

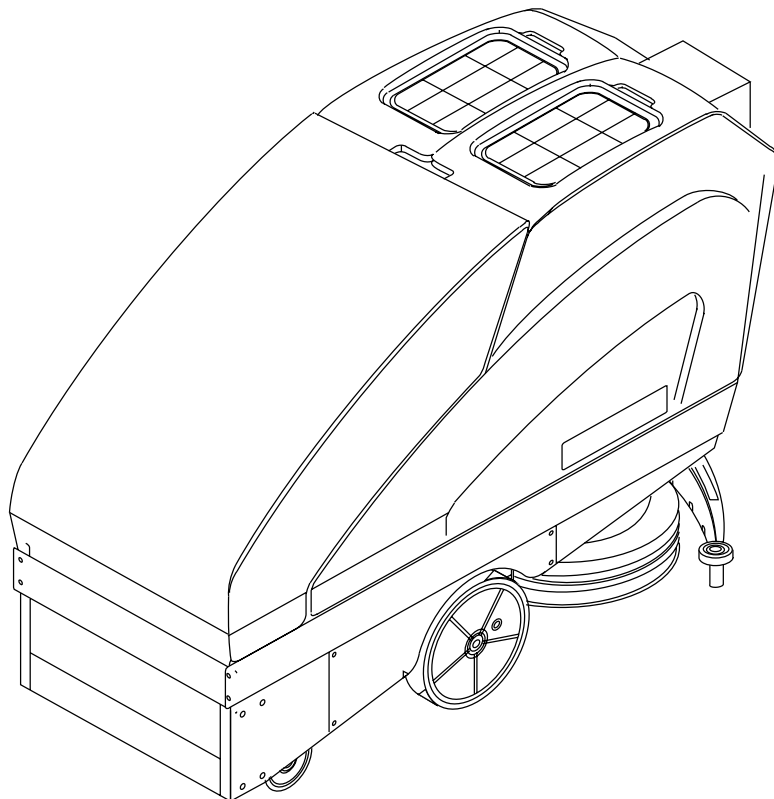


# 265XP

Automatic Floor Scrubber

**Model No.:**  
**608338**  
**608339 – Pac**  
**609246 – Can. Pac**

**Operator and Parts Manual**



**NOBLES**  
12875 RANSOM STREET  
HOLLAND MI 49424 U.S.A.

**CUSTOMER SERVICE: 1-800-365-6625**  
**FAX: 1-800-678-4240**

**608370**  
**Rev. 00 (09-99)**

# OPERATION

This manual is furnished with each new model. It provides necessary operation and machine maintenance instructions.

**Read this manual completely and understand the machine before operating or servicing it.**

This machine will provide excellent service. However, the best results will be obtained at minimum costs if:

- The machine is operated with reasonable care.
- The machine is maintained regularly - per the machine care instructions provided.
- The machine is maintained with supplied or equivalent parts.

## MACHINE DATA

Please fill out at time of installation for future reference.

Model No.- \_\_\_\_\_ Install. Date - / /

Serial No.- \_\_\_\_\_

©1999 Tennant Company

Printed in U.S.A.

Nobles is a registered United States trademark of Tennant Company

## TABLE OF CONTENTS

SAFETY PRECAUTIONS .....	3	Drive Carriage Assembly .....	18
CONTROLS AND INSTRUMENTS .....	5	Machine Frame (Front) .....	20
OPERATOR RESPONSIBILITY .....	6	Machine Frame (Rear) .....	22
RECEIPT OF MACHINE .....	6	Scrubber Head Assembly .....	24
BATTERY INSTALLATION .....	6,41	Scrubber Head Mounting .....	26
BRUSH AND PAD DRIVER INSTALLATION .....	6	Squeegee Assembly .....	27
SQUEEGEE TOOL INSTALLATION .....	7	Squeegee Arm Assembly .....	28
FILLING THE SOLUTION TANK .....	7	Control Console Assembly .....	30
MACHINE OPERATION .....	7	Tank Assembly .....	32
ES™ Switch (Option) .....	8	Electrical Panel .....	34
CLEANING WITH THE MACHINE .....	8	Electrical Panel (cont'd.) .....	36
OPERATING TIPS .....	8	Battery Group .....	37
EMPTYING THE TANKS .....	9	BREAKDOWNS .....	38
SQUEEGEE ADJUSTMENTS .....	9	Pad Motor & Drive Motor .....	38
SQUEEGEE BLADE REPLACEMENT .....	10	OPTIONS .....	39
OTHER USES FOR THE MACHINE .....	10	Wall Roller Kit .....	39
ROUTINE MAINTENANCE .....	11	ES™ Option Components .....	40
MAINTENANCE CHART .....	11	ELECTRICAL DIAGRAMS .....	42
DAILY MAINTENANCE .....	12	Wiring Diagram .....	42
BEFORE EACH USE .....	12	Ladder Diagram .....	43
AFTER EACH USE .....	12		
BATTERY MAINTENANCE .....	12		
CHARGING THE BATTERIES .....	13		
WEEKLY MAINTENANCE .....	13		
MONTHLY MAINTENANCE .....	13		
QUARTERLY MAINTENANCE .....	14		
OPTIONAL KITS AND ATTACHMENTS .....	14		
TROUBLE SHOOTING .....	15		
SPECIFICATIONS .....	17		
STANDARD PARTS .....	18		

## SAFETY PRECAUTIONS

This machine is intended for industrial and commercial use. It is suited to scrub hard floors in an indoor environment and is not constructed for any other use. Use only recommended pads, brushes and cleaning detergents.

The following safety alert symbols are used throughout this manual as indicated in their description.

**⚠ WARNING:** To warn of hazards or unsafe practices which could result in severe personal injury or death.

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

The following information signals potentially dangerous conditions to the operator or equipment:

### FOR SAFETY:

1. **Do not operate machine:**
  - Unless trained and authorized.
  - Unless operation manual is read and understood.
  - In flammable or explosive areas unless designed for use in those areas.
2. **Before starting machine:**
  - Make sure all safety devices are in place and operate properly.
3. **When using machine:**
  - Go slow on inclines and slippery surfaces.
  - Use care when reversing machine.
  - Always follow safety and traffic rules.
  - Report machine damage or faulty operation immediately.
4. **Before leaving or servicing machine:**
  - Stop on level surface.
  - Turn off machine.
5. **When servicing machine:**
  - Avoid moving parts. Do not wear loose jackets, shirts, or sleeves.
  - Block machine tires before jacking machine up.
  - Use hoist or jack of adequate capacity to lift machine.
  - Disconnect battery connections before working on machine.
  - Wear protective gloves when handling batteries or battery cables.
  - Avoid contact with battery acid.
  - Use manufacturer supplied or approved replacement parts.

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

**⚠ WARNING:** Flammable materials can cause an explosion or fire. Do not use flammable materials in tank(s).

**⚠ WARNING:** Flammable materials or reactive metals can cause explosion or fire. Do not pick up.

**⚠ WARNING:** Moving parts. Turn off power before working on machine.

### IMPORTANT NOTICE TO OWNERS:

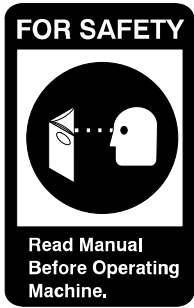
The foam filled tire option must be installed in place of the solid tires when the machine is used consistently on grouted tile floors to prevent tile damage and excessive machine component wear. Foam filled tires should also be used on soft surfaces such as sports floors to reduce wheel marking of surface.

**ATTENTION:** Usage of solid tires in the above conditions will void the warranty on drive system components.

# OPERATION

The following safety labels are mounted on the machine in the locations indicated. If these or any label become damaged or illegible, install new labels in their place.

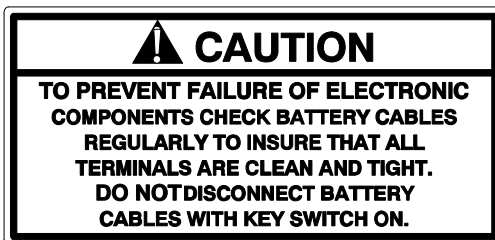
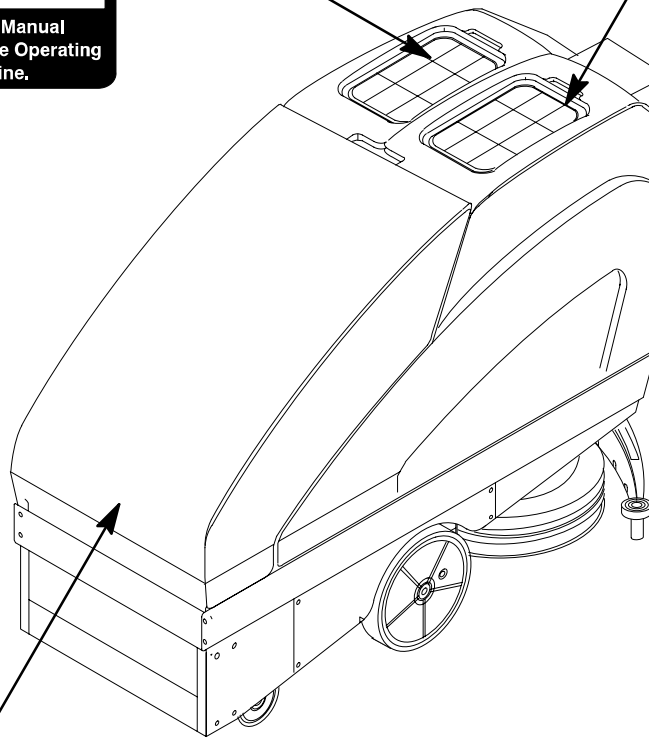
FOR SAFETY LABEL –  
LOCATED ON THE LID OF  
THE RECOVERY TANK.



FLAMMABLE SPILLS LABEL –  
LOCATED ON THE LID OF THE  
SOLUTION TANK.



MOVING PARTS LABEL –  
LOCATED ON THE  
REAR PANEL.

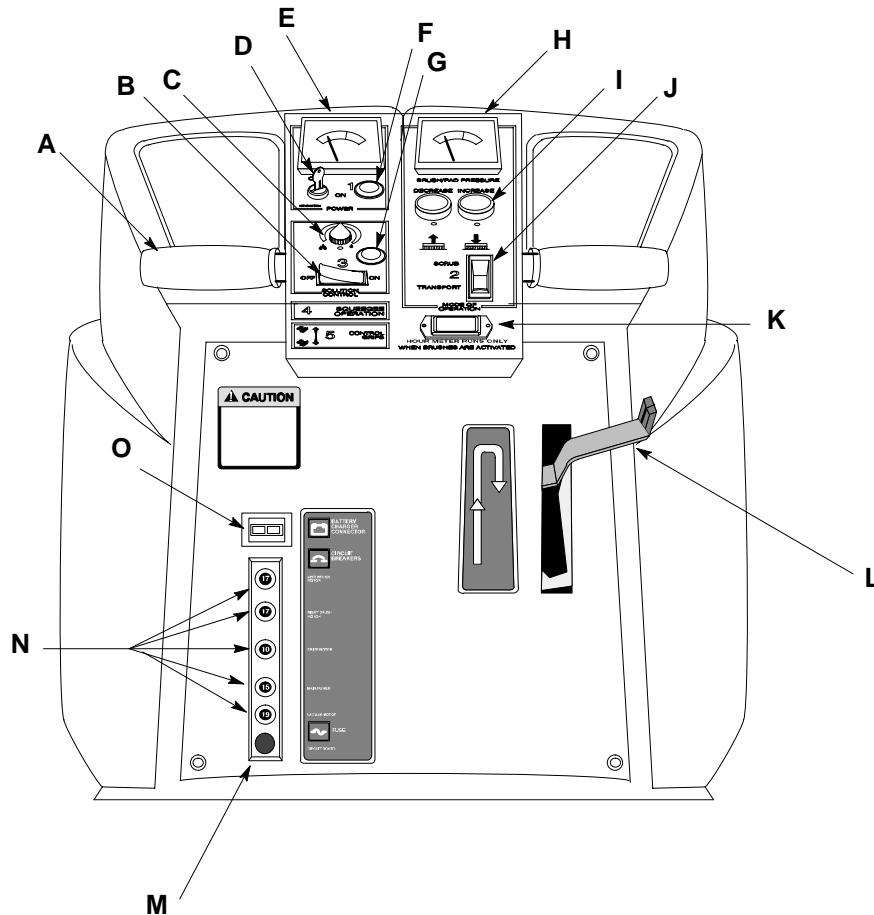


BATTERY CABLE DECAL –  
LOCATED UNDER HOOD IN  
FRONT OF BATTERY TRAYS.



BATTERY GAS DECAL –  
LOCATED ON THE  
REAR PANEL

## CONTROLS AND INSTRUMENTS



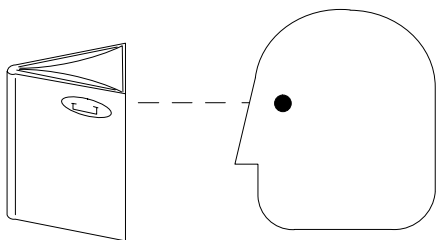
- A. Steering Handles
- B. Solution Flow On/Off Switch
- C. Solution Flow Control Knob
- D. Key Switch
- E. Battery Meter
- F. On/Off Pilot Light (Green)
- G. Solution Pilot Light (Blue)
- H. Pad Pressure Meter
- I. Brush Pressure Switch (Up/Down)
- J. Brush Switch
- K. Hour Meter
- L. Squeegee Lift Handle
- M. Fuse
- N. Circuit Breakers
- O. Battery Charger Connector

## OPERATION

### OPERATOR RESPONSIBILITY

The operator's responsibility is to take care of the daily maintenance and checkups of the machine to keep it in good working condition. The operator must inform the service mechanic or supervisor when the maintenance intervals are required as stated in the MAINTENANCE section of this manual.

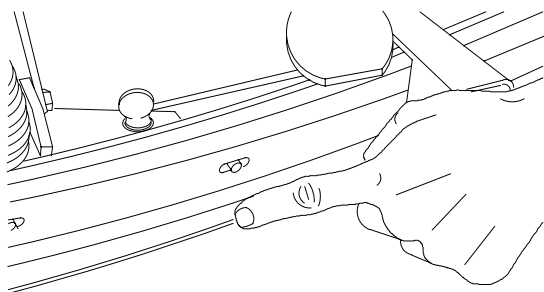
Read this manual carefully before operating this machine.



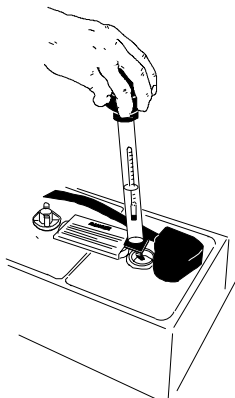
**FOR SAFETY: Do not operate machine unless operation manual is read and understood.**

After the first 50 hours (3 weeks) of operation the following procedures are recommended:

- Check the squeegee deflection.



- Check the battery electrolyte level.



- Check the battery cable connections.

### RECEIPT OF MACHINE

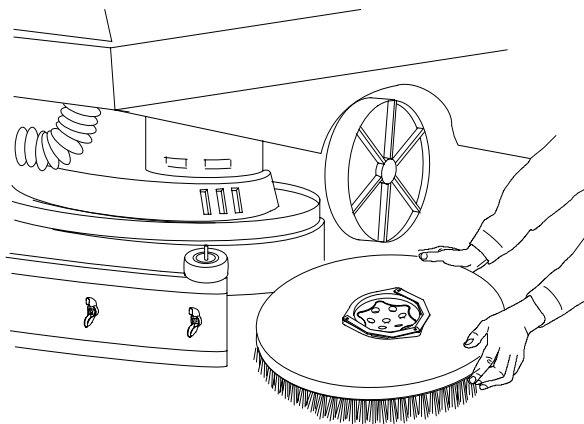
Carefully check carton and machine for signs of damage. If damaged, **file claim with carrier immediately**. Concealed damage claims should be filed within 90 days of receipt. Retain all packing materials and delivery receipts for claim support.

### BATTERY INSTALLATION

Battery installation must be completed before removing machine from pallet. After batteries are installed remove shipping screws (4) that mount front and rear of machine to pallet. Create a ramp and carefully push machine off pallet. Be certain that scrub head is in the up position. See page 41 for battery installation instructions.

### BRUSH AND PAD DRIVER INSTALLATION

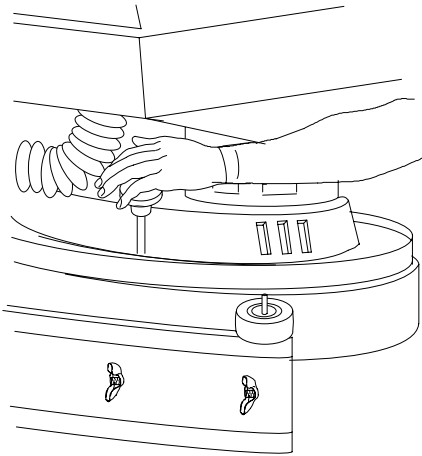
1. Make sure the scrubber head is in the "UP" position, and the key switch is turned "OFF."
2. Slide the brush or pad driver under the scrubber head. Holding the brush or pad driver with both hands, lift it up to the drive hub and snap into position (Figure 1).



**FIG. 1.**

**NOTE:** Pads should be mounted to drivers before installation, for proper centering.

3. To remove the brush or pad driver, push down on the brush release pin, located on the scrubber head, behind each scrub motor (Figure 2).

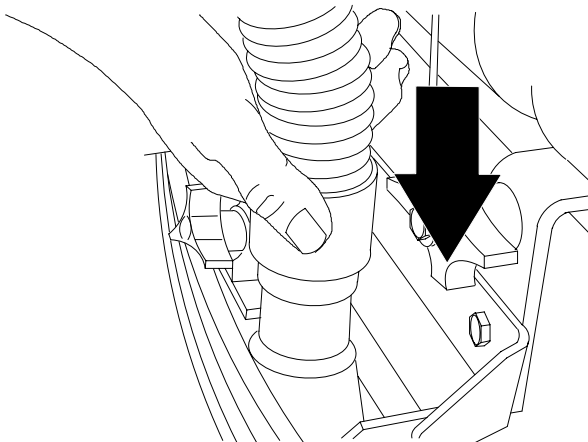


**FIG. 2.**

**ATTENTION:** Do not operate scrub motors without brushes or pad drivers (with pads) in place.

**SQUEEGEE TOOL INSTALLATION**

Slide the squeegee tool onto the bracket, with the wing screws loose. **MAKE SURE** the washers are **on top** of the bracket. Tighten the wing screws (**HAND TIGHTEN ONLY**). If they are too tight, this will defeat the breakaway feature should the tool get caught on an obstruction during use. Attach the pickup hose to the tool (Figure 3).



**FIG. 3.**

**FILLING THE SOLUTION TANK**

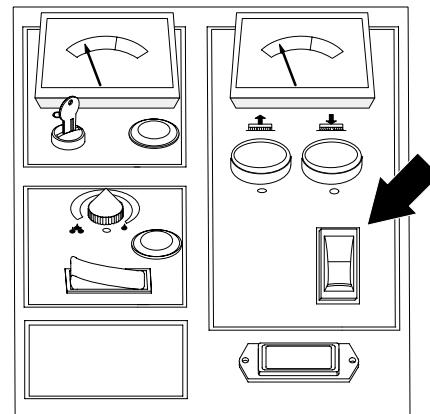
Tanks on the machine are made of polyethylene and are resistant to most cleaning solutions. **CAUTION: DO NOT USE WATER IN EXCESS OF 66°C (150°F)**, as it can cause the material to become brittle and void the warranty.

Remove the clear lid from the solution tank (operator's left) and pour solution to the fill line located inside the tank. If powdered chemicals are being used, mix the chemical with water before putting it in the tank. This will help prevent clogging of plumbing, valves, etc.

**⚠ WARNING: Flammable materials can cause an explosion or fire. Do not use flammable materials in tank(s).**

**MACHINE OPERATION**

1. Turn the ignition key to the "ON" position.
2. Activate Scrub/Transport Switch to either transport (brush-up) or scrub (brush down) position (Figure 4).



**FIG. 4.**

**To Transport:**

- Press bottom half of Scrub/Transport Switch to raise brush if you wish to transport the machine **without scrubbing**.
- To travel, twist the control grips forward. As you twist farther, the machine will travel faster.
- To stop, simply release the grips.
- For reverse travel, twist the grips backward. Reverse travel speed is limited for safety.

**To Scrub:**

- Press and release the top half of Scrub/Transport Switch to lower brushes for scrubbing. The scrub head will lower to the floor and **automatically** select a pre-determined pressure, approximately 75 lbs. This setting is sufficient for most applications. If this pressure is right for your job, no additional operator settings are required.

## OPERATION

To begin scrubbing, simply twist the handle grips forward. The machine will begin to move forward and the brushes will start spinning. Brushes will stop approximately 2 seconds after the grips are released.

**NOTE:** While scrubbing, check the needle position of the brush pressure meter. For normal scrubbing, the indicator should be in the MIDDLE to LOWER green section, as selected by the machine.

**ATTENTION:** Do not operate with the needle in the RED zone. This will cause the circuit breakers to trip.

If necessary, pad pressure can be adjusted using the increase (+) and decrease (–) buttons located on the control console. Press the increase (if pressure is too low) or decrease (if pressure is too high) button until desired pressure is achieved.

- While scrubbing, check the needle position of the brush pressure meter. For normal scrubbing, the indicator should be in the MIDDLE to LOWER green section.  
To increase (+) or decrease (–) pad pressure. Press and hold brush switch until desired pressure is achieved.

3. Check skirt for proper adjustment. To adjust the skirt on the scrub head, loosen the latch located on the rear of the scrub head. Push the skirt evenly to the floor, and fasten the latch, securing the skirt's position. During operations where the squeegee is off the floor, such as double scrub or strip, be sure the skirt is positioned slightly off of the floor to avoid "plowing" solution.
4. To activate solution flow to pads or brushes during scrub operation, press solution switch to the ON position.  
Solution flow can be regulated by turning the flow adjustment knob toward the minimum or maximum positions.
5. To lower the squeegee, lift the handle while pressing to the right, then lower to the floor. The vacuum motor will start when the handle is placed in the lowest position (Figure 5).

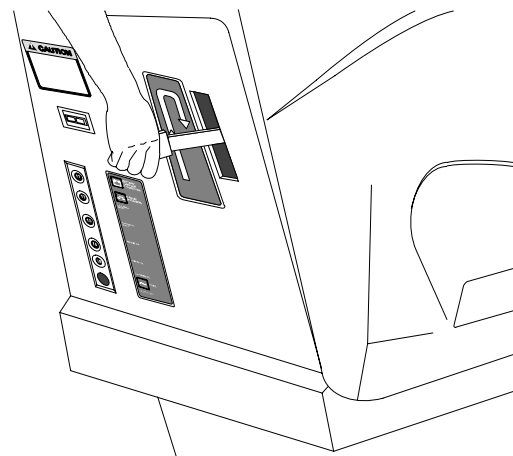


FIG. 5.

6. To begin scrubbing, slowly twist the handle control grips in the direction of desired travel. The scrub motors will only start if they are in lowered position.

---

### ES™ Switch (Option)

The ES™ switch turns on and off the solution recycling system.

---

### CLEANING WITH THE MACHINE

Remove any potential obstructions to the brushes or squeegee by sweeping the area to be cleaned prior to operating the machine.

When operating the machine, work at a pace that delivers the cleaning performance desired, and is safe for the area being cleaned. Always operate at a slower speed when working around walls or obstacles. When turning, reduce speed to a lower level to maintain maximum control.

The machine's unique squeegee system encompasses the brushes, therefore it is not necessary to turn off the solution flow when making turns. This squeegee system also enables you to travel in reverse **without lifting the squeegee off of the floor.**

**⚠ WARNING: Flammable materials or reactive metals can cause explosion or fire. Do not pick up.**

---

### OPERATING TIPS

Do not park the machine for long periods of time on resilient floors. The weight of the machine can leave marks on the floor.



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

If your machine is equipped with foam filled tires, strong cleaning solutions will cause the tire to "bleed" on the floor. This is normal due to the mold release compound used in making the tires, and it should cease after a few weeks of use.

The harder you work the machine (heavy brush pressure, etc.) the shorter your run time will be. Only use as much power as is required for the job.

## EMPTYING THE TANKS

The solution tank is designed to retain your unused cleaning solution for reuse and savings. It does not require draining after use. Should you choose to drain, however, open the drain hose compartment door located in the lower front area of the machine. Pull out the clear drain hose (smaller diameter). Remove the plug and drain the tank (Figure 6).

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

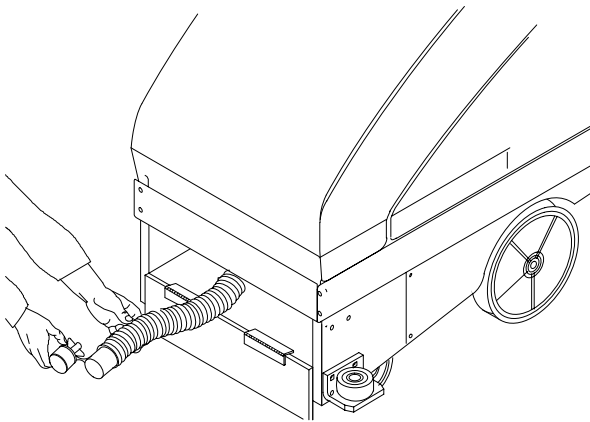


FIG. 6.

The recovery tank is equipped with an automatic float shut-off, which responds to the presence of water or foam. When the tank is filled to its usable capacity, the float will activate, shutting off the vacuum air flow. The operator will notice an increase in the vacuum motor sound level and a drop in vacuum pickup. When this happens, raise the brushes and squeegee tool and transport the machine to a disposal site. Open the drain hose compartment door and pull the (large) hose from the cavity. Remove the plug and drain the tank. The volume of solution in the tank may cause a rush of solution from the hose. Should the operator desire to control this rush, turn the key on and lower the squeegee to the floor. The vacuum will hold the water in the tank (Figure 6).

The recovery tank should be flushed with clear water under pressure after each use to prevent a building up of heavy debris.

## SQUEEGEE ADJUSTMENTS

To operate properly, the squeegee tool must be properly adjusted. **The squeegee tip adjustment** keeps the tool level to the floor, and the blade wiping evenly from tip to tip. To adjust, lower the tool to the floor and drive the machine slightly forward, until the wiping blade lays over. Turn the knob to the right or left to get proper blade deflection at the tips.

**The squeegee pressure adjustment** assures the blade "lays over" slightly in use and the sharp edge of the blade wipes the floor. To adjust, lower the tool to the floor and drive the machine ahead slightly. Locate the adjustment knob at the top of the pressure arm under the back of the machine. To increase pressure, turn the knob clockwise; to decrease pressure, turn counter-clockwise. Do not apply too much pressure, only enough to lay the blade over, so the sharp edge wipes the floor (Figure 7).

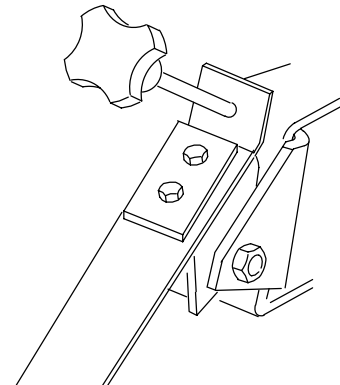


FIG. 7.

### SQUEEGEE BLADE REPLACEMENT

Once the wiping edge has worn round, the blade will no longer wipe the floor dry. The wiping blade has four (4) usable edges. Once they are all used, a new replacement blade kit should be installed, not just the wiping blades. To reverse or replace the blades, remove the tool from the machine. Starting at the outside of each end of the tool, remove the bolts toward the center. To install new blades, put all blades in place, and install the bolts from the **center out**.

**IMPORTANT: Proper blade installation is critical to maximize water pick up. Make sure blades are straight. Do not over tighten bolts, as this will cause the blades to wrinkle (Figure 8).**

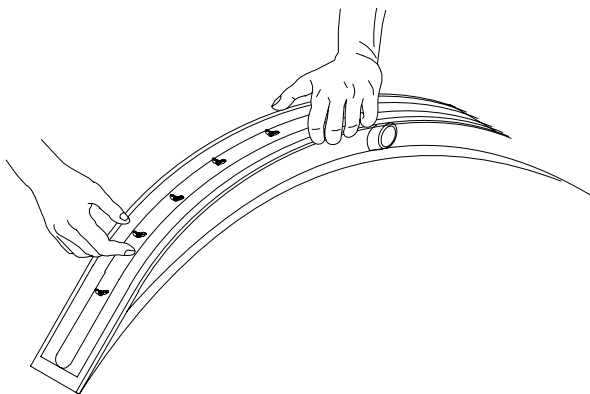


FIG. 8.

### OTHER USES FOR THE MACHINE

#### High Volume Water Pick Up

For high volume, high performance water pick up in circumstances such as floods:

1. Lower the squeegee and leave the brushes up.
2. You can vacuum water as fast as you can walk.

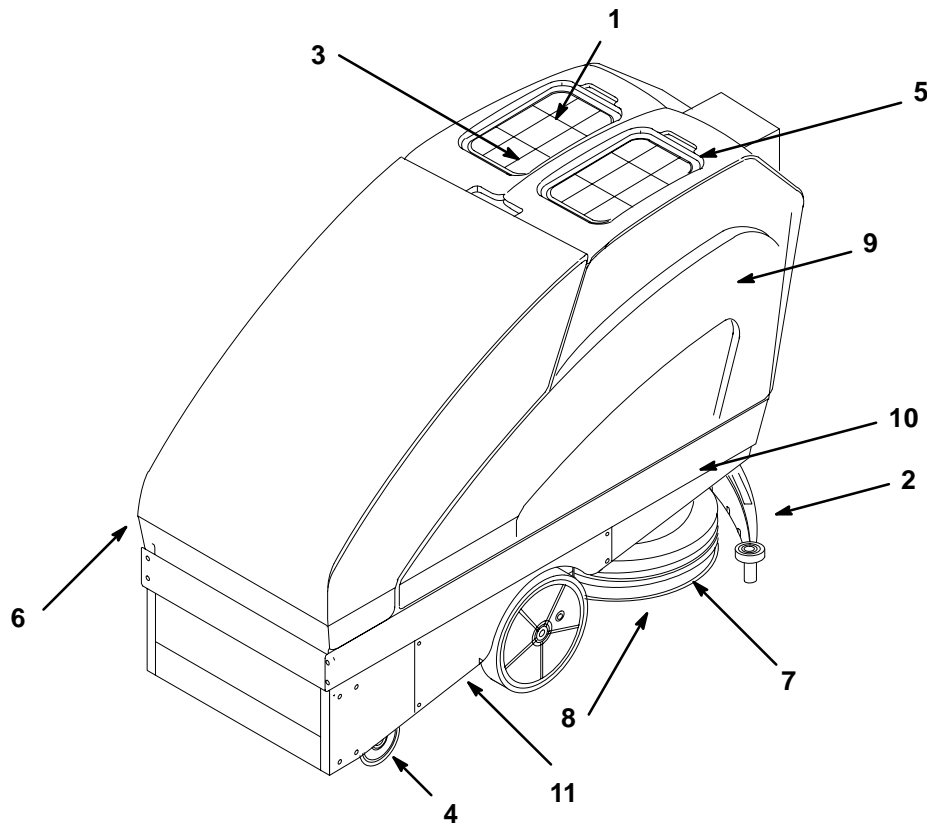
#### To Polish Floors

1. Install polish pads on the machine.
2. Leave the squeegee up and lower the scrub head to the floor.
3. Polish without water to a high shine!

#### High Performance Wet Vac

1. Remove the hose from the squeegee tool.
2. Using a connector, such as a short length of 1-1/2" OD PVC pipe, connect a 1-1/2" vacuum hose, wand, and desired pick up tool to the machine.
3. Lower the squeegee handle.
4. You have a 27 gallon wet vac at your disposal!

**ROUTINE MAINTENANCE**



**MAINTENANCE CHART**

Interval	Key	Description	Procedure	No. Of Service Points
Daily	2	Squeegee	Check for damage and wear	1
			Check deflection	1
	8	Scrub brush or pad	Check for damage and wear	1
	1	Recovery tank	Clean	1
	1	Recovery tank, ES™ mode*	Clean ES™ filter	1
	3	Recovery tank float screen	Clean	1
	5	Solution tank, ES™ mode*	Clean	1
	6	Machine	Check for leaks	1
	7	Scrub head skirt	Check adjustment	1
80 Hours			Check for damage and wear	1
	4	Front casters	Lubricate	4
	2	Squeegee	Check leveling	1
800 Hours	11	Chain	Lubricate	1
800 Hours	9	Vacuum fan motor	Check motor brushes	1
	10	Scrub brush motor	Check motor brushes	1

## DAILY MAINTENANCE

### BEFORE EACH USE

MAKE SURE THE CHARGER HAS TURNED "OFF" by assuring the needle on the charger is at "0." Unplug the charger from the wall receptacle, then disconnect the charge from the machine (Figure 9).

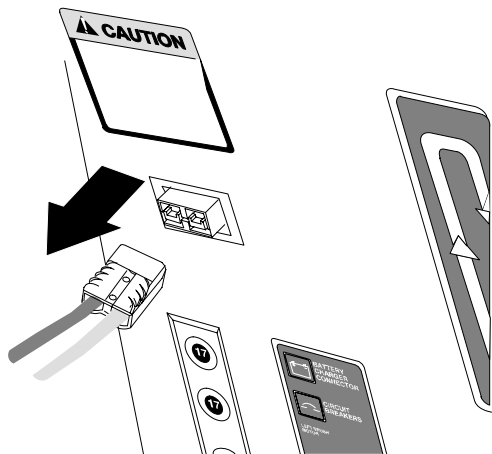


FIG. 9.

Check all battery cells for low water level. Add distilled water to just below the fill ring, if needed. Replace caps. Wipe off the tops of batteries with a clean cloth.

**FOR SAFETY: 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 battery compartment open when charging.**

Make sure brushes or pad drivers with pads are installed on machine before using the machine in the scrub mode.

### AFTER EACH USE

Drain and flush the recovery tank with clean water. Replace the drain plug on the hose and return the hose to its storage compartment.

Remove the float shut-off assembly from the recovery tank. The float shut-off easily pulls off, and pushes on its mounting plate. Rinse the float shut-off and install on the machine (Figure 10).

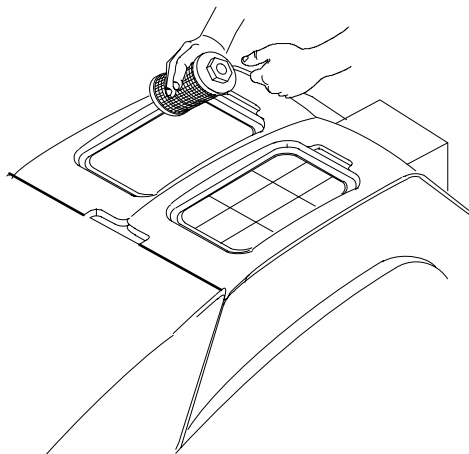


FIG. 10.

Locate the recovery tank filter inside the tank, directly below the float shut off. Unscrew and remove the filter. Rinse off all debris from the filter screen and install.

**NOTE: NEVER REMOVE THE RECOVERY TANK FILTER WITH SOLUTION IN THE TANK. Drain the tank first, to avoid having debris enter the tank's drain passages.**

Remove the brushes and squeegee tool from the machine. Rinse under water. Inspect the brushes and squeegee blades for wear; replace if required. Reinstall on the machine.

Wipe down the entire machine with a damp cloth. A light spray of Armor-All® or a similar product will keep the exterior looking like new!

### BATTERY MAINTENANCE

Remove all battery caps and check the water level in each cell. Add distilled water **only** to cover plates, or a maximum of 1/4" below fill neck ring.

Never add acid to the batteries, only distilled water. Always keep the battery caps on, except when adding water or taking hydrometer readings (Figure 11).

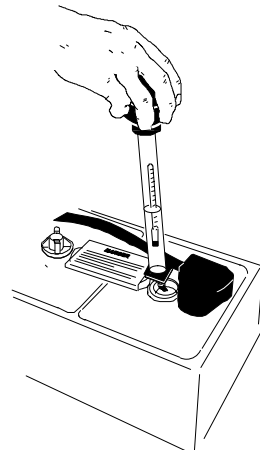


FIG. 11.

**CHARGING THE BATTERIES**

1. Push the machine to a flat, dry surface in a well ventilated area.
2. Turn the machine power off.

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

3. Lift the hood to access the battery compartment.
4. Check the water level in all battery cells. If the level is low, add just enough distilled water to cover the plates. **DO NOT OVERFILL.** The batteries can overflow during charging due to expansion.

**FOR SAFETY: When servicing machine, avoid contact with battery acid.**

5. Plug the charger connector into the battery connector.

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

6. Plug the battery charger into the wall outlet.
7. The charger will start automatically. Check the charger meter to assure the charger is working. When the batteries are fully charged, the charger will automatically turn off.
8. After the charger has turned off, unplug the charger from the wall outlet.
9. Unplug the charger connector from the battery connector on the machine.

**NOTE:** Make sure the battery caps are in place while charging.

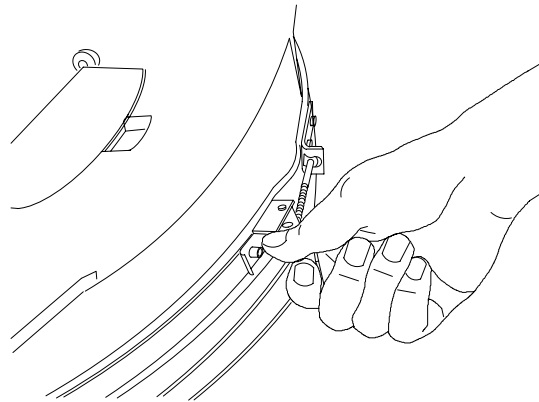
**NOTE:** Do not take readings immediately after adding distilled water. If the water and acid are not thoroughly mixed, the readings may not be accurate. Check the hydrometer readings against the following chart to determine the remaining battery charge level:

Specific Gravity at 27°C (80°F)	Battery Charge
1.265	100% Charged
1.223	75% Charged
1.185	50% Charged
1.148	25% Charged
1.110	Discharged

**NOTE:** If the readings are taken when the battery electrolyte level is any temperature other than 27°C (80°F), the reading must be temperature corrected. Add or subtract to the specific reading 0.004 (4 point) for each 6°C (10°F) above or below 27°C (80°F).

**WEEKLY MAINTENANCE**

Inspect the scrub head skirt for adjustment and wear. For proper adjustment, the skirt should be resting on the floor, with the brushes at the desired pressure. To readjust, lower the scrubber head to the desired pressure. Release the clamp on the skirt, and push the skirt down until it rests on the floor all the way around the casting. Tighten clamp. If the skirt is torn or worn beyond adjustment, replace (Figure 12).



**FIG. 12.**

**MONTHLY MAINTENANCE**

- Clean the top surface of the batteries and terminals, and check for loose connections. Use a strong solution of baking soda and water. Brush the solution sparingly over the battery tops, terminals, and cable clamps. **DO NOT** allow any solution to enter the batteries. Use a wire brush to clean the terminal posts and cable connectors. After cleaning, apply a coating of clear battery post protector to the terminals and cable connections. Keep the tops of the batteries clean and dry.

Keep all metallic objects off the top of the batteries, which may cause a short circuit. Replace any worn or damaged wires.

- Grease the swivel zerk and the wheel zerk on each front caster.
- Lubricate the squeegee wing screws and the front drain door hinge.
- Inspect float and vacuum motor screen. Replace, if required.
- Grease the drive chain. Adjust tension, if required (Figure 13).

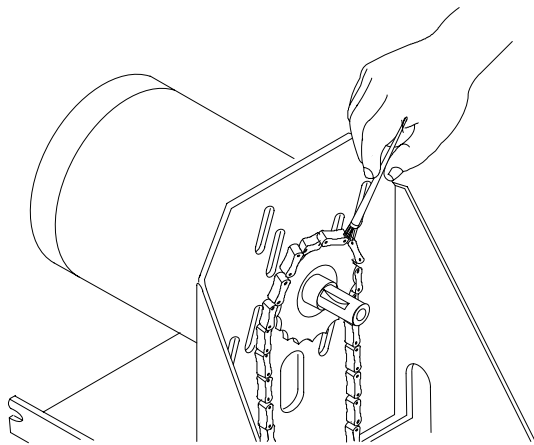


FIG. 13.

## QUARTERLY MAINTENANCE

**NOTE:** It is recommended six month and annual maintenance procedures be performed by technicians from your authorized Service Center. Inspection, adjustment, and lubrication are not warrantable items, and thus may be performed by most qualified service people. Ask your service center for a Planned Maintenance Agreement, to assure your machine is in top operating condition at all times!

Inspect the vacuum motor brushes. Replace if worn to 10 mm (0.38 in) or less (Figure 14).

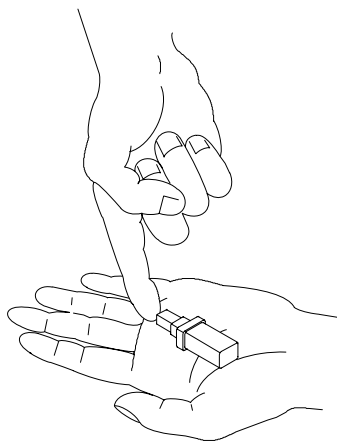


FIG. 14.

Inspect the carbon motor brushes in both drive motors, plus the traction drive motor. Replace if worn to 10 mm (0.38 in) or less.

## OPTIONAL KITS AND ATTACHMENTS

The following options are available, at an additional cost, for field or factory installation.

### FOAM FILLED TIRES

A softer tire used on rough or grouted tile floors, or where extra traction is needed. Field installation is available.

**IMPORTANT:** Foam filled tires are required if the machine is used on grouted tile floors. Drive train warranty will be void unless so equipped! See safety instruction section of this manual for details.

### HIGH BUMPER ROLLER KIT

Mounted on the front corners of the machine, to protect the machine and fixtures. Field installation is available.

### POWER WAND ATTACHMENT

The optional power wand attachment has both squeegee blades and a scrub brush for maximum reach cleaning. Its low profile swivel head design provides fast and effective cleaning under appliances and fixtures. This is available as a field installed option only.

### ES™ (Extended Scrub)

The ES™ option package allows you to transform your scrubber into a solution recycle machine simply by flipping a switch. This is available as a field installed option only.

## TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Machine does not operate.	Key switch is off.	Turn key to "ON".
	Batteries discharged.	Charge batteries.
	Loose or corroded battery cables.	Clean and lubricate.
	Electrical malfunction.	Contact Service Center for assistance.
Machine does not self propel	Key switch is off.	Turn key to "ON".
	Drive circuit breaker is tripped.	Reset Breaker.
	Drive chain is broken.	Contact Service Center for assistance.
	Electrical malfunction.	Contact Service Center for assistance.
Circuit breaker for transport drive trips.	Operator attempting to negotiate grades in excess of machine capabilities.	See safety instructions in this manual for instructions.
	Machine travel obstructed.	Remove obstructions.
	Operator using directional control as a brake.	Cease using directional control as a brake.
	Caster or differential bearings are dragging.	Contact Service Center for assistance.
	Work motor brushes.	Contact Service Center for assistance.
Poor solution flow.	Solution tank filter is plugged.	Remove and clean filter.
	Min/Max control malfunction.	Contact Service Center for assistance.
	Electrical malfunction.	Contact Service Center for assistance.
Brush motor(s) do not operate.	Circuit breaker(s) tripped.	Reset breaker(s), reduce pressure.
	Scrub head not lowered.	Lower head to floor.
	Transport grips not activated	Grips must be activated for brushes to operate.
Circuit breakers on brush motor trip	Excessive brush pressure.	Reduce pressure.
	Improper brush or pad for operation.	Use correct, or less aggressive pad based on application.
	Dirty pads.	Replace or clean.
	Defective breaker(s).	Contact Service Center for assistance.
	Worn motor brushes.	Contact Service Center for assistance.
Vacuum motor will not operate.	Key switch to "OFF".	Turn key to "ON".
	Squeegee lift handle not lowered.	Lower handle to lowest point.
	Electrical malfunction.	Contact Service Center for assistance.

## TROUBLE SHOOTING –continued

PROBLEM	CAUSE	SOLUTION
Poor vacuum pick up.	Recovery tank lid not properly sealed.	Insure float housing is in place and locked.
	Filter cage screen plugged.	Clean.
	Recovery tank drain hose left open.	Replace cap.
	Hole or leak in vacuum hose.	Repair or replace.
	Blockage in pick up hose or wand.	Inspect hose and tool for blockage and clean. Inspect recovery tank at hose entrance for material pick up.
	Low battery charge.	Charge batteries.
	Leak in recovery tank.	Contact Service Center for assistance.
	Vac motor malfunction.	Contact Service Center for assistance.
	Electrical malfunction.	Contact Service Center for assistance.
Squeegee streaks, uneven pick up.	Squeegee obstructed.	Check and clean tool and blades. <b>NOTE: Sweep floor before scrubbing.</b>
	Squeegee angle out of adjustment	Adjust to proper angle
	Improper squeegee pressure	Adjust pressure
	Squeegee blades worn	Reverse or replace
	Inadequate squeegee lubrication for floor conditions	Increase solution flow
	Blades installed improperly	Refer to Squeegee Blade Installation Section of this manual
Batteries deliver below normal run time.	Batteries not fully charged.	Charge batteries.
	Electrolyte level is low.	Fill to proper level and charge ( <b>DIS-TILLED WATER ONLY</b> ).
	Cables are loose or corroded	Clean and lubricate
	Pad pressure too heavy	Reduce pressure
	Improper pads causing too much amp draw	Change to proper pads
	Charger is defective	Contact Service Center for assistance
	Battery is defective	Contact Service Center for assistance



**SPECIFICATIONS****GENERAL MACHINE DIMENSIONS/CAPACITIES**

Item	Dimension/Capacity
Overall length	1651 mm (65 in)
Width (less squeegee)	610 mm (27 in)
Height	1118 mm (43.5 in)
Scrub brush diameter	343 mm (13.5 in)
Squeegee width	800.1 mm (31.5 in)
Scrubbing path width	660 mm (26 in)
Solution tank capacity	94.6L (25 gal)
Recovery tank capacity	102.2L (27 gal)
Dry weight, less batteries	249Kg (549 lbs)

**GENERAL MACHINE PERFORMANCE**

Item	Measure
Aisle turnaround width	1828.8 mm (72 in)
Maximum trailer loading clearance angle	8°

**POWER TYPE**

Type	Quantity	Volts	Ah Rating	Weight
Batteries	6	6	235 @ 20 hr rate	29.9Kg (66 lbs) each

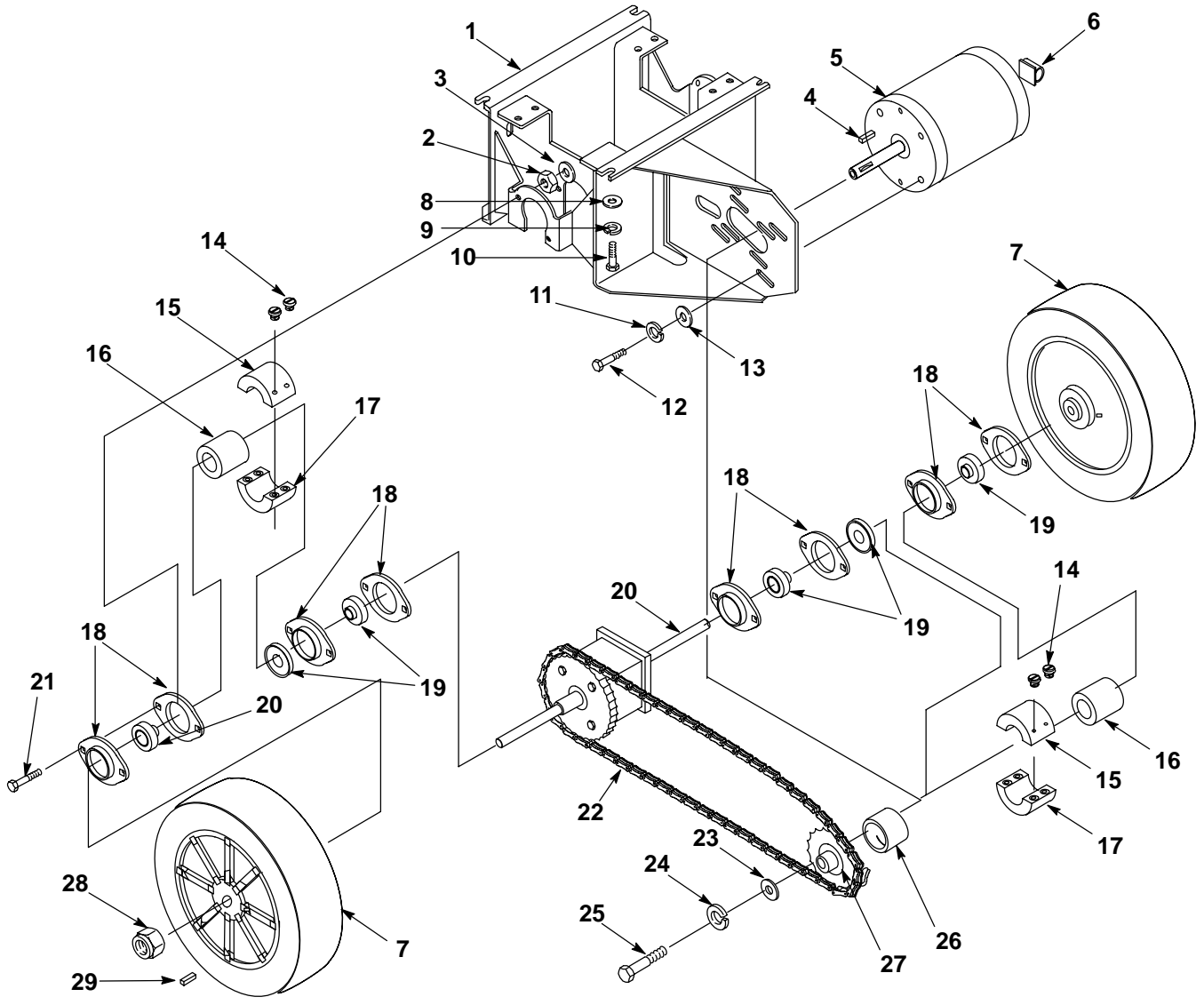
Type	Use	VDC	Hp
Electric motors	Scrub brush (2)	36	.45
	Vacuum fan (1)	36	.75
	Propelling (1)	36	.45

Type	VDC	Amp	Hz	Phase	VAC
Chargers	36	25	60	1	120

**TIRES**

Location	Type	Size
Front casters (2)	Solid, non-marking urethane	11 x 2 inch
Rear Tires (2)	Solid, non-marking urethane	5 x 2 inch

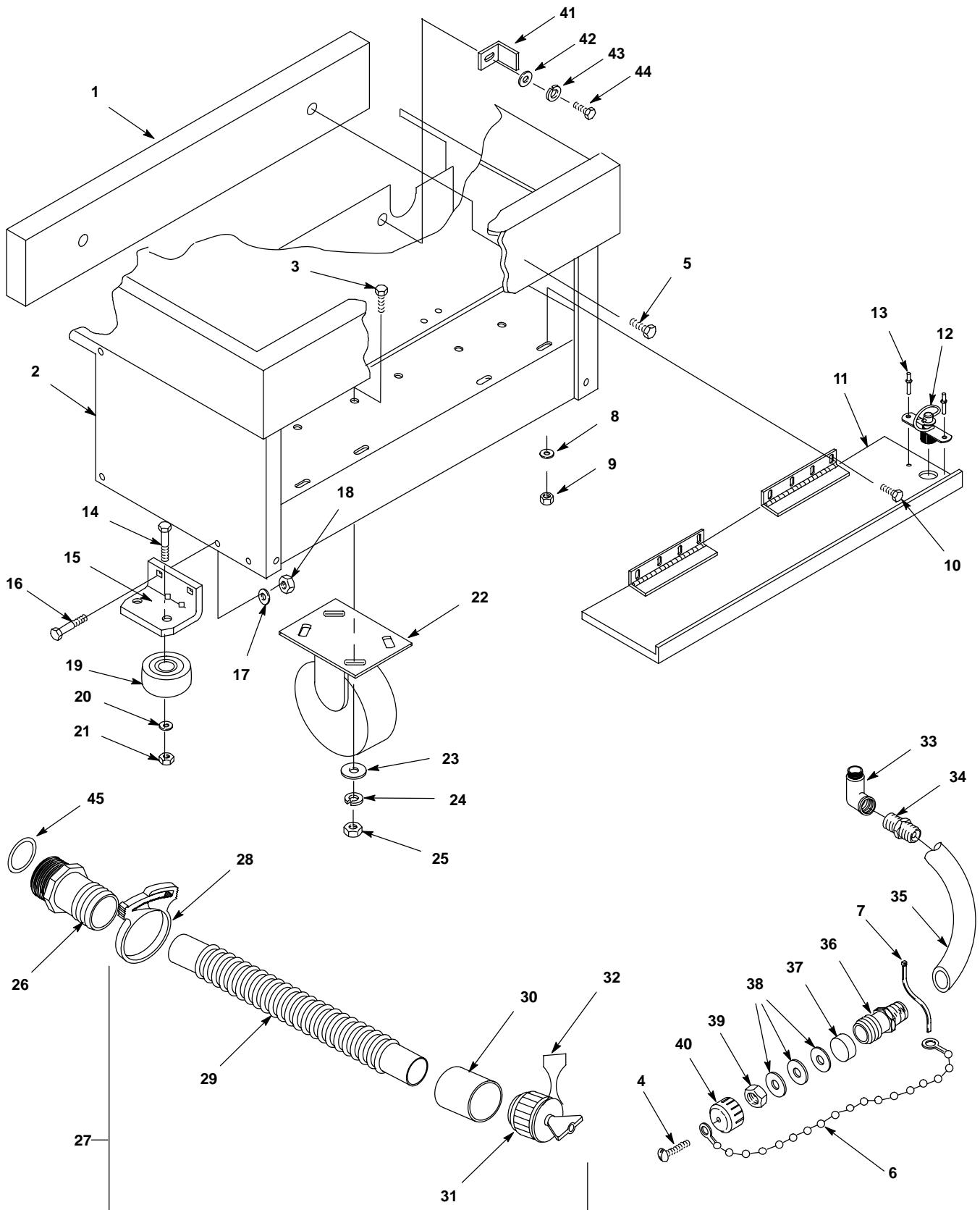
Drive Carriage Assembly



## Drive Carriage Assembly

Ref.	Part No.	Description	Qty.
1	611 015 000	Carriage Weldment	1
2	140506	Nut, Hex, Std., .31"-18	8
3	140015	Washer, Lock, Spring	8
4	069 764 080	Key, 0.25" x 0.25" x 0.75"	1
5	069 762 427	Motor, Drive, .45 HP	1
6	575037	Clip, Cable	1
7	611 333 000	Wheel, 11" Ø 2" Wide	2
8	140013	Washer, Plain, ANSI-A, .38", ZP	4
9	069 760 088	Washer, Lock, Spg.	4
10	200 031 541	Screw, Hex Hd., M10 x 25	4
11	140016	Washer, Lock, Spring	4
12	069 760 108	Screw, Hex Head, 1/4-20 UNC x .88"	4
13	069 760 082	Washer, Plain, ANSI-A, .25" Wide	4
14	611421	Screw, Socket Head, 1/4-28 x .5" Long	8
15	611426	Collar, 4 Bolt (Through)	2
16	611410	Differential Spacer	2
17	611425	Collar, 4 Bolt, 1/4-28 UNF	2
18	069 760 006	Bearing, Flangette, 2 Hole, Set Of 2	8
19	069 760 007	Bearing, Ball, Ø 19.05	4
20	611 376 000	Differential, Sprocket 40 Tooth	1
21	069 762 137	Screw, Carriage, .31-18 UNC x 1.00"	8
22	611 054 000	Chain, #41, 66 Links (33" Long)	1
23	14880.5	Washer, Flat 5/16"	1
24	140015	Washer, Split Lock 5/16"	1
25	069 760 107	Screw, Hex Head, .31-18 UNC x .62"	1
26	069 760 741	Spacer, 19.9mm x 25.4mm x 18 mm	1
27	069 760 365	Sprocket, #41 Chain, 10 Tooth	1
28	612 074 000	Nut, Hex Lock, .75-10 UNC	2
29	612 004 000	Key, Square, .188" x 1.50" Long	2

**Machine Frame (Front)**



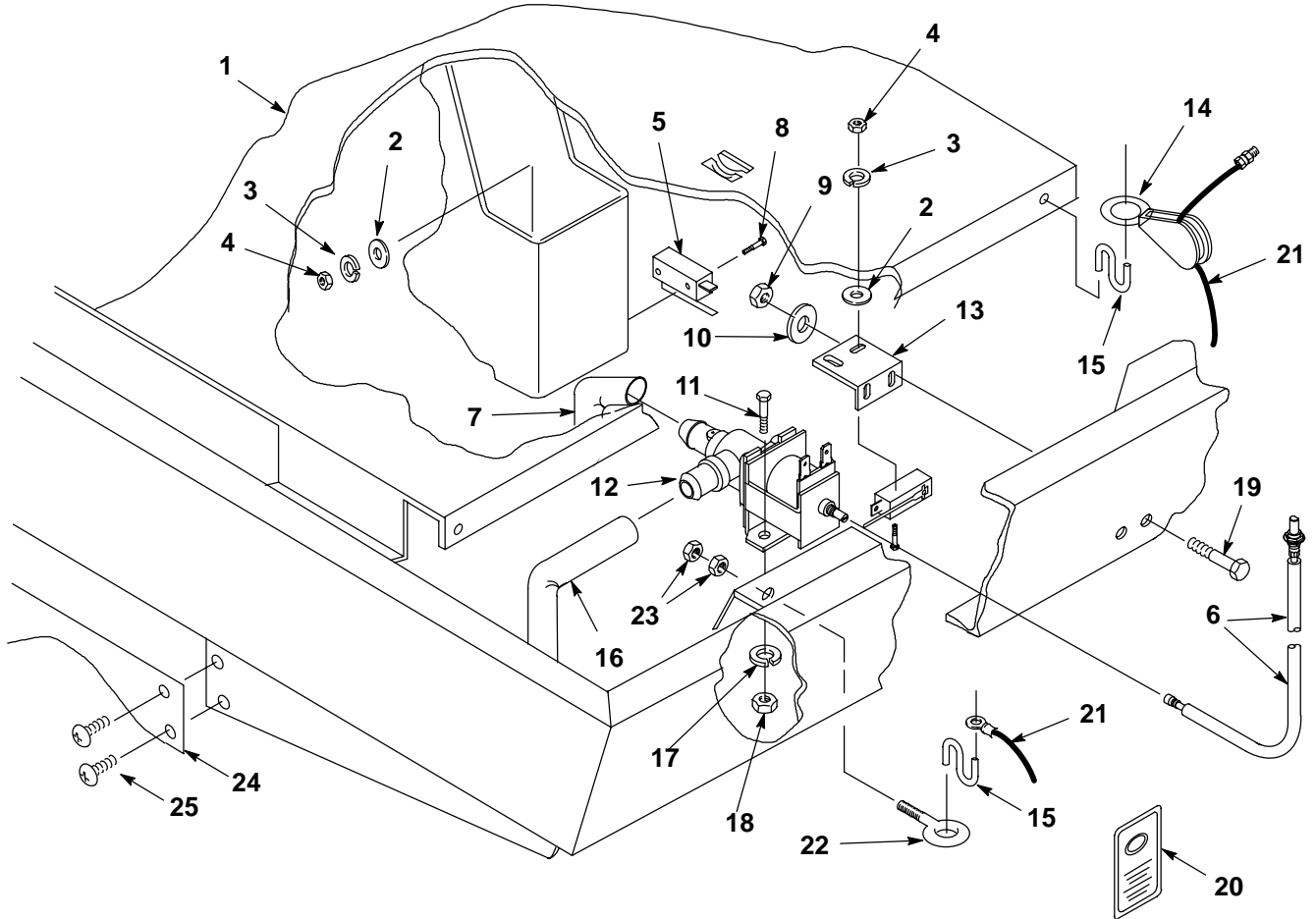
## Machine Frame (Front)

Ref.	Part No.	Description	Qty.
1	626063	Counter Weight	1
2	626008	Frame Weldment	1
3	200 031 544	Screw, Hex Hd., M10 x 25	8
4	200 055 343	Screw, Pan Head Slot M04 x 12mm	1
5	069 764 060	Screw, Truss Hd., .31-18 x .75"	2
6	621443	Chain, Drain Plug	1
7	130041	Tie, Wire	1
8	140031	Washer, Lock, Spring, ANSI, #10, ZP	4
9	579134	Nut, Hex, Std., #10-24 UNC, Zinc Plate	4
10	601 092 000	Screw, Hex Hd., #10-24 UNC x .5"	4
11	626044	Door, Front	1
12	140962	Latch	1
13	28681	Rivet	2
14	069 760 092	Screw, Hex Hd., .31-18 UNC x 1.75"	2
15	611 053.BK	Bracket, Wheel, Front	2
16	069 767 077	Screw, Carriage, .31-18 UNC x .75" LG., ZP	4
17	140015	Washer, Split Lock 5/16"	4
18	140506	Nut, Hex 5/16"-18	4
19	630450	Wheel, Rubber, Ø 76 x 22 WD	2
20	069 760 082	Washer, Plain, ANSI-A, .25" Wide, ZP	2
21	140546	Nut, Lock Nylon Insert 5/16"-18	2
22	069 760 030	Caster, Ø 127 mm x 50 mm Wide	2
23	140036	Washer, Flat 3/8"	8
24	069 760 088	Washer, Lock, Spring, ANSI, .44" ZP, M10	8
25	140285	Nut, Hex Std., M10 x 1.50	8
26	626111	Fitting, Straight 1.50" Tube, 1.50"NPT	1
∇27	603217	Asm, Drainhose	1
▲28	140308	Clamp, Hose 1-5/16 to 2-1/4	1
▲29	630068	Hose, Drain 38.1 ID	1
▲30	630394	Sleeve, Drain Hose 1.5 ID Copper	1
▲31	621324	Plug, Expansion 1-1/2" Dia	1
▲32	578441	Strap, Drain Hose	1
33	578 034 000	Fitting, Elbow 1"NPT	1
34	626079	Fitting, Reducer 1"M x 3/4" Barb	1
35	626093	Hose, Clear .75 ID 19" x 670mm	1
36	612 146 000	Fitting, Straight .75 Hose x .75 NPT	1
37	612 145 000	Seal, Solution Drain Cap	1
38	601 076 000	Washer, Flat Plastic	3
39	200 160 014	Nut, Hex Lock M04	1
40	612 158 000	Cap, .75" NPT Plastic w/Hole	1
41	606970	Bracket, Solution Hose	1
42	019680127	Washer, Flat	1
43	578244000	Washer, 6.4x10.0 lck ss	1
44	200031436	Screw m6 x 1 x 16 hxhdcp	1
45	607018	Spacer, Drainhose Fitting	1

∇= ASSEMBLY

▲= INCLUDED IN ASSEMBLY

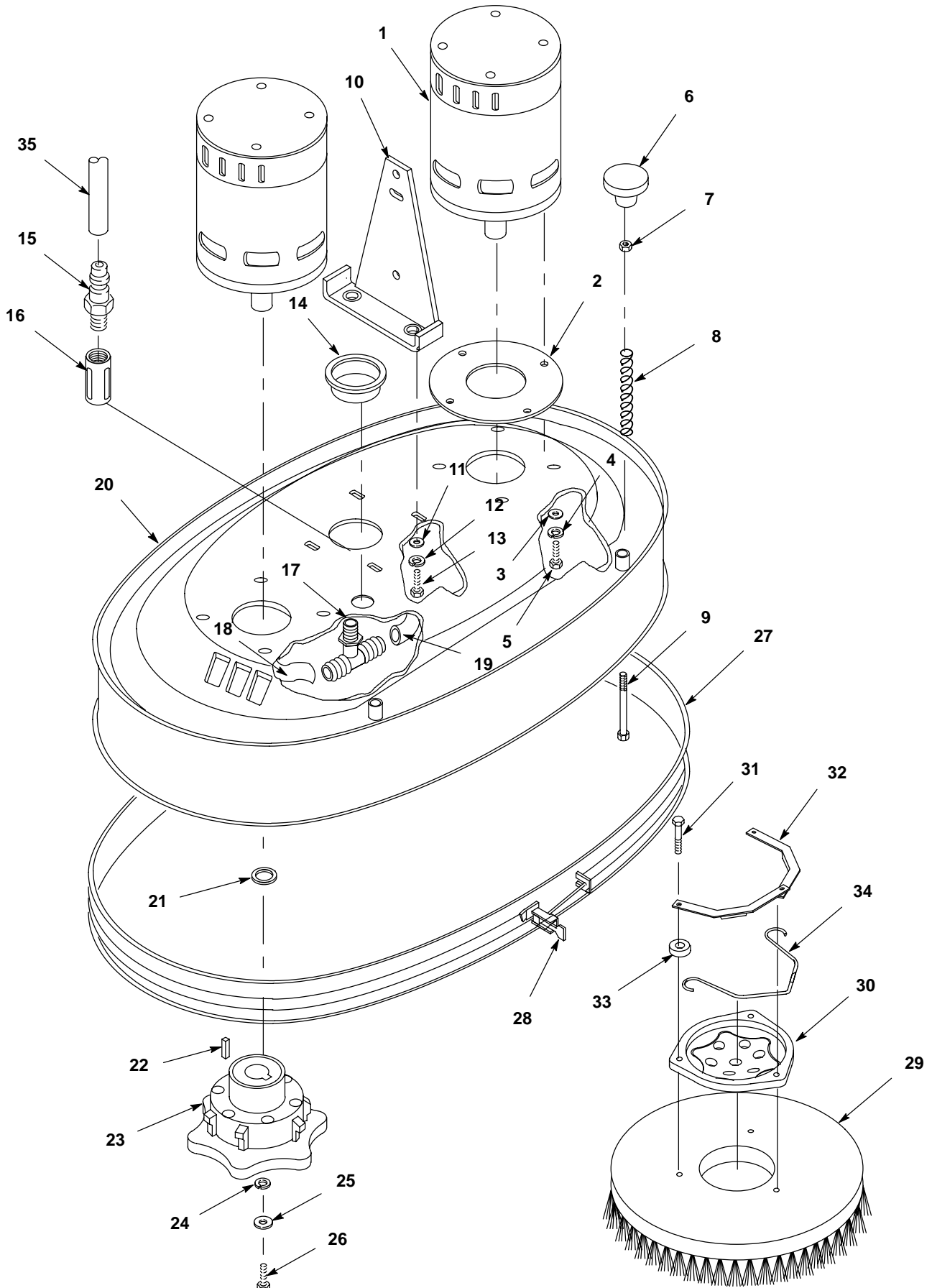
Machine Frame (Rear)



## Machine Frame (Rear)

Ref.	Part No.	Description	Qty.
1	626008	Frame, Weldment	1
2	140026	Washer, Plain, ANSI-A, #06, ZP	4
3	069 760 093	Washer, Lock, Spring, ANSI, #08, ZP	2
4	069 762 159	Nut, Hex, Std., #06-32 UNC, ZP	4
5	069 764 009	Switch, Snap, 24A, Lever, SPNO & C	2
6	626120	Cable, Water Flow Control	1
7	626204	Hose, 320mm	1
8	069 764 002	Screw, Hex Head, #06-32 UNC x 1.00	4
9	200 102 014	Nut, Hex, Std., M04 x 0.70	2
10	069 760 093	Washer, Lock, Spring, ANSI, #08, ZP	4
11	200 031 436	Screw, Hex Hd., M06 x 16 mm	2
12	626100	Valve, Liquid Dispensing	1
13	611 155 000	Switch Bracket, Actuator Linkage	1
14	069 762 361	Pulley, Block, $\varnothing 1\text{-}1/2$ "	1
15	611 163 000	Hook, S, Squeegee Lift & Swivel Block	2
16	626205	Hose, 510mm	1
17	602 139 000	Washer, Flat, 6.4mm x 12.7mm x 1.7	1
18	579028	Nut, Hex Lock M06, ZP	1
19	200 031 342	Screw, Hex Hd., M04 x 10	1
20	578769	Decal, Caution Moving Parts	1
21	626073	Cable, Squeegee Lift	1
22	600205	Eye Bolt, 1/4"	1
23	069 760 094	Nut, Hex Jam .25-20UNC	2
24	626055	Skirt, Lower	1
25	200 070 432	Screw, M06 x 10mm	4

Scrubber Head Assembly



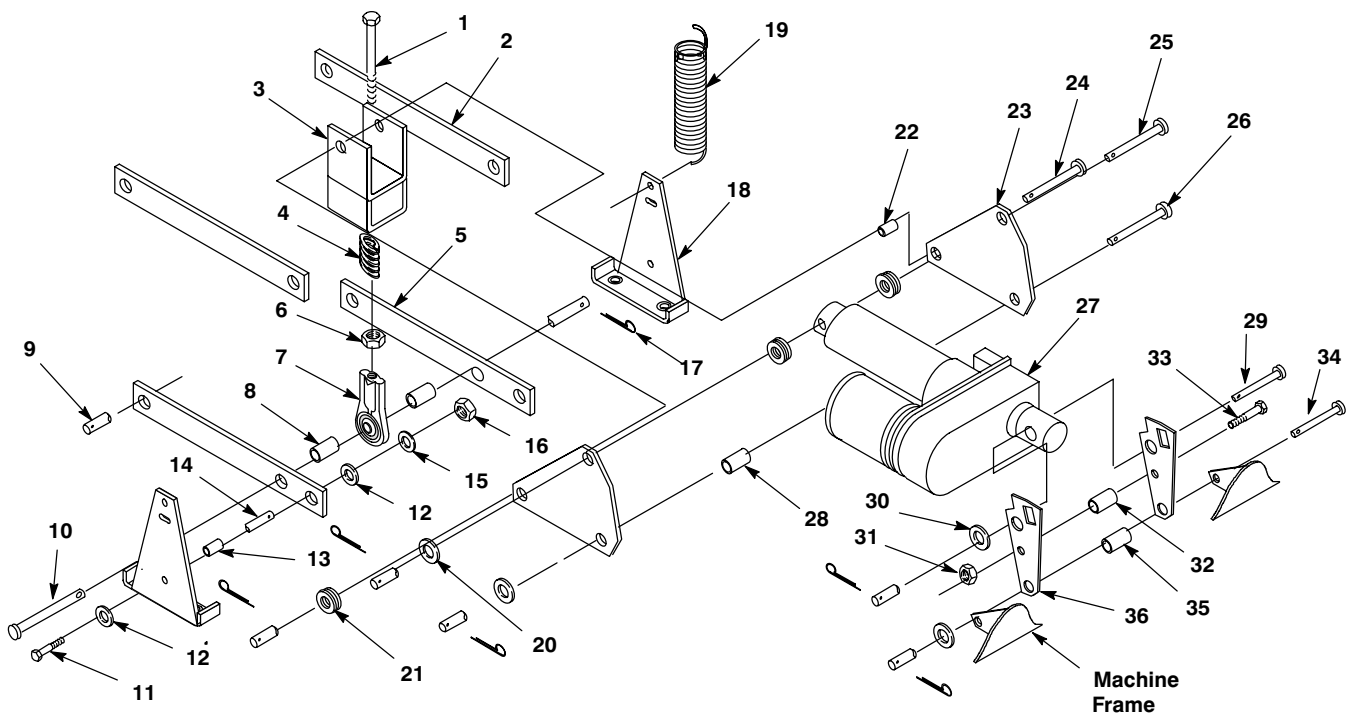


**Scrubber Head Assembly**

Ref.	Part No.	Description	Qty.
1	069 762 427	Motor, Drive, .45 HP	2
2	612468	Gasket, End Bell	2
3	069 760 082	Washer, Plain, ANSI-A, .25" Wide, ZP	8
4	140016	Washer, Lock, Spring, ANSI, .25" Wide, ZP, M06	8
5	069 760 108	Screw, Hex Hd., 1/4-20 UNC x .88", SS	8
6	626083	Knob, 3/8-16	2
7	039 708 223	Nut, Hex Jam, .38-16 UNC	2
8	626081	Spring, Compression	2
9	590248	Screw, Hex Head, 3/8"-16 x 4.75" Long	2
10	626084	Bracket, Head Lift	2
11	14880.5	Washer, Flat, ANSI-A, .31" Wide, ZP, M08	4
12	140015	Washer, Lock, Spring, ANSI, .31", ZP, M06	8
13	200 607 491	Screw, Hex Hd., M08 x 25 mm	4
14	069 764 561	Caplug, 33-A1, 2.62" Hole/2.44" Tube	1
15	069 764 592	Fitting, 1/2" Hose x 1/2" NPT	1
16	069 764 137	Fitting, Coupling, 1/2" NPT, PVC	1
17	069 760 729	Fitting, Tee, 1/2" Hose x 1/2" NPT	1
18	069 760 725	Hose, Solution, 12.7 ID x 73.5mm	1
19	069 760 726	Hose, 12.7 ID x 225mm	1
20	611 108 000	Scrubber Head, Permold	1
21	626138	Spacer, 19.1 x 31.7 x 7.9 mm, ZP	2
22	140632	Key, 0.25" x 0.25" x 1.00"	2
23	626022	Hub, Brush	2
24	069 764 631	Washer, Flat, 8.4mm, 25.4, 4.8	4
25	140015	Washer, Lock, Spring, ANSI, .31", ZP, M06	2
26	621 284 000	Screw, Hex Head, .31-18 UNC x 1.25" ZP	2
27	626059	Skirt, Scrubber Head	1
28	626136	Band Assembly, Retaining	1
▽29	626174	Brush Assembly, Poly	Set of 2
	626175	Brush Assembly, Nylon	Set of 2
	626176	Brush Assembly, Grit	Set of 2
	626071	Pad Driver Assembly	Set of 2
	611 191 000	Drive Block, 260	Set of 2
▲30	626133	Brush Adapter	Set of 2
▲31	630431	Screw, Hex Head, M6 x 40	6
▲32	626074	Clip, Brush Hub	4
▲33	626080	Spacer, Nylon	4
▲34	626072	Spring, Brush Hub	2
35	626104	Hose, Recovery Dia 38.1	1

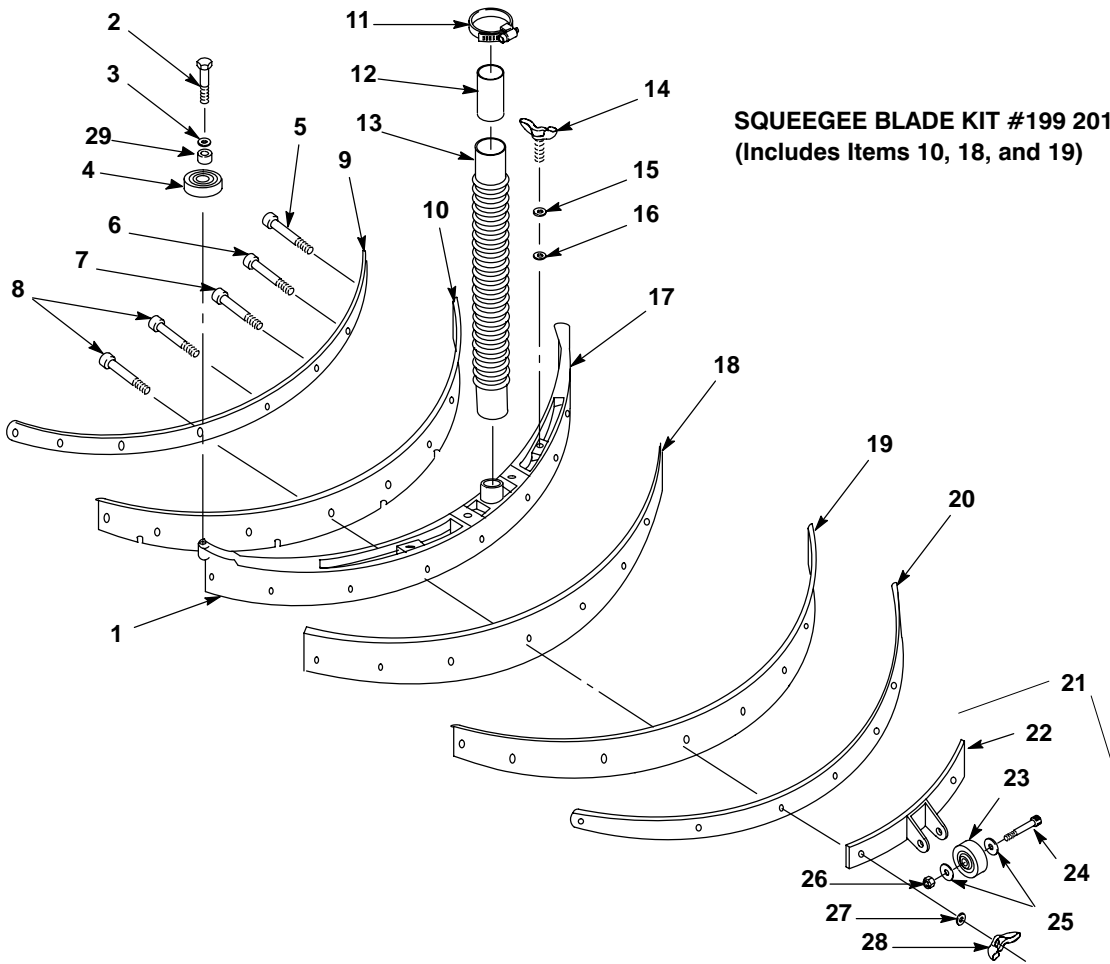
▽= ASSEMBLY  
 ▲= INCLUDED IN ASSEMBLY

## Scrubber Head Mounting



Ref.	Part No.	Description	Qty.
1	611 272 000	Screw, Hex Hd., 1/2-20 UNF x 4.5	1
2	069 760 450	Arm Head	2
3	611 271 000	Spring Holder	1
4	069 762 067	Spring, Comp., 1.00" OD, .50" ID, 2.00" LG	1
5	069 760 449	Arm Head	2
6	069 767 162	Nut, Hex Std., 1/2-20 UNF, ZP	1
7	069 767 091	Rod End	1
8	069 760 443	Spacer, 0.50" ID, 1.50" LG, .06" Thick, Metal	2
9	069 760 417	Sleeve, Bearing, Ø 12.7 x 8.4 x 14	6
10	069 764 083	Pin, Clevis, .50" Ø x 5.25" LG	1
11	200 031 496	Sleeve, Hex Hd., M08 x 35	8
12	630447	Washer, Nylon, Ø 12.7 x 25.4 x .8	18
13	069 760 416	Bearing, Journal, Ø 12.7 x 12.7	8
14	069 767 177	Sleeve, Bearing, Ø 12.7 x 8.4 x 20	2
15	14880.5	Washer, Flat, ANSI-A, .31" Wide, ZP, M08	8
16	200 160 017	Nut, Hex Lock, M08	10
17	578421	Pin, Cotter, .12" Ø x 1.00" LG	6
18	626084	Scrubber Head Mounting Bracket	2
19	611 241 000	Spring, Ext., 1.00" OD, 4.50" LG, .095" Wide	2
20	579144	Washer, Plain, ANSI-A, .31" Wide, ZP, M08	3
21	611 500 000	Washer, Plain, ANSI-A, .50" Narrow, ZP	1
22	069 760 458	Bearing, Journal, Ø 9.5 x 5.3 LG	2
23	611 064 000	Bellcrank, Head Linkage	2
24	069 764 081	Pin, Clevis, .38" Ø x 2.25" LG	1
25	630448	Pin, Clevis, .5" Ø x 2.25" LG	1
26	611 105 000	Pin, Clevis, .38" x 2.62" LG	1
27	069 762 436	Actuator, Linear, 36VDC, 102 mm Stroke	1
28	069 760 443	Spacer, 0.50" ID, 1.50" LG, .06" Thick, Metal	1
29	611 098 000	Pin, Clevis, .50" x 1.75" LG	1
30	611 500 000	Washer, Plain, ANSI-A, .50" Narrow, ZP	4
31	579028	Nut, Hex Lock, M08	1
32	069 764 179	Spacer, .37" ID x 1.12" Long	1
33	630432	Screw, Hex Hd., M06 x 50mm, DIN 933, ZP	1
34	611 099 000	Pin, Clevis, .38" Ø x 2.62" LG	1
35	069 764 635	Spacer, 0.50" ID, 1.50" LG, .06" Thick, Metal	1
36	612 062 000	Switch Actuator Link	2

Squeegee Assembly

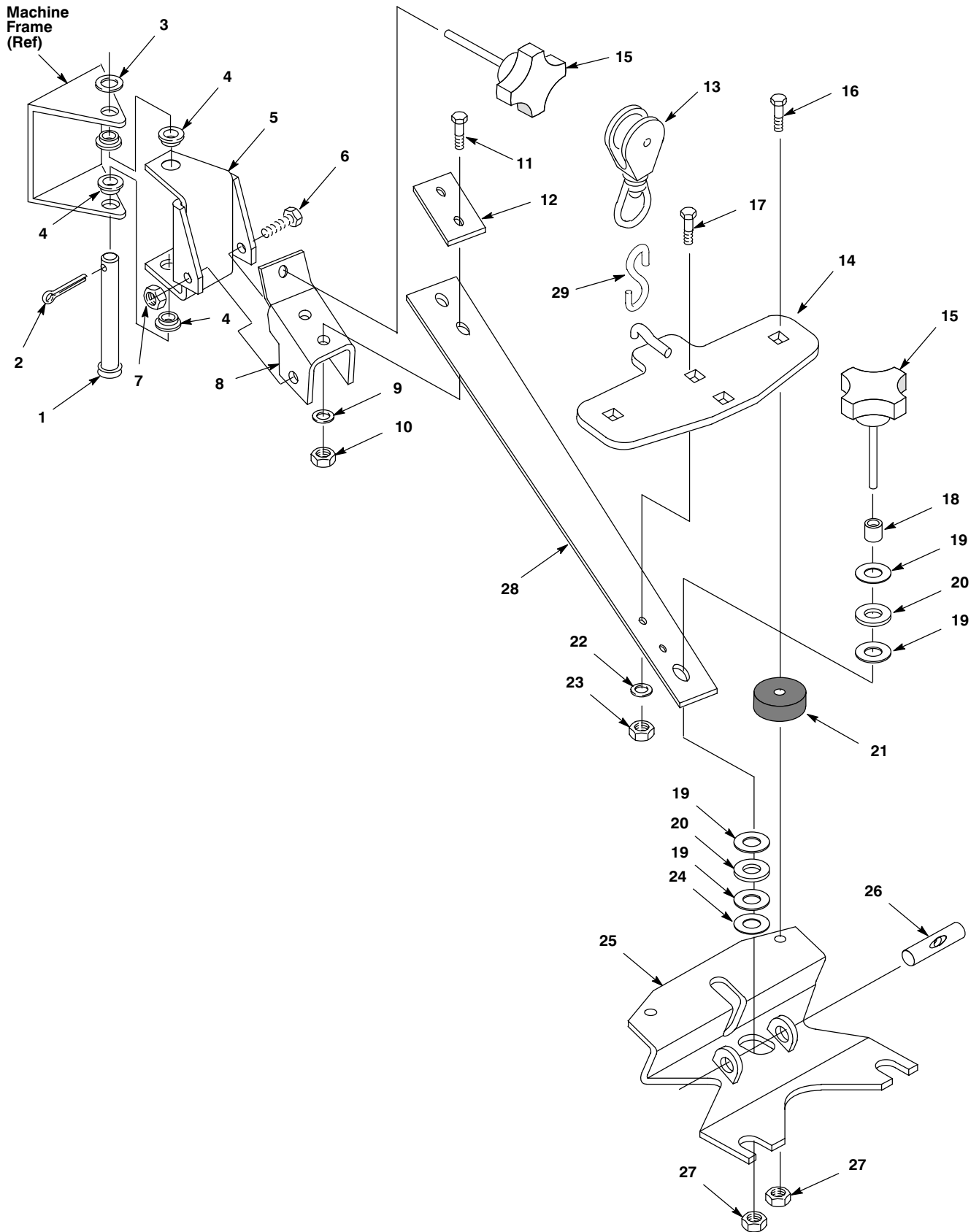


SQUEEGEE BLADE KIT #199 201 017  
(Includes Items 10, 18, and 19)

Ref.	Part No.	Description	Qty.
∇1	469 764 914	Asm, Squeegee 26"	1
▲2	069 760 092	Screw, Hex Hd., .31-18 UNC x 1.75"	2
▲3	069 760 082	Washer, Plain, ANSI-A, .25" Wide, ZP	2
▲4	630450	Wheel, Rubber, Ø 76 x 22 Wide	2
▲5	612 184 000	Screw, Carriage, 1/4-20 UNC x 1.5	2
▲6	612 185 000	Screw, Carriage, 1/4-20 UNC x 2.0	2
▲7	612 186 000	Screw, Carriage, 1/4-20 UNC x 2.5	2
▲8	612 187 000	Screw, Carriage, 1/4-20 UNC x 2.75	2
▲9	069 760 605	Strip, Retainer, Front	1
▲10	067 760 602	Blade, Squeegee, Front	1
▲11	140308	Clamp, Hose 1-5/16 to 2-1/4	1
▲12	160632	Sleeve, Squeegee Hose	1
▲13	626104	Squeegee Hose	1
▲14	069 764 149	Screw, Wing, .50-13 x 1.00"	2
▲15	069 760 091	Washer, Plain, ANSI-A, .50" Wide, ZP	2
▲16	059 650 290	Washer, Nylon, Adjusting Knob	2
▲17	469 764 803	Squeegee, Machined, (Molded Version), 26"	1
▲18	067 760 601	Blade, Squeegee, Rear	1
▲19	067 760 603	Strip, Back Up, Squeegee	1
▲20	069 760 604	Squeegee Band, Rear, 26" Size	1
∇21	600218	Asm, Squeegee Wheel	1
▲22	600184	Bracket, Squeegee Wheel	1
▲23	630477	Wheel, 2" OD, .38" Gray	1
▲24	600187	Screw, Shoulder 3/8" x 1-1/4"	1
▲25	140020	Washer, Flat 3/8"	2
▲26	140546	Nut, Lock Nylon Insert 5/16-18	1
▲27	069 762 311	Washer, Flat, 7.9 ID, 19, 1.7, .25", SS	8
▲28	140536	Nut, Wing, 1/4-20 UNC	8
▲29	103070	Bushing, Wheel	2

∇= ASSEMBLY  
▲= INCLUDED IN ASSEMBLY

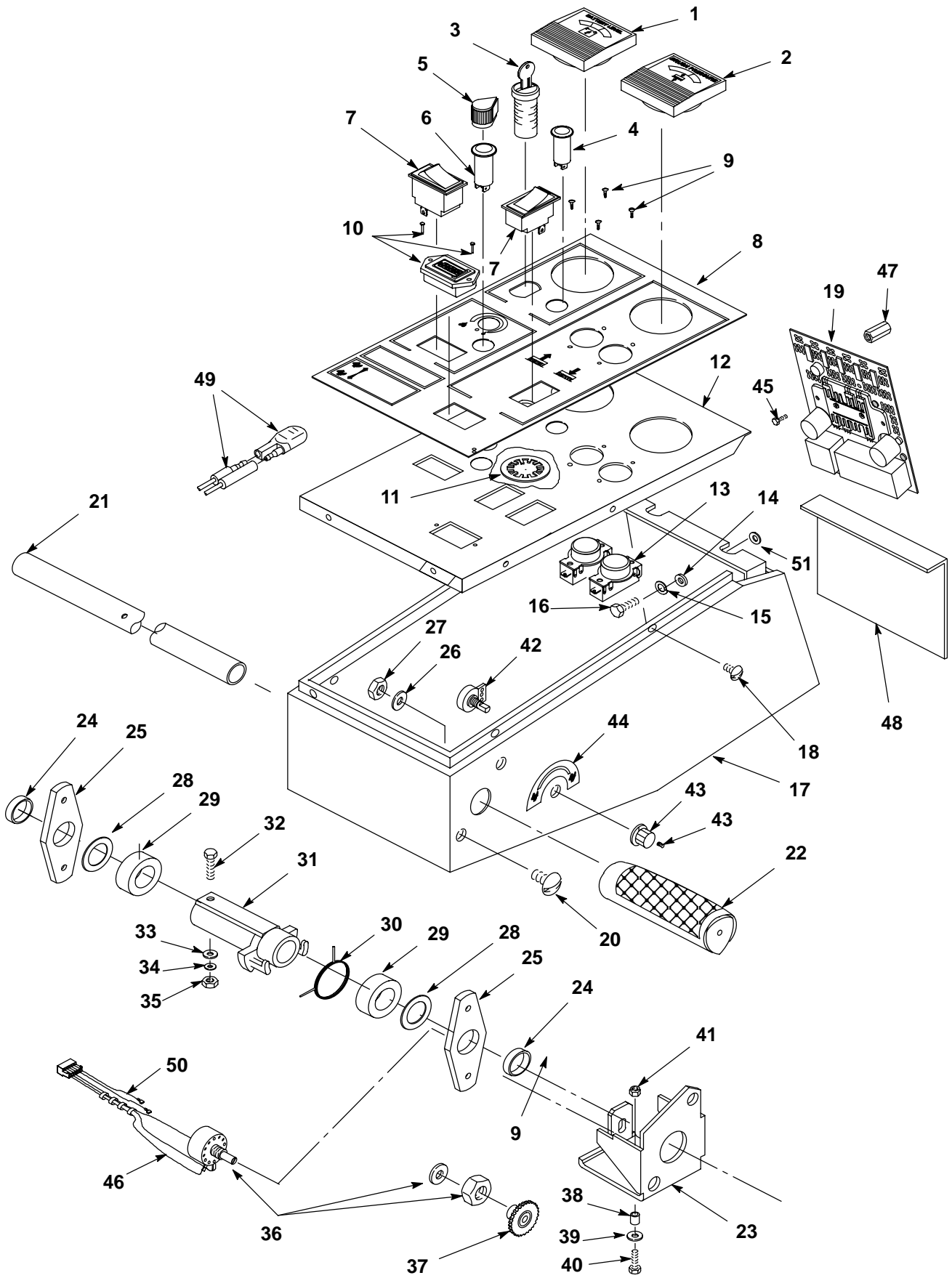
**Squeegee Arm Assembly**



## Squeegee Arm Assembly

Ref.	Part No.	Description	Qty.
	601731	Kit, Squeegee Swivel Arm Replacement (Includes #1 – 29)	1
1	069 764 065	Pin, Clevis .38" Dia x 4.62"	1
2	578421	Pin, Cotter .12" x 1.00"	1
3	579144	Washer, Flat	1
4	630095	Bearing, Flange	4
5	231072	Bracket, Squeegee Swivel	1
6	200 032 503	Screw, Hex Head, M08 x 60mm	1
7	200 160 017	Nut, Hex, M08	1
8	626067	Bracket, Squeegee Spring Mounting	1
9	140016	Washer, Lock, Spring, ANSI, .25" ZP, 06	2
10	579029	Nut, Hex Std., M06 x 1.00", DIN 943P	2
11	200 031 483	Screw, Hex Head, M06 x 20mm	2
12	069 764 155	Plate, Squeegee Spring Back-up	1
13	602509	Pulley, Swivel Eye	1
14	602828	Bracket, Squeegee Pulley Zinc	1
15	626143	Knob, Plastic, .31-18 UNC x 2.5"	2
16	602 068 000	Screw, Carriage, .31-18 UNC x1.25", ZP	2
17	069 767 077	Screw, Carriage, .31-18 UNC x.75", ZP	2
18	069 764 154	Sleeve, 12.7 OD x 8.5 ID x 12.7mm	1
19	630447	Washer, Nylon, 123.7x25.4x0.8	4
20	626149	Washer, Rubber, .5"x1.0"x.125"	2
21	626148	Washer, Rubber, .31" x 1.5" x .53"	2
22	140015	Washer, Split Lock	2
23	140506	Nut, Hex, Standard, .31"-18 UNC, Zinc Plated	2
24	14880.5	Washer, Flat	1
25	626087	Bracket, Squeegee Mounting	1
26	626147	Pin, Floating Thread	1
27	140546	Nut, Hex Lock, .31-18 UNC, Nylon Ins.	4
28	626142	Spring, Flat Squeegee	1
29	611 163 000	Hook, "S", Squeegee Lift & Swivel	1

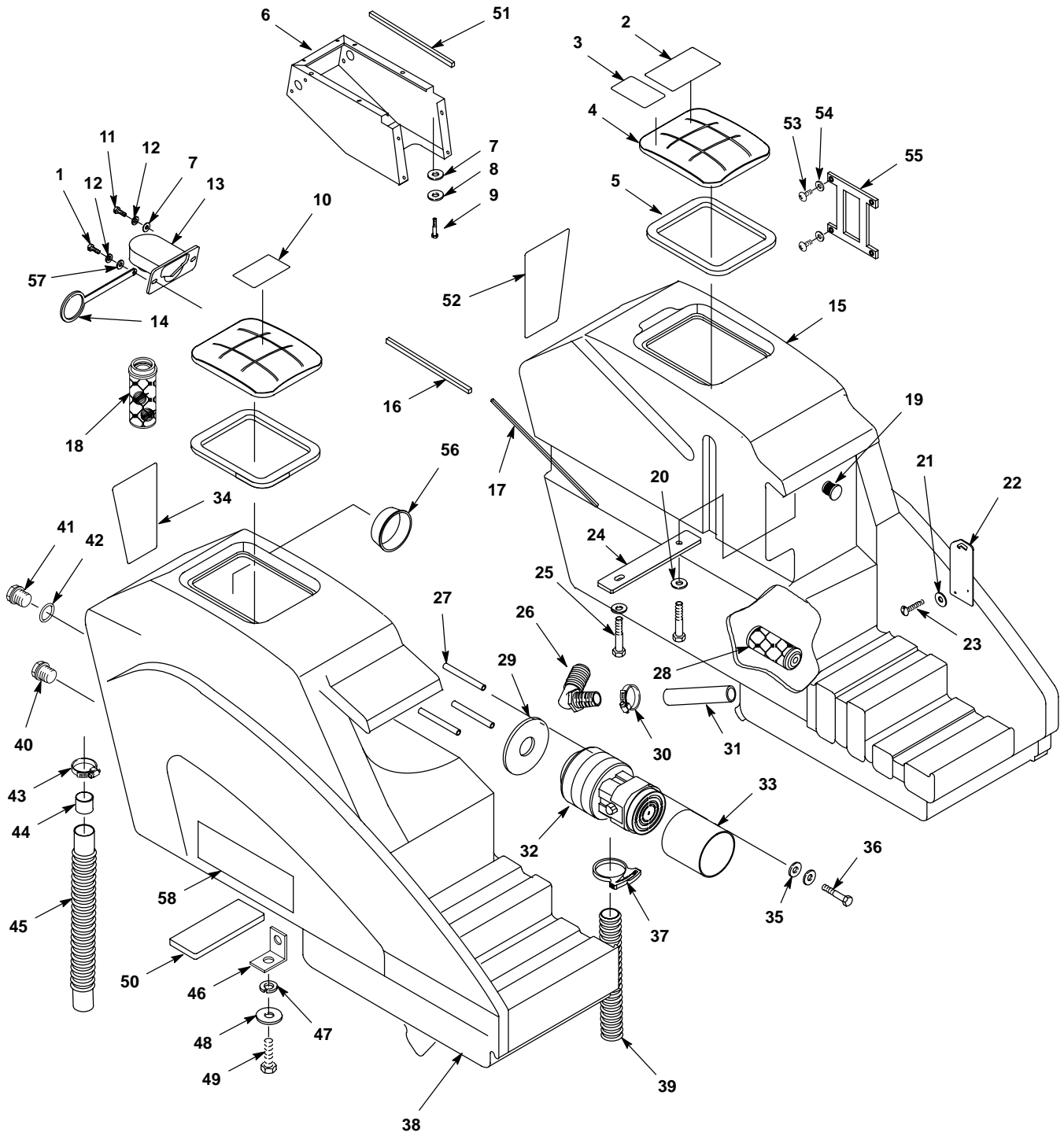
**Control Console Assembly**



## Control Console Assembly

Ref.	Part No.	Description	Qty.
1	610026	Meter, Battery 36VDC	1
2	611411	Meter, Pad Pressure, 19 Amp 36VDC	1
3	130785	Switch, Keylock	1
	069 762 236	Key, Illinois F315 Doublesided	1
	602018	Kit, Replacement For Singlesided Keys	1
4	626114	Light, Pilot, Green 36V	1
5	626121	Knob, Water Valve	1
6	626101	Light, Pilot, Blue 36V	1
7	039 705 081	Switch, Rocker 15 Amp	2
8	600561	Decal, Console	1
9	611 226 000	Screw, Truss Hd., #06-32 x .25"	4
10	630143	Meter, Hour 18-60VDC	1
11	069 762 306	Washer, Lock, Internal, 02.0 ID	1
12	626009	Cover, Console	1
13	626128	Switch, Push Button	2
14	579210	Washer, Flat, 6.4mm, 18.0, 1.5	6
15	140016	Washer, Lock, 1/4"	6
16	200 609438	Screw, Hex Hd., M06 x 16mm	6
17	626006	Console,	1
18	578 141 000	Screw, Pad Hd., Phil, M05 x 10, DN7985A, SS	6
19	611 081 000	Speed Control, PMC, 40 Amp	1
N/S	626157	Cover, P.C. Board	1
20	069 764 060	Screw, Truss Hd., .31-18, 0.75"	4
21	626053	Handle Bar, Zinc Plated	1
22	200823	Grip, Handle	2
23	626151	Bracket, Potentiometer Mounting	1
24	069 760 540	Bushing, 22.2 ID x 6.4 LG	2
25	611 377 000	Bearing Block, Ø.875" x .25	2
26	140015	Washer, Split Lock 5/16"	4
27	140506	Nut, Hex, Std., 5/16-18	4
28	069 760 582	Washer, Nylon, 23 ID, 34 OD	2
29	630186	Collar, Shaft, Ø22.3	2
30	630088	Spring, Center, .072", Zinc Plated	1
31	626131	Hub and Gear	1
32	630431	Screw, Hex Hd., M06 x 4mm, DIN 933	1
33	579210	Washer, Flat, 6.4, 18.0, 1.5, ZP	2
34	578 244 000	Washer, Lock,	1
35	579028	Nut, Hex Lock MO6	1
36	626057	Potentiometer Assembly	1
37	630099	Gear, 28 Tooth, 24 Pitch	1
38	578579	Spacer, .25 ID x .88 OD x .5Long	1
39	602 139 000	Washer, Flat 6.4mm	1
40	200 031 444	Screw, Hex MO6 x 30	1
41	140284	Nut, Hex Nylock MO6 x 1.0	1
42	630133	Resistor, 0-20K Speed Control	1
43	630265	Knob, Speed Limit	1
44	626168	Decal, Speed Control	1
45	611 291 000	Screw, Phil Hd #08-32x.50	2
46	611440	Decal, Fuse Specification	1
47	140958	Stand-off, 8-32 x 3/8 x 1	2
48	600742	Shield, Speed Control	1
49	069 764 206	Diode Replacement	1
50	601 085 000	Decal, P.M.C. Connection	1
51	606374	Gasket	1

Tank Assembly

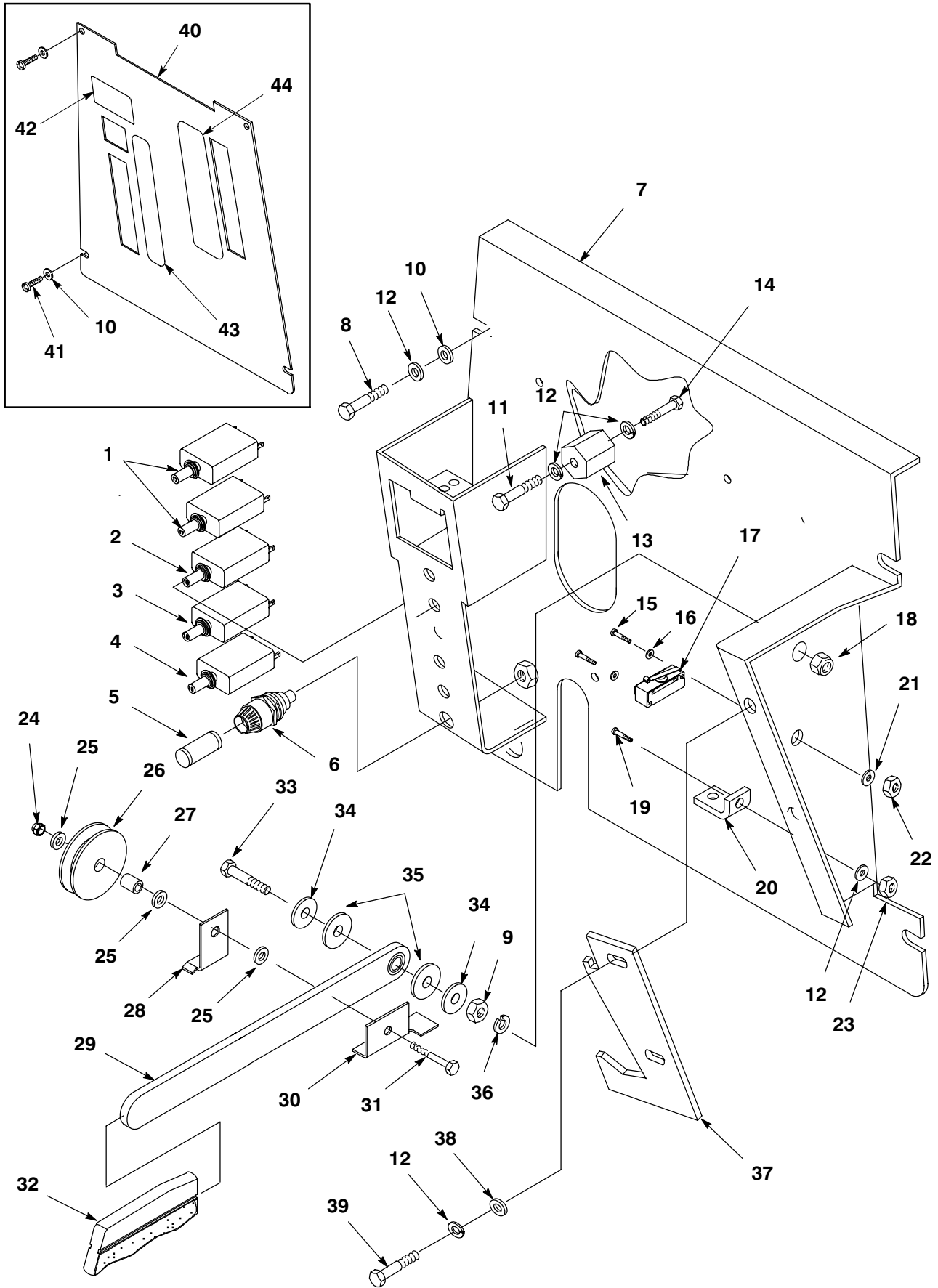




## Tank Assembly

Ref.	Part No.	Description	Qty.
1	600385	Screw, Pan Head Phil., M6 x 20	1
2	069 762 445	Label, Info, Attention: Hot Water	1
3	578729	Decal, Read Manual	1
4	630055	Cover, Tank	2
5	630367	Gasket, Recovery Tank Cover	2
6	626006	Console, 265	1
7	579210	Washer, Flat, 6.4mm x 18.0 x 1.5	9
8	140016	Washer, Lock, Spring, ANSI, .25" ZP	6
9	200 031 436	Screw, Hex Head, M06 x 16mm	6
10	630420	Decal, Flammable Material	1
11	578 187 000	Screw, Pan Head Phil, M06 x 12MM, SS	2
12	200 655 017	Washer, Lock, Spring, 6.1mm, SS	2
13	630053	Mount, Float Cage	1
14	231076	Strap, Float Cage	1
15	608364	Tank, Solution, Green	1
16	626202	Gasket, FR (.330M)	1
17	626203	Gasket, FR (.914M)	1
18	630052	Float, Cage w/ Ball, 12 x 12 Screen	1
19	575 328 000	Fitting, Plug, .5" NPT	1
20	140016	Washer, Lock, Spring, ANSI, .25" ZP	2
21	580 025 000	Washer, Lock, Int., #10, ZP	2
22	626042	Plate, Rod Support	1
23	200 058 384	Screw, Flat Head, Slot, M05 x 14mm	2
24	626043	Strap, Tank Tie	1
25	200 031 436	Screw, Hex Head, M06 x 16mm	2
26	601 104 000	Fitting, Elbow, .5" Hose x .5" NPT	1
27	626041	Spacer, 6.3 x 9.4 x 80, Steel	3
28	630024	Filter, Solution Feed, 60 Mesh	1
29	626092	Gasket, Vac Fan	1
30	140307	Clamp, Hose 3/4" x 1-3/4"	1
31	626161	Spacer, .5" x .63" x 3.0	1
32	626200	Vac Fan, .75 HP, High Performance	1
	611 340 000	Carbon Brush, Vac Fan (Order 2)	2
33	626103	Extension, Vac Fan	1
34	626033	Decal, Operation	1
35	140016	Washer, Lock, Spring, .25" ZP	3
36	626123	Screw, Hex Head, M06 x 100mm	3
37	611 205 000	Clamp, Hose, TYT SNP-50, 2.0-2.3'	1
38	608366	Tank, Recovery, Green	1
39	611413	Hose, Vac Extension, 50.8 ID x 230	1
40	630147	Plug, 3/4" NPT	1
41	630139	Fitting, Plug Hex 3/8"	1
42	630134	O-Ring, 16mm OD x 3.5mm	1
43	140308	Clamp, Hose 1-5/16" to 2-1/4"	1
44	160632	Sleeve, Squeegee Hose	1
45	626104	Hose, Recovery Tank 38.1 Dia.	1
46	626015	Bracket, Tank Support	2
47	200 351 020	Washer, Lock 10.2mm	8
48	140013	Washer, Flat 3/8"	8
49	200 031 538	Screw, Hex Head, M10 x 20	8
50	626077	Spacer, Tank	1
51	602739	Gasket, FR (.152M)	1
52	626036	Decal, Maintenance	1
53	140872	Screw, #6 x 3/8" PNP HL	8
54	630390	Washer, Flat .15, .56, .04	8
55	630056	Hinge, Recovery Tank	2
56	626162	Cap, Tapered 3.125"	1
57	059 650 283	Washer, Flat 6.4mm, 18.0, 1.6	1
58	608369	Decal, 265XP	2

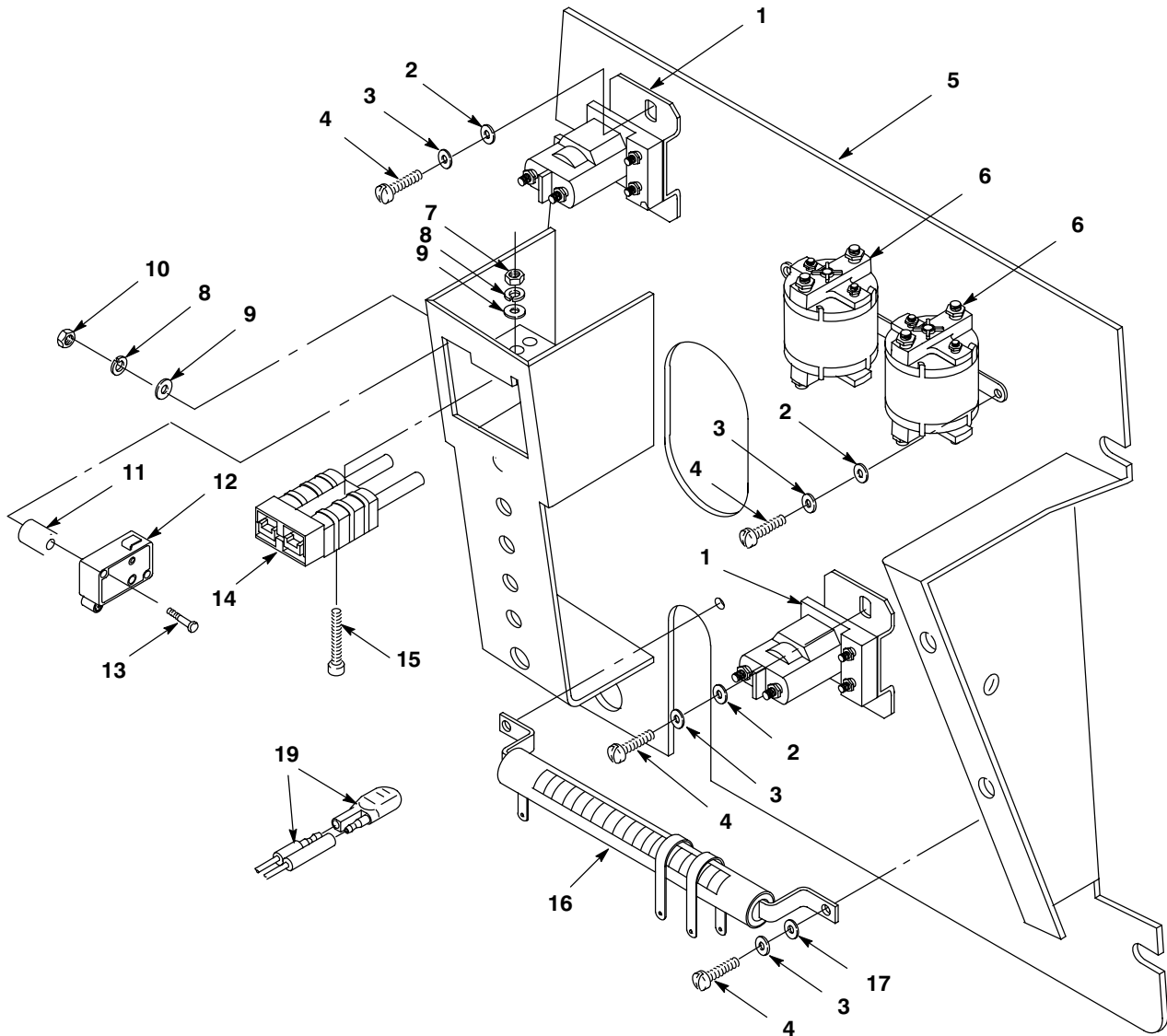
Electrical Panel



## Electrical Panel

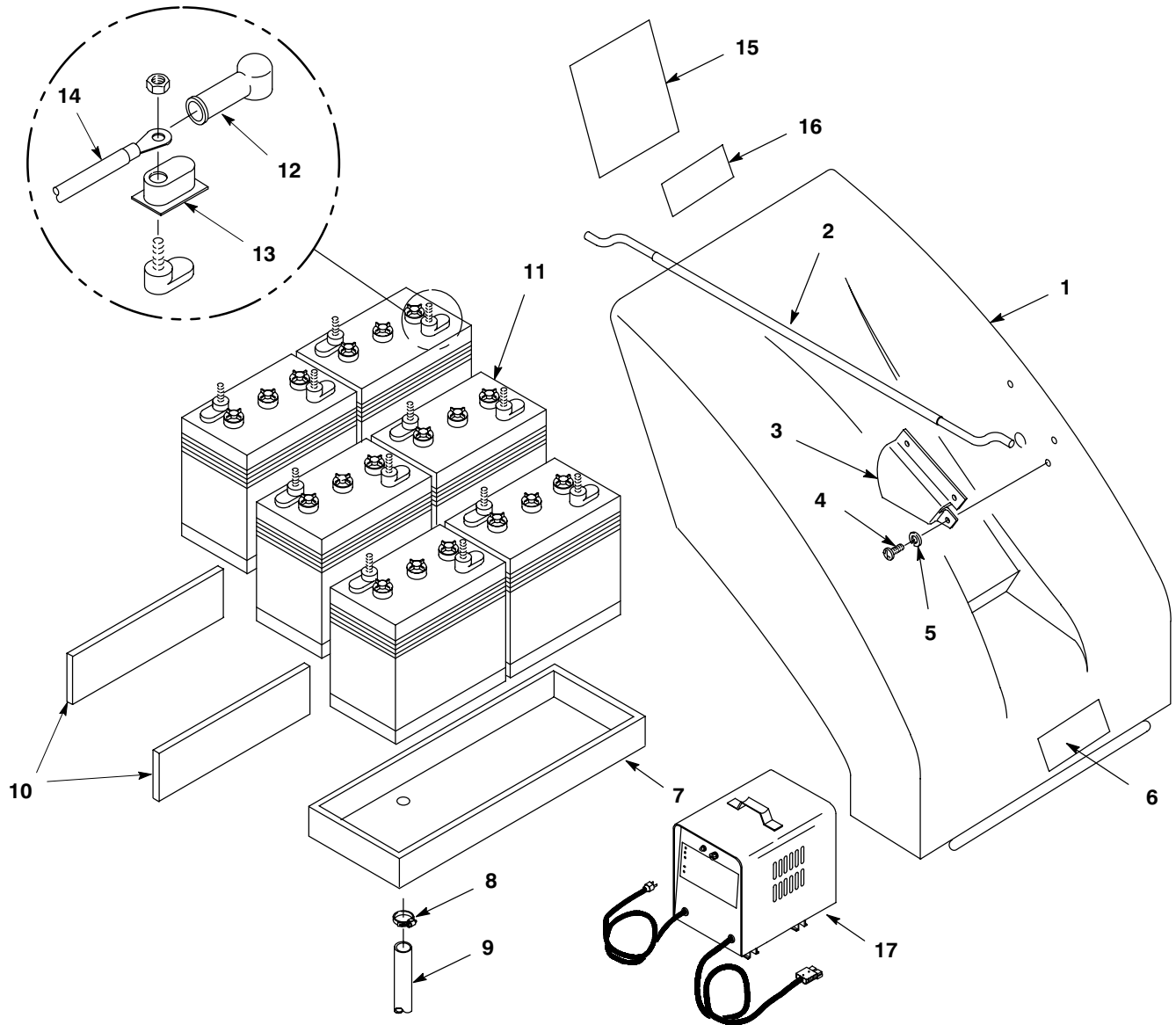
Ref.	Part No.	Description	Qty.
1	20796	Circuit Breaker, 17 AMP	2
2	611 110 000	Circuit Breaker, 10 AMP	1
3	069 764 092	Circuit Breaker, 15 AMP	1
4	572 011 000	Circuit Breaker, 19 AMP	1
5	601091	Fuse, 2 AMP, 3AG, Fast Blow	1
6	578418	Fuseholder, Bayonette	1
7	626007	Panel, Electrical	1
8	200 031 436	Screw, Hex Head, M06 x 16mm	4
9	140285	Nut, Hex M10 x 1.5	1
10	579210	Washer, Flat, 6.4 x 18.0 x 1.5, ZP	8
11	578 189 000	Screw, Hex Head, 1/4-20 UNC x .75"	1
12	140016	Washer, Lock 1/4"	9
13	578427	Standoff, Terminal	1
14	069 762 115	Screw, Hex Head, 1/4-20 x .5"	1
15	200 051 274	Screw, Fill. Head, Slot, M03 x 30mm	2
16	140026	Washer, Flat #6	2
17	069 764 008	Switch, Snap, 25 Amp, Roller, SPNO & C	1
18	200 160 018	Nut, Lock M10	1
19	200 031 436	Screw, Hex Head, M06 x 16mm	1
20	069 760 792	Bracket, Lift Cable	1
21	069 764 054	Washer, Lock, Spring, ANSI, #06, ZP	2
22	200 102 012	Nut, Hex, M03-.5	2
23	200 634 016	Nut, Hex, M06	1
24	579028	Nut, Hex Lock, M06	2
25	579210	Washer, Flat, 6.4 x 18.0 x 1.5 mm, ZP	2
26	630426	Pulley, Cable, $\varnothing$ 2" x 3/16"	1
27	626047	Spacer, 6.2 x 9.3 x 12 mm, ZP	1
28	626045	Bracket, Cable Retaining	1
29	231071	Arm, Squeegee Lift	1
30	626146	Bracket, Switch Engagement	1
31	630432	Screw, Hex Head, M06 x 50mm	1
32	630209	Grip, Squeegee Lift	1
33	601 094 000	Screw, Hex Head, M10 x 45	1
34	611 375 000	Washer, Flat	2
35	059 650 290	Washer, Nylon	2
36	140333	Washer, Lock	1
37	626145	Bracket, Squeegee Catch	1
38	140012	Washer, Plain, ANSI-A, #12, ZP	2
39	200 031 436	Screw, Hex Head, M06 x 16mm	2
40	626011	Cover, Rear Panel	1
41	578 141 000	Screw, Pan Phil M5 x 10	4
42	069 780 017	Decal, Warning	1
43	600817	Decal, Circuit Breaker	1
44	600818	Decal, Squeegee Lift	1

## Electrical Panel (cont'd.)



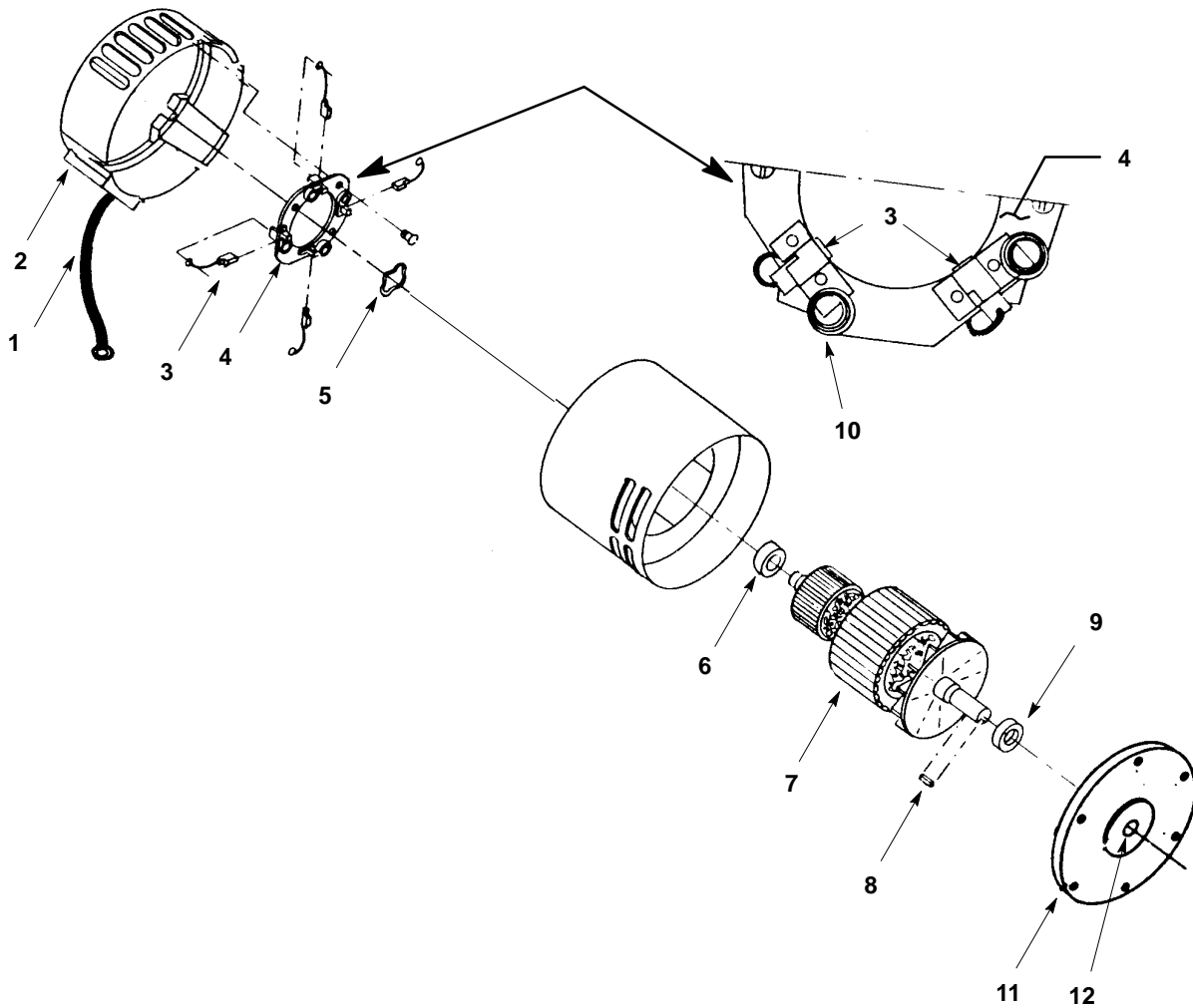
Ref.	Part No.	Description	Qty.
1	611 157 000	Contactors, 36VDC, 100A, SPNO, #120	2
2	140012	Washer, Plain, ANSI-A, #12 Wide, ZP	9
3	069 762 005	Washer, Lock, Spg., ANSI, #10, ZP	9
4	578 141 000	Screw, Pan Head, Phil, M05 x 10, DIN7985, SS	9
5	626007	Electrical Panel (Ref)	1
6	069 760 440	Contactors, SPDT, 100A	2
7	069 762 159	Nut, Hex, Std., #6-32, UNC, ZP	2
8	069 764 054	Washer, Lock, Spg., ANSI, #06, ZP	4
9	140026	Washer, Plain, ANSI-A, #06, ZP	4
10	200 102 012	Nut, Hex, Std., M03 x .5, DIN 934 ZP	2
11	626050	Spacer, 3.6mm x 7.9 x 9.5, Nylon	2
12	611 266 000	Switch, Mini, Snap, SPDT	1
13	200 051 274	Screw, Fill. Hd., Slot, M03 x 30mm	2
14	626130	Plug, Charger w/Cable Assembly	1
15	601 079 000	Screw, Socket Head, #6-32 UNC x 1.0"	2
16	612453	Resistor, .10 OHM, 100 Watt Adj.	1
17	140012	Washer, Flat, 6.4 x 18 x 1.5, ZP	2
18	626016	Wire Harness, Main Asm (Not Shown)	1
19	069 764 206	Diode Replacement	2

Battery Group



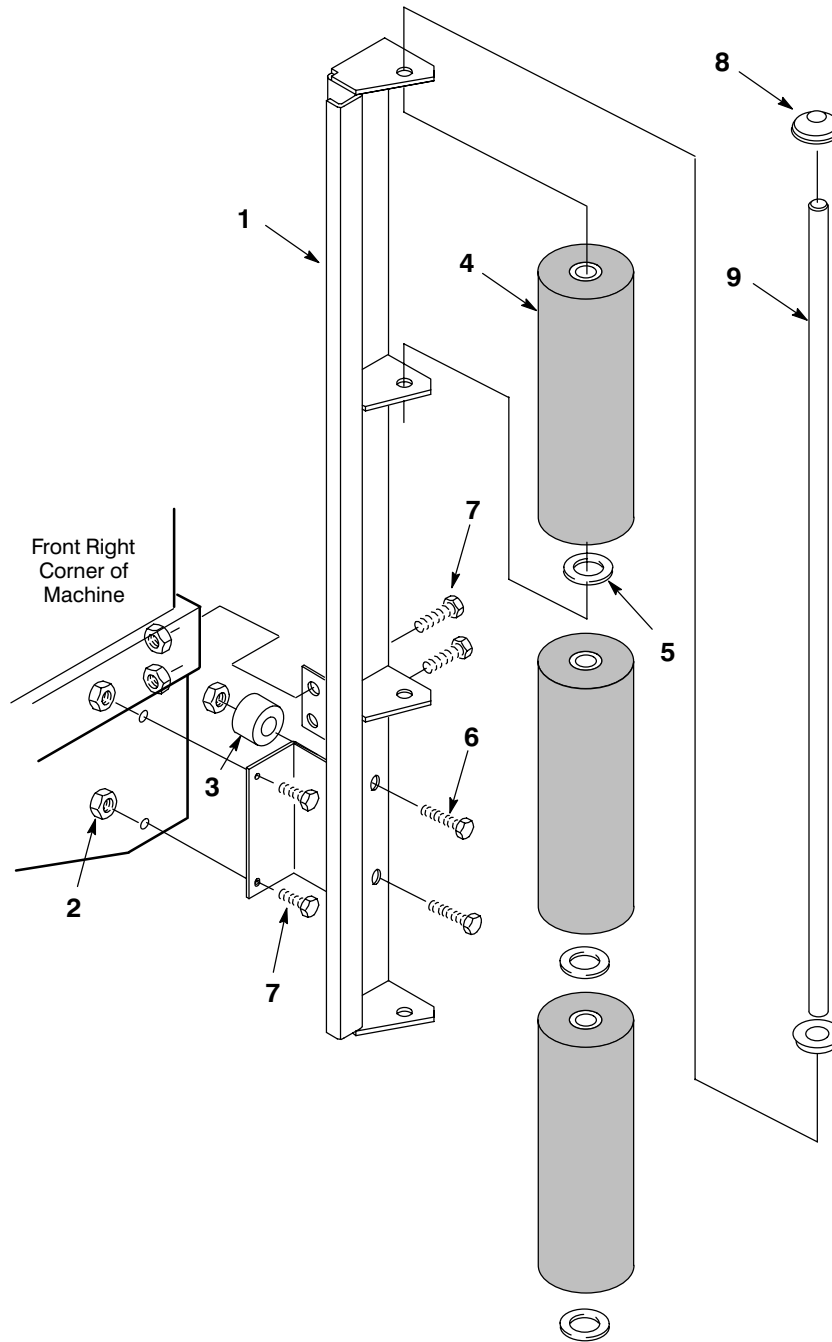
Ref.	Part No.	Description	Qty.
1	608368	Shroud, Front Green	1
2	626 108	Rod, Hood Support	1
3	626 109	Bracket, Rod Retaining	1
4	578 141 000	Screw, Pan Phl M5x10	3
5	069 762 005	Washer, Lock	3
6	608189	Decal, Nobles Logo	1
7	626 019	Battery Tray	1
8	069 764 220	Clamp, Hose	1
9	612 235 000	Hose, 11/16 x 460MM	1
10	626 076	Spacer, Battery Foam	2
11	069 764 222	Battery, 6 Volt 240 AMP	6
12	611 221	Battery Cable Terminal Boot Black	5
	611 222	Battery Cable Terminal Boot Red	5
13	611 223	Cover, Terminal	12
14	611 116 000	Battery Cable, #04GA	5
15	626 096	Decal, Wiring Diagram	1
16	601 095 000	Decal, Caution Battery Connect	1
17	469 760 868	Charger, Battery 36VDC 25A 120 VAC	1

## Pad Motor & Drive Motor



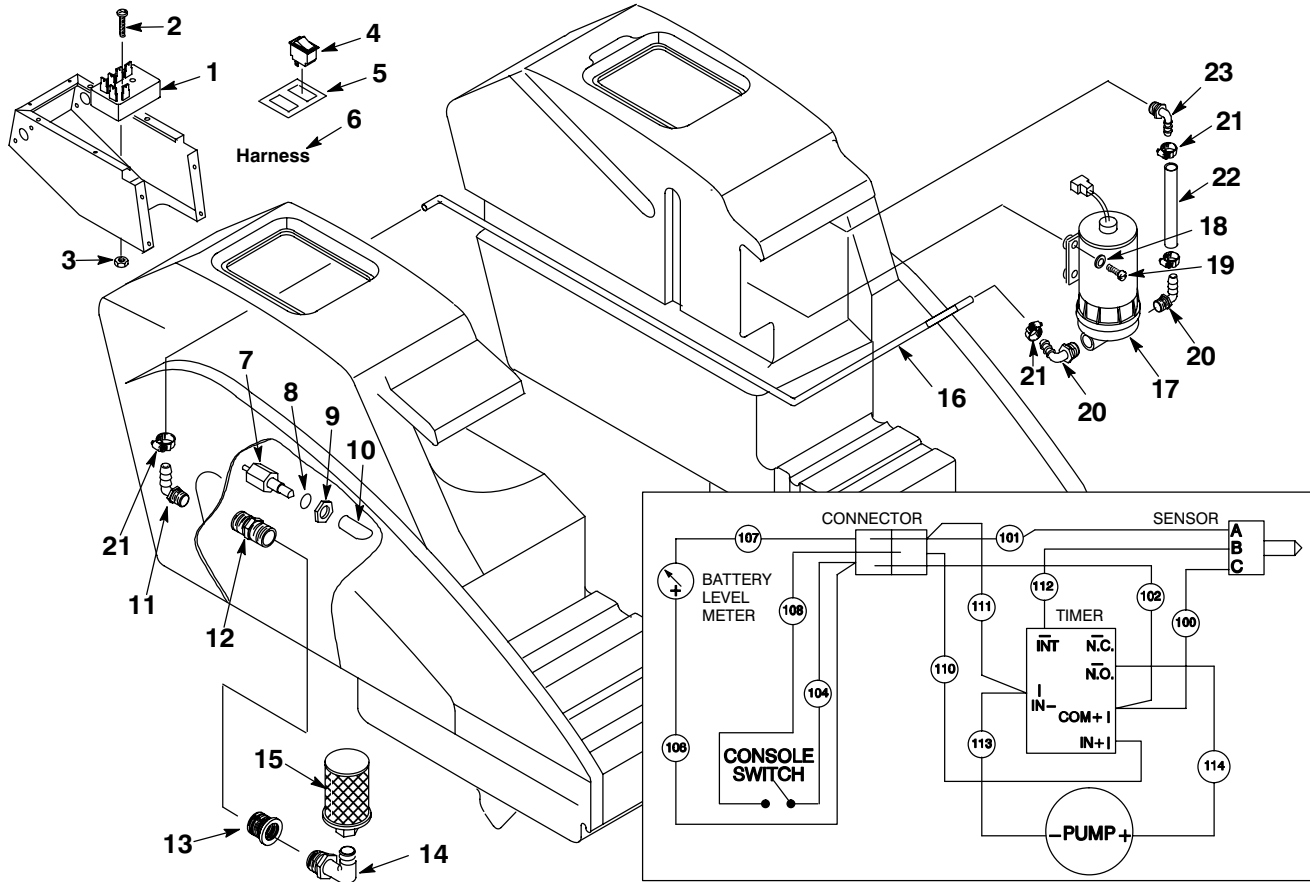
Ref.	Part No.	Description	Qty.
	069 762 427	Motor, 36V, .5hp, 320rpm (Complete)	1
1	611 284 000	Asm., Lead	1
2	611 288 000	Bracket, Commutator	1
3	611 287 000	Asm., Brush (Must order 4)	Set Of 4
4	611 283 000	Asm., Brush Board (Includes 3 & 10)	1
5	602 087 000	Washer, Helical	1
6	602 088 000	Bearing	1
7	611 282 000	Asm., Armature (Includes 6 & 9)	1
8	069 764 080	Key, Shaft	1
9	140124	Bearing	1
10	602 131 000	Spring, Brush (Must order 4)	Set Of 4
11	611 286 000	Endbell, Motor	1
12	601 077 000	Seal, Oil	1

Wall Roller Kit



Ref.	Part No.	Description	Qty.
	626708	Kit, Wall Roller	1
1	626020	Bracket, Wall Roller, LH	1
1	626091	Bracket, Wall Roller, RH	1
2	200 160 017	Nut, Hex, Standard, M08-1.00	12
3	626140	Spanner, 9.53x25.4,x30.0	4
4	626021	Roller, Upper	6
5	612 161 000	Washer, Flat, 13.4 x 21.8	6
6	200 031 501	Screw, Hex Head, M08 x 50	4
7	200 031 486	Screw, Hex Head, M08 x 16	8
8	069 764 114	Cap, Push-On	4
9	626156	Shaft, High Roller	2

**ES™ Option Components**



Ref.	Part No.	Description	Qty.
	626700	Kit, Extended Scub	1
1	626102	Timer, 36VDC, Range – 30 Sec.	1
2	578 008 000	Screw, M05 x 31.3	1
3	140283	Nut, Lock M05	1
4	039 705 081	Switch, Rocker 15A	1
5	120068	Decal, Switch	1
6	626018	Wire Harness	1
7	630137	Sensor, Liquid Level, 10–40 VAC	1
8	630134	O–Ring, Sensor	1
9	140607	Nut, Sensor	1
10	626169	Deflector, Water	1
11	578 037 000	Fitting, Elbow, .5" Hose x .75"	1
12	630385	Fitting, Nipple, 3/4"NPT, Nylon	1
13	578 036 000	Fitting, Bush, 1.0" MPT x 3/4" FPT	1
14	578 034 000	Fitting, Elbow, 1" NPT, Street	1
15	578 014 000	Filter, SRS, 100 Mesh	1
16	612 104 000	Tubing, Clear, Bulk	.64m
17	626106	Pump, 36 VDC, SRS	1
18	140012	Washer, Flat 3/16"	4
19	602 168 000	Screw, #10–32 x 1"	4
20	578 039 000	Fitting, Elbow, .5" Hose x .38" NPT	2
21	140310	Clamp, Hose 5/16"–7/8"	4
22	612 104 000	Tubing, Clear, Bulk	.16m
23	601 104 000	Fitting, Elbow .5 Hose x .5 NPT	1





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

**FOR SAFETY: When servicing machine, wear protective gloves when handling batteries or battery cables. Avoid contact with battery acid.**

**BATTERY SPECIFICATIONS:**

6 – 6 VOLT 235AMP @ 20 hr rate

**INSTRUCTIONS**

**Step 1:**

Turn Key to OFF. This prevents any motors from accidentally starting when battery connections are made.

**Step 2:**

Carefully set batteries in compartment and arrange battery posts as shown.

**Step 3:**

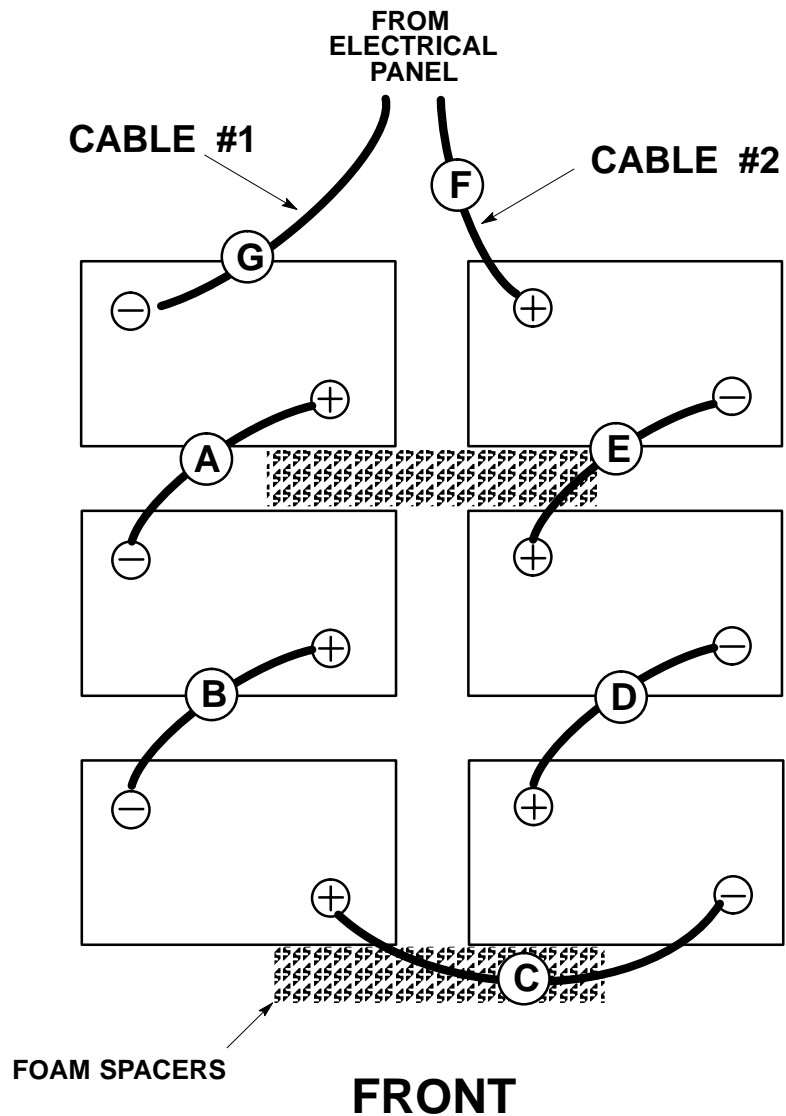
Insert foam spacers between batteries as shown and place a translucent terminal cover over each post.

**Step 4:**

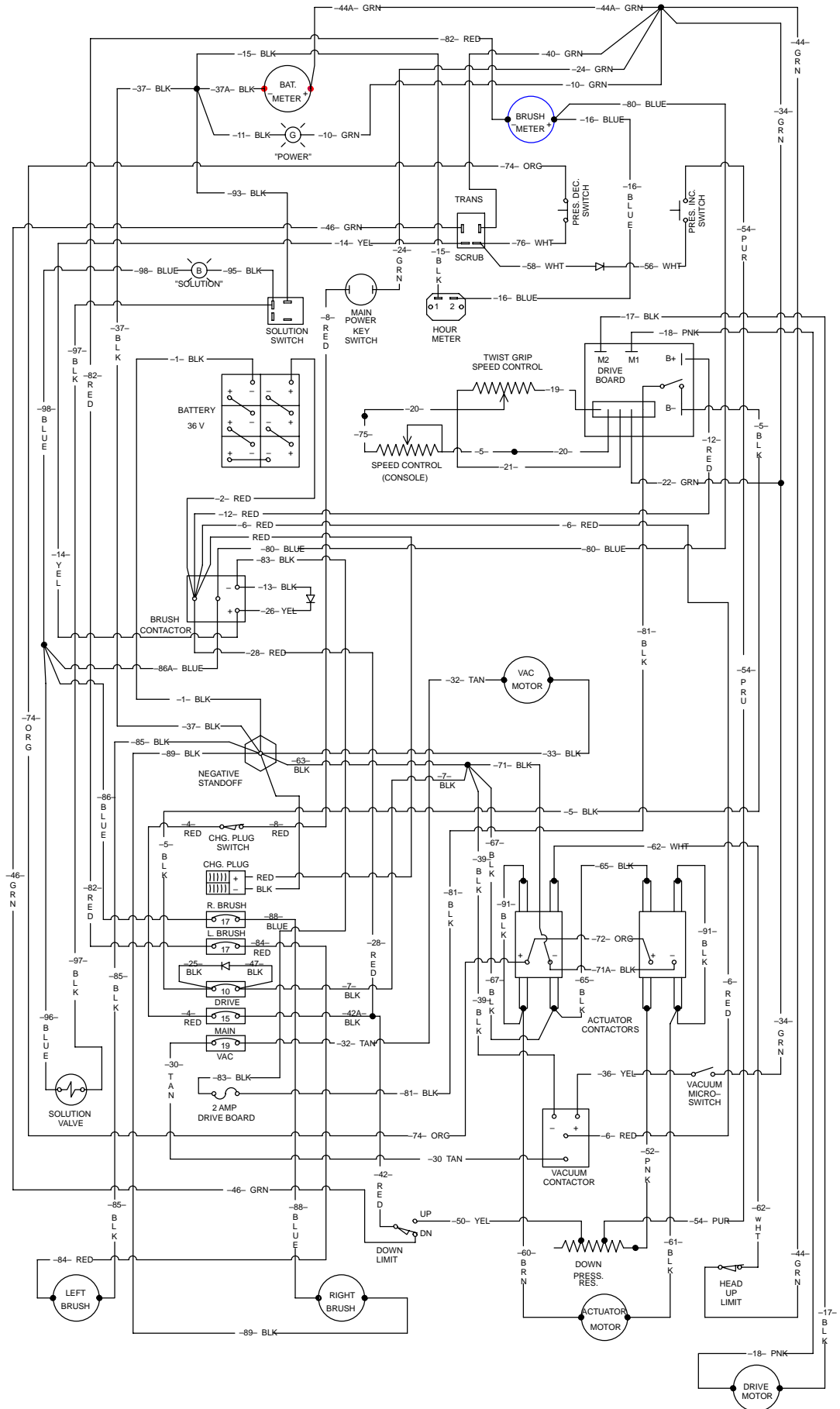
Connect cables to battery posts in order as labeled (RED to POSITIVE & BLACK to NEGATIVE). Cover post with rubber boot.

**NOTE:** Once final battery cable connection is made the scrubber head will automatically raise to transport position. This is normal.

**CAUTION:** Be careful not to bridge wrench from post to post when connecting cables. This could cause sparking and create an explosive hazard.



## Wiring Diagram



Ladder Diagram

