Pioneer Eclipse

An AMANO Company

Walk-Behind Autoscrubber

PE310AS

Operator's Manual

CE

Instructions For Use

Failure to read and understand this manual before operating this machine or performing service on this machine may result in injury to the operator or nearby personnel or result in damage to the machine or nearby property. Each operator must be trained in the operation of this machine before being allowed to use it. Contact Amano Pioneer Eclipse Customer Service at 1-800-367-3550 or +1-336-372-8080 or an authorized Amano Pioneer Eclipse Distributor to inquire about training or to request a replacement manual.

NOTICE

Proper maintenance is necessary with all battery powered floor machines. Following the scheduled maintenance procedures found in your operation manual will provide many years of uninterrupted service.

Pioneer Eclipse
An AMANO Company

In addition to the scheduled maintenance procedures listed it is recommended to have your machine serviced by certified service personnel every three months. This service should include an emissions check.

! FOR YOUR SAFETY !

DO NOT store or use gasoline or other flammable vapors and liquids in the vicinity of this or any or other appliance.

Record This Important Information

Date of Purchase _____

Purchased From _____

Address _____

City_____ State_____ Zip _____

Phone _____ Contact _____

Machine Model _____

Machine Serial Number _____

Important Phone Numbers

Medical Emergency _____

Police _____

Fire Department _____

In this Operation Manual you will find three statements that you must read and observe to ensure safe operation of this machine.

DANGER! indicates that the possibility of severe bodily injury or death can occur if DANGER! statements are ignored. Read and observe all DANGER! statements included in the Operation Manual and attached to the machine.

WARNING! indicates that the possibility of bodily injury to the operator and other people can occur if WARNING! statements are ignored. Read and observe all WARNING! statements included in the Operation Manual and attached to the machine.

CAUTION! indicates that the possibility of damage to the machine or other property can occur if CAUTION! statements are ignored. Read and observe all CAUTION! statements included in the Operation Manual and attached to the machine.

Table of Contents

Quick Reference

Description	Specification
Length	39.4” (100 cm)
Width (Splash Skirt)	21.7” (55 cm)
Height	41.7” (106 cm)
Number of Pads	1
Pad Driver Diameter	20” (50 cm)**
Pad Pressure	44-88 lbs. (20-40 kg)
Squeegee Width	29” (74 cm)
Solution Tank Capacity	12 Gal. (45 L)
Recovery Tank Capacity	12 Gal. (45 L)
Weight (w/o Batteries)	201 lbs. (91 kg)
Weight (w/ Lead Acid Batteries)	308 lbs. (140 kg)
Weight (w/ Sealed Batteries)	330 lbs. (150 kg)
Battery Compartment Size (LxWxH)	12.2” x 13.8” x 10.2” (310mm x 350mm x 260 mm)
Voltage	24 VDC
Power Source	12 VDC 110Ah Battery (Qty. 2)
Pad Drive Gearmotor	370W / 17A
Traction Motor	110W / 8A
Vacuum Motor	550W / 22A
Pad Lift Control	Manual (Pedal)
Squeegee Lift Control	Manual (Lever)
Forward Speed	0-2.2 mph (0-3.5 km/h)
Maximum Slope	3%
Scrubbing Performance	18,800 ft^2/h (1750 m^2/h)
Noise Level	72 dBA

***Note: Due to variations commonly found in pad dimensions, APEC recommends the use of 19” pads with this machine rather than 20” pads, even though some 20” pads will work on the machine.*

Safety Precautions

Anyone operating the machine should read the following carefully and be informed of potentially dangerous operating conditions. Operators should be familiar with the location and use of all safety devices on the machine. Do not use the machine if it is not in proper operating condition, and report any damage or operation faults immediately.

DANGER! This machine has parts including the pad holder or brush assembly that can cause severe injury if these parts are contacted while they are moving. **DO NOT** allow any part of the body or clothing to come in contact with these parts while they are moving. **DO NOT** try to change the pad or brush while the machine is running. **DO NOT** allow other people to come near the machine while it is in operation. **DO NOT** allow the machine to run unattended. **DO NOT** leave the machine in a place where unauthorized or untrained personnel could use the machine. **DO NOT** run the machine with the pad or brush off center, damaged or missing. **DO NOT** operate the machine if the machine has loose parts.

WARNING! Batteries emit hydrogen gas. Explosion or fire can result. Keep sparks and open flame away. Keep covers open when charging. **DO NOT** smoke around batteries. Avoid skin contact with the acid contained in the batteries. Never allow metal objects to lay across battery tops.

WARNING! Operate from the rear of the machine only.

WARNING! Inspect pad holders and or brushes regularly. A fractured pad holder and or brush may result in pad fragments causing injury.

WARNING! Use caution when driving the machine on a ramp or incline. **DO NOT** turn the machine or leave it unattended on a ramp or incline.

WARNING! Store machine inside. Keep the electrical components of the machine dry. **DO NOT** pressure wash machine.

WARNING! Modifications or alterations to this machine can lead to personal injury or damage to the machine. **DO NOT** make unauthorized modifications or alterations to this machine. Amano Pioneer Eclipse assumes no liabilities for injury or damage resulting from an unauthorized modification or alteration to the machine. Any unauthorized modification or alteration to this machine voids all warranties.

WARNING! The motors and motor controller become hot enough while the machine is in operation, and for a long time after the machine is shut off, to cause severe burns. **DO NOT** touch these parts of the machine until they have cooled.

WARNING! Injury can occur to the eyes and body while using the machine. Safety goggles, safety shoes, and safety clothing are recommended while operating the machine.

WARNING! Machine vibration may cause tingling or numbness in the fingers or hands. Gloves are recommended to reduce machine vibration. If tingling or numbness persists, shut off the machine. If the vibration is caused by loose parts, adjust or tighten these parts before using the machine again.

WARNING! DO NOT use this machine to scrub on an incline. This machine is designed to scrub on a flat level floor.

CAUTION! Before starting machine ensure all safety devices are in place and functioning properly. **DO NOT** operate this machine unless all covers, skirts and guards are properly installed.

CAUTION! DO NOT use this machine to vacuum inflammable, toxic, and/or corrosive liquids and powders.

CAUTION! DO NOT operate machine unless trained and authorized. **DO NOT** operate machine unless you have read and understand the operation manual. **DO NOT** operate machine in flammable or explosive areas.

CAUTION! When using machine, go slowly on inclines or slippery surfaces. Use care when operating machine in reverse.

CAUTION! Follow all manufacturers instructions on chemical product containers when handling, mixing, or using chemical products.

CAUTION! When servicing machine, stay clear of moving parts. **DO NOT** wear loose clothing when working on machine. Block machine wheels before raising or jacking up machine. Use hoist stands that will support the weight of the machine. Wear eye and ear protection when using pressurized air or water. Disconnect battery connections before servicing machine. Use only replacement parts supplied by Amano Pioneer Eclipse or an Amano Pioneer Eclipse Authorized Distributor or Service Center.

CAUTION! When loading or unloading machine onto or off a truck or trailer, turn machine OFF. Only use a truck or trailer that will support the weight of the machine to transport. **DO NOT** push the machine onto or off a truck or trailer unless the load height is 15 in (380mm) or less from the ground. Block machine wheels when transporting. Tie the machine down securely to truck or trailer when transporting.

CAUTION! When draining liquids from the machine, follow all local and federal waste disposal standards.

This Machine is Manufactured for Commercial use only.

This machine is designed and manufactured for indoor use on hard floor surfaces. Amano Pioneer Eclipse does not recommend use of this machine in any environment other than an indoor environment. This battery powered floor machine is designed and manufactured for commercial floor cleaning only. This machine is designed to clean most modern types of floors including composition tile, stone, marble, terrazzo, and resilient floor covering, and some coated wood floors.

Operator Responsibility

The operator is responsible for performing the recommended daily maintenance and checkups of the machine to keep it in good working condition. The operator must inform the service mechanic or supervisor when recommended maintenance procedures are required as prescribed in the MAINTENANCE section of this manual.

Read this manual carefully before operating this machine.

FOR SAFETY: Do not operate machine before reading and understanding the operation manual.

Check the machine for shipping damage.

Keep your machine regularly maintained by following the maintenance information in this manual. We recommend taking advantage of a service contract from your Amano Pioneer Eclipse Authorized Distributor or Service Center.

Order parts and supplies only from an Authorized Amano Pioneer Eclipse Distributor. Use the parts illustration section of your manual when ordering parts.

During and after operation, perform the recommended daily and hourly procedures outlined in the Maintenance Chart.

Test for Operator-Ear Sound Pressure Level

Amano Pioneer Eclipse measures and rates the operator-ear sound pressure level for hand-guided floor treatment and floor cleaning machines for industrial use. All tests are performed in accordance with European Machinery Directive (2006/42/EC).

- Outdoor test area consists of a flat open space free from effects of signboards, buildings or hillsides for at least 15m (50ft) from the center of the test surface. Indoor tests are conducted in a semi-anechoic or sound deadening room.
- The test surface is a single sheet of floor covering at least 1m (3.3ft) wider and longer than the equipment being tested. In order to not affect the sound reading, the observer taking readings is at least 2m (6.6ft) from the equipment being tested, or standing directly behind the operator.
- All machines are tested while stationary and centered on the test surface. With the traction drive in neutral (where applicable) the test is conducted with the machine at maximum engine or motor speed as specified by the manufacturer.
- The operator is located in the normal operating position with the microphone or meter supported independent of the machine, 1, 68m (66in) above the test surface, 25cm (10in) to the right and left centerline of the operators position, an 20cm (8in) to the rear most point of the handle, with the handle in the most forward position.
- The sound level meter is observed for a minimum of five seconds or until a stabilized reading is obtain. The maximum repeatable sound level observed during the test at each microphone position is recorded and documented.

Test for Hand-Arm Vibration at the Grip Surface of Hand-Guided Machinery

Amano Pioneer Eclipse measures and rates the vibration at the machine-hand contact surface of hand-guided machines that are provided with handles in accordance with European Machinery Directive (2006/42/EC).

- The test area consists of a flat open floor area that allows the machine to be operated normally
- The transducer is mounted firmly at a point halfway along the length of the handle where the handle would normally be held.
- Machines are tested while stationary, with all mechanisms necessary for the equipment to perform its intended functions engaged and the traction drive in neutral (if applicable). The machine will be tested at maximum engine or motor speed as specified by the manufacturer of the subject machine.
- The measurements are recorded from the dominant axis.

Machine Preparation

Unpacking the Machine

Unpack the machine with caution. The machine is shipped boxed on a wooden pallet. To unpack machine:

1. Cut and remove bands holding the box to the pallet.
2. Remove staples attaching the box to the platform at the bottom edge of the box.
3. With two people, one at either end of the box, lift box straight up and off machine.
4. Remove any loose or miscellaneous items that are not strapped to the pallet.
5. Cut and remove bands securing the machine to the pallet.
6. Carefully take the machine off of the pallet by means of a wooden or metallic ramp.
7. Cut and remove bands securing the batteries (if applicable) from the pallet.
8. Open the battery cover and remove any components that may be inside the battery compartment.
9. Check machine for any damage that may have occurred during transport.
10. Read carefully the contents of this operators manual.
11. Install the batteries (See the “Installing Batteries” section).

Transporting the Machine

When shipping the machine, make sure the batteries are disconnected. It is recommended that the batteries be removed from the machine during transport. Remove the splash skirt, pad/brush, and squeegee before loading to prevent damage to these components. Secure the machine to the transporting vehicle so that it does not move during transport. Always engage the parking brake while the machine is being transported. For a longer transport, it is recommended to pack the machine in its original box, with the batteries removed.

To repack the machine, refer to the “Unpacking the Machine” section, using the original packing materials and container.

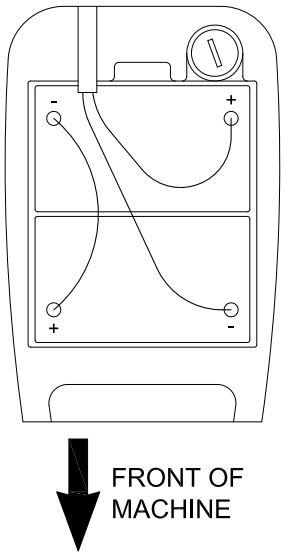
Installing Batteries

PROPOSITION 65 WARNING

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

Check the batteries for any damage prior to installation. Make sure there are no cracks or other external damage.

1. Disconnect the battery plug from the back of the machine.
2. Lift up the battery cover to access the battery compartment.
3. Place the batteries in the battery compartment as shown.
4. Clean the battery terminals and battery cables. Apply a film of dielectric grease to terminals.



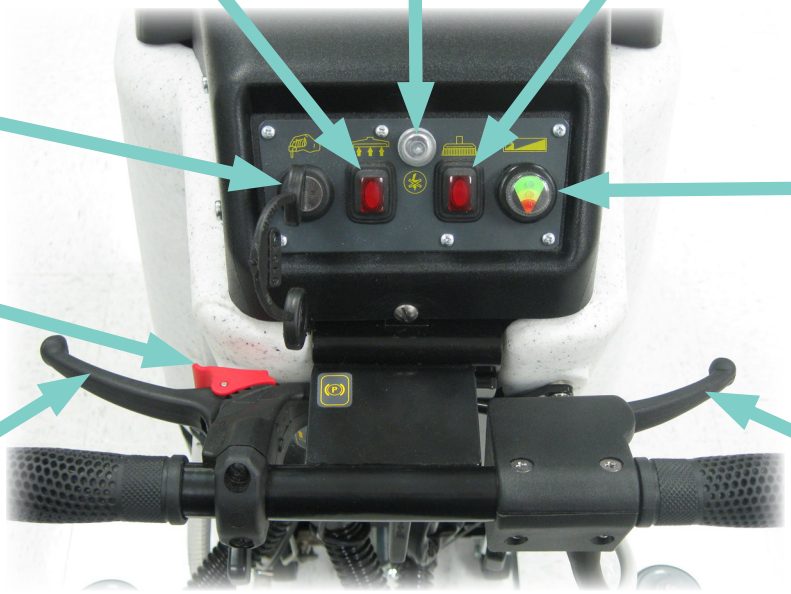
DANGER! Incorrect connection of batteries can cause an explosion and/or serious injury.

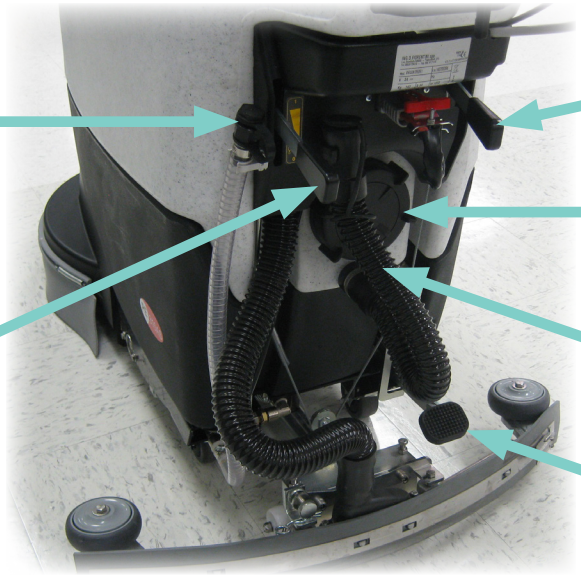
5. Connect the batteries as shown in the battery connection diagram.

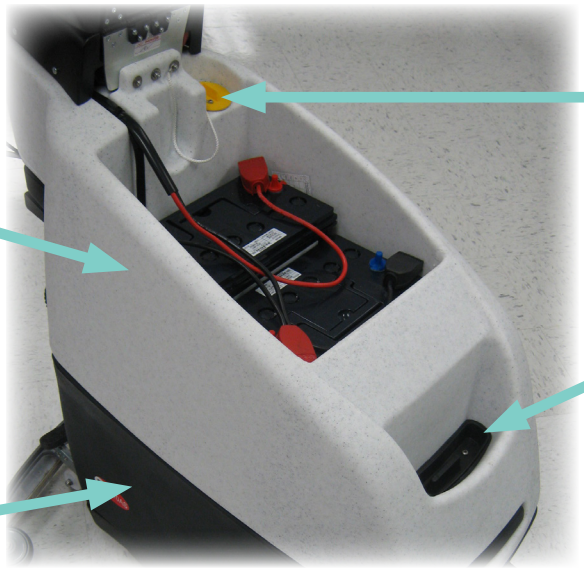
Note: Red Cables are (+) Positive & Black Cables are (-) Negative.

6. Double check the battery connections.
7. Connect the battery plug at the back of the machine to the machine.

Machine Components







Main Key Switch

Turns the machine on and off.

Vacuum Switch

Turns on the vacuum motor on and off.

Traction Breaker

Over current protection for the traction motor. This is a 7A breaker. If the traction forward lever is pressed and the machine does not traverse, turn the machine off and press the breaker to reset.

Pad Motor Switch

Turns the pad drive motor on and off. This switch also opens the solenoid valve to allow solution to flow to the pad. The solenoid valve will close when the switch is turned off.

Battery Level Indicator

Displays the charge level of the battery. There are three lights and the top green light indicates the battery is fully charged. The bottom red light indicates the battery pack needs to be recharged. Stop using the machine when the red light is illuminated to prevent damage to the machine.

Traction Forward Lever

Pulling back on the traction forward lever will make the machine move forward. The further you pull back the faster the machine will traverse. This machine does not have reverse. If you need the machine to back-up, release the traction forward lever and pull the machine backwards. If the squeegee is in the lowered position, you will need to raise the squeegee before pulling the machine backwards.

Parking Brake

The parking brake will prevent the machine from moving while not in use or being transported. The parking brake should be engaged when the machine is not in use or left unattended. Always disengage the parking brake while in use to prevent damage to the drive components.

Engage the parking brake by pulling back on the brake lever and push the red latch into one of the notches. To release the parking brake, pull on the brake lever and the red latch will automatically release.

Squeegee Lift Lever

This lever will manually lift and lower the squeegee assembly. To lower the squeegee, pick up on the lever and rotate it towards the right side of the machine. Allow the lever to fall and the squeegee will rest on the floor. When you need to lift the squeegee, pick up on the lever and rotate towards the center of the machine. Place the lift lever in the notch of the lever catch plate and allow it to rest in place.

Recovery Tank Clean Out

When the recovery tank needs to be thoroughly cleaned or there is an obstruction at the drain hose, removing the recovery tank clean out cap will provide access to the inside of the recovery tank. Always be sure to reinstall and tighten the clean out cap before using the machine.

Recovery Tank Drain Hose

This drain hose will allow you to drain the dirty water out of the recovery tank. Always be sure to reinstall the drain plug in the end of the hose after draining.

Pad / Brush Pedal

The foot pedal will raise and lower the pad drive assembly. To lower the pad drive assembly, using your foot, press down on the pedal and slightly rotate toward the center of the machine. Once the pedal is in the channel, slowly lower the pad drive assembly until it rests on the floor. To raise the pad drive assembly, using your foot, press down on the pedal and rotate the pedal outward until it is captured in the lift guide bracket.

Solution Adjustment Lever

This lever adjusts the amount of solution being put on the floor while the pad is turning. Raising the lever all the way up is the maximum amount of solution flow. Pushing the lever all the way down will shut off flow of solution.

Solution Tank Drain Hose

Unthread the cap on the end of the hose and drain any remaining solution in the solution tank. The clear hose also serves as an liquid level gauge to determine how much solution is left in the solution tank.

Solution Tank Fill

Remove the fill cap and add solution and cleaner to the solution tank.

Recovery Tank Access

Remove the cap to gain access to the inside of the recovery tank. Use this access to rinse the recovery tank after it has been drained.

How the Machine Works

Battery Charging

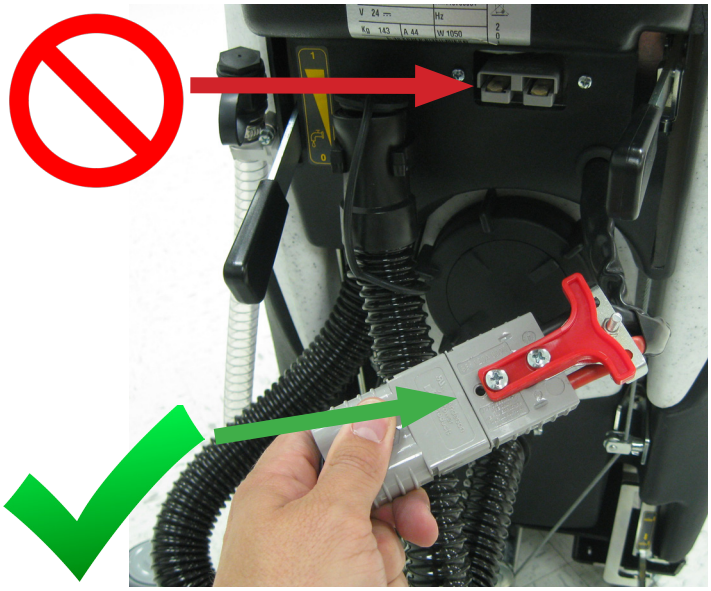
To charge the batteries, first drive the machine to a flat, dry, well-ventilated area. Turn the machine off. Raise the battery cover and leave open while the batteries are charging. If using lead acid batteries, check the water level in all the battery cells. If the level is low, add just enough distilled water to cover the plates. ***DO NOT OVERFILL****

Only use the supplied or a battery charger approved by Amano Pioneer Eclipse to charge the batteries. Using the wrong charger can damage the batteries and void any warranty.

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

CAUTION! Wear protective gloves and goggles when handling batteries or battery cables. Avoid contact with battery acid.

Unplug the battery cable from the machine plug at the back of the machine and connect it to the charging cable of the battery charger. Then plug the charger cord into a wall socket. The battery charger will initialize and start the charging cycle.



Note: DO NOT connect the charger to the connector on the machine. This will not charge the batteries and could damage the electrical components of the machine.

When the charge cycle is complete, unplug the charger from the wall socket. Disconnect the charger cable from the battery connector. Reconnect the battery cable to the machine plug, making sure there is a good connection and it is pushed in completely.

Preparing the Machine

After charging, detach the battery charger plug from the battery connector. Then connect the battery connector plug to the machine plug. Close the battery cover. Turn on the main key switch to operate the machine.

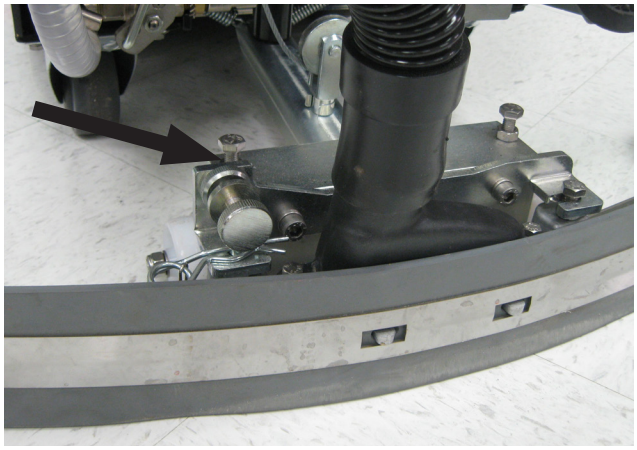
Filling Solution Tank

Before every scrubbing operation, remove the solution tank fill cap and fill the solution tank with the right quantity of water and cleaner. When filling the solution tank, you can use the clear drain hose, at the back of the machine, to see the fluid level in the tank.

For a proper cleaning of the floor, it is important to choose the appropriate cleaner solution. Your Amano Pioneer Eclipse Authorized Distributor can recommend the appropriate Amano Pioneer Eclipse cleaner for your particular needs. Please note that using a chemical agent that is too-strong can compromise the long life of your machine. It is important to use a low-sudsing detergent solution, or an anti-foaming additive, in order not to damage the vacuum motor.

Squeegee Adjustment

The squeegee must be properly adjusted in order to dry the floor. For the best results, adjust the squeegee until the rear blade contacts the floor with an angle of approximately 45-60 degrees to the floor. Lower the squeegee to the floor using the squeegee raise lever and push the machine slightly forward. If the angle needs to be adjusted, use the squeegee adjustment knob to adjust the angle of the squeegee. Note that after each adjustment, the machine must be pushed forward in order to see the angle change.



If there is poor squeegee performance, check the following:

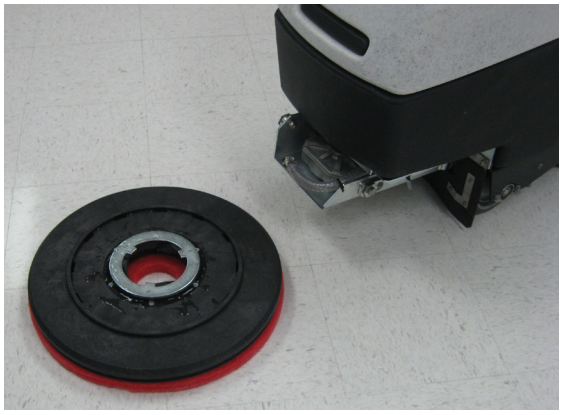
- Obstructions in the vacuum hose, inlets, filters, and squeegee itself.
- Vacuum motor operation.
- All recovery tank inspection openings are closed.

Pad/Brush Installation & Removal

It is very important to use the appropriate pad or brush when scrubbing a floor. Failure to do so could result in damage to the floor finish and/or the floor. Your Amano Pioneer Eclipse Authorized Distributor can recommend the appropriate pad/brush for your particular needs.

Note: It is not necessary to remove the splash skirt to install or remove the pad holder/brush.

1. If you are using a pad, place the appropriate pad onto the pad holder and press firmly. Be sure the pad is centered on the pad holder and not offset.
2. Place the pad holder/brush on the floor with the pad or bristles touching the floor.
3. Place the front of the machine over the pad holder/brush so that the pad drive motor is over the center of the pad holder/brush.

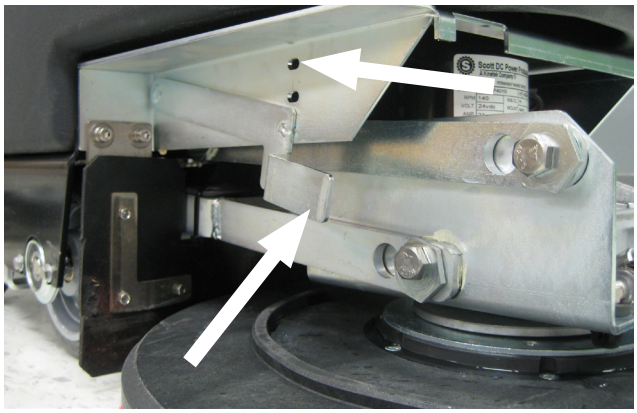


4. Press down on the pad/brush lift pedal to lower the pad driver motor down onto the center of the pad holder/brush.

5. Using the pad motor switch, turn on the pad drive motor. The pad holder/brush will automatically attach to the pad drive motor.
6. To remove the pad holder, turn the pad motor switch off and raise the pad drive motor using the pad/brush lift pedal.
7. With the pad/brush off of the floor, turn on the pad motor switch. After a few seconds, turn the switch off and the pad/brush will drop to the floor.

Pad Pressure Adjustment

The amount of pressure being applied to the pad/brush is adjustable. The machine has three pad pressure settings: 44 lbs (20 kg); 66 lbs (30 kg); & 88 lbs (40 kg).



To adjust the pad pressure, lower the pad drive assembly to the floor and remove the splash skirt. Using the tab on the adjustment arm, pull outward and raise or the lower the adjustment arm to the desired position. Be sure the location tab of the adjustment arm is properly seated before using the machine. The lowest pad pressure setting is in the top tab location and highest pad pressure is in the lowest tab location.

Scrubbing

1. Use the pad/brush lift pedal to lower the pad driver to the floor.
2. Press the pad motor switch and use the traction forward lever to start moving forward. DO NOT stay in one place because it will damage the floor.
3. Immediately use the solution adjustment lever to apply solution to the floor and adjust accordingly.
4. Lower the squeegee using the squeegee lift lever and press the vacuum switch.
5. Adjust the solution flow so that the floor is covered completely with solution, but without any excess that could generate splashes or trails at the ends of the squeegee.
6. To end scrubbing, turn off the pad drive motor and raise the pad driver using the pad/brush lift pedal.
7. After all of the solution is collected, raise the squeegee and turn the vacuum motor off.

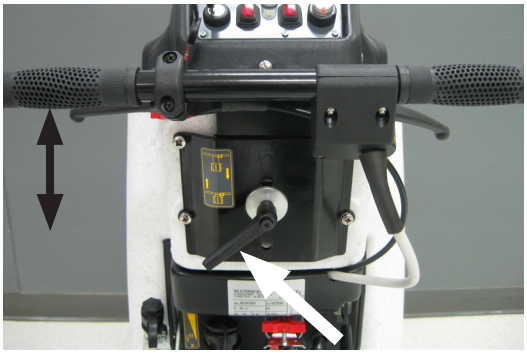
If the floor is very dirty or difficult to clean, a double scrub operation is recommended. On the initial pass, scrub with the solution flow on, but do not lower the squeegee or turn on the vacuum motor. Make a second pass, continuing to scrub, with the vacuum motor on and the squeegee lowered.

Draining & Cleaning Recovery Tank

When the recovery tank is full or at the end of every scrubbing operation, empty the dirty water from the recovery tank using the drain hose on the back of the machine. Always rinse and clean the recovery tank after each use. It is important to remove the recovery tank clean out cap and thoroughly clean the tank at least once a week.

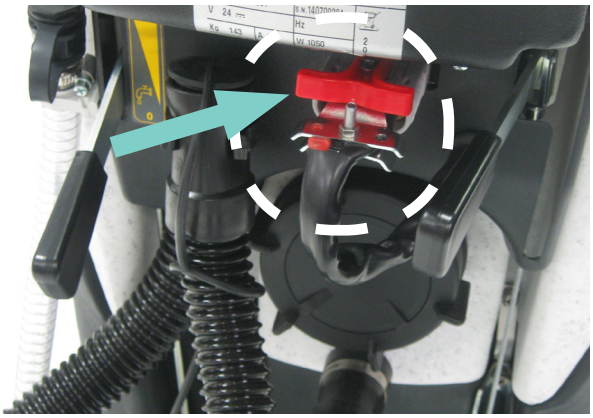
Handle Adjustment

The height of the operators handle can be raised and lowered. Locate the knob on the underside of the operators handle and loosen. Place the operators handle in the desired location and tighten the knob.



Maintenance

Before conducting any maintenance procedures, remove the key from the main key switch and disconnect the battery cable from the machine.



Squeegee Blade Replacement

The squeegee blades should be replaced when the contact edges become worn. To replace the blades, remove the squeegee from the machine.

Remove the wing nuts that retain the front band. Replace the old squeegee blade with a new blade. Reinstall the front band and retain with the wing nuts.

Loosen the clamp on the rear band and remove the rear band from the squeegee. The rear squeegee blade can be flipped and rotated, providing four wear edges. If necessary, replace the old blade with a new rear squeegee blade and retain with the band.

Battery Maintenance

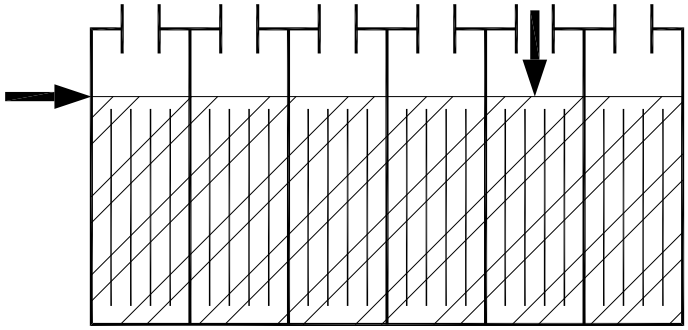
The batteries are deep cycle 12 volt batteries. The lifetime of the batteries is limited by the number of charges the batteries receive. To get the most life from the batteries, charge them when the battery indicator light is red. Use only the supplied battery charger to charge the batteries.

Periodically clean the top surface of the batteries and the 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 BAKING SODA 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 protectant to the terminals and the cable connectors. Keep the tops of the batteries clean and dry.

To prevent a possible short circuit, keep all metallic objects off the top of the batteries. Replace any worn or damaged wires.

Lead Acid Batteries

Never add acid to the batteries, only distilled water. Always keep the battery caps on, except when adding water or taking hydrometer readings. Check the electrolyte level in each battery cell before and after charging, and after every 50 hours of operation. Do not charge the batteries unless the fluid is slightly above the battery plates. If needed, add just enough distilled water to cover the plates.



NEVER add acid to the batteries. DO NOT overfill

Measuring the specific gravity, using a hydrometer, is a way to determine the charge level and condition of the batteries. If one or more of the battery cells test lower than the other battery cell (0.050 or more), the cell is damaged, shorted, or is about to fail.

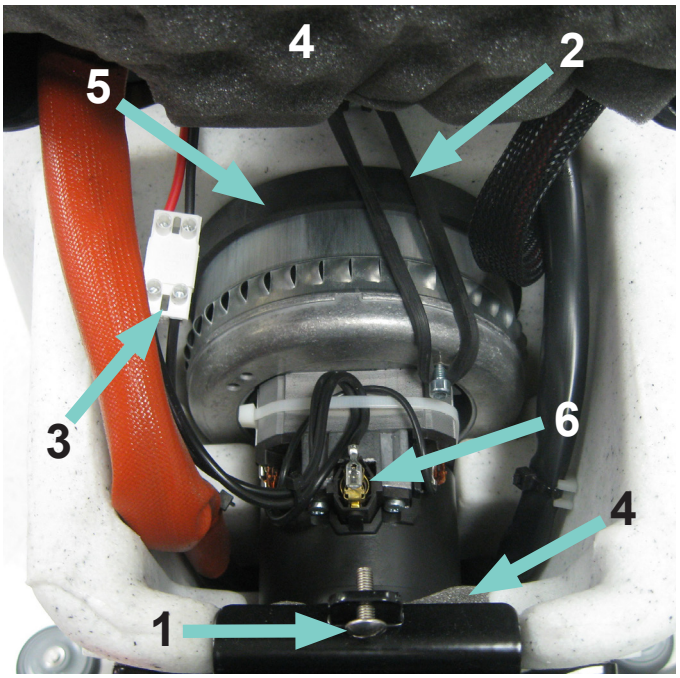
Sealed batteries no maintenance is required.

Vacuum Motor Maintenance

The vacuum motor must be checked and cleaned. The carbon brushes should be checked every six months and replaced if necessary. To check the vacuum motor, remove the key from the main key switch and disconnect the battery cable from the machine. At the rear of the control panel, loosen the single screw (1) on the bottom of the control panel. Raise the control panel up, giving access to the vacuum motor.

Unhook the retaining strap (2) and disconnect the cable plug (3) going to the motor. The motor can now be removed for service and cleaning. While the motor is removed, also thoroughly clean this area and the foam filters (4) above and behind the motor. Replace if necessary.

Remove, check, and clean the gasket (5) on the front of the motor. Visually check the motor fan for damage and make sure it is clean. Check the carbon brushes (6) by removing the plastic cap and then remove the screws that hold the plastic housings. If they are severely worn or damaged, replace if necessary.



Scheduled Maintenance

Operation	Interval				
	Daily	Weekly	Monthly	Every 6 Months	Annually
Empty and rinse the recovery tank	●				
Check the vacuum motor filter	●				
Check for loose or lost fasteners	●				
Inspect hoses and connections	●				
Inspect pad holder / brush	●				
Check the squeegee blades		●			
Check the suction hoses and squeegee		●			
Inspect battery water level (Lead Acid only)		●			
Thoroughly clean the recovery tank		●			
Check the solution tank filter			●		
Check wiring for fray or cut			●		
Check the scrub deck linkage			●		
Check the squeegee linkage and cable			●		
Inspect drive belt				●	
Replace drive belt	As Required				
Check safety systems				●	
Check the carbon brushes of motors				●	
Check the electrical system					●
Check the brake system					●

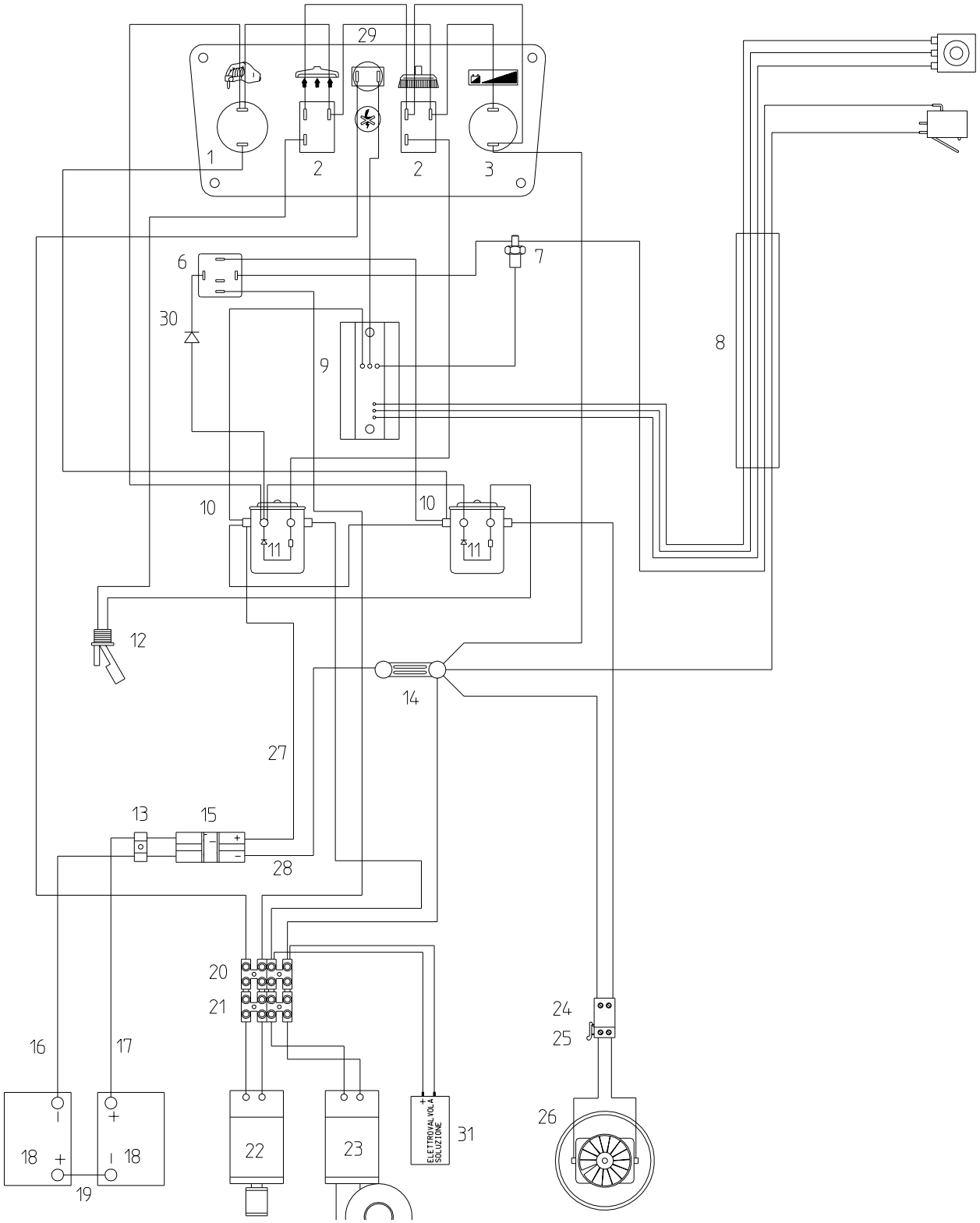
These items must be performed with the proper tools and training. Contact an Amano Pioneer Eclipse Factory Certified Technician unless you have the proper equipment and mechanical proficiency.

Machine Troubleshooting

Problem	Possible Cause	Solution
Machine will not turn on	Battery plug is not connected	Plug the battery plug to the machine.
	Incorrect battery connection	Check for a loose battery connection.
		Check batteries are wired together correctly via the battery connection diagram.
	Battery voltage is too low	Charge the battery using the appropriate charger.
	Key switch failure	Check key switch is functioning and wiring to the key switch is correct.
	Failed Fuse	Check the fuse.
Pad Motor will not start	Scrub switch off	Turn on the scrub switch.
	Scrub switch failure	Check the scrub switch is functioning and wiring is correct. Replace if necessary.
	Battery voltage is too low	Charge the battery using the appropriate charger.
	Carbon brushes are worn	Check the carbon brushes, replace if necessary.
	Bad wiring connection	Check the wiring going to the motor for a bad or loose connection.
Vacuum motor does not start	Vacuum switch off	Turn on the vacuum switch.
	Recovery tank full	Empty and rinse the recovery tank.
	Float valve is stuck	Clean debris or dirt from the float valve.
	Vacuum switch failure	Check the vacuum switch is functioning and wiring is correct. Replace if necessary.
	Battery voltage is too low	Charge the battery using the appropriate charger.
	Vacuum motor carbon brushes are worn	Check the carbon brushes, replace if necessary.
	Bad wiring connection	Check the wiring going to the motor for a bad or loose connection.
Solution flow inadequate or no solution flow	Solution tank empty	Fill solution tank.
	Solution flow lever adjusted too low or off	Lift up on the solution flow lever to increase flow.
	Solution tank filter blocked/clogged	Clean solution tank filter.
	Solenoid stuck/plugged	Clean solenoid.
	Solenoid failure	Check the solenoid is functioning and wiring is correct. Replace if necessary.
	Solution vavle broken or out of adjustment	Check valve and linkage.
Machine trails water; has poor or no water pickup	Air leak	Check recovery tank access lid; drain hose plug; recovery tank clean out.
	Worn squeegee blades	Rotate or replace squeegee blades.
	Squeegee out of adjustment	Adjust squeegee.
	Vacuum hose blocked	Flush and clean the vacuum hose.
	Squeegee dirty / blocked	Clean squeegee and remove any debris.
	Vacuum motor filter clogged	Clean vacuum motor filter.
	Vacuum hose damaged / disconnected	Reconnect vacuum hose to squeegee; replace hose if damaged.
	Recovery tank full	Empty and rinse the recovery tank.
Machine exhibits poor scrubbing performance	Pad / brush worn down	Replace pad / brush.
	Using the wrong pad / cleaner	Use chemical product and pad / brush recommended by an APEC distributor.
	Pad pressure adjusted to low	Increase pad pressure. (See *"Adjust Pad Pressure"* section)
	Pad / brush is dirty	Remove debris from pad / brush. Replace pad / brush if necessary.
Machine will not move forward	Parking brake is engaged	Disengage the parking brake
	Traction breaker has tripped	Reset traction breaker.
	Traction breaker repeatedly tripps	Using the traction motor with the parking brake engaged.
		Check the drive assembly for damaged, loose, or missing parts.
	Traction motor carbon brushes are worn	Check the carbon brushes, replace if necessary.
	Drive belt is broke / worn	Replace drive belt.
	Drive assembly is damaged	Check the drive assembly for damaged, loose, or missing parts.
	Bearings are worn	Replace drive wheel bearings.
Battery will not charge	Using the wrong battery charger	Use the correct 24V battery charger recommended by an APEC distributor.
	Charger plugged incorrectly to machine	Plug the charger to the battery "pigtail" cable.
	Batterys are too weak / old	Replace batteries.

PE310AS
Walk-Behind Autoscrubber
Parts Manual

Notes: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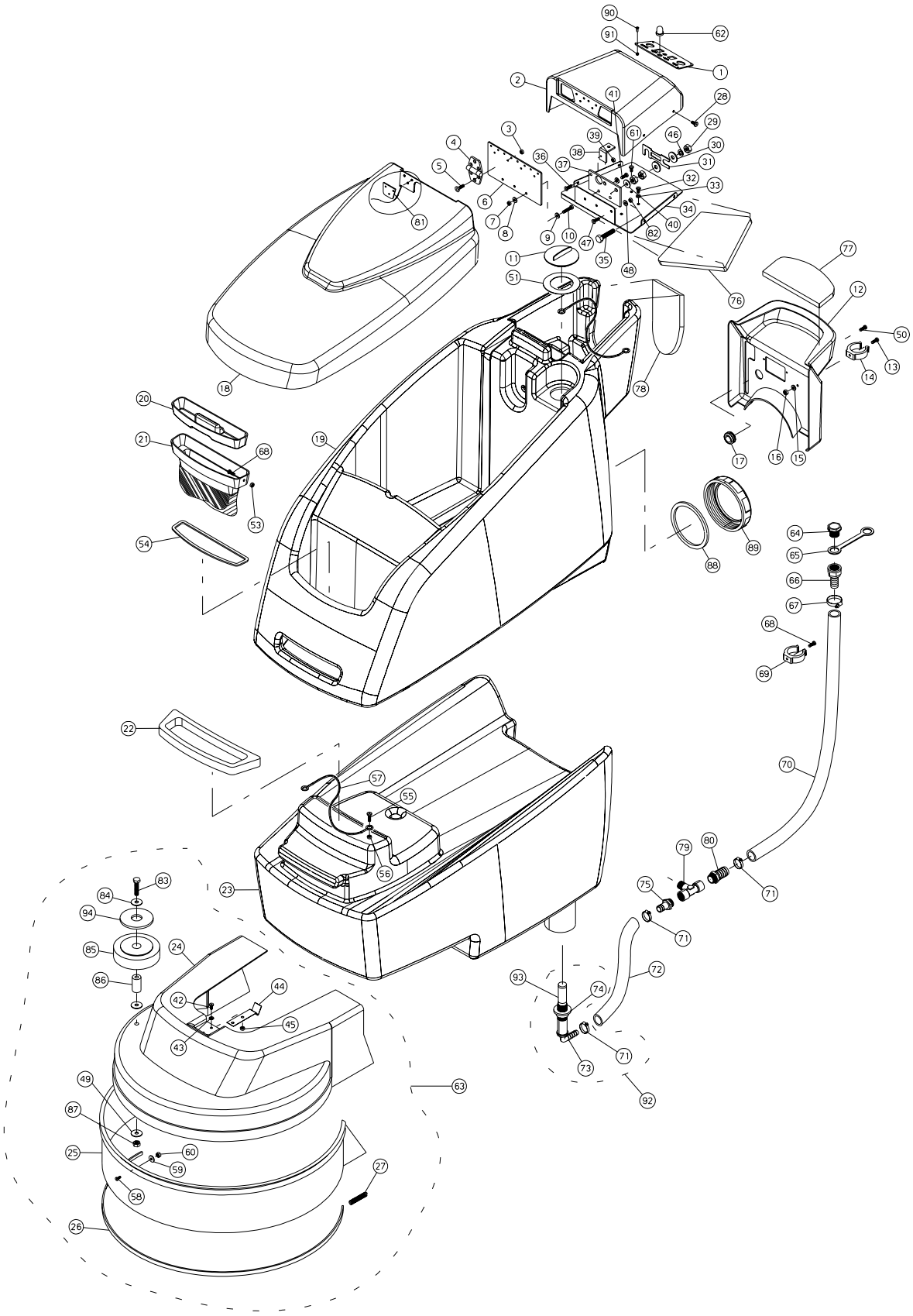
Electrical Schematic (continued)

Item	Ref. No.	Description	Qty
1	IN064	SWITCH, KEY	1
2	IN067	SWITCH, LIGHTED	2
3	PY602	INDICATOR, BATTERY	1
4	PY612	POTENTIOMETER	1
5	IN009	MICRO SWITCH	1
6	SL015	RELAY, 24V	1
7	PY234	DIODE	1
8	MI195	SHEATH, RED	1
9	PY125	CONTROLLER	1
10	SL001	SOLENOID, 24V	2
11	PY460	DIODE, SUPPRESSOR	2
12	GL022	SWITCH, FLOAT	1
13	MI287	HOLDER, CABLE	1
14	PY289	FUSE, 75A	1
15	HAP8026	CONNECTOR, SY120	1
16	PY613	CABLE, BATTERY, NEGATIVE	1
17	PY614	CABLE, BATTERY, POSITIVE	1
18A	MP276600	BATTERY, 12V, SCS150, TROJAN	2
18B	MP382500	BATTERY, 12V, SEALED, 100AH	2

Item	Ref. No.	Description	Qty
19	PY001	CABLE, BATTERY	1
20	PY350	TERMINAL, 4 POLE, FEMALE	1
21	PY351	TERMINAL, 4 POLE, MALE	1
22	MO205	MOTOR, TRACTION, 100W, 24V	1
23	MO212	GEARMOTOR	1
24	PY030	PLUG, MOTOR, FEMALE	1
25	PY031	PLUG, MOTOR, MALE	1
26	MO180	MOTOR, VACUUM, 24V	1
27	PY615	CABLE, POSITIVE	1
28	PY616	CABLE, NEGATIVE	1
29	PY603	BREAKER, CIRCUIT, 7A	1
30	PY214	DIODE	1
31	RB015	VALVE, SOLENOID	1
32A	MP278300	CHARGER, BATTERY, 24V *(NOT SHOWN)*	1
32B	MP278301	CHARGER, SEALED, 24V *(NOT SHOWN)*	1
33	MP289100	FUSE, 6.3A, CHARGER *(NOT SHOWN)*	1

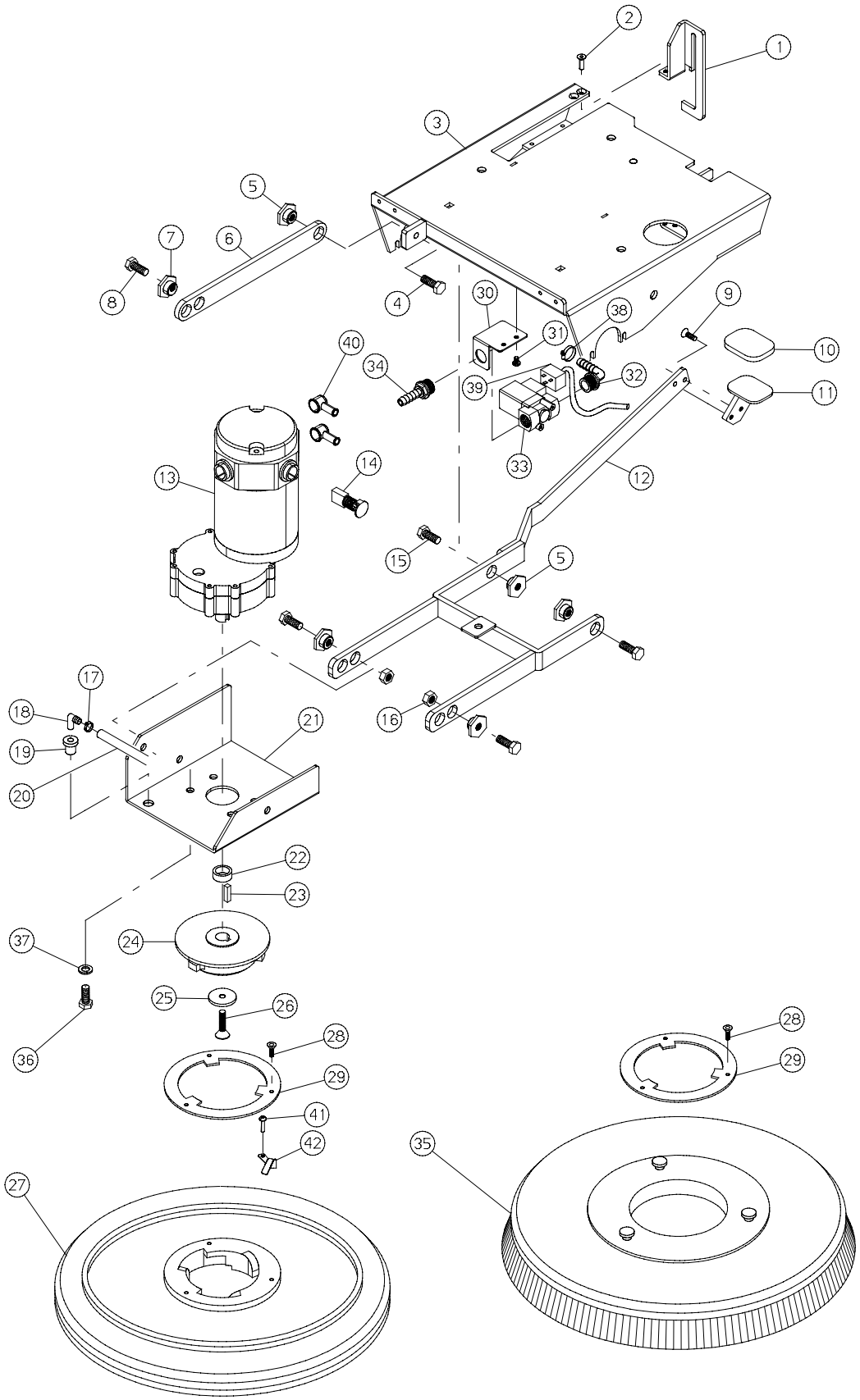
Tanks & Cover Assembly



Tanks & Cover Assembly (continued)

Item	Ref. No.	Description	Qty
1	TG100	PLATE, PANEL, CONTROL	1
2	CO194G	COVER, CONTROL	1
3	DD402	NUT, HEX, M4	24
4	MV035	HINGE, COVER	4
5	VS410	SCREW, C. SINK, M4 X 10	24
6	SU451	PLATE, SUPPORT, COVER	1
7	DD452	NUT, LOCK, M5	3
8	RO500	WASHER, FLAT, M5	3
9	RO500	WASHER, FLAT, M5	3
10	VE426	SCREW, M5 X 30	3
11	TA037	CAP, TANK, RECOVERY	1
12	CA147G	COVER, REAR	1
13	VC414	SCREW, M5 X 20	1
14	ML022	CLIP, HOSE, DRAIN	1
15	RO500	WASHER, FLAT, M5	1
16	DD452	NUT, LOCK, M5	1
17	PY240	GROMMET, CABLE	1
18	CO193G	COVER, BATTERY	1
19	SB152	TANK, RECOVERY	1
20	CO195G	LID, TANK, SOLUTION	1
21	CO199G	FRAME, LID, TANK	1
22	GR132	GASKET, TANK, SOLUTION	1
23	SB194	TANK, SOLUTION	1
24	CA149G	SKIRT, SPLASH	1
25	BP245	RUBBER, SKIRT, SPLASH	1
26	LM357	BAND, SKIRT, SPLASH	1
27	ML002	SPRING, BAND, SKIRT	2
28	VC410	SCREW, M5 X 12	4
29	DD905	NUT, HEX, BRASS, M8	6
30	RO502	WASHER, FLAT, M8 X 24	4
31	PY289	FUSE, 75A	1
32	VC409	SCREW, M5 X 6	4
33	RO500	WASHER, FLAT, M5	4
34	LM420	BRACKET, PANEL, CONTROL	1
35	VE464	SCREW, M8 X 35	2
36	VC410	SCREW, M5 X 12	1
37	PY424	PLATE, MOUNT, FUSE	1
38	SU454	BRACKET, DIODE	1
39	DD452	NUT, LOCK, M5	1
40	RO455	WASHER, LOCK, M8	2
41	VC410	SCREW, M5 X 12	2
42	VC410	SCREW, M5 X 12	2
43	RO500	WASHER, FLAT, M5	2
44	ML122	CATCH, SKIRT, SPLASH	1
45	DD452	NUT, LOCK, M5	2
46	RO455	WASHER, LOCK, M8	2
47	VC410	SCREW, M5 X 12	1
48	RO500	WASHER, FLAT, M5	1
49	RO502	WASHER, FLAT, M8 X 24	1
50	VC402	SCREW, M4 X 10	2
51	GR141	SEAL, CAP, TANK, RECOVERY	1
52	VC412	SCREW, M5 X 10	1
53	DD452	NUT, LOCK, M5	1
54	GR143	GASKET, FILL, SOLUTION	1
55	VS407	SCREW, C. SINK, M5 X 20	1
56	DD452	NUT, LOCK, M5	1
57	MV100	LANYARD	2
58	VC404	SCREW, M4 X 16	3
59	RO505	WASHER, M4 X 12	3
60	DD451	NUT, LOCK, M4	3
61	VC412	SCREW, M5 X 10	2
62	IN038	BOOT, COVER, BREAKER	1
63	KIT460	SKIRT, SPLASH, ASM.	1
64	RC132	CAP, 1/2” NPT	1
65	GR126	SEAL, LANYARD, CAP	1
66	RC089	FITTING, 1/2” FNPT X 15MM	1
67	FS002	CLAMP, 12-20MM	1
68	VC414	SCREW, M5 X 20	1
69	ML120	CLIP, HOSE, SOLUTION	1
70	TB206	HOSE, DRAIN	1
71	FS002	CLAMP, 12-20MM	3
72	TB209	HOSE, TANK, SOLUTION	1
73	RC151	FITTING, ELBOW, 1/2” NPT	1
74	GR140	GASKET, FILTER, TANK	1
75	RC002	FITTING, 3/8” NPT X 12MM	1
76	IS016	INSULATION, SOUND, C.PANEL	1
77	IS015	INSULATION, SOUND, REAR	1
78	IS014	INSULATION, SOUND, TANK	1
79	RC118	FITTING, TEE	1
80	RC117	FITTING, 3/8” NPT X 15MM	1
81	SU466	PLATE, REINFORCEMENT, COVER	2
82	DD452	NUT, LOCK, M5	1
83	VE469	SCREW, M8 X 60	1
84	RO502	WASHER, FLAT, M8 X 24	2
85	RT154	WHEEL, 3.94” X 1.2”	1
86	BO202	BUSHING, WHEEL	1
87	DD454	NUT, HEX, M8	1
88	GR184	GASKET, CAP	1
89	TA059	CAP, CLEANOUT, TANK	1
90	VC430	SCREW, M3 X 8	4
91	DD401	NUT, HEX, M3	4
92	KIT761	FILTER, TANK, SOLUTION, ASM.	1
93	FT056	FILTER, TANK, SOLUTION	1
94	RT155	COVER, WHEEL	1

Pad Drive Assembly

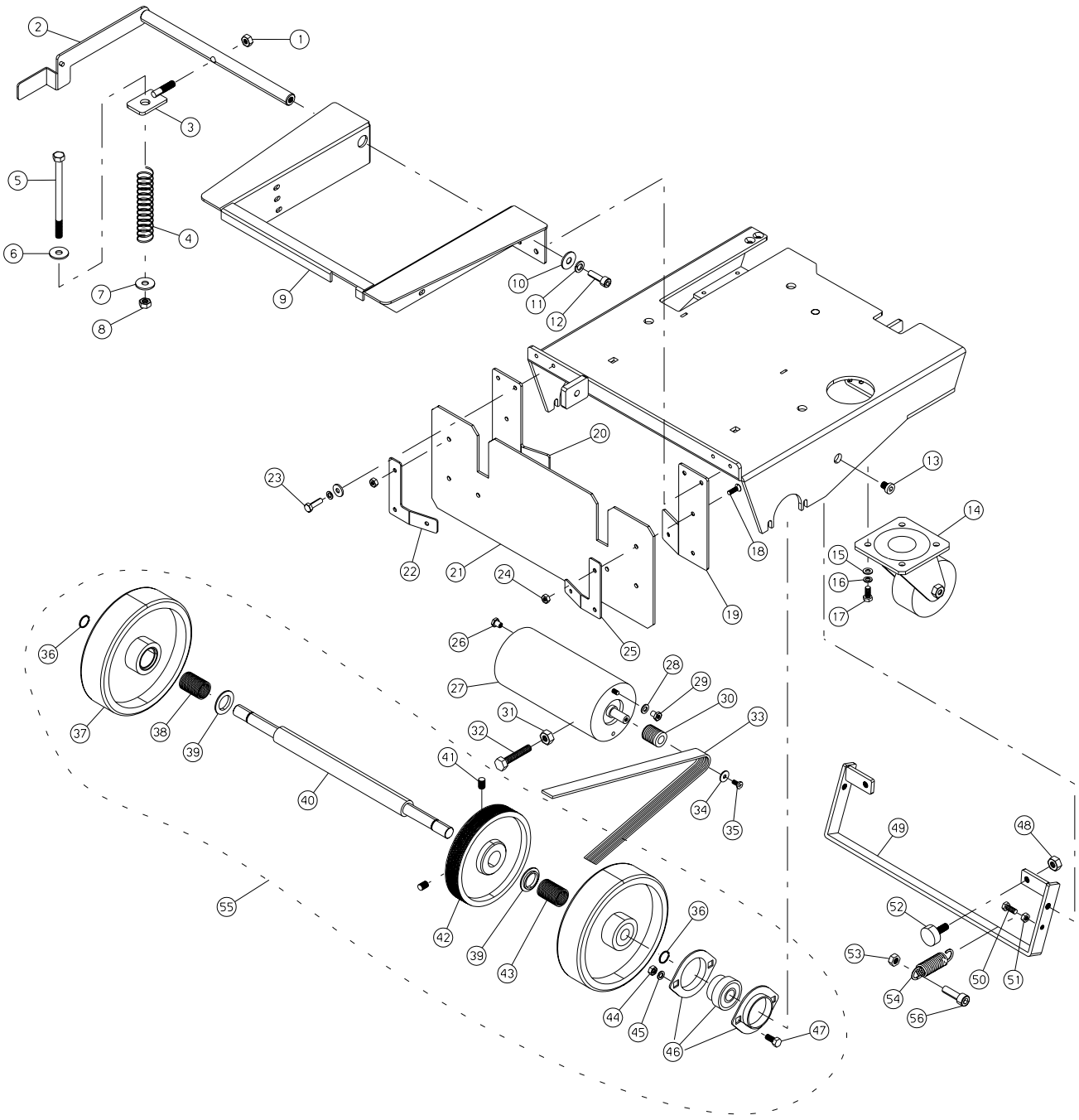


Pad Drive Assembly (continued)

Item	Ref. No.	Description	Qty
1	ST121	BRACKET, GUIDE, LIFT, PAD	1
2	VS421	SCREW, C. SINK, M6 X 12	2
3	TP116	FRAME, BASE	1
4	VE492	SCREW, M10 X 25	1
5	BO156	BUSHING, LEVER, PAD	4
6	LV294	LINKAGE, LIFT, PAD	1
7	BO157	BUSHING, LEVER, ECCENTRIC	2
8	VE492	SCREW, M10 X 25	1
9	VS421	SCREW, C. SINK, M6 X 12	2
10	IS001	PAD, PEDAL	1
11	LM175	PEDAL, LIFT, PAD	1
12	LV282	LEVER, LIFT, PAD	1
13	MO212	GEARMOTOR, DRIVE, PAD	1
14	MP084	BRUSH, CARBON, MOTOR	4
15	VE492	SCREW, M10 X 25	4
16	DD406	NUT, HEX, M10	2
17	FS002	CLAMP, 12-20MM	1
18	RC112	FITTING, ELBOW, 10MM	1
19	GR138	BUSHING, RUBBER	1
20	TB207	HOSE, DELIVERY, SOLUTION	1
21	SU426	BRACKET, MOUNT, MOTOR	1
22	DT161	SPACER, FLANGE	1

Item	Ref. No.	Description	Qty
23	CH048	KEY, STRAIGHT, M6	1
24	FL071	FLANGE, DRIVE, MOTOR	1
25	VI020	WASHER, C.SINK, SPECIAL	1
26	WS034	SCREW, C. SINK, 5/16” X 3/4”	1
27	TS037	PAD HOLDER	1
28	VD235	SCREW, C. SINK, M4 X 19	3
29	FL072	PLATE, FLANGE, PAD	1
30	SU453	BRACKET, SOLENOID	1
31	VC411	SCREW, M5 X 8	2
32	RC050	FITTING, ELBOW, 1/2” NPT	1
33	RB015	VALVE, SOLENOID, ASM.	1
33A	RB020	VALVE, SOLENOID *(NOT SHOWN)*	1
33B	PY349	COIL, SOLENOID *(NOT SHOWN)*	1
34	RC115	FITTING, 1/2” NPT	1
35	SZ033	BRUSH, NYLON	1
36	WE231	SCREW, 3/8” X 3/4”	4
37	RO456	WASHER, FLAT, 10MM	4
38	FS002	CLAMP, 12-20MM	1
39	PY548	CONNECTOR, SOLENOID	1
40	MP298	BOOT, CABLE	2
41	VA408	SCREW, C. SINK, M4 X 16	1
42	ML139	SPRING, PAD	1

Drive Wheel Assembly

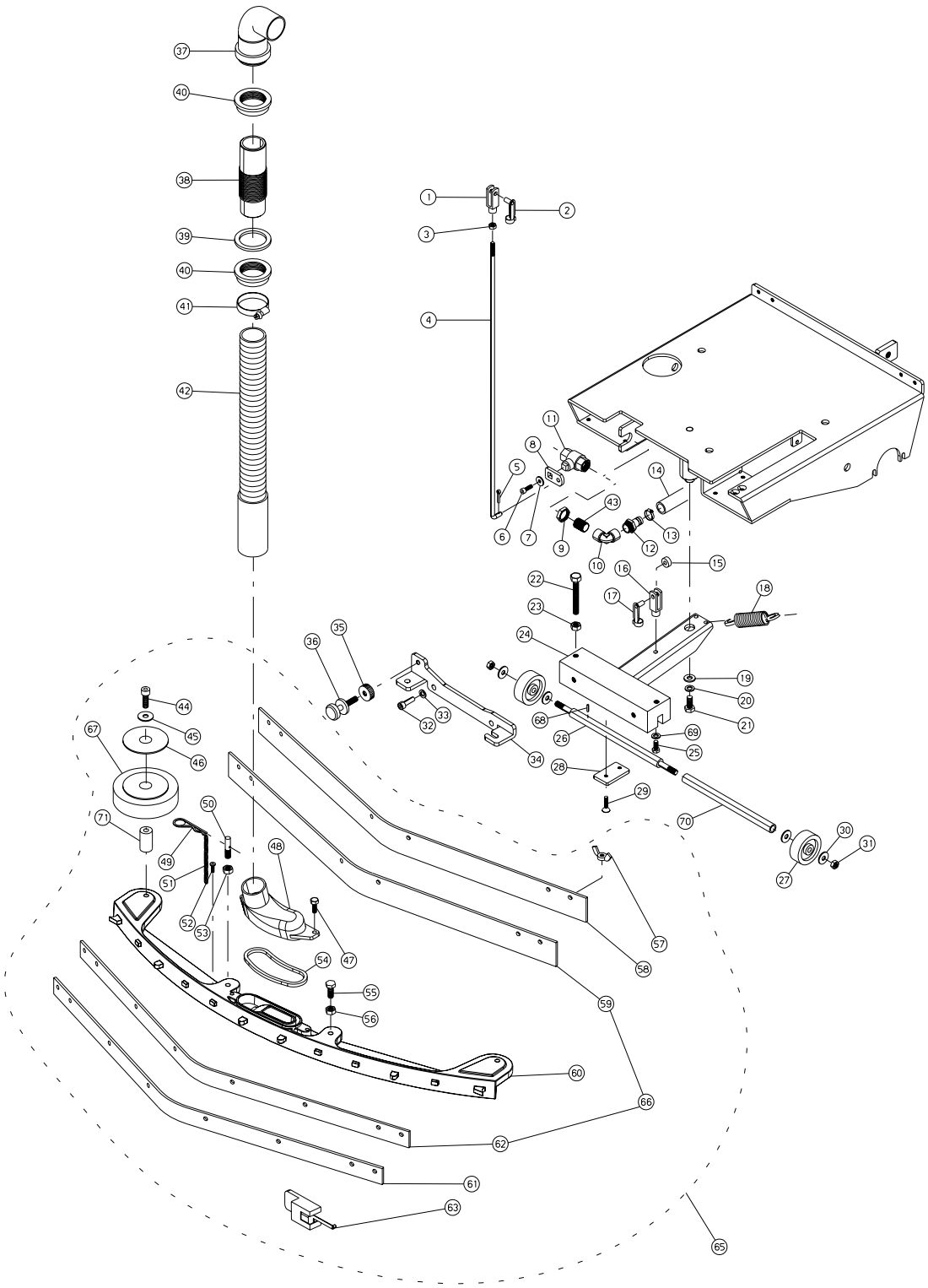


Drive Wheel Assembly (continued)

Item	Ref. No.	Description	Qty
1	DD454	NUT, LOCK, M8	1
2	LV290	LEVER, ADJ., PRESSURE, PAD	1
3	ST106	BRACKET, PRESSURE, PAD	1
4	ML107	SPRING, PRESSURE, PAD	1
5	VE473	SCREW, M8 X 110	1
6	RO502	WASHER, FLAT, M8 X 24	1
7	RO404	WASHER, FLAT, M8	1
8	DD454	NUT, LOCK, M8	1
9	SU425	BRACKET, SUPPORT, FRAME	1
10	RO404	WASHER, FLAT, M8	1
11	RO455	WASHER, LOCK, M8	1
12	VB430	SCREW, M8 X 16	1
13	VB239	SCREW, M8 X 12	2
14	RT125	CASTER, SWIVEL	2
15	RO403	WASHER, FLAT, M6	12
16	RO454	WASHER, LOCK, M6	12
17	VE442	SCREW, M6 X 12	8
18	VS412	SCREW, C. SINK, M5 X 10	6
19	SU429	SUPPORT, SPLASH, LEFT	1
20	SU428	SUPPORT, SPLASH, RIGHT	1
21	BP239	SKIRT, SPLASH, RUBBER	1
22	LM435	BRACKET, SPLASH, RIGHT	1
23	VE443	SCREW, M6 X 16	4
24	DD403	NUT, HEX, M5	6
25	LM433	BRACKET, SPLASH, LEFT	1
26	BO082	BUSHING, BRASS, M5	1
27	MO205	MOTOR, 100W, 750RPM, 24V	1
28	RO403	WASHER, FLAT, M6	2

Item	Ref. No.	Description	Qty
29	BO082	BUSHING, BRASS, M5	1
30	PP024	PULLEY, MOTOR, DRIVE	1
31	DD454	NUT, LOCK, M8	1
32	VE464	SCREW, M8 X 35	1
33	CI037	BELT, POLY-V	1
34	RO500	WASHER, FLAT, M5 X 15	1
35	VC410	SCREW, M5 X 12	1
36	SG007	RING, RETAINING, M15	2
37	RT131	WHEEL, DRIVE	2
38	ML036	SPRING, DIFFERENTIAL, RIGHT	1
39	DT018	SPACER	2
40	AL071	SHAFT, DRIVE, WHEEL	1
41	VG032	SCREW, SET, M8 X 12	2
42	PP101	PULLEY, SHAFT, WHEEL	1
43	ML037	SPRING, DIFFERENTIAL, LEFT	1
44	RO403	WASHER, FLAT, M6	4
45	RO454	WASHER, LOCK, M6	4
46	CS008	BEARING, BALL	2
47	VE443	SCREW, M6 X 16	1
48	DD453	NUT, LOCK, M6	2
49	LV291	SUPPORT, LEVER, BRAKE	1
50	VE442	SCREW, M6 X 12	1
51	DD404	NUT, HEX, M6	1
52	TA035	PAD, BRAKE	2
53	DD453	NUT, LOCK, M6	1
54	ML046	SPRING, EXTENSION	1
55	KIT461	AXLE, WHEEL, ASM., KIT	1
56	VC413	SCREW, M5 X 16	1

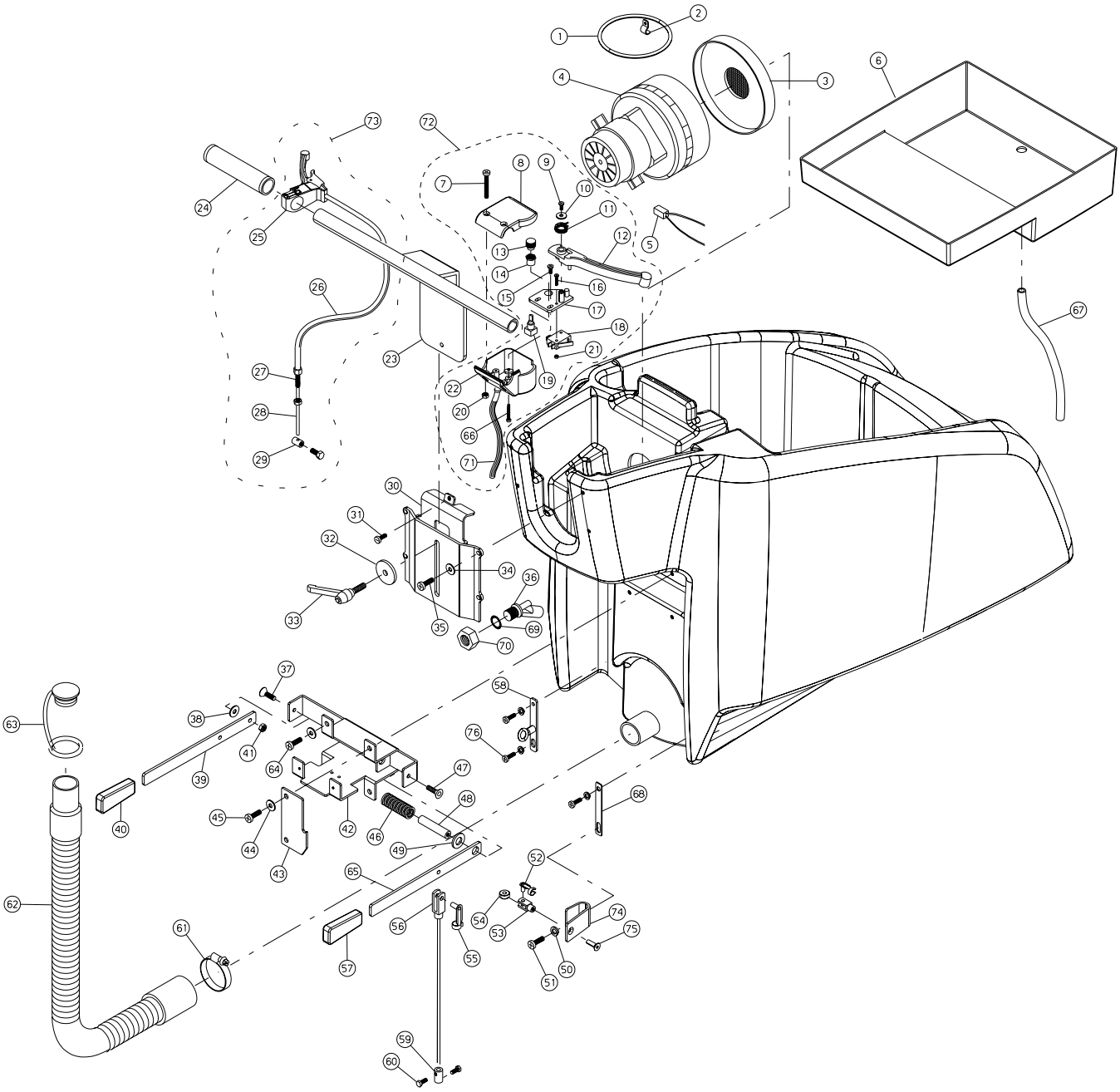
Squeegee Assembly



Squeegee Assembly (continued)

Item	Ref. No.	Description	Qty
1	SN002	YOKE, END, M6	1
2	MI028	PIN, YOKE, M6, w/ SPRING	1
3	DD404	NUT, HEX, M6	1
4	TI147	ROD, CONTROL, SOLUTION	1
5	CP206	PIN, COTTER, M2 X 30	1
6	WV010	SCREW, C. SINK, #10 X 3/8”	1
7	NB030100	WASHER, FLAT, #10	1
8	LV063	LEVER, VALVE	1
9	GH007	NUT, MOUNTING, VALVE	1
10	RC074	FITTING, ELBOW	1
11	RB005	VALVE, SOLUTION	1
12	RC002	FITTING, 3/8” NPT X 12MM	1
13	FS001	CLAMP, 8-12MM	1
14	TB187	TUBING, SOLUTION	1
15	CS029	BEARING, BALL	1
16	SN002	YOKE, END, M6	1
17	MI028	PIN, YOKE, M6, w/ SPRING	1
18	ML034	SPRING	2
19	VI058	WASHER, 8.5MM	1
20	RO455	WASHER, LOCK, M8	1
21	VB430	SCREW, M8 X 16	2
22	VE467	SCREW, M8 X 50	2
23	DD405	NUT, HEX, M8	2
24	SU578	FRAME, LIFT, SQUEEGEE	1
25	VE443	SCREW, M6 X 16	1
26	AL093	AXLE, FRAME, SQUEEGEE	1
27	RT153	WHEEL, NYLON	2
28	PT180	PLATE, AXLE	1
29	VS421	SCREW, C.SINK, M6 X 12	2
30	RO404	WASHER, FLAT, M8	4
31	DD454	NUT, LOCK, M8	2
32	VB430	SCREW, SCK HD, M8 X 16	2
33	RO455	WASHER, LOCK, M8	2
34	PT228	BRACKET, MOUNT, SQUEEGEE	1
35	GH006	NUT, JAM, ADJUSTMENT, SQ.	1
36	VI007	SCREW, ADJUSTMENT, SQ.	1
37	RC113	FITTING, ELBOW, HOSE	1
38	TB179	PIPE, ADAPTER, HOSE	1
39	GR118	SEAL, GASKET	1
40	GH018	RING, PIPE	2
41	FS031	CLAMP, 21-44MM	1
42	TB205	HOSE, SQUEEGEE	1
43	RC119	FITTING, UNION	1
44	VE469	SCREW, M8 X 60	2
45	RO404	WASHER, FLAT, M8	2
46	RT155	COVER, WHEEL	2
47	VE443	SCREW, M6 X 16	2
48	CO252	COVER, TRAP, SQUEEGEE	1
49	CP260	PIN, CLIP, HITCH, M3	1
50	PE167	PIN, ATTACH, SQUEEGEE	1
51	MI171	LANYARD, CHAIN	1
52	VC409	SCREW, M5 X 6	1
53	DD405	NUT, HEX, M8	1
54	GR185	GASKET, COVER, TRAP	1
55	VE461	SCREW, M8 X 20	1
56	DD405	NUT, HEX, M8	1
57	VL450	NUT, WING, M6	4
58	LM631	BAND, SQUEEGEE, FRONT	1
59	BP339	RUBBER, SQUEEGEE, FRONT	1
60	SQ071	BODY, SQUEEGEE	1
61	LM632	BAND, SQUEEGEE, REAR	1
62	BP340	RUBBER, SQUEEGEE, REAR	1
63	CC022	LATCH, SQUEEGEE, REAR	1
64	N/A	N/A	-
65	KIT859	SQUEEGEE, ASSEMBLY	1
66	KIT858	RUBBER, SQUEEGEE, KIT	1
67	RT154	WHEEL, 3.94” X 1.2”	2
68	SP001	PIN, M3 X 16	1
69	RO454	WASHER, LOCK, M6	1
70	TB224	TUBING, AXLE	1
71	BO073	BUSHING, WHEEL	2

Handle Assembly



Handle Assembly (continued)

Item	Ref. No.	Description	Qty
1	GI021	RING, MOTOR, VAC	1
2	MI082	CLAMP	1
3	GL019	FILTER, GASKET	1
4	MO180	MOTOR, VACUUM, 24V	1
5	MP239	BRUSH, CARBON	1
6	SB153	TRAY, BATTERY	1
7	VS216	SCREW, M5 X 35	2
8	CO175	COVER, HOUSING	1
9	VA264	SCREW, SELF THR, 3.5 X 13	1
10	RO301	WASHER, FLAT, 6 X 18	1
11	ML125	SPRING	1
12	LV297	LEVER	1
13	IG023	GEAR, PLASTIC	1
14	BO071	BUSHING, POTENTIOMETER	1
15	VC400	SCREW, M3 X 16	1
16	VS229	SCREW, M3 X 18	1
17	SU455	SUPPORT	1
18	IN009	MICROSWITCH	1
19	PY612	POTENTIOMETER	1
20	DD252	NUT, LOCK, M5	1
21	DD250	NUT, LOCK, M3	1
22	CO176	HOUSING, POTENTIOMETER	1
23	MN053	HANDLE	1
24	MN058	GRIP, HANDLE	2
25	LV296	LEVER, BRAKE	1
26	MI190	SHEATH, CABLE, BRAKE	1
27	MI191	ATTACHMENT, WIRE, BRAKE	1
28	MI192	WIRE, BRAKE	1
29	MI193	TERMINAL, CABLE	1
30	SU410	SUPPORT, HANDLE	1
31	VC910	SCREW, M5 X 16	1
32	VI020	WASHER	1
33	VP042	KNOB, LEVER, M8 X 20	1
34	RO403	WASHER, FLAT, M6	4
35	VC423	SCREW, M6 X 16	4
36	GL022	SWITCH, FLOAT	1
37	VS423	SCREW, C.SINK, M6 X 16	1
38	RO911	WASHER, WAVE, M8	1
39	LV293	LEVER, SOLUTION	1
40	VP055	GRIP, LEVER, M4 X 20	1
41	DD453	NUT, LOCK, M6	1
42	SU430	BRACKET, PLUG, CHARGER	1
43	PT182	PLATE, CATCH, LEVER	1
44	RO403	WASHER, M6	2
45	VC423	SCREW, M6 X 16	2
46	ML100	SPRING	1
47	VS423	SCREW, C.SINK, M6 X 16	1
48	PE199	PIN, LIFT, SQUEEGEE	1
49	RO406	WASHER, FLAT, M12	1
50	RO454	WASHER, LOCK, M6	4
51	VC423	SCREW, M6 X 16	1
52	MI006	PIN, YOKE	1
53	SN001	YOKE, END, M6	1
54	BO158	BUSHING, CABLE	1
55	MI028	PIN, YOKE, M6, w/ SPRING	1
56	MI189	CABLE, M3 X 970MM, w/ END YOKE	1
57	VP055	GRIP, LEVER, M4 X 20	1
58	LM574	RAIL, CABLE	1
59	MI146	TERMINAL, CABLE	1
60	VE221	SCREW, M5 X 8	2
61	FS011	CLAMP, HOSE	1
62	TB156	HOSE, DRAIN	1
63	TA002	PLUG, HOSE	1
64	VC422	SCREW, M6 X 12	2
65	LV292	LEVER, LIFT, SQUEEGEE	1
66	VA258	SCREW, SELF THR, 3.9 X 45	1
67	TB202	HOSE, 6MM	1
68	LM434	PLATE, STRAP, TANK	1
69	GR146	GASKET, SWITCH, FLOAT	1
70	GH038	NUT, SWITCH, FLOAT	1
71	CW092	CABLE, WIRING, POT.	1
72	KIT459	LEVER, POTENTIOMETER, ASM.	1
73	KIT442	LEVER, BRAKE, ASM.	1
74	LM575	BRACKET, SUPPORT, CABLE	1
75	VS421	SCREW, C.SINK, M6 X 12	1
76	VS422	SCREW, M6 X 12	3

Limited Warranty

PE310AS

TO QUALIFY FOR THIS WARRANTY

(1) Machine must be registered at the time of purchase on a form provided by Amano Pioneer Eclipse Corporation. Your Amano Pioneer Eclipse Corporation Distributor is responsible for the registration of your machine. Please cooperate with your Distributor in supplying necessary information on the card.

(2) The machine must have been purchased from Amano Pioneer Eclipse Corporation or an authorized Amano Pioneer Eclipse Corporation Distributor.

(3) This warranty extends to the original purchaser only and is not transferable to subsequent owners.

TIME PERIODS

(1) Rotational molded parts warranted for eight (8) years.

(2) Batteries warranted by battery manufacturer for one (1) year.

(3) ONE YEAR WARRANTY. Warranted to be free from defects in material and workmanship for a period of one (1) year from the date of purchase by the original owners. (See Exclusions.)

(4) ONE (1) YEAR WARRANTY - For labor necessary to make warranty repairs.

EXCLUSIONS (Not Covered by Warranty)

(1) Parts that fail through normal wear by reason of their characteristics (pads, brushes, belts, wheels, pad holder, rubber skirt, squeegee rubber, or other consumable parts).

(2) This warranty does not extend to parts affected by misuse, neglect, abuse or improper maintenance. All defective parts must be returned to the distributor for credit.

(3) Batteries warranted by the battery manufacturer for one (1) year (Prorated).

(4) Vacuum Motors are warranted for ninety (90) days.

THE OBLIGATION OF AMANO PIONEER ECLIPSE CORPORATION

(1) The obligation of Amano Pioneer Eclipse Corporation under this warranty is limited to repairing or replacing, at its option, any part which is proven to be defective in material or workmanship under normal use for the applicable period stated above.

(2) Warranty repairs will be made by your Amano Pioneer Eclipse Corporation Distributor without charge for parts and labor. They will be compensated with a warranty labor rate of $45.00 per hour, for the first year of ownership.

(3) Parts repaired or replaced under this warranty are warranted only during the balance of the original warranty period. All defective parts replaced under these warranties become the property of Amano Pioneer Eclipse Corporation.

WARRANTY SERVICE

To obtain warranty service, take your machine and proof of purchase to any authorized Amano Pioneer Eclipse Corporation Distributor. Amano Pioneer Eclipse Corporation will not reimburse expenses for service calls or travel. For the Distributor in your area, call Amano Pioneer Eclipse Corporation Customer Service Department at 1-800-367-3550 or 1-336-372-8080. If you are dissatisfied with the service that you receive, call or email Amano Pioneer Eclipse Corporation Customer Service Department at apeccs@pioneer-eclipse.com for further assistance.

INSTRUCTIONS AND CONDITIONS FOR WARRANTY REIMBURSEMENT

- Order replacement part: Orders will be processed and charged, as normal procedure.
- Call Amano Pioneer Eclipse Corporation for R/A number.
- You will need the Machine Serial Number, and the Machine Model Number.
- Parts must be returned, accompanied with the R/A number to be eligible for warranty credit.
- All Warranty Parts will be shipped prepaid UPS Ground, any other method will be at the recipients expense.
- Freight on any Warranty Part after 30 days must be paid for by the Purchaser.
- Warranty labor rate is $45.00 per hour.
- Credit will be issued upon completion of the above steps, at the above rates.

DISCLAIMER OF CONSEQUENTIAL

AMANO PIONEER ECLIPSE CORPORATION DISCLAIMS ANY RESPONSIBILITY FOR LOSS OF USER TIME OF THE AMANO PIONEER ECLIPSE CORPORATION MACHINE OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE EXCEPT AS STATED IN THE WARRANTY APPLICABLE TO EACH MACHINE. EXCEPT AS STATED IN SUCH WARRANTIES, THE COMPANY DOES NOT OTHERWISE WARRANT ANY MACHINE AND NO WARRANTY, EXPRESS, IMPLIED OR STATUTORY IS MADE BY THE COMPANY.

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EC Machinery Directive 2006/42/EC,
EC Restriction of Hazardous Substances Directive (2011/65/EU)
Harmonized Standards Applied: EN 12100-1, EN12100-2

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