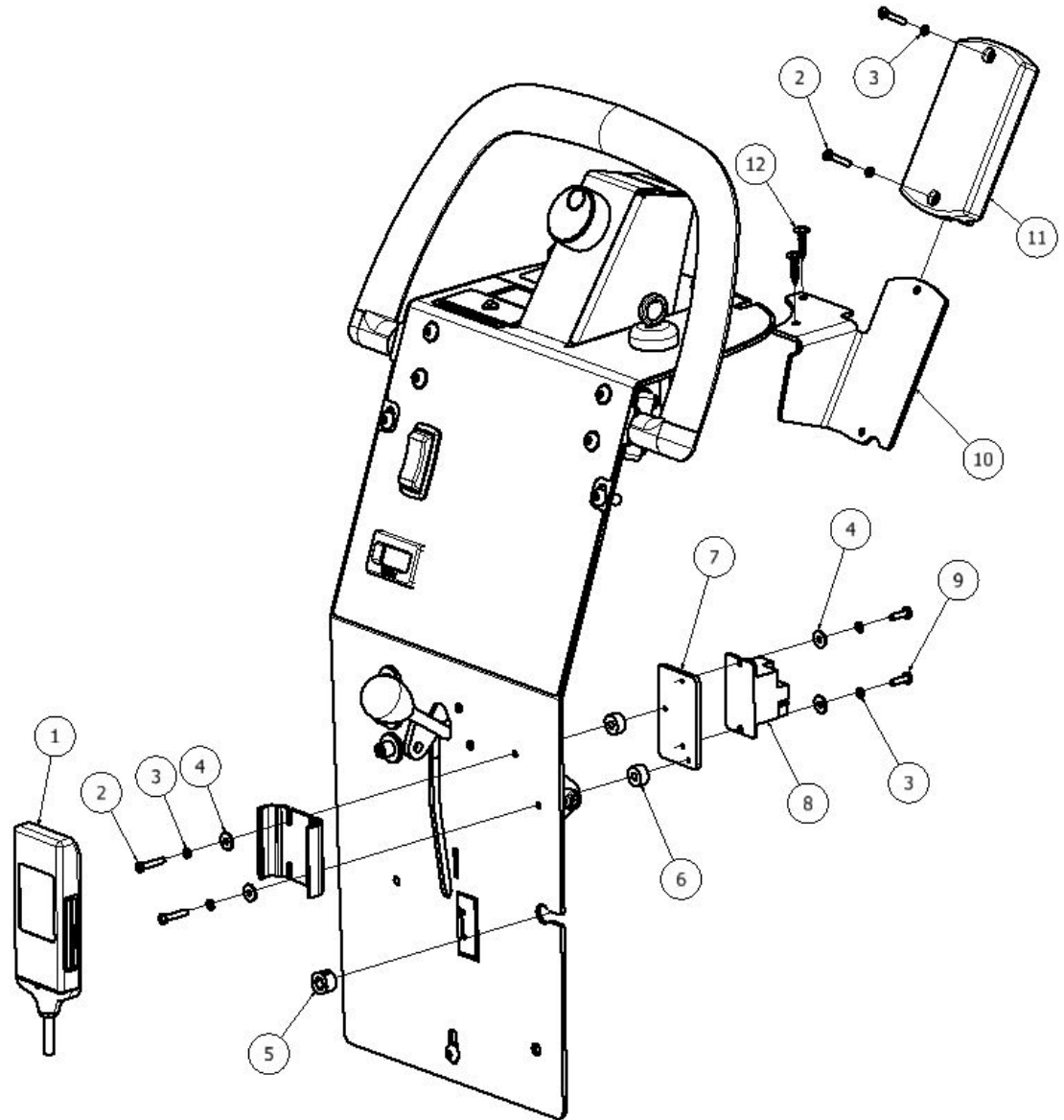
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|----------------------------------|
| 1 | 1 | 875107 | LED, RED, 24VDC |
| 2 | 1 | 855115 | LABEL BATTERYSHIELD WITH QR CODE |
| 3 | 1 | 875104 | LABEL, CONTROL, SOLUTION |
| 4 | 2 | 878210 | SPACER SOLUTION CONTROLLER |
| 5 | 2 | 875001 | KNOB, .25 BORE, SMALL |
| 6 | 1 | 872401 | CONTROLLER, DISPENSING |
| 7 | 1 | 911680 | HARNESS, SOLUTION CONTROL |
| 8 | 1 | 911684 | HARNESS, BATTERYSHIELD |

*Items 7-8 not shown.



CONTROLS OPTIONAL SCRUBSMART® TELEMETRY SYSTEM

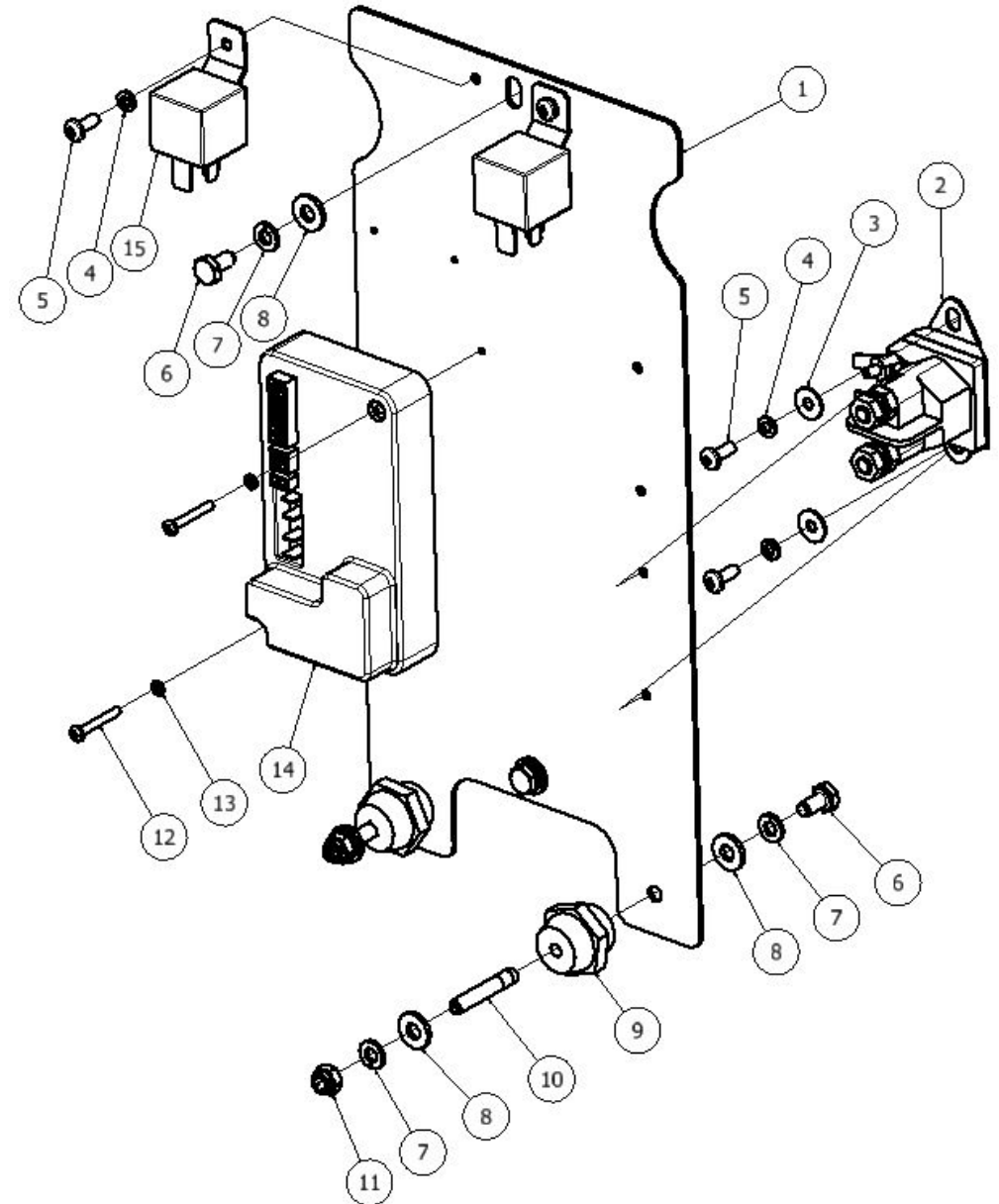
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--------------------------------|
| 1 | 1 | 899203 | TRANSMITTER TELEMETRY TRACKING |
| 2 | 4 | W132D | SCREW PAN #6-32 X 1.0 ZINC |
| 3 | 6 | 980025 | WASHER SPLIT LOCK #6 ZINC |
| 4 | 6 | 980033 | WASHER, FLAT, #6, SS |
| 5 | 1 | 873805 | GROMMET LOCKING 1/2" ID |
| 6 | 2 | 878208 | SPACER PLASTIC #10 X .25 THICK |
| 7 | 1 | 870826 | BRACKET MTG RELAY |
| 8 | 1 | 911685 | RELAY, 24VDC, BATTERYSHIELD |
| 9 | 2 | W315D | SCREW, PAN, #6-32 X .50, BLK |
| 10 | 1 | 870827 | BRACKET MTG KEYPAD |
| 11 | 1 | 895002 | KEYPAD TELEMETRY TRACKING |
| 12 | 2 | 962460 | SCREW, #8X.75, PHIL TRUSS SS |



ELECTRONICS S-24 DISK

(See additional diagrams for models equipped with BatteryShield®.)

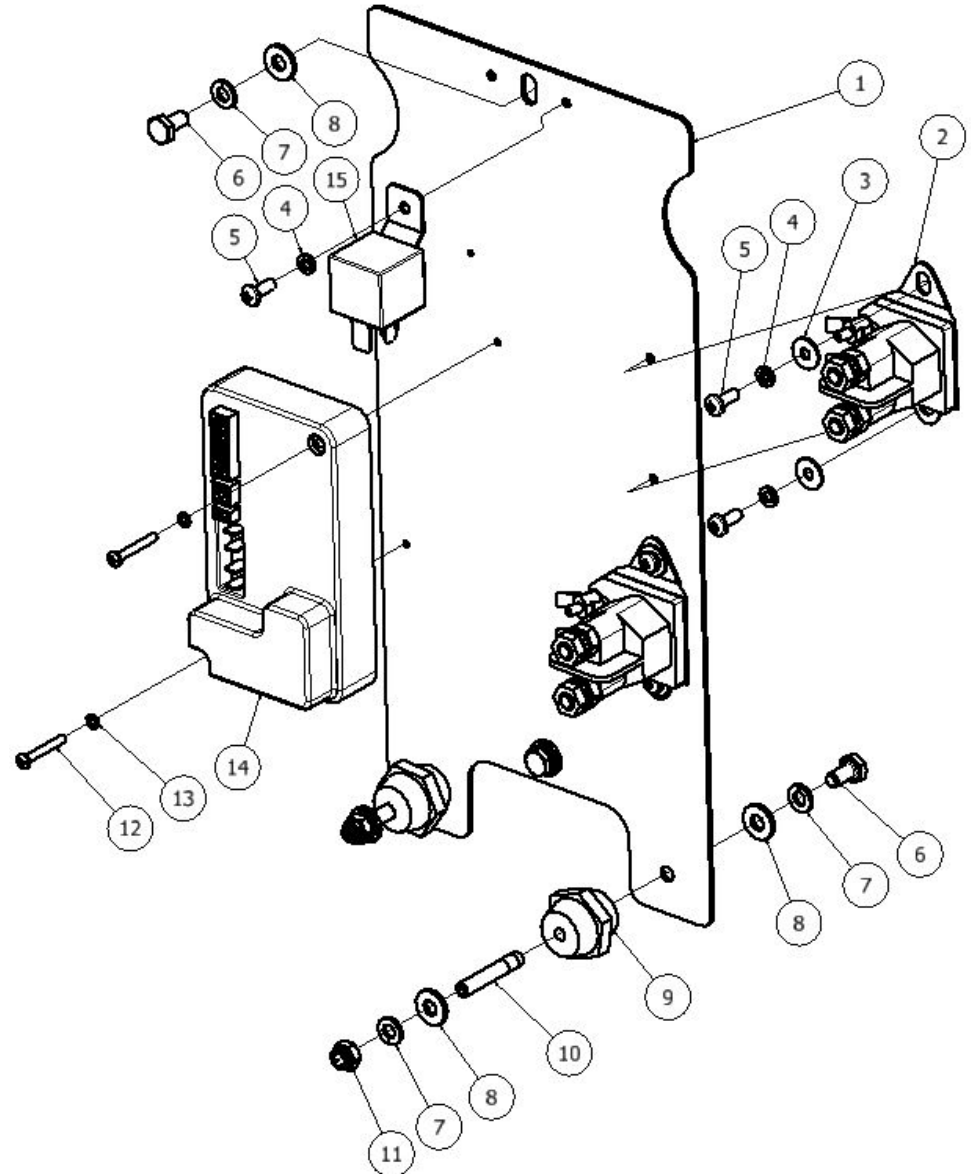
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--|
| 1 | 1 | 879801 | PANEL, ELECTRONICS |
| 2 | 1 | 912401 | CONTACTOR, 24V, 100A |
| 3 | 2 | W401D | WASHER, FLAT, #10 |
| 4 | 4 | 980022 | WASHER, LOCK, SPLIT, #10 |
| 5 | 4 | 962363 | SCREW, PAN, #10-32 X .50, SS |
| 6 | 4 |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



ELECTRONICS S-28 & S-32 DISK

(See additional diagrams for models equipped with BatteryShield®.)

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

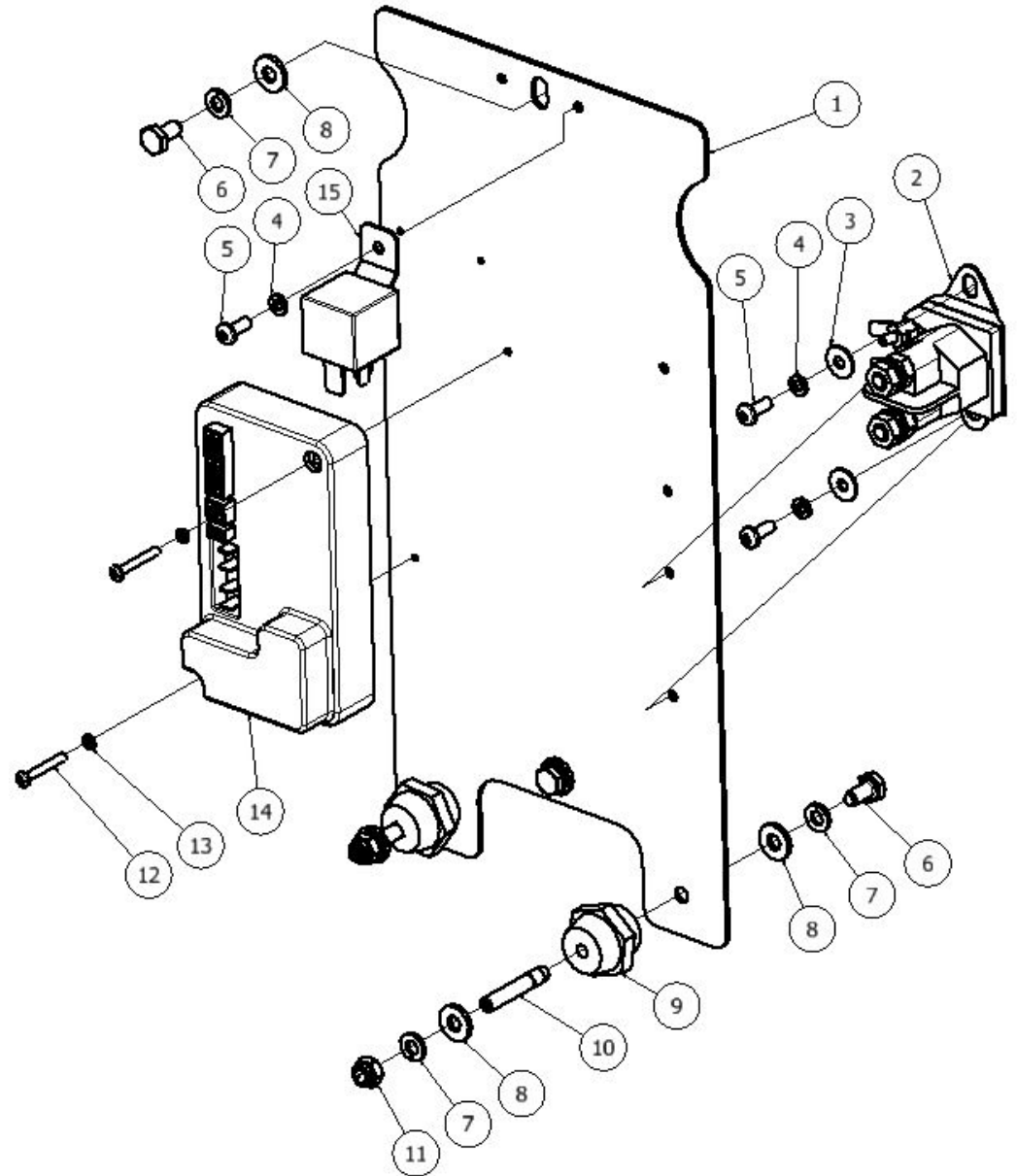


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ELECTRONICS S-28 ORBITAL

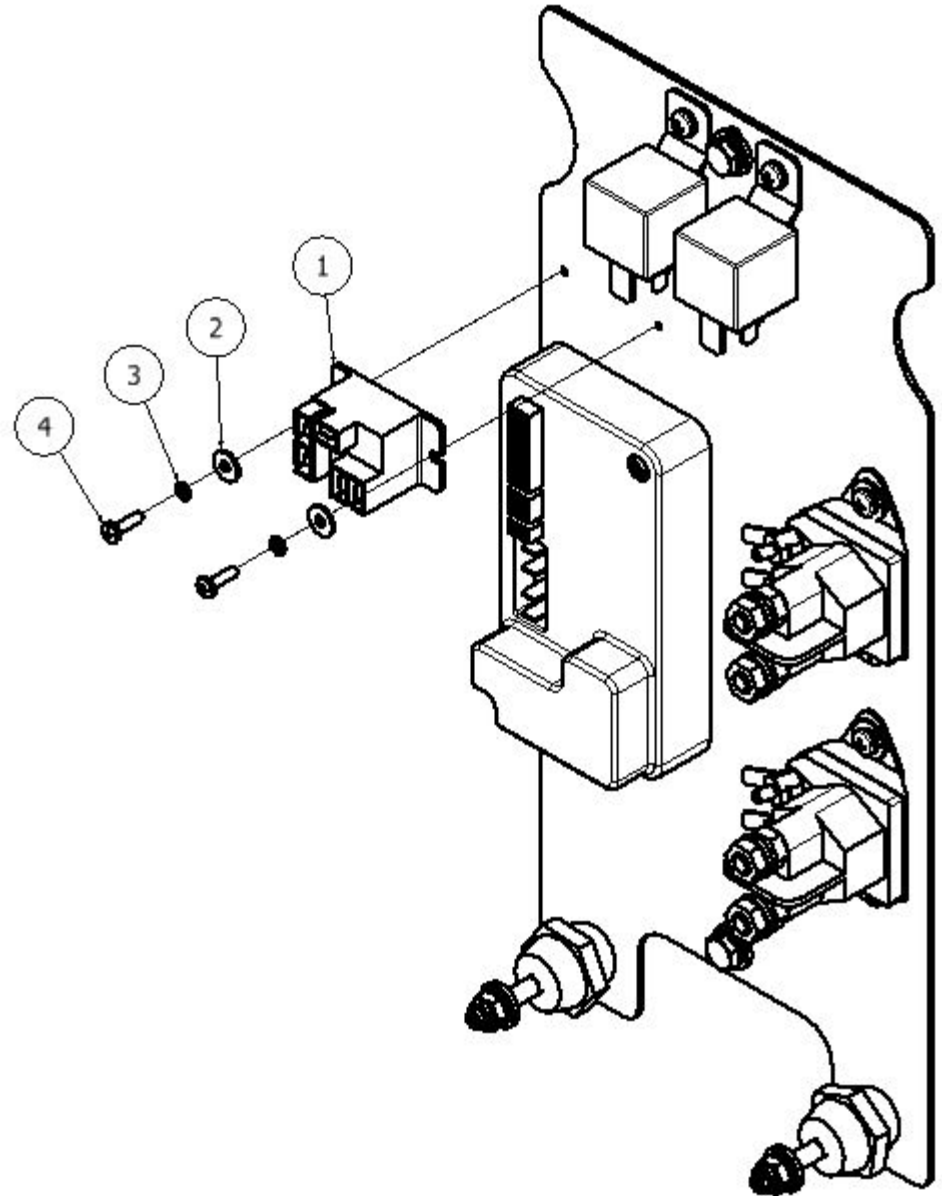
(See additional diagrams for models equipped with BatteryShield®.)

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



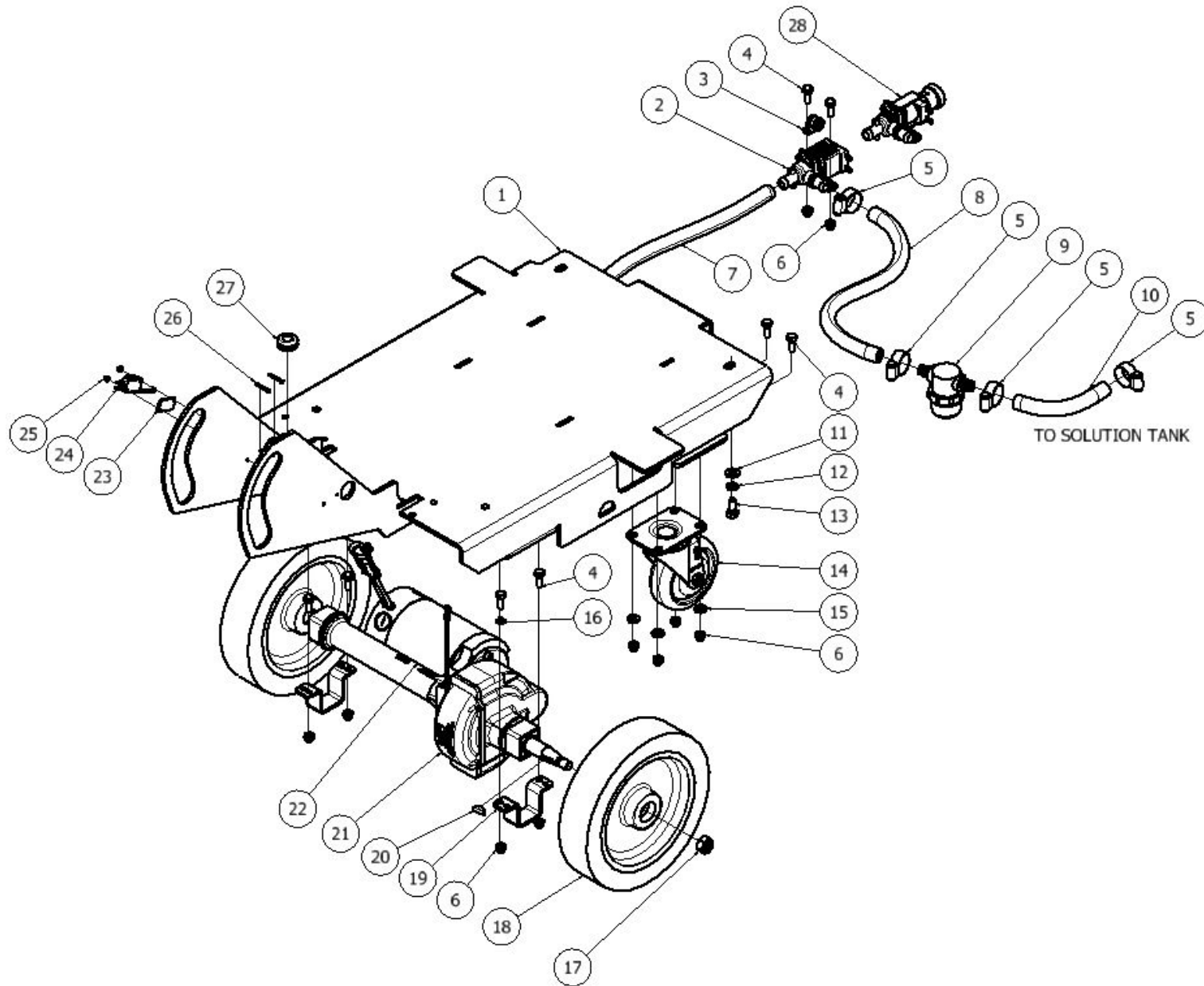
ELECTRONICS OPTIONAL BATTERYSHIELD®

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



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FRAME ASSEMBLY



FRAME ASSEMBLY

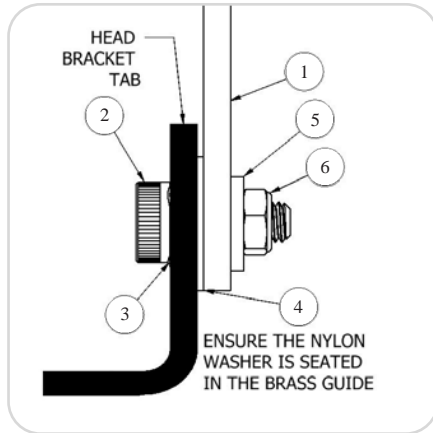
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|-------------------------------------|
| 1 | 1 | 873201 | FRAME, SCRUBBER, 20 TRACT |
| 2* | 1 | 859402 | VALVE SOLENOID 24V NONADJ |
| 3 | 1 | 852101 | CLAMP, WIRE, P-SHAPED |
| 4 | 14 | W189D | SCREW, HEX, 1/4-20 X .75, SS, PATCH |
| 5 | 4 | S453P | CLAMP, HOSE, WORM |
| 6 | 14 | 920011 | NUT, NYLOCK, 1/4-20, ZINC |
| 7 | 1 | 224130 - 20.0" | TUBING, 1/2" |
| 8 | 1 | 224130 - 14.0" | TUBING, 1/2" |
| 9 | 1 | 843319 | FILTER, SCREEN, BOWL |
| 10 | 1 | 224130 - 5.12" | TUBING, 1/2" |
| 11 | 4 | W243D | WASHER, FLAT, 5/16, SS |
| 12 | 4 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 13 | 4 | 962269 | SCREW, HEX, .31-18 X .75, SS |
| 14 | 2 | 875017 | ASSY CASTER 4 INCH REPLACEMENT |
| 15 | 8 | W104D | WASHER, FLAT, .25 |
| 16 | 1 | 980029 | WASHER, LOCK, .25, STAR, EXT |
| 17 | 2 | 920648 | NUT, M12, NYLOCK |
| 18 | 2 | 879705 | WHEEL URETHANE 222MM |
| 19 | 2 | 850807 | BRACKET, RETAINING, TRANS |
| 20 | 2 | 915007 | KEY, WOODRUFF, 5MM |
| 21 | 1 | 879203 | TRANSAXLE, 24VDC |
| 22 | 1 | 875204 | MOTOR REPL FOR TRANSAXLE 879203 |
| 23 | 1 | 856608 | PLATE, MOUNTING |
| 24 | 1 | 911682 | SWITCH, SNAP, BENT LEVER |
| 25 | 2 | W385D | NUT, NYLOCK, #4-40, ZINC |
| 26 | 2 | 962273 | SCREW, PAN, #4-40 X .88, ZINC |
| 27 | 1 | 873804 | GROMMET .50ID .81HOLE .25THK |
| 28* | 1 | 855014 | ASSY VALVE SCRUBBER REPLMNT |
| 29** | 1 | 870919 | BRUSH KIT REPL FOR TRANSAXLE 879203 |

* For machines serial number 113191 and lower, use item 28 (870919).
 Machines produced after serial number 113191, use item 2 (859402).
 Machines with serial number greater than 113191 utilize the solution
 flow control on the control panel.

**Item 29 not shown.

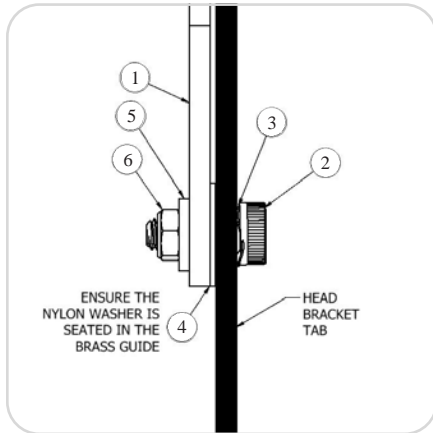
HEAD LIFT

DISK HEAD MOUNTING HARDWARE

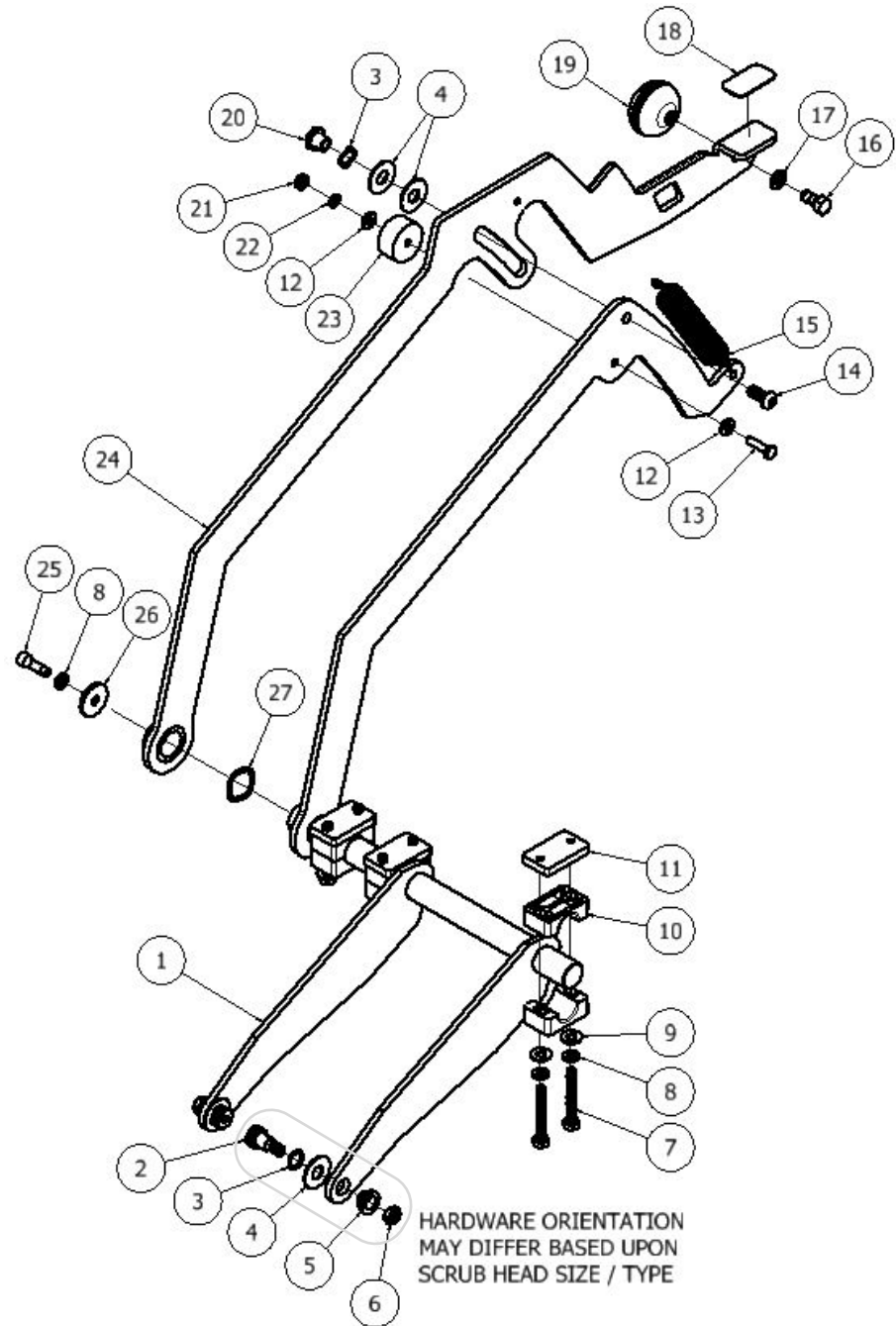


*LEFT SIDE SHOWN

ORBITAL HEAD MOUNTING HARDWARE



*LEFT SIDE SHOWN

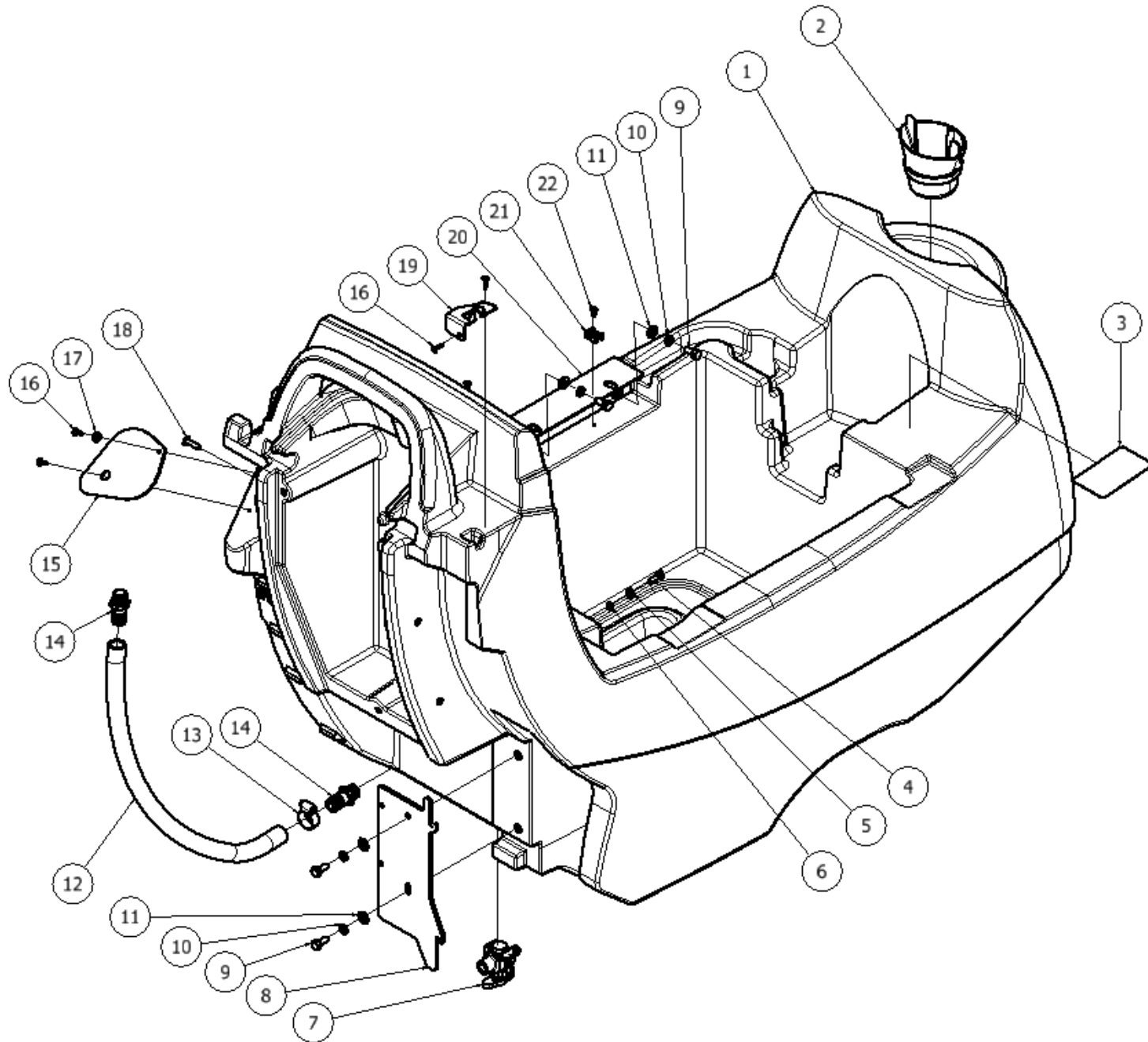


HEAD LIFT

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---|
| 1 | 1 | 870801 | BRACKET, LIFT, HEAD |
| 2 | 2 | 962465 | SCREW, SHOULDER, .50 X .50 |
| 3 | 3 | 980093 | WASHER, WAVE, .50INCH |
| 4 | 4 | 980612 | WASHER, NYL, .50 X 1.25 X .062 |
| 5 | 2 | 871101 | BUSHING, FLANGE, .50IN |
| 6 | 2 | 920035 | NUT, NYLOCK, .38-16, SS |
| 7* | 6 | 962446 | SCREW HH .31-18 X 2.25 SS |
| 8* | 7 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 9* | 6 | W243D | WASHER, FLAT, 5/16, SS |
| 10* | 6 | 875601 | MOUNT, BEARING, PLASTIC |
| 11* | 3 | 870828 | BRACKET BEARING MOUNT |
| 12 | 2 | W104D | WASHER, FLAT, .25 |
| 13 | 1 | 962221 | SCREW, HEX, .25-20 X 1.0, SS |
| 14 | 1 | 964256 | SCREW .38-16X.88 BUTT SCK ZNC PTCH |
| 15 | 1 | 878301 | SPRING, EXTENSION |
| 16 | 1 | 962028 | SCREW, HX, .38-24X.75,SS,PTCH |
| 17 | 1 | 980009 | WASHER, SPLIT LOCK, 3/8, SS |
| 18 | 1 | 875105 | LABEL, FOOT, GRIP, LARGE |
| 19 | 1 | 875002 | KNOB, PLASTIC, LARGE |
| 20 | 1 | 878207 | SPACER LIFT ARM |
| 21 | 1 | 920037 | NUT, THIN JAM, 1/4-20, ZINC |
| 22 | 1 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 23 | 1 | 858205 | SPACER, RUBBER |
| 24 | 1 | 875106 | LEVER, DOWNPRESSURE |
| 25 | 1 | 962279 | SCREW, SOCKET CAP, .31X1.0, SS |
| 26 | 1 | 980108 | WASHER, FLAT, .31ID, 1.25OD, .12THK, SS |
| 27 | 1 | 980785 | WASHER WAVE 1.0INCH SS |

*ITEMS 7-11 CAN BE ORDERED AS A KIT UNDER PART NUMBER 875028 - KIT MOUNT HEAD LIFT REPLACEMENT.

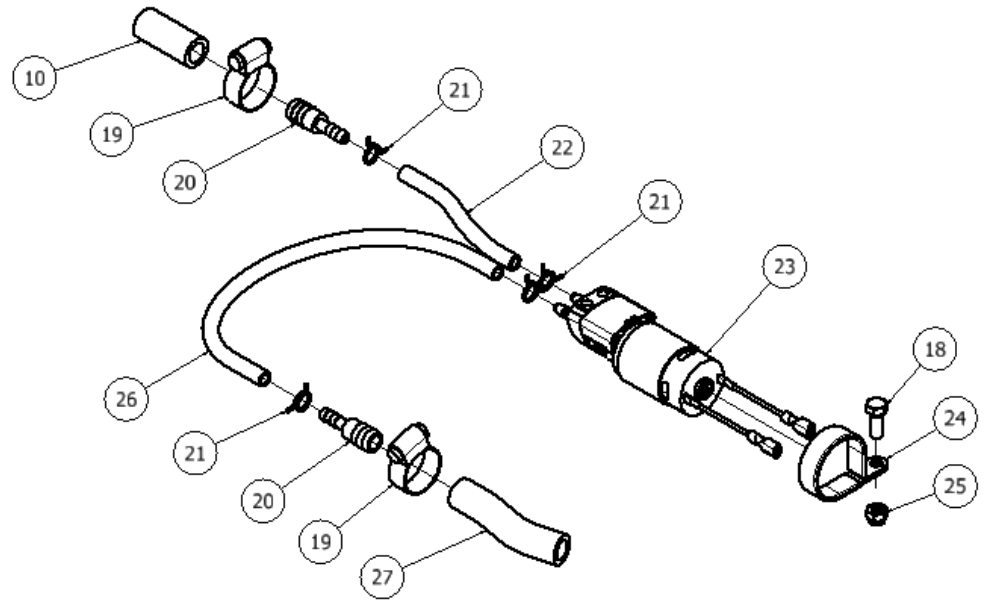
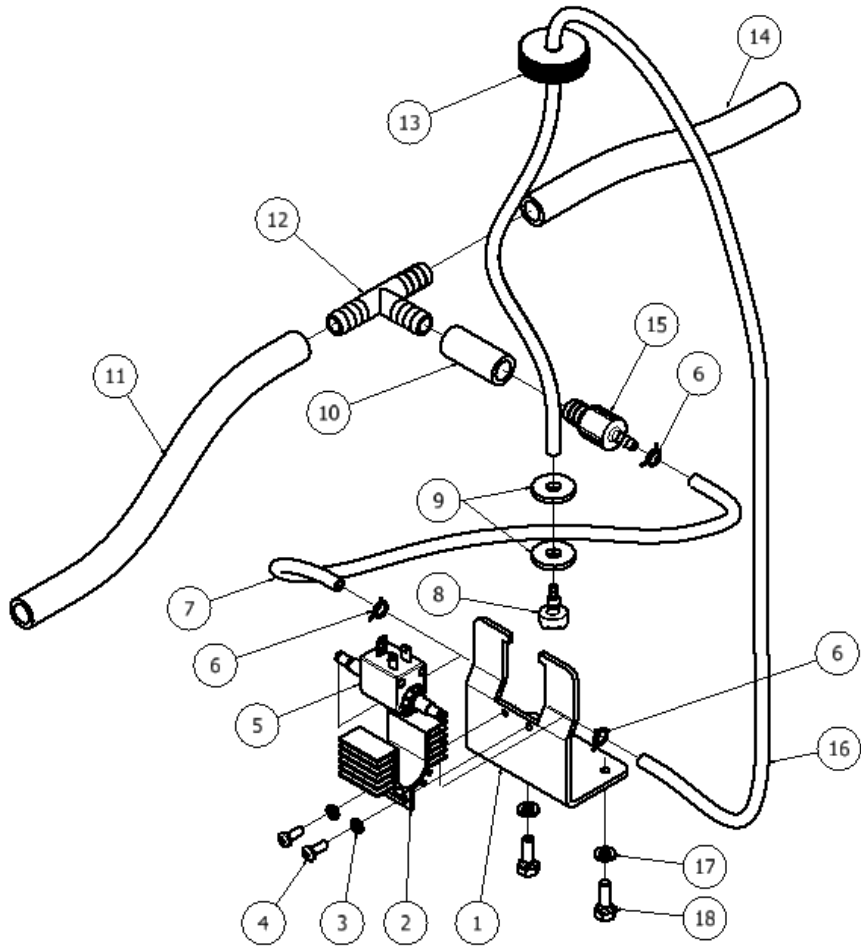
SOLUTION TANK



SOLUTION TANK

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|-------------------------------------|
| 1 | 1 | 878601 | TANK, SOLUTION, 22 GAL |
| 2 | 1 | 875011 | KIT, STRAINER, PORT, FILL |
| 3 | 1 | 875103 | LABEL, INSTRUCTION, BATTERY |
| 4 | 1 | W189D | SCREW, HEX, 1/4-20 X .75, SS, PATCH |
| 5 | 1 | 920037 | NUT, THIN JAM, 1/4-20, ZINC |
| 6 | 1 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 7 | 1 | 879401 | VALVE, SHUT-OFF, BALL |
| 8 | 1 | 870805 | BRACKET, SUPPORT, LEVER |
| 9 | 5 | 962269 | SCREW, HEX, .31-18 X .75, SS |
| 10 | 5 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 11 | 5 | W243D | WASHER, FLAT, 5/16, SS |
| 12 | 1 | 879004 | TUBE, SIGHT, REPLACEMENT |
| 13 | 1 | S453P | CLAMP, HOSE, WORM |
| 14 | 2 | 853303 | FITTING, STR, BM12, PM08 |
| 15 | 1 | 872304 | COVER, PORT, FILL |
| 16 | 4 | 962460 | SCREW, #8X.75, PHIL TRUSS SS |
| 17 | 1 | W401D | WASHER, FLAT, #10 |
| 18 | 1 | 962455 | SCREW, TRUSS, .25-20 X 1.0 |
| 19 | 1 | 870819 | BRACKET, RETENTION, HANGER |
| 20 | 1 | 874501 | HINGE, TANK, RECOVERY |
| 21 | 4 | 225670 | PAD, WIRE TIE |
| 22 | 4 | 962271 | SCREW, PAN, #10 X .38L, ZINC |

OPTIONAL CHEMICAL INJECTION SYSTEM

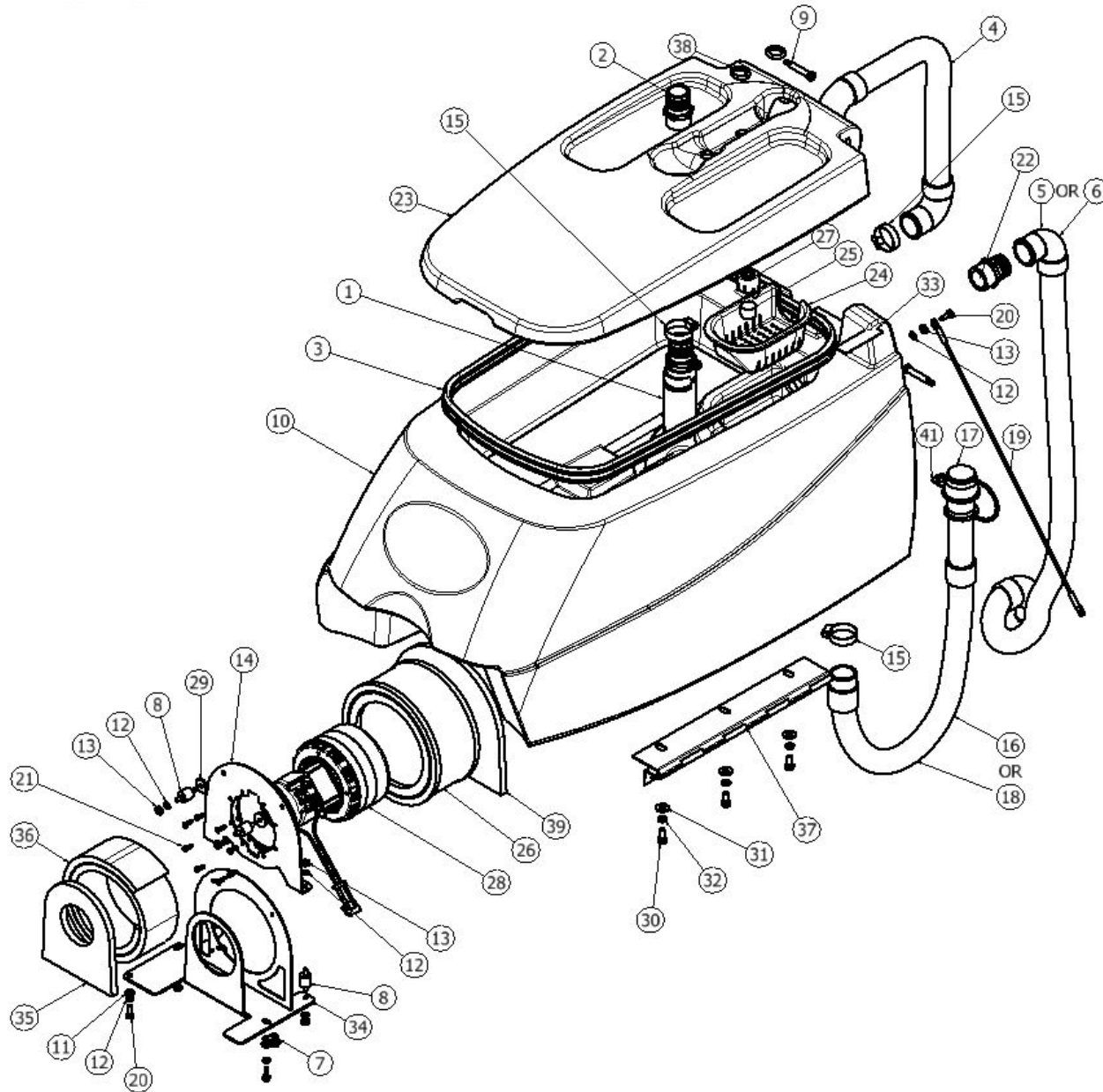


OPTIONAL CHEMICAL INJECTION SYSTEM

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|--|
| 1 | 1 | 870811 | BRACKET, MTG, HEAT SINK |
| 2 | 1 | 870810 | BRACKET, HEAT SINK |
| 3 | 2 | 980022 | WASHER, LOCK, SPLIT, #10 |
| 4 | 2 | 962363 | SCREW, PAN, #10-32 X .50, SS |
| 5 | 1 | 877002 | PUMP, 24VDC, SOLENOID, EMX08 |
| 6 | 3 | 872002 | CLAMP, HOSE, .31, WIRE |
| 7 | 1 | 879003 - 10.0" | TUBING, 3/16" |
| 8 | 1 | S764P2 | FILTER, STRAINER |
| 9 | 2 | 980107 | WASHER, FLAT, .31ID, 1.0OD, .12THK, SS |
| 10 | 2 | 224130 | TUBING, 1/2" |
| 11 | 1 | 224130 - 1.62" | TUBING, 1/2" |
| 12 | 1 | 873308 | FITTING, TEE, 0.50 INCH |
| 13 | 1 | 871501 | CAP, 38MM, WITH HOLE |
| 14 | 1 | 224130 | TUBING, 1/2" |
| 15 | 1 | 879402 | VALVE, CHECK, .188 X .50 BARB |
| 16 | 1 | 879003 - 42.0" | TUBING, 3/16" |
| 17 | 2 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 18 | 3 | W189D | SCREW, HEX, 1/4-20 X .75, SS, PATCH |
| 19 | 2 | S453P | CLAMP, HOSE, WORM |
| 20 | 2 | 853301 | FITTING, REDUCER, BM08, BM04 |
| 21 | 4 | 872003 | CLAMP, HOSE, .38, WIRE |
| 22 | 1 | 224130 | TUBING, 1/2" |
| 23 | 1 | 877005 | PUMP, GEAR, 24VDC |
| 24 | 1 | 872001 | CLAMP, P-SHAPED, 1.5 DIA |
| 25 | 1 | 920011 | NUT, NYLOCK, 1/4-20, ZINC |
| 26 | 1 | 224130 | TUBING, 1/2" |
| 27 | 1 | 224130 - 3.38" | TUBING, 1/2" |

RECOVERY TANK ASSEMBLY

*** PRIOR TO SERIAL NUMBER 123255 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***



RECOVERY TANK ASSEMBLY

*** PRIOR TO SERIAL NUMBER 123255 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--|
| 1 | 2 | 223370 | FLOAT, SHUTOFF |
| 2 | 2 | 853304 | FITTING, STR, BM24, PM20 |
| 3 | 1 | 873401 | GASKET, COVER, PRESS-IN |
| 4 | 1 | 854103 | HOSE, VACUUM, 1.5INCH |
| 5 | 1 | 874101 | HOSE, SQUEEGEE, 90 CUFF |
| 6 | 1 | 874102 | HOSE SQUEEGEE MID CHEM RESIST |
| 7 | 1 | 852101 | CLAMP, WIRE, P-SHAPED |
| 8 | 4 | 855603 | MOUNT, RUBBER, .25-20 |
| 9 | 2 | 962462 | SCREW, SHOULDER, .38 X 1.75, SS |
| 10 | 1 | 878602 | TANK, RECOVERY, 22 GAL |
| 11 | 3 | W104D | WASHER, FLAT, .25 |
| 12 | 12 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 13 | 9 | 920037 | NUT, THIN JAM, 1/4-20, ZINC |
| 14 | 1 | 870806 | BRACKET, MTG, ISOLATOR |
| 15 | 4 | S611A | CLAMP, HOSE, WORM |
| 16 | 1 | 854101 | HOSE, DRAIN, CAPPED |
| 17 | 1 | 851501 | CAP HOSE DRAIN - REPL FOR 854101 |
| 18 | 1 | 854104 | HOSE DRAIN CAPPED CHEM RESIST |
| 19 | 1 | 872412 | CABLE RETENTION MID LONG |
| 20 | 4 | W189D | SCREW, HEX, 1/4-20 X .75, SS, PATCH |
| 21 | 8 | 964224 | SCREW PHPS M5.5 X 16 ZINC PLASTIC |
| 22 | 1 | 853308 | FITTING, MODIFIED |
| 23 | 1 | 872301 | COVER, TANK, RECOVERY |
| 24 | 1 | 879201 | TRAY, DEBRIS |
| 25 | 1 | 877007 | PUCK, BROMINE (4-PACK) |
| 26 | 1 | 873304 | FILTER, HEPA, MID |
| 27 | 1 | 879202 | TRAY, PUCK |
| 28 | 2 | 875202 | MOTOR, VACUUM, 24VDC, 3-STAGE |
| 29 | 2 | 980106 | WASHER, FLAT, .25ID, 1.0OD, .12THK, SS |
| 30 | 3 | 962269 | SCREW, HEX, .31-18 X .75, SS |
| 31 | 3 | W243D | WASHER, FLAT, 5/16, SS |

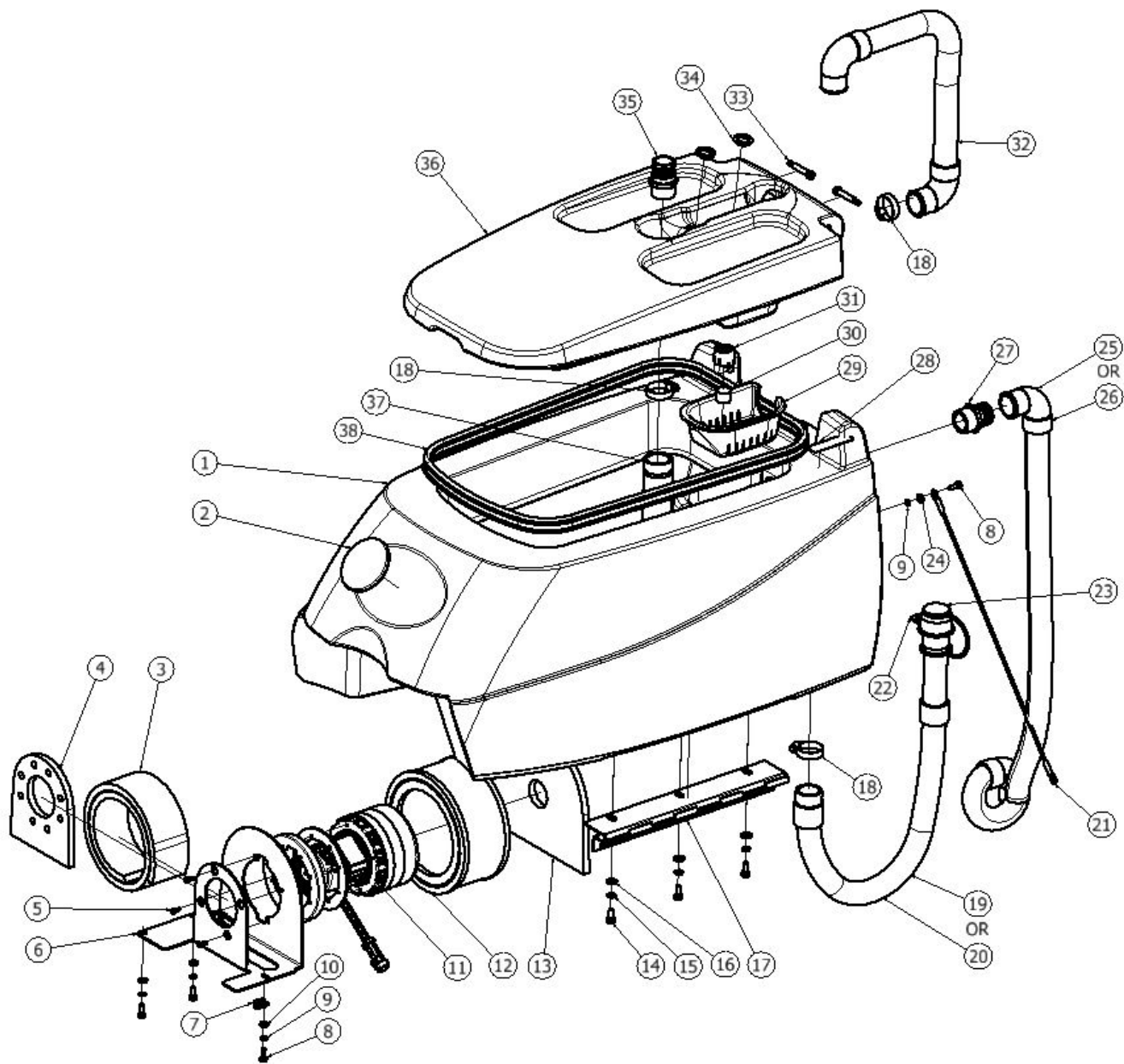
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|-----------------------------|
| 32 | 3 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 33 | 1 | 875110 | LABEL, INSTRUCT, BROMINE |
| 34 | 1 | 872303 | COVER, MTG, VACUUM |
| 35 | 1 | 873314 | GASKET, FOAM, VACUUM |
| 36 | 1 | 853305 | FOAM, NOISE, VACUUM |
| 37 | 1 | 874501 | HINGE, TANK, RECOVERY |
| 38 | 2 | 856803 | PLUG HOLE 1 INCH BLACK |
| 39 | 1 | 873315 | FOAM BARRIER NOISE |
| 40 | 1 | 858506 | STRAP SUPPORT HOSE |

AVAILABLE VACUUM MOTOR KIT - #875023

| ITEM | DESCRIPTION | QTY |
|--------|--|-----|
| 877802 | SHEET INSTR MID-SCRUBBER VAC MTR REPL | 1 |
| 873314 | GASKET, FOAM, VACUUM | 1 |
| 875202 | MTR, VAC, 24VDC, 3STG - KIT 875023 AVAIL | 1 |
| 873315 | FOAM BARRIER NOISE MID | 1 |
| 853305 | FOAM,NOISE,VACUUM | 1 |

RECOVERY TANK ASSEMBLY

*** AFTER SERIAL NUMBER 123254 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***



RECOVERY TANK ASSEMBLY

*** AFTER SERIAL NUMBER 123254 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|-----------------------------------|
| 1 | 1 | 878602 | TANK, RECOVERY, 22 GAL |
| 2 | 1 | 895113 | LABEL PACIFIC 4INCH ROUND |
| 3 | 1 | 853305 | FOAM, NOISE, VACUUM |
| 4 | 1 | 873314 | GASKET, FOAM, VACUUM |
| 5 | 4 | 964224 | SCREW PHPS M5.5 X 16 ZINC PLASTIC |
| 6 | 1 | 872312 | COVER MTG VACUUM |
| 7 | 1 | 852101 | CLAMP, WIRE, P-SHAPED |
| 8 | 4 | W189D | SCREW HH .25-20 X .75 SS |
| 9 | 4 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 10 | 3 | W104D | WASHER, FLAT, .25 |
| 11 | 2 | 875202 | MOTOR, VACUUM, 24VDC, 3-STAGE |
| 12 | 1 | 873304 | FILTER, HEPA, MID |
| 13 | 1 | 873315 | FOAM BARRIER NOISE |
| 14 | 3 | 962206 | SCREW HH .31-18 X .75 SS W PATCH |
| 15 | 3 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 16 | 3 | W243D | WASHER, FLAT, 5/16, SS |
| 17 | 1 | 874501 | HINGE, TANK, RECOVERY |
| 18 | 3 | S611A | CLAMP HOSE 1.0 - 2.0 SS |
| 19 | 1 | 854101 | HOSE, DRAIN, CAPPED |
| 20 | 1 | 854104 | HOSE DRIAN CAPPED CHEM RESIST |
| 21 | 1 | 872412 | CABLE RETENTION MID LONG |
| 22 | 1 | 858506 | STRAP SUPPORT HOSE |
| 23 | 1 | 851501 | CAP HOSE DRAIN - REPL FOR 854101 |
| 24 | 1 | 920037 | NUT HEX .25-20 SS THIN |
| 25 | 1 | 874101 | HOSE, SQUEEGEE, 90 CUFF |
| 26 | 1 | 874102 | HOSE SQUEEGEE MID CHEM RESIST |
| 27 | 1 | 853308 | FITTING, MODIFIED |
| 28 | 1 | 875110 | LABEL, INSTRUCT, BROMINE |
| 29 | 1 | 879201 | TRAY, DEBRIS |
| 30 | 1 | 877007 | PUCK, BROMINE (4-PACK) |
| 31 | 1 | 879202 | TRAY, PUCK |

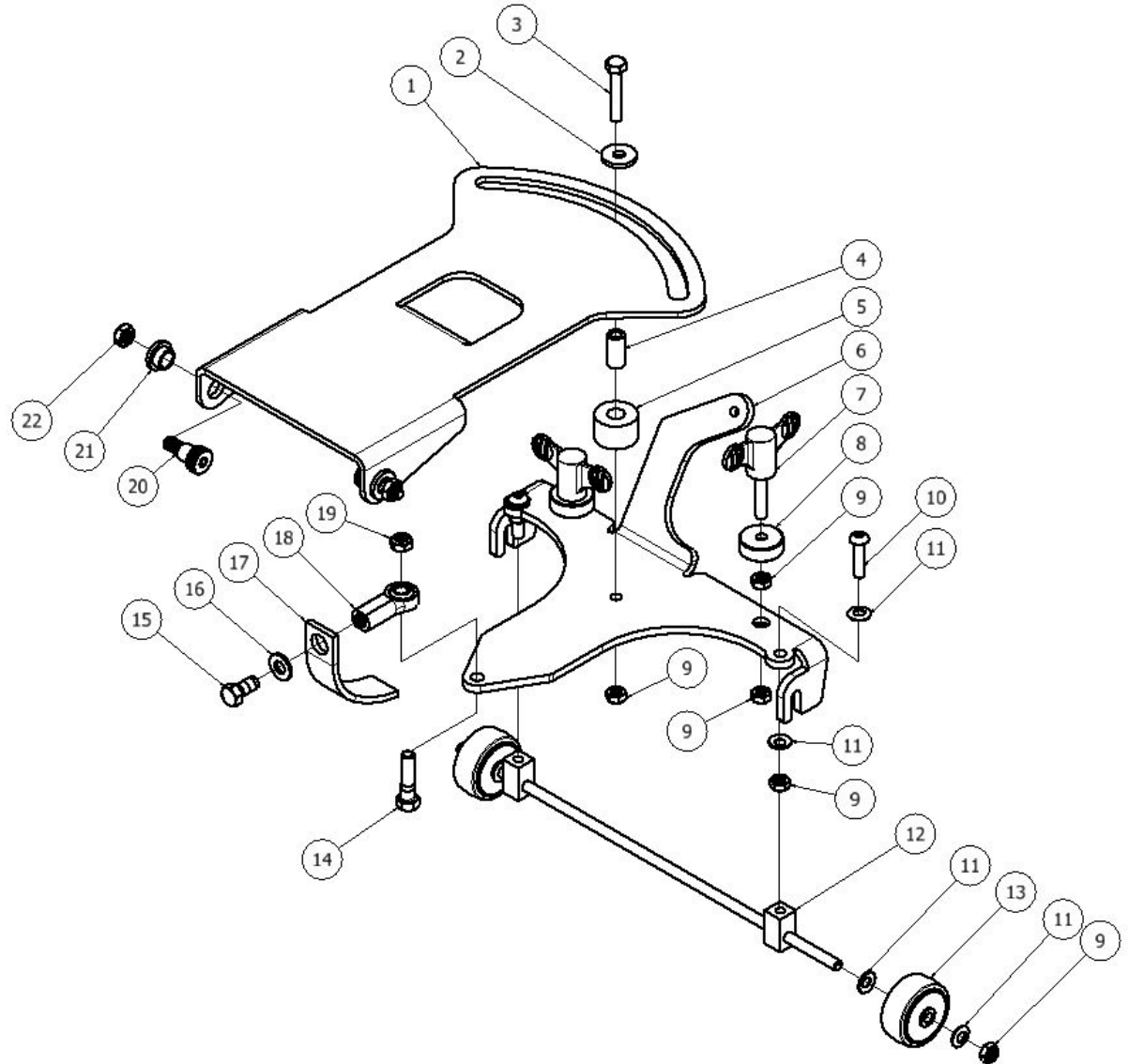
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--|
| 32 | 1 | 854103 | HOSE, VACUUM, 1.5INCH |
| 33 | 2 | 962462 | SCREW SHLDR .38 DIA X 1.75 .31-18 SS PATCH |
| 34 | 2 | 856803 | PLUG HOLE 1 INCH BLACK |
| 35 | 1 | 853304 | FITTING, STR, BM24, PM20 |
| 36 | 1 | 872301 | COVER, TANK, RECOVERY |
| 37 | 1 | 223370 | FLOAT, SHUTOFF |
| 38 | 1 | 873401 | GASKET, COVER, PRESS-IN |

AVAILABLE VACUUM MOTOR KIT - #875023

| ITEM | DESCRIPTION | QTY |
|--------|--|-----|
| 877802 | SHEET INSTR MID-SCRUBBER VAC MTR REPL | 1 |
| 873314 | GASKET, FOAM, VACUUM | 1 |
| 875202 | MTR, VAC, 24VDC, 3STG - KIT 875023 AVAIL | 1 |
| 873315 | FOAM BARRIER NOISE MID | 1 |
| 853305 | FOAM,NOISE,VACUUM | 1 |

SQUEEGEE LINKAGE

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--|
| 1 | 1 | 870803 | BRACKET, SWING, SQUEEGEE |
| 2 | 1 | 980107 | WASHER, FLAT, .31ID, 1.0OD, .12THK, SS |
| 3 | 1 | 962270 | SCREW, HEX, 5/16-18X1.75,SS |
| 4 | 1 | 878204 | SPACER, GUIDE, SQUEEGEE |
| 5 | 1 | 877501 | GUIDE, ROLLER, SQUEEGEE |
| 6 | 1 | 870802 | BRACKET, LINK, SQUEEGEE |
| 7 | 2 | 875003 | KNOB, THREADED, .31-18 X 1.5 |
| 8 | 2 | 877207 | RETAINER, FRAME, SQUEEGEE |
| 9 | 9 | 920040 | NUT, .31-18, NYLOCK, SS, LOW |
| 10 | 2 | 962464 | SCREW, BUTTON, .31-18 X 1.25, ZINC |
| 11 | 8 | 980105 | WASHER, PLASTIC, THRUST |
| 12 | 1 | 850501 | AXLE, WHEEL, SQUEEGEE |
| 13 | 2 | 849709 | WHEEL, 2 OD, .31 ID |
| 14 | 1 | 962075 | SCREW, HEX, 3/8-16 X 1.5, SS |
| 15 | 1 | 962028 | SCREW, HX, .38-24X.75,SS,PTCH |
| 16 | 1 | 980003 | WASHER, FLAT, .38 |
| 17 | 1 | 878504 | STRAP, GROUNDING, STATIC |
| 18 | 1 | 902051 | BEARING, ROD END, .38 FEM |
| 19 | 1 | 920032 | NUT .38-16 NYLOCK THIN ZINC |
| 20 | 2 | 962465 | SCREW, SHOULDER, .50 X .50 |
| 21 | 2 | 871101 | BUSHING, FLANGE, .50IN |
| 22 | 2 | 920035 | NUT, NYLOCK, .38-16, SS |

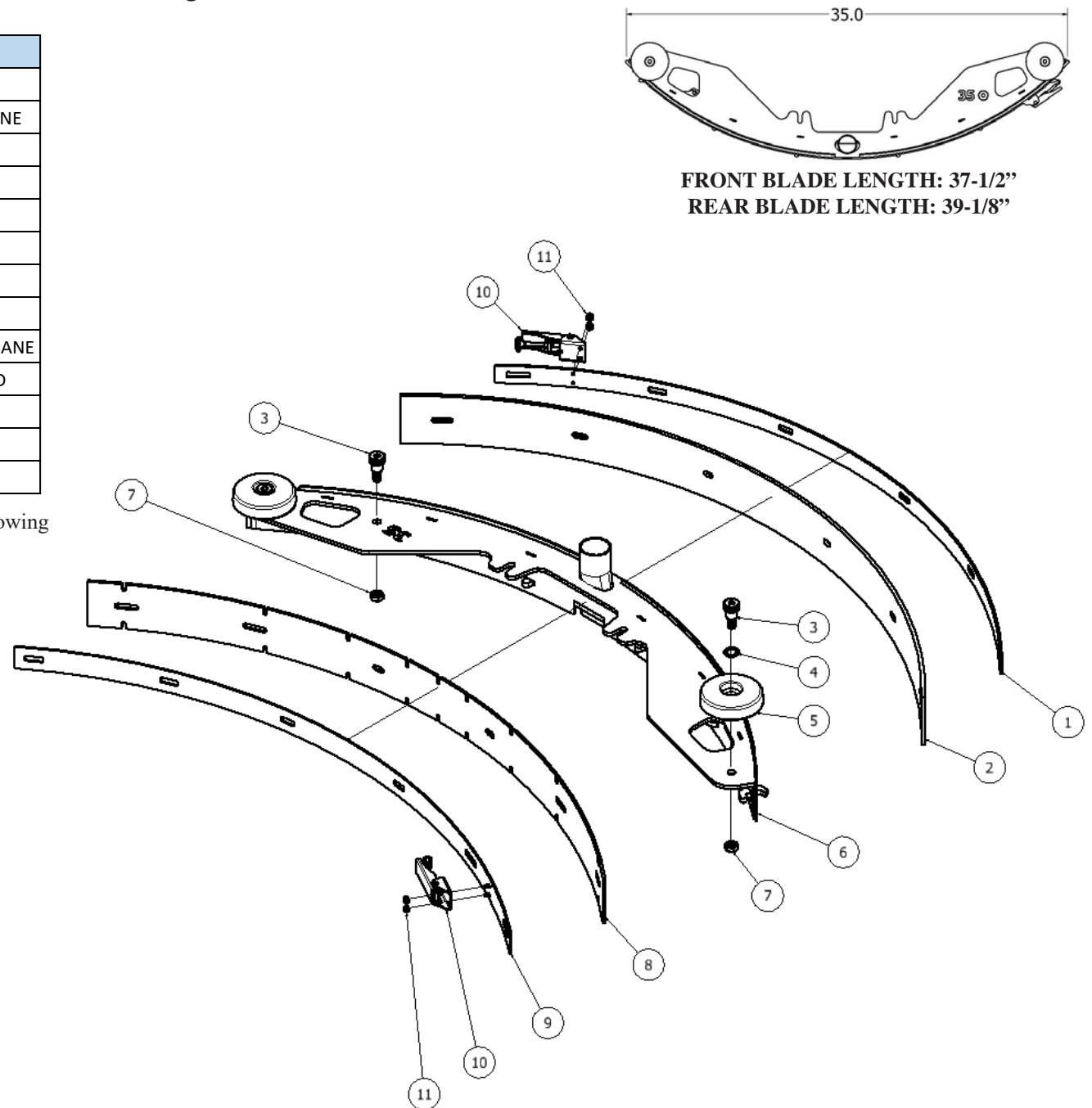


35" SQUEEGEE ASSEMBLY

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

Full Squeegee assemblies can be ordered under the following part numbers:

1. Linatex (standard): 878526
2. Urethane (optional): 878511



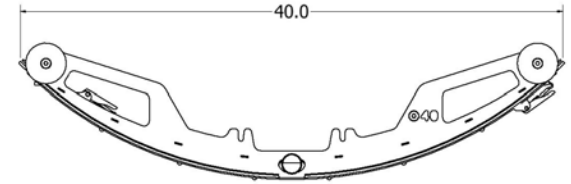
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40" SQUEEGEE ASSEMBLY

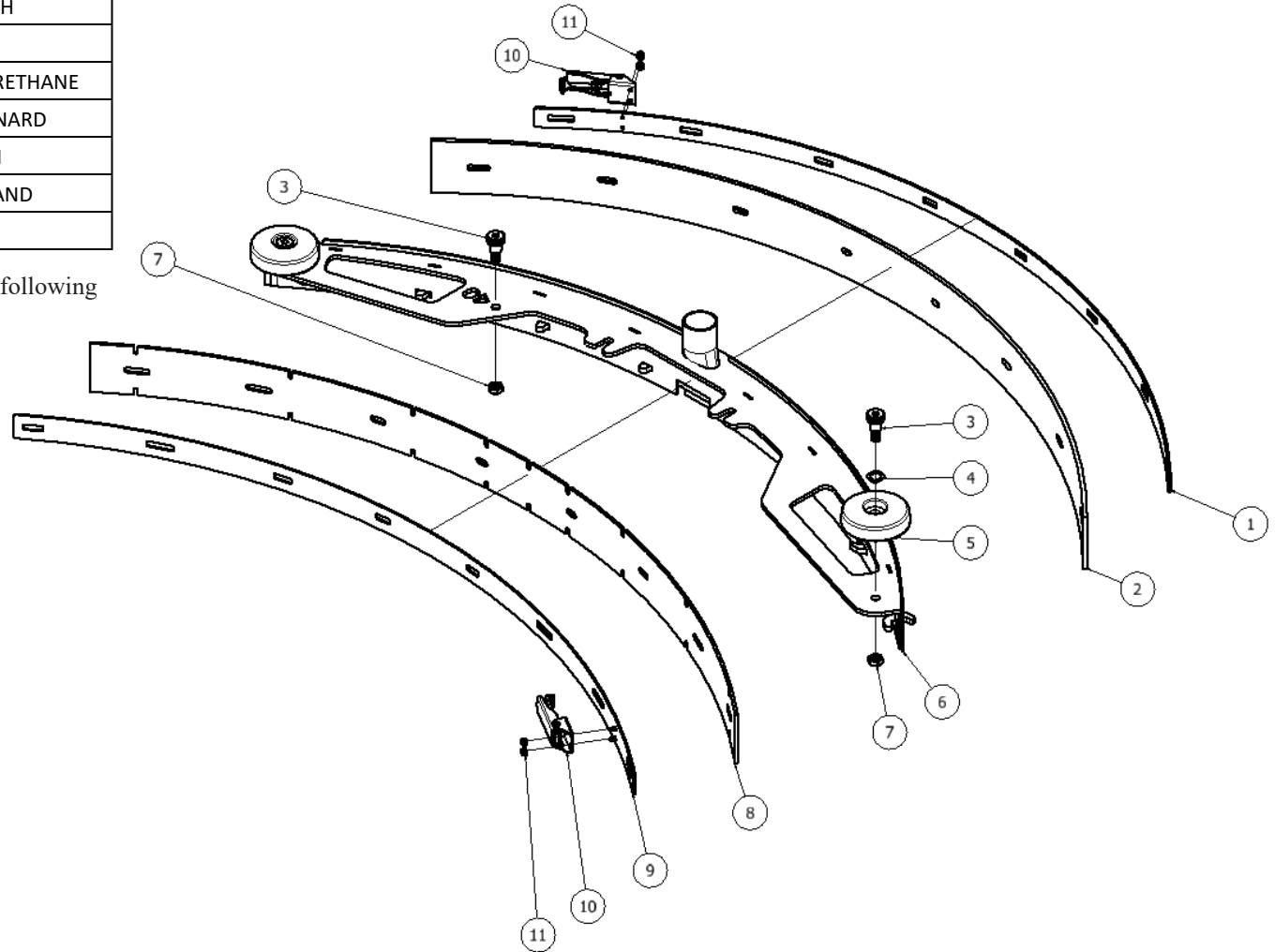
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|------------------------------|
| 1 | 1 | 877201 | RETAINER REAR 40 INCH |
| 2 | 1 | 870709 | BLADE REAR 40 INCH URETHANE |
| 2 | 1 | 870703 | BLADE REAR 40 INCH LINATEX |
| 3 | 3 | 962465 | SCREW, SHOULDER, .50 X .50 |
| 4 | 2 |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

Full Squeegee assemblies can be ordered under the following part numbers:

1. Linatex (standard): 878527
2. Urethane (optional): 878512



FRONT BLADE LENGTH: 43"
REAR BLADE LENGTH: 44-5/8"

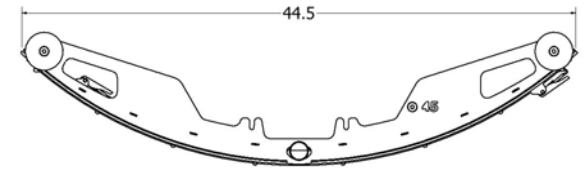
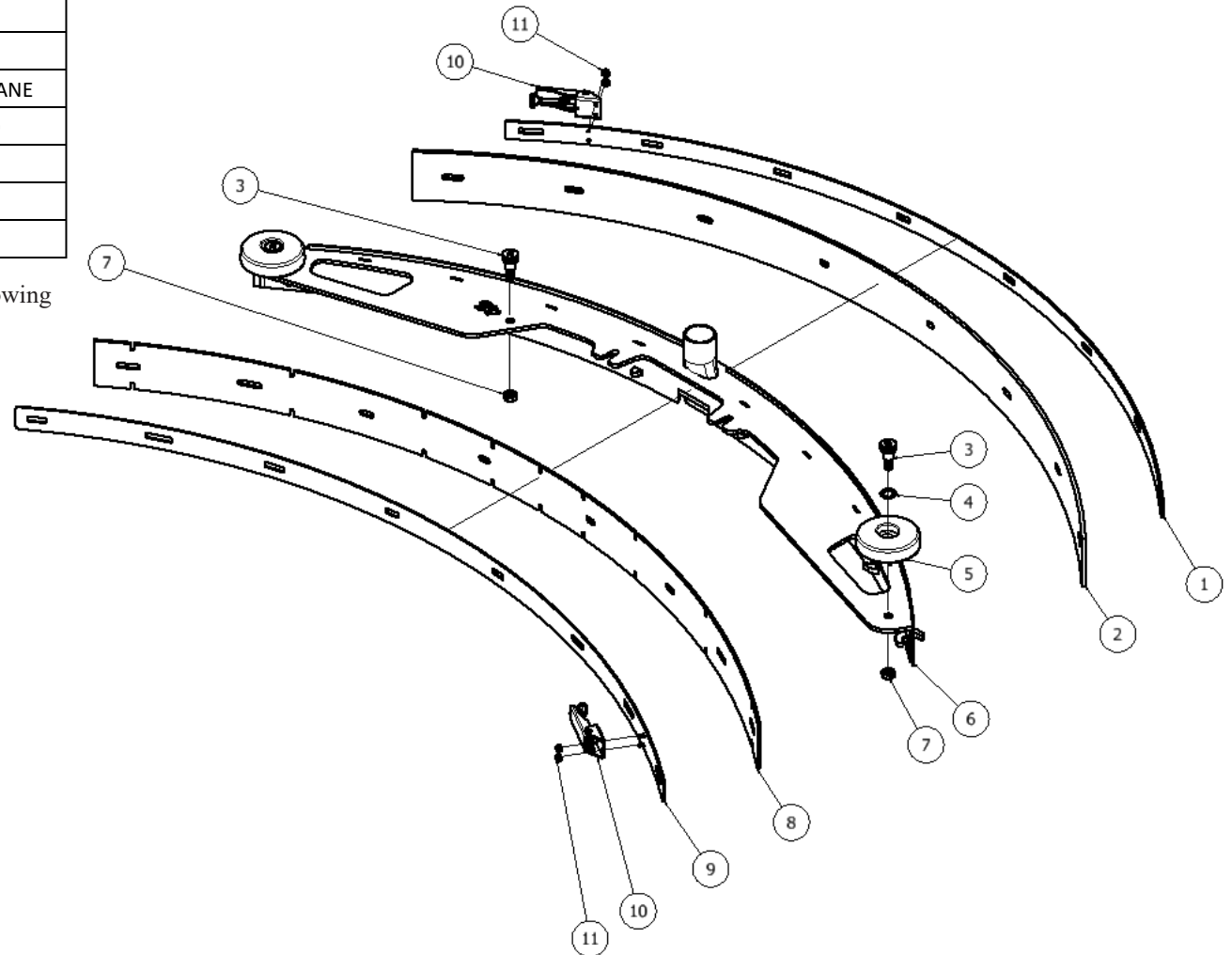


45" SQUEEGEE ASSEMBLY

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|------------------------------|
| 1 | 1 | 877205 | RETAINER REAR 45 INCH |
| 2 | 1 | 870711 | BLADE REAR 45 INCH URETHANE |
| 2 | 1 | 870705 | BLADE REAR 45 INCH LINATEX |
| 3 | 3 | 962465 | SCREW, SHOULDER, .50 X .50 |
| 4 | 2 | 980093 | WASHER, WAVE, .50INCH |
| 5 | 2 | 859703 | WHEEL, GUIDE |
| 6 | 1 | 873205 | FRAME SQUEEGEE 45 INCH |
| 7 | 3 | 920035 | NUT, NYLOCK, .38-16, SS |
| 8 | 1 | 870712 | BLADE FRONT 45 INCH URETHANE |
| 8 | 1 | 870706 | BLADE FRONT 45 INCH LINARD |
| 9 | 1 | 877206 | RETAINER FRONT 45 INCH |
| 10 | 2 | 852002 | CLAMP, OVER-CENTER, BAND |
| 11 | 4 | 920034 | NUT, NYLOCK, #6-32, SS |

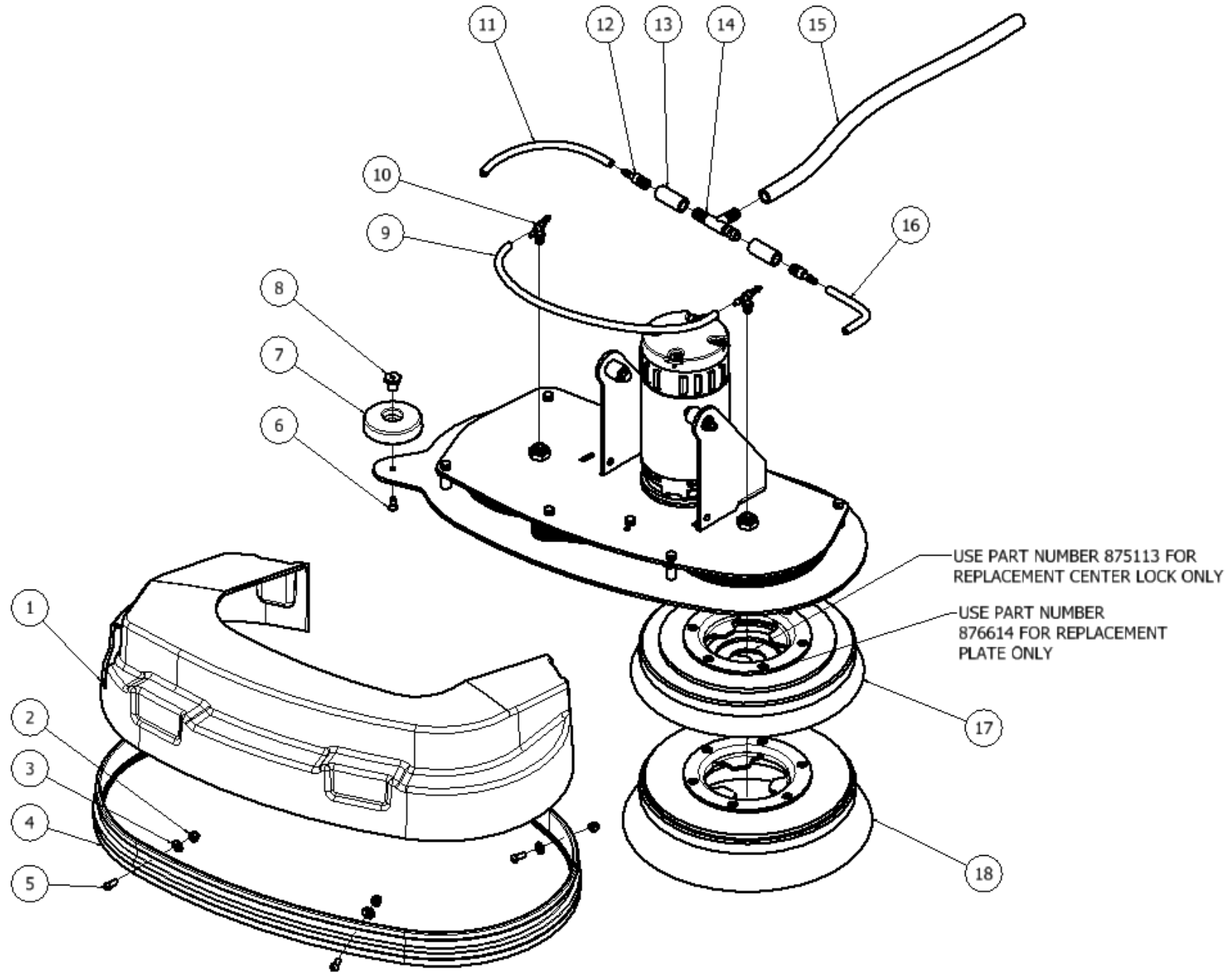
Full Squeegee assemblies can be ordered under the following part numbers:

1. Linatex (standard): 878528
2. Urethane (optional): 878513



FRONT BLADE LENGTH: 47-1/8"
REAR BLADE LENGTH: 48-5/8"

S-24 DISK SCRUB HEAD



USE PART NUMBER 875113 FOR
REPLACEMENT CENTER LOCK ONLY

USE PART NUMBER
876614 FOR REPLACEMENT
PLATE ONLY

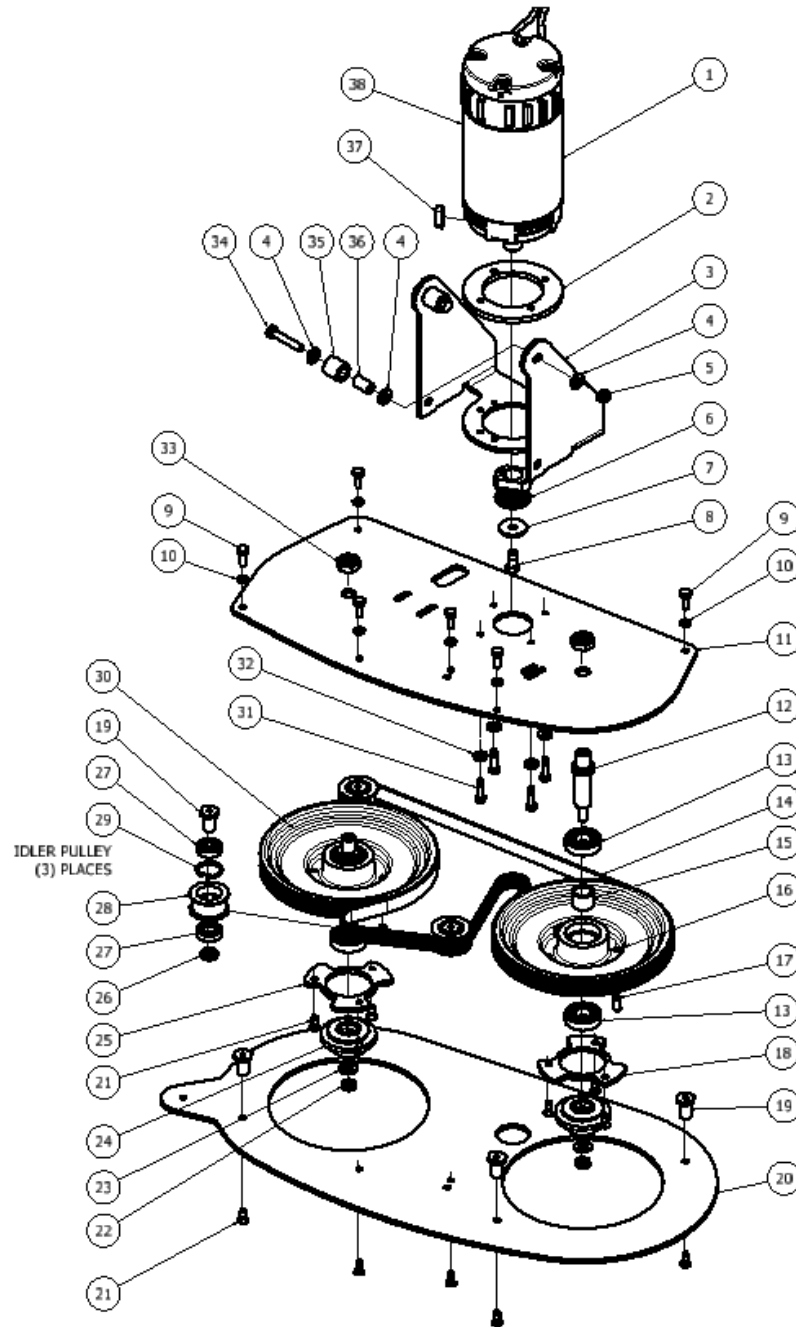
S-24 DISK SCRUB HEAD

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|--|
| 1* | 1 | 872305 | SHROUD, HEAD, 24INCH |
| 2* | 4 | 920665 | NUT, NYLOCK, 1/4-20, SS |
| 3* | 4 | W104D | WASHER, FLAT, .25 |
| 4* | 1 | 858503 | SKIRT, BRISTLE |
| 5* | 4 | 962263 | SCREW, BUTT, SOCK, .25-20X.62, SS BO |
| 6 | 1 | 962274 | SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH |
| 7 | 1 | 859703 | WHEEL, GUIDE |
| 8 | 1 | 878205 | SPACER, WHEEL, GUIDE |
| 9 | 1 | 204179 - 16.0" | TUBING, 1/4" |
| 10 | 2 | 873302 | FITTING, TEE, PM02XBM04 |
| 11 | 1 | 204179 - 8.25" | TUBING, 1/4" |
| 12 | 2 | 853301 | FITTING, REDUCER, BM08, BM04 |
| 13 | 2 | 224130 - 1.75" | TUBING, 1/2" |
| 14 | 1 | 873308 | FITTING, TEE, 0.50 INCH |
| 15 | 1 | 224130 - 20.0" | TUBING, 1/2" |
| 16 | 1 | 204179 - 9.75" | TUBING, 1/4" |
| 17 | 2 | 875901 | DRIVER, PAD, 12INCH, BRISTLE |
| 18** | 2 | 870902 | BRUSH, POLY, 12 INCH |
| 18** | 2 | 870908 | BRUSH, NYLON, 12 INCH |
| 18** | 2 | 870909 | BRUSH, GRIT, 12 INCH |

*Items 1-5 can be ordered as an assembly under part number 875019.

**Optional brushes (Item 18) listed for reference.

S-24 DISK SCRUB HEAD



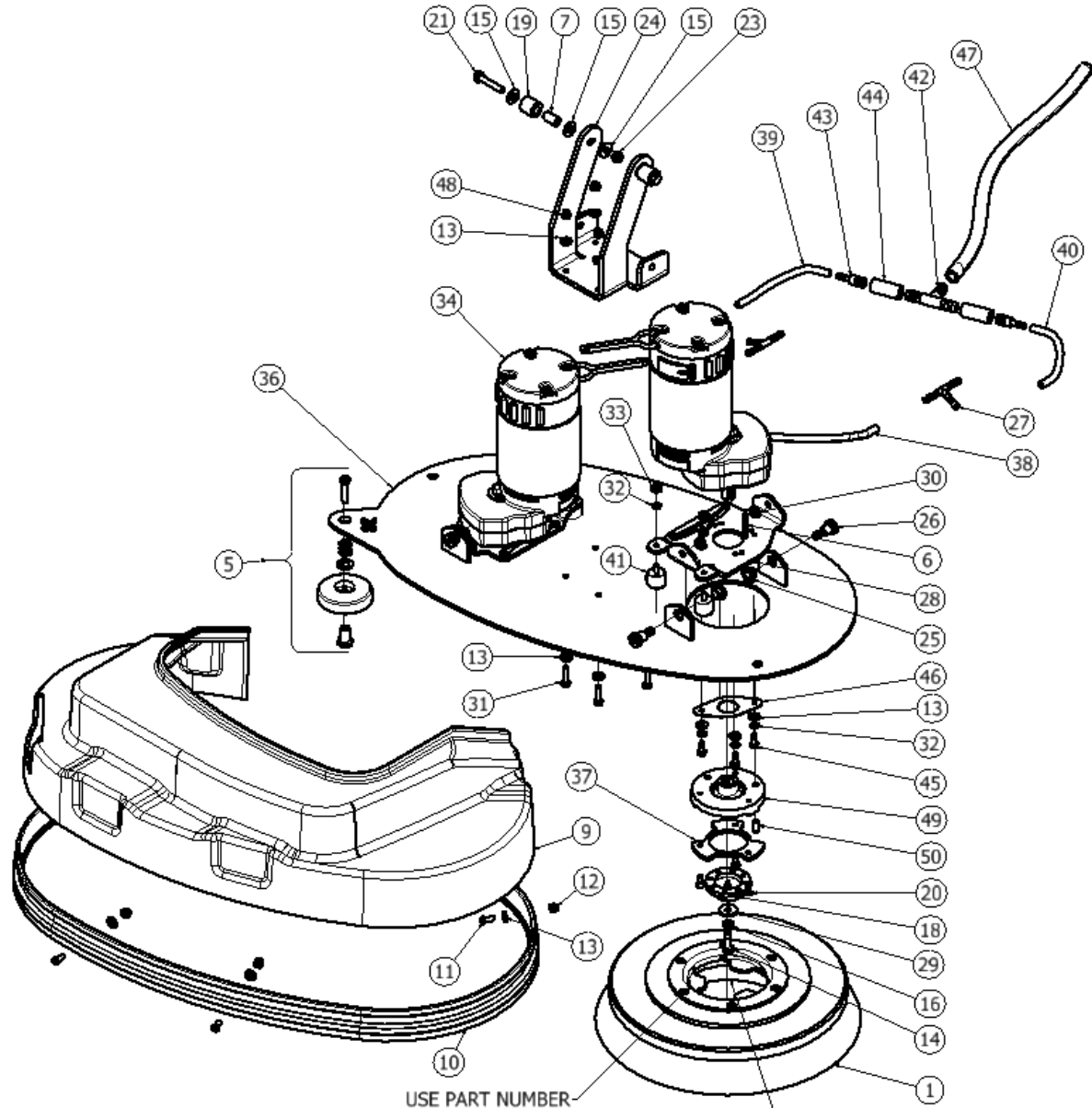
S-24 DISK SCRUB HEAD

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--|
| 1 | 1 | 855204 | MOTOR, 24V, 2200 RPM, 1HP |
| 2 | 1 | 878206 | SPACER, MOTOR, 24INCH |
| 3 | 1 | 870807 | BRACKET, SUPPORT, HEAD 24 |
| 4 | 6 | W243D | WASHER, FLAT, 5/16, SS |
| 5 | 2 | 920012 | NUT, NYLOCK, 5/16-18, ZINC |
| 6 | 1 | 876902 | PULLEY, MOTOR, DRIVE |
| 7 | 1 | 980108 | WASHER, FLAT, .31ID, 1.25OD, .12THK, SS |
| 8 | 1 | 964060 | SCREW, HEX, M8-1.25 X 20, SS |
| 9 | 6 | W189D | SCREW, HEX, 1/4-20 X .75, SS, PATCH |
| 10 | 6 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 11 | 1 | 876602 | PLATE, MTG, 24 INCH |
| 12 | 2 | 877701 | SHAFT, PULLEY, HEAD |
| 13 | 4 | 902053 | BEARING, .75 ID, DBL SEAL |
| 14 | 1 | 903046 | BELT, V-GROOVE, STRETCH |
| 15 | 2 | 878203 | SPACER, BEARING |
| 16 | 1 | 874305 | HUB, PULLEY, MACH FLAT |
| 17 | 2 | 857009 | PLUNGER BALL PRESS-IN |
| 18 | 1 | 873802 | GUIDE, DRIVER, RH |
| 19 | 6 | 878201 | SPACER, IDLER |
| 20 | 1 | 876606 | PLATE, COVER, 24 INCH |
| 21 | 12 | 962274 | SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH |
| 22 | 2 | 920035 | NUT, NYLOCK, .38-16, SS |
| 23 | 2 | 980003 | WASHER, FLAT, .38 |
| 24 | 2 | 873801 | GUIDE, PAD, PLASTIC |
| 25 | 1 | 853803 | GUIDE, DRIVER |
| 26 | 3 | 878202 | SPACER, IDLER, PLAIN |
| 27 | 6 | 902035 | BEARING, .5 ID, 1.1875 OD |
| 28 | 3 | 876901 | PULLEY, IDLER |
| 29 | 3 | 877302 | RING, RETAINING, INT, 1.12 DIA |
| 30 | 1 | 874306 | HUB, PULLEY, MACH GROOVED |
| 31 | 4 | 964008 | SCREW, HEX, M6 X 25, SS, PATCH |

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---------------------------------------|
| 32 | 8 | W104D | WASHER, FLAT, .25 |
| 33 | 2 | 920039 | NUT, .62-18, NYLOCK, LOW |
| 34 | 2 | 962270 | SCREW, HEX, 5/16-18X1.75,SS |
| 35 | 2 | 857501 | ROLLER, PLASTIC |
| 36 | 2 | 858203 | SPACER, WHEEL, GUIDE |
| 37 | 1 | 915006 | KEY, 8MM X 7MM X 28MM |
| 38 | 1 | 850906 | BRUSH CARBON KIT 4 PC 855204 & 875201 |

S-28 DISK SCRUB HEAD

*** PRIOR TO SERIAL NUMBER 121567 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***



USE PART NUMBER
876614 FOR REPLACEMENT
PLATE ONLY

USE PART NUMBER 875113 FOR
REPLACEMENT CENTER LOCK ONLY

S-28 DISK SCRUB HEAD

*** PRIOR TO SERIAL NUMBER 121567 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***

| 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 | 855022 | KIT GUIDE WHEEL REPLACEMENT ANIT-RATTLE |
| 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 | 6 | 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 |
| 23 | 2 | 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, 1.0OD, .12THK, SS |
| 30 | 4 | 920035 | NUT, NYLOCK, .38-16, SS |
| 31 | 4 | 962221 | SCREW, HEX, .25-20 X 1.0, SS |

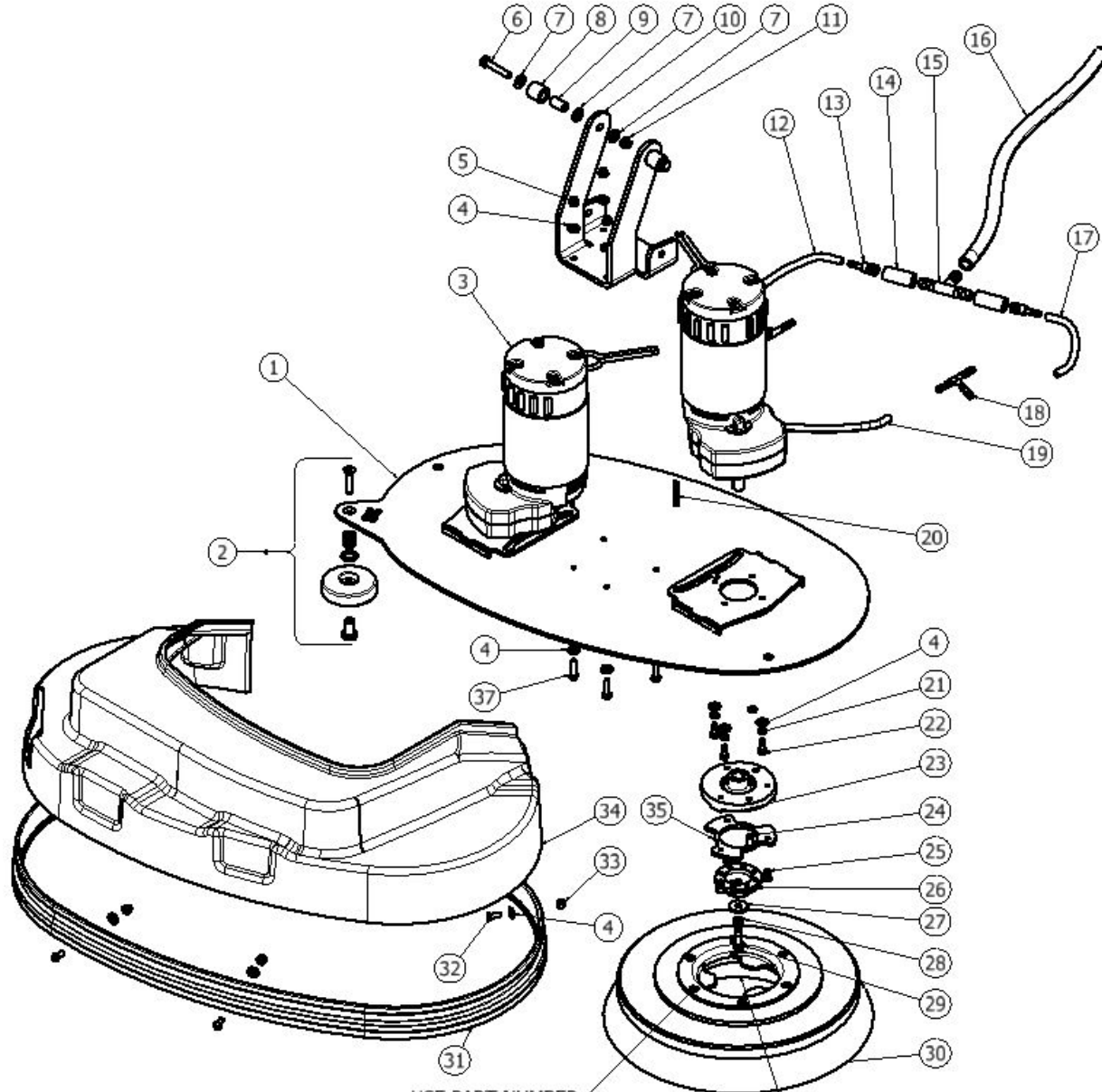
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|---------------------------------------|
| 32 | 12 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 33 | 4 | 920037 | NUT, THIN JAM, 1/4-20, ZINC |
| 34 | 2 | 875203 | MOTOR GEAR BRUSH MRP15 SERVICE |
| 35 | 1 | 850906 | BRUSH CARBON KIT 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 | 2 | 854302 | HUB, DRIVER, BRUSH |
| 50 | 2 | 857009 | PLUNGER BALL PRESS-IN |

*Items 9-13 can be ordered as an assembly under part number 875020.

**Optional brushes (Item 1) listed for reference.

S-28 DISK SCRUB HEAD

*** AFTER SERIAL NUMBER 121566 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***



USE PART NUMBER
876614 FOR REPLACEMENT
PLATE ONLY

USE PART NUMBER 875113 FOR
REPLACEMENT CENTER LOCK ONLY

S-28 DISK SCRUB HEAD

***** AFTER SERIAL NUMBER 121566 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS *****

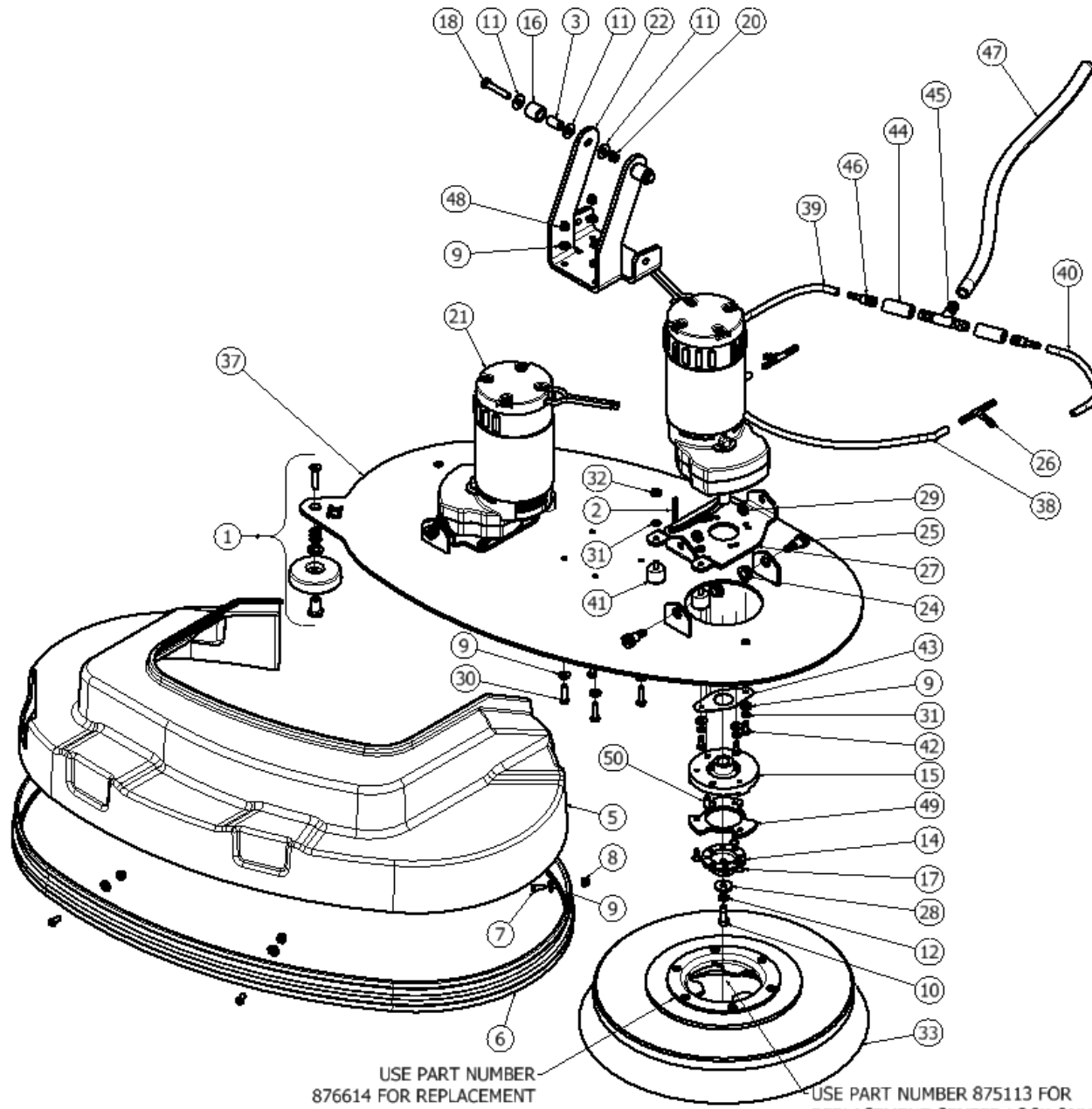
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|--|
| 1 | 1 | 876612 | PLATE, MTG, 28INCH, TORNADO |
| 2 | 1 | 855022 | KIT WHEEL GUIDE REPLACEMENT |
| 3 | 2 | 875203 | MOTOR GEAR BRUSH MRP15 SERVICE |
| 4* | 20 | W104D | WASHER, FLAT, .25 |
| 5 | 4 | 920011 | NUT, NYLOCK, 1/4-20, ZINC |
| 6 | 2 | 962270 | SCREW, HEX, 5/16-18X1.75,SS |
| 7 | 6 | W243D | WASHER, FLAT, 5/16, SS |
| 8 | 2 | 857501 | ROLLER, PLASTIC |
| 9 | 2 | 858203 | SPACER, WHEEL, GUIDE |
| 10 | 1 | 870804 | BRACKET, SUPPORT, HEAD |
| 11 | 2 | 920012 | NUT, NYLOCK, 5/16-18, ZINC |
| 12 | 1 | 204179 - 6.0" | TUBING, 1/4" |
| 13 | 2 | 853301 | FITTING, REDUCER, BM08, BM04 |
| 14 | 2 | 224130 - 1.75" | TUBING, 1/2" |
| 15 | 1 | 873308 | FITTING, TEE, 0.50 INCH |
| 16 | 1 | 224130 - 20.0" | TUBING, 1/2" |
| 17 | 1 | 204179 - 5.5" | TUBING, 1/4" |
| 18 | 2 | 873301 | FITTING, TEE, .25INCH |
| 19 | 1 | 204179 - 15.2" | TUBING, 1/4" |
| 20 | 2 | 915008 | KEY, SQUARE, 5MM X 5 X 40MM |
| 21 | 8 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 22 | 8 | 964448 | SCREW, HEX, M6 X 16, SS, PATCH |
| 23 | 2 | 854302 | HUB, DRIVER, BRUSH |
| 24 | 2 | 857009 | PLUNGER BALL PRESS-IN |
| 25 | 6 | 962274 | SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH |
| 26 | 2 | 853804 | GUIDE, PAD, PLASTIC |
| 27 | 2 | 980107 | WASHER, FLAT, .31ID, 1.0OD, .12THK, SS |
| 28 | 2 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 29 | 2 | 962466 | SCREW, HEX, M8-1.25 X 25, SS, PATCH |
| 30 | 2 | 870901 | BRUSH, POLY, 14 INCH |

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---|
| 31* | 1 | 878502 | SKIRT, BRISTLE |
| 32* | 4 | 962263 | SCREW, BUTT, SOCK, .25-20X.62, SS BO |
| 33* | 4 | 920665 | NUT, NYLOCK, 1/4-20, SS |
| 34* | 1 | 872302 | SHROUD, HEAD, 28INCH |
| 35 | 1 | 873802 | GUIDE, DRIVER, RH |
| 36 | 1 | 853803 | GUIDE, DRIVER, LH (NOT SHOWN) |
| 37 | 4 | 962221 | SCREW, HEX, .25-20 X 1.0, SS |
| 38 | 1 | 875020 | ASSY SHROUD S28 REPLACEMENT (ITEMS 31-34 & 4) |
| 39 | 1 | 850906 | BRUSH CARBON KIT 4 PC 855204 & 875201 |

*Items 31–34, & 4 can be ordered as an assembly under part number 875020.

S-32 DISK SCRUB HEAD

*** PRIOR TO SERIAL NUMBER 121567 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***



USE PART NUMBER
876614 FOR REPLACEMENT
PLATE ONLY

USE PART NUMBER 875113 FOR
REPLACEMENT CENTER LOCK ONLY

S-32 DISK SCRUB HEAD

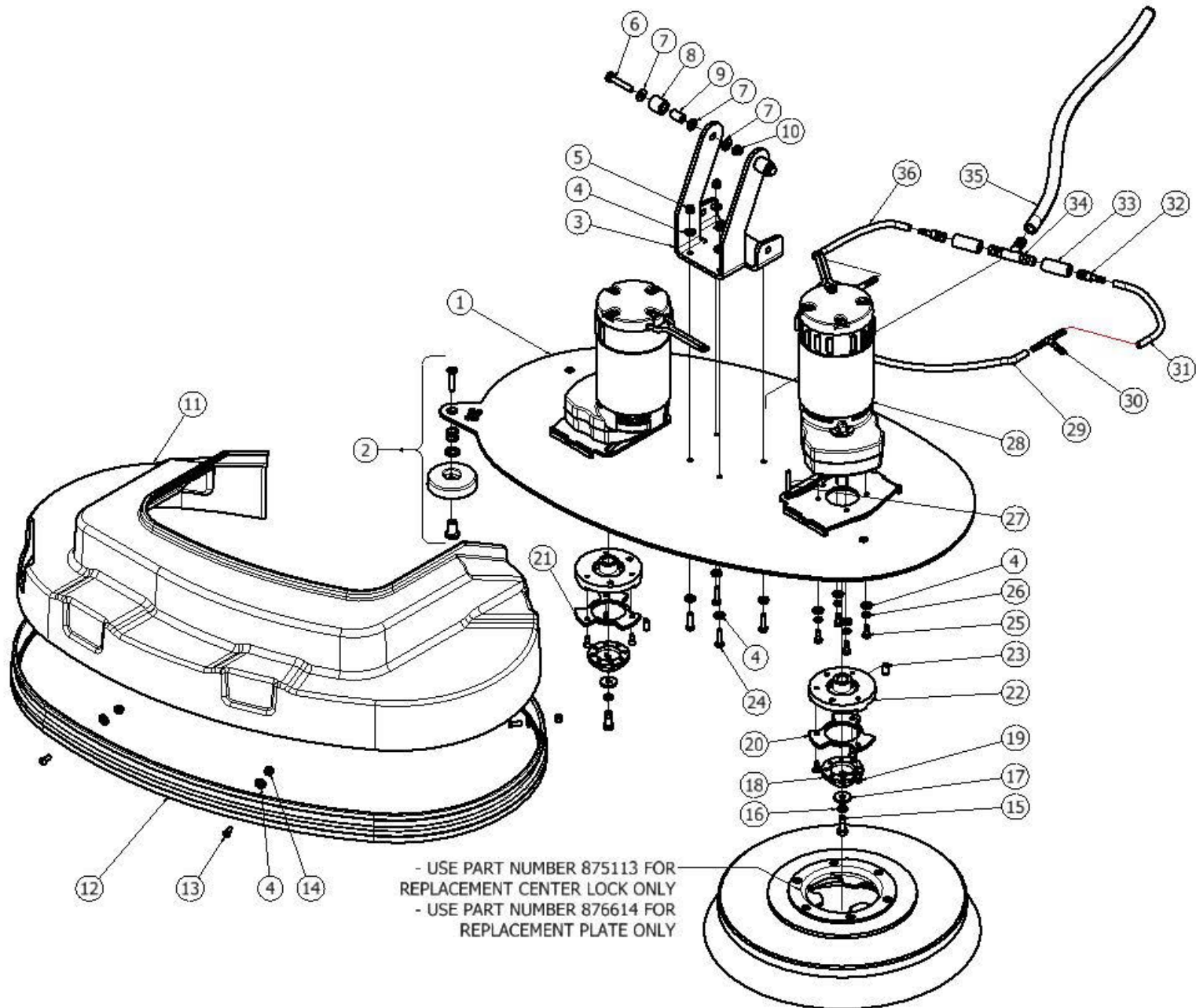
***** PRIOR TO SERIAL NUMBER 121567 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS *****

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|--|
| 1 | 1 | 855022 | KIT GUIDE WHEEL RELACEMENT ANTI-RATTLE |
| 2 | 2 | 915008 | KEY, SQUARE, 5MM X 5 X 40MM |
| 3 | 2 | 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 | 6 | 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 |
| 20 | 2 | 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 |

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|--------------------------------|
| 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 |
| 49 | 1 | 853803 | GUIDE DRIVER LH |
| 50 | 2 | 857009 | PLUNGER BALL PRESS-IN |

S-32 DISK SCRUB HEAD

*** AFTER SERIAL NUMBER 121566 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***



- USE PART NUMBER 875113 FOR
REPLACEMENT CENTER LOCK ONLY
- USE PART NUMBER 876614 FOR
REPLACEMENT PLATE ONLY

S-32 DISK SCRUB HEAD

*** AFTER SERIAL NUMBER 121566 – CONFIRM SERIAL NUMBER BEFORE ORDERING REPLACEMENT PARTS ***

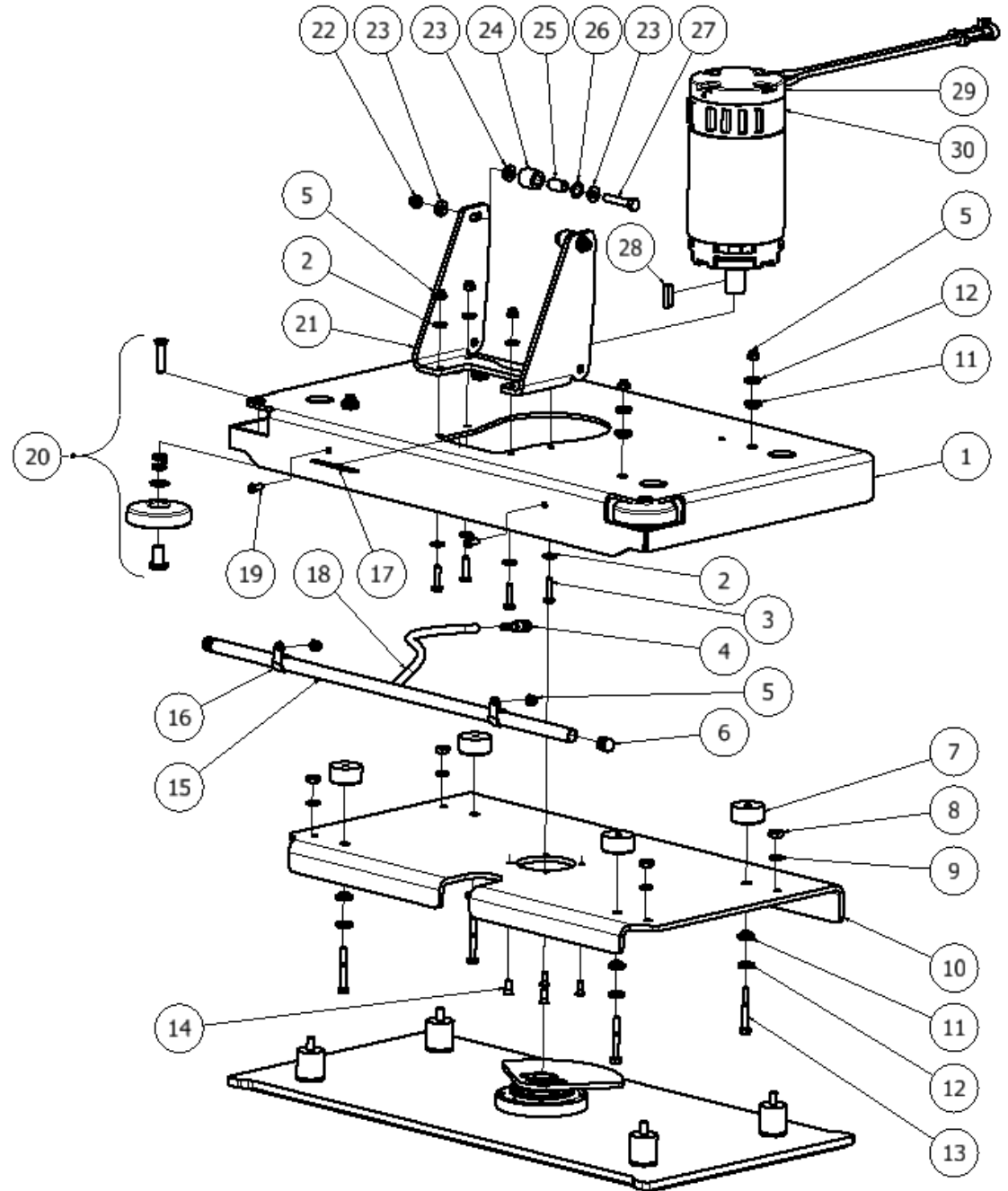
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|--|
| 1 | 1 | 876613 | PLATE, MTG, 32INCH, RIGID |
| 2 | 1 | 855022 | KIT GUIDE WHEEL REPL ANTI-RATTLE |
| 3 | 1 | 870804 | BRACKET, SUPPORT, HEAD |
| 4 | 20 | W104D | WASHER, FLAT, .25 |
| 5 | 4 | 920011 | NUT, NYLOCK, 1/4-20, ZINC |
| 6 | 2 | 962270 | SCREW, HEX, 5/16-18X1.75,SS |
| 7 | 6 | W243D | WASHER, FLAT, 5/16, SS |
| 8 | 2 | 857501 | ROLLER, PLASTIC |
| 9 | 2 | 858203 | SPACER, WHEEL, GUIDE |
| 10 | 2 | 920012 | NUT, NYLOCK, 5/16-18, ZINC |
| 11 | 1 | 872306 | SHROUD, HEAD, 32INCH |
| 12 | 1 | 878502 | SKIRT, BRISTLE |
| 13 | 4 | 962263 | SCREW, BUTT, SOCK, .25-20X.62, SS BO |
| 14 | 4 | 920665 | NUT, NYLOCK, 1/4-20, SS |
| 15 | 2 | 962466 | SCREW, HEX, M8-1.25 X 25, SS, PATCH |
| 16 | 2 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 17 | 2 | 980107 | WASHER, FLAT, .31ID, 1.00D, .12THK, SS |
| 18 | 2 | 853804 | GUIDE, PAD, PLASTIC |
| 19 | 6 | 962274 | SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH |
| 20 | 1 | 873802 | GUIDE, DRIVER, RH |
| 21 | 1 | 853803 | GUIDE, DRIVER, LH |
| 22 | 2 | 854302 | HUB, DRIVER, BRUSH |
| 23 | 2 | 857009 | PLUNGER BALL PRESS-IN |
| 24 | 4 | 962221 | SCREW, HEX, .25-20 X 1.0, SS |
| 25 | 8 | 964448 | SCREW, HEX, M6 X 16, SS, PATCH |
| 26 | 8 | 980002 | WASHER, LOCK, SPLIT, .25 |
| 27 | 2 | 915008 | KEY, SQUARE, 5MM X 5 X 40MM |
| 28 | 2 | 875203 | MOTOR GEAR BRUSH MRP15 SERVICE |
| 29 | 1 | 204179 - 17.2" | TUBING, 1/4" |
| 30 | 2 | 873301 | FITTING, TEE, .25INCH |
| 31 | 1 | 204179 - 6.5" | TUBING, 1/4" |

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|----------------|--|
| 32 | 2 | 853301 | FITTING, REDUCER, BM08, BM04 |
| 33 | 2 | 224130 - 1.75" | TUBING, 1/2" |
| 34 | 1 | 873308 | FITTING, TEE, 0.50 INCH |
| 35 | 1 | 224130 - 20.0" | TUBING, 1/2" |
| 36 | 1 | 204179 - 7.0" | TUBING, 1/4" |
| 37 | 1 | 875021 | ASSY SHROUD S32 REPLACEMENT (ITEMS 11 - 14, & 4) |
| 38 | 1 | 850906 | BRUSH CARBON KIT 4 PC 855204 & 875201 |

*Items 11–14, & 4 can be ordered as an assembly under part number 875021.

S-28 ORBITAL SCRUB HEAD

| ITEM | QTY | PART NUMBER | DESCRIPTION |
|------|-----|-------------|---|
| 1 | 1 | 870812 | BRACKET, MTG, HEAD, ORBITAL |
| 2 | 8 | W104D | WASHER, FLAT, .25 |
| 3 | 4 | 962221 | SCREW, HEX, .25-20 X 1.0, SS |
| 4 | 1 | 853301 | FITTING, REDUCER, BM08, BM04 |
| 5 | 10 | 920665 | NUT, NYLOCK, 1/4-20, SS |
| 6 | 2 | 856802 | PLUG .62 TUBE |
| 7 | 4 | 858205 | SPACER, RUBBER |
| 8 | 4 | W405D | NUT, .31-18, JAM, SS |
| 9 | 4 | 980094 | WASHER, SPLIT LOCK, .31, SS |
| 10 | 1 | 876609 | PLATE, MOUNTING, MOTOR |
| 11 | 8 | 851101 | BUSHING, RUBBER |
| 12 | 8 | 980104 | WASHER, RUBBER |
| 13 | 4 | W117D | SCREW, HEX, .25-20 X 2.0, SS |
| 14 | 4 | 964009 | SCREW, SCK, FLT, M6-1 X 20, SS, PATCH |
| 15 | 1 | 879005 | TUBE DISTRIBUTION S-28 ORB |
| 16 | 2 | 852003 | CLAMP, P-SHAPED, .62 DIA |
| 17 | 1 | 855116 | LABEL PATENT ORBITAL HEAD |
| 18 | 1 | 204179 | TUBING, 1/4" |
| 19 | 2 | 962263 | SCREW, BUTT, SOCK, .25-20X.62, SS BO |
| 20 | 2 | 855022 | KIT GUIDE WHEEL REPLACEMENT ANTI-RATTLE |
| 21 | 1 | 870813 | BRACKET, SUPPORT, HEAD |
| 22 | 2 | 920012 | NUT, NYLOCK, 5/16-18, ZINC |
| 23 | 6 | W243D | WASHER, FLAT, 5/16, SS |
| 24 | 2 | 857501 | ROLLER, PLASTIC |
| 25 | 2 | 858203 | SPACER, WHEEL, GUIDE |
| 26 | 2 | 980093 | WASHER, WAVE, .50INCH |
| 27 | 2 | 962270 | SCREW, HEX, 5/16-18X1.75,SS |
| 28 | 1 | 915006 | KEY, 8MM X 7MM X 28MM |
| 29 | 1 | 875205 | MOTOR ORBITAL SERVICE |
| 30 | 1 | 850906 | BRUSH CARBON KIT 4 PC 855204 & 875201 |



S-28 ORBITAL SCRUB HEAD

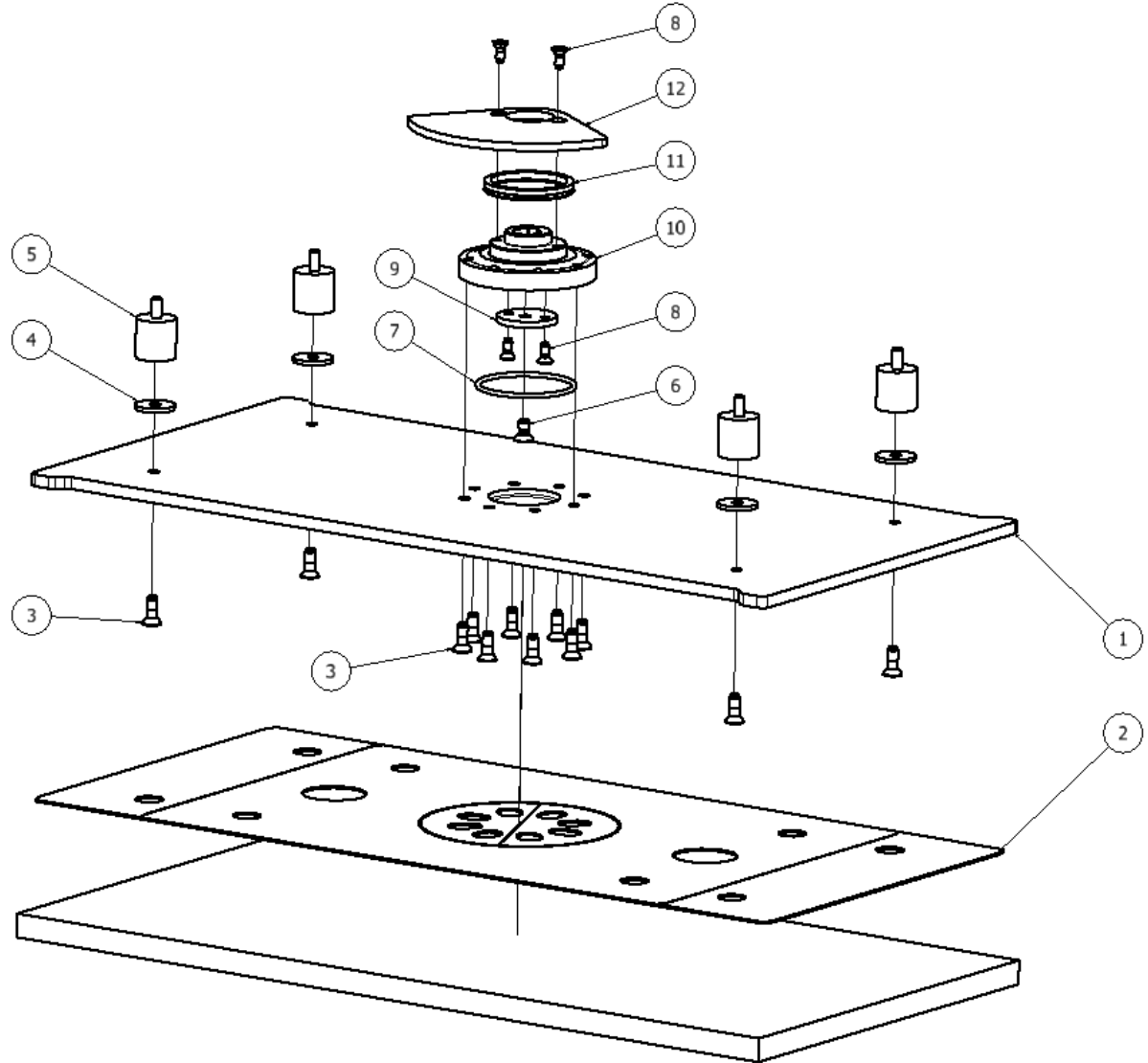
| ITEM | QTY | PART NUMBER | DESCRIPTION |
|-------|-----|-------------|---|
| 1* | 1 | 876607 | PLATE, ORBITAL, 28 INCH |
| 2* | 1 | 875903 | PAD, MIGHTYLOK ADH UNIVERSAL |
| 3** | 12 | 962278 | SCREW, SOCKET, FLT, .31-18X.88, SS, PATCH |
| 4** | 4 | 980108 | WASHER, FLAT, .31ID, 1.25OD, .12THK, SS |
| 5** | 4 | 855604 | MOUNT, ISOLATOR, .31THD |
| 6*** | 1 | 964447 | SCREW, FLT, M8 X 16, SS |
| 7*** | 1 | 875801 | O-RING, EPDM, 233 |
| 8*** | 4 | 962274 | SCREW, FLAT, SOCK, .25-20X.62, SS, PATCH |
| 9*** | 1 | 876611 | PLATE, RETAINING, BEARING |
| 10*** | 1 | N/A | ASSY, BEARING, REPL, ORBIT |
| 11*** | 1 | 547604 | SEAL BEARING ORBITAL |
| 12 | 1 | 876608 | PLATE, BALANCE, 28 INCH |

*ITEMS 1 & 2 CAN BE ORDERED PRE-ASSEMBLED AS A KIT UNDER PART NUMBER 875009 - KIT, PLATE, REPL, ORBIT.

**ITEMS 3, 4, & 5 CAN BE ORDERED AS A KIT UNDER PART NUMBER 855027 - KIT ISOLATOR SET OF 4 W/ STD HWD.

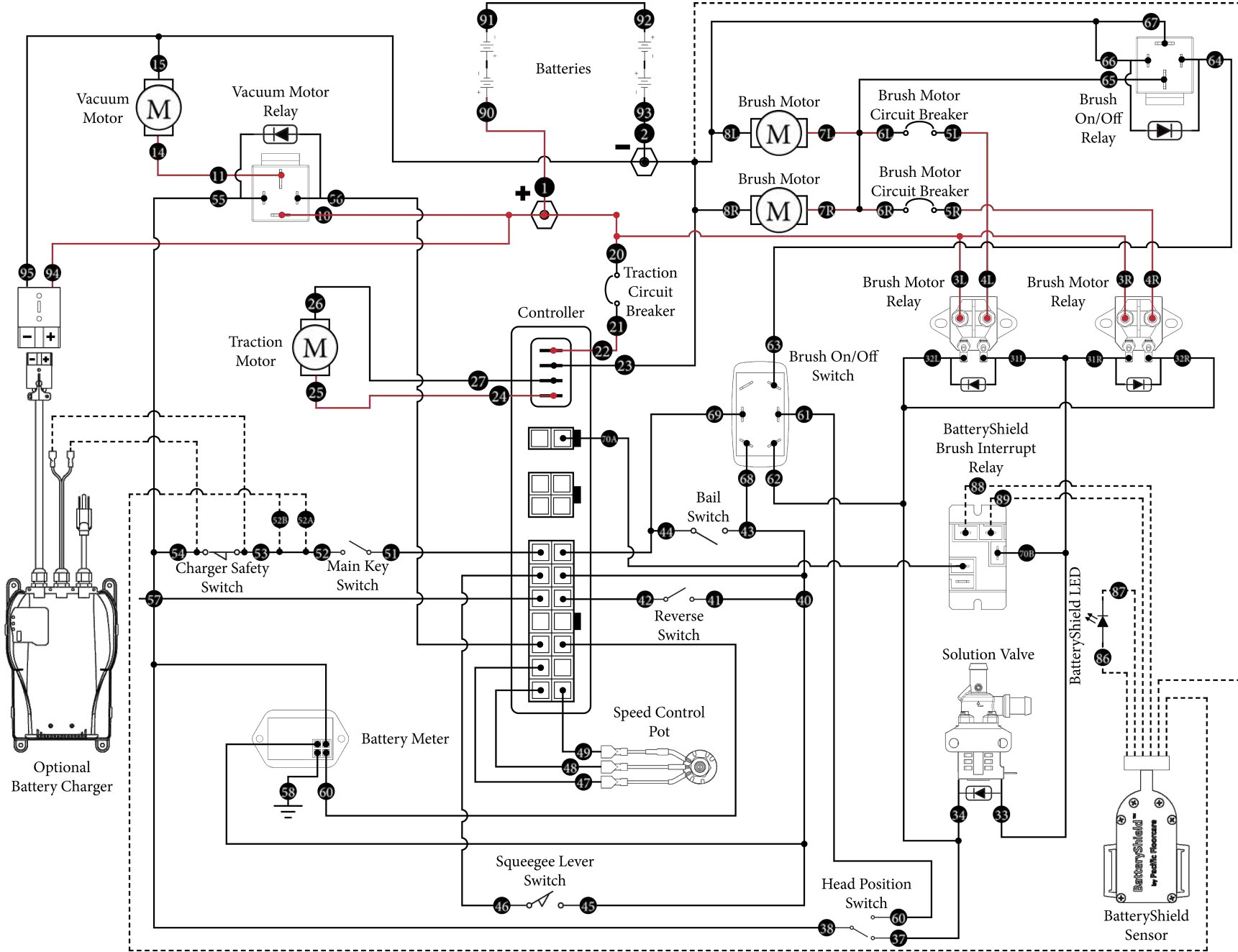
***ITEMS 6-11 CAN BE ORDERED AS A KIT UNDER PART NUMBER 875010 - ASSY, BEARING, REPL, ORBIT.

NOTE: PRIOR TO SERIAL NUMBER 125673, SEAL (ITEM 11) WAS NOT PROVIDED. SEAL CAN BE ADDED WHEN THE BEARING ASSEMBLY IS REPLACED.



S-24 DISK

ALL SERIAL NUMBERS

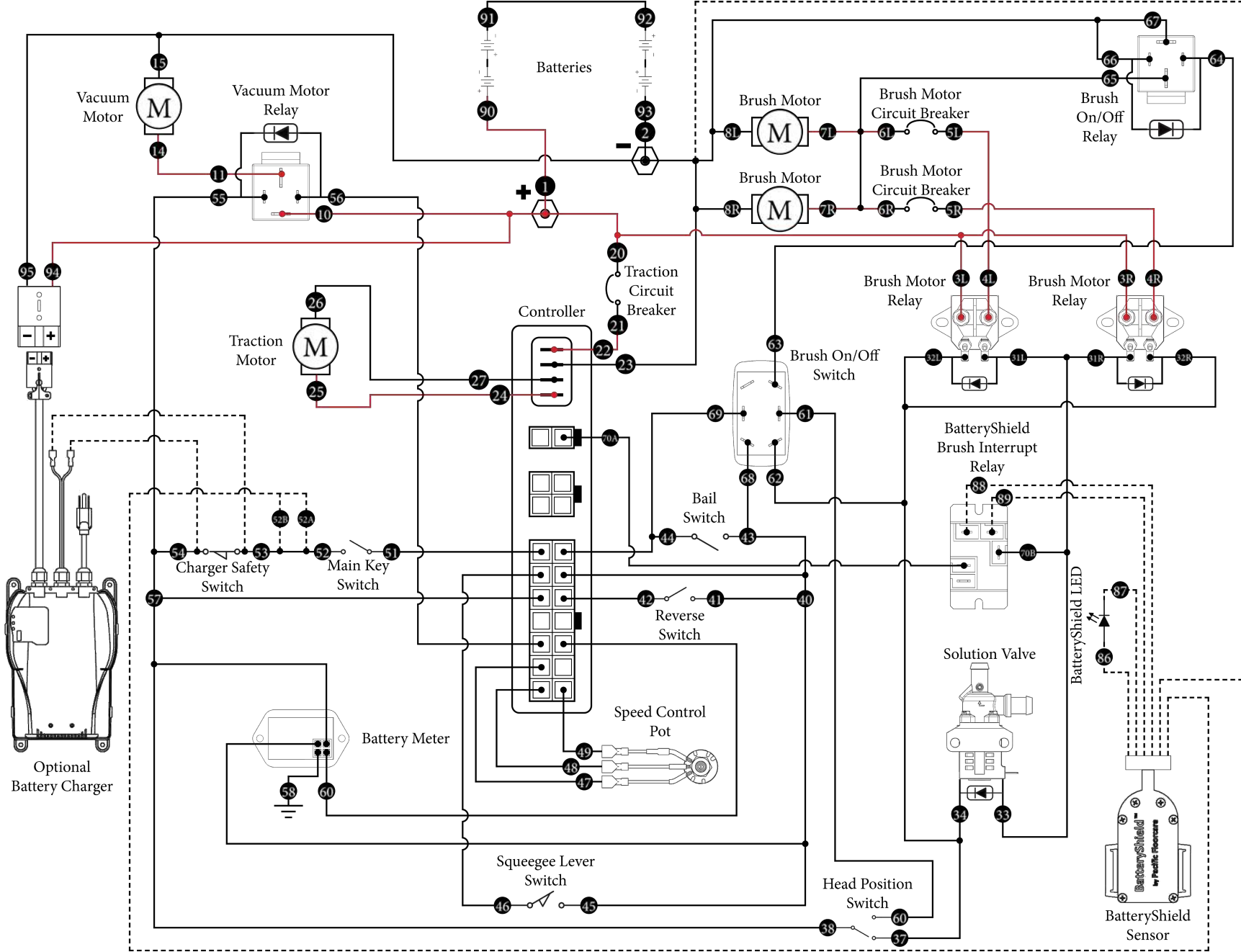


----- Wires represented with dashed lines indicate optional equipment installation

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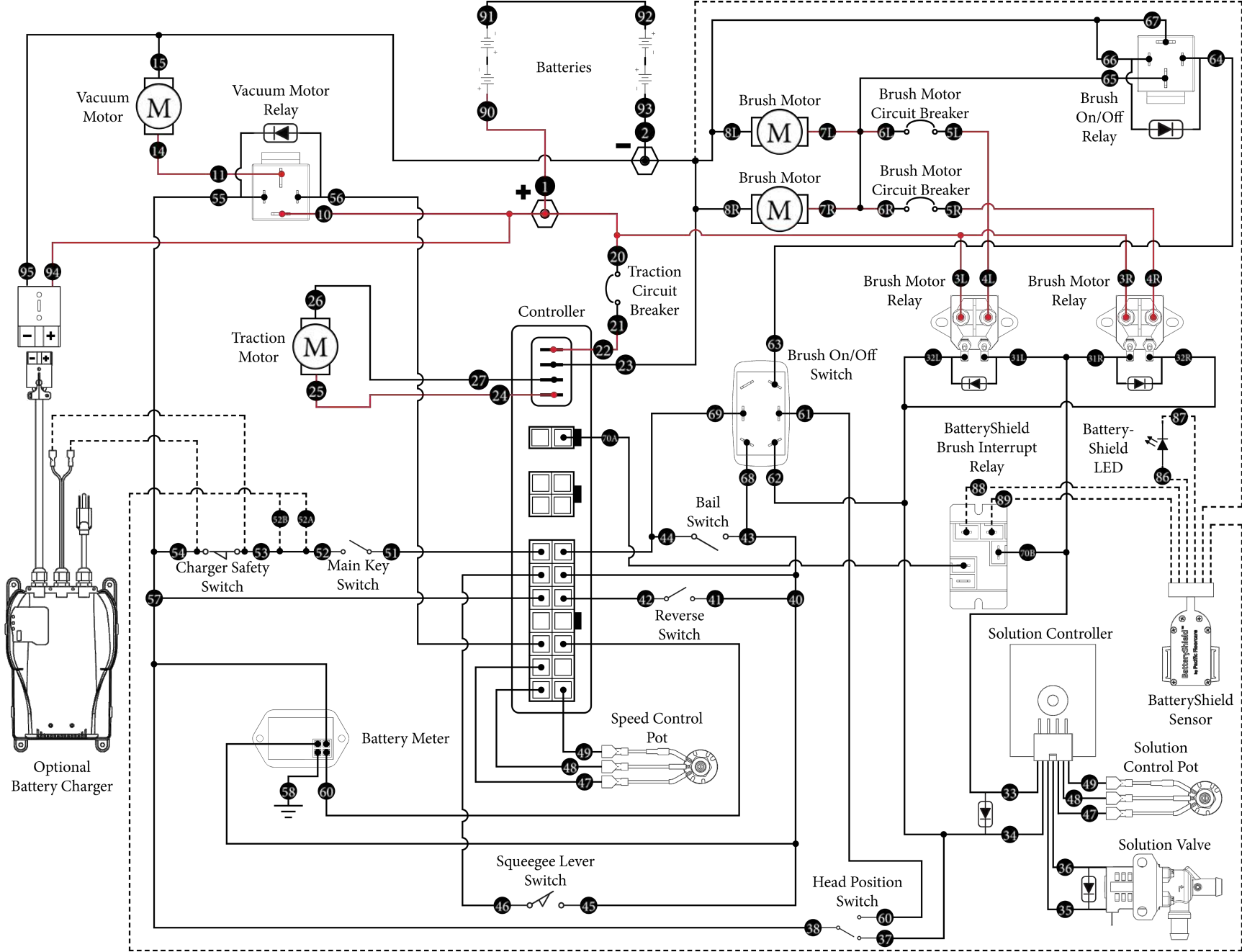
S-28 & S-32 DISK ***PRIOR TO SERIAL NUMBER 113191***



--- Wires represented with dashed lines indicate optional equipment installation

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S-28 & S-32 DISK ***AFTER SERIAL NUMBER 113191***

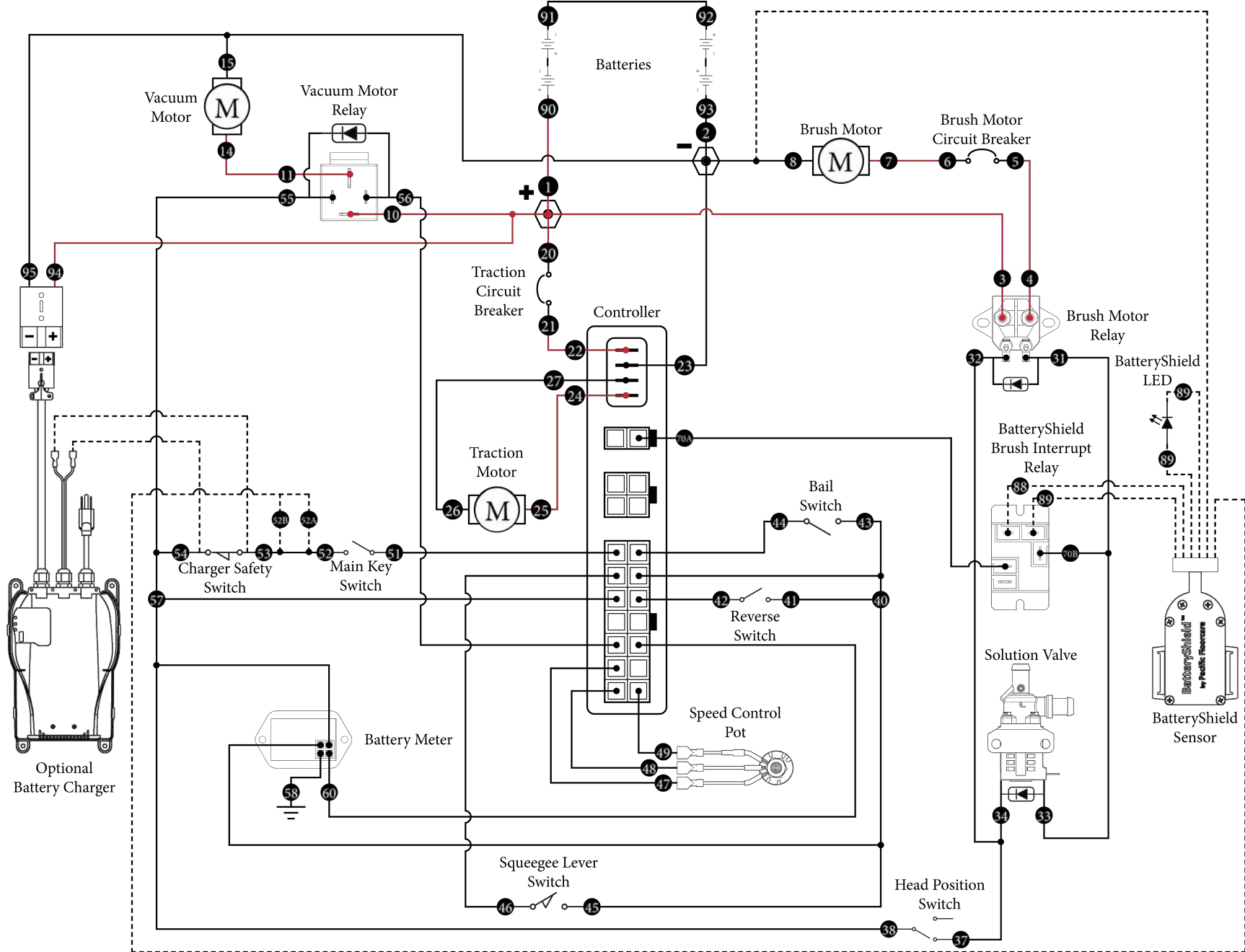


--- Wires represented with dashed lines indicate optional equipment installation

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S-28 ORBITAL

*****PRIOR TO SERIAL NUMBER 113191*****

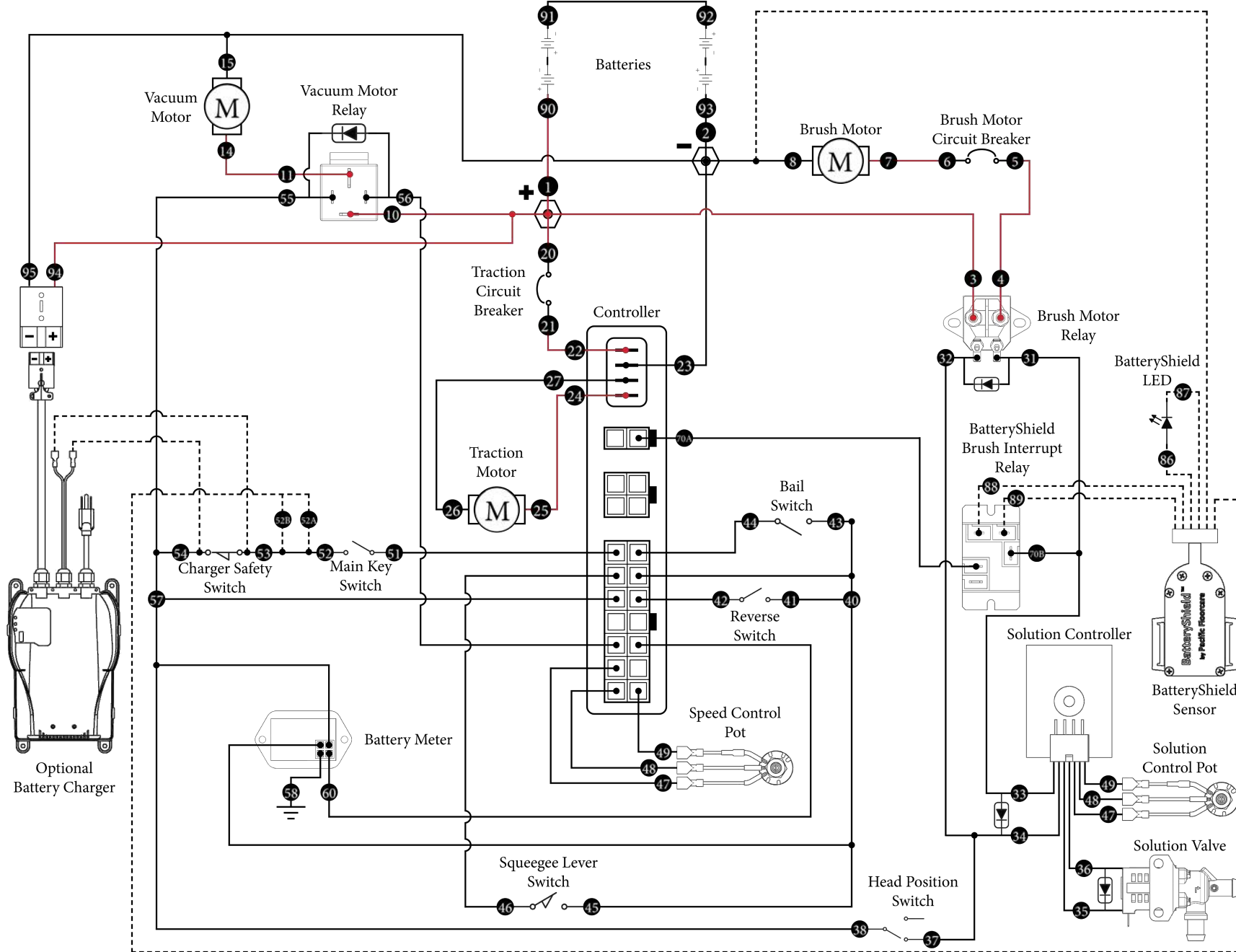


--- Wires represented with dashed lines indicate optional equipment installation

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S-28 ORBITAL

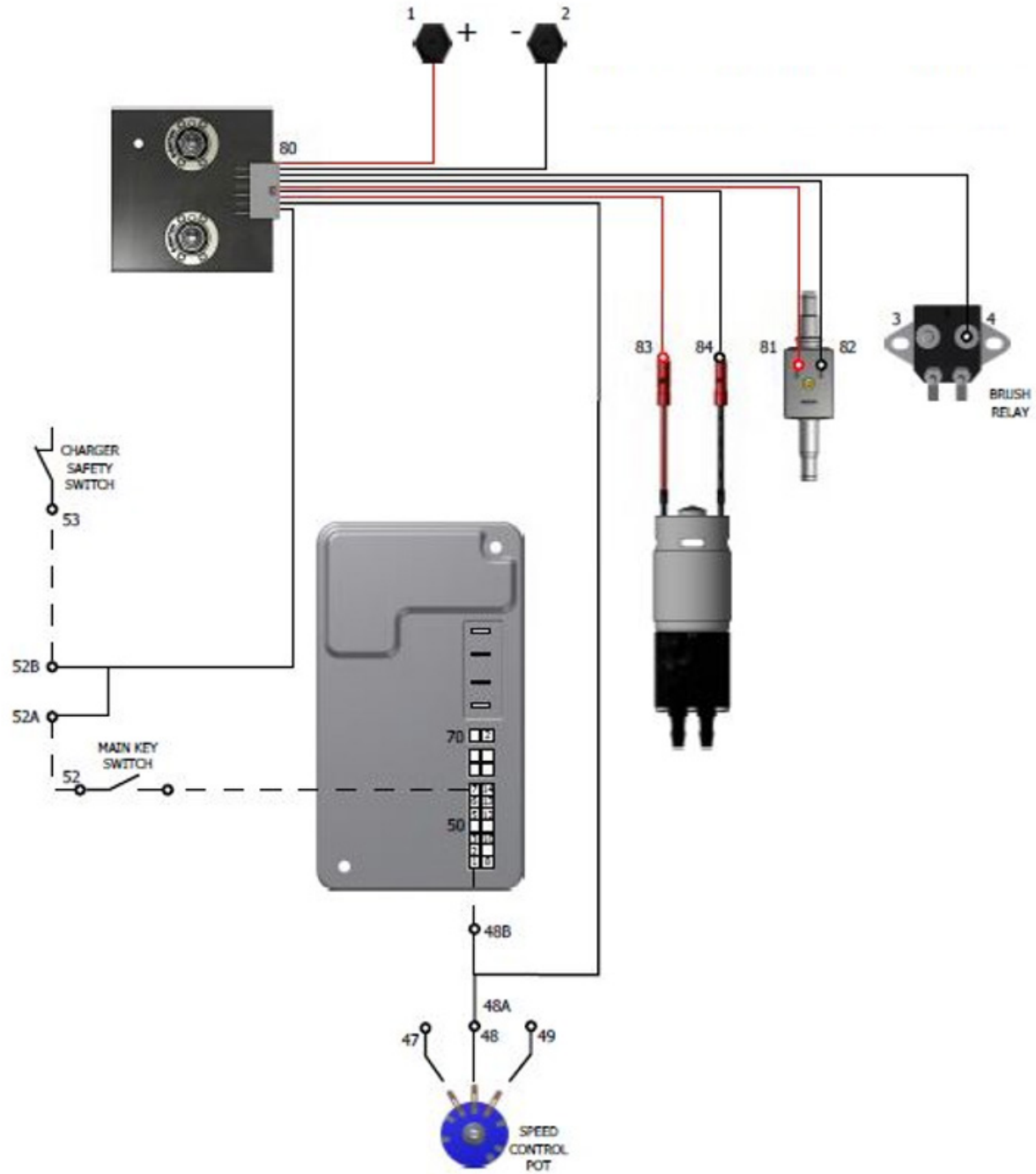
AFTER SERIAL NUMBER 113191



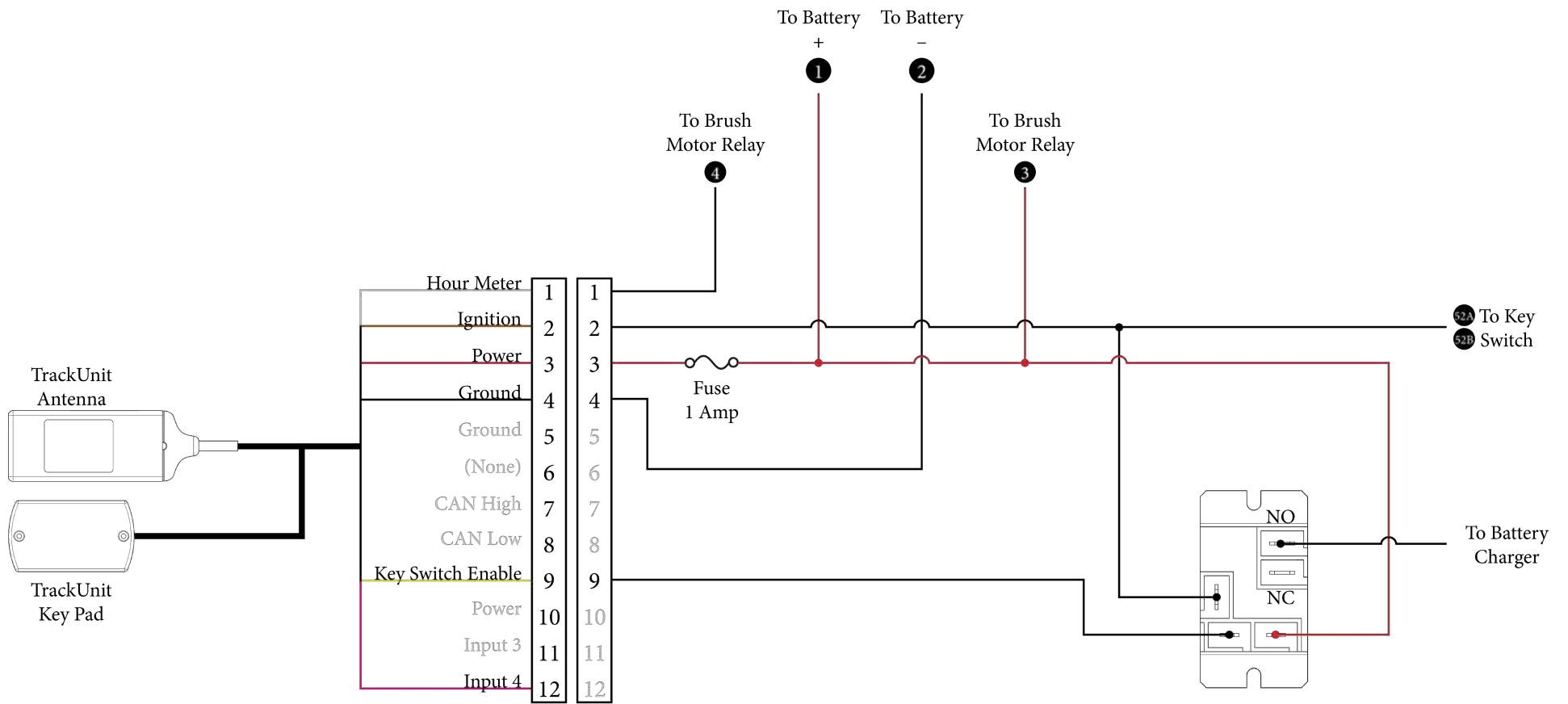
--- Wires represented with dashed lines indicate optional equipment installation

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OPTIONAL CHEMICAL INJECTION SYSTEM



OPTIONAL SCRUBSMART® TELEMETRY SYSTEM



| REVISION | REVISION LOG |
|------------|---|
| 2019.10.24 | UPDATED BALLOONS FOR THE RECOVERY TANK, PAGE 37. |
| 2020.03.02 | MULTIPLE UPDATES, MISC CORRECTIONS AND ADDITIONS. |
| 2020.06.15 | UPDATE SQUEEGEE ASSEMBLY IMAGES, PAGES 45-47. |
| 2020.7.29 | UPDATE WARRANTY INFORMATION. |
| 2020.10.16 | UPDATE WATERING LEAD ACID BATTERIES WITH HYDROLINK, PAGE 9. |
| 2021.1.5 | UPDATE BATTERYSHIELD WARRANTY POLICY |
| 2021.2.2 | UPDATE 28" DISK AND 32" DISK PARTS DIAGRAMS |
| 2021.3.30 | UPDATE PART DESCRIPTION FOR 855204, PAGE 53. |
| 2021.3.31 | UPDATE PART NUMBERS, PAGES 55, 57 & 61. REMOVED WARRANTY INFORMATION. |
| 2021.5.25 | CORRECTED TYPO, PAGE 4 |
| 2021.6.1 | UPDATE 28" DISK AND 32" DISK PARTS DIAGRAMS |
| 2021.9.9 | UPDATE RECOVERY TANK SYSTEM PARTS DIAGRAMS |
| 2022.3.16 | ADDED NOTES, PGS. 47, 48, & 49 |
| 2022.6.28 | UPDATED HEAD LIFT DIAGRAMS & TABLE, PAGE 45. |
| 2023.5.25 | UPDATE PGS. 33-34, 37, 52 & 54. UPDATE ALL ELECTRICAL DIAGRAMS |
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