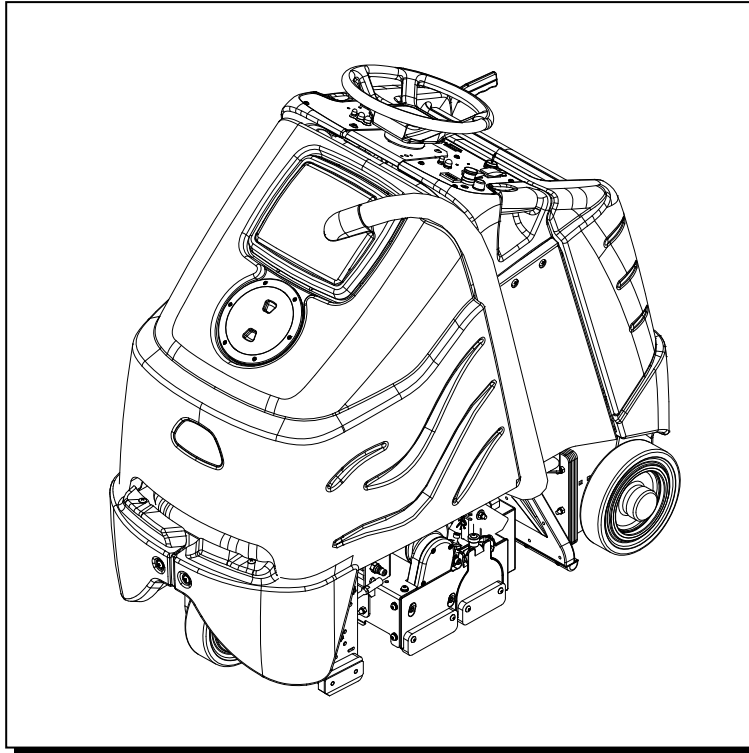


chariot®



iExtract®

Operating Instructions (ENG)



MODELS: CE24 CE24X CEE24
10060140 10060150 10060160



Read these instructions before using the machine

MACHINE DATA LOG/OVERVIEW

Model:	_____
Date of Purchase:	_____
Serial Number:	_____
Dealer:	_____
Address:	_____
Phone Number:	_____
Sales Representative:	_____

OVERVIEW

The **Chariot iExtract®** is a battery powered, stand-on, carpet extractor intended for commercial use. The **Chariot iExtract®** applies a cleaning solution onto a carpeted floor, sweeps and scrubs the carpet with two counter-rotating brushes and then vacuums the soiled water back into the recovery tank. The brushes also help to raise the pile of the carpet, giving it a lush groomed appearance.

Warranty Registration

Thank you for purchasing a Windsor product. Warranty registration is quick and easy. Your registration will allow us to serve you better over the lifetime of the product.

To register your product go to:

www.windsorind.com/WarrantyRegistration.aspx

For customer assistance:

1-800-444-7654



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HOW TO USE THIS MANUAL

This manual contains the following sections:

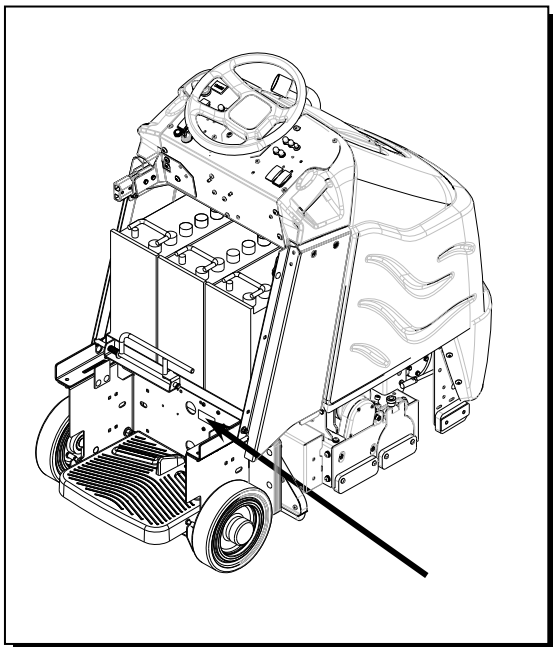
- HOW TO USE THIS MANUAL
- SAFETY
- OPERATIONS
- MAINTENANCE
- PARTS LIST

The HOW TO USE THIS MANUAL section will tell you how to find important information for ordering correct repair parts.

Parts may be ordered from authorized Windsor dealers. When placing an order for parts, the machine model and machine serial number are important. Refer to the MACHINE DATA box which is filled out during the installation of your machine. The MACHINE DATA box is located on the inside of the front cover of this manual.

Model:	_____
Date of Purchase:	_____
Serial Number:	_____
Dealer:	_____
Address:	_____
Phone Number:	_____
Sales Representative:	_____

The model and serial number of your machine are located below the battery compartment of the machine.



The SAFETY section contains important information regarding hazard or unsafe practices of the machine. Levels of hazards are identified that could result in product or personal injury, or severe injury resulting in death.

The OPERATIONS section is to familiarize the operator with the operation and function of the machine.

The MAINTENANCE section contains preventive maintenance to keep the machine and its components in good working condition. They are listed in this general order:

- Batteries
- Scrub Brushes
- Service Schedule
- Machine Troubleshooting

The PARTS LIST section contains assembled parts illustrations and corresponding parts list. The parts lists include a number of columns of information:

- **REF** – column refers to the reference number on the parts illustration.
- **PART NO.** – column lists the part number for the part.
- **PRV NO.** – reference number
- **QTY** – column lists the quantity of the part used in that area of the machine.
- **DESCRIPTION** – column is a brief description of the part.
- **SERIAL NO. FROM** – If this column has an (*) and a Reference number, see the SERIAL NUMBERS page in the back of your manual. If column has two asterisk (**), call manufacturer for serial number. The serial number indicates the first machine the part number is applicable to. The main illustration shows the most current design of the machine. When a boxed illustration is shown, it displays the older design.
- **NOTES** – column for information not noted by the other columns.

NOTE: If a service or option kit is installed on your machine, be sure to keep the KIT INSTRUCTIONS which came with the kit. It contains replacement parts numbers needed for ordering future parts.

IMPORTANT SAFETY INSTRUCTIONS

When using an battery powered appliance, basic precaution must always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE.



To reduce the risk of fire, electric shock, or injury:

Use only indoors. Do not use outdoors or expose to rain.

Use only as described in this manual. Use only manufacturer's recommended components and attachments.

If the machine is **not working properly**, has been dropped, damaged, left outdoors, or dropped into water, return it to an authorized service center.

Do not operate the machine with any openings blocked. Keep openings free of debris that may reduce airflow.

This machine **is not** suitable for picking up hazardous dust.

Machine can cause a fire when operating near flammable vapors or materials. Do not operate this machine near flammable fluids, dust or vapors.

This machine is suitable for commercial use, for example in hotels, schools, hospitals, factories, shops and offices for more than normal housekeeping purposes.

Maintenance and repairs **must be done** by qualified personnel.

If foam or liquid comes out of machine, **switch off immediately**.

Disconnect battery before cleaning or servicing.

Before the machine is discarded, the batteries **must be removed** and properly disposed of.

Make sure all warning and caution labels **are legible and properly attached** to the machine.

During operation, attention shall be paid to other persons, especially children.

Before use all covers and doors shall be put in the positions specified in the instructions.

When leaving unattended, secure against unintentional movement.

The machine shall only be operated by instructed and authorized persons.

When leaving unattended, switch off or lock the main power switch to prevent unauthorized use.

Only chemicals recommended by the manufacturer shall be used.

This appliance has been designed for use with the brushes specified by the manufacturer. The fitting of other brushes may affect its safety.

Do not use on surfaces having a gradient of over 10% (6 degrees).

SAVE THESE INSTRUCTIONS

HAZARD INTENSITY LEVEL

The following symbols are used throughout this guide as indicated in their descriptions:

HAZARD INTENSITY LEVEL

There are three levels of hazard intensity identified by signal words -**WARNING** and **CAUTION** and **FOR SAFETY**. The level of hazard intensity is determined by the following definitions:



WARNING - Hazards or unsafe practices which COULD result in severe personal injury or death.



CAUTION - Hazards or unsafe practices which could result in minor personal injury or product or property damage.

FOR SAFETY: To Identify actions which must be followed for safe operation of equipment.

Report machine damage or faulty operation immediately. Do not use the machine if it is not in proper operating condition. Following is information that signals some potentially dangerous conditions to the operator or the equipment. Read this information carefully. Know when these conditions can exist. Locate all safety devices on the machine. Please take the necessary steps to train the machine operating personnel.

FOR SAFETY:

DO NOT OPERATE MACHINE:

Unless trained and authorized.

Unless operation guide is read and understood.

In flammable or explosive areas.

In areas with possible falling objects.

WHEN SERVICING MACHINE:

Avoid moving parts. Do not wear loose clothing: jackets, shirts, or sleeves when working on the machine. Use Windsor approved replacement parts.



Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep solution tank in raised position when charging. Keep sparks and flames away from the batteries. Do not smoke around batteries.



Disconnect batteries before working on machine. Only qualified personnel should work inside machine. Always wear eye protection and protective clothing when working on or near batteries. Avoid skin contact with the acid contained in the batteries.



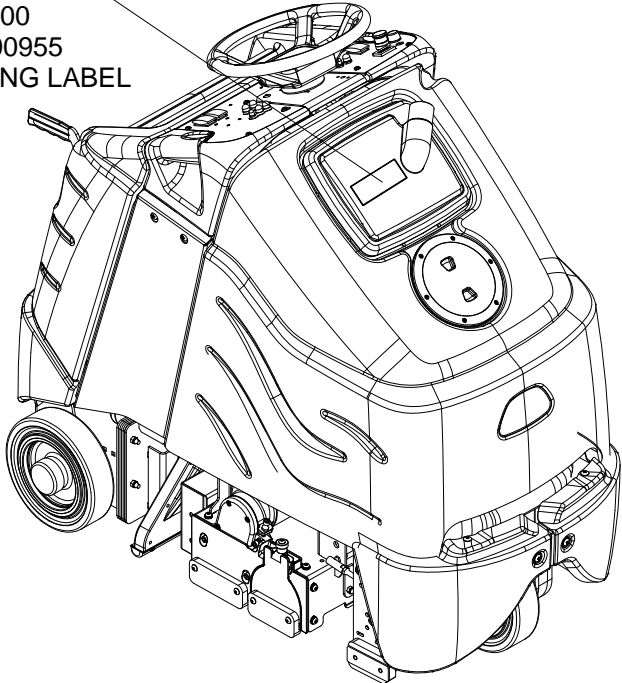
Never allow metal to lie across battery tops.

SAFETY LABEL LOCATION

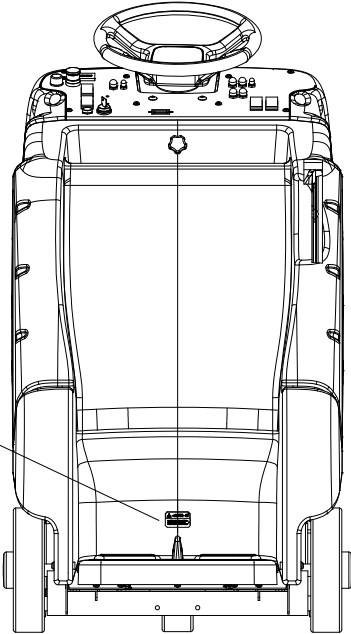
NOTE: These drawings indicate the location of safety labels on the machine. If at any time the labels become illegible, promptly replace them.



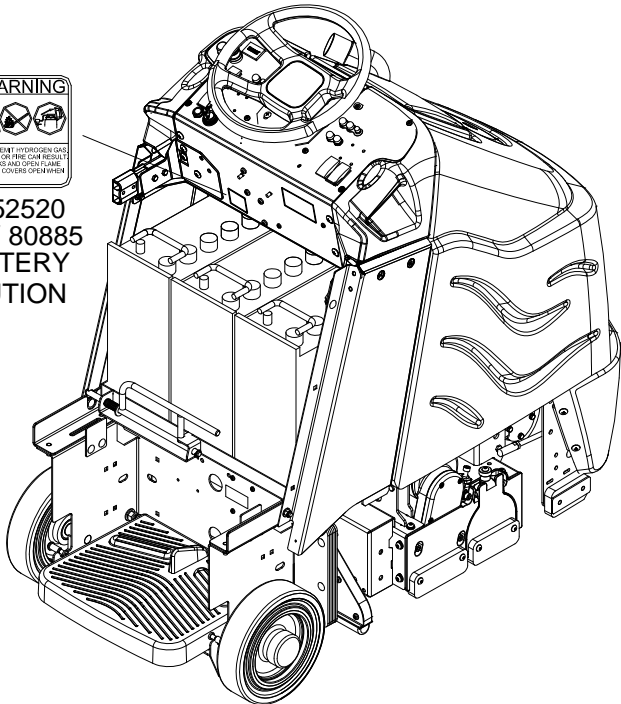
86244300
PRV 500955
WARNING LABEL



86244310
PRV 500956
CAUTION LABEL



86252520
PRV 80885
BATTERY
CAUTION

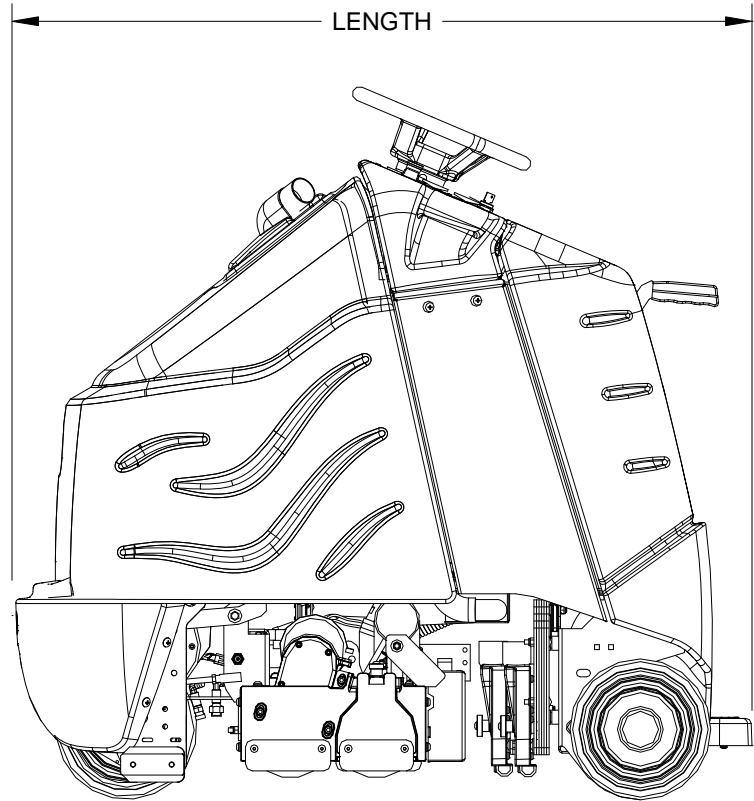
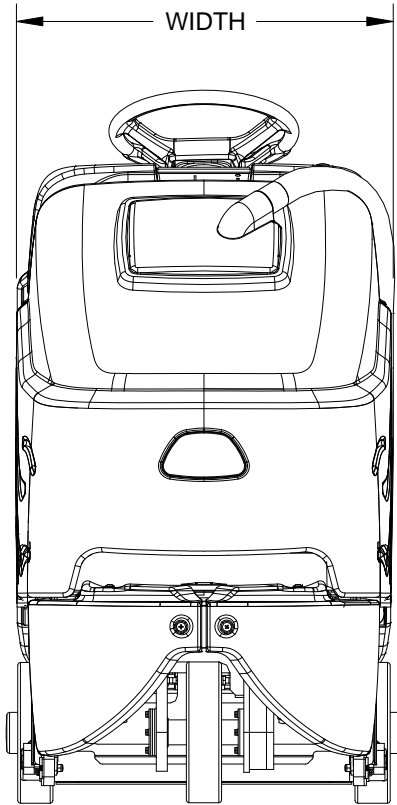


TECHNICAL SPECIFICATIONS

ITEM	DIMENSION/CAPACITY
Nominal Power	2952 W
Rated Voltage	36 Volts DC
Rated Amperage	82 amps
Batteries	3 X12 Volt 195-215 AH @ 20 hr. rate
Battery Compartment Dimensions	21 in. x 16 in. x 17 in. tall (533mm x 406mm x 432mm)
Propelling Motor	.75 HP (560 W)
Mass (GVW)	1400 lbs (635 kg)
Weight Empty Without Batteries	821 lbs (372 kg)
Solution Control	1.3 GPM pump metered flow with automatic shut-off in neutral
Spray Pump Pressure	100 psi
Solution Capacity	25 gal (95Liter)
Spray Jets	2
Recovery Capacity	25 gal (95 Liter)
Vacuum Motors	2 x .75 HP (560W)
Maximum Flow Rate of Vacuum Motor	77.0 cfm (36.4 Liters per second)
Maximum Suction Of Vacuum Motor	81.8 inches of water (20.3 kPa)
Scrub Brush Diameter	6 inch (152 mm)
Scrub Brush Motors	2 x .75 HP (560W)
Scrub Brush Pressure	Floating
Scrub Brush Speed	800 rpm
Tires	10 in. (254mm) Solid Gray non-marking
Extracting Speed 1	60 feet per minute (18 m/min)
Extracting Speed 2	132 feet per minute, 1.5 mph (40 m/min, 2.4 Km/hr)
Maximum (Transport) Speed	3.5 miles/hour (5.6 Km/hour)
Frame Construction	Powder coated steel
Brake	Electrical parking brake, sets automatically whenever operator steps off platform or engages emergency stop.
Minimum Aisle U-Turn Width	56 in. (1425 mm)
Maximum Rated Climb And Descent Angle	7.5 degrees

TECHNICAL SPECIFICATIONS

ITEM	MEASURE
Height	50.6 inches (1285 mm)
Length	52.5 inches (1330 mm)
Width	26.5 inches (670 mm)
Width of scrub path	23 inches (585 mm)



SPECIAL NOTES:

The sound pressure level at the operator's ear was measured to be 70 dBA. This was a nearfield, broadband measurement taken in a typical industrial environment on a tile floor. This appliance contains no possible source of impact noise. The instantaneous sound pressure level is below 63 Pa.

The weighted root mean square acceleration at the operator's arms was measured to be below 2.5m/s^2 . This was a tri-axial, third-octave-band measurement made during normal operation on a composite tile floor. The measurement and related calculations were made in accordance with ANSI S3.34-1986.

HOW THIS MACHINE WORKS

The Chariot iExtract® is a battery powered, self-propelled Carpet Extractor intended for commercial use. The machine is designed to apply a cleaning solution onto carpeted floor, sweep and scrub the carpet with two counter-rotating brushes, then vacuum the soiled water back into the recovery tank.

The machine's primary systems are the solution system, scrub system, recovery system and operator control system.

The function of the solution system is to store cleaning solution and deliver it to the scrub system. The solution system consists of the solution tank, strainer, pump, valve and controls. The solution tank stores cleaning solution (water and detergent) until it is delivered to the scrub system. The strainer protects the pump from debris. The valve automatically prevents solution flow unless the scrub brushes are turned on and the machine is being propelled. The solution pump switch controls the cleaning solution flow to the spray jets/accessory port.

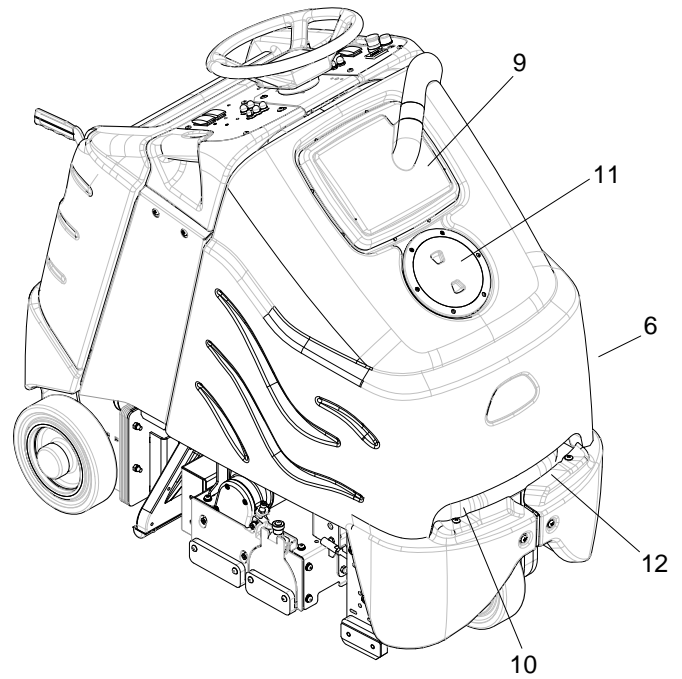
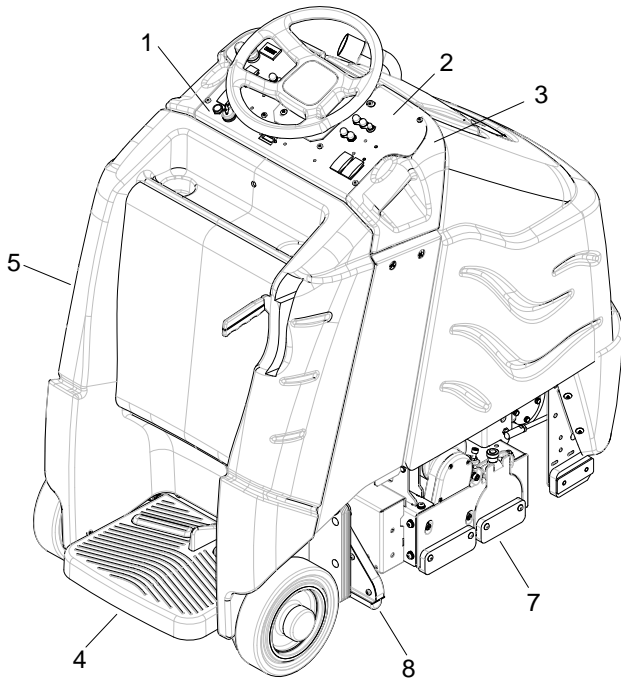
The function of the scrub system is to sweep and scrub the carpet and lift and groom the carpet pile. The scrub system consists of two cylindrical brushes, motors, hopper, lift actuator, and controls. The brushes scrub the carpet as the motors drive the brushes. The counter-rotating action of the brushes picks up debris and throws it into a removable hopper. The actuator switch controls the lift actuator and brush motors to lower the deck and turn the motors on, or raise the deck and turn the motors off. The brush motors will automatically turn off when the throttle pedal is in neutral.

The function of the recovery system is to vacuum the soiled water back into the recovery tank. The recovery system consists of the vacuum shoes, vacuum motors, float ball filter, recovery bag and controls. The vacuum shoes extract the dirty solution from the carpet as the machine moves forward. The vacuum motors provide suction to draw the dirty solution off the floor and into the recovery bag. The float ball filter protects the vacuum fan from debris and foam. The recovery bag stores the dirty solution.

The function of the operator control system is to control the direction and speed of the machine. The directional control system consists of the direction control switch, throttle pedal, speed control switch, drive reset switch, emergency stop/brake switch, steering wheel, propel controller, drive wheel and operator presence pedal prior to Serial Number(11*). The directional control switch signals forward or reverse direction. The controller interprets signals from the throttle pedal to command the drive wheel to propel or slow the machine. The drive reset switch is to make sure the operator is on platform before machine will propel. The steering wheel points the drive wheel in the direction desired by the operator. The parking brake automatically engages when the operator steps off the platform. The emergency stop/brake can be used to hold the machine on slopes.

*SEE SERIAL NUMBER PAGE.

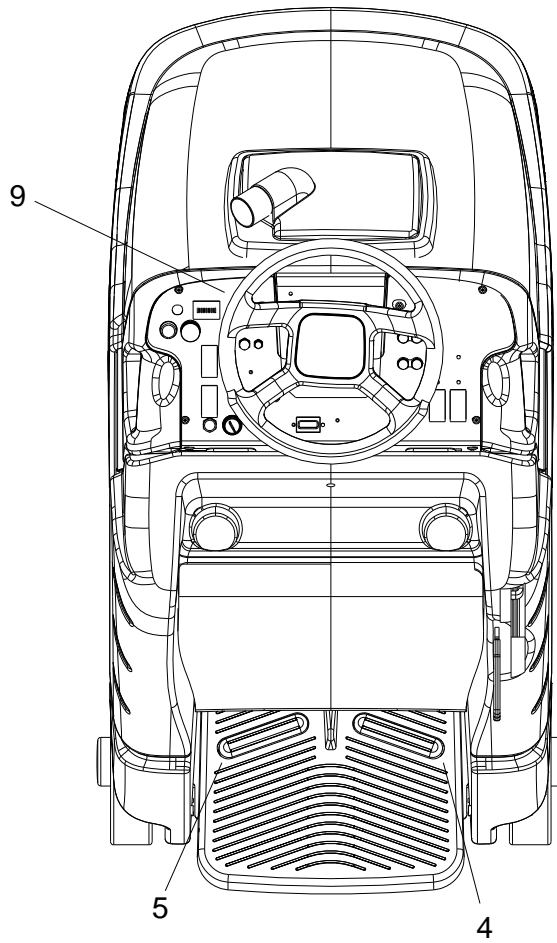
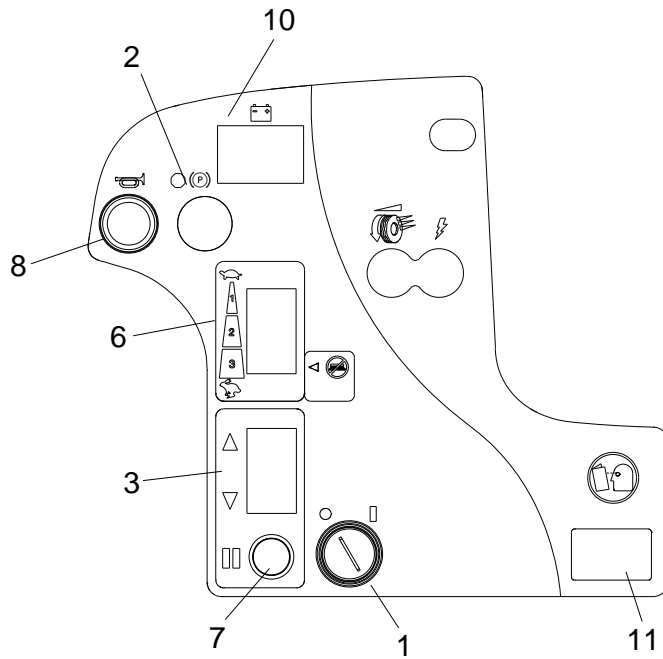
COMPONENTS



1. *Control Panel-Drive*
2. *Control Panel-Scrub*
3. *Control Housing*
4. *Pedal Platform*
5. *Rear Cover*
6. *Tank*

7. *Scrub Deck*
8. *Vacuum Shoes*
9. *Recovery Dome*
10. *Recovery Drain Hose*
11. *Solution Cover*
12. *Solution Drain Hose*

DRIVE CONTROLS



DRIVE CONTROLS

- | | |
|--|---|
| 1. <i>Key Switch</i> | 7. <i>Drive Reset Switch</i> |
| 2. <i>Emergency Stop/Brake Switch</i> | 8. <i>Horn Button</i> |
| 3. <i>Directional Control Switch</i> | 9. <i>Steering Wheel</i> |
| 4. <i>Throttle Pedal</i> | 10. <i>Battery Discharge Indicator</i> |
| 5. <i>Operator Presence Pedal-
Prior to Serial Number (11*)</i> | 11. <i>Hour Meter</i> |
| 6. <i>Speed Control Switch</i> | |

1. KEY SWITCH

Controls the power for machine functions.

To turn the machine power on, rotate key clockwise.

To turn the machine off, rotate key counterclockwise.

2. EMERGENCY STOP/BRAKE SWITCH

This safety feature is designed to cut all power to the machine at any time and apply parking brake.

To shut the machine power off, push the Emergency Stop Switch, this will also engage the parking brake and cause the machine to stop immediately.

To reset the machine, rotate the switch clockwise.

3. DIRECTIONAL CONTROL SWITCH

Controls the direction of travel of the vehicle. The position of the switch indicates direction of travel.

To travel forward, press the top of the switch.

To travel in reverse, press the bottom of the switch.

DRIVE CONTROLS

4. THROTTLE PEDAL

Controls the speed of the vehicle within the speed control setting selected. Pressing the pedal causes the machine to travel in the direction selected by the Directional Control Switch.

To increase speed, increase pressure on the pedal.

To decrease speed, decrease pressure on the pedal.

5. OPERATOR PRESENCE PEDAL - Prior to Serial Number (11*)

This safety feature is designed to ensure that the operator has their left foot on pedal platform whenever machine is moving. The operator must have left foot on Operator Presence Pedal for machine to move.

6. SPEED CONTROL SWITCH

Controls the maximum speed of the machine. There are two settings intended for scrubbing, speeds 1 and 2. Speed 3 is recommended for transport only, not scrubbing.

To increase speed, press the top of the switch.

To decrease speed, press bottom of the switch. Speeds can be adjusted at any time, whether machine is moving or not.

The position of the switch indicates speed setting.

7. DRIVE RESET SWITCH

This safety feature is designed to ensure safe engagement of propel drive. Each time the machine power is turned on, and each time an operator steps on to the platform, the Drive Reset Switch must be pushed before machine will propel.

8. HORN BUTTON

The horn is activated by pressing the horn button.

9. STEERING WHEEL

The steering wheel turns the front wheel causing the machine to change direction.

*SEE SERIAL NUMBER PAGE.

10. BATTERY DISCHARGE INDICATOR

Indicates the charge level of the batteries.

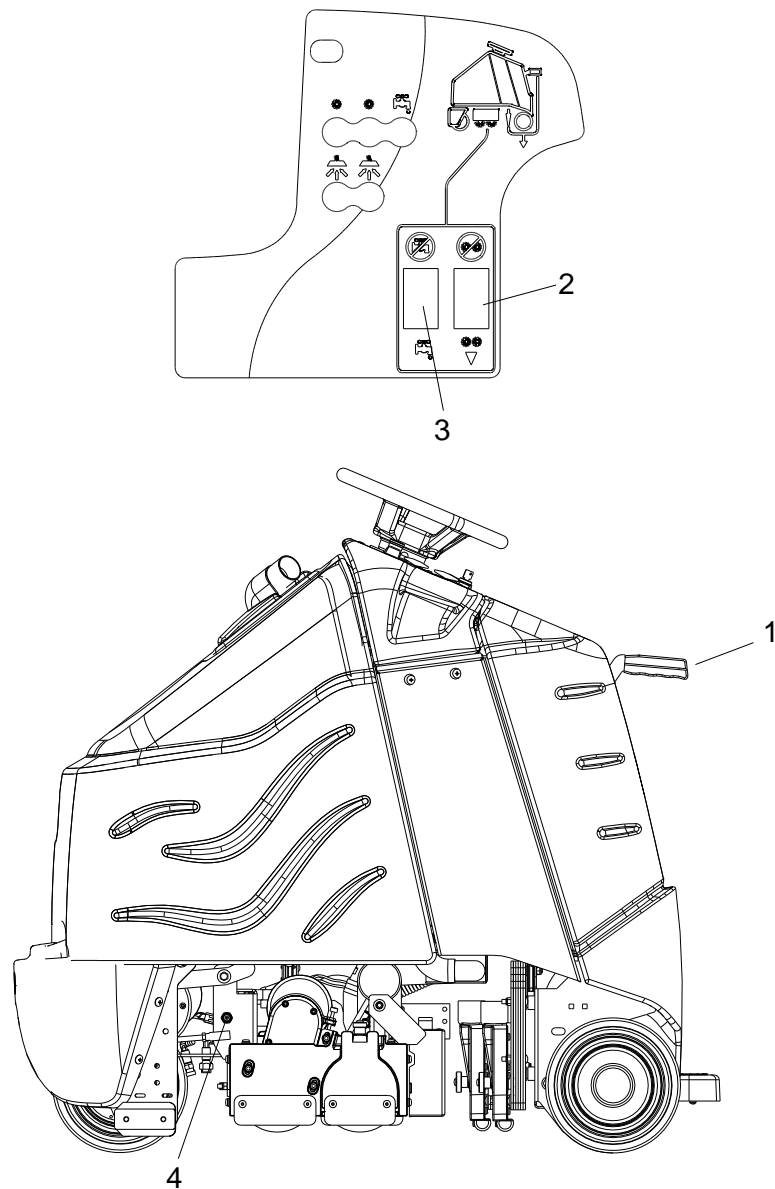
The meter display is divided into 10 vertical bars. Bars illuminated on the far right indicate full charge. Bars flashing near the left side indicate the batteries should be recharged. Further operation of the machine could damage the machine or the batteries.

When the machine is left overnight with less than a full charge, the display may initially indicate a full charge. It will also indicate a full charge if the batteries are disconnected, then reconnected. After a few minutes of operation the meter will give the correct charge level.

11. HOUR METER

Records the number of hours the machine has been in operation. This information is useful in determining when to service the machine.

SCRUB CONTROLS



-
1. Vacuum Shoe Lift Lever
 2. Scrub Deck Actuator Switch

3. Solution Control Switch
4. Solution Accessory Tool Hookup

SCRUB CONTROLS

1. VACUUM SHOE

Raises and lowers the vacuum shoes, and turns the vacuum motors on and off.

To lower vacuum shoes and start vacuum motors, lift the lever from its raised position.

To raise vacuum shoes and stop vacuum motors, lift the lever from its lowered position.

2. SCRUB DECK SWITCH

Raises and lowers the scrub deck, turns the scrub brush motors on and off.

To lower the scrub deck and turn on scrub brush motors, press the bottom of the switch. The brush motors will automatically shut off when the throttle pedal is in neutral.

To raise the scrub deck and turn off scrub brush motors, press the top of the switch.

3. SOLUTION CONTROL SWITCH

Controls solution flow to scrub deck spray jets/accessory port.

If the brush motors are turned off or the throttle pedal is in neutral, the flow is automatically interrupted until the motors are turned on again.

4. SOLUTION ACCESSORY TOOL HOOKUP

Auxiliary cleaning tools may be connected to this port. Solution Control Switch must be "on" for solution to flow.

MACHINE OPERATION

PRE-RUN MACHINE INSPECTION

Do a pre-run inspection to find possible problems that could cause poor performance or lost time from breakdown. Follow the same procedure each time to avoid missing steps.

NOTE: See maintenance section for pre-run machine inspection checklist items.

STARTING MACHINE

NOTE: Perform pre-run machine check before operating machine.

FOR SAFETY: Before starting machine, make sure that all safety devices are in place and operating properly.

1. Stand on the operator platform. Throttle pedal must be in neutral position.

Note: Prior to Serial Number (11*). Place left foot on operator presence pedal. Throttle pedal must be in neutral position.

2. Turn the machine power on by turning key switch clockwise to the "ON" position.
3. Check the position of the Directional Control Switch to make sure the machine will travel in the direction intended.
4. Press the Drive Reset Switch.
5. Press lightly on the throttle pedal with right foot.

*SEE SERIAL NUMBER PAGE.

EMERGENCY STOP PROCEDURES

1. Release the throttle pedal by lifting right foot.
2. Turn machine power off with key switch by turning key switch counterclockwise.
3. If an electrical problem is suspected, push in emergency stop button. This will also engage the parking brake and cause the machine to stop immediately.

MACHINE OPERATION

FILLING SOLUTION TANK

FOR SAFETY: Before leaving or servicing machine; stop on level surface, turn off machine and remove key.

1. Turn the machine power off.
2. Remove solution cover.
3. Fill the solution tank with clean water, leaving enough room for the required amount of cleaning solution. The solution tank capacity filled to fill inlet is 25 gallons (95 liters). The water must not be hotter than 140° F (60°C) to prevent damage to the tank.
4. Measure the chemical into the solution tank. Liquid chemicals should be added to the solution tank after filling with water. Dry chemicals should be thoroughly mixed before being added into solution tank. Commercially available, high alkaline floor cleaners are suitable for use in the solution system.

NOTE: Read the chemical manufacturers recommended proportion instructions.

4. Replace solution tank cover.

WARNING: Flammable materials can cause an explosion or fire. Do not use flammable materials in the tanks.

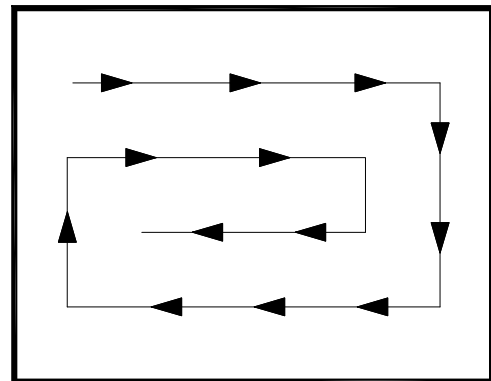
NORMAL SCRUBBING

Plan the scrubbing pattern in advance. For efficient operation, the runs should be the longest possible without turning, stopping, or raising or lowering scrub deck. The longest track is around the perimeter of the area to be cleaned and a collapsing rectangle pattern is most efficient.

In order to achieve the best possible results, the area which is to be cleaned should be swept before scrubbing. Large debris, strings and wire must be removed to prevent being caught in brushes.

If the machine is allowed to stand in neutral with the scrub deck down for more than 2 seconds, the solutions flow stops and brush motors stop. When forward travel is resumed, the solution flow and the scrub brush motors will continue. Overlap the brush path and avoid transporting over previously cleaned areas.

RECOMMENDED SCRUBBING PATH



MACHINE OPERATION

TO BEGIN SCRUBBING

When operating the machine around people, pay close attention for unexpected movement. Use extra caution around children.

Flammable liquids and/or reactive metals can cause explosions or fire! Do not pick up.

1. Stand on the operator platform. Throttle pedal must be in neutral position.

***Note:** Prior to Serial Number- (11*). Place left foot on operator presence pedal. Throttle pedal must be in neutral position.*

2. Turn machine power on.
3. Check position of Directional Control Switch to ensure that machine is set to travel in direction intended.
4. Press the Drive Reset Switch.
5. Lower the vacuum shoes.
6. Lower the scrub deck to floor.
7. Drive machine forward to begin scrubbing.

***NOTE:** Shut machine off immediately if water or foam is expelled from the machine.*

8. Adjust the speed of the machine.

***NOTE:** Once solution flow rate is set it is not necessary to shut off solution when stopping scrubbing. Solution flow is automatically shut off when brush motors stop. When brush motors are activated, flow automatically resumes.*

*SEE SERIAL NUMBER PAGE.

PRIMING PUMP

If the solution system has gone dry or has been unused for a period of time, it may be necessary to follow the pump priming procedure.

1. Fill solution tank.
2. Loosen, but do not completely remove the strainer bowl. Solution should flow out of the strainer. If it does not, check the strainer screen inside the solution tank. Insure it is clear of debris. Tighten the strainer bowl.
3. Disconnect the vacuum hose from the recovery dome.
4. Begin normal scrubbing and set the solution flow to maximum setting. Solution flow should begin within 2 minutes.
5. Connect vacuum hose to recovery dome.
6. Adjust the speed of the machine as necessary.

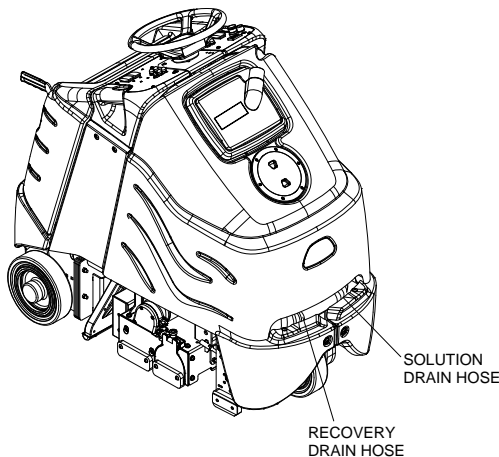
MACHINE OPERATION

TO STOP SCRUBBING

1. Raise the scrub deck, turn off scrub brushes.
2. Raise the vacuum shoes, turn off vacuum.
3. Allow the throttle pedal to return to neutral.
4. Turn machine power off.

FOR SAFETY: Before leaving or servicing machine: stop on level surface, turn off machine and remove key.

FOR SAFETY: When using machine, go slow on inclines and slippery services.



EMPTYING AND CLEANING TANKS

1. Park the machine next to a floor drain. Drain hoses are at the front of the machine.
2. Turn the machine power off.

RECOVERY TANK

1. Pull the large drain hose from under the front of the tank. Unscrew cap, then lower hose in direction of the drain. Do not stand in front of end of hose. Recovered solution will come out with force.

2. Remove the recovery tank dome. Flush the recovery bag out with clean water. Do not use water hotter than 140°F (60°C) to clean tank. Damage may occur.
3. Clean debris from dome basket.
4. Clean off the float shut-off system and inspect for free movement of float. The float shut-off system is located in the rear of the recovery tank.
5. Replace the drain cap and secure drain hose under tank.
6. If machine is to be stored, leave the recovery tank dome off.

SOLUTION TANK

1. Pull recovery drain hose out to expose the solution drain hose.
2. Pull the solution drain hose from under front of the tank. Unscrew cap, then lower hose in direction of drain.
3. Remove the solution tank cover.
4. Flush the solution tank out with clean water and run several gallons of clean water through systems. Do not use water hotter than 140°F (60°C) to clean tank. Damage may occur.

NOTE: Never allow solution to remain in tank. Damage to tank, seals and valves could occur.

Tuck drain hose under tank and secure with recovery drain hose by tucking it under tank.

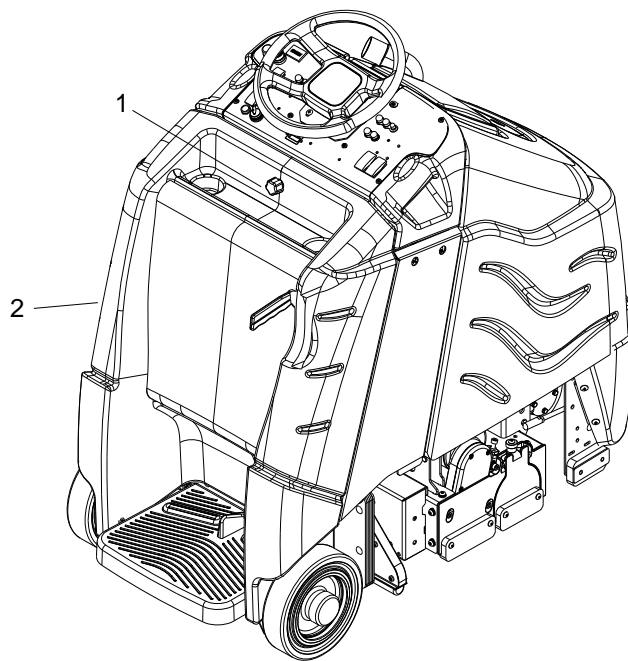
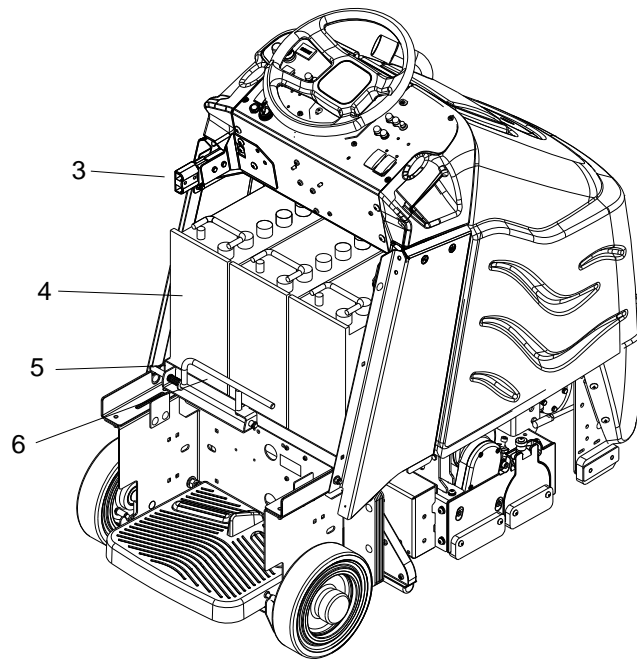
NOTES:

SERVICE SCHEDULE

MAINTENANCE	BEFORE EACH WORK PERIOD	AFTER EACH WORK PERIOD	50 HRS	100 HRS	200 HRS
Check water level of batteries after charging; add distilled water if necessary. (Wet cell only)	*				
Check that dome and cover seal tightly.	*				
Visually check for damaged or worn tires.	*				
Check brushes for proper installation.	*				
Check vacuum hose connections.	*				
Check that vacuum shoes are securely attached.	*				
Check for securely attached drain hoses and caps.	*				
Check pedal(s), brake and steering for proper operation.	*				
Clean out recovery tank and dome basket.		*			
Clean and inspect float shutoff.		*			
Clean out solution tank and filter, check flow.		*			
Clean and inspect solution filter strainer.		*			
Run vacuum motors to dry.		*			
Empty hopper and clean scrub deck.		*			
Clean brushes and check wear.		*			
Clean vacuum shoes.		*			
Clean outside of tanks, check for damage.		*			
Store with dome off tank.		*			
Charge batteries.		*			
Clean off top of batteries.			*		
Check battery cells with hydrometer. (Wet cell only)			*		
Inspect vacuum shoes.			*		
Clean solution strainer inside tank.			*		
Check battery connections are tight.			*		
Clean battery cases and battery compartment.				*	
Check parking brake.					*
Clean chains, cables and pulleys for scrub deck lift and vacuum shoe lift.					*
Clean pivot points on scrub deck and vacuum shoe lift.					*
Check all motors for carbon brush wear.					*
Check motor commutators.					*
Check steering chain tensioner.					*

NOTE: Traction drive, wheels and batteries should be serviced based on traction drive hour meter (Deluxe). The scrub brush hour meter should be used for all other service schedule items.

MAINTENANCE- BATTERIES



-
- | | |
|-------------------------------------|------------------------------|
| 1. <i>Rear Cover Retainer Knob</i> | 4. <i>Batteries</i> |
| 2. <i>Rear Cover</i> | 5. <i>Battery Tray</i> |
| 3. <i>Battery Connector-Machine</i> | 6. <i>Battery Tray Latch</i> |

BATTERIES

The batteries provide the power to operate the machine. The batteries require regular maintenance to keep them operating at peak efficiency.

The machine batteries will hold their charge for long periods of time, but they can only be charged a certain number of times. To get the greatest life from the batteries, charge them when their charge level reaches 25% of a full charge. Use a hydrometer to check the charge level.

Do not allow the batteries to remain in a discharged condition for any length of time. Never expose a discharged battery to temperatures below freezing. Discharged batteries will freeze causing cracked cases. Do not operate the machine if the batteries are in poor condition or if they have a charge level below 25% (specific gravity below 1.155).

Keep all metallic objects off the top of the batteries, as they may cause a short circuit. Replace worn or damaged cables and terminals.

Check the electrolyte level in each battery cell before and after charging the batteries. Never add acid to the batteries, use distilled water. Do not allow water level to fall below the battery plates. Portions of plates exposed to air will be destroyed. Do not overfill. Keep plugs firmly in place at all times.

⚠ CAUTION: When servicing machine, avoid contact with battery acid.

⚠ WARNING: Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep covers open when charging.

⚠ WARNING: Wear eye protection and protective clothing when working with batteries.

⚠ WARNING: Charge batteries in a well ventilated area.

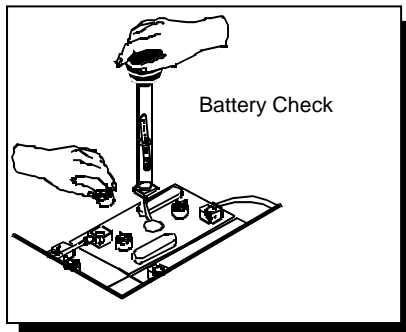
BATTERY MAINTENANCE

1. When cleaning the batteries, use a solution of baking soda and water. Do not allow the cleaning fluid to enter the battery cells, electrolyte will be neutralized.
2. Maintain the proper electrolyte level in each battery cell. If a cell should accidentally overflow, clean immediately.
3. Wipe off the top of the batteries at least once a week.
4. Test battery condition with a hydrometer at least once a week.
5. Ensure that all connections are tight and all corrosion removed.
6. Every 4 to 6 months, remove that batteries from the machine and clean the battery cases and battery compartment.

MAINTENANCE-BATTERIES

CHECKING BATTERY SPECIFIC GRAVITY

Use a hydrometer to check the battery specific gravity.



CHECKING GRAVITY

- A. Hydrometer
- B. Battery

NOTE: Do not take readings immediately after adding distilled water, if the water and acid are not thoroughly mixed, the reading may not be accurate.

Check the hydrometer readings against this chart.

SPECIFIC GRAVITY @ 80° F (27°C)	BATTERY CONDITION
1.265	100% CHARGED
1.225	75% CHARGED
1.190	50% CHARGED
1.155	25% CHARGED
1.120	DISCHARGED

NOTE: If the readings are taken when the battery electrolyte is any temperature other than 80° F (27°C), the reading must be temperature corrected.

To find the corrected specific gravity reading when the temperature of the battery electrolyte is other than 80° F (27°): Add (+) to the specific gravity reading 0.004 (4 points), for each 10° F (6° C) above 80° (27° C).

Subtract (-) from the specific reading 0.004 (4 points), for each 10° F (6° C) below 80° F (27° C).

CHARGING BATTERIES

CAUTION: When servicing machine, avoid contact with battery acid.

WARNING: Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep covers open when charging.

WARNING: Wear eye protection and protective clothing when working with batteries.

WARNING: Charge batteries in a well ventilated area.

Use a 36 volt, 20 amp maximum output DC charger which will automatically shut off when the batteries are fully charged.

1. Stop the machine in a clean, well ventilated area next to the charger.
2. Turn "OFF" machine.

FOR SAFETY: Before leaving or servicing machine; stop on level surface, turn off machine and remove key.

3. Remove rear cover, unplug batteries from machine, unlatch battery tray and pull out to expose batteries.

WARNING: Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep covers open when charging.

4. Check the electrolyte level in each battery cell. Before charging, add just enough distilled water to cover the plates. After charging is complete, add just enough distilled water to bring up the level to the indicator ring. If the water level is too high before charging, normal expansion rate of the electrolyte may cause an overflow resulting in a loss of battery acid balance and damage the machine.

MAINTENANCE-BATTERIES

1. Replace the battery caps, and leave them in place while charging.
2. Unplug the battery connector from the machine.

FOR SAFETY: When charging, connect the charger to the batteries before connecting the charger to the AC wall outlet. Never connect the charger to the AC wall outlet first. Hazardous sparks may result.

3. Plug the charger connector into the battery connector. Connect the charger AC plug to a wall outlet. The charger gauge should indicate that the batteries are charging.
4. When the batteries are fully charged, disconnect the charger from the AC wall outlet, then disconnect the charger from the batteries.
5. Connect the batteries to the machine connector.
6. Check the electrolyte level. It should be up to the indicator ring. If necessary, add distilled water.
7. Install the rear cover.

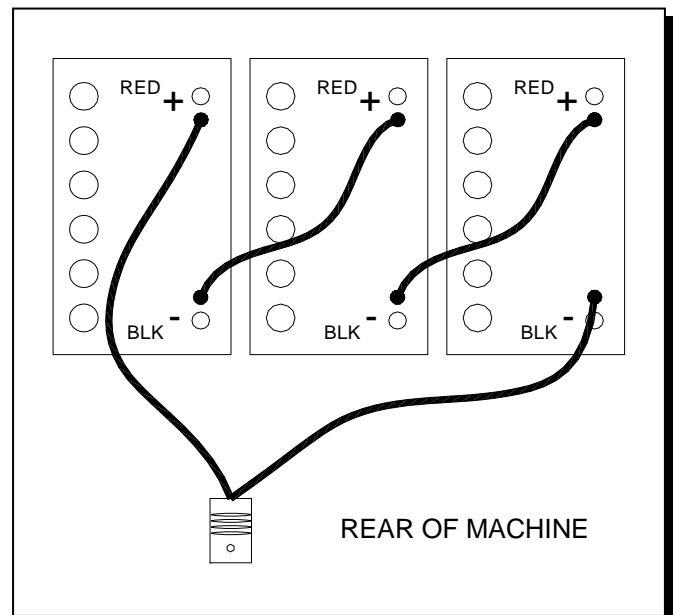
CHANGING BATTERIES

Stop the machine in a clean area next to the charger. Turn off machine.

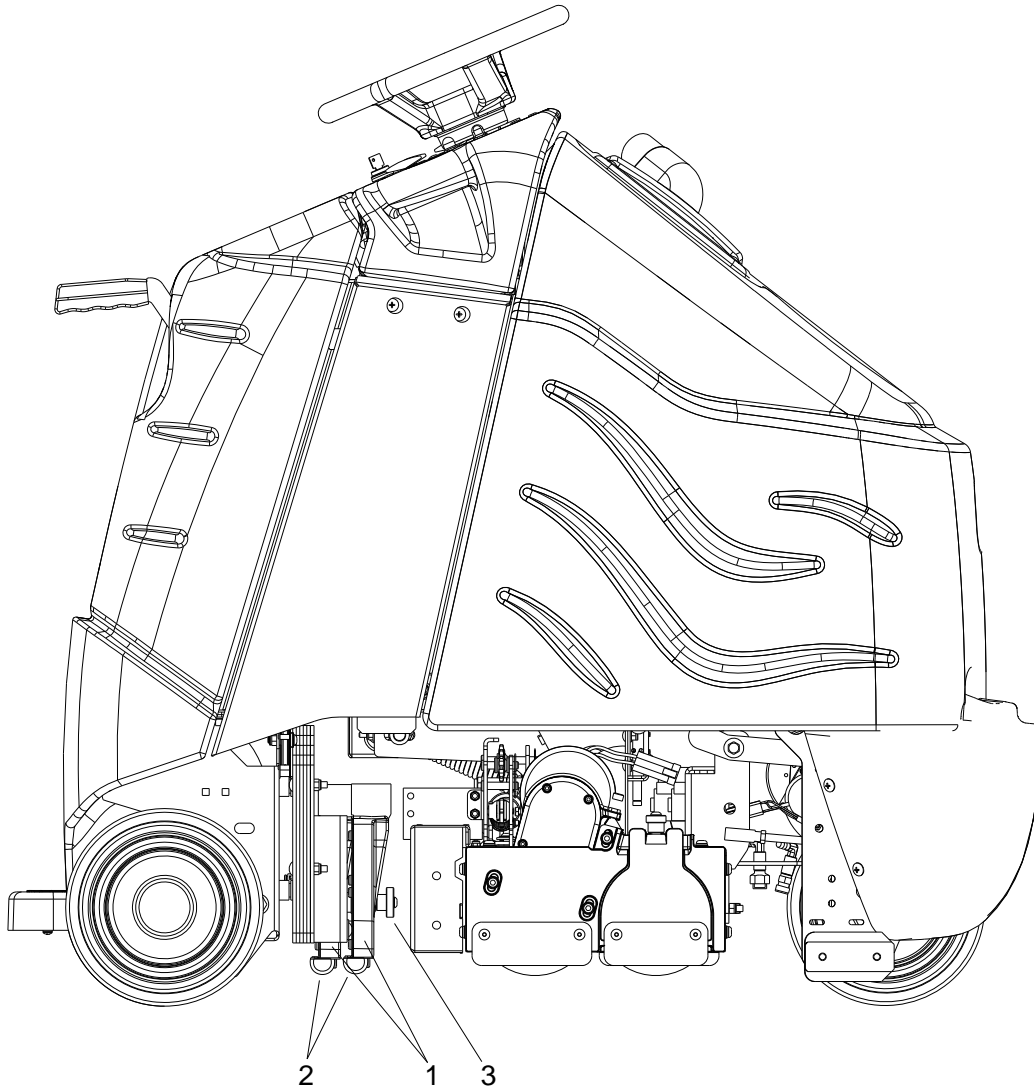
FOR SAFETY: Before leaving or servicing the machine; stop on level surface, turn off machine and remove key.

1. Remove the rear cover.
2. Disconnect battery pack from machine.
3. Unlatch battery tray from machine and pull out to expose batteries.
4. Use the proper size open-end wrench to disconnect main ground wire first and secure cable terminal away from batteries.
5. Disconnect main positive lead and secure cable terminals away from batteries.
6. Loosen both terminals on each jumper cable and remove one at a time.
7. Prepare a suitable site to place the batteries.
8. Attach suitable battery lifting device and lift batteries from the machine.

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



MAINTENANCE-VACUUM SHOES



-
1. *Vacuum Shoes*
 2. *Vacuum Shoes Glides*
 3. *Vacuum Shoe Retainer Knobs*

MAINTENANCE - VACUUM SHOES

VACUUM SHOES

The dual offset vacuum shoes are designed to extract soiled solution from the carpet. The plastic vacuum shoe glides minimize damage to carpet and flooring.

MAINTENANCE

The vacuum shoes should be removed and cleaned daily to ensure maximum solution recovery.

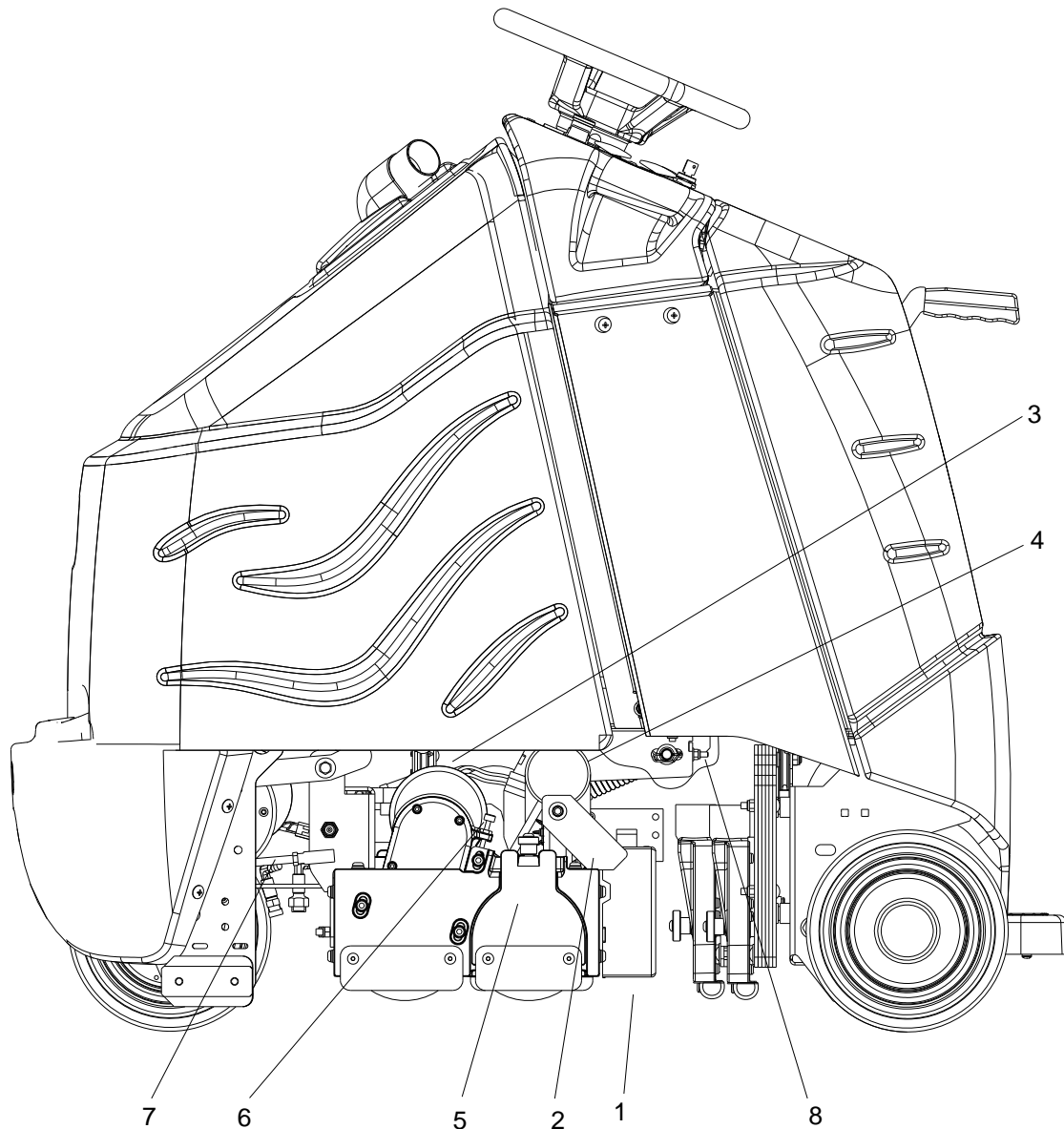
VACUUM SHOE REMOVAL

1. Remove hopper from left side of machine by rotating the hopper retaining plate and sliding the hopper out.
2. Unscrew retainer knob from right side vacuum shoe.
3. Pull vacuum shoe forward until it is free from pivot pin.
4. Remove vacuum hose from top of vacuum shoe
5. Repeat to remove left side vacuum shoe.
6. Inspect or repair as necessary and reinstall.

TO CLEAN VACUUM SHOES

1. With the vacuum shoes in the raised position, turn key switch "off".
2. Remove vacuum shoes.
3. Flush vacuum shoes from top with water. If necessary, clean blockage from narrow opening with knife, scraper or similar device.
4. Vacuum shoe glides may be removed for cleaning (or replaced) by removing the three pins that secure them to metal vacuum shoes.

MAINTENANCE-SCRUB DECK



-
1. *Hopper*
 2. *Hopper Retainer Plate*
 3. *Scrub Brush Motor*
 4. *Scrub Deck Lift Actuator*
 5. *Brush Door*
 6. *Motor Assembly Jack Screw*
 7. *Lower Links*
 8. *Brush Pressure Adjustment*

MAINTENANCE-SCRUB DECK

SCRUB HEAD

The dual cylindrical scrub head is designed to sweep and scrub the carpet. The brushes, turning in a counterclockwise rotation, pick up the debris and throw it into a removable hopper, and raise the pile of the carpet, giving it a lush groomed appearance.

MAINTENANCE

The brushes should wear evenly side to side if properly adjusted. Scrub brushes should be exchanged front to back every 50 hours to ensure even wear. It is not necessary to rotate end for end since swapping front to back puts the brushes in the opposite rotation, as well as balancing wear. Scrub brushes should be replaced as a set when bristle length wears to height of yellow PerformAlert™ bristles.

SCRUB BRUSH REMOVAL

The scrub brushes are removed from the sides of the machine. The front is removed from the right side and the rear is removed from the left side.

1. Unscrew knob on brush door but do not remove.
2. Pull out on top of door until lip on door clears brush head.
3. Push down on door until hooks on bottom of door are free of scrub head side.
4. Pull out on door with a rocking motion to free idler door from end of brush.
5. Pull brush out with a rocking motion to free brush from drive hub.

SCRUB BRUSH REPLACEMENT

1. Lift the drive side of the brush and push it onto drive hub until a positive stop is felt. The brush door cannot be installed until the brush is fully seated on the drive hub.
2. Allow end of brush to drop below scrub deck. Fully insert brush door onto brush.
3. Line up bottom hooks on brush door with notches on side of scrub head.
4. Slide brush door up until lip rests on top of scrub head.
5. Hand tighten knob to secure door into place.

DUMPING HOPPER

The removable hopper is located behind the rear scrub brush and can be removed from the left side of the machine. Remove the hopper by rotating the hopper retaining plate and sliding the hopper out. The hopper can be dumped from the top. Flush the hopper clean with running water.

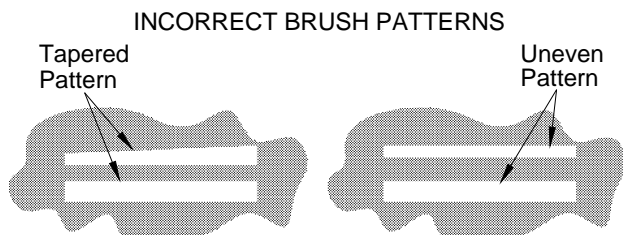
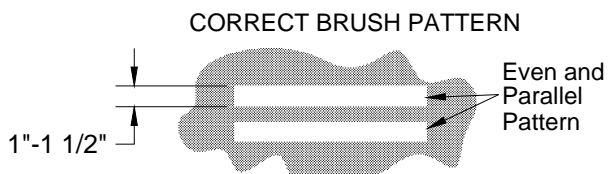
MAINTENANCE-SCRUB DECK

SCRUB DECK ADJUSTMENT

Scrub deck adjustment consists of three types of adjustments. The first is to insure the individual brushes make the same width pattern end to end. Any tapered brush pattern should be adjusted out. The second is to make the pattern of equal width between front and rear brushes. Unequal patterns are caused by the scrub deck not being parallel to the floor. The third is to make the contact patterns on the floor the correct width. Proper adjustment is obtained when the contact patterns of the brushes on the floor show two equal 1-1.5 inch (25-38 mm) rectangles the width of the brushes. The rectangles should be parallel to each other.

TESTING, ADJUSTMENT OF INDIVIDUAL BRUSHES

1. Move the machine to an unfinished area of hard floor to avoid marking carpet.
2. With pump off, lower scrub head to floor. Allow brushes to run for approximately 30 seconds. It may be necessary to repeat this step in the same location until a good mark can be seen on the floor. This can be accomplished by touching lightly the throttle pedal to restart the scrub deck without moving the machine.
3. Raise the scrub deck and note the brush patterns on the floor. There should be two rectangles with parallel sides. If the pattern is tapered, proceed as follows.



ADJUSTMENT OF INDIVIDUAL BRUSHES

The brush pattern is adjusted from the motor side only of both brushes.

1. Determine if motor end is to be moved up or down to balance the pattern.
2. Loosen the 3 hex socket head screws on the end of the housing.
3. Loosen the jam nut on the jackscrew and rotate the jackscrew to move the motor assembly up or down as needed.
4. Tighten the 3 hex socket head screws.
5. Tighten the jam nut on the jackscrew.
6. Re-test and readjust as necessary.

LEVELING THE SCRUB HEAD

Leveling the cylindrical head is accomplished by adjusting the lower links that attach the deck to the frame. Links should be adjusted to equal lengths. To increase pattern width on rear brush, loosen lock nuts and shorten the lower links by screwing the rod into the threaded ends. To increase pattern width on front brush, lengthen the lower links by screwing the rod out of the threaded ends. After adjustment, be sure to tighten lock nuts.

ADJUSTING BRUSH PRESSURE

Changing the brush pressure is accomplished by adjusting the take-up nuts on the deck counter-balance spring. To increase brush pressure or pattern width, loosen the nuts. To decrease brush pressure or pattern width, tighten the nuts.

MAINTENANCE-SCRUB DECK

⚠ WARNING: Do not use a pressure washer to clean around the brush motors. Use tap pressure only.

TO REPLACE SCRUB BRUSH MOTORS

1. With the scrub deck in the raised position, disconnect brush motor wiring connector from harness.
2. Remove brushes and brush door.
3. Remove aluminum end housing from deck.
4. Separate brush motor with gearbox from end housing.
5. Reverse to reassemble.
6. Adjust brush levelness as described in earlier section.

BRUSH MOTOR CARBON BRUSH REPLACEMENT

1. Scribe alignment mark on motor barrel to motor cap. Remove two bolts.
2. Remove end cap from motor.
NOTE: Motors contain two wave washers in cap. Do not lose these.
3. Release brush from spring tension. Remove screw connecting brush wire lead to brush holder. Clean brush holder to insure free movement.
4. Retract spring and install new brush. Install connector screw and lead.
5. When all new brushes are installed. Place all in retracted position, held into brush holder by spring tension.
6. Carefully place end cap onto bearing on motor shaft.
NOTE: Use care to assure wave washer alignment.
7. With end cap in partially installed position, release all brushes to contact position with motor commutator.

NOTE: Failure to insure all brushes are released will result in motor failure.
8. Reset end cap and realign with scribe marks on motor barrel. Reinstall the two attach bolts from cap into base.
9. Maintain alignment between motor barrel base and cap.

MAINTENANCE-SCRUB DECK

ACTUATOR SCRUB DECK REMOVAL/REPLACEMENT

FOR SAFETY: Before leaving or servicing machine, stop on a level surface. Turn off machine.

1. Lower scrub deck.
2. Disconnect spring assembly from actuator slide link.
3. Remove the clevis pin retaining the top of the actuator.
4. Remove slide link and actuator as an assembly by removing the two bolts connecting them to the deck through the bushings.
5. Either unthread the actuator main lead screw from the barrel, or remove the two bolts connecting the barrel to the slide link.
6. Reverse for re-installation.

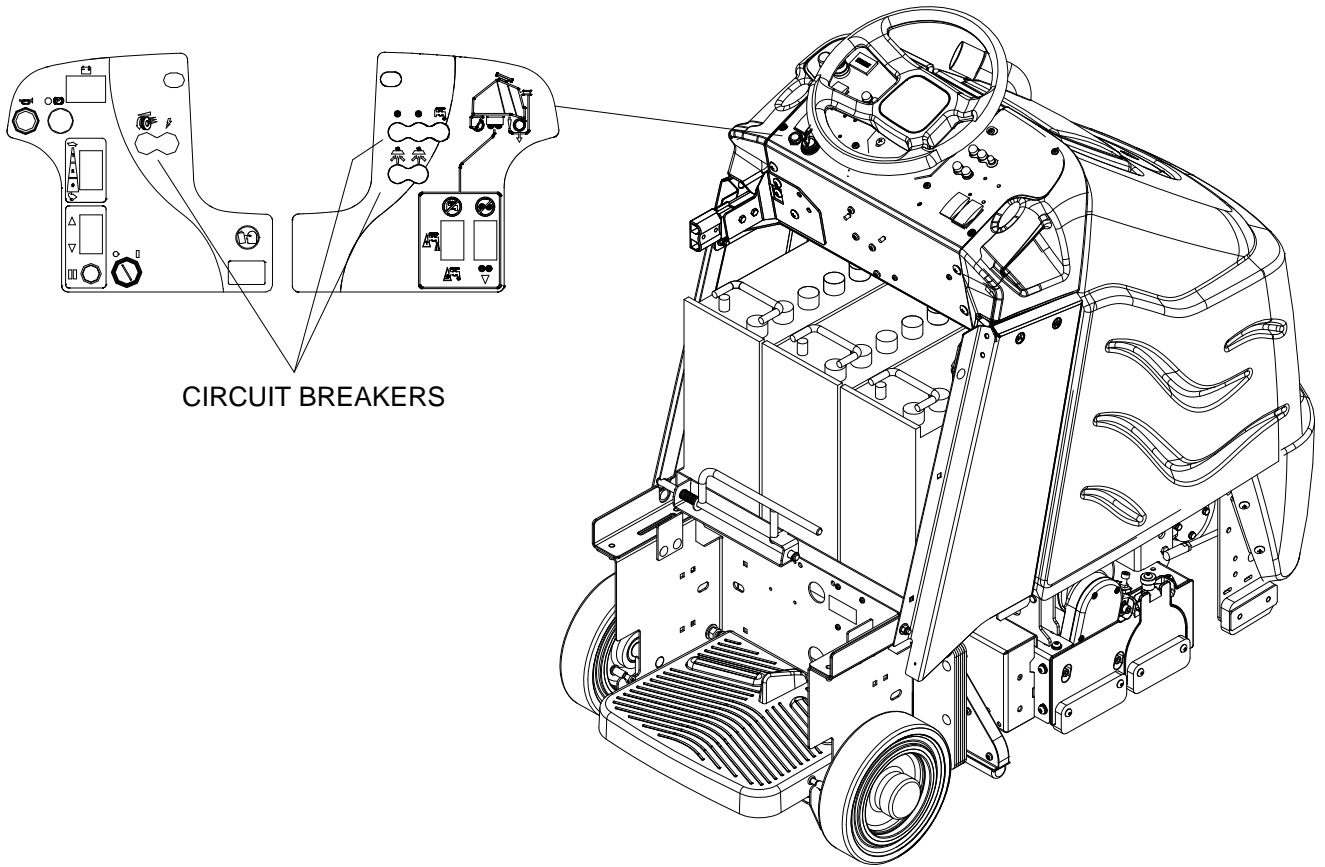
SCRUB DECK ACTUATOR ADJUSTMENT

The actuator will need to be adjusted when replaced.

To adjust the actuator:

1. While holding actuator barrel to prevent it from spinning, apply power to the actuator such that it is fully extended. Positive power to white wire, and negative/ground to black. Limit switch within actuator will stop it.
2. Turn barrel out one or more full turns to assure that when it is retracted it will not bind against itself.
3. While holding actuator barrel to prevent it from spinning, apply power to the actuator such that it is fully retracted. Positive power to black wire, and negative/ground to white wire. Limit switch within actuator will stop it.
4. With actuator fully retracted, turn barrel in until it touches the base of the threaded shaft.
5. At the bottomed out position, turn the barrel out only enough to allow connection to slide link.
6. Connect actuator.
7. Check travel of actuator during operation.

MAINTENANCE-CIRCUIT PROTECTION



CIRCUIT BREAKERS

1. CIRCUIT BREAKERS

Circuit breakers interrupt the flow of power in the event of an electrical overload. When a circuit breaker is tripped, reset it by pressing the exposed button. If a circuit breaker continues to trip, the cause of the electrical overload should be found and corrected.



30 Amp. Protects the left vacuum motor circuit.



30 Amp. Protects the right vacuum motor circuit.



25 Amp. Protects the left scrub brush motor.



25 Amp. Protects the right scrub brush motor.



30 Amp. Protects the propel motor.

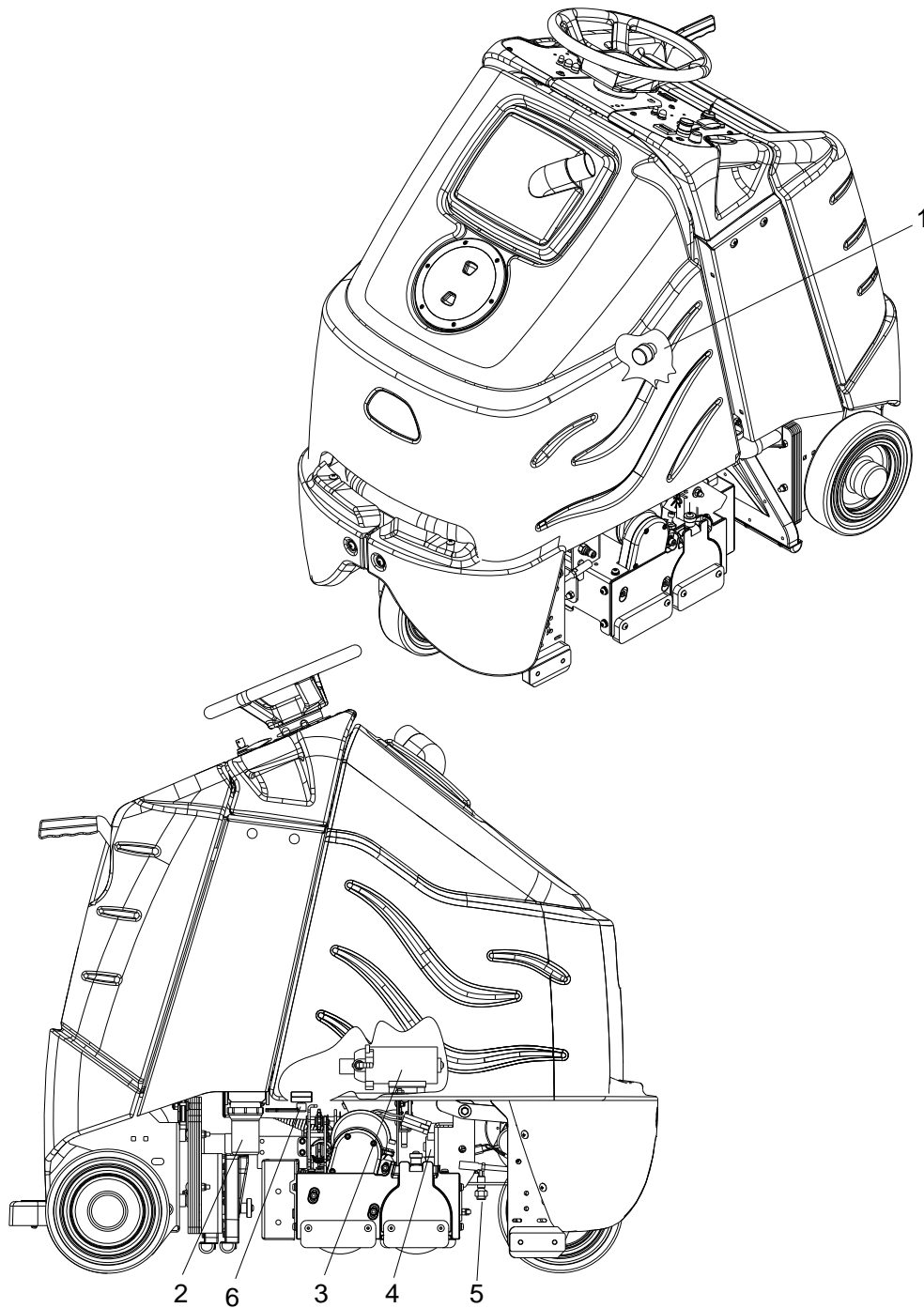


3 Amp. Protects the machine controls.



3 Amp. Protects the pump.

MAINTENANCE-SOLUTION STRAINER & PUMP



1. *Solution Strainer – Coarse*
2. *Solution Strainer – Fine*
3. *Pump*

4. *Solenoid Valve*
5. *Jets*
6. *Shut-off Valve*

MAINTENANCE – SOLUTION STRAINER & PUMP

1. SOLUTION STRAINER – COARSE

Located in bottom of tank. The coarse strainer protects the finer strainer from large debris. If the fine strainer is clean and the pump and solenoid valve are not working, then check the coarse strainer for debris. Drain the solution tank and clean the coarse strainer. To remove the strainer, rotate the strainer counterclockwise. Cleanout the debris from wire mesh and re-assemble.

2. SOLUTION STRAINER – FINE AND SHUT-OFF VALVE

The fine strainer is located in right rear corner of machine. The fine strainer protects the pump, injector, solenoid valve and jets from debris. If there is little or no solution flow to the ground, first check to make sure the shut-off valve is open. Next, check the strainer for debris. To remove the strainer, first turn the shut-off valve to the off position. Then, turn the bottom part of the strainer counterclockwise until the bottom is separated. Clean out the debris from the wire mesh and re-assemble. Make sure the O-ring gasket is in place when re-assembled. To resume flow, turn the shut-off valve to the open position.

3. PUMP

The pump is located under the tank on the right side of machine. The pump delivers solution from the tank to the scrub deck.

To repair or replace pump:

1. Lower scrub deck to gain access to pump mounting plate.
2. Remove screw that secures pump mounting plate to frame.
3. The pump is located under the tank on the right side of machine. The pump delivers solution from the tank to the scrub deck. Pull pump mounting plate forward and down to expose pump.

4. Reverse steps to install.

4. SOLENOID VALVE

The solenoid valve is mounted on the front of the scrub deck, on right side.

The solenoid valve shuts off solution flow to jets whenever scrubbing stops. To repair or replace solenoid valve, remove screws that secure it to deck.

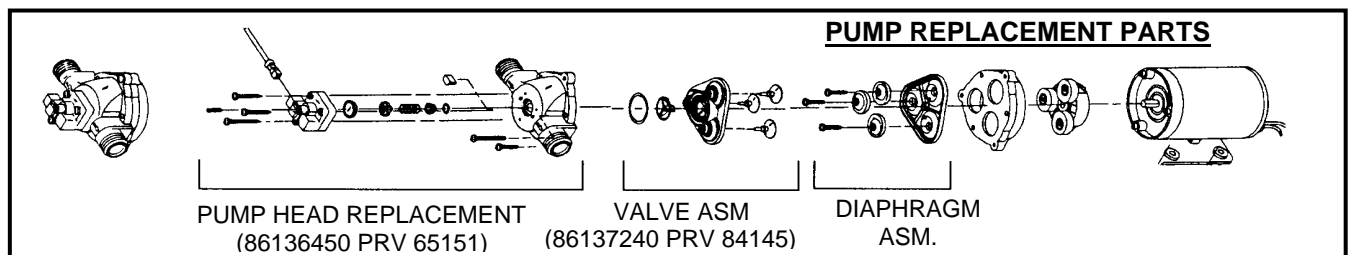
5. JETS

The two jets are located in front of and above the scrub deck.

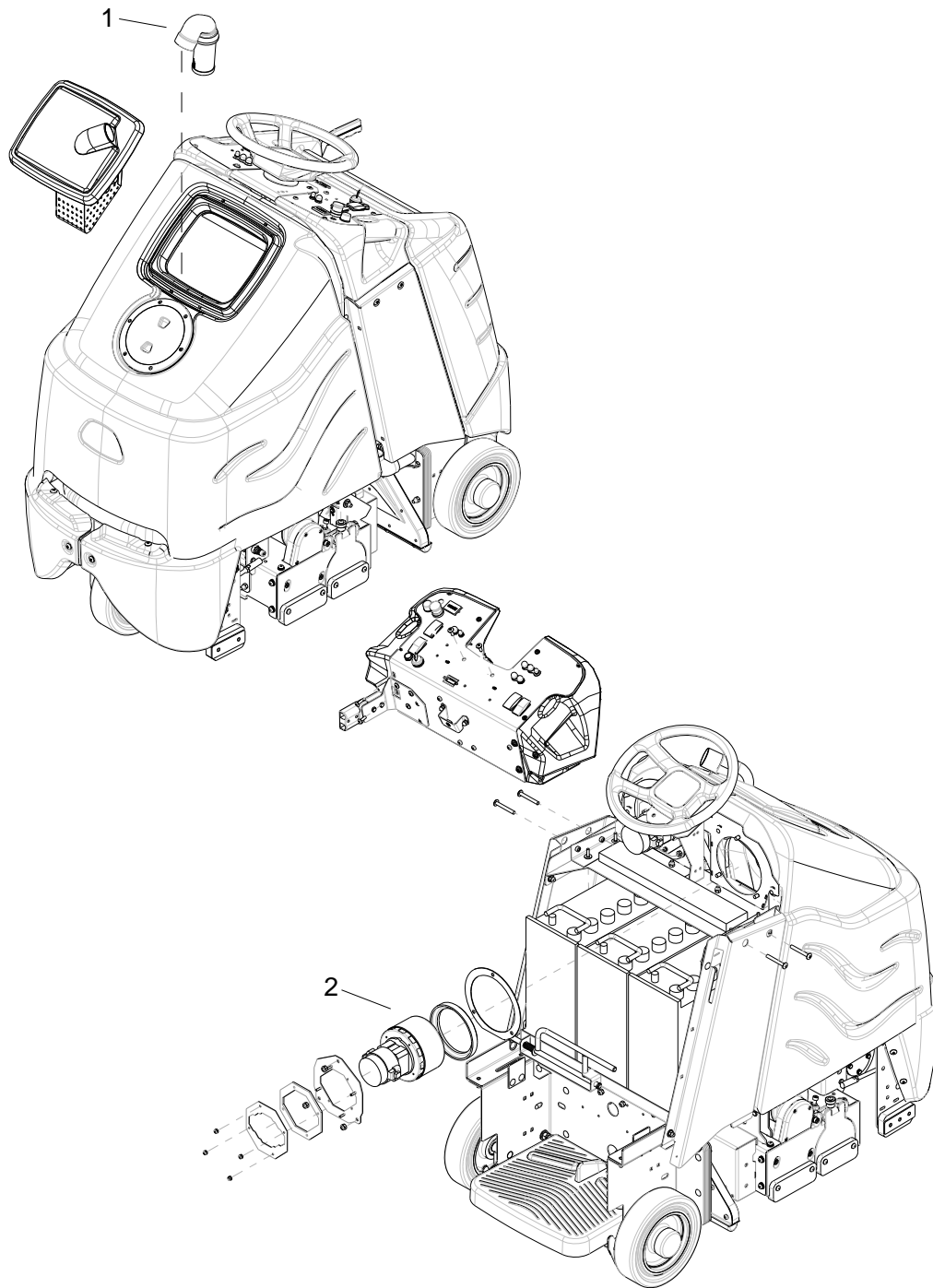
The jets spray cleaning solution onto the carpet. The spray pattern should be checked regularly and if jets become clogged they should be cleaned or replaced immediately.

To clean jets:

1. Remove jet from jet body by rotating it counterclockwise.
2. Blow debris back through orifice if possible. Do not use pointed object to unplug jet. This will damage jet and cause improper spray pattern and solution flow through jets.
3. If jet cannot be cleaned by blowing debris back through its orifice, submerge jet in small container or acetic acid and let soak for up to six hours.
4. After soaking jet, use a soft brush to remove debris and rinse thoroughly.
5. Install jet in jet body by rotating it clockwise firmly into place.



MAINTENANCE-VACUUM & FLOAT SHUT-OFF



-
1. Recovery tank float shut-off
 2. Vacuum motor

MAINTENANCE – VACUUM & FLOAT SHUT-OFF

RECOVERY TANK FLOAT SHUT-OFF

When water is no longer being vacuumed from the floor and the vacuum fan is operating, the ball float has engaged. The vacuum motors will not vacuum water with recovery tank full. The recovery tank must be drained.

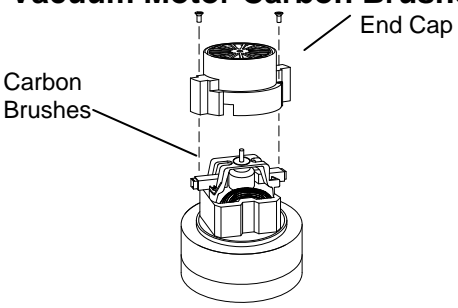
1. The float shut-off screen can be cleaned in or out of the machine.
2. To clean the float shut-off while it is inside the machine wipe material off screen then rinse. Check that the ball is also clean and moves freely.
3. To remove the float shut-off, grasp the elbow with one hand and the manifold assembly with the other. Tilt and pull the float screen assembly to pull it off the tube.
4. To install, place one hand on the tube, and then tilt and push the float screen assembly over the tube.

FOR SAFETY: before leaving or servicing machine, stop on a level surface, turn off machine and disconnect power.

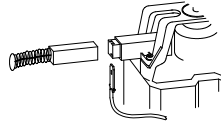
TO REPAIR OR REPLACE VACUUM MOTORS

1. Remove rear cover from machine.
2. Remove two screws from top of control panel and four screws from sides of control housing.
3. Slide control housing back from tank to expose vacuum motors.
4. Disconnect electrical connector from the vacuum motors.
5. Remove three nuts that secure vacuum motor retaining plate, remove plate and vacuum motor.
6. Reverse steps to install. Make sure that gasket is on vacuum so that vacuum seals against tank.

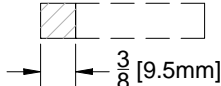
Vacuum Motor Carbon Brushes



If armature commutator is grooved, extremely pitted or not concentric, the motor will need to be replaced or sent to a qualified service center.

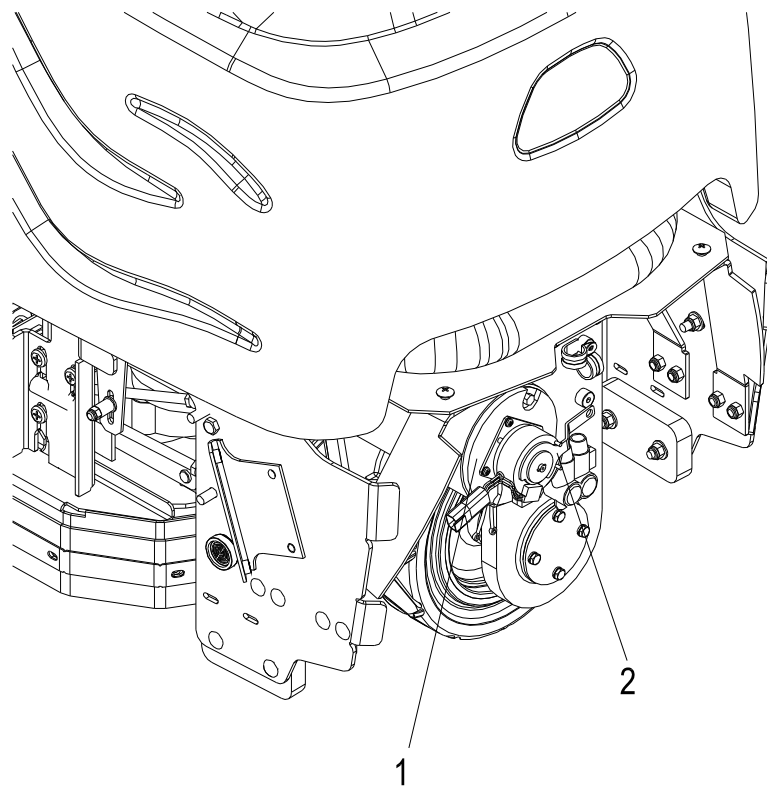


Important:
These brushes wear quicker as the length shortens due to increased heat. Spring inside brush housing will damage motor if brushes are allowed to wear away completely.



Periodically check the length of the carbon brushes. Replace both carbon brushes when either is less than 3/8" (9.5mm) long.

MAINTENANCE- DRIVE MOTOR & BRAKE



-
1. *Drive motor*
 2. *Parking brake*

MAINTENANCE-DRIVE MOTOR & BRAKE

ELECTRIC PARKING BRAKE ENGAGEMENT

FOR SAFETY: Before leaving or servicing machine, stop on a level surface, turn off machine and remove key.

Electric Brake Engagement

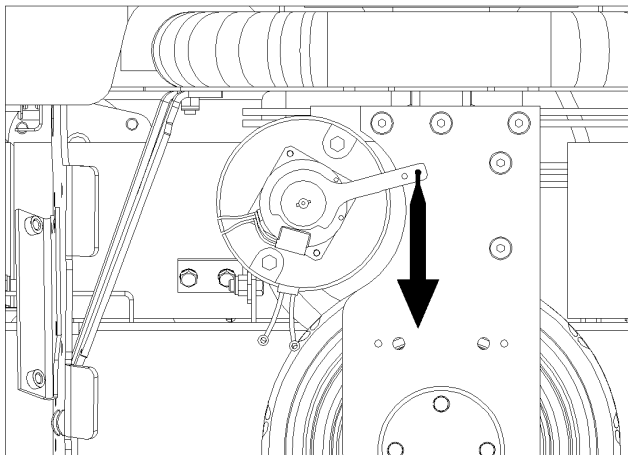
This machine is equipped with an electric parking brake.

The brake automatically engages and keeps the machine from moving whenever the operator steps off the platform or when emergency stop is engaged.

The brake has a mechanical over-ride that can be engaged so machine can be pushed or towed (slowly).

When the mechanical over-ride is engaged the machine cannot be driven.

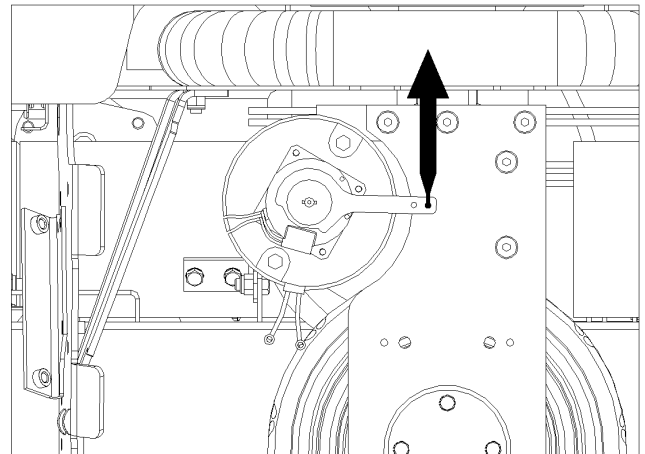
To engage brake:



1. Mechanical over-ride engaged.
Machine can be pushed or towed (slowly).
2. Push lever firmly in direction of arrow

Note: There is an intermediate stop. Make sure lever is fully in the down position.

To disengage brake:



1. Mechanical over-ride disengaged
Machine can be driven.
2. Push lever firmly in direction of arrow.

MAINTENANCE-DRIVE MOTOR & BRAKE

DRIVE MOTOR CARBON BRUSH REPLACEMENT

⚠ WARNING: Do not use a pressure washer to clean around the motors. Use tap pressure only.

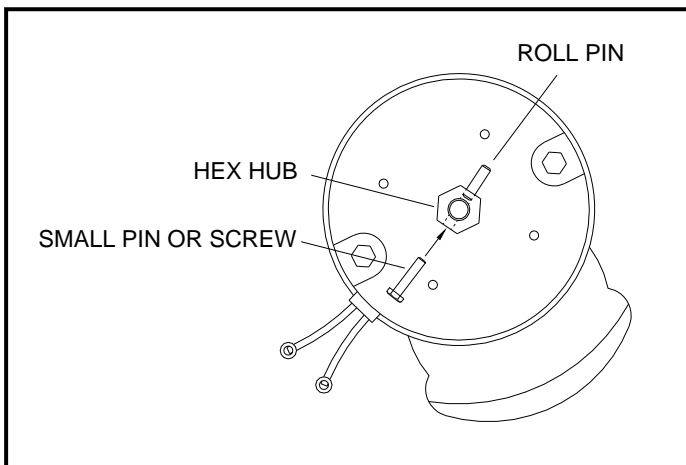
FOR SAFETY: Before leaving or servicing machine, stop on a level surface, turn off machine and remove key.

1. Disconnect batteries from machine.
2. Disconnect the electrical connection to the traction motor.

BRAKE REMOVAL

(Must be done to access carbon brushes)

3. Remove 4 mounting screws and remove brake.
4. Drive roll pin out of the hex hub enough to allow hex hub to slide off shaft. It is recommended that the roll pin be left partially in the hex hub.



7. Install new brush and reinstall connecting screw and lead.
8. When all new brushes are installed. Place all in retracted position, held into brush holder by spring tension.
9. Carefully replace brush cap.

Reinstalling:

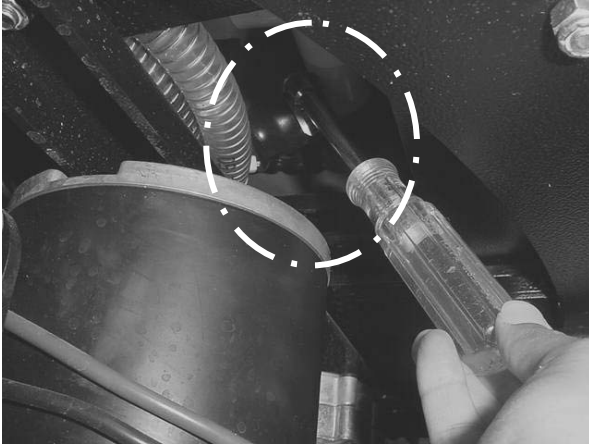
10. When replacing the hex hub, use a small pin or screw to help align the holes.
11. Drive the pin into the hub and make sure it is flush to the hex surface. The brake will not fit on the hub if the roll pin is protruding from the hub.
12. Replace the hub and use Lock-Tite on the screws.

5. Remove brush cap.
6. Release brush from spring tension. Remove screw connecting brush wire lead to brush holder. Clean brush holder to insure free movement.

MAINTENANCE-BAG REPLACEMENT

REMOVING BAG

1. Disconnect batteries and make sure parking brake is not overridden.
2. Under left front side of machine loosen hose clamp on recovery dump hose. **Do not remove hose.**



3. Remove Dome and set aside
4. Remove Float cage, loosen screws that secure manifold assembly and remove manifold.
5. Remove the eight screws and nuts holding the bag clamps and set aside.
6. Remove clamps and set aside.
7. Pull mandrel from bottom of tank. Access can either be from the dirty water side or the clean water side or both. When replacing bag with new one be sure to save mandrel.



REPLACING BAG

1. Install mandrel in bottom of bag.
2. Place new bag in tank making sure hole for strainer basket is oriented properly.



3. Angle mandrel and bag into tank fitting toward front of machine. Push mandrel into fitting until it bottoms out.
4. Attach bag to top of machine by rolling edge of bag over clamp strips.
5. Replace manifold and float cage.
6. Tighten clamp on bottom of machine.

MAINTENANCE-TRANSPORTATION

PUSHING MACHINE

The machine may be pushed for short distances at speeds not to exceed 5 mph. Be careful to avoid damaging machine. The machine may be pushed by hand from the rear.

NOTE: To avoid damage caused by regenerative voltage, disconnect traction motor before towing or pushing machine.

MACHINE TIE-DOWNS

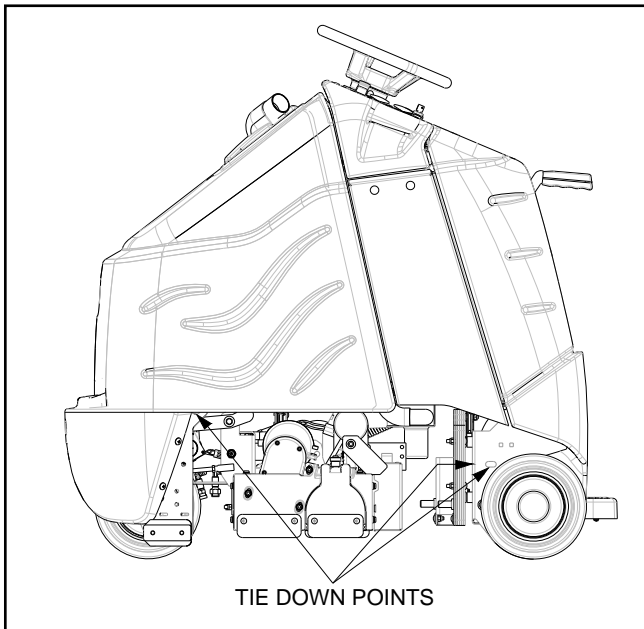
There are two tie points located at front and each side of foot box frame and two at the front side of frame. Tie-down devices must be of the proper type and strength. The combined strength of all tie-downs must be strong enough to lift two times the weight of the machine. Tie-downs must be positioned to prevent the machine from moving forward, backward, or either side to side. Use all four corners of the machine with the tie-downs running out opposite directions. Tie-downs must be attached to the transporting vehicle securely.

PREPARATION FOR LOADING /UNLOADING TRAILER

Before loading or unloading machine from trailer, remove scrub brushes and vac shoes to eliminate interference with tie-downs.

Scrub head must be in the up position before loading.

NOTE: When transporting the machine on a trailer or in a truck, in addition to using tie-downs, be sure to set the parking brake, and block the tires to prevent the machine from rolling.



MAINTENANCE-TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
No power to machine	Battery disconnected	Check all battery cable connections
	Emergency shut-off activated	Reset
	Battery cables corroded	Clean connections
	Faulty key switch	Replace switch
Little or no propel	Low battery charge	Charge batteries
	Machine turned on with pedal not in neutral position	Allow pedal to return to neutral. Restart
	Tripped circuit breaker	Reset circuit breaker
	Controller overheated	Allow cool down period
	Loose motor connection	Check wires and connections from controller to motor
	Faulty throttle circuit or potentiometer	Check wires and connections from throttle to controller and potentiometer resistance
	Faulty drive reset circuit or switch	Check wires, connections and switch
	Faulty operator presence pedal circuit or switch - Prior to Serial Number (11*)	Check switch engagement, wires, connections and switch
	Faulty platform circuit or switch	Check wires, connections and switch
	Brake over-ride engaged	Disengage brake over-ride
	Faulty brake circuit or over-ride switch	Check wires, connections and switch
Machine does not change speeds	Faulty speed control circuit or switch	Check wires, connections and switch
Forward speed only Reverse speed only	Faulty forward/reverse switch	Replace switch
Poor or no water pickup	Debris caught on vacuum shoe(s)	Remove debris
	Vacuum hose clogged	Clear obstruction from hose
	Vacuum hose(s) disconnected from manifold or vacuum shoe(s) or recovery tank dome	Reconnect vacuum hose
	Recovery tank float system dirty	Clean float system
	Recovery tank not sealed	Place recovery tank dome on tank. Replace damaged gaskets
	Float-ball shut-off engaged Tank full	Empty recovery tank
	Foam filling recovery tank	Empty recovery tank. Use less or different detergent. Use defoamer.

*SEE SERIAL NUMBER PAGE.

MACHINE TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Vacuum motor(s) not running, or run slowly	Circuit breaker tripped	Reset circuit breaker
	Faulty vacuum circuit or switch	Check wires, connections and switch
	Worn vacuum motor brushes	Replace brushes, check commutator
Vacuum shoes will not go up/down	Faulty cables or pulleys	Repair/replace cables and pulleys
Poor scrubbing performance	Debris caught in scrub brushes	Remove debris
	Worn brushes	Replace brushes
	Low scrub brush down pressure	Increase brush pressure
	Low battery charge	Charge batteries
Little or no solution flow to the floor	Solution tank empty	Fill solution tank
	Solution pump turned off	Turn on pump
	Solution strainer plugged	Clean solution strainer
	Solution system plumbing obstructed	Clear obstruction from plumbing
	Pump obstructed	Clean or replace pump
	Solution solenoid valve obstructed or stuck	Clean or replace valve
	Solution Shut-off valve is closed	Open shut-off valve
	Jet(s) obstructed	Clean or replace jet(s)
	Faulty pump circuit or pump	Check wiring, connections, and pump.
	Faulty solenoid	Check solenoid valve
Brush motors do not run, or run slowly	Circuit breaker(s) tripped	Reset circuit breaker(s) and check brush pressure.
	Low battery charge	Charge battery
	Faulty brush circuit or motor	Check wires, connections and motor
	Worn brush motor brushes	Replace brushes, check commutator
Scrub deck will not go down/up	Actuator circuit breaker tripped	Reset breaker
	Faulty actuator circuit or actuator	Check wires, connections and actuator

MACHINE TROUBLESHOOTING- CONTROLLER FAULT CODES

PROPEL CIRCUIT BOARD TROUBLESHOOTING

Curtis 1228 LED DIAGNOSTICS- Basic and Cylindrical

During normal operation, with no faults present, the status LED is steadily on. If the controller detects a fault, the status LED provides two types of information. First, it displays a slow flash (2 Hz) or a fast flash (4 Hz) to indicate the severity of the fault. Slow-flash faults are self-clearing; as soon as the fault is corrected, the vehicle will operate normally. Fast-flash faults (“.” in Table 2) are considered to be more serious in nature and require that the key switch be cycled to resume operation after the fault is corrected.

After the severity indication has been active for 10 seconds, the status LED flashes a 2-digit fault identification code continuously until the fault is corrected. For example, code “1,4”—low battery voltage—appears as: one LED flash, followed by a pause, then 4 LED flashes, and then repeats.

LED CODE	PROGRAMMER LCD DISPLAY	EXPLANATION	POSSIBLE CAUSE
1,1	THERMAL CUTBACK	over-/under-temperature cutback	<ol style="list-style-type: none"> 1. Temperature >92°C or < -25°C. 2. Excessive load on vehicle. 3. Operation in extreme environments. 4. Electromagnetic brake not releasing.
1,2	THROTTLE FAULT 1	throttle fault	<ol style="list-style-type: none"> 1. Throttle input wire open or shorted. 2. Throttle pot defective. 3. Wrong throttle type selected.
1,3	SPD LIMIT POT FAULT	speed limit pot fault	<ol style="list-style-type: none"> 1. Speed limit pot wire(s) broken or shorted. 2. Broken speed limit pot.
1,4	LOW BATTERY VOLTAGE	battery voltage too low	<ol style="list-style-type: none"> 1. Battery voltage <17 volts. 2. Bad connection at battery or controller.
1,5	OVERVOLTAGE	battery voltage too high	<ol style="list-style-type: none"> 1. Battery voltage >36 volts. 2. Vehicle operating with charger attached. 3. Intermittent battery connection.
2,1	MAIN OFF FAULT	main contactor driver Off fault	<ol style="list-style-type: none"> 1. Main contactor driver failed open.
2,3	MAIN CONT FLTS	main contactor fault	<ol style="list-style-type: none"> 1. Main contactor welded or stuck open. 2. Main contactor driver fault. 3. Brake coil resistance too high.
2,4	MAIN ON FAULT	main contactor driver On fault	<ol style="list-style-type: none"> 1. Main contactor driver failed closed.

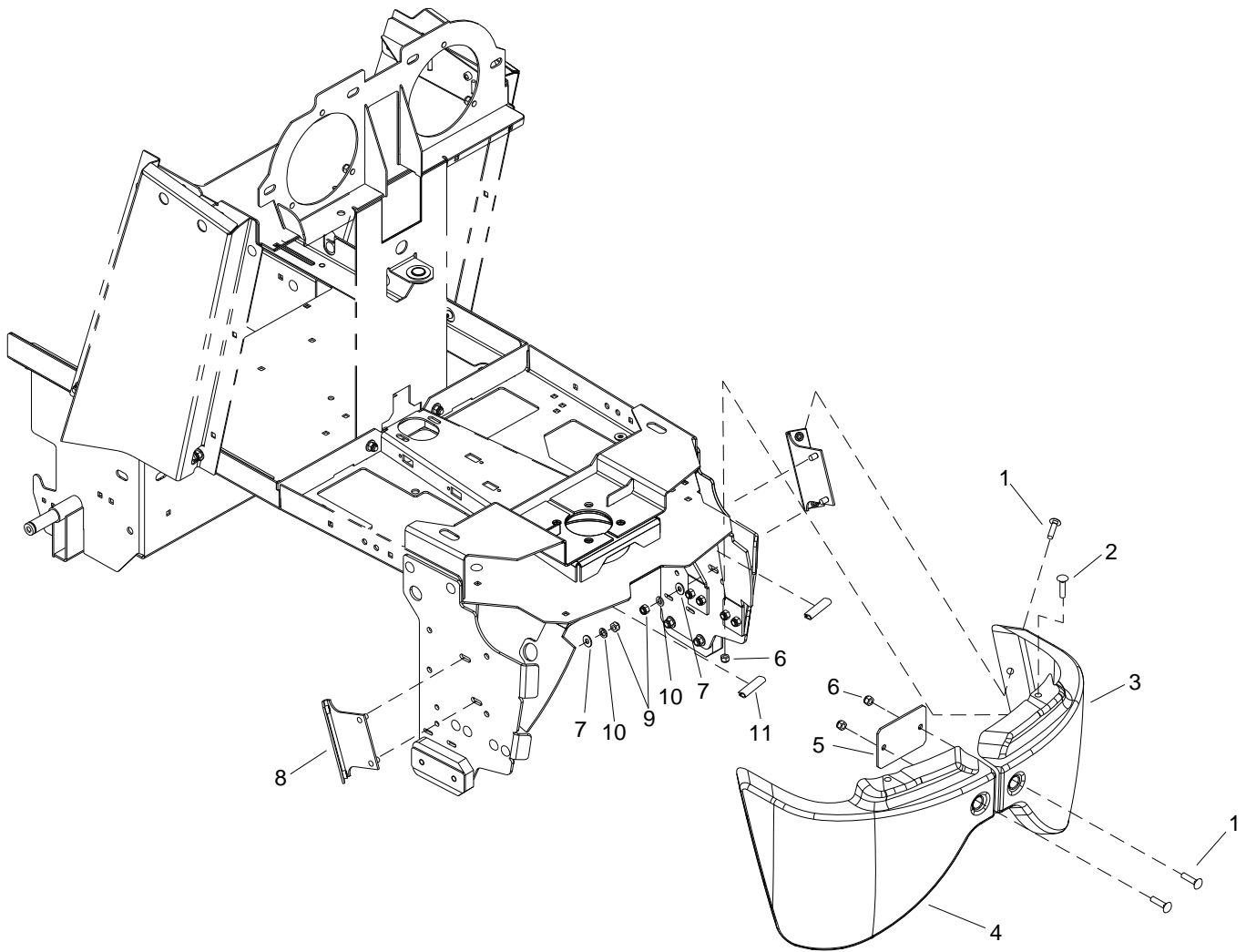
MACHINE TROUBLESHOOTING- CONTROLLER FAULT CODES

LED CODE	PROGRAMMER LCD DISPLAY	EXPLANATION	POSSIBLE CAUSE
3,1	PROC/WIRING FAULT	HPD fault present for >10 sec.	1. Misadjusted throttle. 2. Broken throttle pot or throttle mechanism.
3,2	BRAKE ON FAULT	brake On fault	1. Electromagnetic brake driver shorted. 2. Electromagnetic brake coil open.
3,3	PRECHARGE FAULT	precharge fault	1. Low battery voltage. 2. KSI and throttle turned on at same time.
3,4	BRAKE OFF FAULT	brake Off fault	1. Electromagnetic brake driver open. 2. Electromagnetic brake coil shorted.
3,5	HPD	HPD (High Pedal Disable) fault	1. Improper sequence of throttle and KSI, push, or inhibit inputs. 2. Misadjusted throttle pot.
4,1	CURRENT SENSE FAULT	current sense fault	1. Short in motor or in motor wiring. 2. Controller failure. *
4,2	HW FAILSAFE	motor voltage fault (hardware)	1. Motor voltage does not correspond to throttle request. 2. Short in motor or in motor wiring. 3. Controller failure. *
4,3	EEPROM FAULT	EEPROM fault	1. EEPROM failure or fault.
4,4	POWER SECTION FAULT	power section fault	1. EEPROM failure or fault. 2. Short in motor or in motor wiring. 3. Controller failure.

The logo features the word "chariot" in a bold, italicized, lowercase sans-serif font. The letter "h" is stylized with horizontal lines passing through it, and the letter "i" has a dot. A horizontal line with a slight shadow effect runs beneath the word. Below the logo, the word "PARTS" is written in a bold, italicized, uppercase sans-serif font.

chariot
PARTS

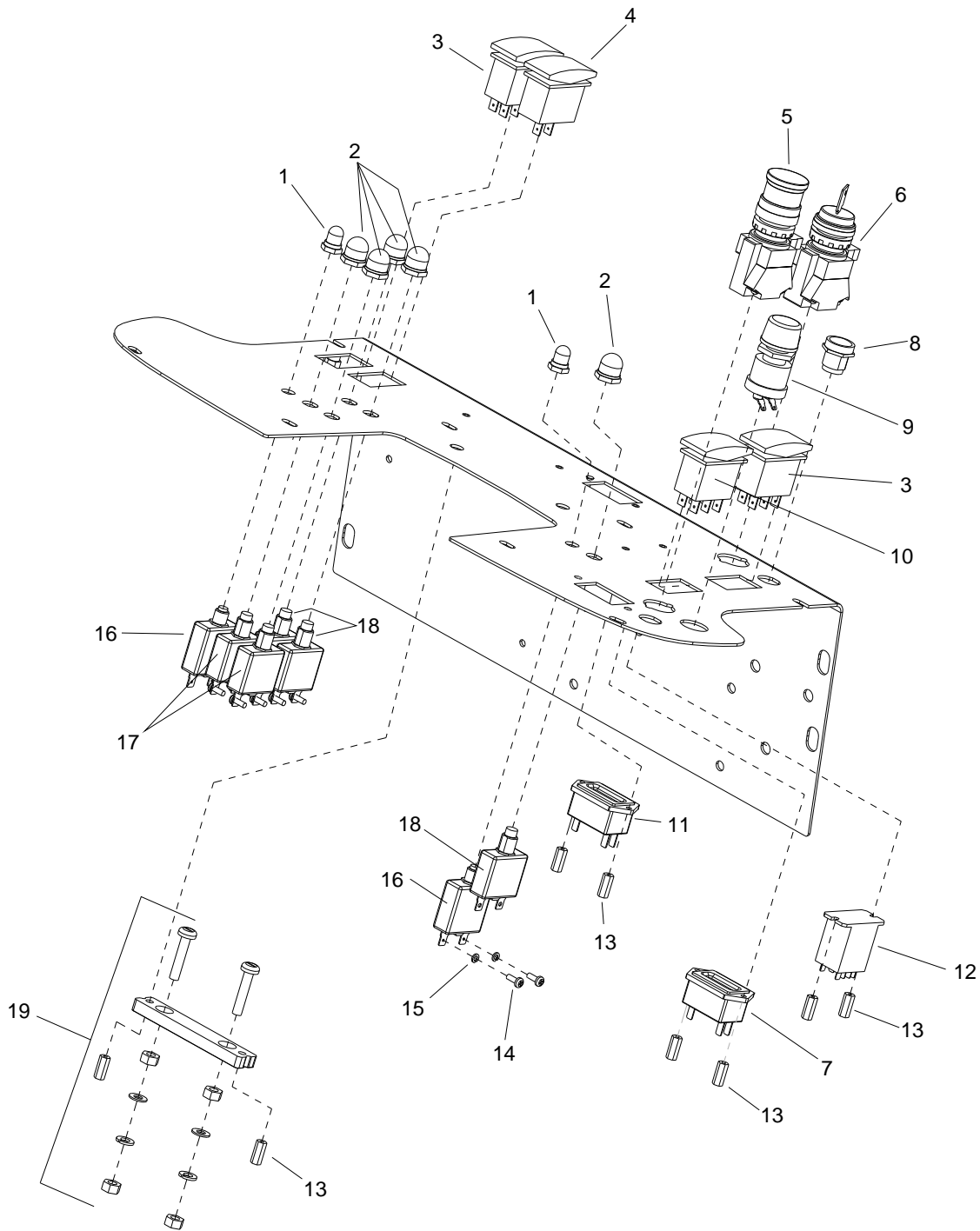
BUMPER



BUMPER

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86276890	70752	6	SCR, 5/16-18X3/4 PTHMS SS		
2	86007070	70849	2	SCR, #12 X 1.25 PPHMS SS		
3	86063230	140813	1	BUMPER , LEFT		
4	86063240	140814	1	BUMPER, RIGHT		
5	86071020	140783	1	BRKT, FRONT BUMPER		
6	86270830	57023	4	NUT, 5/16-18 HEX NYLOCK SS		
7	86010670	87029	4	WASHER, 5/16 FLAT SS		
8	86070730	140729	2	BRKT, BUMPER MOUNT, SIDE		
9	86197040	57264	4	NUT, 5/16-18 HEX ACORN PLTD		
10	86279130	87083	4	WASHER, 5/16 SPLIT LOCK PLTD		
11	86251750	67602	2	RISER, BUMPER		

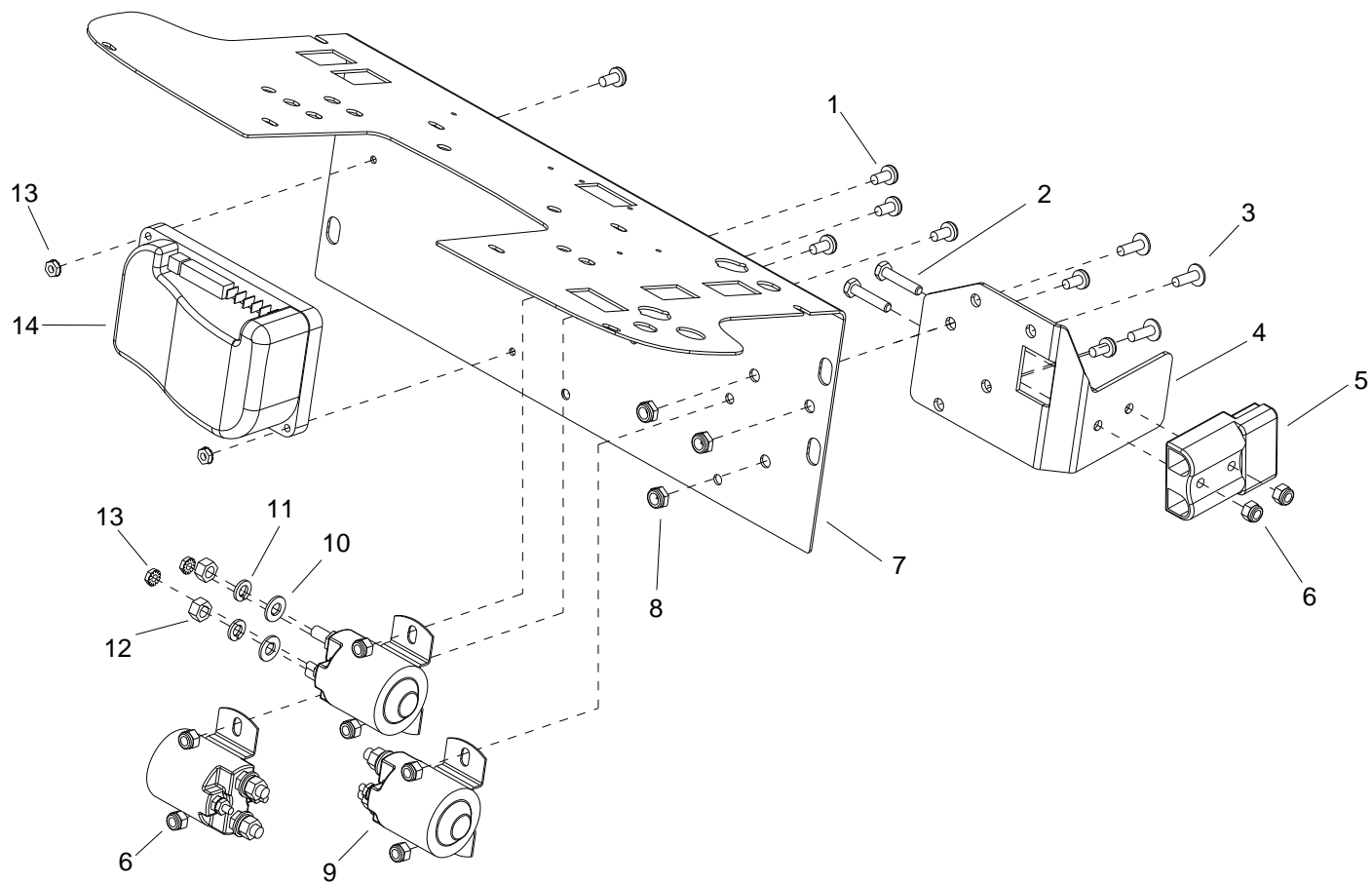
CONTROL PANEL- UPPER



CONTROL PANEL - UPPER

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86002010	14942	2	BOOT, 3/8 CIRCUIT BREAKER		
2	86008900	80845	5	BOOT, SEAL-PUSH BUTTON 7/16-28		
3	86007130	72128	1	SWITCH, DPDT 2-POSITION ROCKER		
4	86007140	72130	1	SWITCH, SPST 2-POSITION ROCKER		
5	86007180	72160	1	SWITCH, EMERGENCY STOP		
6	86007190	72161	1	SWITCH KEY DPST		
7	86246930	54144	1	METER, 36V BATTERY CHARGE LEVEL		
8	86257140	72196	1	SWITCH ASM, SEALED PB RND BRN		
9	86257280	81371	1	SWITCH, PUSH BUTTON		
10	86257110	72189	1	SWITCH, 4P3T FIXED POS ROCKER		
11	86005530	54154	1	METER, 12-48 VDC LED HOUR		
12	86251410	67506	1	RELAY, 15A 36V MINI		
13	86255900	73538	8	STANDOFF, 6-32 X 5/8 HEX NYL		
14	86273990	70067	10	SCR, 6-32 X 3/8 PPHMS		
15	86279300	87134	10	WASHER, #6 LOCK		
16	86002000	14717	2	BREAKER, 3 AMP		
17	86001920	14607	2	BREAKER, 25A 50 VDC CIRCUIT		
18	86001910	14606	3	BREAKER, 30A 50VDC CIRCUIT		
19	86229770	140805	1	BLOCK, SHUNT MOUNT		

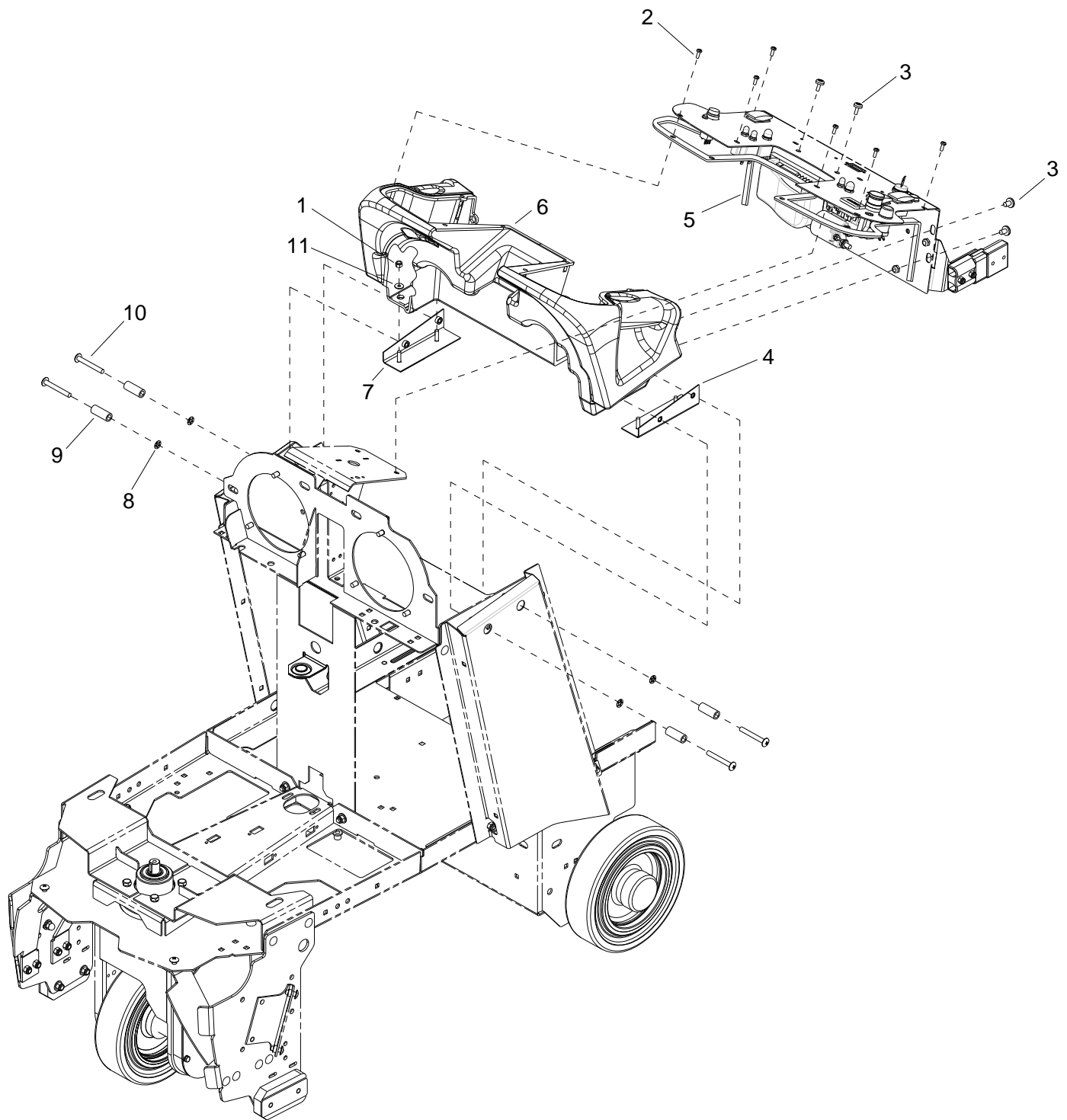
CONTROL PANEL- LOWER



CONTROL PANEL-LOWER

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86223740	70872	6	SCR, 1/4-20 X .59 PPHMS SS C		
2	86273820	70019	2	SCR, 1/4-20 X 1.25 HHCS		
3	86277480	70850	3	SCR, 5/16-18 X 1/2 PTHMS SS		
4	86070720	140728	1	BRKT, BATT CONN, BASIC		
5	86008760	80682	1	CONN, 175 DCA GRY W/O TERMS		
6	86005810	57245	8	NUT, 1/4-20 HEX NYLOCK SS		
7	86075310	61039	1	CONTROL PANEL, EXTRACTOR		
8	86271840	57285	3	NUT, 5/16-18 HEX NYLOCK THIN SS		
9	86006370	67315	3	RELAY, 36VDC 100AMP HVY DUTY		
10	86010670	87029	6	WASHER, 5/16 FLAT SS		
11	86279130	87083	6	WASHER, 5/16 SPLIT LOCK PLTD		
12	86271120	57125	6	NUT, 5/16-18 BRASS		
13	86005700	57104	8	NUT, 10-32 W/STAR WASHER PLTD		
14	86027740	27911	1	CONTROLLER, GEAR DRIVE BASIC		

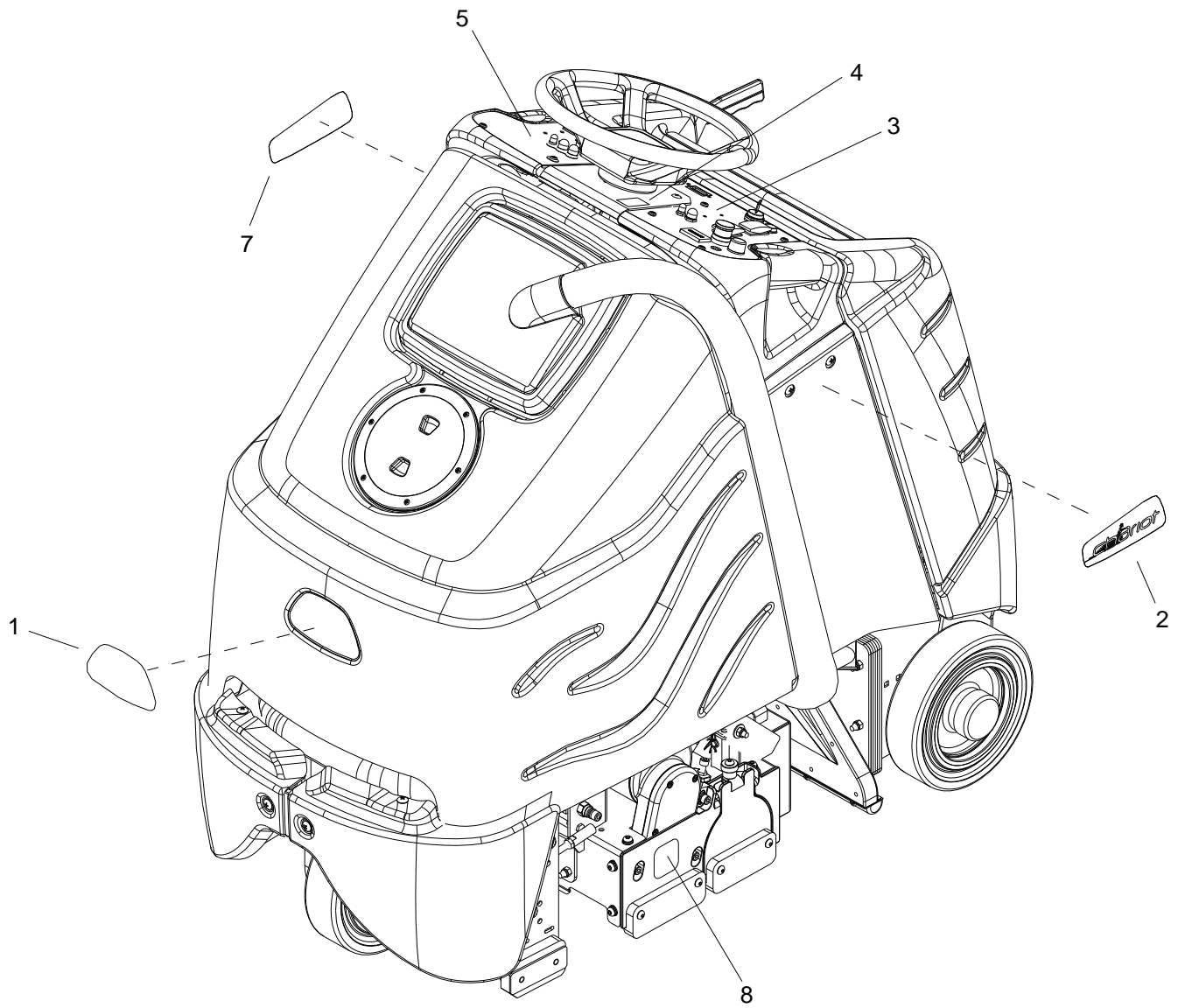
CONTROL PANEL HOUSING



CONTROL PANEL HOUSING

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86005810	57245	4	NUT, 1/4-20 HEX NYLOCK SS		
2	86290540	-	6	SCR, 10-32 X 1/2 TORX SS BLK NP		
3	86277480	70850	6	SCR, 5/16-18 X1/2 PTHMS SS		
4	86070710	140726	1	BRKT, LEFT CONSOLE MOUNT		
5	86237900	35278	3	GASKET, .125 X .25W X 23L		
6	86031730	270084	1	CONSOLE		
7	86070700	140725	1	BRKT, RIHGT CONSOLE MOUNT		
8	86279750	87252	4	WASHER, RET, PUSHNUT, 5/16 BOLT		
9	86089650	78524	4	TUBE, 5/8 OD X .357 ID X 1.57		
10	86277420	70841	4	SCR, 5/16-18 X 2.5 PTHMS SS		
11	86010630	87013	4	WASHER, 1/4 ID X 5/8 OD SS		

DECAL

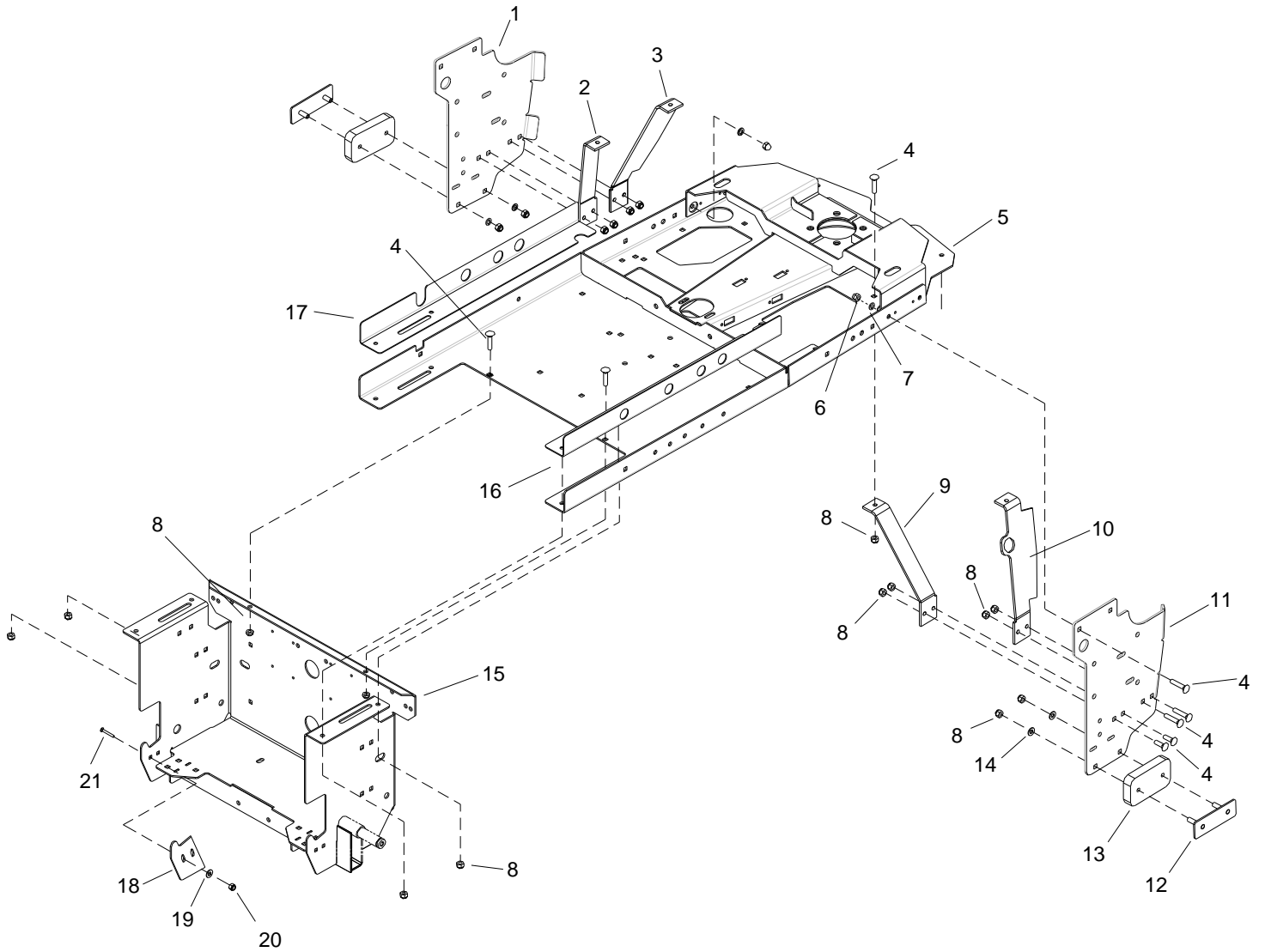


DECAL

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86004970	50990	1	LABEL, WINDSOR LOGO DOMED		
2	86244820	501230	1	DECAL, CHARIOT IEXTRACT LT		
3	86244190	500882	1	LABEL, PANEL BASIC LEFT		
4	86243990	500780	1	LABEL, COVER PANEL		
5	86244510	501108	1	LABEL, PANEL, EXTRACTOR, RT		
6	OPEN					
7	86244830	501231	1	DECAL, CHARIOT IEXTRACT RT		
8	86298970	-	1	LABEL, CLEAN BRUSHES AND DECK		

NOTE: See "SAFETY LABEL LOCATION" page for safety label information.

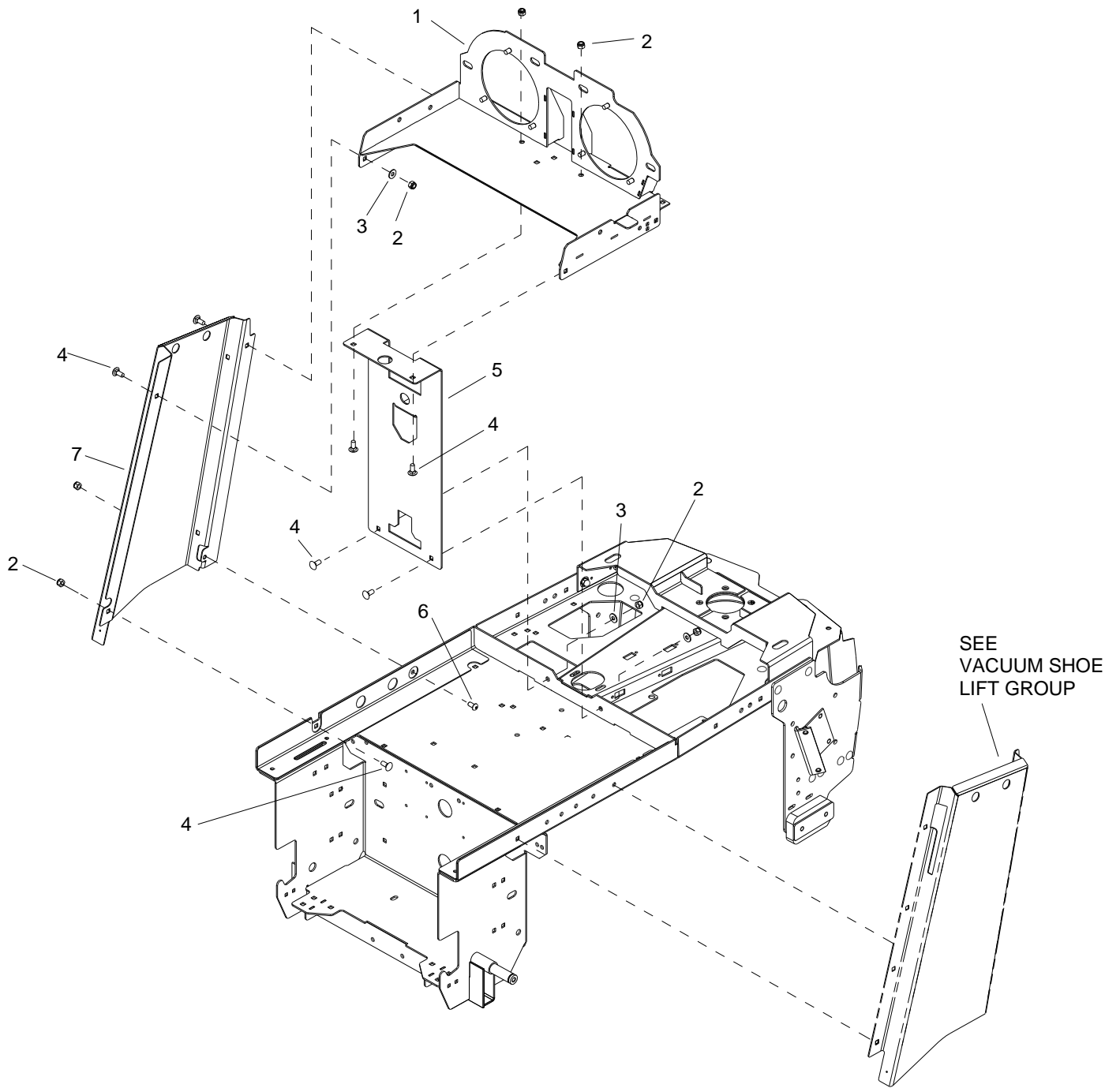
FRAME-LOWER



FRAME-LOWER

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86070750	140731	1	BRKT, LINKAGE, LEFT		
2	86071130	140812	1	BRKT, TIP BRACE, LEFT, REAR		
3	86070760	140733	1	BRKT, BRACE, LEFT FRONT		
4	86276070	70593	16	SCR, 5/16-18 X 3/4 CARRIAGE SS		
5	86092500	34428	1	FRAME, MAIN		
6	86197040	57264	4	NUT, 5/16-18 HEX ACORN PLTD		
7	86279130	87083	4	WASHER, 5/16 SPLIT LICK PLTD		
8	86270830	57023	20	NUT, 5/16-18 HEX NYLOCK SS		
9	86071120	140811	1	BRKT, TIP BRACE, RIGHT, REAR		
10	86071430	140863	1	BRKT, BRACE, RGT FRONT		
11	86070740	140730	1	BRKT, LINKAGE, RIGHT		
12	86079320	620101	2	PLATE, PAD RETAINER		
13	86064300	140790	2	PAD, TIPPING BAR		
14	86010670	87029	4	WASHER, 5/16 FLAT SS		
15	86091420	05251	1	AXLE, REAR WELDMENT		
16	86088760	75458	1	TRAY, SLIDE, LEFT		
17	86088750	75457	1	TRAY, SLIDE, RIGHT		
18	86079290	620097	2	PLATE, REAR COVER ADJ.		
19	86010630	87013	4	WASHER, 1/4 ID X 5/8 OD SS		
20	86271870	57290	4	NUT, 1/4-20 HEX NYLOCK THIN SS		
21	86276950	70772	4	SCR, 1/4-20 X 3/4 CARRIAGE SS		

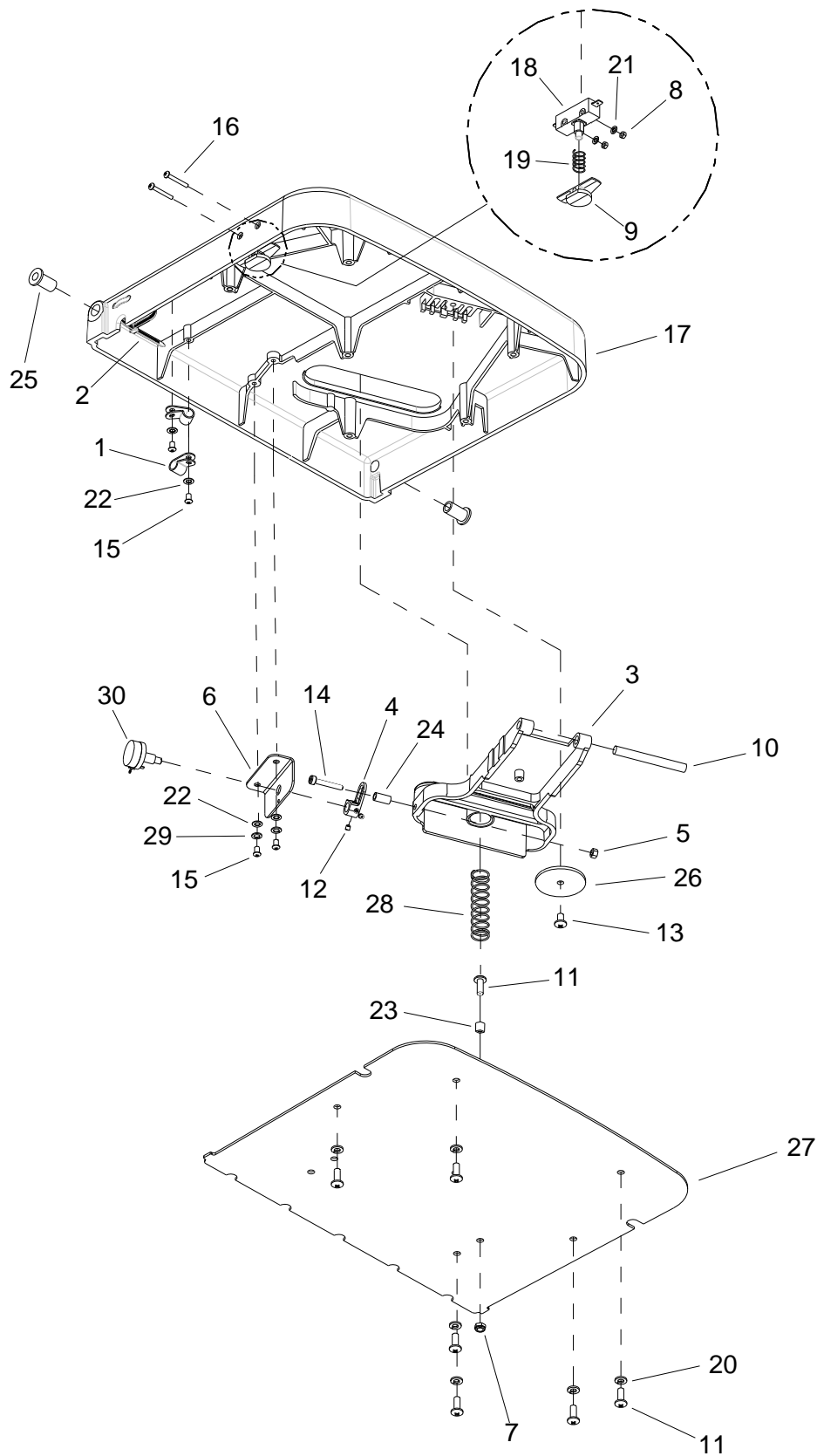
FRAME-UPPER



FRAME-UPPER

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86091610	140129	1	BRKT, HORIZ ELECT, EXTRACTOR		
2	86270830	57023	8	NUT, 5/16-18 HEX NYLOCK SS		
3	86010670	87029	5	WASHER, 5/16 FLAT SS		
4	86276070	70593	7	SCR, 5/16 X 3/4 CARRIAGE SS		
5	86083080	66437	1	PLATE, VERT BEARING SUPPORT		
6	86277460	70847	1	SCR, 5/16-18 X 5/8 BSHCS SS		
7	86073500	270090	1	BRKT, SIDE CHANNEL L		

PEDAL PLATFORM-From Serial Number (11*)



PEDAL PLATFORM-From Serial Number (11*)

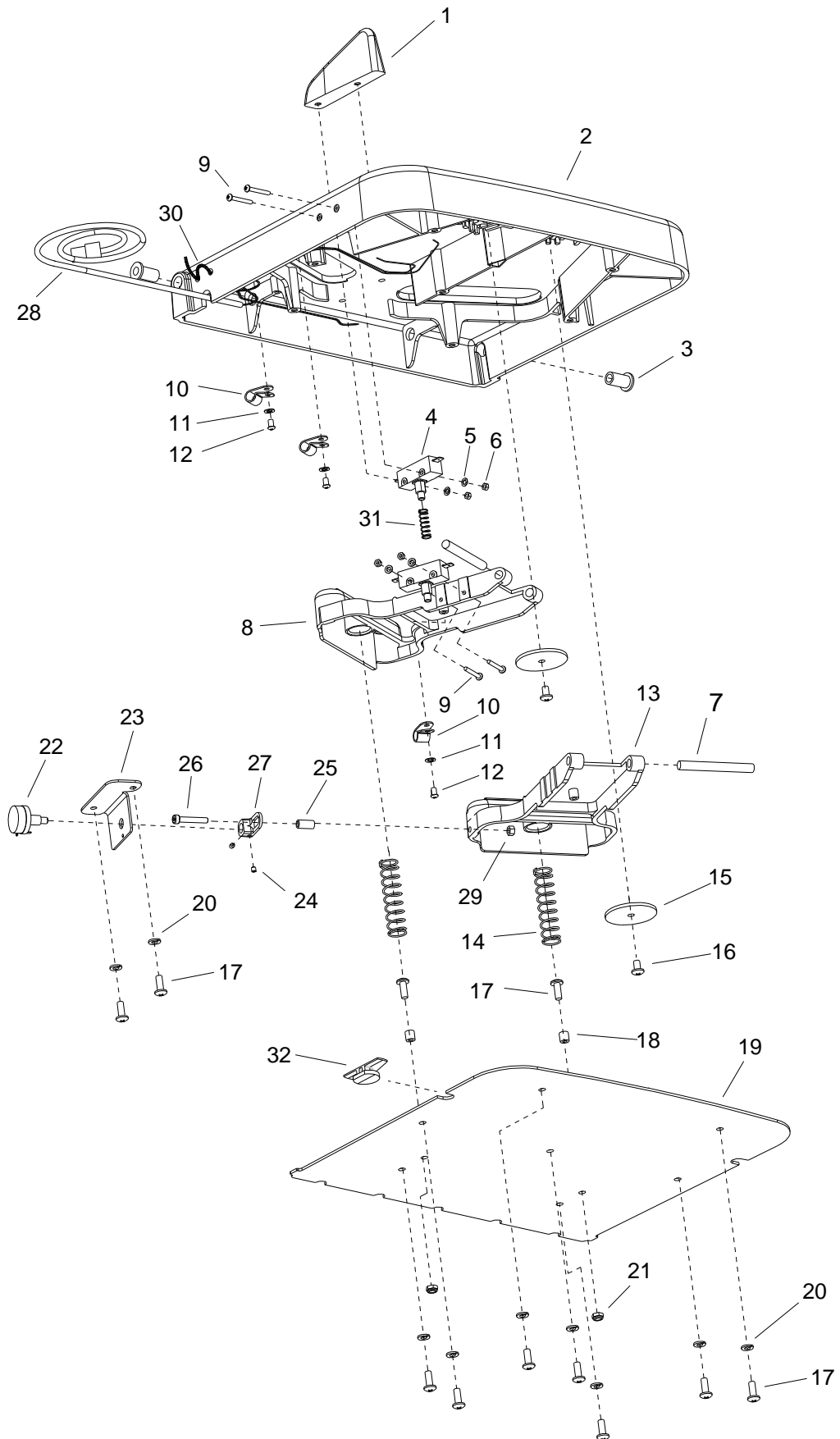
REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES
1	86233170	20054	2	CLAMP, 3/8 NYLON UL/CSA		
2	86264920	27049	1	CABLE TIE, .19 X 7 UL/CSA		
3	86222510	34430	1	PEDAL, THROTTLE		
4	86221850	34433	1	LINK, THROTTLE		
5	86136310	57086	1	NUT, M5 HEX		
6	86312820	-	1	BRACKET, POT, SPEED		
7	86288720	57277	1	NUT, M6 NYLOCK PLATED		
8	86272040	57503	2	NUT, M3.5 X 2.8 HEX		
9	86223260	66085	1	PLUNGER, PLATFORM SWITCH		
10	86223580	67502	1	ROD, PIVOT, 8.5MM X 77		
11	86274340	70179	7	SCR, M6 X 16 PH		
12	86278060	70759	2	SET SCR, M4 X 4MM NP		
13	86277360	70833	1	SCR, M6 X 10 PH		
14	86277370	70834	1	SCR, M5 X 30 SHCS		
15	86277380	70835	4	SCR, M4.8 X 16 PHTF		
16	86277390	70836	2	SCR, M3.5 X 38 PH		
17	86312770	-	1	PLATFORM		
18	86007110	72123	1	SWITCH, 25A SPST 125-250V SNAP		
19	86224750	73993	1	SPRING, COMP, .48OD X .91L		
20	86279140	87085	6	WASHER, M6 SPLIT LOCK DIN127B		
21	86279720	87248	2	WASHER, M4 INT STAR		
22	86279730	87249	4	WASHER, M5 INT STAR		
23	86224360	730325	1	SPACER 12.7MMOD X 2.78W X 6L		
24	86224350	730305	1	SPACER, 8MM X 16LG		
25	86333280	-	2	BUSHING, 8MM X 10 LG SS		
26	86222780	620047	1	PLATE, PIVOT		
27	86222810	620050	1	PLATE, COVER		
28	86254970	730304	1	SPRING, COMP 18MM OD X 83 X 2		
29	86137300	87084	2	WASHER, M5 SPLIT LOCK PLTD		
30	86250280	66135	1	POTENTIOMETER 5K OHMS		

NOTE: Complete platform assembly is available, Part No. 86028310.

**CALL MANUFACTURER FOR SERIAL NUMBER

*SEE SERIAL NUMBER PAGE

PEDAL PLATFORM-To Serial Number (11*)

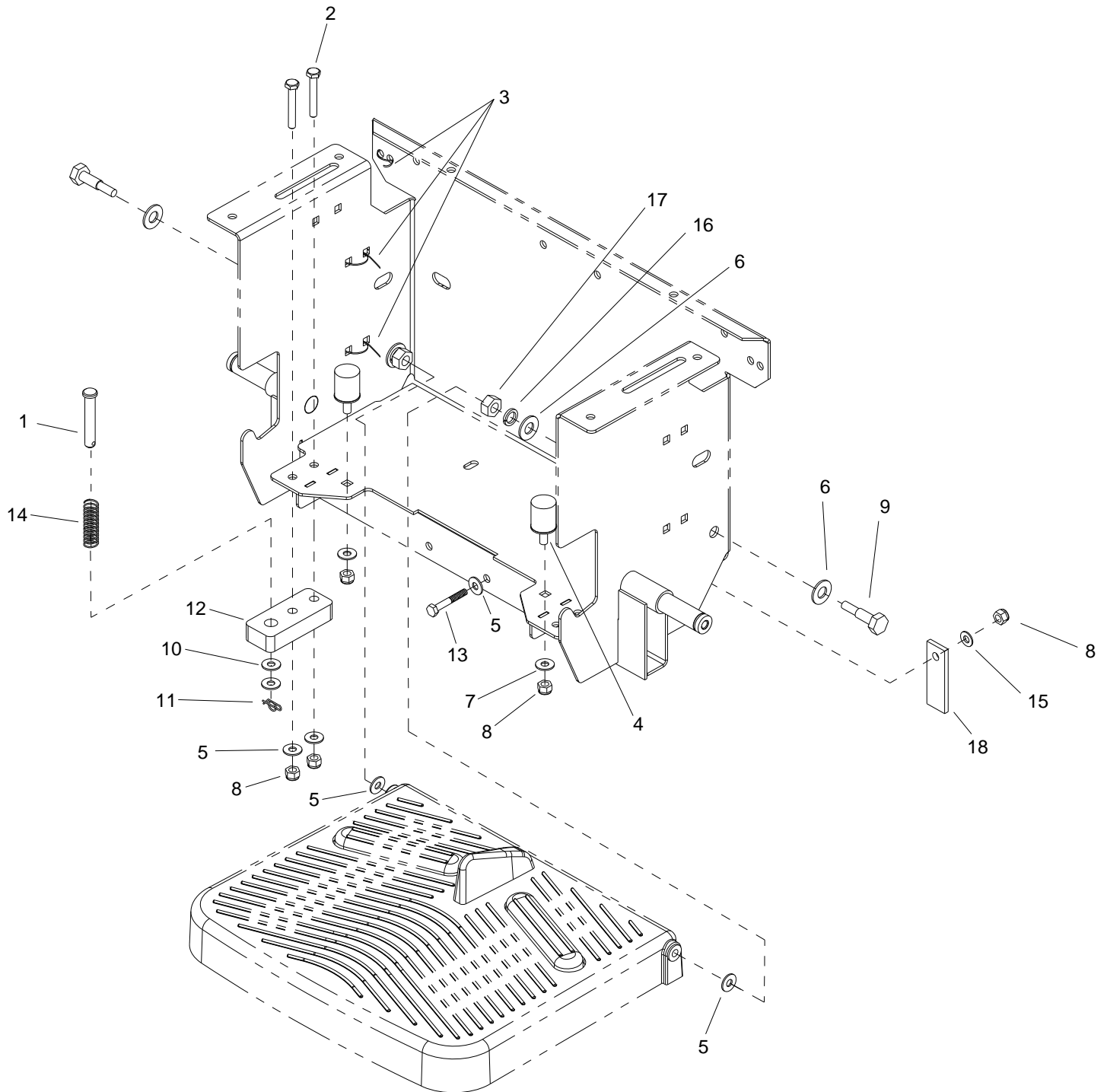


PEDAL PLATFORM-To Serial Number (11*)

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86217650	34432	1	DIVIDER		
2	86222700	34429	1	PLATFORM		
3	86216380	140713	2	BUSHING, 8MM X 10LG CLY		
4	86007110	72123	2	SWITCH, 25A SPST 125-250V SNAP		
5	86279720	87248	4	WASHER, M4 INT STAR		
6	86272040	57503	4	NUT, M3.5 X 2.8 HEX		
7	86223580	67502	2	ROD, PIVOT, 8.5MM X 77		
8	86222520	34431	1	PEDAL, BRAKE		
9	86277390	70836	4	SCR, M3.5 X 38 PHMS		
10	86233170	20054	3	CLAMP, 3/8 NYLON UL/CSA		
11	86279730	87249	4	WASHER, M5 INT STAR		
12	86277380	70835	4	SCR, M4.8 X 16 PHTF		
13	86222510	34430	1	PEDAL, THROTTLE		
14	86254970	730304	2	SPRING, COMP 18MM OD X 83 X 2		
15	86222780	620047	2	PLATE, PIVOT		
16	86277360	70833	2	SCR, M6 X 10 PH		
17	86274340	70179	11	SCR, M6 X 16 PH		
18	86224360	730325	2	SPACER 12.7MM ID X 2.78W X 6L		
19	86222810	620050	1	PLATE, COVER		
20	86279140	87085	9	WASHER, M6 SPLIT LOCK DIN127B		
21	86288720	57277	2	NUT, M6 NYLOCK PLATED		
22	86250280	66135	1	POTENTIOMETER, 5K OHMS		
23	86222790	620048	1	PLATE, THROTTLE		
24	86278060	70759	2	SET SCR, M4 X 4MM NP		
25	86224350	730305	1	SPACER, 8MM 16L		
26	86277370	70834	1	SCR, M5 X 30 SHCS		
27	86221850	34433	1	LINK, THROTTLE		
28	86218810	23717	1	HARNESS, TWISTER PEDAL		
29	86136310	57086	1	NUT, M5 HEX		
30	86264920	27049	1	CABLE TIE, 7" UL/CSA		
31	86224750	73993	1	SPRING, COMP, .48OD X 91L		
32	86223260	66085	1	PLUNGER, PLATFORM SWITCH		

*SEE SERIAL NUMBER PAGE.

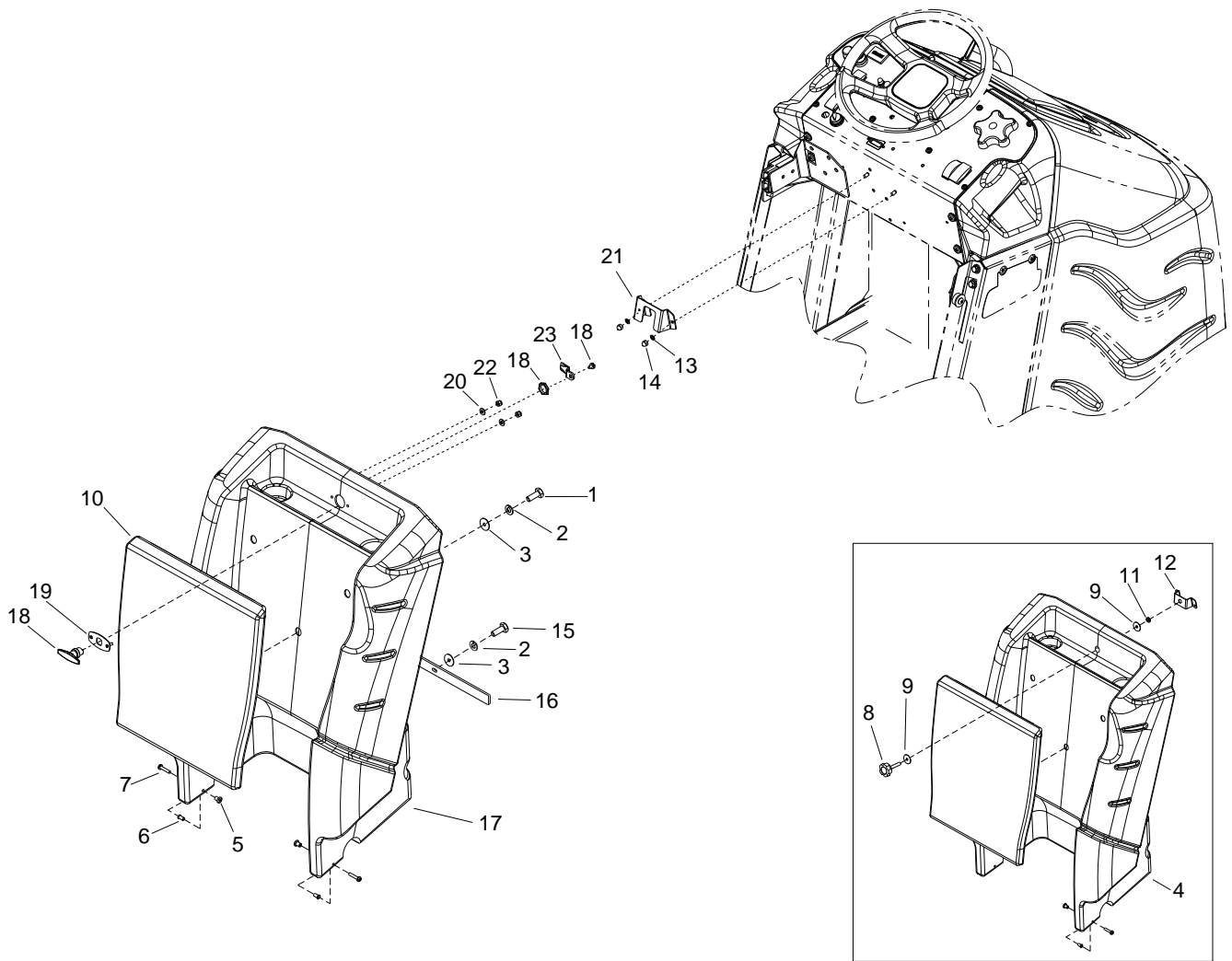
PEDAL PLATFORM



PEDAL PLATFORM

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86248920	66487	1	PIN, CLEVIS 1/2 X 2.25		
2	86274690	70258	2	SCR, 5/16-18 X 1.5 HHCS GR5PLT		
3	86264920	27049	3	CABLE TIE, 7" UL/CSA		
4	86231070	730328	2	BUMPER, 1 X 1.375 RUBBER		
5	86010670	87029	5	WASHER, 5/16 FLAT SS		
6	86259430	87485	4	M12 FLAT WASHER		
7	86010770	87143	2	WASHER, 7/16ID X1D.08 FLT SS		
8	86270830	57023	5	NUT, 5/16-18 HEX NYLOCK SS		
9	86256470	70852	2	STUB AXLE, M12-1.75 X 45MM		
10	86278850	80613	2	WASHER, .506ID X .94D X .064 NYL		
11	86008680	80607	1	COTTER, 1/2" RING		
12	86064480	629993	1	PLATE, SWITCH BASE		
13	86276980	70775	1	SCR, 5/16-18 X 2 HHCS SS		
14	86007780	73576	1	SPRING, COMP .60D X2.0L X .045W		
15	86279630	87212	1	WASHER, .344ID X 1.13OD X .09T PLT		
16	86259440	87486	2	WASHER, M12 SPRING LOCK		
17	86271190	57142	2	NUT, M12 X 1.75 HEX DIN934 PLT		
18	86256130	730402	1	STRAP, STATIC .2T X 1W X 3L		

REAR COVER

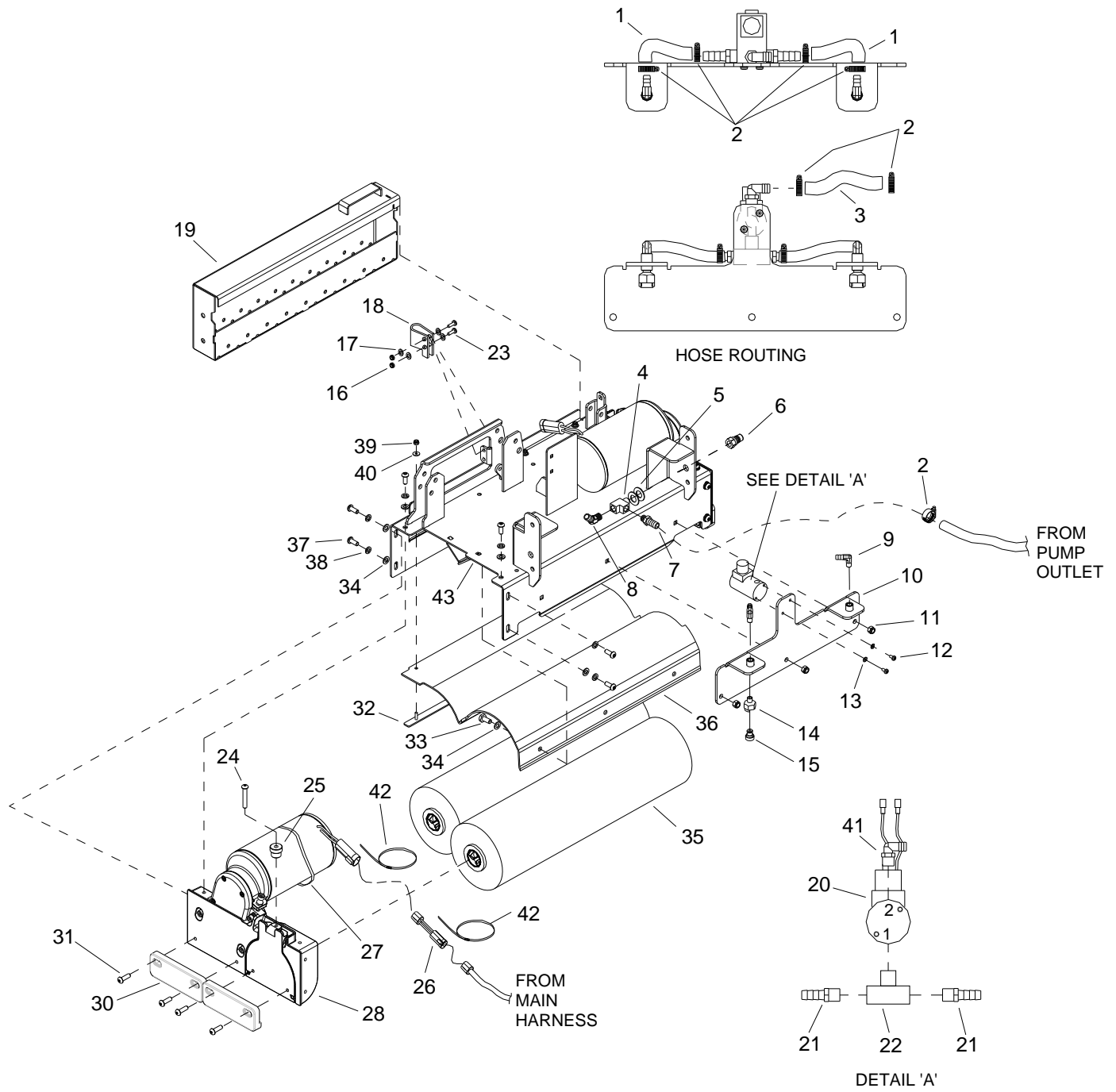


REAR COVER

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86276780	70728	3	SCR, 5/16-18 X 3/4 HHCS SS		
2	86279130	87083	5	WASHER, 5/16 SPLIT LOCK PLTD		
3	86010670	87029	5	WASHER, 5/16 FLAT SS		
4	86031790	270701	1	COVER, REAR, BASIC		
5	86005860	57273	2	NUT, 1/4-20 X 12MM HEX BARREL		
6	86228980	09152	2	BEARING FLANGED .377ID X .505OD		
7	86275870	70556	2	SCR, 1/4-20 X 1.5" PPHMS SS		WAS 70697
8	86242140	72193	1	KNOB, 3/8-16 X 1.5		
9	86010770	87143	2	WASHER, 7/16ID X 1D X .08FLT SS		
10	86248380	66433	1	PAD, FLAT LEANING		
11	86005630	57022	1	NUT, 3/8-16 HEX NYLOCK THIN SS		
12	86071030	140786	1	BRKT, ASSEMBLY, REAR COVER		
13	86010780	87162	2	WASHER, 1/4 SPLIT LOCK		
14	86271940	57299	2	NUT, 1/4-20 ACORN SS		
15	86006560	70083	2	SCR, 5/16-18 X 1 HHCS SS		
16	86066940	140891	1	BAR, COVER		
17	86324660	-	1	REAR COVER, BASIC	*(10)	
18	86324640	-	1	HANDLE, CAM LATCH	*(10)	
19	86324760	-	1	PLATE, COVER LATCH	*(10)	
20	86010630	87013	2	WASHER, 1/4 ID X 5/8 OD SS	*(10)	
21	86324340	-	1	BRKT, REAR COVER	*(10)	
22	86005810	57245	2	NUT, 1/4-20 HEX NYLOCK SS	*(10)	
23	86324650	-	1	PAWL, HANDLE	*(10)	

*See Serial Number Page

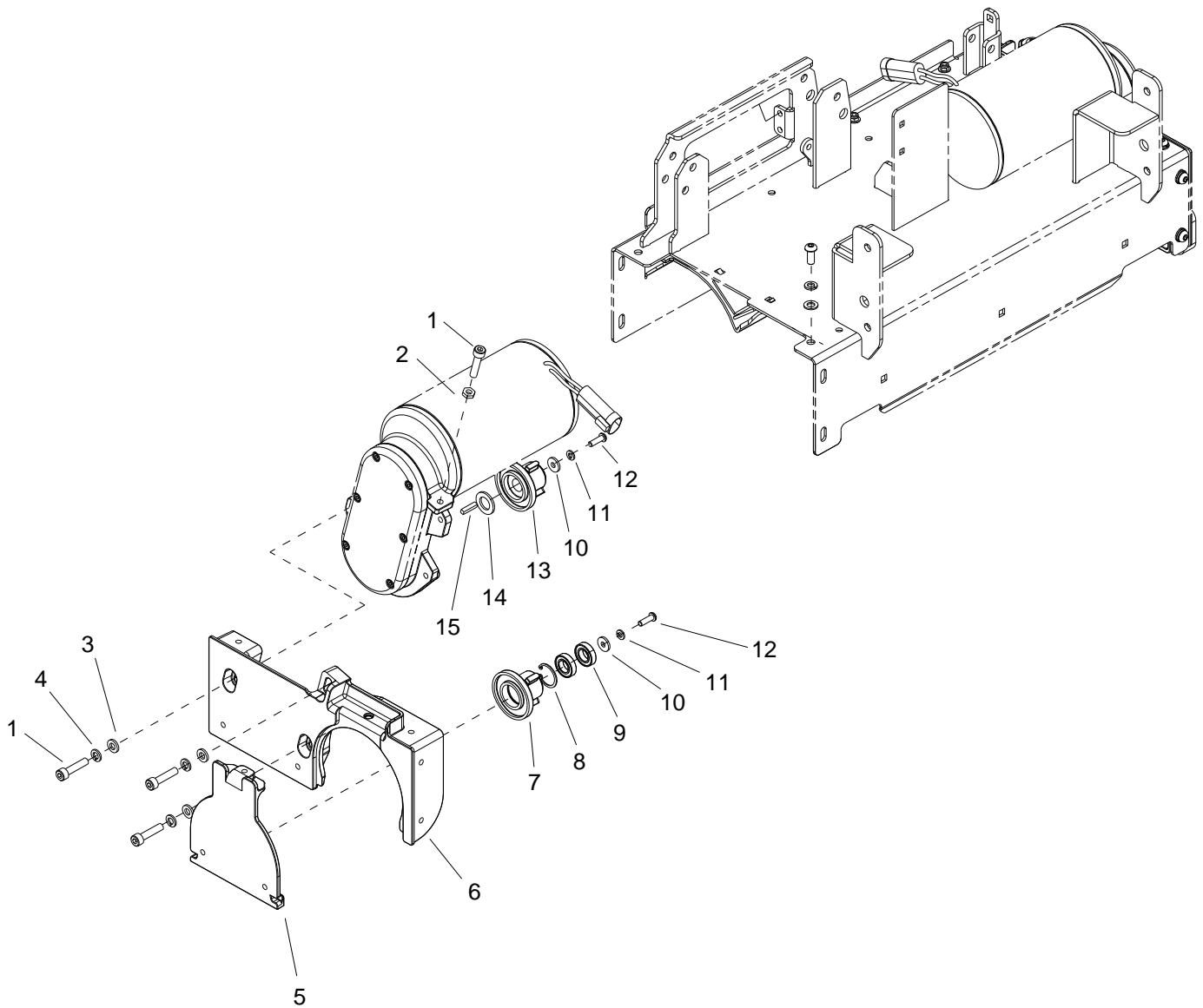
SCRUB DECK



SCRUB DECK

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86281150	39282	2	HOSE, 3/8 ID WIRE BOUND X 7"		
2	86233150	20042	7	CLAMP, 3/8 HOSE (D-SLOT)		
3	86281100	39274	1	HOSE, 1/2ID WIRE BOUND X 7"		
4	86197760	78308	1	TEE, 1/4 STREET		
5	86010730	87088	2	WASHER, 5/8 ID X 1.18 X .06 SS		
6	86005580	56012	1	NIPPLE, 1/4 FPT QD		
7	86197570	40028	1	HOSEBARB, 1/4MPT X 1/2 DL		
8	86184900	790601	1	HOSEBARB, 1/4MPT X 1/2H 45 BR		
9	86197590	40031	2	HOSEBARB, 1/8MPT X 3/8 90 D		
10	86073620	67017	1	BRKT, JET MOUNT		
11	86270830	57023	3	NUT, 5/16-18 HEX NYLOCK SS		
12	86274290	70162	2	SCR, 10-32 X 3/8 PPHMS SS		
13	86010640	87016	2	WASHER, #10 LOCK EXT STAR SS		
14	86004570	44067	2	JET BODY, MINI PROMAX BODY		
15	86241730	44107	2	JET MINI PROMAX 9506		
16	86271870	57290	2	NUT, 1/4-20 HEX NYLOCK THIN SS		
17	86010630	87013	4	WASHER, 1/4 ID X 5/8 OD SS		
18	86255950	73869	1	STOP, MOUNT		
19	86092840	41535	1	HOPPER, CYL. SCRUB DECK 24		
20	86258870	84168	1	VALVE, 120V 110 PSI SOLENOID		
21	86197550	40014	2	HOSEBARB, 1/4MPT X 3/8 DL		
22	86197730	78024	1	TEE, 1/4 BRANCH		
23	86006530	70057	2	SCR, 1/4-20 X 1 PPHMS SS		
24	86277150	70797	2	SCR, 5/16-18 X 2 BSHCS SS		
25	86242120	48090	2	KNOB, 1.0 OD X 5/16-18		
26	86260400	880212	1	WIRE ASM, REV POLARITY JUMPER		
27	86002830	27196	2	CABLE TIE, .375 X 24.7		
28	86217740	53815	2	DRIVE MOTOR (2 UNITS/CARTON)		
29	-	OPEN	-	-		
30	86078060	149997	4	PAD, SKID BAR, LARGE		
31	86277530	70861	8	SCR, M8 X 1.25 X 20LG BSHCS SS		
32	86086100	66859	1	RETAINER, DEFLECTOR		
33	86006560	70083	3	SCR, 5/16-18 X 1 HHCS SS		
34	86010670	87029	15	WASHER, 5/16 FLAT SS		
35	86230500	02498	2	BRUSH, 24" CYL, C-NYLON		
36	86064010	29270	1	DEFLECTOR, MACHINED		
37	86277530	70861	12	SCR, M8X1.25 X 20 LG BSHCS SS		
38	86279130	87083	12	WASHER, 5/16 SPLIT LOCK PLTD		
39	86270990	57090	4	NUT, 10-32 HEX NYLOCK SS		
40	86010650	87018	4	WASHER, #10 X 9/16 OD		
41	86197630	40042	1	HOSEBARB, 1/4MPT X 1/2H 90D DL		
42	86264940	27051	3	CABLE TIE, 11.38" UL/CSA		
43	86092540	34453	1	FRAME, EXTRACTOR DECK 24IN		

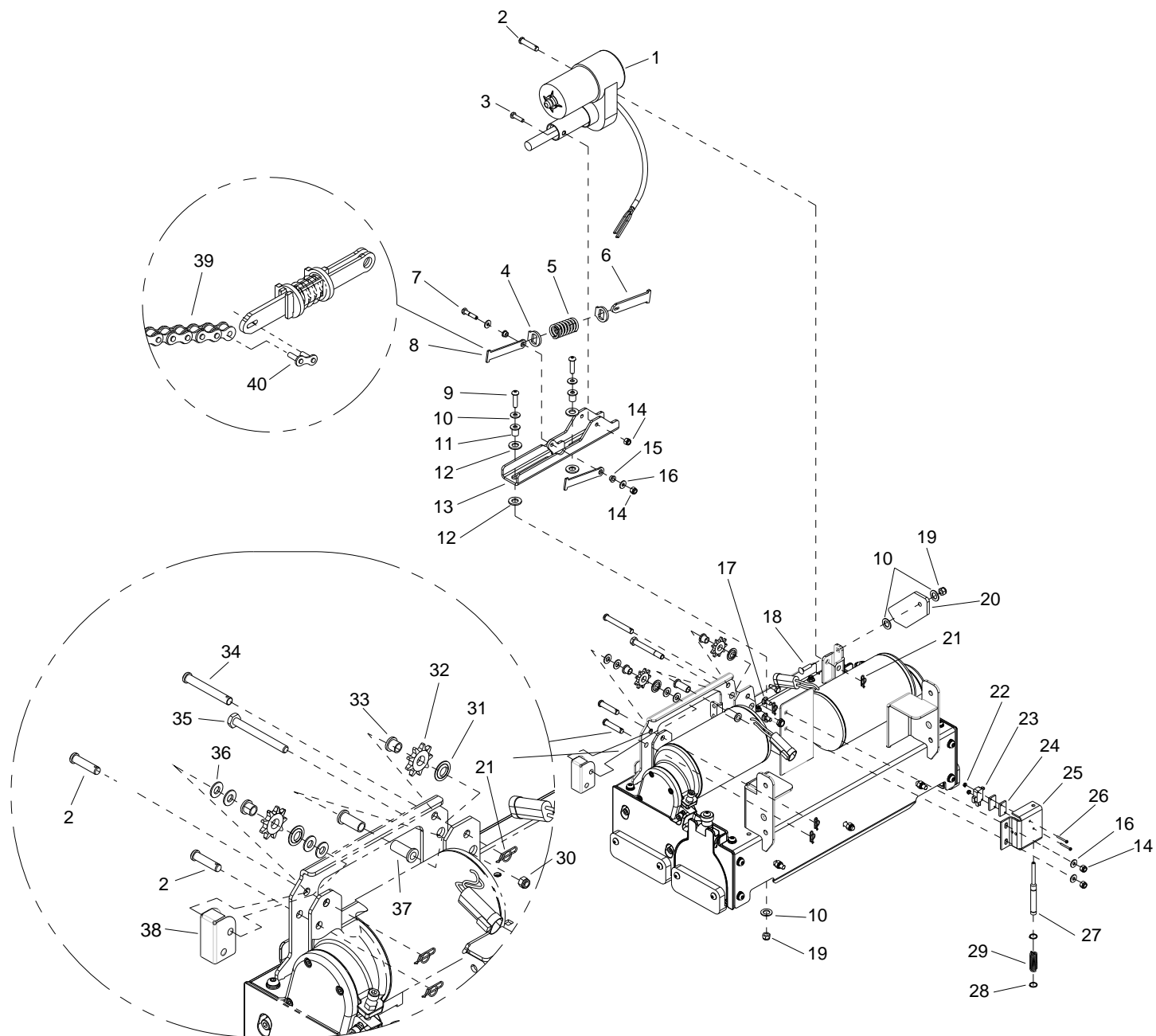
SCRUB DECK MOTORS



SCRUB DECK MOTORS

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86277880	70855	8	SCR, M8-1.25 X 35 LG SHCS SS		
2	86222330	57504	2	NUT, M8 -1.25 HEX JAM SS		
3	86279790	87489	6	WASHER, M8 (THICK) FLAT SS		
4	86137310	87098	6	WASHER, M8 SPLIT LOCK		
5	86217710	29268	2	DOOR, CYLINDRICAL BRUSH		
6	86219290	34418	2	HOUSING, SCRUB PLUS DRIVE		
7	86219450	41488	2	HUB, TRI-STAR BRUSH IDLER		
8	86223520	67598	2	RING, 28 MM INT SNAP PHOSPHATE		
9	86228960	09149	4	BEARING, 15 X 28 X 7W SS BALL		
10	86279770	87487	4	WASHER, M6 LARGE OD FLAT SS		
11	86279140	87085	4	WASHER, M6 SPLIT LOCK DIN127B		
12	86277870	70854	4	SCR, M6-1.0 X 20 LG BHSCS SS		
13	86219440	41487	2	HUB, TRI-STAR BRUSH DRIVE		
14	86279780	87488	2	WASHER, M16 SMALL OD FLAT SS		
15	86004820	48041	2	KEY, 3/16 SQ X 7/8 CRS		

SCRUB DECK LIFT ACTUATOR

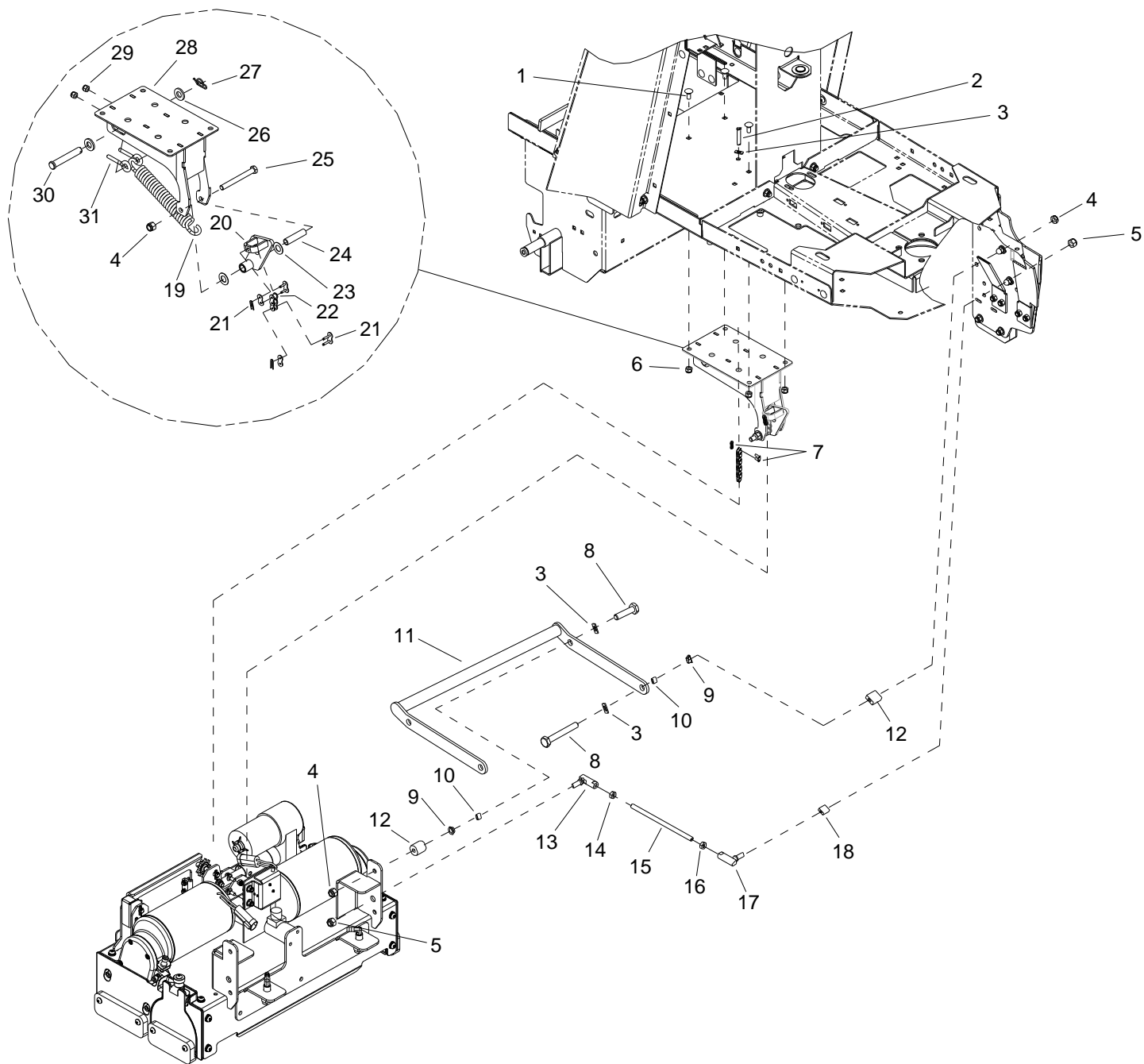


SCRUB DECK LIFT ACTUATOR

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86011950	-	1	ACTUATOR, 36VDC, 3.5 IN STRK	*(1)	WAS 05250
2	86248980	81438	3	PIN, CLEVIS 3/8 X 1.75 PLTD		
3	86006910	70443	2	SCR, 1/4-20 X 5/8 SHCS		
4	86090330	87258	2	WASHER, .804ID X 1.25OD X .179		
5	86278400	730351	1	SPRING, COMP., 1.10 OD X 2.25 L X 148		
6	86066920	140852	1	BAR, COMP. SPRING RETAINER		
7	86273820	70019	1	SCR, 1/4-20 X 1.25 HHCS SS		
8	86070190	140581	2	BRKT, SCRUB DECK GUIDE 36V		
9	86276760	70724	2	SCR, 5/16-18 X 1.25 BSHCS SS		
10	86010670	87029	6	WASHER, 5/16 FLAT SS		
11	86228840	09124	2	BEARING, FLANGED .314 ID X .502 OD		
12	86259420	87232	4	WASHER, THRUST .51ID X 1OD		
13	86091840	140850	1	BRKT, ACTUATOR SLIDER		
14	86005810	57245	5	NUT, 1/4-20 HEX NYLOCK SS		
15	86231360	14744	2	BUSH, BRZ FLG .25 X .38 X .25		
16	86010630	87013	4	WASHER, 1/4 ID X 5/8 OD SS		
17	86277500	70853	2	SCR, 1/4-20 X 5/8 CARR SS		
18	86277130	70795	1	SCR, 5/16-18 X 1.00 CARRIAGE SS		
19	86270830	57023	3	NUT, 5/16-18 HEX NYLOCK SS		
20	86069440	140442	1	BRKT, LATCH		
21	86008670	80606	4	COTTER, 3/8" RING		
22	86271280	57163	2	NUT, 4-40 W/STAR WASHER		
23	86007160	72157	1	SWITCH, 10A ROLLER MINI		
24	86087520	73456	2	SPACER, L2020B PLUNGER SWITCH		
25	86072460	14387	1	BRKT, MICRO SWITCH MOUNT		
26	86276010	70580	2	SCR, 4-40 X 1.0 PPHMS		
27	86223270	66482	1	PLUNGER, MICRO SWITCH		
28	86270270	27721	2	CLIP, RETAINING 7/16		
29	86007780	73576	1	SPRING, COMP .60D X 2.0L X .045W		
30	86005630	57022	1	NUT, 3/8-16 HEX NYLOCK THIN SS		
31	86222270	57276	2	NUT, PUSH FLAT RD .51 ID		
32	86255650	81627	2	SPROCKET, #41 1/2" P 9T		
33	86229000	09154	2	BEARING FLG .377ID X .502 OD X .500		
34	86272520	66392	1	PIN, CLEVIS 3/8 X 2.75 PLTD		
35	86276400	70642	1	SCR, 3/8-16 X 3 HHCS		
36	86010680	87030	4	WASHER, 3/8 ID X 3/4 OD NYLON		
37	86228910	09139	2	BEARING, FLANGED .377 ID X .502 OD		
38	86290090	-	1	GUARD, CHAIN	*(2)	
39	86232680	270114	1	CHAIN, #41, 1/2" PITCH X 34 P		
40	86009400	81873	1	CHAIN, #41 1/2" P MASTER LINK		

* SEE SERIAL NUMBER PAGE

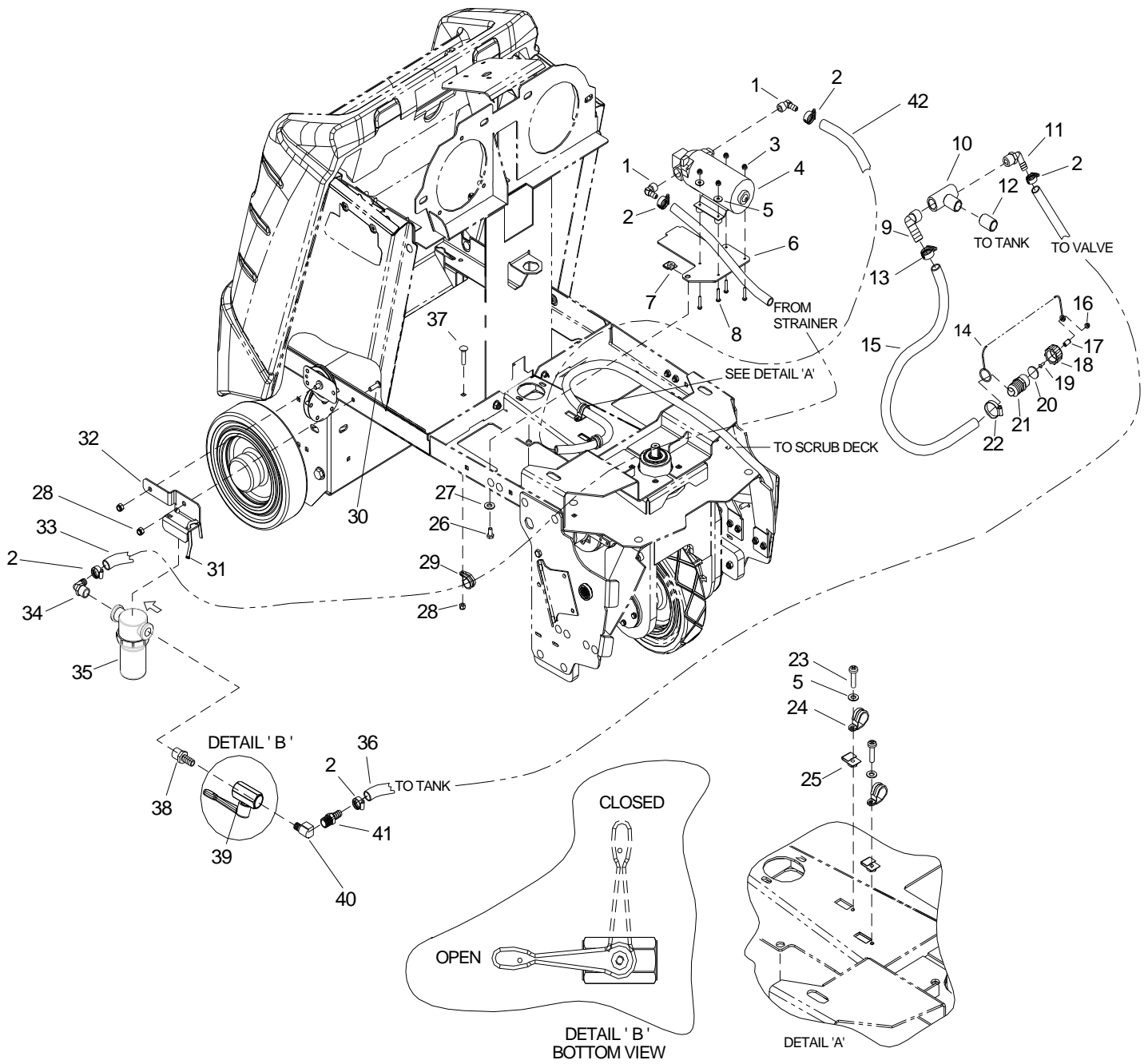
SCRUB DECK LIFT LINKAGE



SCRUB DECK LIFT LINKAGE

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86276070	70593	4	SCR, 5/16-18 X 3/4 CARRIAGE SS		
2	86272380	66217	1	PIN, CLEVIS 3/8 X .75 PLTD		
3	86010770	87143	5	WASHER, 7/16 ID X 1 D X .08 FLT SS		
4	86005630	57022	5	NUT, 3/8-16 HEX NYLOCK THIN SS		
5	86271530	57216	4	NUT, 3/8-27 HEX NYLOCK		
6	86270830	57023	4	NUT, 5/16-18 HEX NYLOCK SS		
7	86009400	81873	1	CHAIN, #41 1/2" P MASTER LINK		
8	86274660	70255	2	SCR, 3/8-16 X 1.5 HHCS GR5 PLT		
9	86009050	81324	4	BEARING, 1/2 ID X 11/32L NYLON		
10	86008460	80102	4	SPACER, .500 OD X .391 ID X .400		
11	86093180	51415	1	LINKAGE ASM, DECK ARM		
12	86224370	730335	4	SPACER, 1 OD X .391 ID X .500		
13	86001320	140353	2	BALL JOINT ASSY, 3/8-24 LH		
14	86005830	57263	2	NUT, 3/8-24 UNF LH		
15	86223540	66483	2	ROD, SCRUB LIFT		
16	86005800	57217	2	NUT, 3/8-24 HEX JAM		
17	86008810	80697	2	BALL JOINT ASY, 3/8-24 RH		
18	86087580	73606	2	SPACER, 1/2 OD X .058 W X .26 LG CRS		
19	86254980	730312	1	SPRING, EXT 1.312D X 8.00L X .225 W		
20	86026210	68023	1	PIVOT ARM, W/BEARINGS		
21	86002850	27343	2	CHAIN, #40, 1/2 P MASTER LINK		
22	86232820	27981	1	CHAIN, #40, 1/2 PITCH X 4 ROLLER		
23	86009100	81396	2	WASHER FIBERGLIDE 1/2" ID X 1" OD		
24	86257830	66879	1	TUBE, .50 OD X .377 ID X 1.656		
25	86275840	70550	1	SCR, 3/8-16 X 2.5 HHCS GR5 PLTD		
26	86279260	87119	1	WASHER, .53 ID X 1.0 OD X .060 PLTD		
27	86008680	80607	1	COTTER, 1/2" RING		
28	86093560	68021	1	PIVOT ASSY DECK LIFT		
29	86271870	57290	2	NUT, 1/4-20 HEX NYLOCK THIN SS		
30	86272320	66151	1	PIN, CLEVIS 1/2 X 2.75 LG		
31	86270310	70760	2	EYEBOLT, 1/4-20 X 1.5 PLTD		

SOLUTION

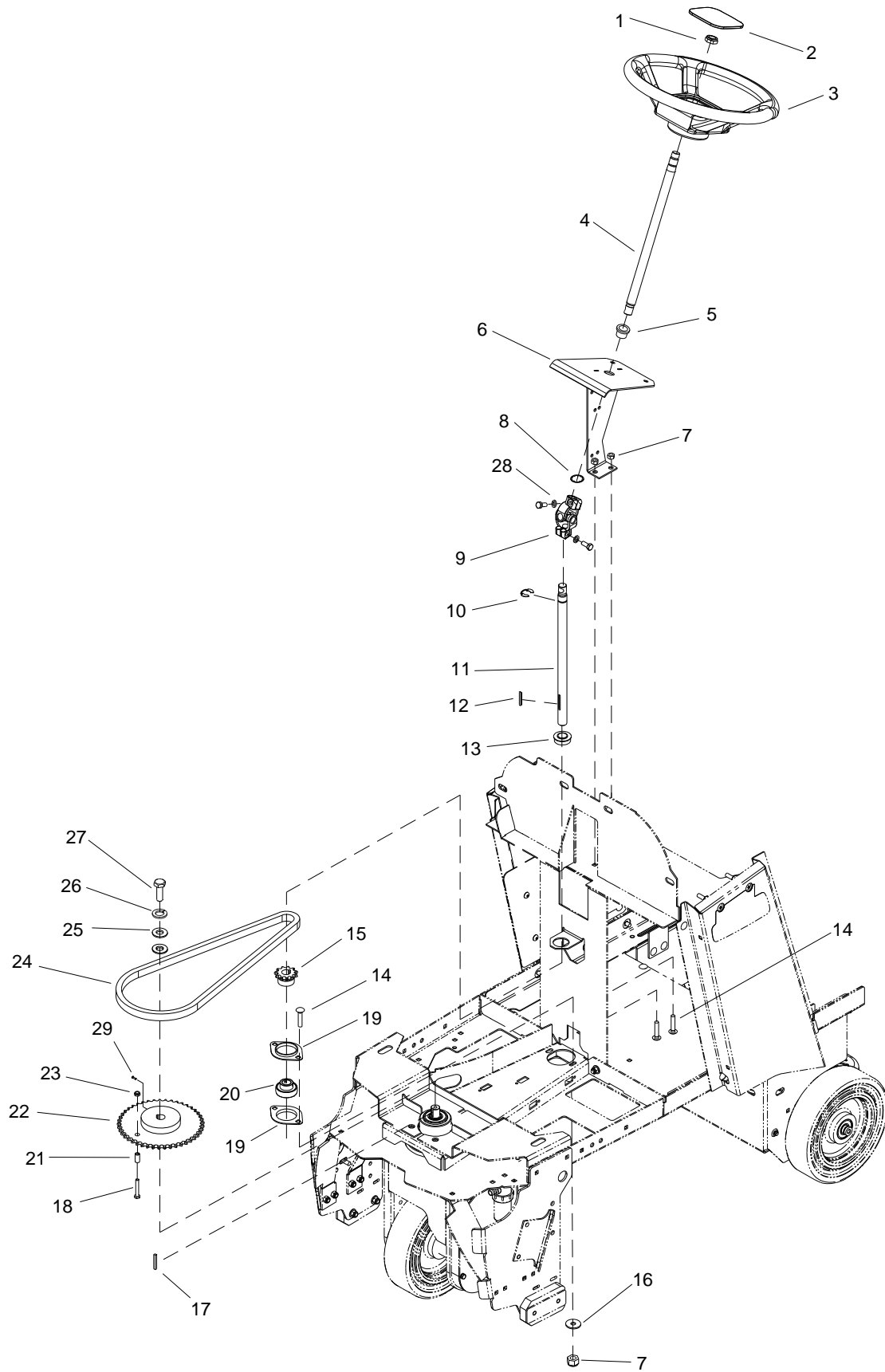


SOLUTION

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86197940	40027	2	HOSEBARB, 3/8MPT X 1/2 OD 90D DL		
2	86233150	20042	5	CLAMP, 3/8 HOSE (D-SLOT)		
3	86270990	57090	4	NUT, 10-32 HEX NYLOCK SS		
4	86006100	65176	1	PUMP ASM, 36 V ACCESSORY		
5	86010650	87018	6	WASHER, #10 X 6/16 OD		
6	86070690	140724	1	BRKT, SOLUTION PUMP		
7	86271820	57270	1	NUT, 5/16-18 CAPTIVE "J" PLTD		
8	86274410	70195	4	SCR, 10-32 X 1.25 PPHMS SS		
9	86240600	41526	1	HOSEBARB, 3/4 MPT X 1, HOSE 90 DEG		
10	86198050	81923	1	TEE, 3/4 FPT		
11	86240390	40075	1	HOSEBARB, 3/4 MPT X 1/2 90D		
12	86247760	80960	1	NIPPLE, 3/4 CLOSE PVCE		
13	86233300	20101	1	CLAMP, 1.25" WORM GEAR SS		
14	86246090	51461	1	LANYARD, .093 X 6", 1" LOOP-.26 EYE		
15	86004310	39505	1	HOSE, 1.0 X 18.0 DRAIN		
16	86248010	57312	1	NUT, 8-32 ACORN CAP, PLATED		
17	86254320	730400	1	SPACER, .17 ID X .25 OD X 3/16LG		
18	86073960	22104	1	CAP, 3/4" GHT W/ .17 HOLE		
19	86252730	70887	1	SCR, 8-32 X 1/2 BHCS SST		
20	86259450	87507	1	WASHER, 1.0 OD X .1 THK, SEAL		
21	86226950	40109	1	1" HOSEBARB X 3/4" GHT NYLON		
22	86233110	20018	1	CLAMP, 1.0" WORM GEAR		
23	86274070	70086	2	SCR, 10-24 X 1/2 PPHMS		
24	86233390	80887	2	CLAMP, 7/8 DIA "P" CUSHIONED		
25	86270860	57028	2	NUT, 10-24 U-TYPE SPEED		
26	86276780	70728	1	SCR, 5/16-18 X 3/4 HHCS SS		
27	86279130	87083	1	WASHER, 5/16 SPLIT LOCK PLTD		
28	86270830	57023	2	NUT, 5/16-18 HEX NYLOCK SS		
29	86233410	81270	1	CLAMP, 3/4 DIA CUSHION .406 DIA		
30	86277460	70847	1	SCR, 5/16-18 X 5/8 BSHCS SS		
31	86264920	27049	2	CABLE TIE, 7" UL/CSA		
32	86068780	140202	1	BRKT, STRAINER MNT		
33	86282370	39735	1	HOSE, 1/2 ID WIRE BOUND X 58"		
34	86001530	40039	1	HOSEBARB, 1/2 MPT X 1/2 HOSE 90	*(3)	
35	86256120	730368	1	STRAINER, 1/2 FPT 100 MESH	*(3)	
-	86252980	730369	-	SCREEN, 100 MESH		
36	86282360	39734	1	HOSE, 1/2 ID WIRE BOUND X 28"		
37	86276070	70593	1	SCR, 5/16-18 X 3/4 CARRIAGE SS		
38	86188210	11-800354	1	NIP, 1/2 X 3/8 HEX BR	*(3)	
39	86225680	84201	1	VALVE, 3/8" FPT BALL	*(3)	
40	86197420	31026	1	ELBOW, 3/8 NPT STREET	*(3)	
41	86197540	40013	1	HOSEBARB, 3/8 MPT X 1/2 DL	*(3)	
42	86281940	39540	1	HOSE, 1/2 ID WIRE BOUND X 40"		

* SEE SERIAL NUMBER PAGE

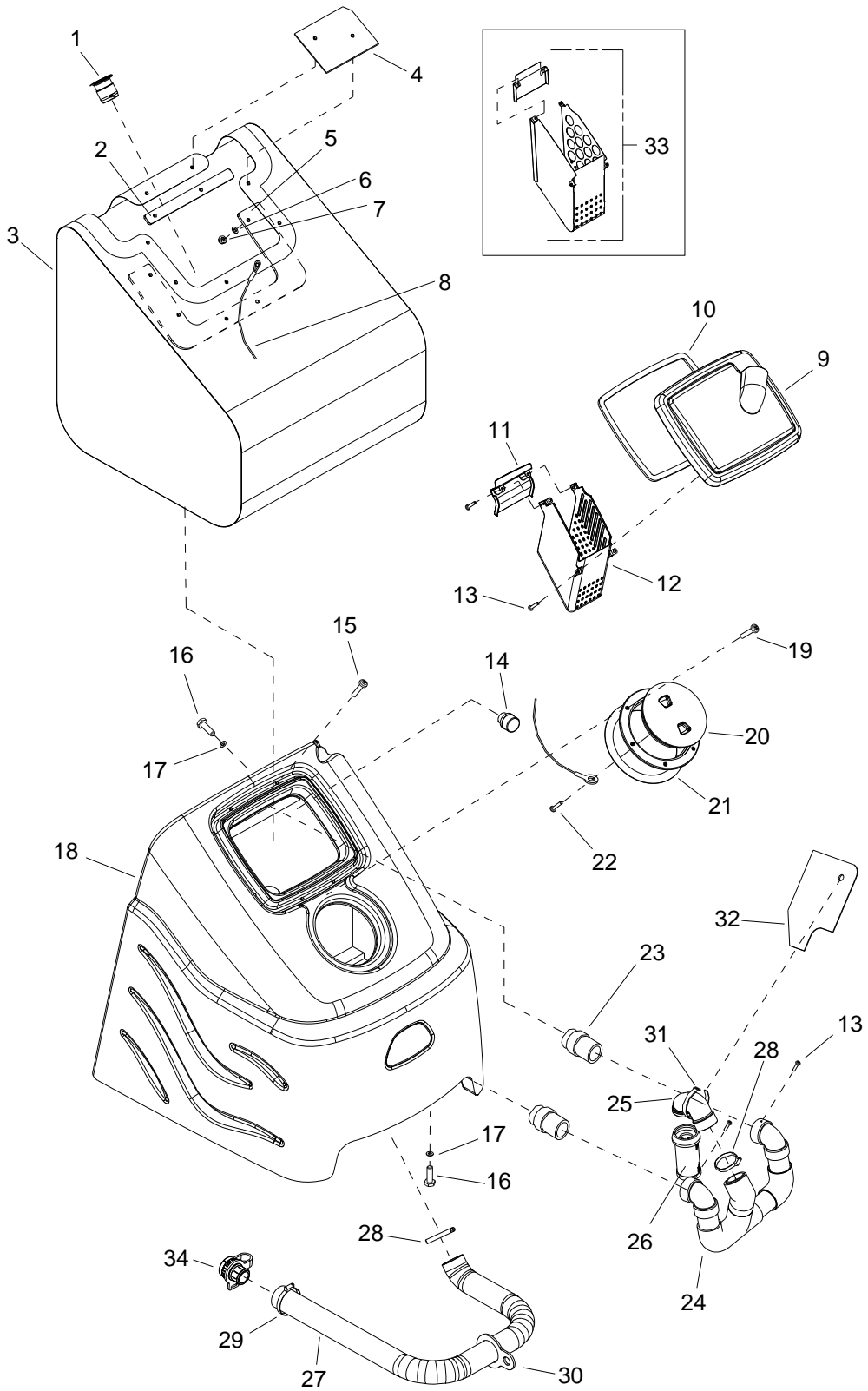
STEERING



STEERING

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86271610	57228	1	NUT, 5/8-16 HEX NYLOCK THN		
2	86234810	27945	1	COVER, STEERING WHEEL		
3	86259610	730117	1	WHEEL, STEERING 40 SPLINE HUB		
4	86224050	730318	1	SHAFT, UPPER STEERING		
5	86228790	09111	1	BEARING, FLANGE .88ODX.75IDX.75		
6	86091740	140720	1	BRKT, UPPER STEERING		
7	86270830	57023	4	NUT, 5/16-18 HEX NYLOCK SS		
8	86005610	57016	1	NUT, 7/8 DIA PUSHLOCK		
9	86219600	45012	1	JOINT, UNIVERSAL FEMALE		
10	86272900	67416	1	RING, 3/4" KLIP		
11	86224060	730319	1	SHAFT, LOWER STEERING		
12	86219650	48110	1	KEY, 5MM SQ X 39MM L		
13	86228670	09072	1	BEARING, 3/4" BORE FLANGED		
14	86276070	70593	4	SCR, 5/16-18 X 3/4 CARRIAGE SS		
15	86224800	730315	1	SPROCKET, STEERING SHAFT		
16	86010670	87029	2	WASHER, 5/16 FLAT SS		
17	86135970	48045	1	KEY, 3/16 SQ X 5/8 LONG		
18	86275190	70377	1	SCR, 3/8-16 X 1.25 HHCS SS		
19	86008610	80595	2	FLANGE, BEARING PRESS STEEL		
20	86001030	09148	1	BEARING, BALL 3/4 BORE SPHERED		
21	86224320	730221	1	SPACER, .63 OD X .385ID X .64L		
22	86224810	730316	1	SPROCKET, DRIVE WHEEL STEERING		
23	86005630	57022	1	NUT, 3/8-16 HEX NYLOCK THIN SS		
24	86002750	270088	1	CHAIN, ISO 08B, 12.7MM PITCH		
25	86278940	87008	2	WASHER, 1/4 ID X 1-1/4OD		
26	86010780	87162	1	WASHER, 1/4 SPLIT LOCK PLTD		
27	86274330	70175	1	SCR, M6 X 20HHMS PLTD		
28	86279130	87083	2	WASHER, 5/16 SPLIT LOCK		
29	86253200	70806	1	SET SCR, M6 X 25 NP		SERVICE ONLY
-	86232780	279001	-	CHAIN, MASTERLINK 12.7MM		SERVICE ONLY

TANK



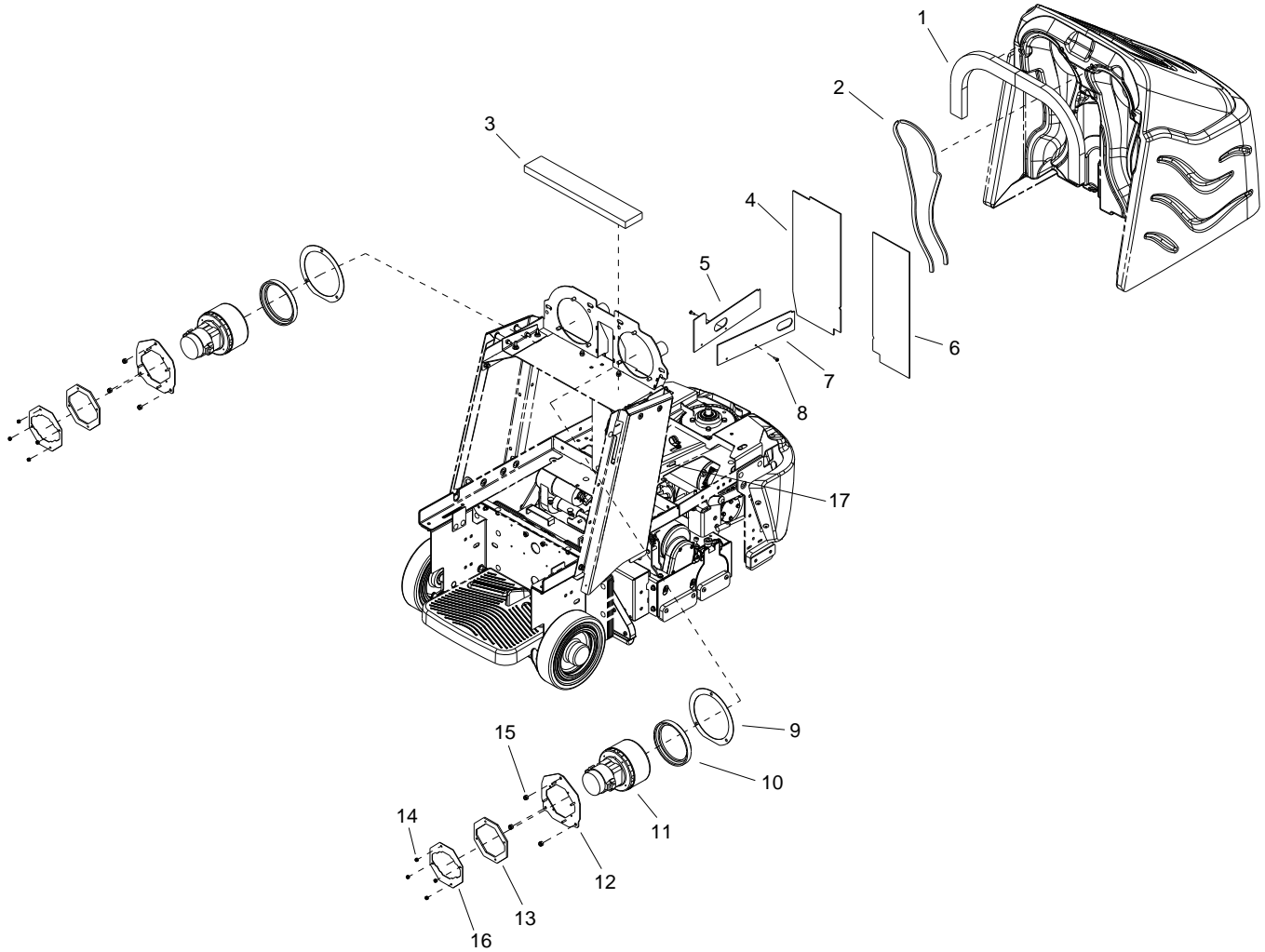
TANK

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86221900	54198	1	MANDREL, BAG		
2	86006470	67513	1	RETAINER, BACK BAG		
3	86001510	140712	1	BAG, INNER TANK, EXT.		
4	86003710	34447	1	FLAP, TANK DEBRIS		
5	86006480	67514	1	RETAINER, MAIN BAG		
6	86010630	87013	8	WASHER, 1/4 ID X 5/8 OD SS		
7	86271940	57299	8	NUT, 1/4-20 ACORN SS		
8	86246080	51368	1	LANYARD, 18.0 W/LOOP & EYE		
9	86003350	28063	1	DOME, COVER, 10 X 13		
10	86004010	35274	1	GASKET, DOME EDGE		
11	86310180	-	1	PLATE, STRAINER BASKET	*(8)	
12	86310190	-	1	BASKET, STRAINER, DOME	*(8)	
13	86006860	70403	6	SCR, #10 1/2 PPHST TYPE B SS		
14	86256100	730333	1	STRAINER, 3/4-MPT, 12 MESH		
15	86276840	70744	8	SCR, 1/4-20 X 1 PFH BLK SS		
16	86006760	70305	6	SCR, 5/16-18 X 3/4 HHCS GR5 PLTD		
17	86279630	87212	6	WASHER, .344 ID X 1.13 OD X .09 TPLT		
18	86064920	75473	1	TANK, DUAL VAC		
19	86275800	70546	6	SCR, 8 X 3/4 PFHT/S BLK ZINC		
20	86002620	260-64A	1	ACCESS COVER CLEAR 6" W/TRIM		
21	86004000	35255	1	GASKET, TANK LID		
22	86277560	70866	1	SCR, #6 X 1/2 SHT MTL SS		
23	86033570	78934	1	TUBE ASM		
24	86027800	34463	1	FLOAT, SINGLE SYSTEM		
25	86227120	04095	1	ADAPTER, FLOAT 30 DEG		
26	86199840	090-12A	1	FLOAT SCREEN CAGE ASSY		
27	86311740	-	1	HOSE, 2.0 X 37.0, DRAIN	**	
-	86004430	39707	1	HOSE ASM, 2 X 37.0 DRAIN		ASM, HOSE & CAP
28	86002380	20046	2	CLAMP, 2.25" WORM GEAR		
29	86002390	20063	1	CLAMP, 1.75" WORM GEAR X .312		
30	86257570	51407	1	TETHER, DRAIN HOSE, 1.5		
31	86264950	27746	1	CABLE TIE, .19W X 11.5L BLK	*(4)	
32	86309210	-	1	BAFFLE, FLOAT	*(4)	
33	98406760	-	-	KIT, DOME BASKET		
34	86328980	-	1	DRAIN CAP ASSEMBLY		

* SEE SERIAL NUMBER PAGE.

**CALL MANUFACTURER FOR SERIAL NUMBER

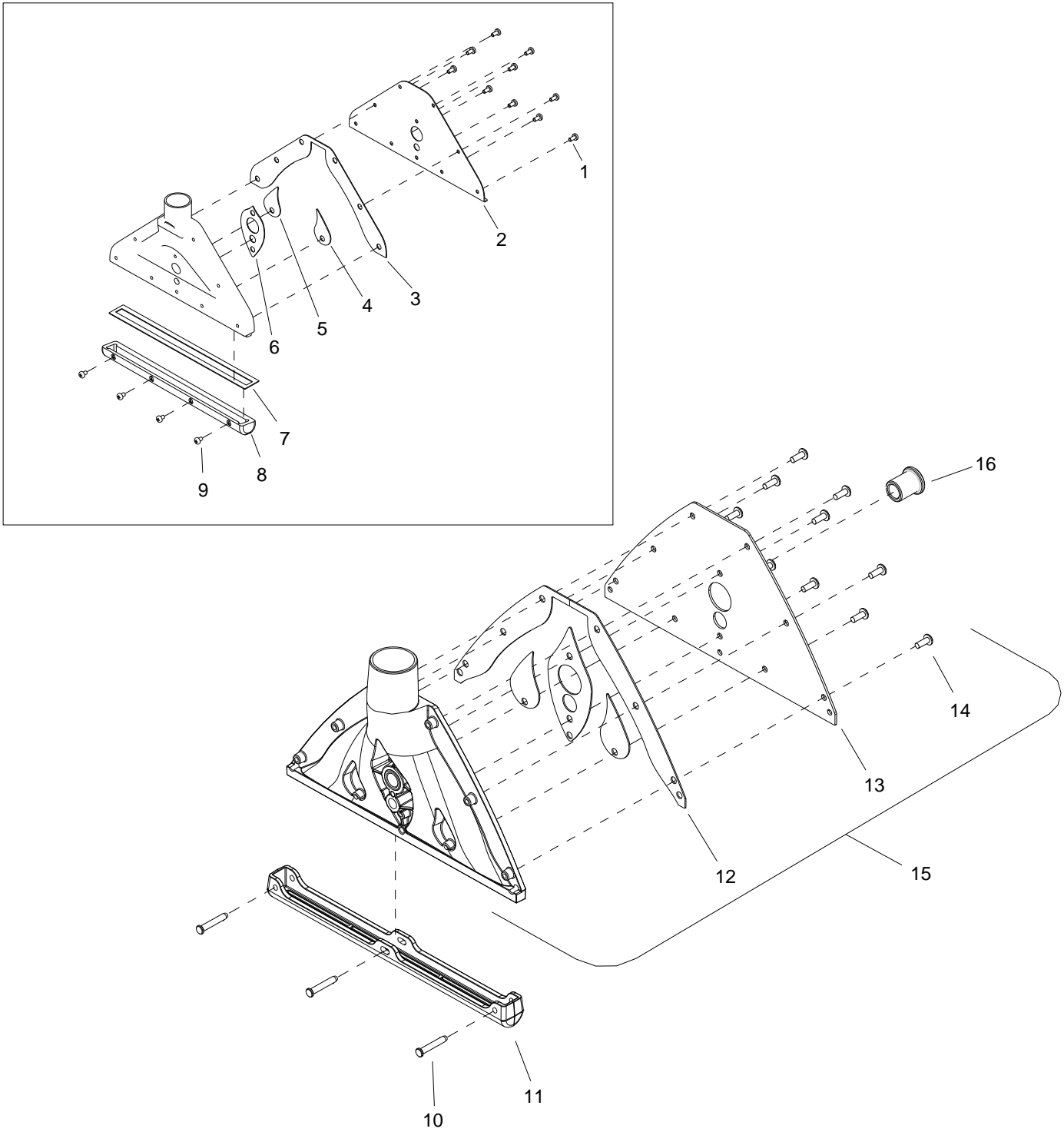
VACUUM



VACUUM

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86236540	34437	2	FOAM, POLY, 1/2 X 2 CURVED W/ADH		
2	86238040	36243	4	GASKET, .25 T X .75 W X 24 L		
3	86236530	34436	1	FOAM, POLYESTER, 1X3X18		
4	86090140	270139	1	VAC CHANNEL COVER		
5	86082110	62913	1	PLATE, CHAIN GUARD LT		
6	86064740	270100	1	VAC CHANNEL COVER		
7	86078650	36241	1	PLATE, CHAIN GUARD RT		
8	86274070	70086	4	SCR, 10-24 X 1/2 PPHMS		
9	86237890	35277	2	GASKET, VAC MOUNT		
10	86237880	35276	2	GASKET, 5.7 VAC MOTOR		
11	86005500	53809	2	VAC MOTOR 36VDC 3STG		
12	86083100	66439	2	PLATE, HORIZ FLANGE RT		
13	86083010	66428	2	PLATE, VAC SPACER		
14	86270990	57090	8	NUT, 10-32 HEX NYLOCK SS		
15	86270830	57023	6	NUT, 5/16-18 HEX NYLOCK SS		
16	86083030	66430	2	PLATE, VAC MOTOR ADAPT		
17	86270860	57028	4	NUT, 10-24 U-TYPE SPEED		

VACUUM SHOES



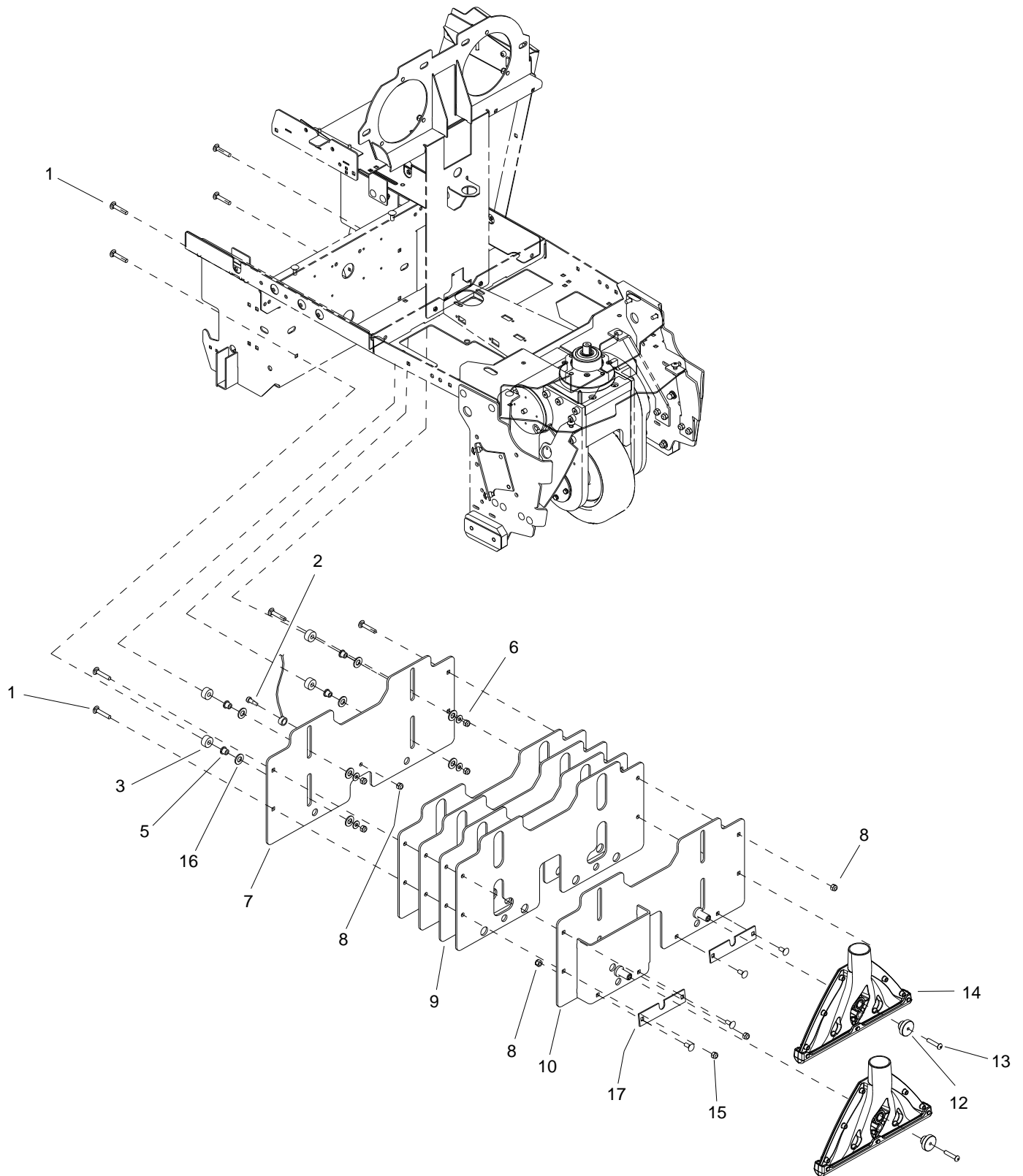
VACUUM SHOES

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86006580	70085	10	SCR, 1/4-20 X 1/2 PPHMS SS		
2	86075450	27246	1	COVER, VAC SHOE		
3	86237910	35279	1	GASKET, VAC SHOE OUTER		
4	86237920	35280	1	GASKET, 5.0 OD X 2.0 ID X .50T		
5	86237930	35281	1	GASKET, VAC SHOE RIGHT		
6	86237940	35282	1	GASKET, VAC SHOE CENTER		
7	86237950	35283	1	GASKET, VAC SHOE WIPER		
8	86295390	-	1	WIPER, VAC SHOE	*(5)	
9	86275950	70568	4	SCR, 10-24 X 3/8 PPHMS SS		
10	86293190	-	3	PIN, CLEVIS	*(9)	
11	86310740	-	1	WIPER, W/GASKET	*(9)	
12	86310750	-	1	ASSEMBLY, GASKETS, VAC SHOE	*(9)	
13	86296410	-	1	PLATE, VACSHOE	*(9)	
14	86302700	-	10	SCR, M6 X 16 PH, SS	*(9)	
15	86296550	-	1	VACSHOE, 13 IN	*(9)	
16	86296350	-	1	BUSHING, BRONZE, PM, 15.93 ID		

* SEE SERIAL NUMBER PAGE

NOTE: Two vacuum shoe assemblies per machine.

VACUUM SHOES LIFT



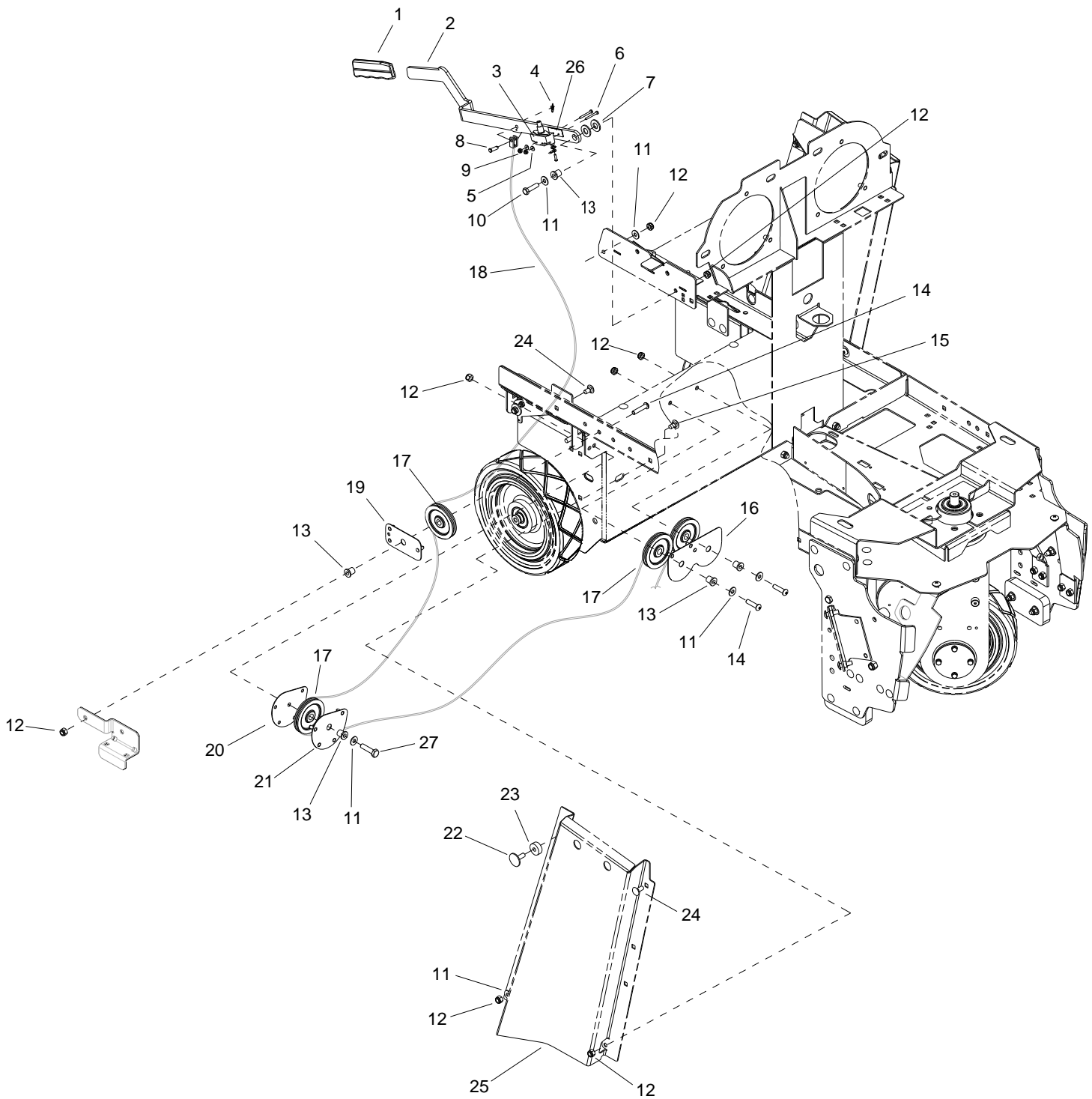
VACUUM SHOES LIFT

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86276690	70715	8	SCR, 5/16-18 X 1.75 CARR SS		
2	86278330	70641	1	SHOULDER BOLT, 3/8OD X 3/8L SS		
3	86224370	730335	4	SPACER, 1 OD X .391 ID X .500		
4	86259420	87232	4	WASHER, THRUST .51ID X 1 OD		
5	86228840	09124	4	BEARING, FLANGED .314 ID X .502 OD		
6	86010670	87029	4	WASHER, 5/16 FLAT SS		
7	86080420	62416	1	PLATE, LIFT SLIDE		
8	86270830	57023	13	NUT, 5/16-18 HEX NYLOCK SS		
9	86080410	62415	4	PLATE, LIFT, WEIGHT		
10	86093700	62424	1	PLATE, LIFT, ASSY		
11	OPEN	-	-	-		
12	86219690	48080	2	KNOB, 1.5 OD X 5/16-18		
13	86276650	70707	2	SCR, 5/16-18 X 1.5 BSHCS SS		
14	86310730	-	2	VAC SHOE	*(9)	
15	86276070	70593	4	SCR, 5/16-18 X 3/4 CARRIAGE SS		
16	86259400	87205	4	WASHER, THRUST 051 ID X 1 ODBRO	*(5)	
17	86295380	-	2	PLATE, VAC SPACER	*(5)	

* SEE SERIAL NUMBER PAGE

**CALL MANUFACTURER FOR SERIAL NUMBER

VACUUM SHOE LIFT HANDLE

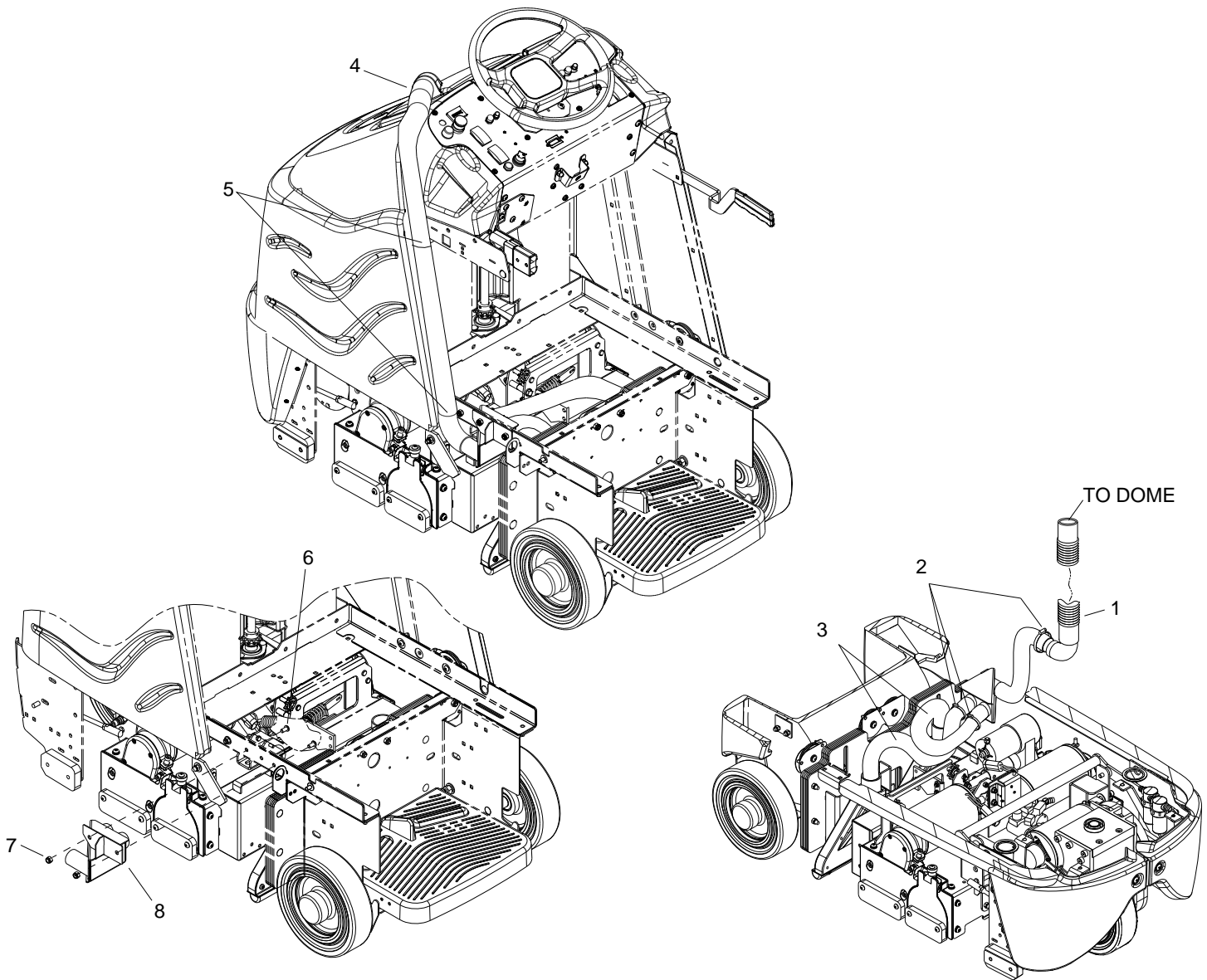


VACUUM SHOE LIFT HANDLE

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86238360	36215	1	GRIP, 3/16 X 1.0 ORANGE		
2	86076610	38319	1	HANDLE, LIFT		
3	86257120	72192	1	SWITCH, DPST SNAP ACTION		
4	86008650	80604	1	COTTER, 1/4" RING		
5	86279450	87161	2	WASHER, #6 FLAT SAE		
6	86277490	70851	2	SCR, #6-32 X 1.38 PPHMS		
7	86259420	87232	2	WASHER, THRUST .51D X 1 OD		
8	86009560	82053	1	PIN, CLEVIS 1/4 X .63 PLTD		
9	86270920	57049	2	NUT, 6-32 HEX NYLOCK SS		
10	86007020	70673	1	SCR, 5/16-18 X 1.25 HHCS SS NP		
11	86010670	87029	7	WASHER, 5/16 FLAT SS		
12	86270830	57023	9	NUT, 5/16-18 HEX NYLOCK SS		
13	86231150	09151	5	BUSHING FLANGE, .314 ID X .502 OD		
14	86276760	70724	3	SCR, 5-16 X 1.25 BSHCS SS		
15	86277460	70847	1	SCR, 5/16-18 X 5/8 BSHCS SS		
16	86083440	66824	1	PLATE, PULLEY MOUNTING, CENTER		
17	86223370	66464	4	PULLEY, PLASTIC 3.0 DIA		
18	86231570	270105	1	CABLE, LIFT		
19	86073600	66833	1	BRKT, PULLEY RETAINER, SINGLE		
20	86083500	66832	1	PLATE, PULLEY RETAINER, CORNER		
21	86083490	66831	1	PLATE, PULLEY MOUNT, CORNER		
22	86066130	89501	1	ASM, HANDLE RETAINER		
23	86254280	730331	1	SPACER, 1.00 OD X .32 ID X .375		
24	86276070	70593	2	SCR, 5/16-18 X 3/4 CARRIAGE SS		
25	86091820	140807	1	BRKT, SIDE CHANNEL R		
26	86295860	-	1	INSULATOR, SWITCH	*(6)	
27	86274720	70264	1	SCR, 5/16-18 X 1.50 HHCS SS		

* SEE SERIAL NUMBER PAGE

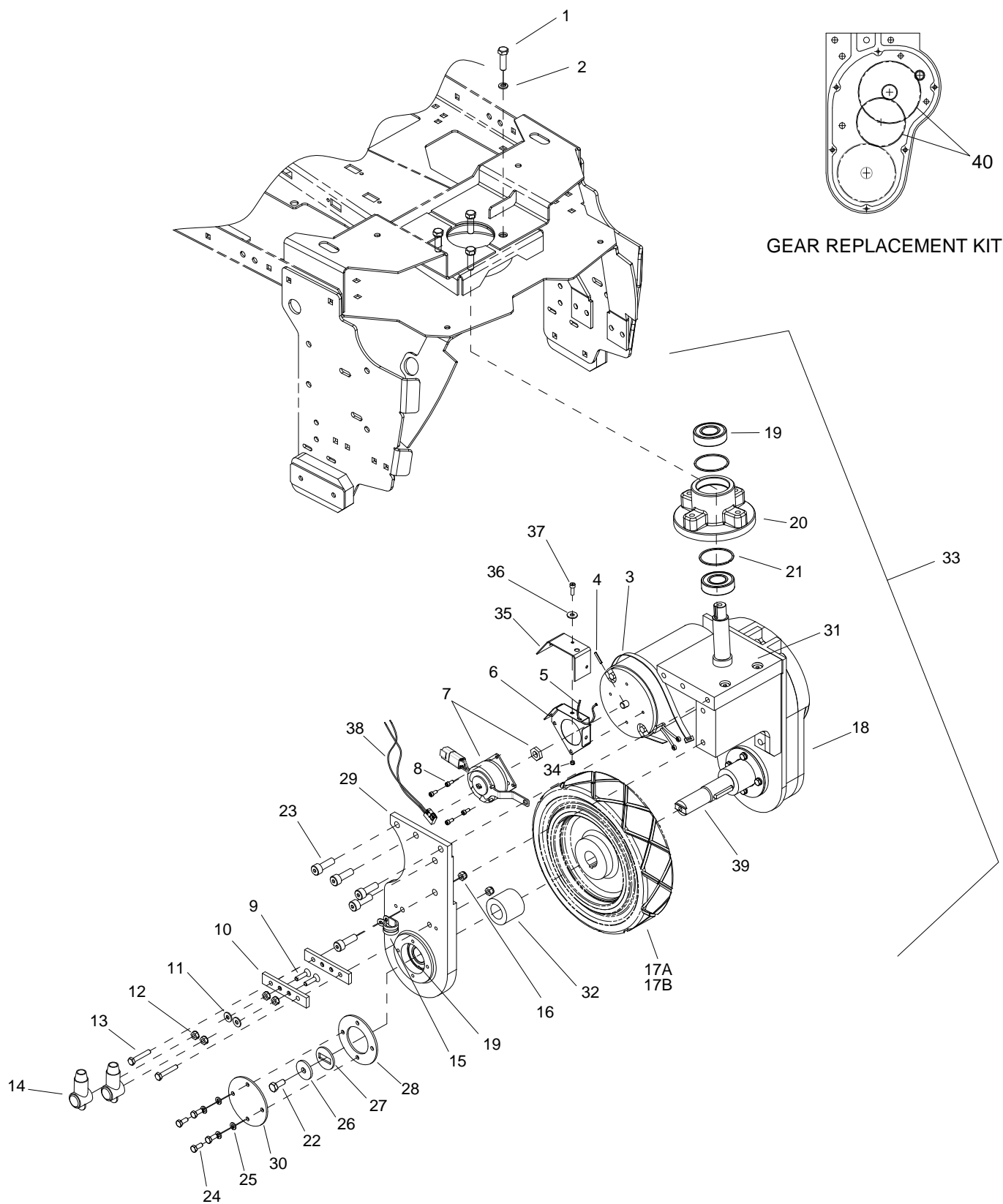
VACUUM HOSES



VACUUM HOSES

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86240320	39729	1	HOSE ASM, 1.5 BLK VAC X 36		
2	86177050	03-000176	3	CLAMP, HOSE #20		
3	86320330	-	2	HOSE ASM, 1.5 BLK VAC X 12		
4	86003010	27759	1	CUFF, HOSE 1.5" BLK A 2161		
5	86264950	27746	2	CABLE TIE, .19 W X 11.5L BLK		
6	86277460	70847	2	SCR, 5/16-18 X 5/8 BSHCS SS		
7	86270830	57023	2	5/16 HEX NYLOCK SS		
8	86093200	54212	1	MANIFOLD		

WHEEL-FRONT DRIVE, GEAR

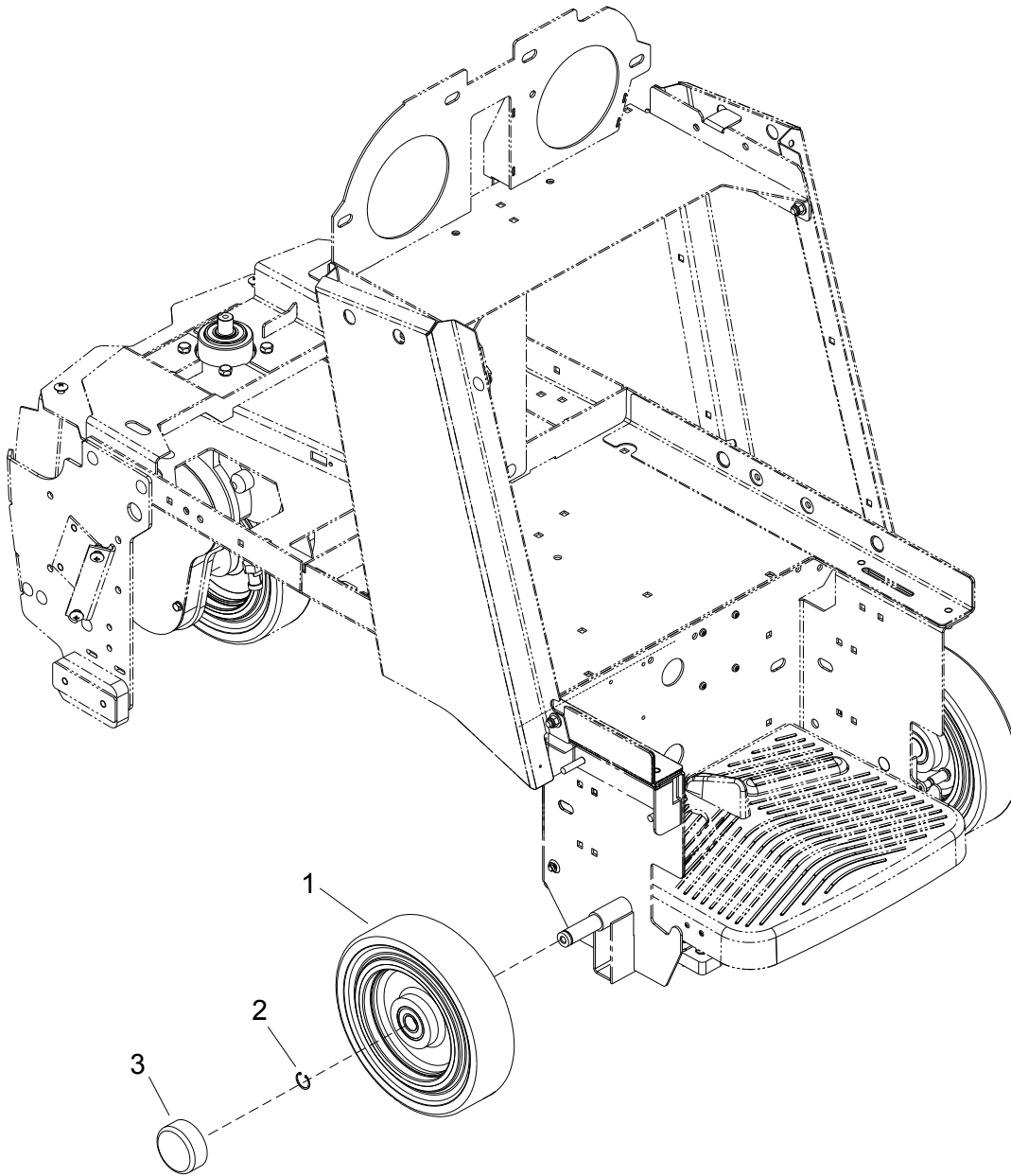


WHEEL-FRONT DRIVE, GEAR

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86275190	70377	4	SCR, 3/8-16 X 1.25 HHCS SS		
2	86010790	87163	4	WASHER, 3/8 SPLIT LOCK PLTD		
3	86002830	27196	1	CABLE TIE, .375 X 24.7		
4	86006170	66031	1	PIN, ROLL 1/8" X 3/4"L		
5	86264930	27050	1	CABLE TIE, 3.5" UL/CSA		
6	86301950	-	1	PLATE, BRAKE SPACER	*(7)	
7	86001740	140816	1	BRAKE, 36 VDC W/CONNECTOR		
8	86273340	00-000289	4	SCR, CAP 8-32 X 3/8 SHCS SS		
9	86006840	70390	2	SCR, 1/4-20 X 1 FHCS PLTD		
10	86257490	76155	2	TERMINAL MOUNT		
11	86010630	87013	2	WASHER, 1/4 ID X 5/8 OD SS		
12	86005710	57105	4	NUT, 1/4-20 HEX W/STAR WASHER		
13	86273740	70010	2	SCR, 1/4-20 X 1.5 HHCS		
14	86008920	80889	2	BOOT, RUBBER TERM. ISOLATOR		
15	86233410	81270	1	CLAMP, 3/4 IDA CUSHION .406 DIA		
16	86005810	57245	2	NUT, 1/4-20 HEX NYLOCK SS		
17A	86259940	89275	1	WHEEL, 10 X 2.5 W/KEYWAY, GRY, NT		
17B	86259920	89273	1	WHEEL, 10 X 2.5 W/KEYWAY, GRY		OPTION
18	86317190	-	1	GEAR BOX DRIVE UNIT HELICAL		
19	86223980	09134	3	SEALED BALL BRNG, 25MM X 52MM		
20	86219420	41510	1	HUB STEERING		
21	86223480	67450	2	RING, 52MM INTERNAL SNAP		
22	86136640	70262	1	SCR, M8-1.25 X 20 HHMS PLTD		
23	86318830	-	10	SCR, M10 X 30 SHCS		
24	86277340	70830	4	SCR, M6 X 15 HHCS BLK		
25	86279690	87243	4	WASHER, M6 SPLIT LOCK BLK		
26	86279710	87245	1	WASHER, M8 (2THK X 26 OD)		
27	86225810	87506	1	WASHER, ANTI-ROTATION		
28	86222720	620037	1	PLATE, BEARING RETAINER		
29	86222760	620041	1	PLATE, DRIVE YOKE RH		
30	86222770	620042	1	PLATE, BEARING COVER		
31	86224020	730233	1	SHAFT ASM, DRIVE PIVOT		
32	86224440	730387	1	SPACER, 25.51 ID X 45 OD X 39.1 L		
33	86317200	-	1	DRIVE MOTOR ASSEMBLY HELICAL		WHEEL NOT INCLUDED
-	86216210	53820	-	BRUSH SET MOTOR, 53810 86005510		
34	86270990	57090	3	NUT, 10-32 HEX NYLOCK SS	*(7)	
35	86301960	-	1	SKIRT, BRAKE	*(7)	
36	86010650	87018	3	WASHER, #10 X 9/16 OD	*(7)	
37	86274290	70162	3	SCR, 10-32 X 3/8 PPHMS SS	*(7)	
38	86320870	-	1	SWITCH, 36V BRAKE		
39	86214990	03126	1	AXLE, DRIVE		
40	98411260	-	1	KIT, DRIVE GEAR		

* SEE SERIAL NUMBER PAGE

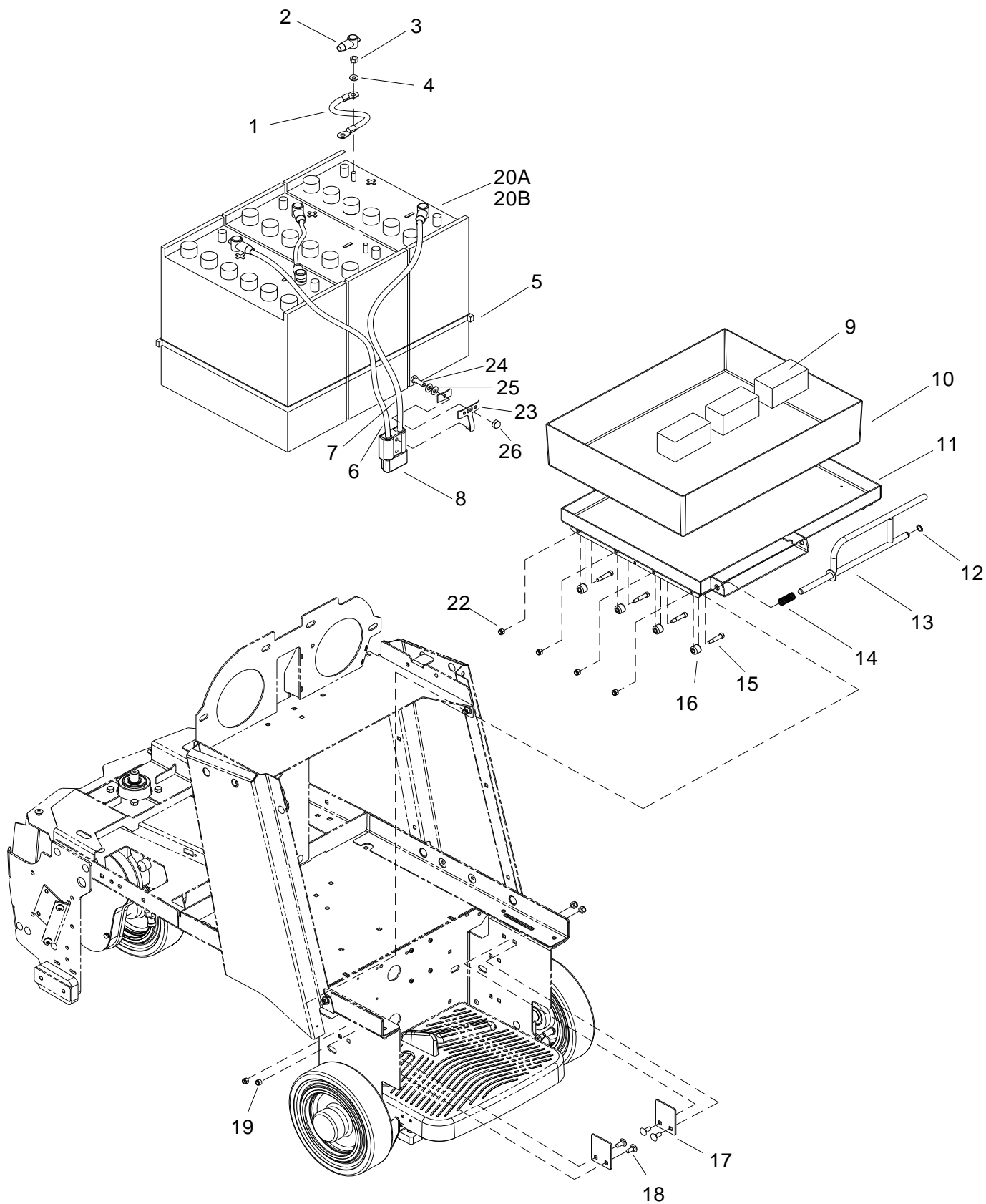
WHEEL-REAR



WHEEL-REAR

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86259950	89276	2	WHEEL, 10X2.5X.787ID BEARINGS		
2	86008710	80623	2	RING, 3/4" EXT SNAP H-D		
3	86232130	17309	2	CAP, 2.75 ID X 1.0 L BLK VINYL		

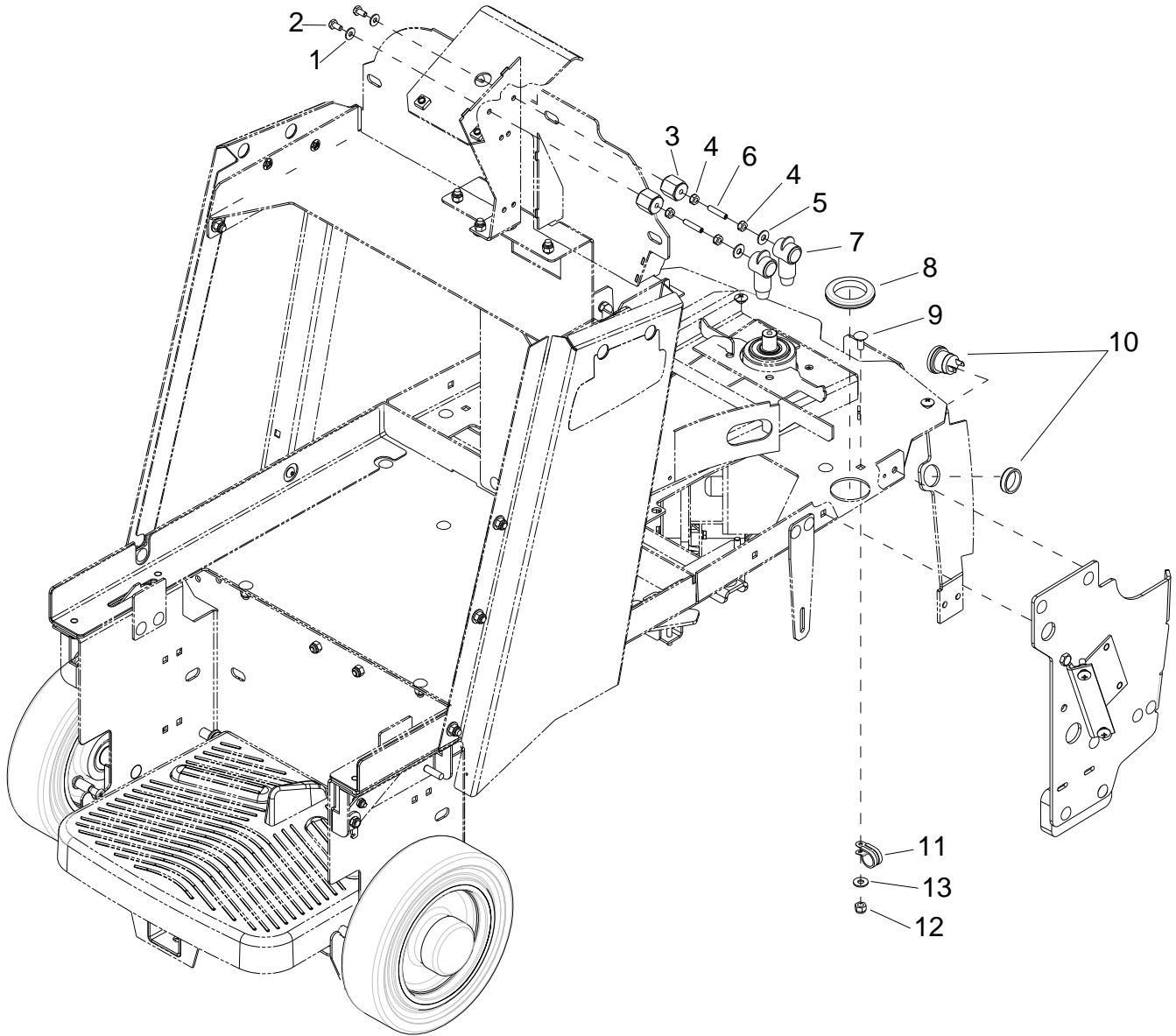
WIRING-BATTERIES



WIRING-BATTERIES

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1A	86260200	80872	2	WIRE, 4X14.5BK 5/16RINGX5/16RING		
1B	86002510	23125	2	WIRE, 4X15 BCLAMPXBCLAMP		
2	86008920	80889	6	BOOT, RUBBER TERM. ISOLATOR		
3	86271910	57295	6	NUT, 5/16-18 FLEXLOCK		
4	86010670	87029	6	WASHER, 5/16 FLAT SS		
5	86264960	27915	2	CABLE TIE, .375 X 43"		
6A	86260610	880836	1	WIRE, 4X25RD CTERM X 3/8RING		
6B	86002570	23190	1	WIRE, 4X27 RD BCLAMP X CTERM		
7A	86260230	80876	1	WIRE, 4X30 BK CTERM X 3/8RING		
7B	86002580	23191	1	WIRE, 4X27 BK BCLAMP X CTERM		
8	86008760	80682	1	CONN, 175 DCA GRY W/O TERMS		
9	86229700	08071	3	BLOCK, 3.0 X 1.5 X 1.5		
10	86008300	78242	1	TRAY, BATTERY LINER		
11	86008410	78568	1	TRAY, BATTERY		
12	86272810	67132	1	RING, 1/2 EXT. SNAP H-D		
13	86092910	51396	1	LATCH ROD, BATTERY TRAY		
14	86254990	730313	1	SPRING, COMP, 63ODX3.5LX.074W		
15	86278150	70117	8	SHOULDER BOLT, 5/16 OD X 1.0 L		
16	86259910	89265	8	WHEEL, BATTERY TRAY		
17	86088790	78571	2	TRAY, STANDARD STOP		
18	86276070	70593	4	SCR, 5/16-18 X 3/4 CARRIAGE SS		
19	86270830	57023	4	NUT, 5/16-18 HEX NYLOCK SS		
20A	86228430	10023	3	BATTERY, 12V, 205AH		
20B	86283410	10030	3	BATTERY, 12V, 225AH		
21	86284090	02456	1	CHARGER, 36V, 20A, 115V, C175		NOT SHOWN
22	86005810	57245	8	NUT, 1/4-20 HEX NYLOCK SS		
23	86233360	28038	1	CLAMP, CABLE KIT SY945		
24	86273980	70066	1	SCREW, 10-32 X 3/4 PPHMS SS		
25	86010650	87018	1	WASHER, 10 X 9/16 OD		
26	86270890	57034	1	NUT, ACORN 10-32		

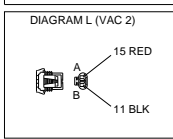
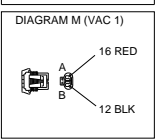
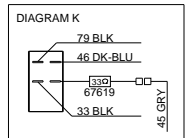
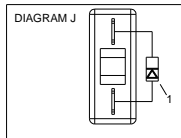
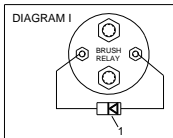
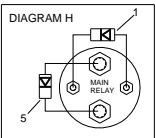
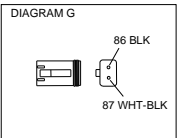
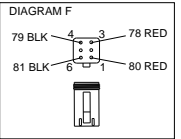
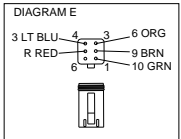
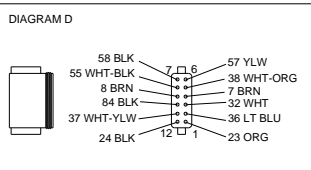
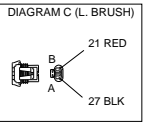
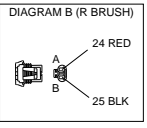
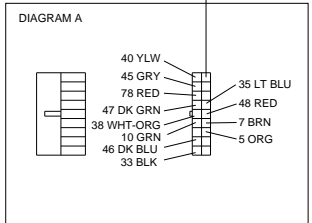
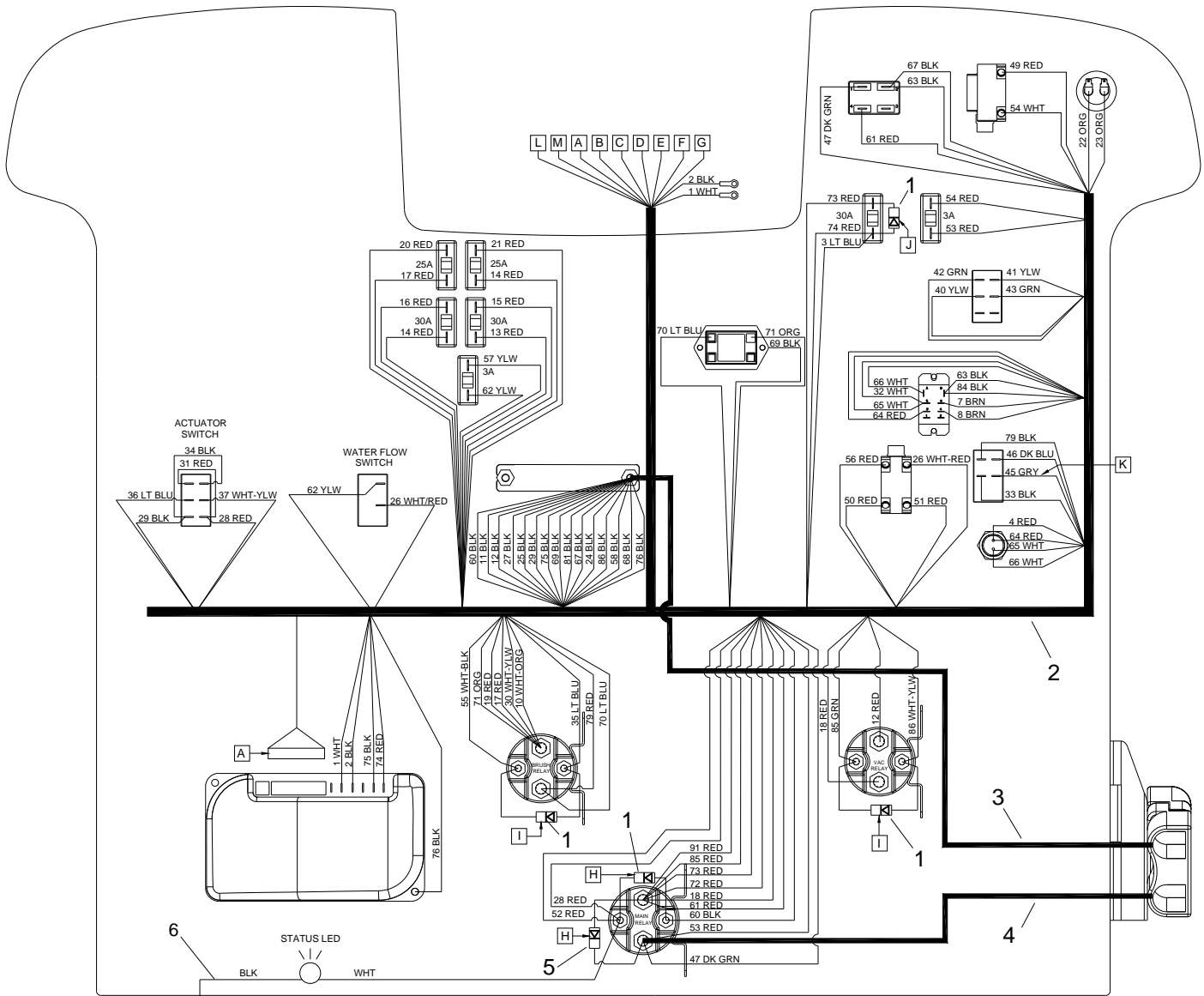
WIRING-COMPONENTS



WIRING-COMPONENTS

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86010780	87162	2	WASHER, 1/4 SPLIT LOCK PLTD		
2	86273830	70020	2	SCR, 1/4-20 X 1/2 HHCS SS NP		
3	86255910	73659	2	STANDOFF, 1/4-20 X 1.0 HEX INS		
4	86005710	57105	4	NUT, 1/4-20 HEX W/STAR WASHER		
5	86010630	87013	2	WASHER, 1/4 ID X 5/8 OD SS		
6	86006850	70393	2	SET SCR, 1/4-20 1.25L		
7	86008920	80889	2	BOOT, RUBBER TERM. ISOLATOR		
8	86238500	81427	1	GROMMET, 1.703IDX2.5ODX.125GRV		
9	86276070	70593	1	SCR, 5/16-18 X 3/4 CARRIAGE		
10	86239720	41520	1	HORN, 108DB MINIATURE PIEZO		
11	86233410	81270	1	CLAMP, 3/4 DIA CUSHION .406DIA		
12	86270830	57023	1	NUT, 5/16-18 HEX NYLOCK SS		
13	86010670	87029	1	WASHER, 5/16 FLAT SS		

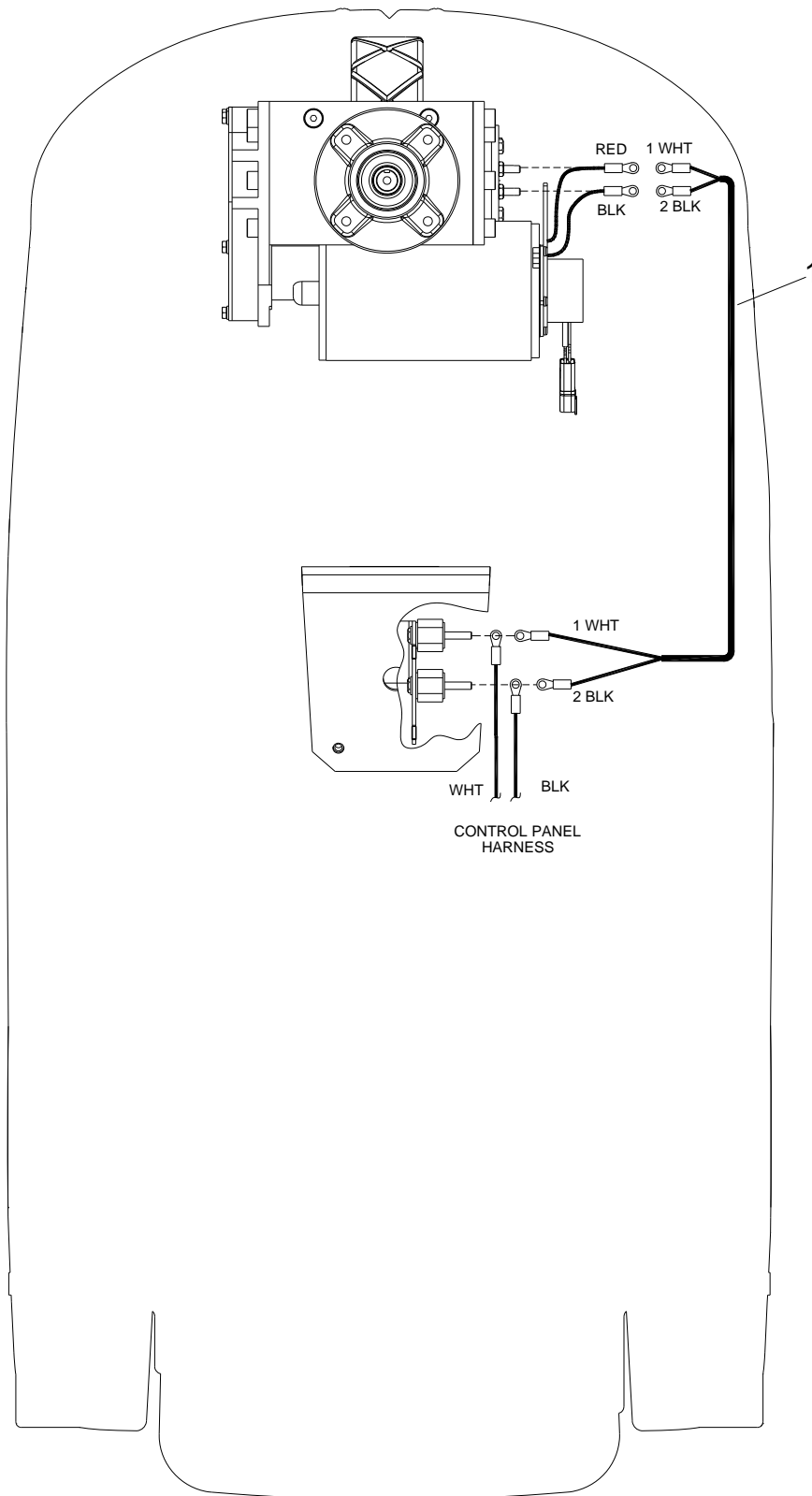
WIRING-CONTROL PANEL



WIRING-CONTROL PANEL

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86261210	29204	4	DIODE ASM, 76008 X 76008		
2	86239250	41559	1	HARNESS, CNL PNL EXTRACTOR		
3	86010860	880353	1	WIRE, 4X20 BK CTERM X5/16REING		
4	86260540	880426	1	WIRE, 4X13 RD C.TERM X 5/16RING		
5	86261250	29273	1	DIODE ASM, FAST RECOVERY		
6	86311210	-	1	LIGHT ASM, INDICATOR, CODE		

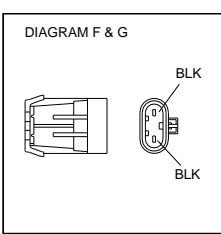
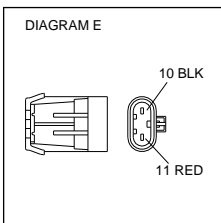
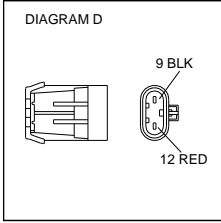
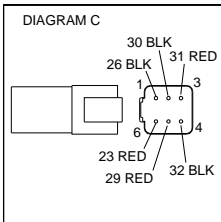
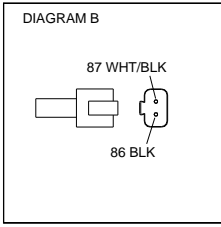
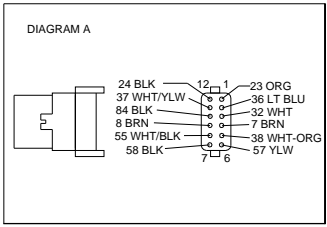
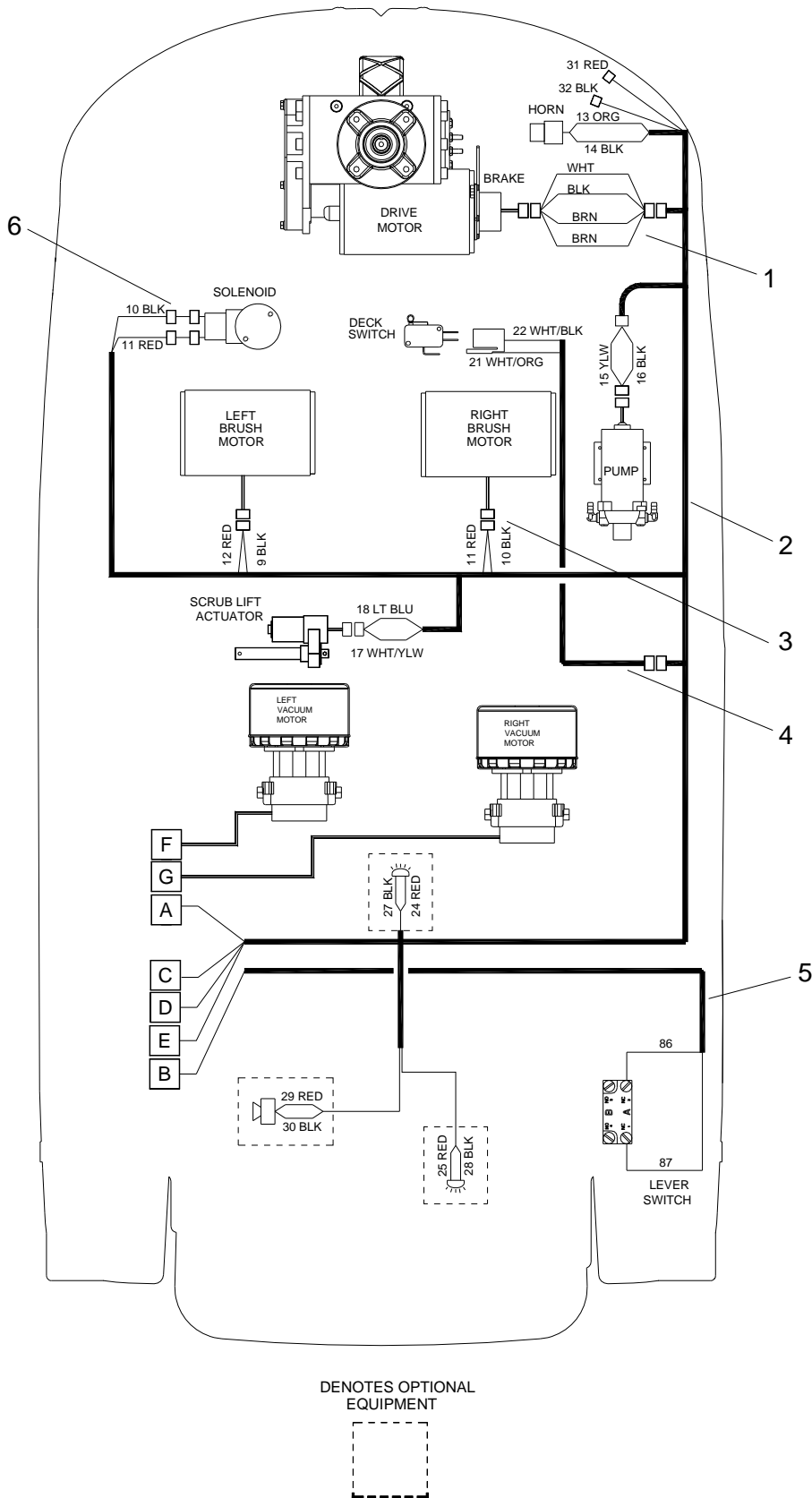
WIRING-DRIVE MOTOR



WIRING-DRIVE MOTOR

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86239120	41522	1	HARNESS, CHARIOT PROPEL		

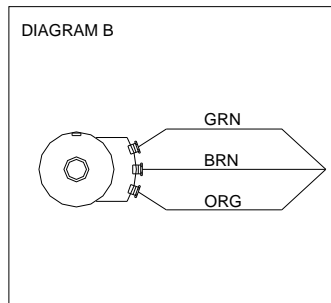
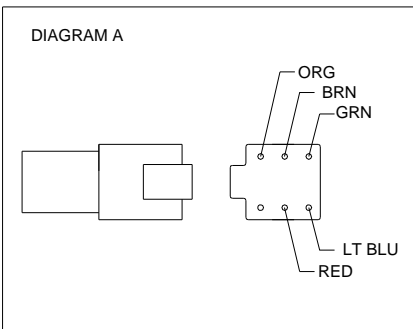
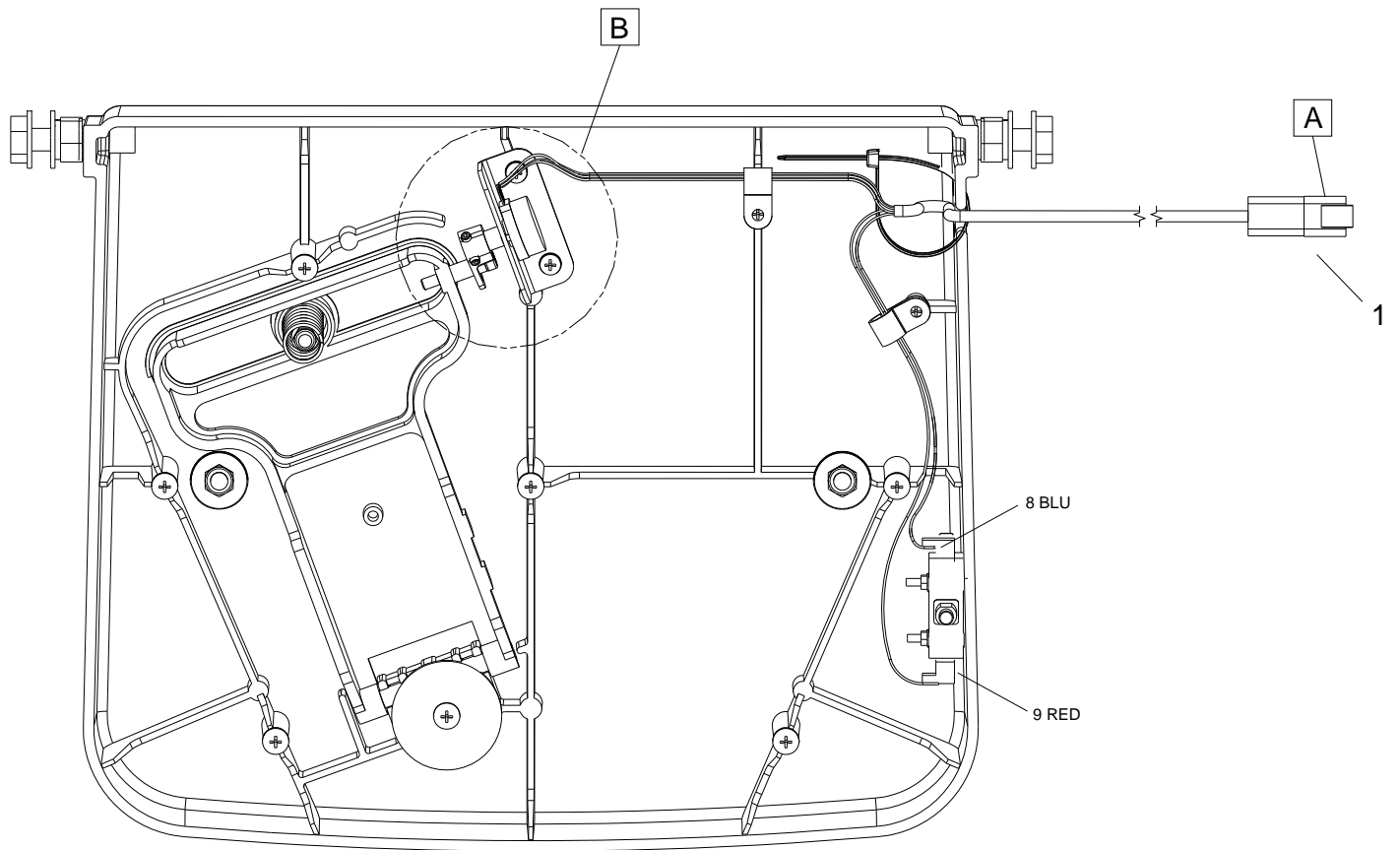
WIRING-MAIN HARNESS



WIRING-MAIN HARNESS

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86239170	41528	1	HARNESS, BRAKE		
2	86239130	41523	1	HARNESS, MAIN		
3	86260400	880212	REF	WIRE ASM, REV POLARITY JUMPER		
4	86239160	41527	1	HARNESS, DECK SWITCH		
5	86239260	41561	1	HARNESS, EXTRACTOR LEVER		
6	86260620	881000	2	WIRE, 2" BLK/16 76042 X 76042		

WIRING-PEDAL PLATFORM-From Serial Number (11*)

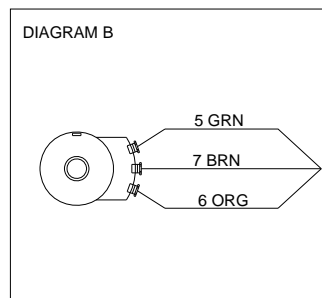
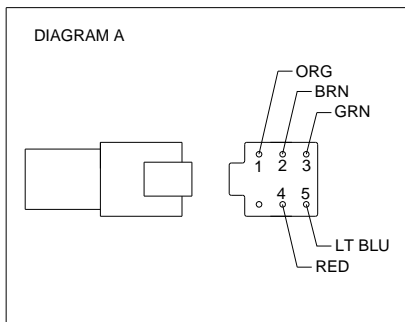
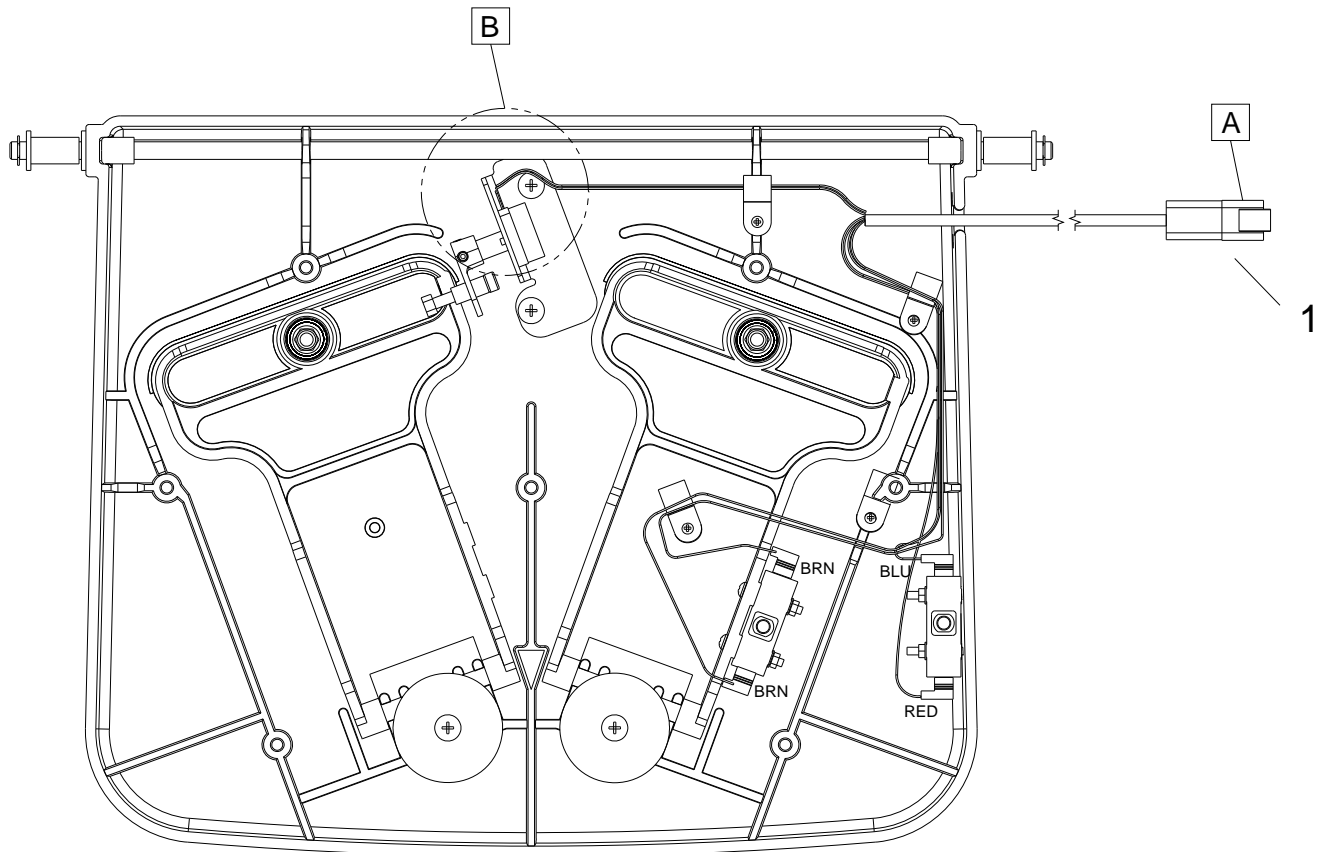


WIRING-PEDAL PLATFORM-From Serial Number (11*)

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86315100	-	1	HARNESS, PEDAL		

***SEE SERIAL NUMBER PAGE.**

WIRING-PEDAL PLATFORM-To Serial Number (11*)

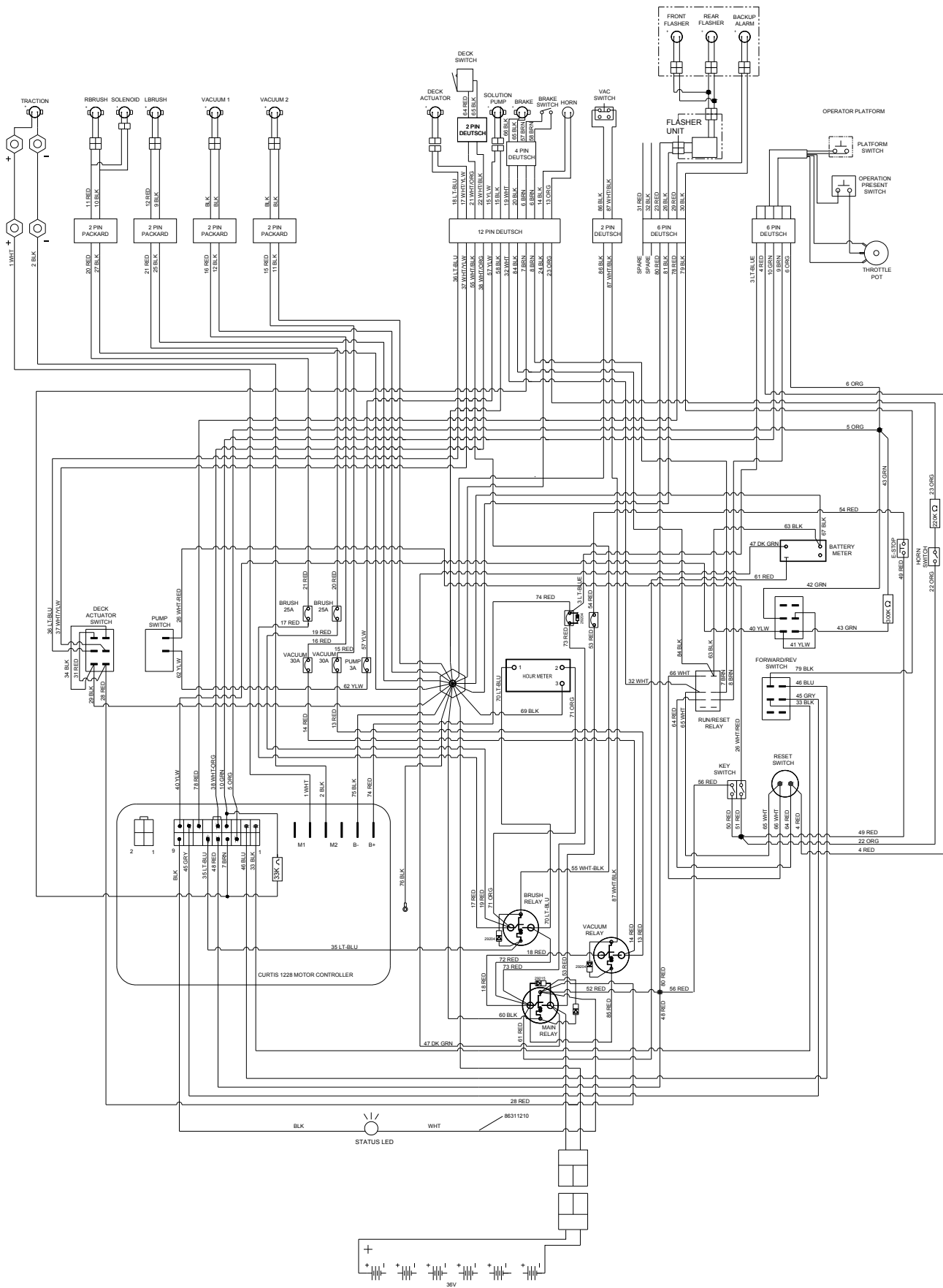


WIRING-PEDAL PLATFORM-To Serial Number (11*)

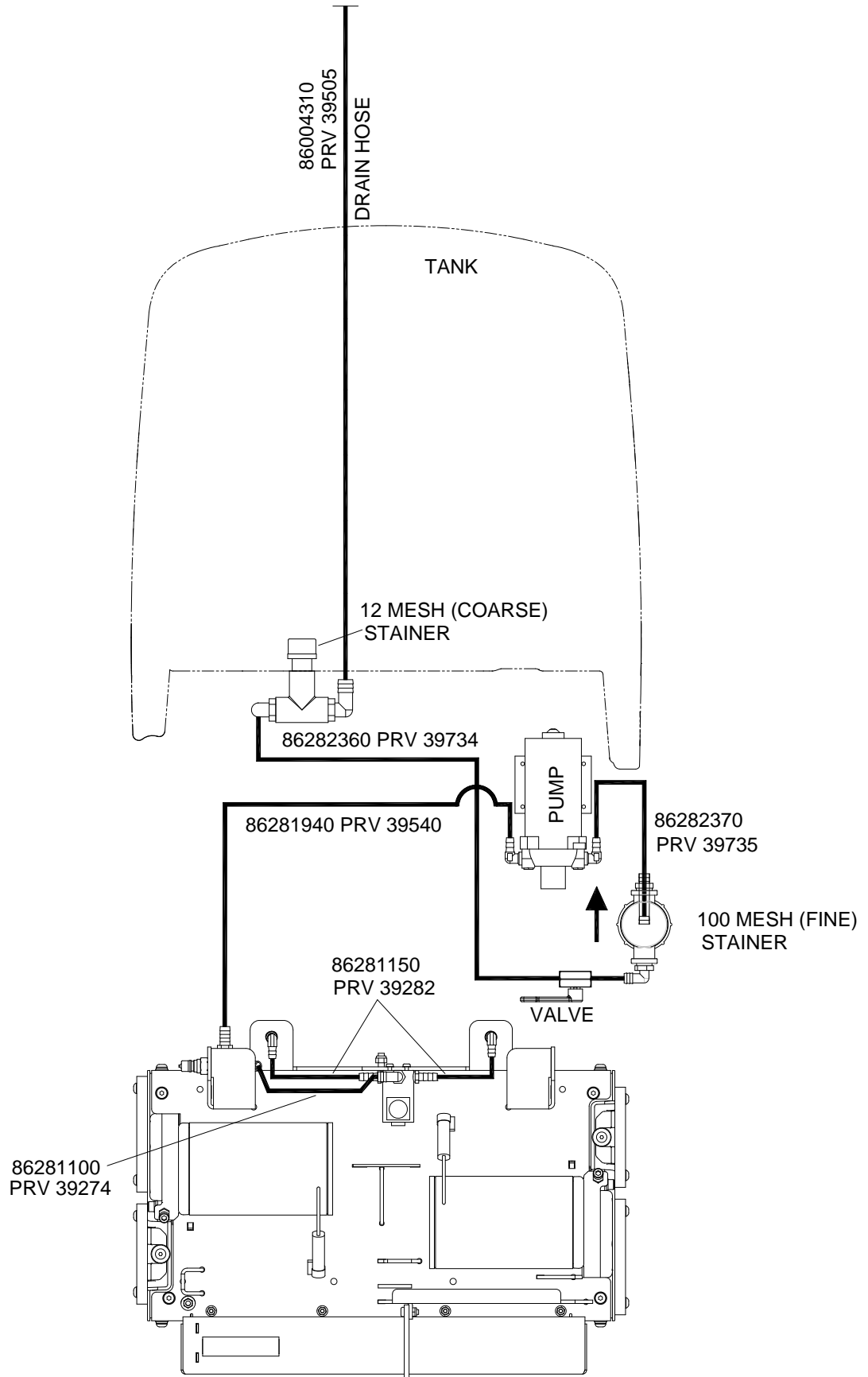
REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86218810	23717	1	HARNESS, TWISTER PEDAL		

***SEE SERIAL NUMBER PAGE.**

WIRING DIAGRAM



HOSE DIAGRAM



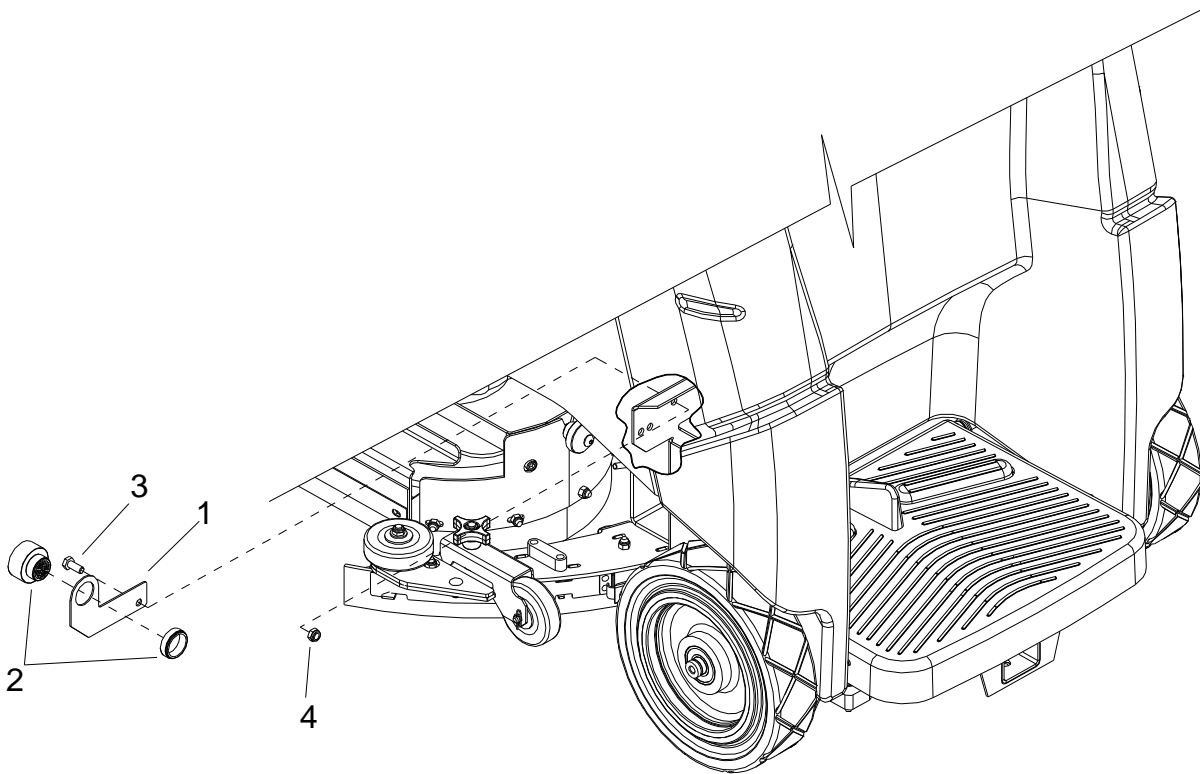
SUGGESTED SPARE PARTS

PART NO.	PRV NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
86001910	14606	BREAKER, 30A 50VDC CIRCUIT		
86002000	14717	BREAKER, 3 AMP		
86251410	67506	RELAY, 15A 36V MINI		
86007140	72130	SWITCH, SPST 2-POSITION ROCKER		
86007190	72161	SWITCH KEY DPST		
86007240	72190	SWITCH, SEALED PB ROUND		
86001740	140816	BRAKE, 36 VDC W/CONNECTOR		
86002730	270085	CHAIN, ISO 08B 12.7 MM PITCH		
86001730	140804	BREAKER, 18A 250VDC, 50VDC		
86007130	72128	SWITCH, DPDT 2-POSITION ROCKER		
86006370	67315	RELAY, 36VDC 100AMP HVY DUTY		
86028890	84098	VALVE, 115V CMD SOLENOID SVC		
86252980	730369	SCREEN, 100 MESH		
86241730	44107	JET, MINI PROMAX 9506		



chariot
OPTIONS

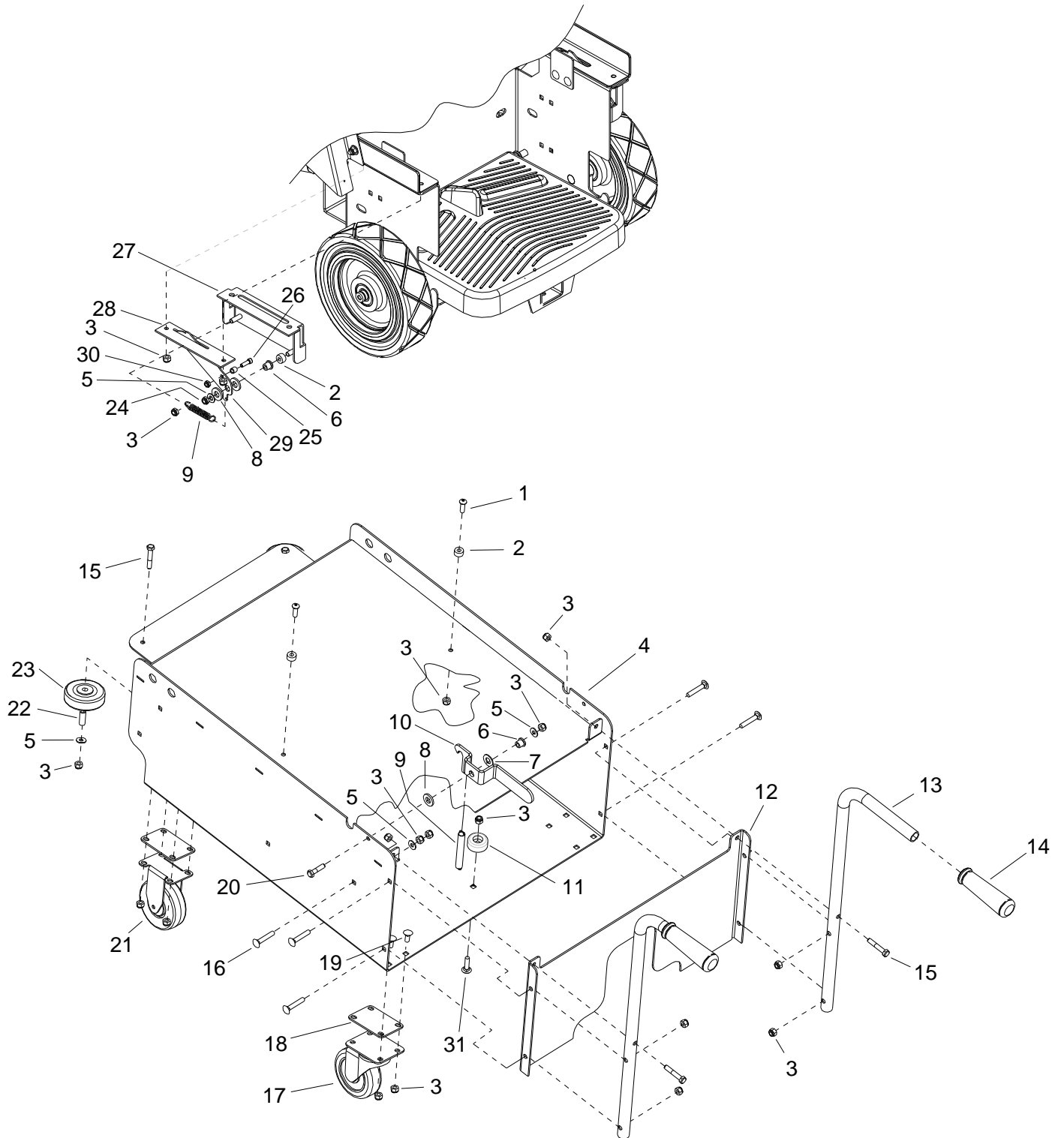
BACK-UP ALARM - OPTION



BACK-UP ALARM - OPTION

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86071140	140817	1	BRKT, BACK UP ALARM		
2	86231500	80882	1	BUZZER, PIEZO 6-28VCD		
3	86276780	70728	1	SCR, 5/16-18 X 3/4 HHCS SS		
4	86271840	57285	1	NUT, 5/16-18 HEX NYLOCK THN SS		

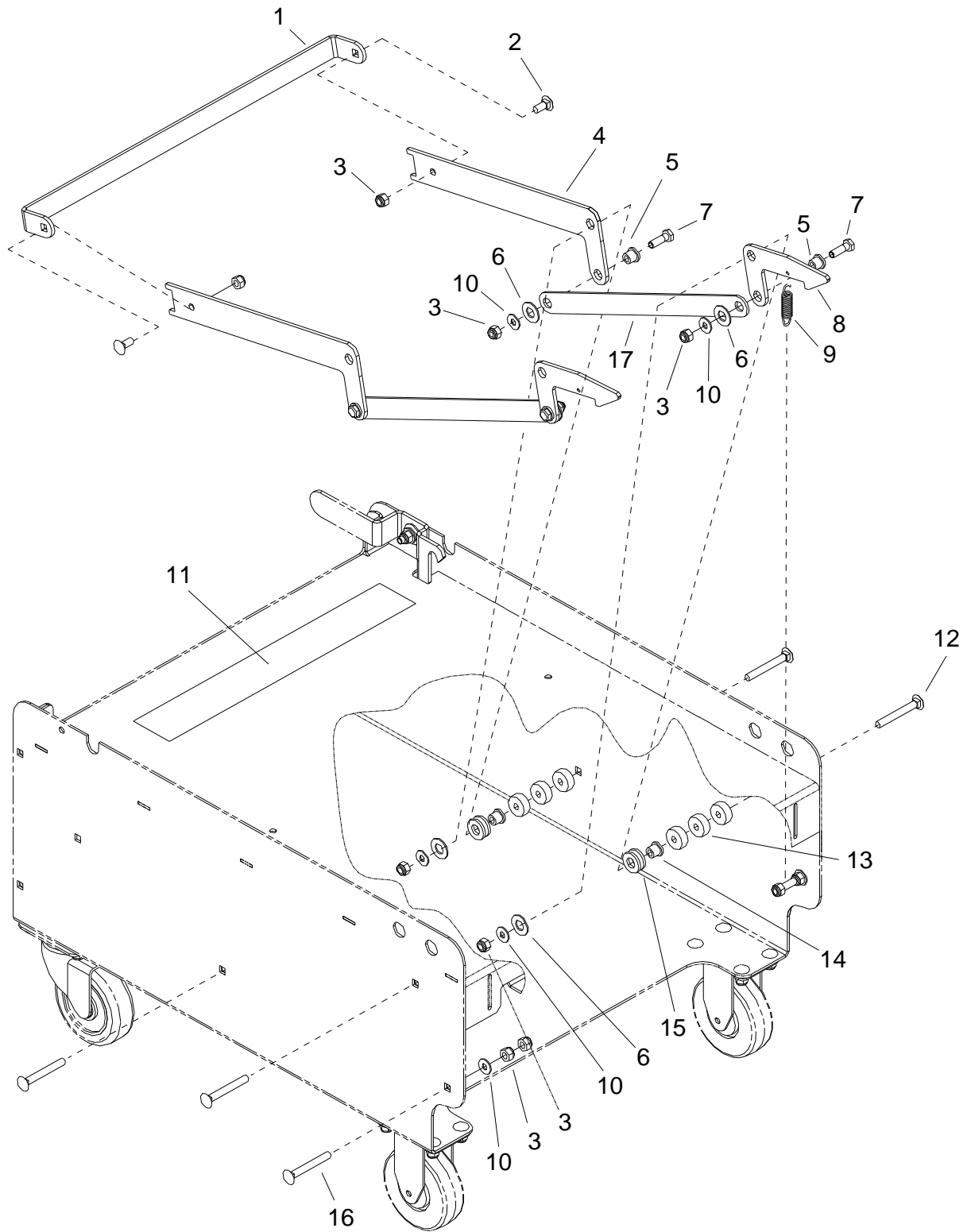
BATTERY CART - OPTION



BATTERY CART - OPTION

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86006930	70514	2	SCR, 5/16-18 X 1.00 BSHCS SS		
2	86254290	730338	4	SPACER, 10D X .343ID, .5 LG		
3	86270830	57023	33	NUT, 5/16-18 HEX NYLOCK SS		
4	86077010	41517	1	HOUSING, BATTERY CART		
5	86010670	87029	7	WASHER, 5/16 FLAT SS		
6	86228840	09124	3	BEARING, FLANGED .314D X .502OD		
7	86259410	87206	1	WASHER, THRUST, .51 ID X 1 OD X .063		
8	86259400	730331	4	WASHER, THRUST .51 ID X 1 OD		
9	86254890	730018	3	SPRING, EXT, .50D X 4.0L		
10	86068490	140019	1	BRKT, TRAY CATCH		
11	86231090	80809	1	BUMPER, RUBBER 5/16" ID X 1.50		
12	86083120	66442	1	PLATE, BATTERY CART BACK		
13	86076600	38318	2	HANDLE, BATTERY CART		
14	86004070	36196	2	GRIP, POLISHER HANDLE		
15	86276790	70732	4	SCR, 5/16-18 X 1.75 HHCS SS		
16	86276690	70715	7	SCR, 5/16-18 X 1.75 CARR SS		
17	86199430	040-03	2	CASTER SWIVEL 4" 250# CPCTY		
18	86078890	620020	8	PLATE, CASTER SPACER		
19	86277130	70795	16	SCR, 5/16-18 X 1.00 CARRIAGE SS		
20	86007020	70673	1	SP SCR, 5/16-18 X 1.25 HHCS SS NP		
21	86232590	18032	2	CASTER, 4" HARD RUBBER RIGID		
22	86001350	140390	2	BUSHING, SPANNER .435 X 1.10		
23	86011020	89202	2	WHEEL, 3" DIA CUSHION RUBBER		
24	86271840	57285	2	NUT, 5/16-18 HEX NYLOCK THIN SS		
25	86008130	73958	2	SPACER, 3/8OD X .62W X .312L, AL		
26	86274730	70265	2	SCR, 1/4-20 X 3/4 SHCS PLTD		
27	86070790	140737	2	BRKT, BATTERY LOCK MOUNT		
28	86087340	730339	2	SPACER, LATCH GUIDE		
29	86070800	140738	2	BRKT, BATTERY TRAY LOCK		
30	86271870	57290	2	NUT, 1/4-20 HEX NYLOCK THIN SS		
31	86276070	70593	1	SCR, 5/16-18 X 3/4 CARRIAGE SS		

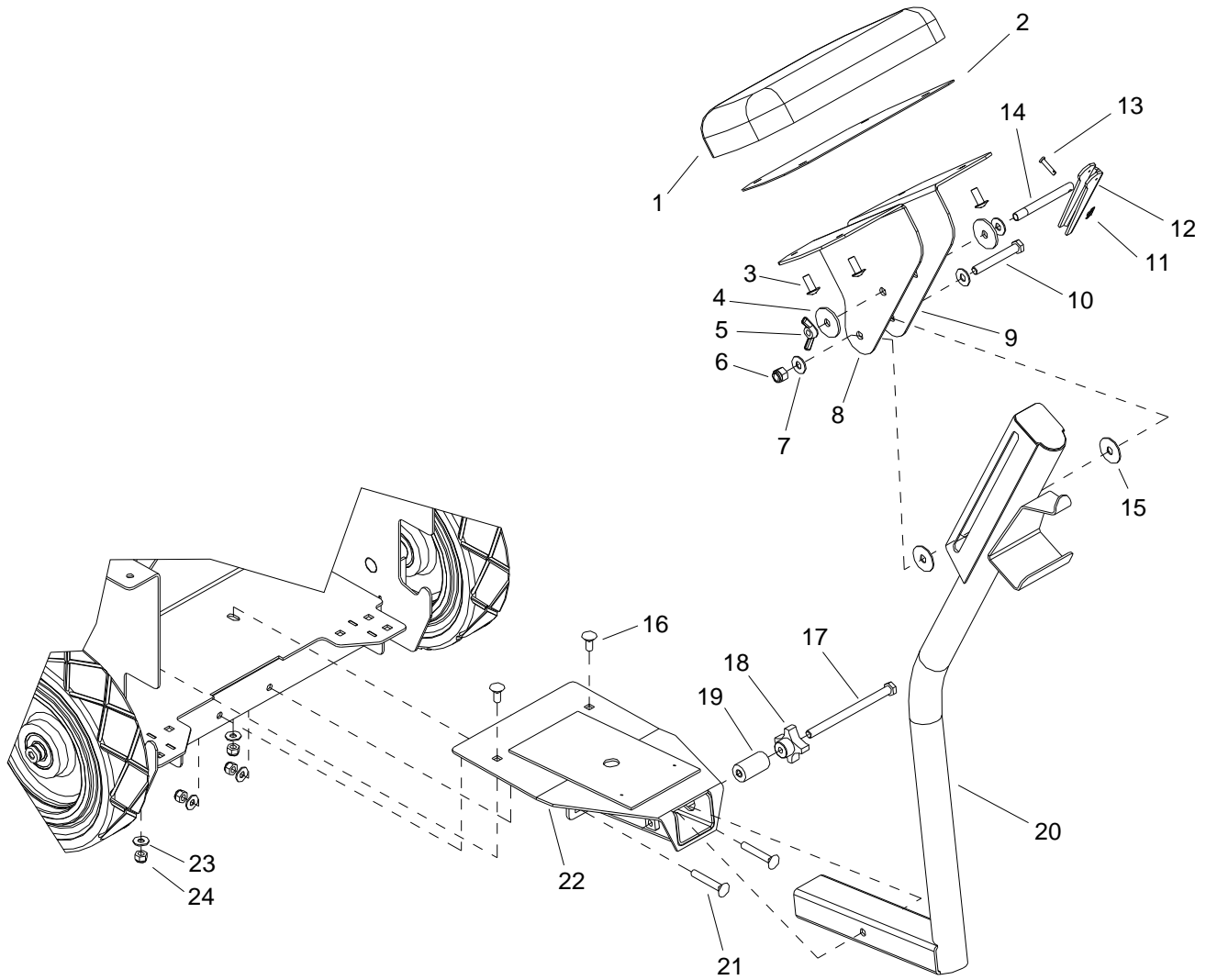
BATTERY CART - OPTION



BATTERY CART - OPTION

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86078330	66478	1	PEDAL, BATTERY CART		
2	86276070	70593	2	SCR, 5/16-18 X 3/4 CARRIAGE SS		
3	86270830	57023	12	NUT, 5/16-18 HEX NYLOCK SS		
4	86087800	730307	2	STIFFENER, PEDAL, BATTERY CART		
5	86228840	09124	4	BEARING, FLANGED .314ID X .502OD		
6	86259410	87206	6	WASHER, THRUST .51 ID X 1 OD X .063		
7	86006560	70083	4	SCR, 5/16-18 X 1 HHCS SS		
8	86077140	51404	2	LATCH, BATTERY CART		
9	86226830	73268	2	SPRING, EXT .68D X 3.00L X .098W		
10	86010670	87029	10	WASHER, 5/16 FLAT SS		
11	86244280	500934	1	LABEL, BATTERY CAR OPERATION		
12	86276060	70590	4	SCR, 5/16-18 X 2.5 CARR GR5		
13	86254280	730331	12	SPACER, 1.00 ODX .32ID X .375		
14	86231150	09151	4	BUSHING FLANGE, .314 X .502 OD		
15	86259400	87205	8	WASHER, THRUST .51 ID X 1 OD		
16	86276690	70715	16	SCR, 5/16-18 X 1.75 CARR SS		
17	86077530	51403	2	LINKAGE, LATCH, BATT CART		

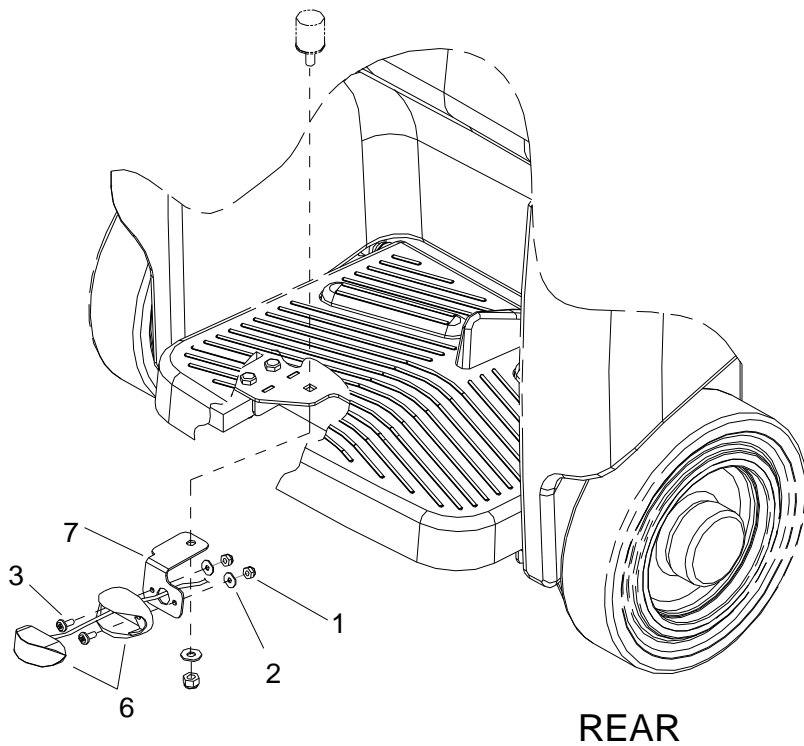
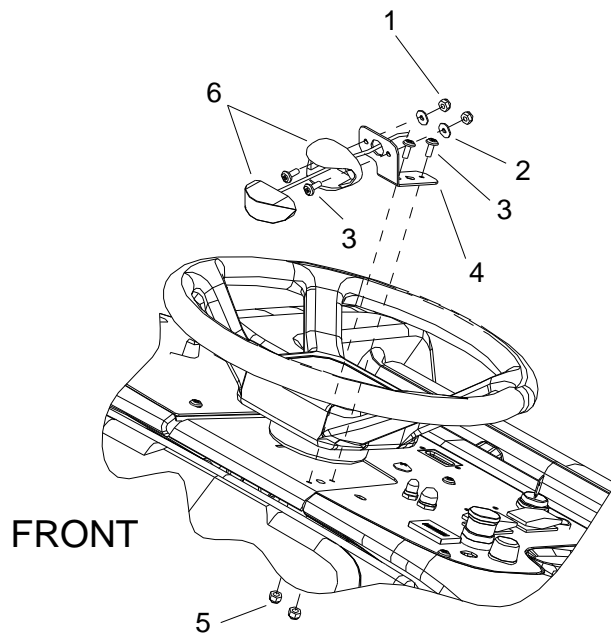
SEAT - OPTION



SEAT - OPTION

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86248390	730324	1	PAD, REAR REST		
2	86082640	629995	1	PLATE, SEAT COVER		
3	86276890	70752	4	SCR, 5/16-18 X 3/4 PTHMS SS		
4	86279460	87164	2	WASHER, 1/2 SPLIT LOCK		
5	86270710	01-000277	1	NUT, WING 3/8-16		
6	86271930	57297	1	NUT, 3/8-16 HEX NYLOCK SS		
7	86278910	87003	3	NUT, 3/8-16 HEX NYLOCK SS		
8	86070830	140742	1	BRKT, LEFT REAR SEAT		
9	86070840	140743	1	BRKT, RIGHT REAR SEAT		
10	86277710	730347	1	SCR, 3/8-16 X 2.75 HHCS SS		
11	86008650	80604	1	COTTER, 1/4" RING		
12	86246320	51142	1	LEVER, HANDLE LOCK		
13	86272300	66133	1	PIN, CLEVIS 3/16 X .88 PLTD		
14	86251860	66481	1	ROD, ARM HANDLE LOCK 4" LG		
15	86279620	87200	2	WASHER, .41D X 1.3OD NYLON		
16	86276070	70593	2	SCR, 5/16-18 X 3/4 CARRIAGE SS		
17	86277510	70857	1	SCR, 3/8-16 X 5.0 HHCS SS FT		
18	86009200	81535	1	KNOB, 3/8-16 4 PRONG ALUM		
19	86254300	730350	1	SPACER, SEAT LOCK		
20	86094000	05246	1	SEAT MOUNT POST		
21	86276710	70717	2	SCR, 5/16-18 X 2.0 CARRIAGE SS		
22	86093790	05247	1	RECEIVER ASSY, SEAT MOUNT		
23	86010670	87029	4	WASHER, 5/16 FLAT SS		
24	86270830	57023	4	NUT, 5/16-18 HEX NYLOCK SS		

WARNING LIGHTS - OPTION



WARNING LIGHTS - OPTION

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86270990	57090	4	NUT, 10-32 HEX NYLOCK SS		
2	86010650	87018	4	WASHER, #10 X 6/16 OD		
3	86276820	70740	4	SCR, 10-32 X 1/2 PTHMS BLK		
4	86071490	140871	1	BRKT, UPPER WARNING LIGHT		
5	86270990	57090	2	NUT, 10-32 HEX NYLOCK SS		
6	86246200	51454	2	LED AMBER LIGHT, 12V		
7	86071500	140872	1	BRKT, LOWER WARNING LIGHT		

SERIAL NUMBERS

REF. NO.	MODEL: SERIAL #
1	CE24, CEE24, CE24X: 1000168053
2	CE24, CEE24, CE24X: 1000170494
3	CE24, CEE24, CE24X: 10060210000143
4	CE24: 1006014000161 , CEE24: 1006016000023
5	CE24, CEE24, CE24X: 10060140000002
6	CE24, CEE24, CE24X: 10060140000046
7	CE24, CEE24, CE24X: 10060210000104
8	CE24: 10060140000256 , CEE24: 10060160000026 , CE24X: 10060150000057
9	CE24: 10060140000283 , CEE24: 10060160000026
10	CE24: 10060140000333 , CEE24: 10060160000027
11	CE24: 10060140000402 , CEE24: 10060160000029