

NOBLES®

5300T

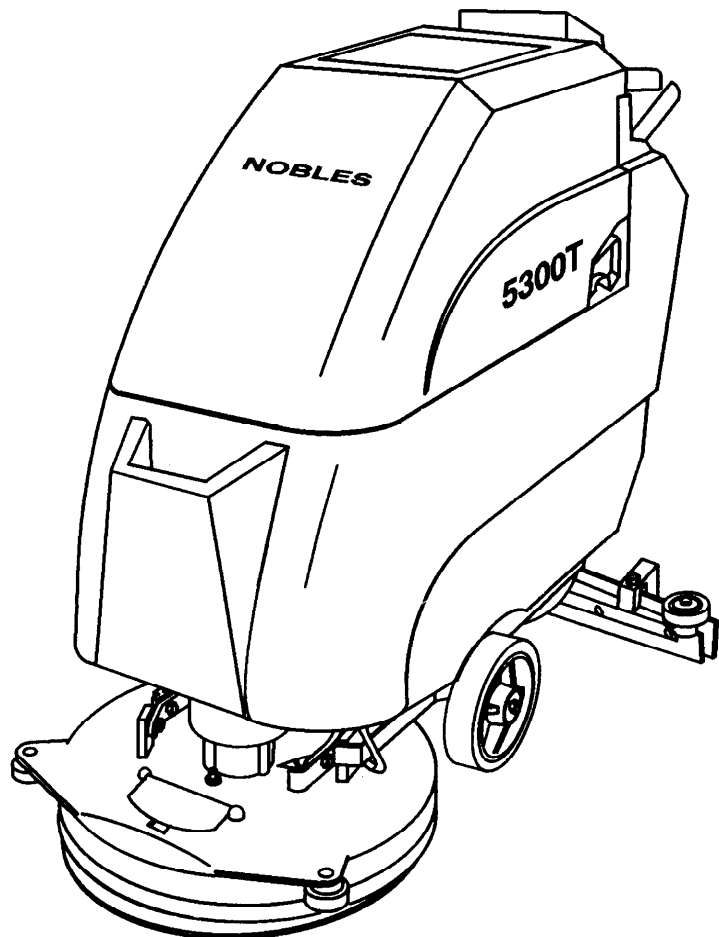
AUTOMATIC SCRUBBER

MODEL: AS5300T

**Operator Manual &
Parts List**



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173262
Rev. 02 (04-95)

NOBLES®

This manual is furnished with each new NOBLES Model 5300T. It provides necessary operating and preventive 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 maintenance instructions provided.
- The machine is maintained with NOBLES supplied or equivalent parts.

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SAFETY PRECAUTIONS

The following 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. Read this manual carefully. Know when these conditions can exist. Locate all safety devices on the machine. Then, take necessary steps to train machine operating personnel. Report machine damage or faulty operation immediately. Do not use the machine if it is not in proper operating condition.

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.
 - Check Brakes And Steering For Proper Operation (If So Equipped).
3. **When Using Machine:**
 - Go Slow On Inclines And Slippery Surfaces.
 - Use Care When Backing Machine.
4. **Before Leaving Or Servicing Machine:**
 - Stop On Level Surface.
 - Turn Off Machine And Remove Key.

5. When Servicing Machine:

- Avoid Moving Parts. Do Not Wear Loose Jackets, Shirts, Or Sleeves When Working On Machine.
- Block Machine Tires Before Jacking Machine Up.
- Jack Machine Up At Designated Locations Only. Block Machine Up With Jack Stands.
- Use Hoist Or Jack Of Adequate Capacity To Lift Machine.
- Wear Eye And Ear Protection When Using Pressurized Air Or Water.
- Disconnect Battery Connections Before Working On Machine.
- Avoid Contact With Battery Acid.
- Use ServiceMaster Supplied Or Equivalent Replacement Parts.



WARNING: Batteries Emit Hydrogen Gas. Explosion Or Fire Can Result. Keep Sparks And Open Flame Away. Keep Covers Open When Charging.



WARNING: Flammable Materials Can Cause An Explosion Or Fire. Do Not Use Flammable Materials In Tank(s).

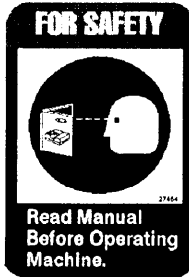


WARNING: Flammable Materials Or Reactive Metals Can Cause Explosion Or Fire. Do Not Pick Up.

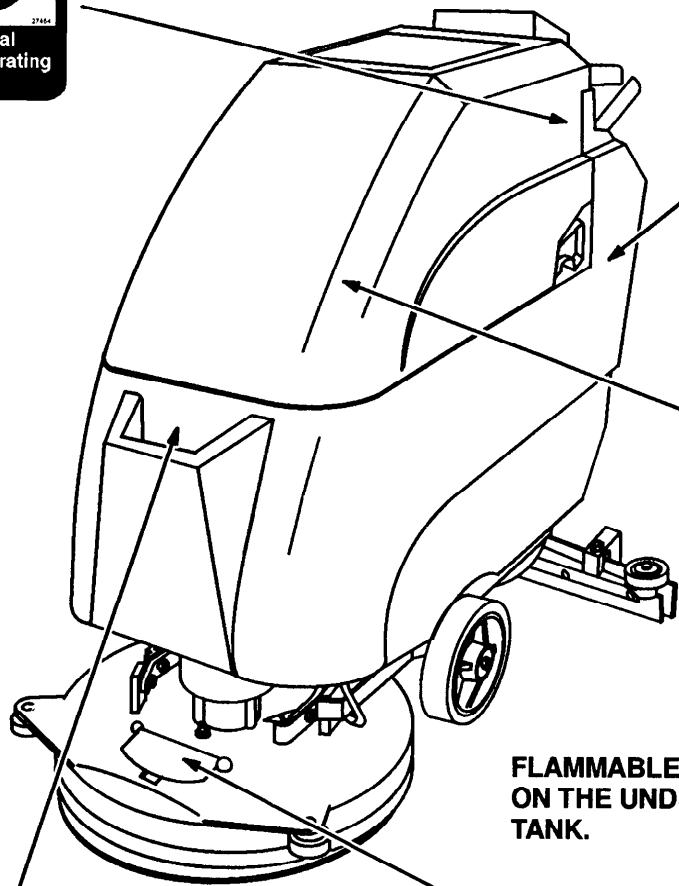
SAFETY PRECAUTIONS

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

FOR SAFETY LABEL – LOCATED ON THE MACHINE BACK PANEL ABOVE THE SQUEEGEE LEVER.



BATTERY CHARGING LABEL – LOCATED ON THE BOTTOM OF THE OPERATOR CONSOLE.



FLAMMABLE MATERIALS LABEL – LOCATED ON THE UNDERSIDE OF THE RECOVERY TANK.



FLAMMABLE SPILLS LABEL – LOCATED ABOVE THE SOLUTION TANK FILL OPENING AND ON THE RECOVERY TANK COVER.



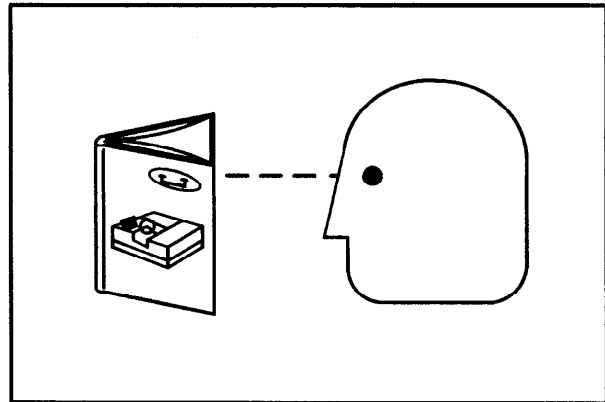
MOVING PARTS LABEL – LOCATED ON THE SCRUB HEAD ACCESS DOOR.

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OPERATOR RESPONSIBILITY

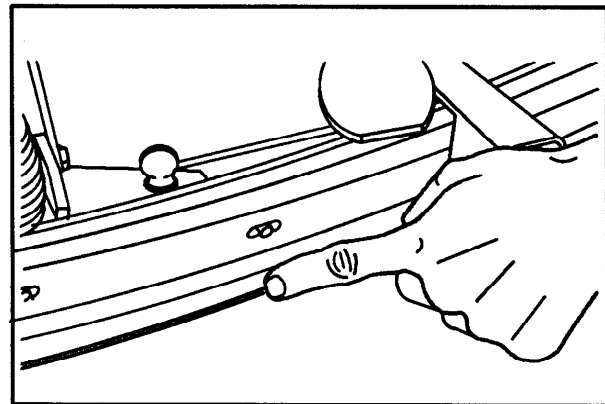
- The operator's responsibility is to take care of the daily maintenance and checkups of the machine to keep it in good working condition. The operator must inform the service mechanic or supervisor when the maintenance intervals are required as stated in the MAINTENANCE section of this manual.
- Read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

FOR SAFETY: Do Not Operate Machine, Unless Operation Manual Is Read And Understood.



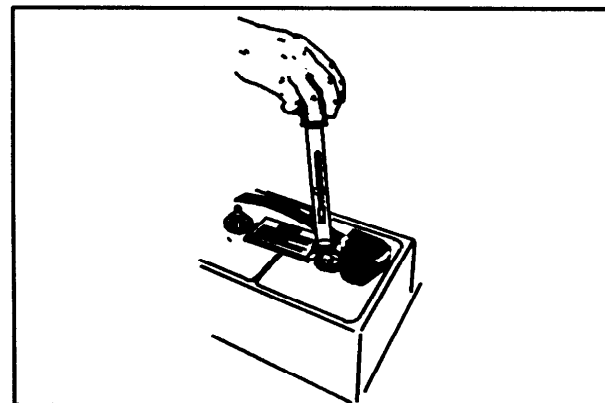
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- After the first 50 hours of operation the following procedures are recommended:
 - Check the squeegee deflection.



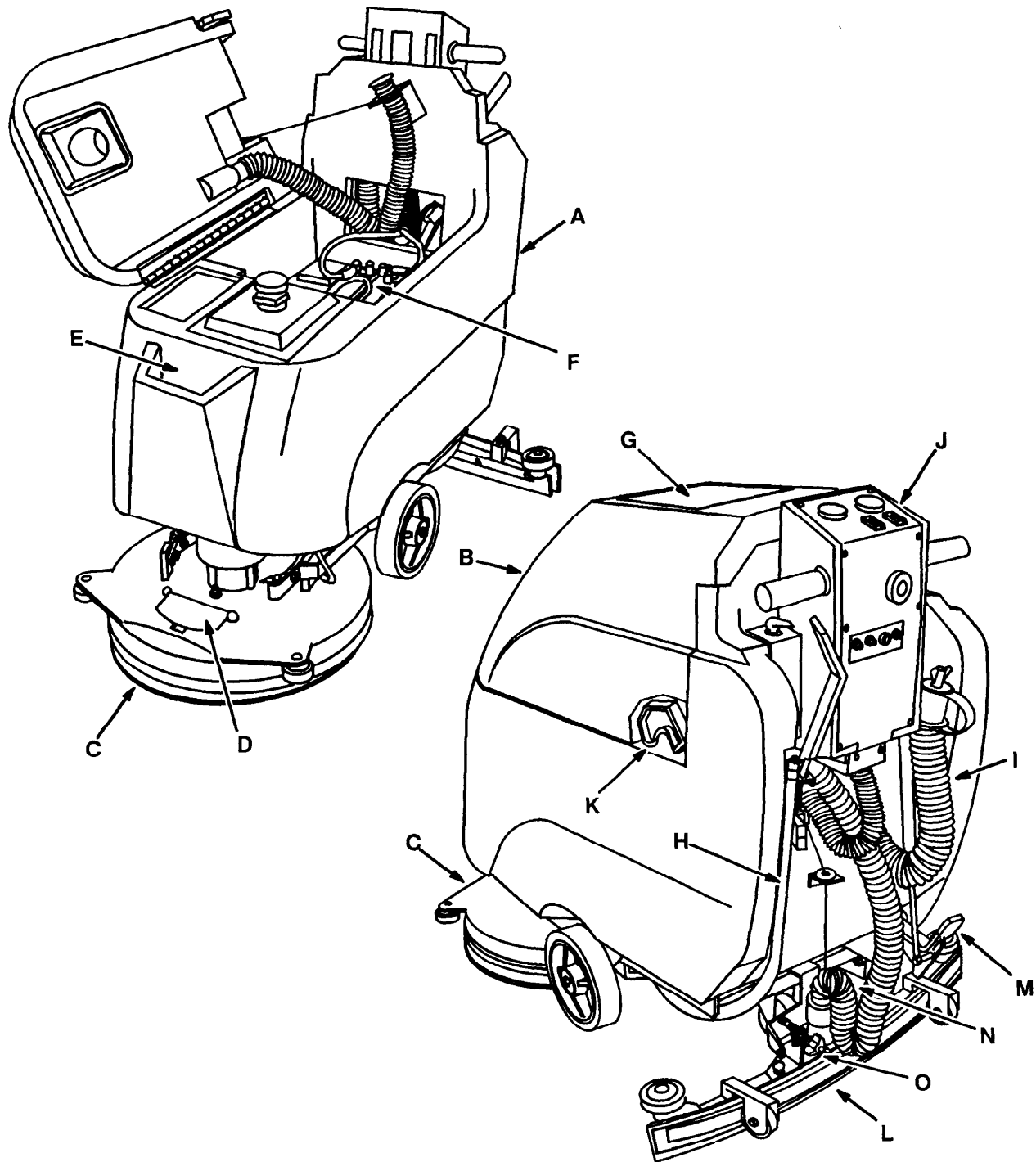
09462

- Check the electrolyte level.
- Check the battery cable connections.



04380

MACHINE COMPONENTS



- A. Solution Tank
- B. Recovery Tank
- C. Scrub Head
- D. Scrub Head Access Cover
- E. Solution Tank Fill Opening
- F. Batteries
- G. Recovery Tank Cover
- H. Solution Tank Hose

- I. Recovery Tank Drain Hose
- J. Console Panel
- K. Stop Arm
- L. Squeegee
- M. Scrub Head Pedal
- N. Squeegee Down Pressure Knob
- O. Squeegee Leveling Knob

09463
09181

OPERATION

CONTROL PANEL SYMBOLS

These symbols are used to identify controls and displays on the machine:



Slow



Fast



Battery Charge



Light Brush Pressure



Heavy Brush Pressure



Machine Power



Solution Flow



Hourmeter



ES™ (Extended Scrub)



Power Wand or Vacuum Wand



Recovery Tank Full



Key Switch



Propelling Circuit Breaker



Scrub Brush Circuit Breaker

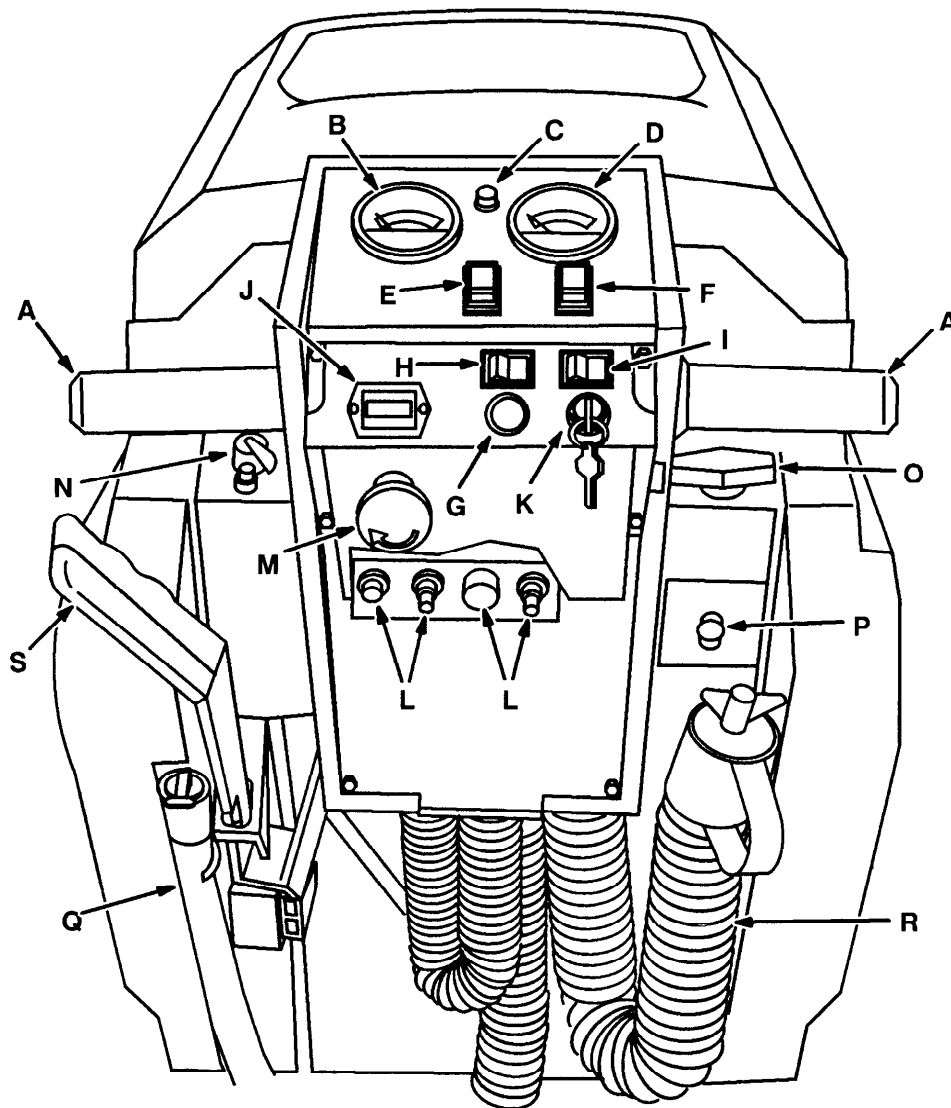


Machine Power Circuit Breaker



Vacuum Fan Circuit Breaker

CONTROLS AND INSTRUMENTS



- A. Steering Handles/Brush and Solution On Switch
- B. Battery Discharge Indicator
- C. Speed Switch
- D. Brush Pressure Gauge
- E. Machine Power Switch
- F. Solution Switch
- G. Pump On Light (Option)
- H. ES™ Switch (Option)
- I. Power Wand Switch (Option)
- J. Hourmeter (Option)
- K. On-off Key Switch (Option)
- L. Circuit Breakers
- M. Power Kill Switch (Option)
- N. Solution Flow Knob
- O. Brush Pressure Knob
- P. Brush Pressure Indicator
- Q. Solution Tank Hose
- R. Recovery Tank Drain Hose
- S. Squeegee Lever

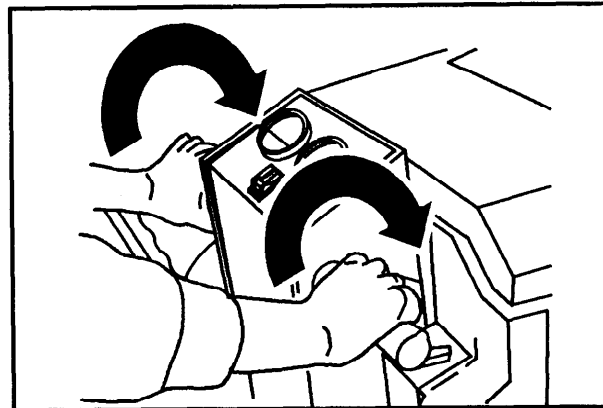
09580

OPERATION

STEERING HANDLES/BRUSH AND SOLUTION ON SWITCH

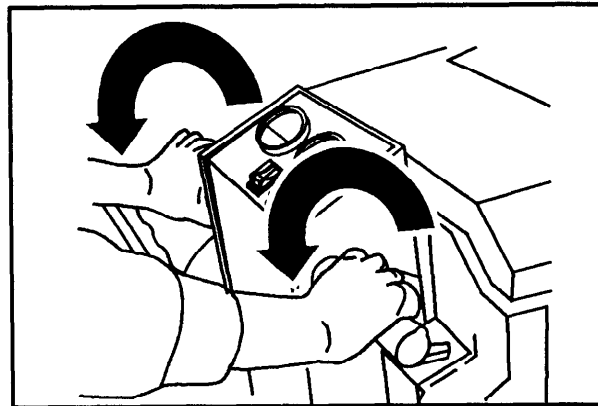
The steering handles control the machine direction, and the brush and solution flow is operated by twisting the steering handles.

Forward/Brush and Solution On: Twist the handles forward.



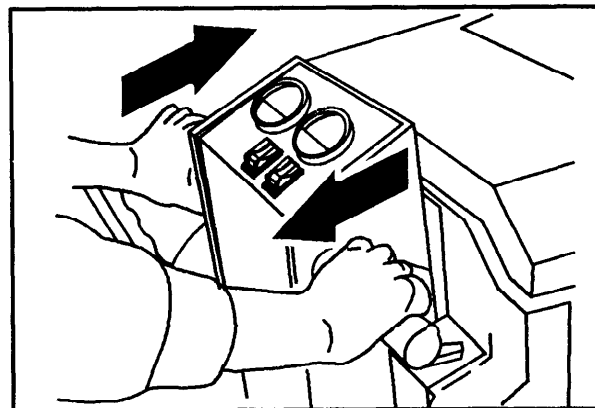
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Backward/Brush and Solution On: Twist the handles toward you.



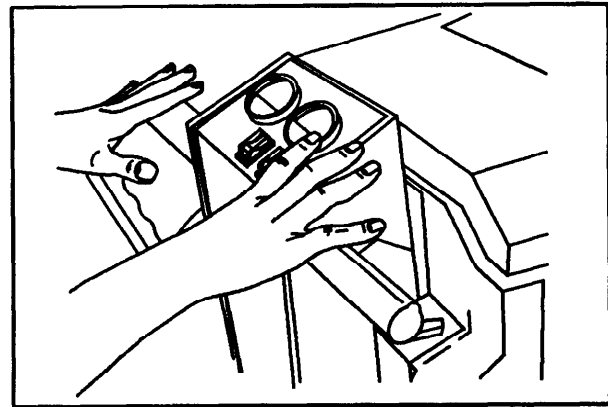
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Turning: Push the machine in the direction of the turn with the steering handles. The machine will turn on the swivel casters.



09517

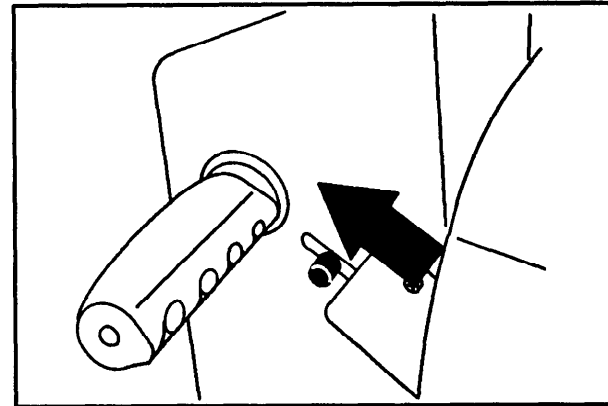
Stopping/Brush and Solution Off: Release the handles.



09518

The steering handles and console height is adjustable.

Adjust: Pull up on the height adjustment lever, move the console up or down, then release the lever.



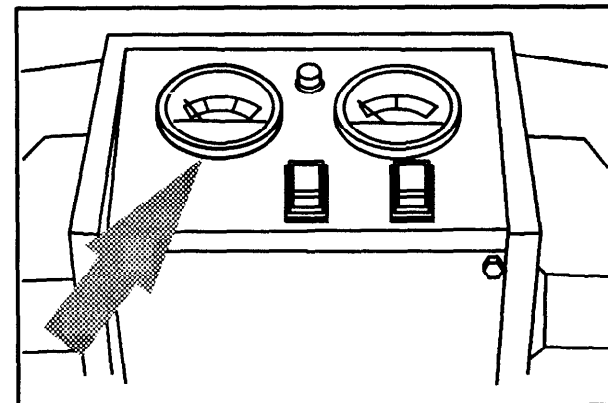
09467

BATTERY DISCHARGE INDICATOR

The battery discharge indicator shows the charge level of the batteries. The meter's needle should be at the top of the **green** zone when the batteries are fully charged. As the batteries discharge, the needle will move into the bottom **red** zone. Recharge the batteries when the needle remains in the bottom **red** zone.

If the needle remains in the top red zone, the batteries have been overcharged.

NOTE: The reading on the battery discharge indicator is not accurate when the machine is first powered on. Operate the machine a few minutes before reading the charge level of the batteries.



09743

OPERATION

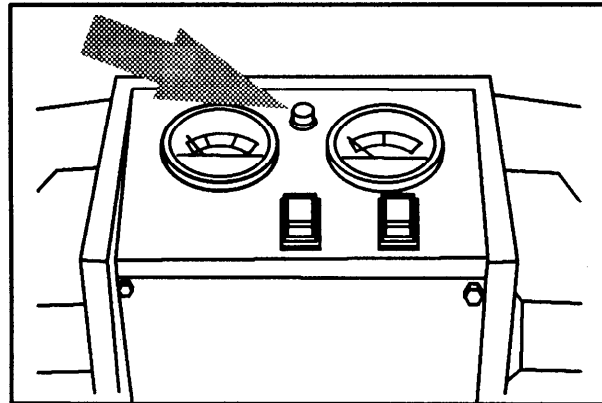
SPEED SWITCH

The speed switch allows variable forward speed of the machine.

Slow: Turn the switch knob counterclockwise



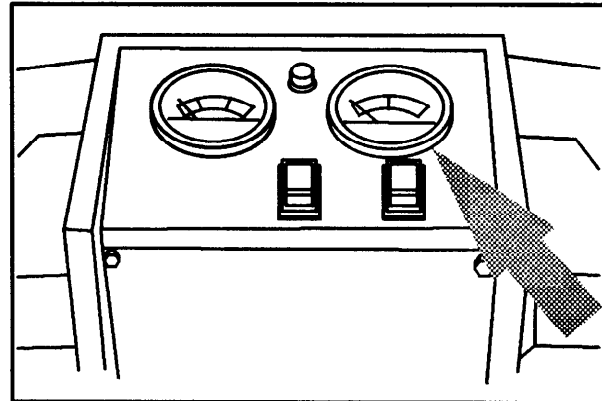
Fast: Turn the switch knob clockwise 



09742

BRUSH PRESSURE GAUGE

The brush pressure gauge shows how hard the scrub brush motor is working. The brush pressure should be operated in the **green** zone. Operating in the **red** zone indicates excessive brush pressure, and will cause the scrub brush circuit breaker to trip.



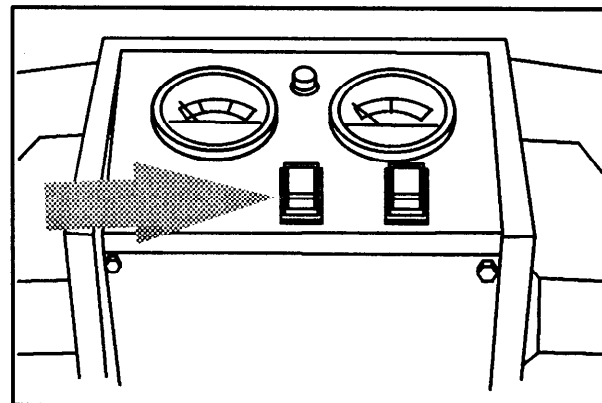
09744

MACHINE POWER SWITCH

The machine power switch turns on and off the machine power.

On: Press the top of the machine power switch. The switch will light up.

Off: Press the bottom of the machine power switch.



09745

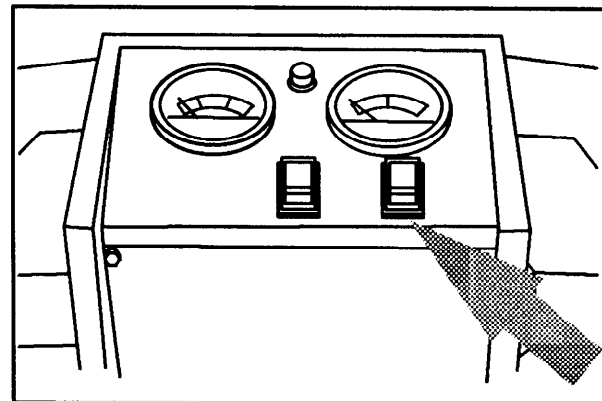
SOLUTION SWITCH

The solution switch starts and stops the solution flow.

Start: Press the top of the solution switch. The switch will light up.

NOTE: Stop the solution flow just before turning a corner. Then start the solution flow once around the corner.

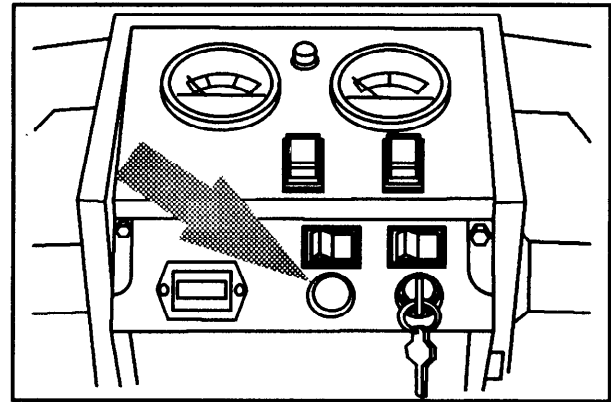
Stop: Press the bottom of the solution switch.



09746

PUMP ON LIGHT (OPTION)

The pump on light will come on when the ES™ solution pump starts.



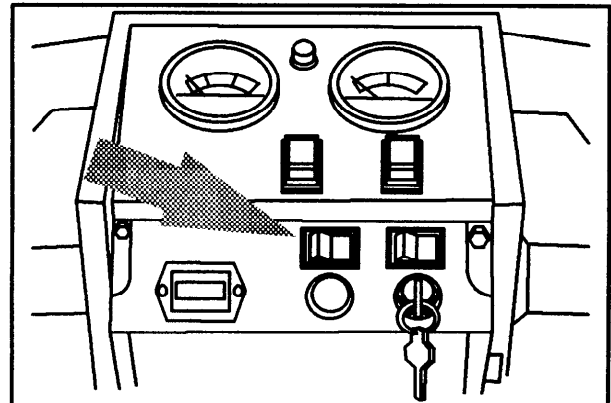
09747

ES™ SWITCH (OPTION)

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

On: Press the right side of the ES™ switch. The switch will light up.

Off: Press the left side of the ES™ switch.



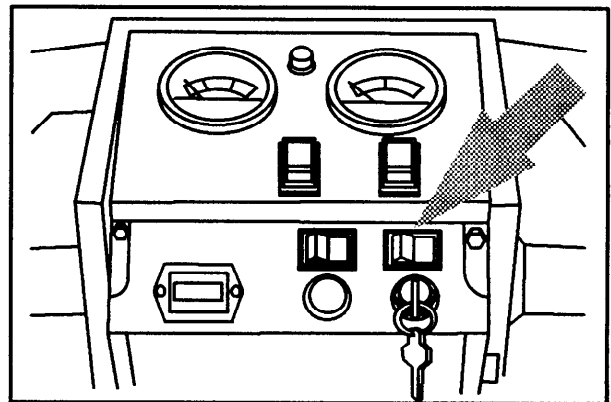
09748

POWER WAND SWITCH (OPTION)

The power wand switch turns on and off the power wand solution system.


On: Press the right side of the power wand switch. The switch will light up.

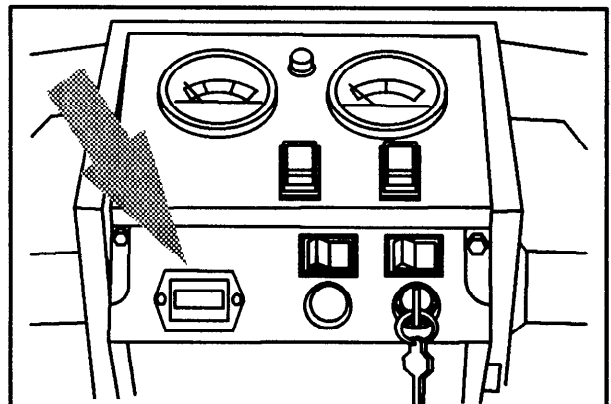
Off: Press the left side of the power wand switch.



09749

HOURMETER (OPTION)

The hourmeter  records the number of hours the machine has been powered on. This information is useful when servicing the machine.



09750

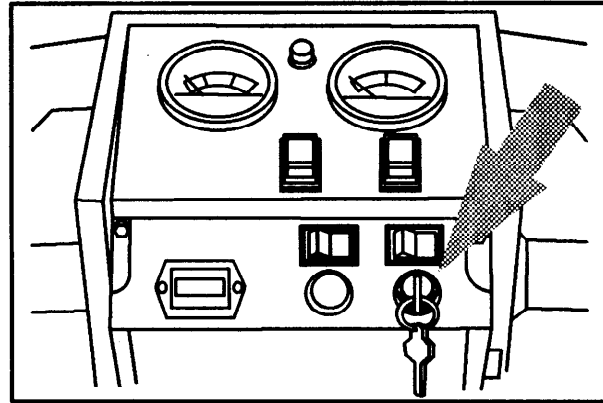
OPERATION

ON-OFF KEY SWITCH (OPTION)

The on-off key switch controls machine power with a key. The machine power switch has to be on for the key switch to turn on the machine power.

On: Turn the key to the right.

Off: Turn the key to the left.



09751

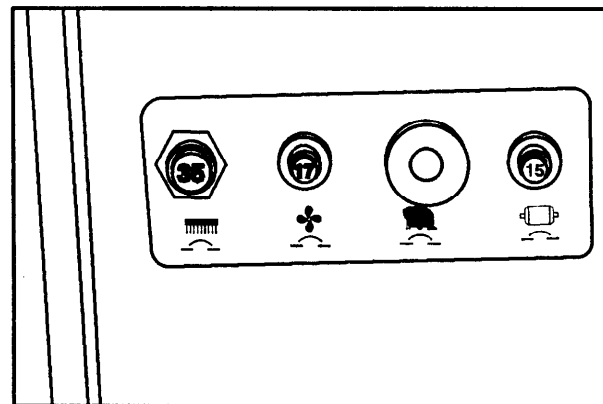
CIRCUIT BREAKERS

The circuit breakers are resettable electrical circuit protection devices. They are designed to stop the flow of current in the event of a circuit overload. Once a circuit breaker is tripped, reset manually by pressing the reset button after the breaker has cooled down.





If the overload that caused the circuit breaker to trip is still there, the circuit breaker will continue to stop current flow until the problem is corrected.

The circuit breakers are located below the operator console.

The chart shows the circuit breakers and the electrical components they protect.



09561

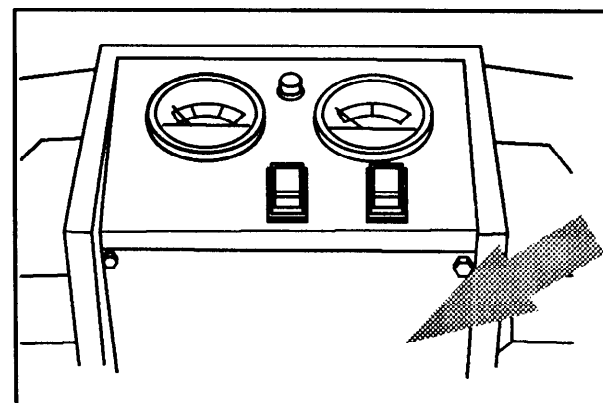
Circuit Breaker	Rating	Circuit Protected
	35 A	Scrub brush
	17 A	Vacuum fan
	7 A	Machine power
	15 A	Machine propel

FUSE

Fuses are a one-time protection device designed to stop the flow of current in the event of a circuit overload. Never substitute higher value fuses than specified.

The fuse is located inside the instrument panel.

Fuse	Rating	Circuit Protected
FU-1	1 A	Directional potentiometer



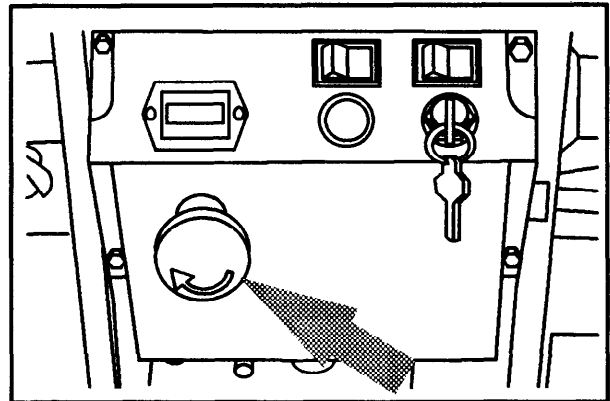
09754

POWER KILL SWITCH (OPTION)

The power kill switch halts all power to the machine.

Halt: Hit the power kill switch.

Restart: Turn the power kill switch to the right to release the switch. Turn off the machine power, then turn on the machine power.



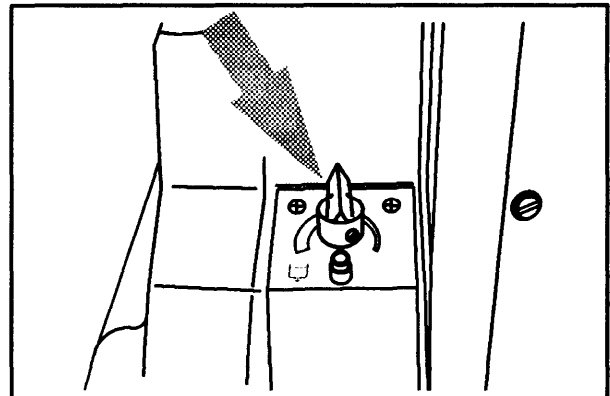
09477

SOLUTION FLOW KNOB

The solution flow knob  controls the amount of solution flow to the floor.

Increase: Turn the solution knob counter-clockwise. The more you turn the knob, the more you increase the solution flow to the floor.

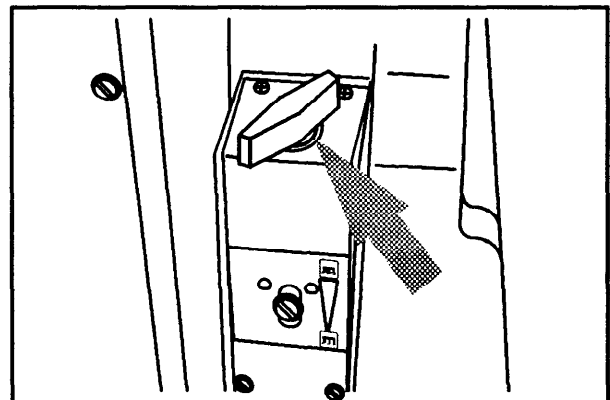
Decrease: Turn the solution knob clockwise.



09479

BRUSH PRESSURE KNOB

The brush pressure knob adjusts the amount of brush pressure to the floor. The indicator below the knob shows if the brush pressure is increasing or decreasing.

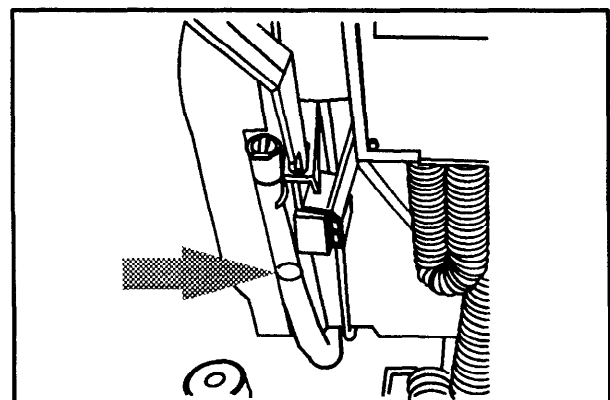


09480

SOLUTION TANK HOSE

The clear solution tank hose shows the solution level in the solution tank.

The hose is used to drain the solution tank. The drain hose plug is removed by flipping up the plug latch and pulling the plug out of the drain hose. The drain hose is plugged by placing the hose plug in the end of the hose and flipping the plug latch down.

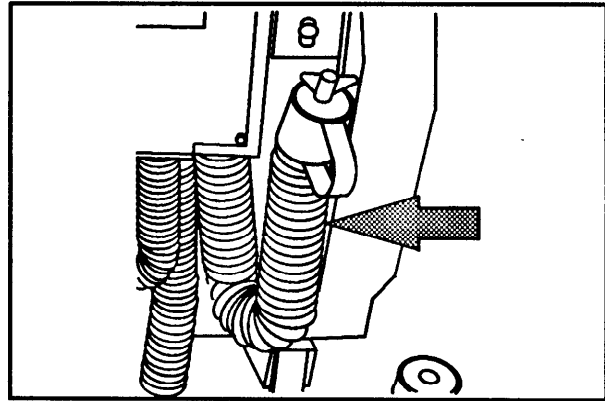


09481

OPERATION

RECOVERY TANK DRAIN HOSE

The recovery tank drain hose is used to drain the recovery tank. The drain hose plug is removed by turning the plug latch to loosen the plug and pulling the plug out of the drain hose. The drain hose is plugged by placing the hose plug in the end of the hose and turning the plug latch to tighten the plug.

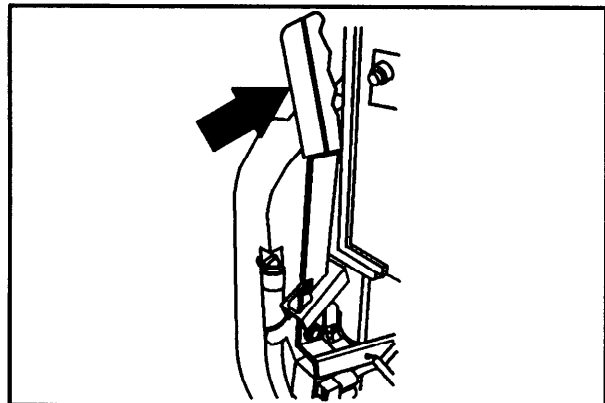


09482

SQUEEGEE LEVER

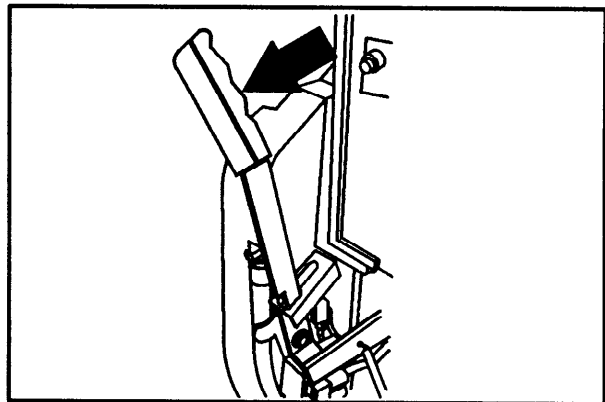
The squeegee lever controls the squeegee and the vacuum system.

Lower Squeegee and Start Vacuum: Move the squeegee lever to the left to unlock it, then move the lever all the way forward.



09483

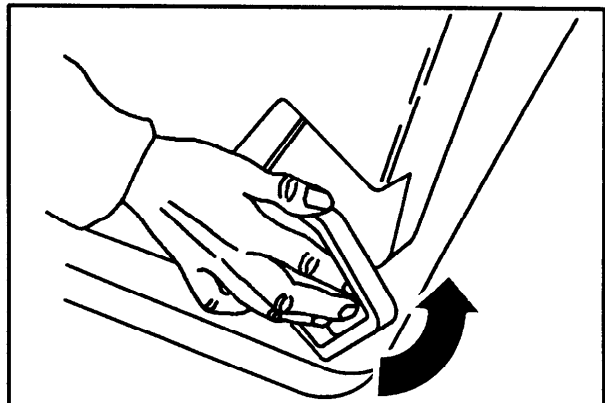
Raise Squeegee and Stop Vacuum: Pull the lever towards you, and move it to the right to lock the lever in the up position.



09484

STOP ARM

The stop arm prevents the recovery tank from pinching fingers when the tank is lowered. Rotate the arm up to lower the recovery tank completely.

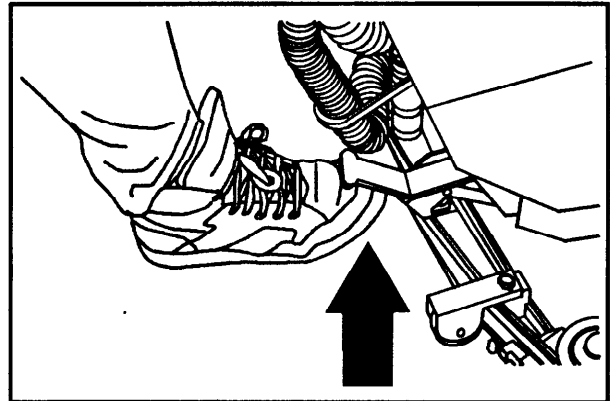


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SCRUB HEAD PEDAL

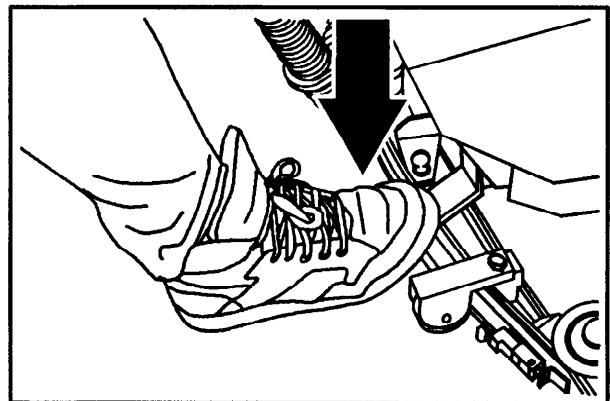
The scrub head pedal raises and lowers the scrub head. The scrub brush starts when the scrub head is lowered and the steering handles are twisted forward or backward.

Lower and Start: Pull up on the pedal with your foot.



09485

Raise and Stop: Step on the pedal with your foot.



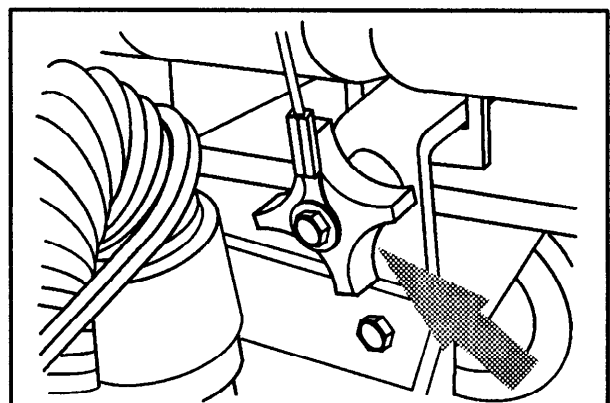
09486

SQUEEGEE DOWN PRESSURE KNOB

The squeegee down pressure knob adjusts the squeegee deflection along the entire length of the squeegee.

Increase: Turn the squeegee down pressure knob clockwise.

Decrease: Turn the squeegee down pressure knob counter-clockwise.



09487

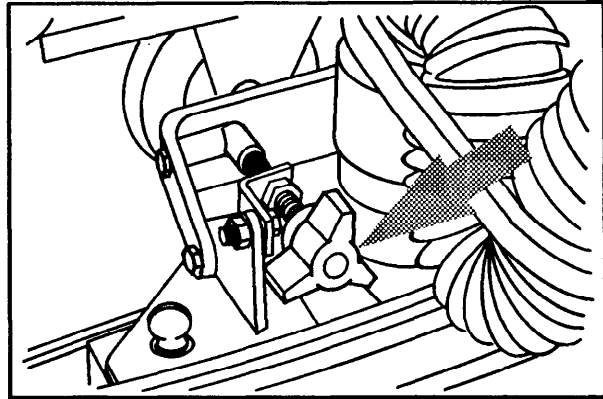
OPERATION

SQUEEGEE LEVELING KNOB

The squeegee leveling knob adjusts the deflection at the ends of the squeegee.

Increase: Turn the squeegee leveling knob counter-clockwise to increase the deflection at the end of the squeegees.

Decrease: Turn the squeegee leveling knob clockwise to decrease the deflection at the end of the squeegees.



09488

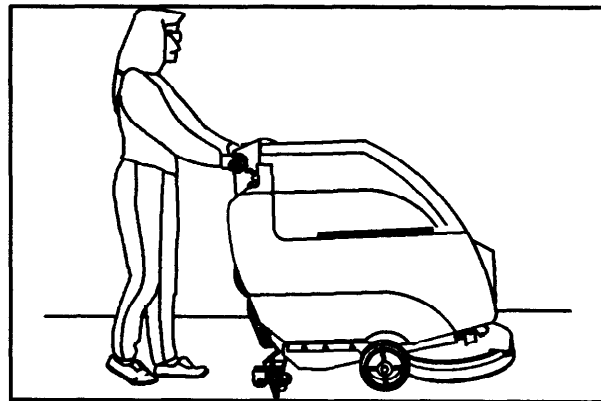
HOW THE MACHINE WORKS

The scrub components of the machine are a solution tank, a scrub brush, a squeegee, a vacuum fan, and a recovery tank.

Water and detergent from the solution tank flows to the floor through a solution valve to the scrub brush. The brush scrubs the floor. As the machine is moved forward the squeegee wipes the dirty solution off the floor, which is then picked up and drawn into the recovery tank.

The steering handles control the direction of the machine in forward or reverse. By twisting the steering handles forward, the machine propels forward. By twisting the handles towards you the machine propels backward. The speed switch controls the forward speed of the machine.

When using the ES™ mode, the dirty solution in the recovery tank is filtered and returned to the solution tank to be reused.

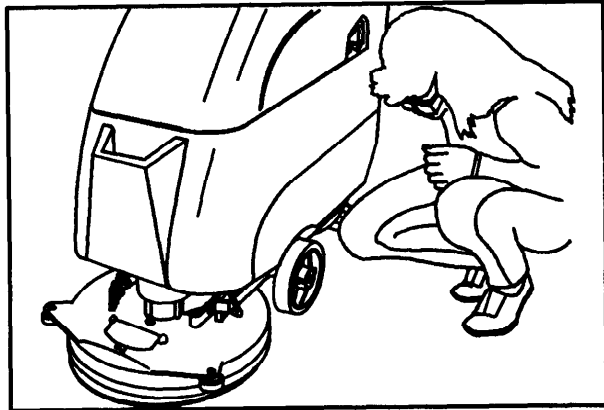


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PRE-OPERATION CHECKLIST

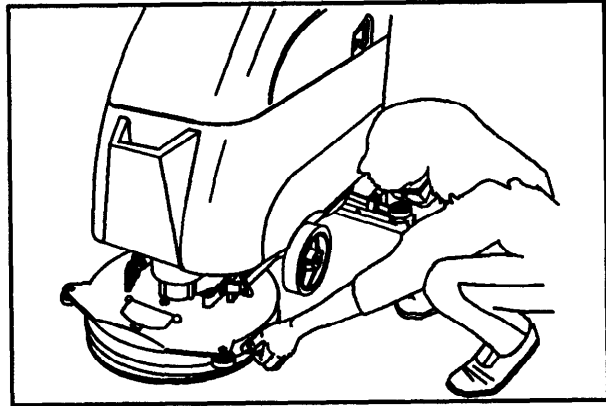
Check over this list of items before operating the machine:

- Check under the machine for leaks.



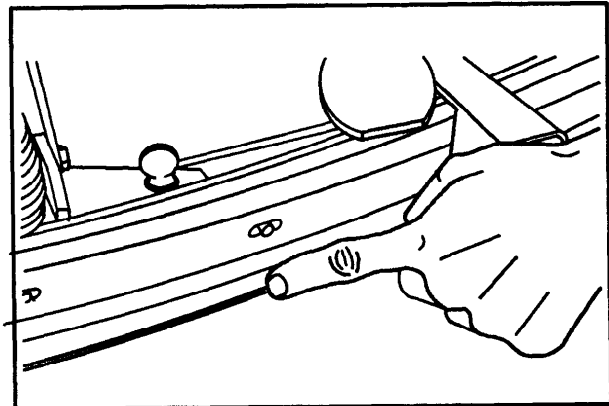
09186

- Check and make sure the scrub head skirt touches the floor all the way around the scrub head.



09522

- Check the squeegee for proper deflection. Check the squeegee blade for wear, rounded edges, nicks, or cuts.

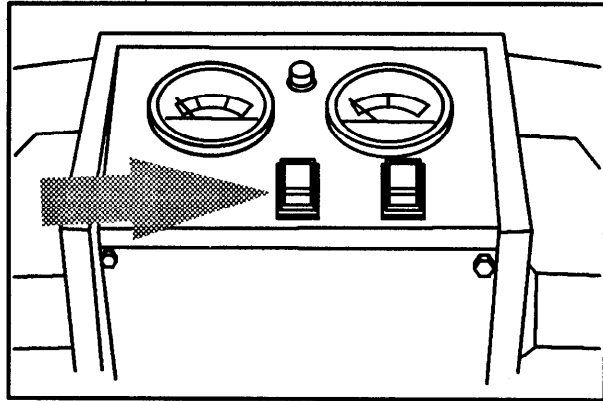


09462

OPERATION

STARTING THE MACHINE

1. Turn the machine power on.



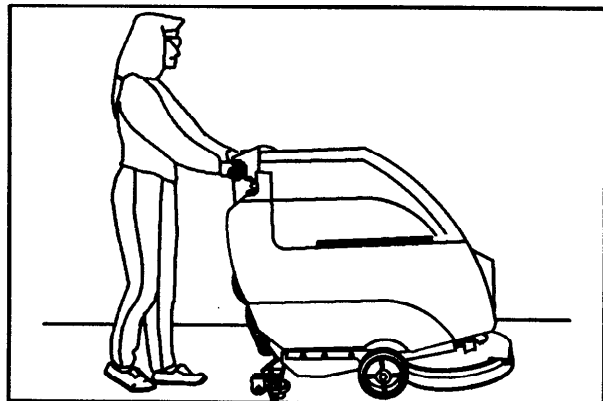
09745

2. Release the machine parking brake, if your machine has this option.

FILLING THE TANKS

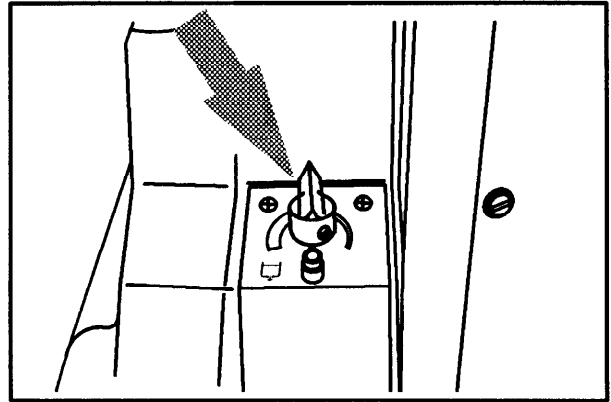
1. Start the machine.
2. Drive the machine to the filling site.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.



09185

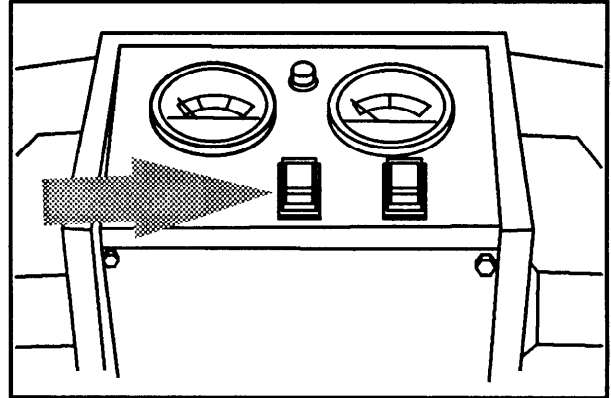
3. Stop the solution flow.



09479

4. Turn the machine power off.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Set Parking Brake (If So Equipped), Turn Off Machine And Remove Key.

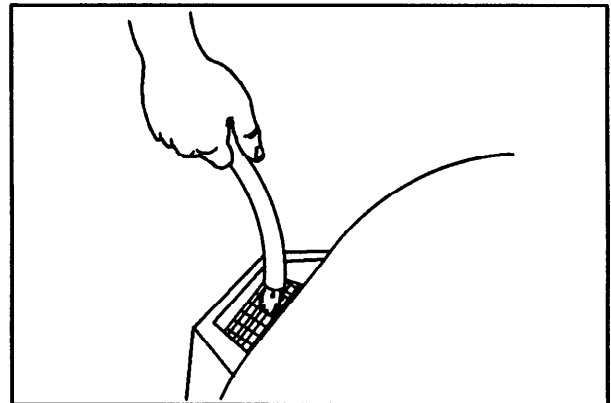


09745

5. Pour the required amount of detergent into the solution tank fill opening. Fill the solution tank to fill opening screen.

*NOTE: The water must **not be** hotter than 55° C (130° F) or tank damage may occur.*

NOTE: Floor conditions, water condition, amount of soilage, type of soilage, brush action all play an important role in determining the type and concentration of detergent used. For specific recommendations, contact your representative.



09492

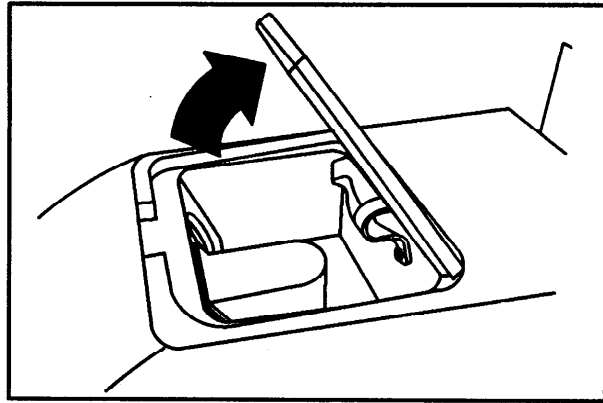
⚠ WARNING: Flammable Materials Can Cause An Explosion Or Fire. Do Not Use Flammable Materials In Tank(s).

OPERATION

6. ES™ mode: Open the recovery tank cover.

NOTE: If you are going to scrub in the ES™ mode, the recovery tank can be partially filled to extend scrub time. Make sure the ES™ switch is in the top position, turning the ES™ system on.

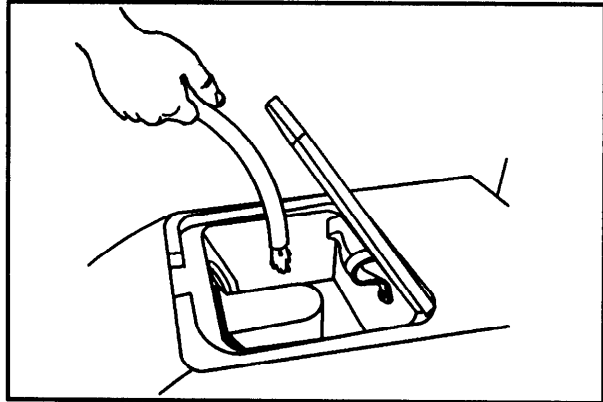
*If you **do not** want to use the ES™ system, press the bottom of the ES™ switch. **DO NOT** fill the recovery tank.*



09493

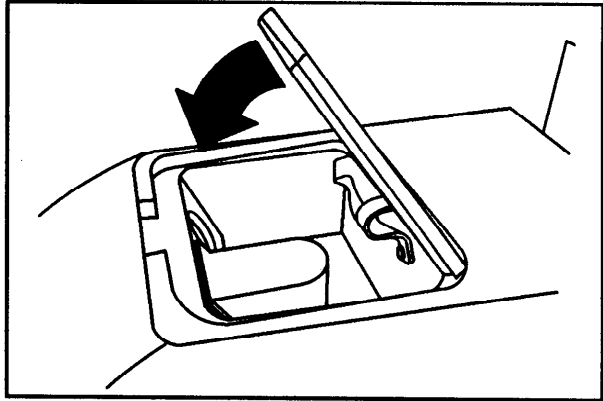
7. ES™ mode: Fill the recovery tank with no more than 23 L (6 gal) of water.

*NOTE: The water must **not be** hotter than 55° C (130° F) or tank damage may occur.*



09503

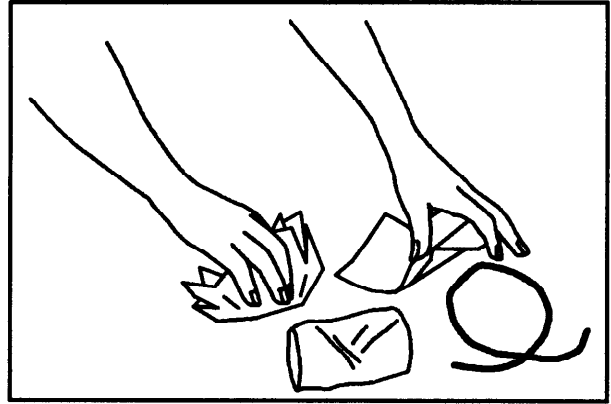
8. ES™ mode: Close the recovery tank cover.



09494

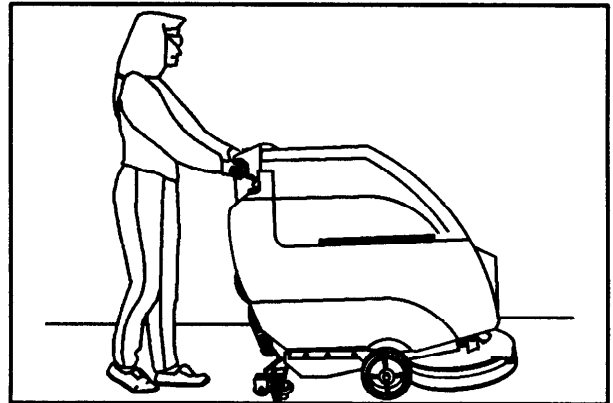
NORMAL SCRUBBING

- Pick up oversized debris before scrubbing. Pick up pieces of wire, string, twine, etc., which could become wrapped around the scrub brush.
 - Plan the scrubbing in advance. Try to arrange long runs with minimum stopping and starting. Do an entire floor or section at one time.
 - Try to scrub as straight a path as possible. Avoid bumping into posts or scraping the sides of the machine. When scrubbing dead end aisles, start at the closed end of the aisle and scrub your way out. Overlap the scrub paths by a few centimeters (inches).
 - When you see poor scrubbing performance, stop scrubbing and refer to *MACHINE TROUBLESHOOTING*.
1. Start the machine.
 2. Drive the machine to the area to be scrubbed.

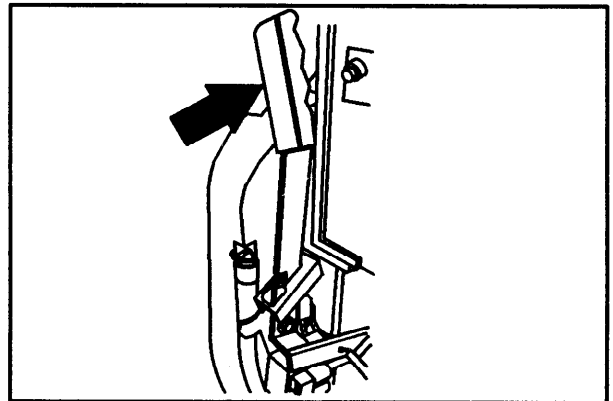


07218

3. Lower the squeegee to the floor with the squeegee lever.



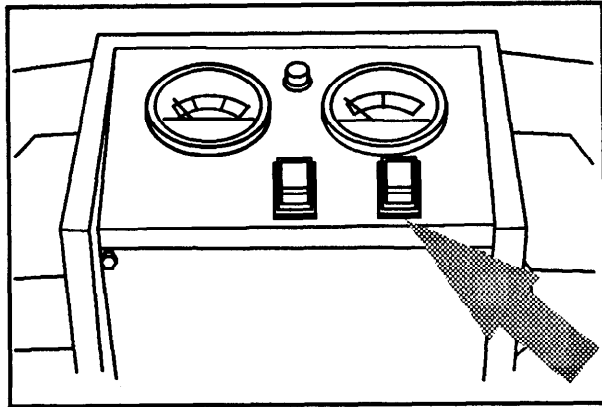
09185



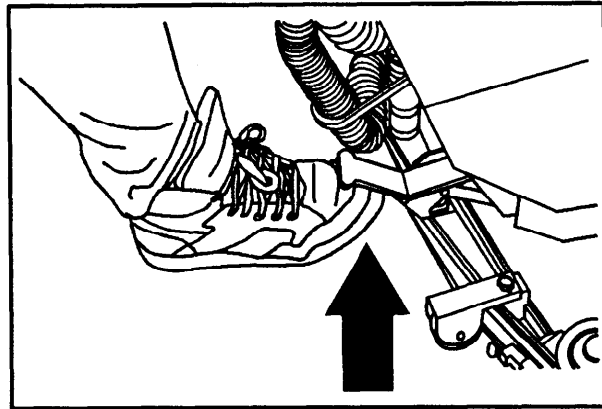
09483

OPERATION

4. Start the solution flow with the solution switch.

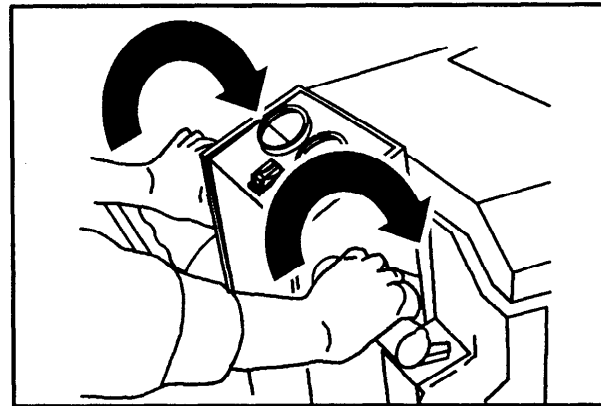


5. Start and lower the scrub brush with the scrub head pedal.

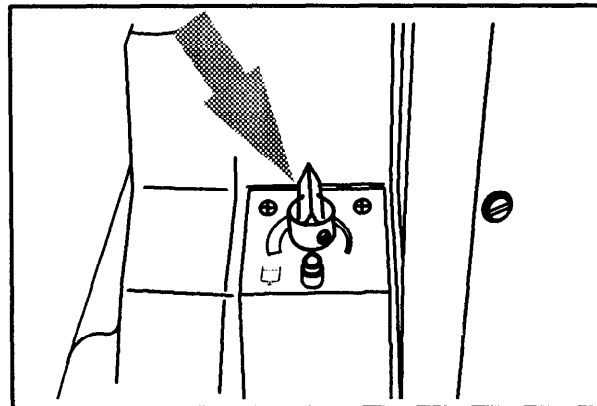


6. Drive the machine forward and scrub as required.

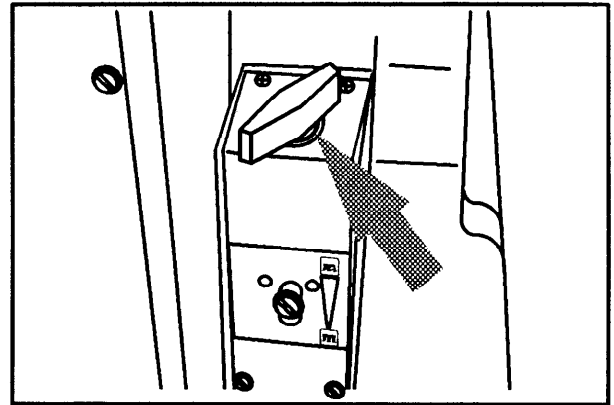
 **WARNING: Flammable Materials Or Reactive Metals Can Cause Explosion Or Fire. Do Not Pick Up.**



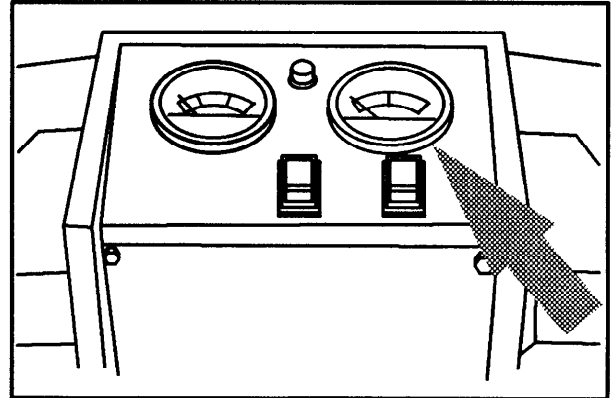
7. Adjust the solution flow to the floor as needed.



8. Adjust brush pressure for cleaning application.



09480



09744

DOUBLE SCRUBBING

Double scrubbing is a method for removing heavy floor accumulations. This is done by making two passes over the area to be cleaned with the machine.

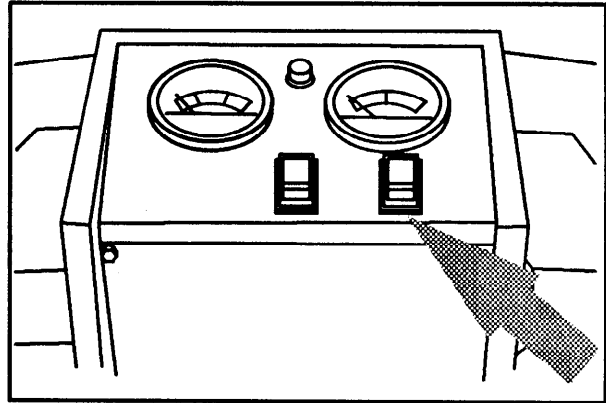
First, make a pass over the area scrubbing with the squeegee up. This dispenses solution over the area allowing the solution to soak on the floor. Let the solution remain on the floor for 3 to 5 minutes. Then make a second pass scrubbing with the squeegee down.

FOR SAFETY: When Using Machine, Go Slow On Inclines And Slippery Surfaces.

OPERATION

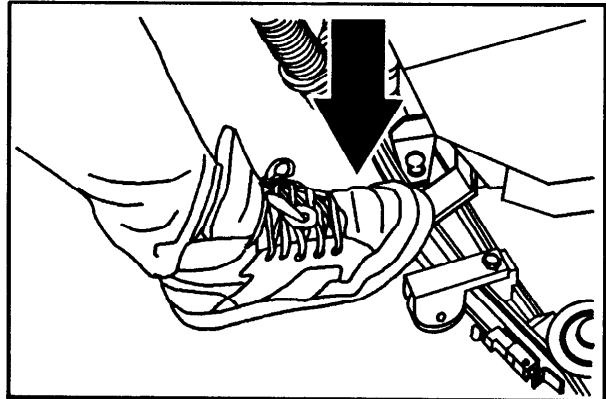
STOP SCRUBBING

1. Release the steering handles and stop the solution flow with solution switch.



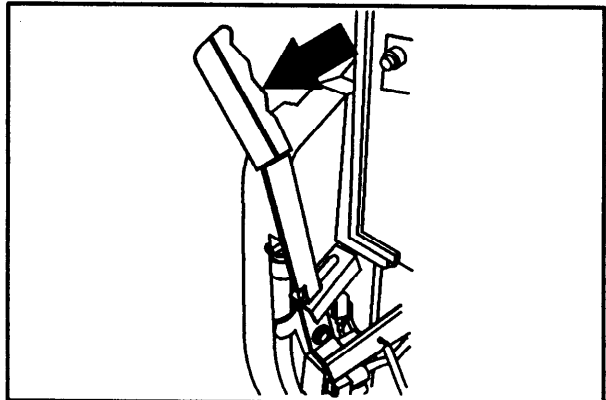
09746

2. Raise the scrub brush with the scrub head pedal.



09486

3. Raise the squeegee with the squeegee lever.



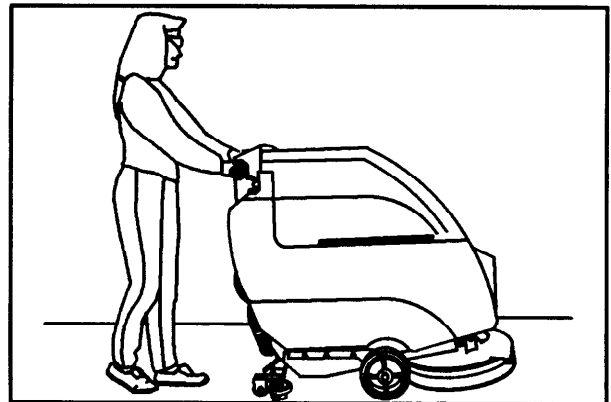
09484

DRAINING AND CLEANING THE TANKS

When you are finished scrubbing, or you hear the a change in the vacuum fan sound, and the machine starts trailing water, the recovery tank should be drained and cleaned. The solution tank then can be filled again for additional scrubbing.

If you used the machine in ES™ mode, the solution tank should also be drained and cleaned when you are finished scrubbing.

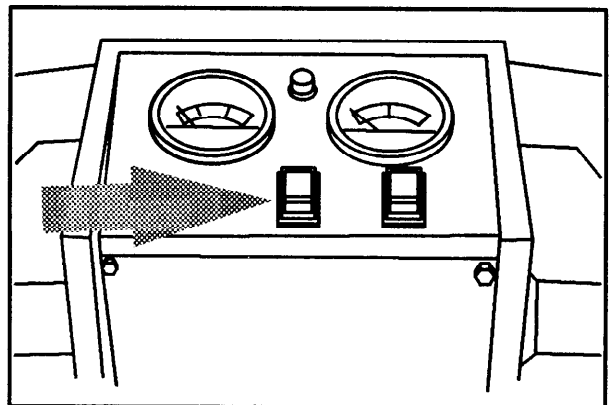
1. Stop scrubbing.
2. Drive the machine next to a floor drain or sink.



09185

3. Turn the machine power off.

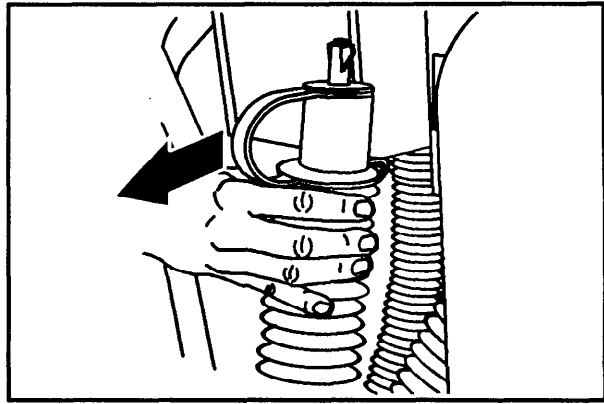
FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.



09745

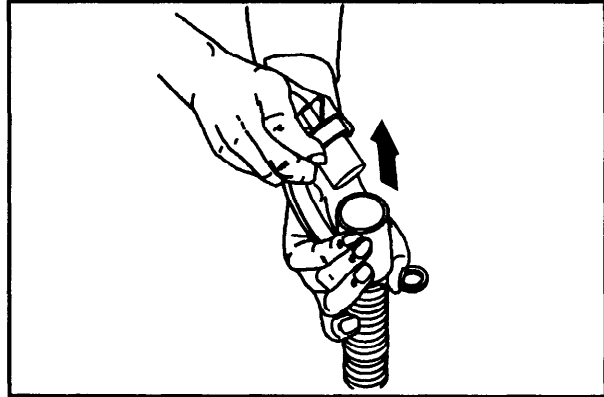
OPERATION

4. Remove the recovery tank drain hose from the mounting clip.



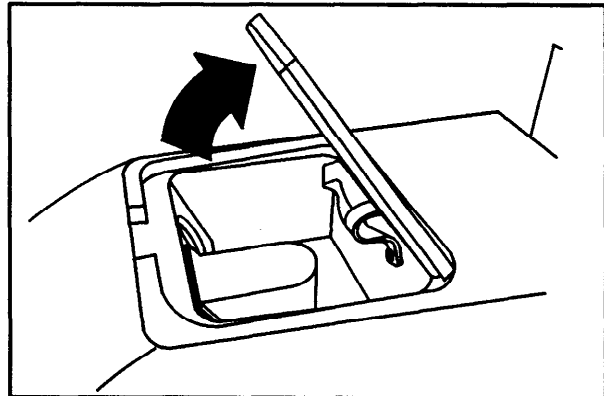
09495

5. Remove the drain hose plug while holding the hose up, then slowly lower the drain hose to the floor drain or sink.



09497

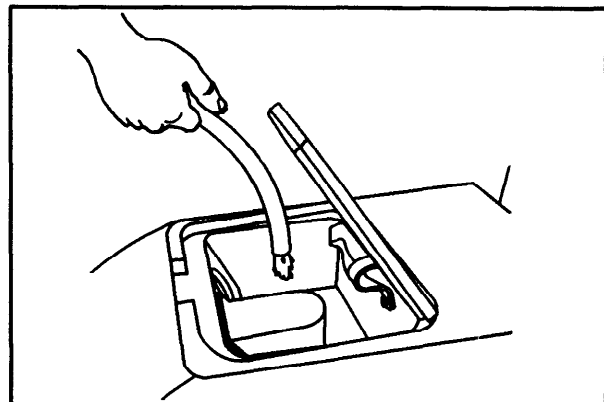
6. Open the recovery tank cover.



09493

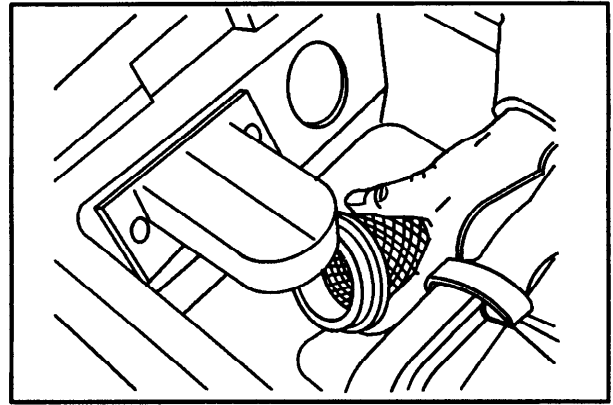
7. Flush out the inside of the recovery tank with clean water.

NOTE: The water must not be hotter than 55° C (130° F), or tank damage may occur. Do not use steam to clean the tank.



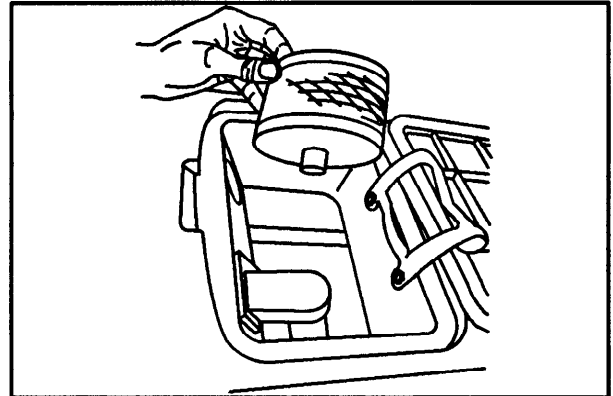
09503

8. Rinse the float screen. Remove and clean the screen if it is still dirty. Put the screen back in the tank.



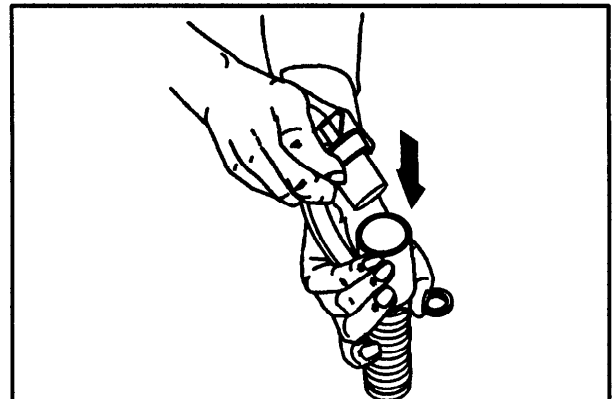
09505

9. ES™ mode: Rinse the ES™ filter. Remove and clean the filter if it is still dirty. Put the filter back in the tank.



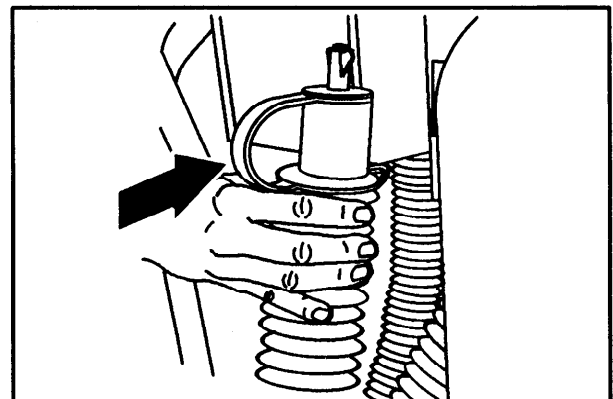
09506

10. When the tank has completely drained, replace the drain hose plug in the recovery tank drain hose.



09498

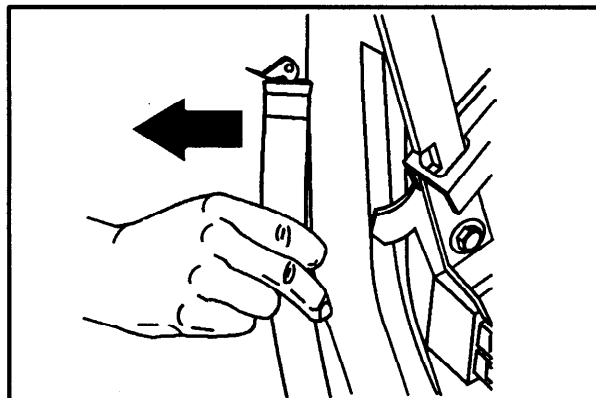
11. Place the recovery tank drain hose back onto the mounting clip on the machine.



09496

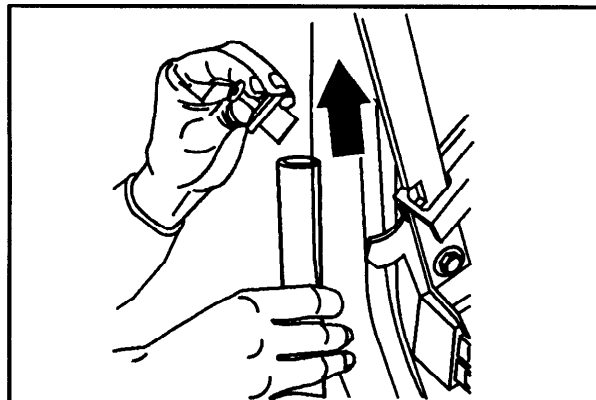
OPERATION

12. ES™ mode: Remove the solution tank drain hose from the mounting clip.



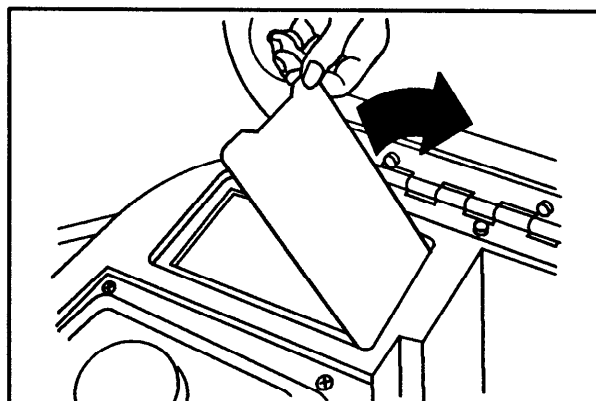
09499

13. ES™ mode: Remove the drain hose plug while holding the hose up, then slowly lower the drain hose to the floor drain.



09502

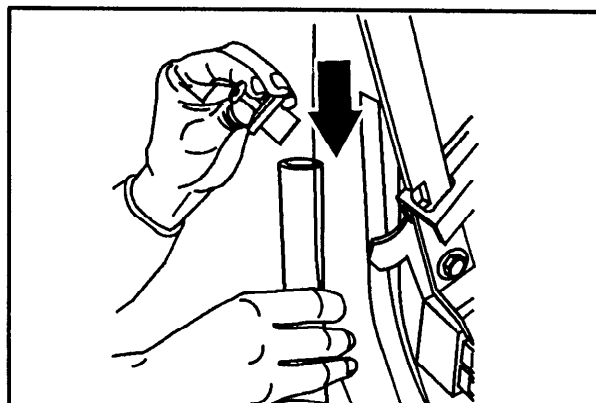
14. ES™ mode: Lift the recovery tank to reach the solution tank. Lift the solution tank cover and flush out the solution tank with clean water. Rinse the filter at the bottom of the solution tank.



09508

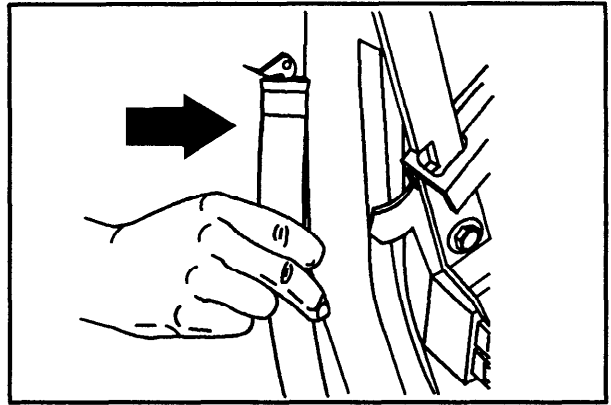
NOTE: The water must not be hotter than 55° C (130° F), or tank damage may occur. Do not use steam to clean the tank.

15. ES™ mode: When the solution tank has completely drained, replace the drain hose plug in the solution tank drain hose.



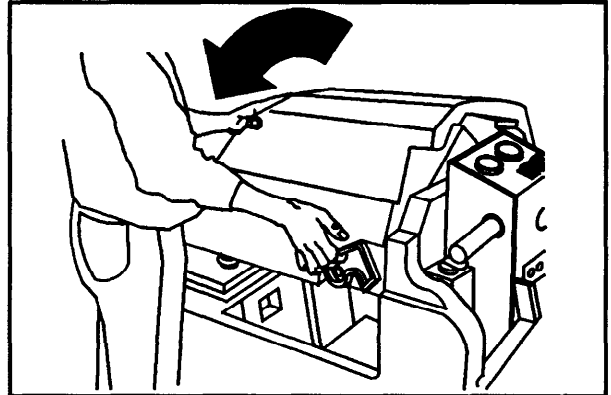
09501

16. ES™ mode: Place the solution tank drain hose back into the mounting clip.



09500

17. Close the solution tank cover, and lower the recovery tank. Rotate the stop arm out of the way to allow the recovery tank to close completely.

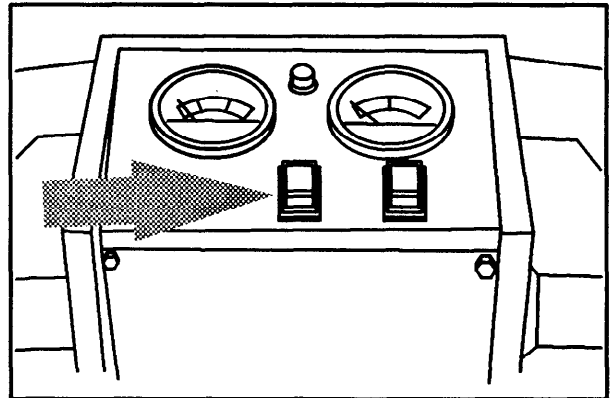


09510

STOP THE MACHINE

1. Stop scrubbing.
2. Turn the machine power off.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine And Remove Key.



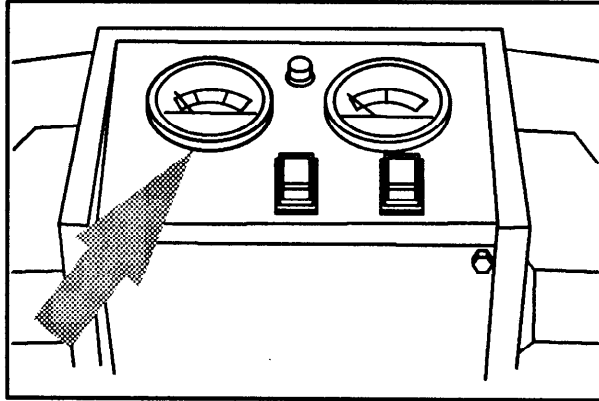
09745

POST-OPERATION CHECKLIST

Check over this list of items after you have finished scrubbing with the machine with the machine powered on:

- Check the battery charge level.

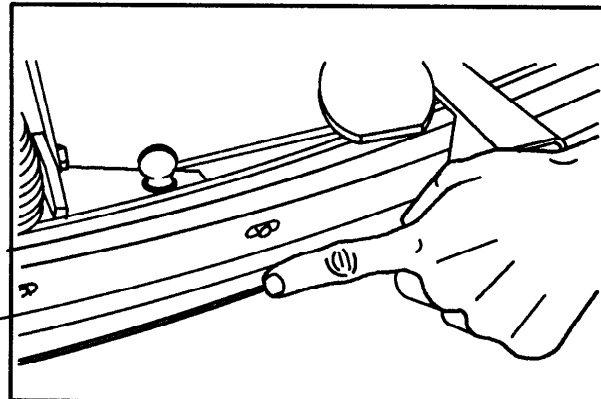
NOTE: The reading on the battery discharge indicator is not accurate when the machine is first powered on. Operate the machine a few minutes before reading the charge level of the batteries.



09743

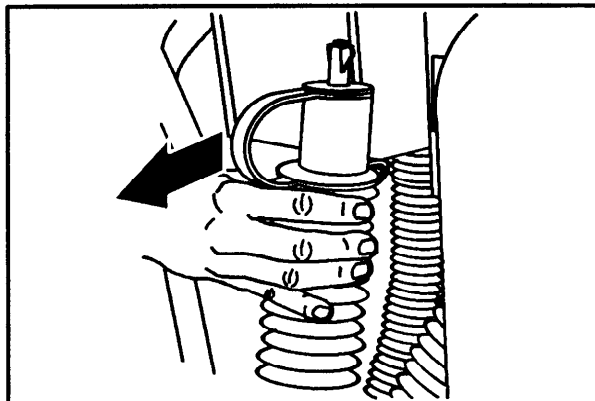
Check over this list of items with the machine is powered off:

- Check for wire, string, or twine wrapped around the scrub brush.
- Check the squeegee for wear or damage.



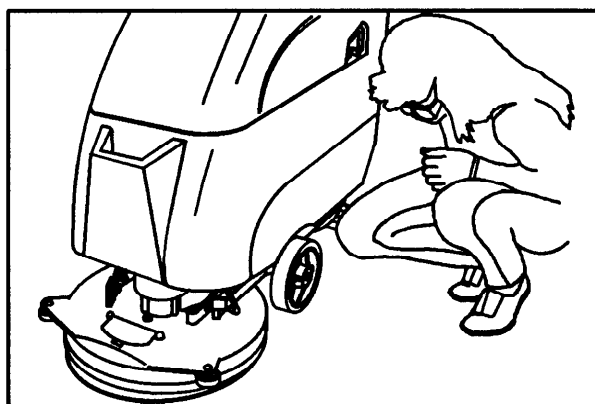
09462

- Drain and clean the recovery tank.



09495

- ES™ machines: Drain and clean the solution tank.
- Check the vacuum hoses for obstructions.
- Check for any machine leaks.
- Check the service records to determine service requirements.



09186

OPERATION ON INCLINES

Drive the machine slowly on inclines.

FOR SAFETY: When Using Machine, Go Slow On Inclines And Slippery Surfaces.

OPERATION

MACHINE TROUBLESHOOTING

Problem	Cause	Remedy
Trailing water – poor or no water pickup	Worn squeegee blades	Rotate or replace squeegee blades
	Squeegee out of adjustment	Adjust squeegee
	Vacuum hose clogged	Flush vacuum hoses
	Recovery tank full	Drain recovery tank
	Vacuum fan will not turn on	Drain recovery tank
		Reset vacuum fan circuit breaker
	Debris caught on squeegee	Remove debris
	Foam filling recovery tank	Empty recovery tank; use less or change detergent
	Vacuum hose to squeegee or recovery tank disconnected or damaged	Reconnect or replace vacuum hose
	Recovery tank float screen clogged	Clean screen
	Recovery tank cover not closed completely	Close cover
Little or no solution flow to the floor	Solution tank empty	Fill solution tank
	Solution switch off	Turn switch on
	Solution control cable broken or out of adjustment	Replace and/or adjust cable
	Solution flow knob turn off	Turn solution flow knob on
	Solution supply lines plugged	Flush solution supply lines
	Solution solenoid clogged or stuck	Clean or replace
	ES™ mode: ES™ switch off	Turn ES™ switch on
Poor scrubbing performance	Debris caught on scrub brushes	Remove debris
	Improper detergent, brush, or pad used	Check with representative for advice
	Worn scrub brush or pad	Replace scrub brush or pad
	Scrub brush motor circuit breaker tripped	Reset circuit breaker
		Adjust scrub brush down pressure, check with representative for advice
	Low battery charge	Charge batteries
	Low scrub brush down pressure	Adjust scrub brush down pressure, check with representative for advice

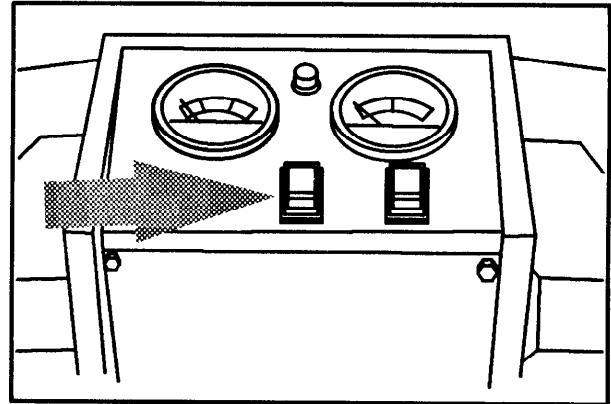
OPTIONS

VACUUM WAND

The vacuum wand uses the machine's vacuum system. The vacuum hose allows pick-up of spills that are out of reach of the machine.

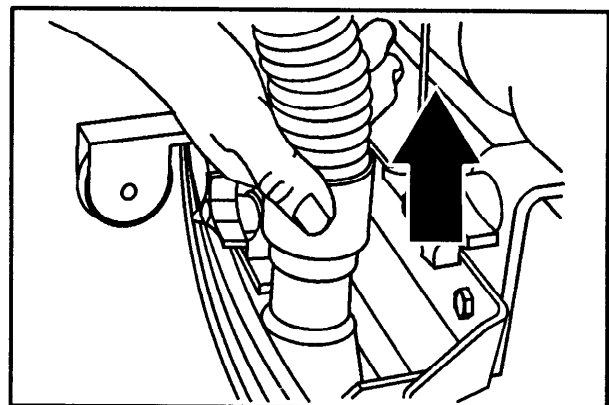
1. Turn the machine power off.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.



09745

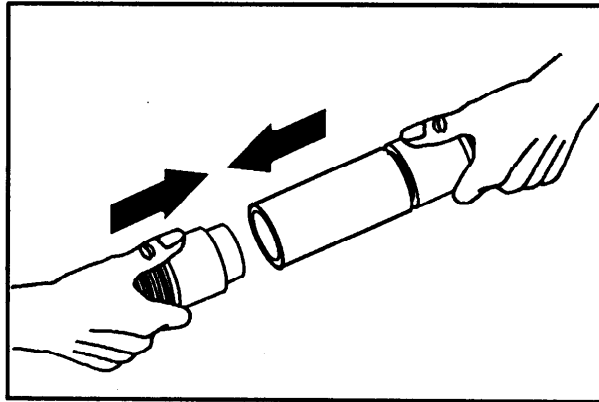
2. Remove the squeegee suction hose from the top of the squeegee.
3. Put together the wand and the wand hose.



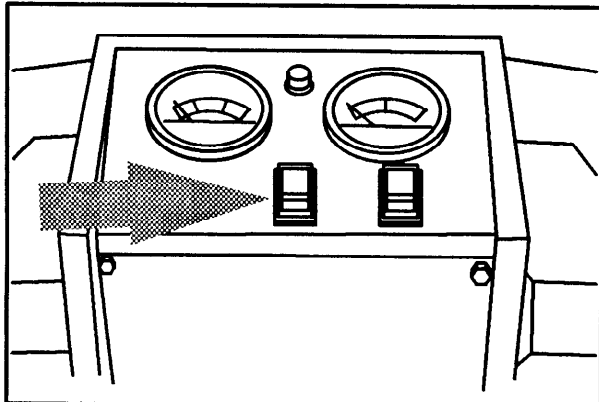
09512

OPERATION

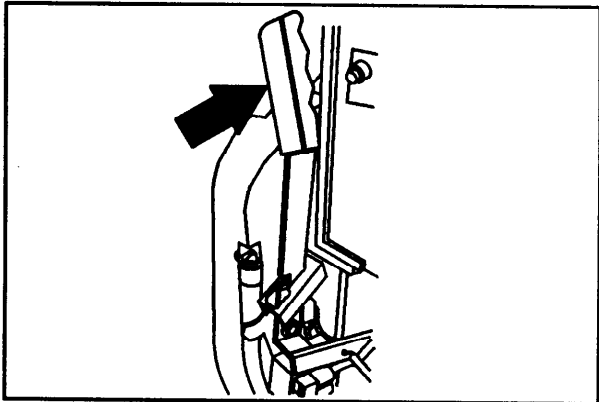
4. Connect the vacuum wand hose and the squeegee suction hose with the adapter.



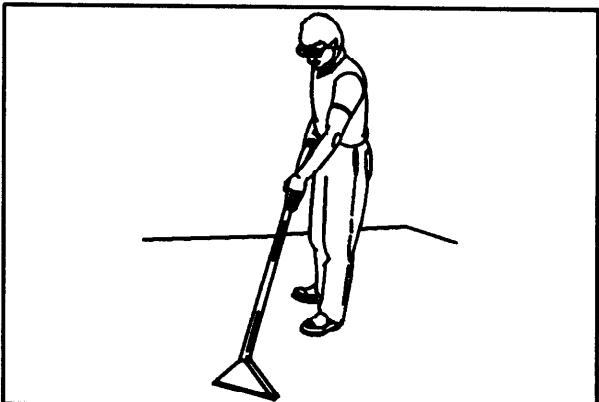
5. Turn the machine power on.



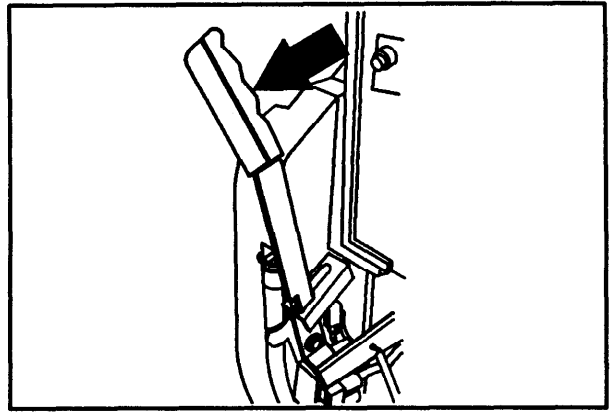
6. Lower the squeegee with the squeegee lever to turn the vacuum system on.



7. Vacuum the floor.

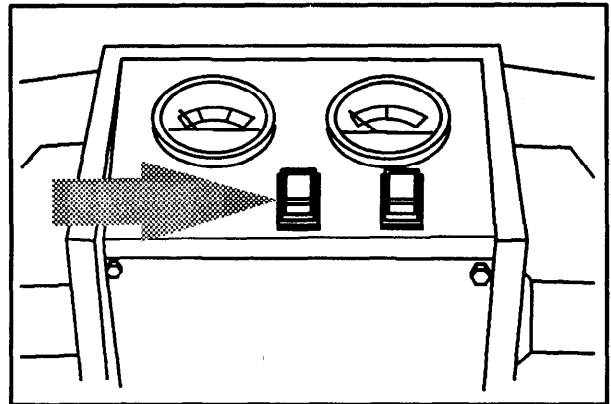


8. When finished, raise the squeegee to shut off the vacuum.



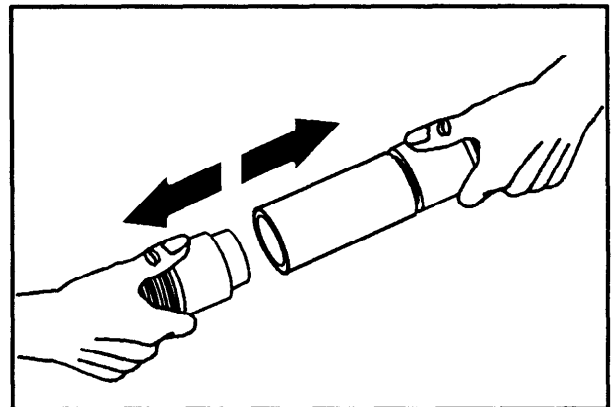
09484

9. Turn the machine power off.



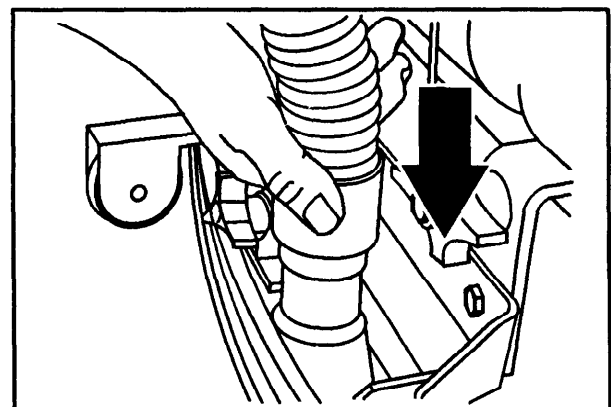
09470

10. Remove the vacuum hose from the squeegee suction hose.



09514

11. Reconnect the squeegee suction hose to the top of the squeegee.



09513

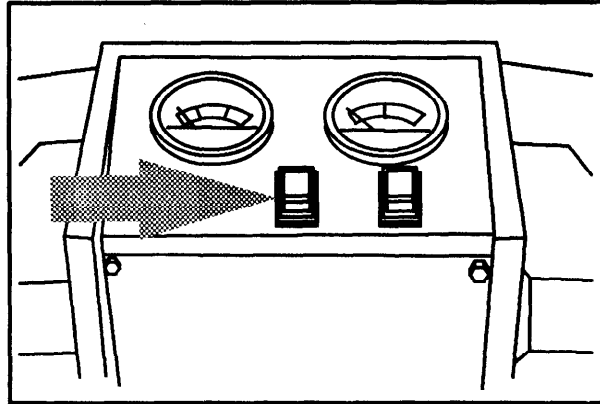
OPERATION

POWER WAND

The power wand uses the machine's vacuum and solution systems. The power wand allows scrubbing of floors that are out of reach of the machine.

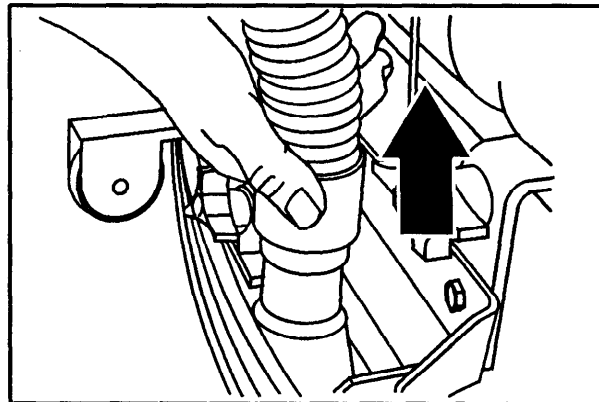
1. Turn the machine power off.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.



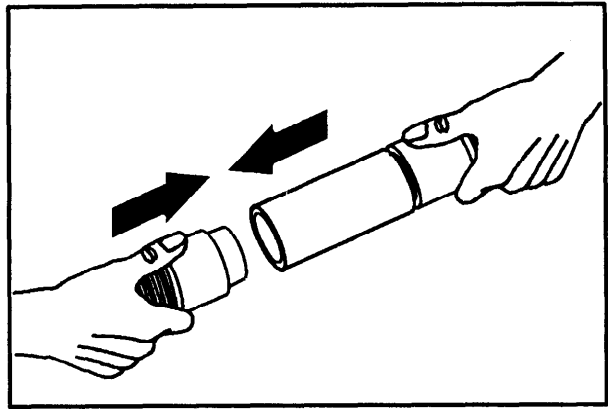
09470

2. Remove the squeegee suction hose from the top of the squeegee.



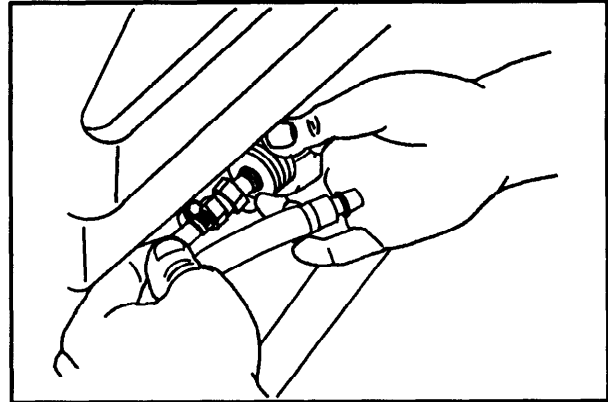
09512

3. Connect the vacuum wand hose and the squeegee suction hose with the adapter.



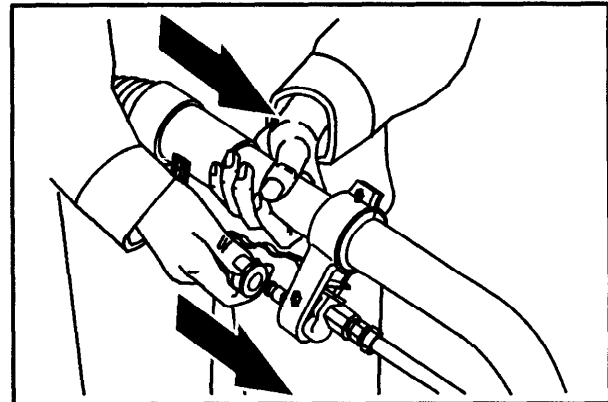
09539

4. Attach the end of solution hose to the quick-disconnect. Push the connector in until it stops. Pull on the hose to make sure it is connected.



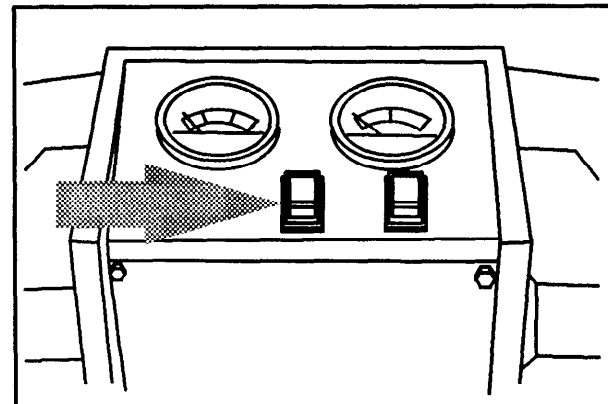
06596

5. Attach the other ends of the solution and vacuum hoses to the power wand.



07320

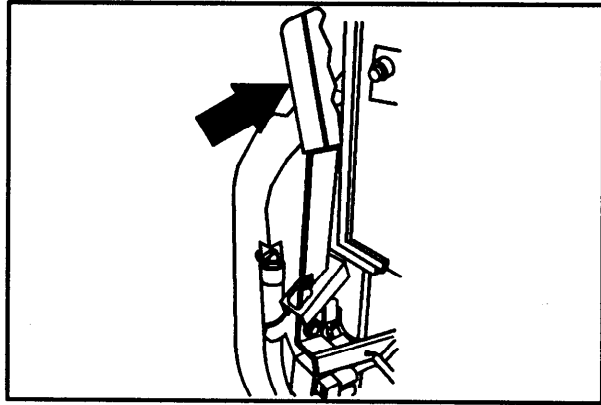
6. Turn the machine power on.



09470

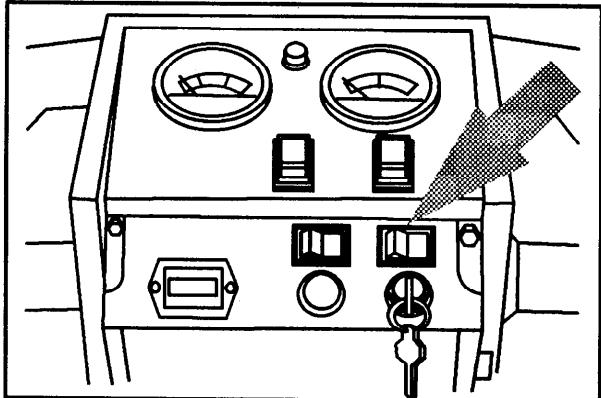
OPERATION

7. Lower the squeegee with the squeegee lever to turn the vacuum system on.



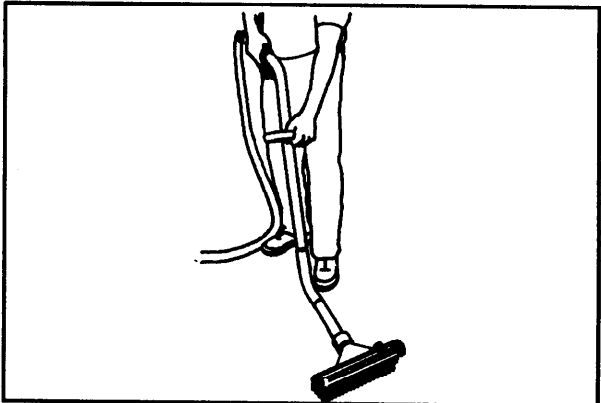
09483

8. Switch the power wand on.



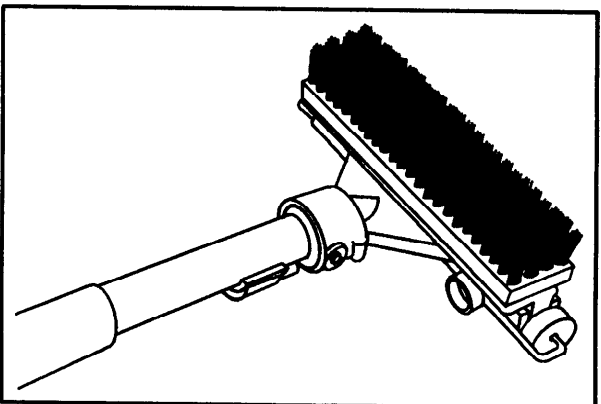
09749

9. Squeeze the solution lever on the power wand to spray solution on the floor. Scrub the floor with the brush side of the cleaning tool.



06603

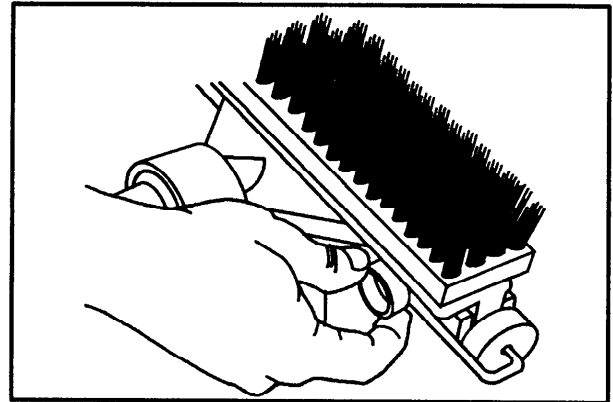
10. Vacuum up the solution by turning over the cleaning tool so the squeegee side is down.



06202

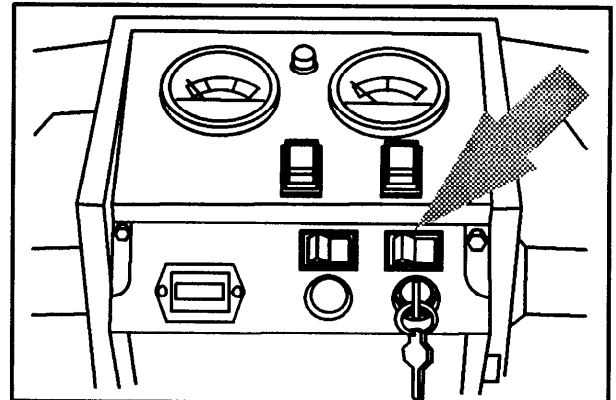
If the cleaning tool is hard to push, or is not picking up the solution very well, adjust the roller wheels on the tool by turning the black adjustment knob.

NOTE: The wheels are properly adjusted when the squeegee blades deflect slightly while the tool is pushed back and forth.



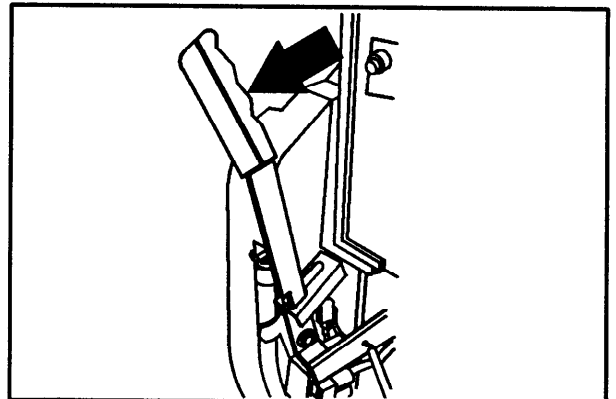
06604

11. When finished, switch the power wand off.



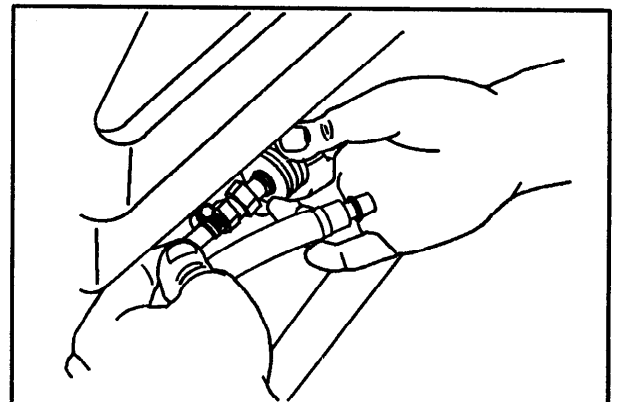
09749

12. When finished, raise the squeegee to shut off the vacuum.



09484

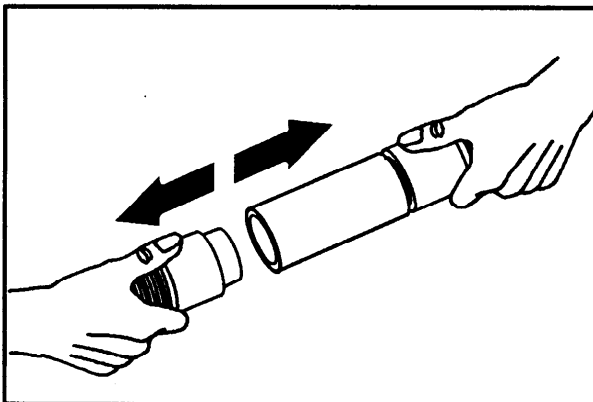
13. Disconnect the solution hose from the machine.



06596

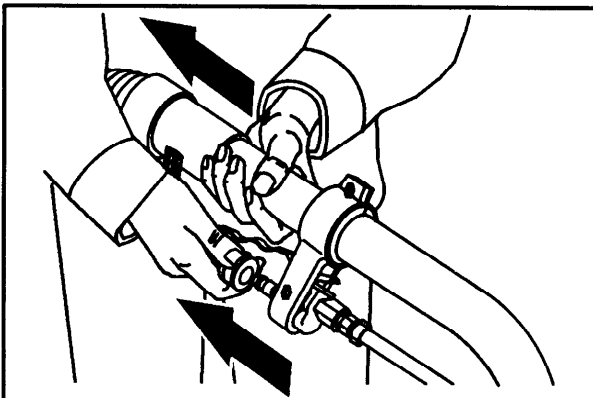
OPERATION

14. Remove the vacuum hose from the squeegee suction hose.



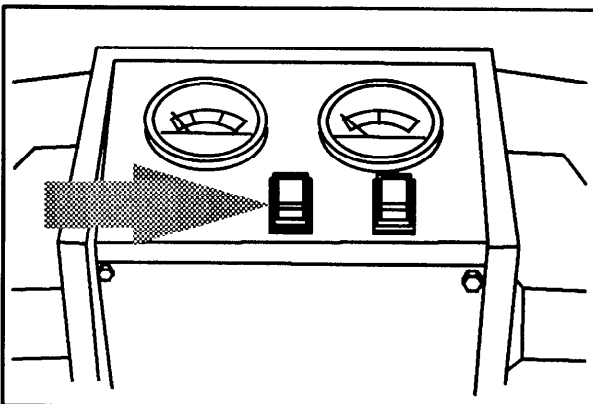
09514

15. Disconnect the other ends of the solution and vacuum hoses from the power wand.



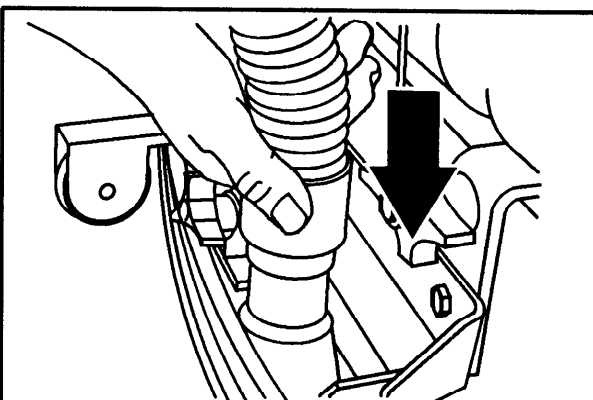
07321

16. Turn the machine power off.



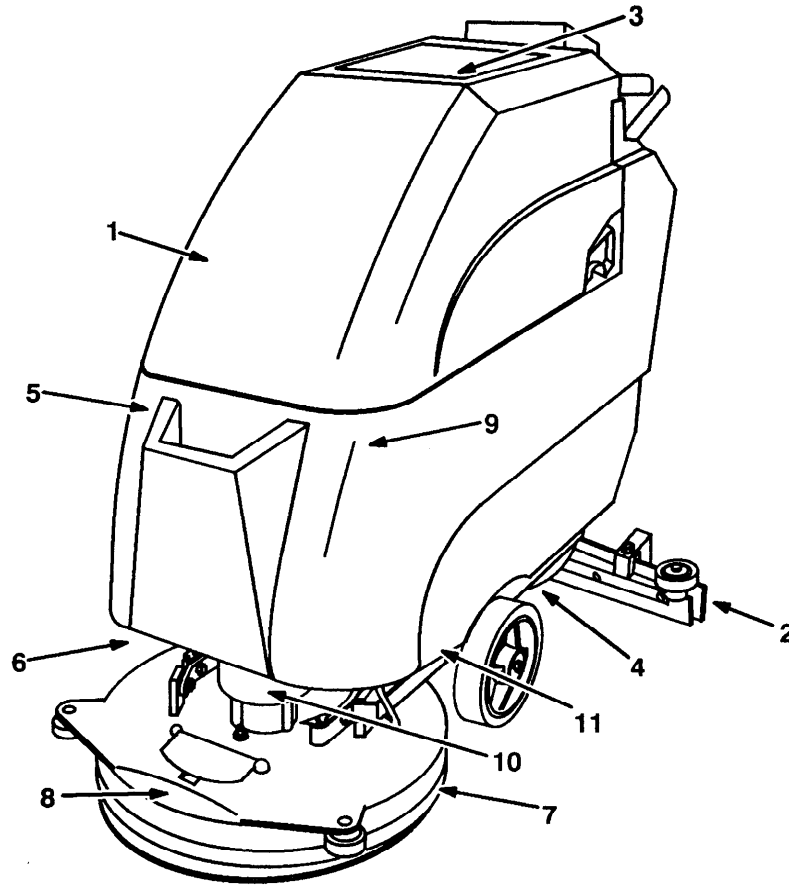
09470

17. Reconnect the squeegee suction hose to the squeegee.



09513

MAINTENANCE



09182

MAINTENANCE CHART

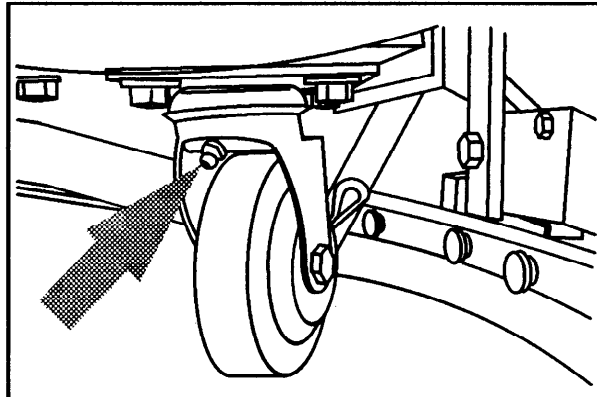
Interval	Key	Description	Procedure	Lubricant	No. of Service Points
Daily	2	Squeegee	Check for damage and wear	-	1
	8	Scrub brush or pad	Check deflection	-	1
	1	Recovery tank	Check for damage and wear	-	1
	1	Recovery tank, ES™ mode	Clean	-	1
	3	Recovery tank float screen	Clean ES™ filter	-	1
	5	Solution tank, ES™ mode	Clean	-	1
	6	Machine	Clean	-	1
	7	Scrub head skirt	Check for leaks	-	1
100 Hours	4	Rear caster	Check adjustment	-	1
	2	Squeegee	Check leveling	SPL	1
400 Hours	9	Vacuum fan motor	Check motor brushes	-	1
	10	Scrub brush motor	Check motor brushes	-	1
	11	Propelling motor	Check motor brushes	-	1

SPL – Special lubricant, Lubriplate EMB grease

LUBRICATION

REAR CASTER

The rear caster has one grease fitting on the caster swivel. Lubricate the caster with a grease gun containing Lubriplate EMB grease every 100 hours of machine operation.



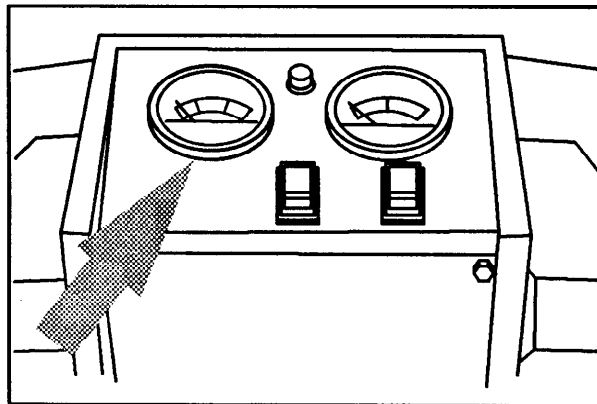
09519

BATTERIES

The batteries are unique in that they hold their power for long periods of time. 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 discharge indicator needle remains in the **red** zone of the indicator.

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 the 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.

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

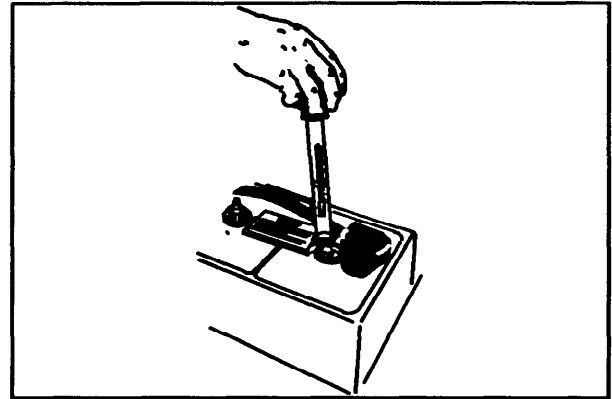


09743

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

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 cells (0.050 or more), the cell is damaged, shorted, or is about to fail.

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:



04380

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 is any temperature other than 27° C (80° F), the reading must be temperature corrected. Add or subtract to the specific gravity reading 0.004, 4 points, for each 6° C (10° F) above or below 27° C (80° F).

CHARGING THE BATTERIES

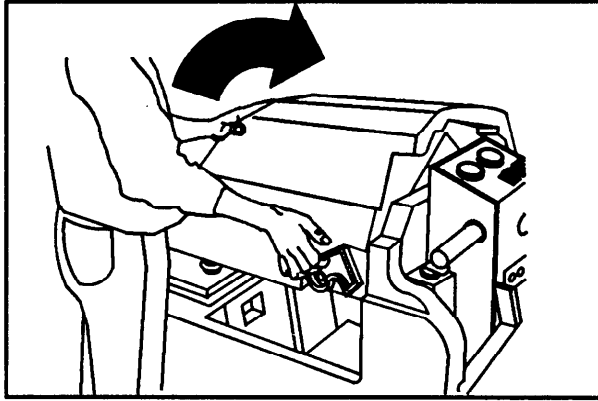
1. Drive the machine to a flat, dry surface in a well-ventilated area.
2. Turn the machine power off and set the parking brake if your machine has this option.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.

MAINTENANCE

3. Lift up the recovery tank to get access to the batteries.

NOTE: The recovery tank must be empty.

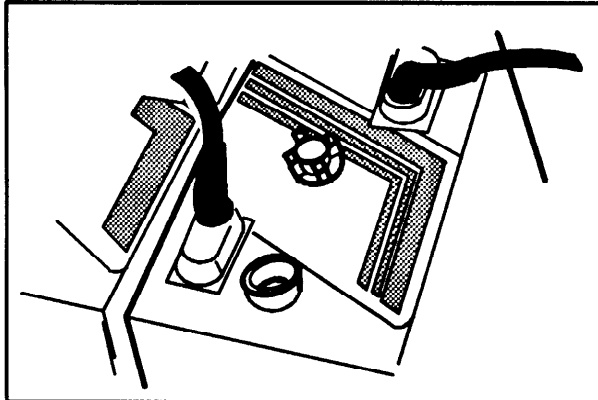


09511

4. 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. The batteries can overflow during charging due to expansion.

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

FOR SAFETY: When Maintaining or Servicing Machine, Avoid Contact With Battery Acid.

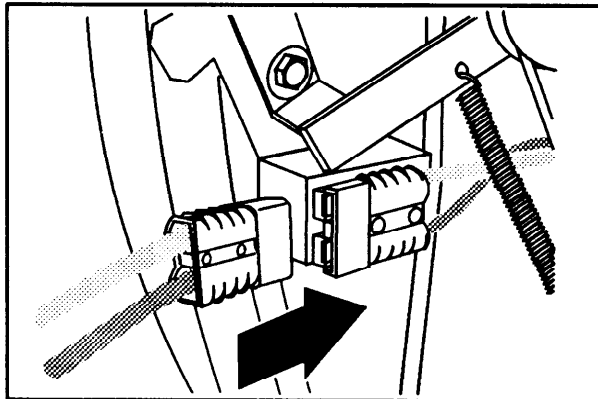


00879

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 Covers Open When Charging.

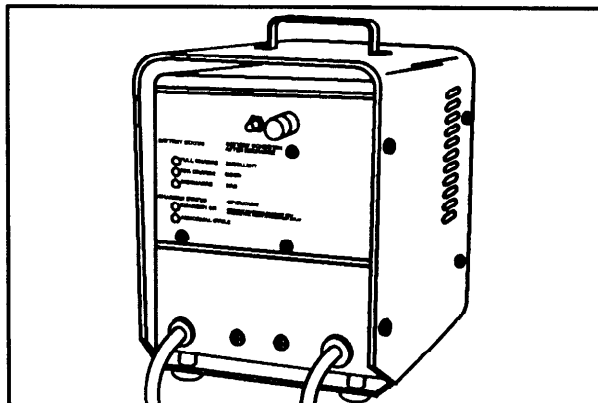
6. Plug the battery charger into the wall outlet.



09520

NOTE: If the red "ABNORMAL CYCLE" lamp lights when charger is plugged into a wall outlet, the charger can not charge the battery, and there is something wrong with the battery.

7. The charger will start automatically. When the batteries are fully charged, the charger will automatically turn off.

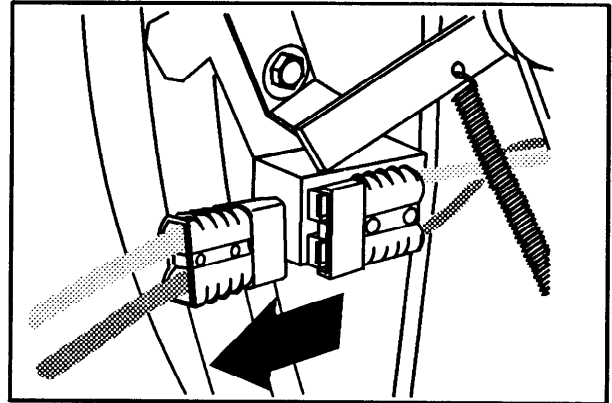


07224

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.

FOR SAFETY: When Maintaining or Servicing Machine, Avoid Contact With Battery Acid.

10. Check the electrolyte level in each battery cell. Add just enough distilled water to bring the electrolyte level up to the fill rings.
11. Lower the recovery tank.
12. Rotate the stop arm out of the way to allow the recovery tank to close completely.



09521

SCRUB HEAD

The scrub head encloses the scrub brush and a solution dispensing system. The scrub head skirt controls over-spray from the scrub brush. Make sure the scrub head skirt touches the floor all the way around when the scrub head is lowered.

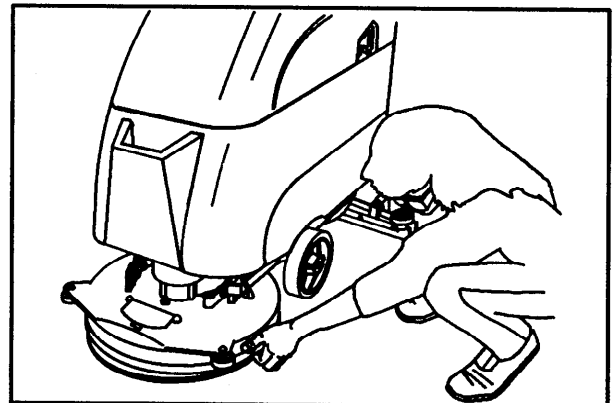
Check the skirt for damage or wear daily.

ADJUSTING THE SCRUB HEAD SKIRT

1. Turn the machine power off.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.

2. Lower the scrub head.
3. Check to see if the scrub head skirt touches the floor all the way around the scrub head.



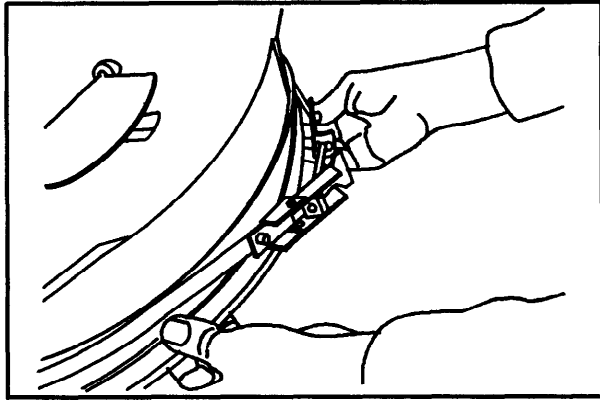
09522

MAINTENANCE

4. If the skirt needs to be adjusted, loosen the skirt band clamp and move the skirt up or down to touch the floor.

NOTE: Replace the scrub head skirt when it is damaged or no longer is able to touch the floor.

5. Tighten the skirt band clamp.
6. Raise the scrub head.



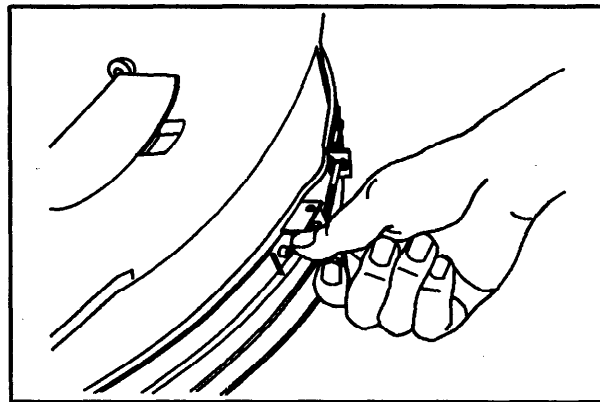
09523

REPLACING THE SCRUB HEAD SKIRT

1. Turn the machine power off.

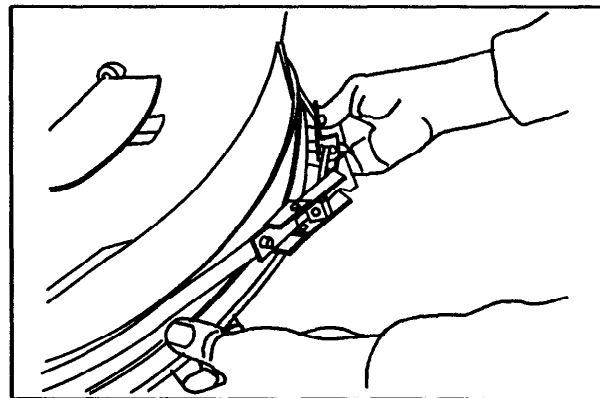
FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.

2. Raise the scrub head.
3. Loosen the skirt band clamp.



09524

4. Pull the old skirt and band off the scrub head.
5. Put the new skirt on the scrub head. **Make sure** the holes in the skirt are facing the rear of the machine.
6. Place the skirt band over the new skirt and tighten the skirt band clamp.
7. Adjust the skirt as stated in *ADJUSTING THE SCRUB HEAD SKIRT*.



09523

SCRUB BRUSH

The scrub brush should be checked daily for wire or string tangled around the brush or brush drive hub. The brush should also be checked for any damage and wear.

The scrub brush should be replaced if large amounts of bristles are missing, or if the remaining bristles' length is less than 10 mm (0.38 in).

Cleaning pads must be placed on pad drives before they are ready to use. The cleaning pad is held in place by a pad holder.

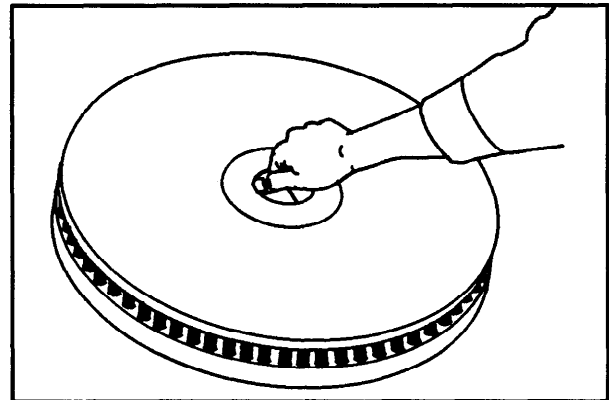
Cleaning pads need to be cleaned with soap and water after every use.

REPLACING THE SCRUB BRUSH

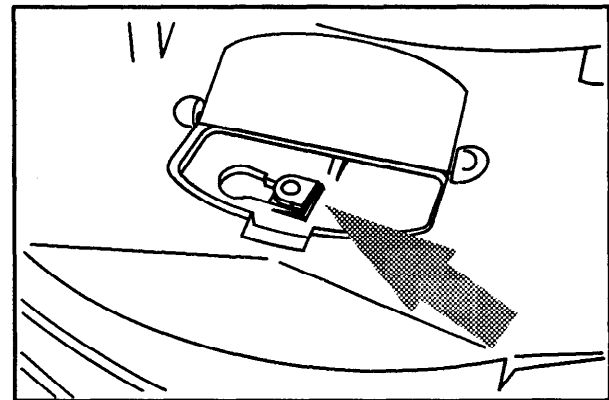
1. Turn the machine power off and set the parking brake if your machine has this option.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.

2. Raise the scrub head with the scrub head lever.
3. Open the access cover on the front of the scrub head.
4. Turn the brush until you can see the brush drive pin.



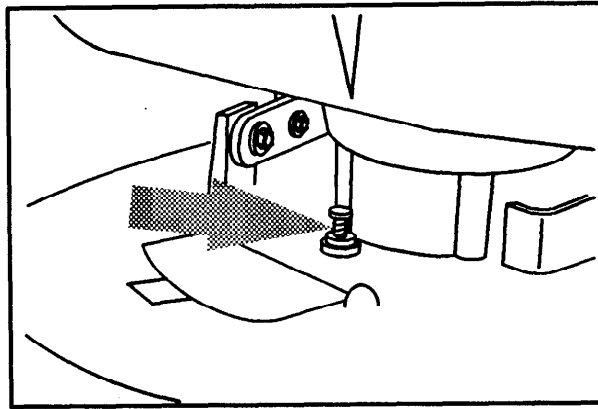
07326



09525

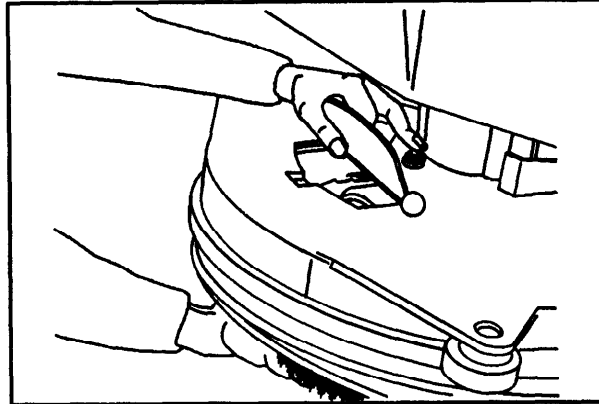
MAINTENANCE

5. Press down on the brush lock pin.



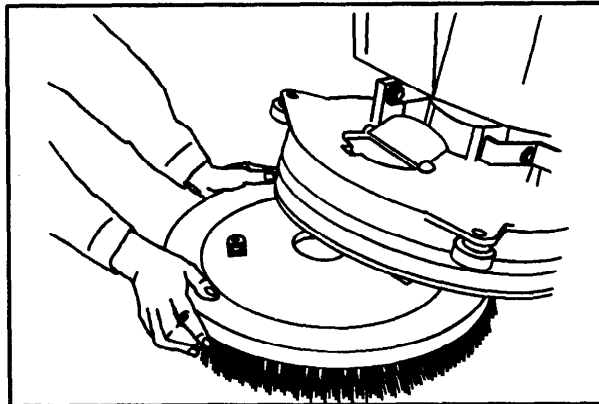
09526

6. Turn the brush clockwise. The brush will drop off the brush drive hub.
7. Pull the brush out from under the scrub head.



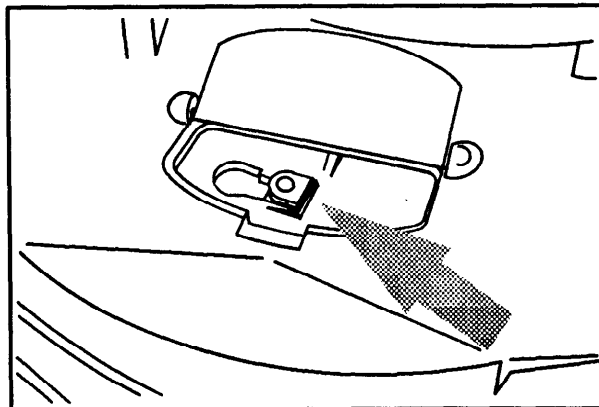
09527

8. Place the scrub brush on the floor in front of the scrub head. Make sure one of the brush drive pins is facing front. Push the brush under the scrub head.
9. Make sure one of the drive pin slots can be seen through the access opening.



09528

10. Line up the brush drive pin on the brush, with the drive pin slot on the drive plate.
11. Lift the scrub brush from underneath onto the brush drive hub. Turn the brush counter-clockwise to engage the drive pins into the drive slots.
12. Check the brush to make sure it is securely mounted on the brush drive hub.
13. Close the scrub head access cover.



09525

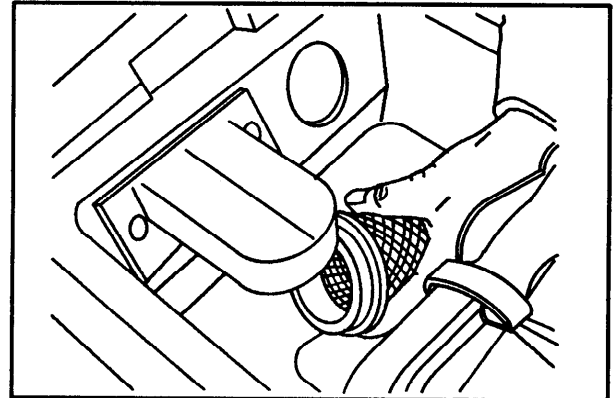
SOLUTION SYSTEM

RECOVERY TANK

The recovery tank stores recovered solution. The recovery tank should be drained and cleaned daily.

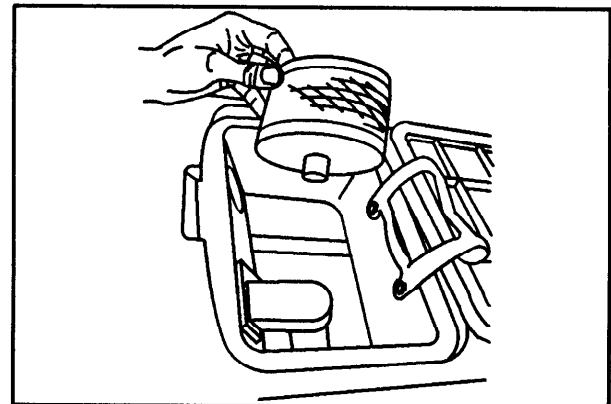
NOTE: The water must not be hotter than 55° C (130° F), or tank damage may occur. Do not use steam to clean the tank.

The recovery tank float screen should be cleaned daily.



09505

ES™ Option: The ES™ filter should be cleaned daily.



09506

SOLUTION TANK

The solution tank contains the cleaning solution.

The solution tank does not require regular maintenance. If deposits form on the bottom of the tank, rinse the tank with a strong blast of warm water.

NOTE: The water must not be hotter than 55° C (130° F), or tank damage may occur. Do not use steam to clean the tank.

ES™ Option: The solution tank should be drained and cleaned daily.

SQUEEGEE

The squeegee channels water into the vacuum fan suction. The front blade channels the water, and the rear blade wipes the floor.

Check the squeegee blades for damage and wear daily. Rotate or replace either of the squeegee blades if the leading edge is torn or worn half-way through the thickness of the blade.

The squeegee can be adjusted for leveling and deflection. The deflection of the squeegee blades should be checked daily, or when scrubbing a different type of floor. The leveling of the squeegee should be checked every 100 hours of machine operation.

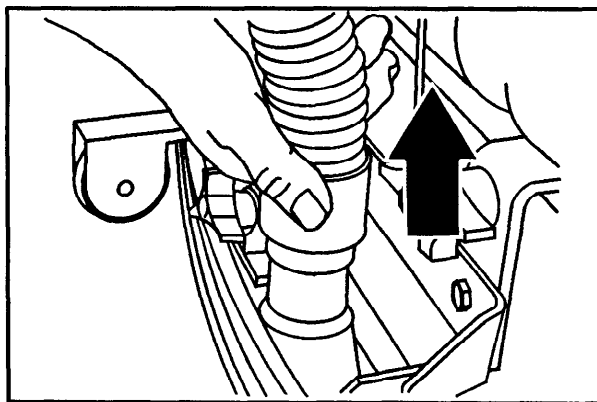
The squeegee can be removed from the squeegee pivot so the squeegee will not be damaged during transport of the machine.

REMOVING THE SQUEEGEE

1. Turn the machine power off and set the parking brake if your machine has this option.

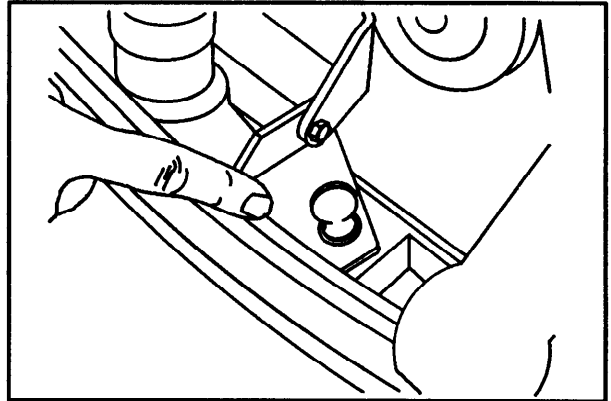
FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.

2. Raise the squeegee.
3. Remove the squeegee suction hose from the squeegee.



09512

4. Loosen the two mounting thumbscrews.
5. Pull the squeegee off the machine.



09533

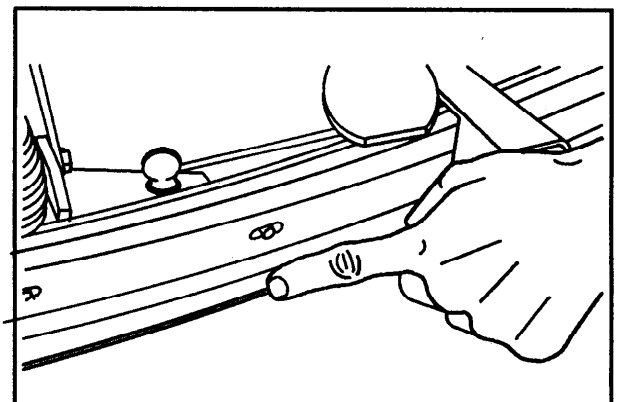
INSTALLING THE SQUEEGEE

1. Make sure the squeegee is raised.
2. Place the squeegee under the squeegee pivot.
3. Line up the mounting studs on the squeegee, with the mounting slots on the squeegee pivot.
4. Mount the squeegee to the squeegee pivot with the mounting thumbscrews.
5. Replace the squeegee suction hose on the squeegee.

LEVELING THE SQUEEGEE

Leveling of the squeegee assures even contact the length of the squeegee blade with the surface being scrubbed. Make sure this adjustment is done on an even, level floor.

1. Turn the machine power on.
2. Lower the squeegee.
3. Drive the machine forward, then turn the machine power off.
4. Look at the deflection of the squeegee blade, over the full length of the squeegee blade.



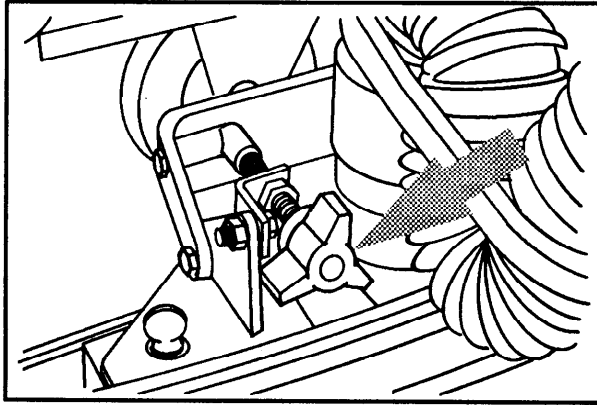
09462

MAINTENANCE

5. If the deflection is not the same over the full length of the blade, turn the squeegee leveling knob counter-clockwise to increase the deflection at the ends of the squeegee.

Turn the squeegee leveling knob clockwise to decrease the deflection at the ends of the squeegee blade.

6. Push the machine forward again to check the squeegee blade deflection.
7. Readjust the squeegee blade deflection if necessary.

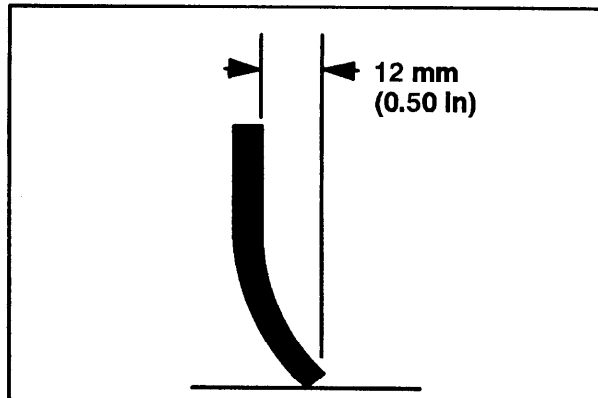


09488

ADJUSTING SQUEEGEE BLADE DEFLECTION

Deflection is the amount of curl the squeegee blade has when the machine moves forward with the squeegee lowered to the floor. The best deflection is when the squeegee wipes the floor just dry with a minimum amount of deflection.

1. Turn the machine power on.
2. Lower the squeegee.
3. Drive the machine forward, and look at the deflection of the squeegee blade. The correct amount of deflection is 12 mm (0.50 in) for scrubbing smooth floors and 15 mm (0.62 in) for rough floors.



03719

4. Turn the machine power off.
5. To adjust the amount of deflection, turn the squeegee deflection knob counter-clockwise to decrease the blade deflection.

Turn the squeegee deflection knob clockwise to increase blade deflection.

6. Push the machine forward again to check the squeegee blade deflection.
7. Readjust the squeegee blade deflection if necessary.

SQUEEGEE BLADES

The squeegee has two squeegee blades. The front blade has two wiping edges. To use both of them, rotate the blade end-for-end.

The rear blade has four wiping edges. To use them all, start with one wiping edge. To use the next wiping edge, rotate the blade end-for-end. To use the next wiping edge, rotate the top edges down, bottom edges up. To use the last edge, rotate the blade end-for-end.

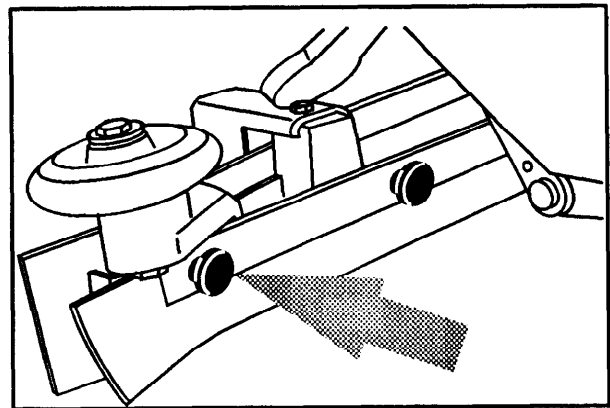
Replace any worn or damaged squeegee blades.

REPLACING OR ROTATING THE FRONT SQUEEGEE BLADE

1. Turn the machine power off and set the parking brake if your machine has this option.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.

2. Make sure the squeegee is raised off the floor.
3. Remove the six thumbscrews holding the retainer and squeegee blade to the squeegee frame.
4. Pull the squeegee blade off the squeegee frame.
5. Rotate the squeegee blade end for end to allow a new edge to face the front of the machine.
6. Line up the squeegee blade and the retainer to the squeegee frame
7. Secure the blade and retainer to the squeegee frame with the six thumbscrews.



09532

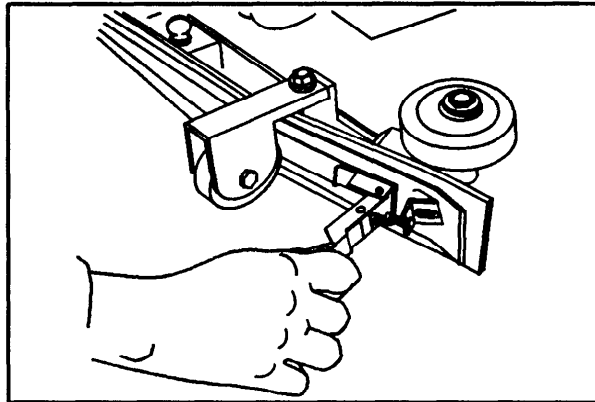
MAINTENANCE

REPLACING OR ROTATING THE REAR SQUEEGEE BLADE

1. Turn the machine power off and set the parking brake if your machine has this option.

FOR SAFETY: Before Leaving Or Servicing Machine; Stop On Level Surface, Turn Off Machine.

2. Make sure the squeegee is raised off the floor.
3. Loosen the retainer clamp and remove the retainer from the squeegee frame.
4. Remove the backup strip the squeegee blade from the squeegee frame.
5. Replace or rotate the squeegee blade to allow a new edge to face the front of the machine.
6. Place the squeegee blade and backup strip on the squeegee frame
7. Secure the squeegee blade and backup strip with the retainer. Tighten the retainer clamp.
8. Adjust the squeegee blade leveling and deflection as stated in *LEVELING THE SQUEEGEE* and *ADJUSTING SQUEEGEE BLADE DEFLECTION*.



09531

ELECTRIC MOTORS

The carbon brushes on the vacuum fan motor, scrub brush motor, and propelling motor should be inspected after every 400 hours of machine operation.

STORAGE INFORMATION

The following steps should be taken when storing the machine for extended periods of time.

1. Drain and clean the solution and recovery tanks.
2. Park the machine in a cool, dry area.
3. Remove the batteries, or charge them after every three months.

SPECIFICATIONS

GENERAL MACHINE DIMENSIONS/CAPACITIES

Item	Dimension/capacity
Length	1180 mm (46.45 in)
Width (less squeegee)	545 mm (21.5 in)
Height	985 mm (38.75 in)
Scrub brush diameter	510 mm (20 in)
Squeegee width	770 mm (30.30 in)
Scrubbing path width	510 mm (20 in)
Solution tank capacity	45 L (12 gal)
Recovery tank capacity	49 L (13 gal)
Net weight, less batteries	102 kg (225 lb)

GENERAL MACHINE PERFORMANCE

Item	Measure
Aisle turnaround width	1525 mm (60 in)
Turning radius	735 mm (29 in)
Maximum trailer loading clearance angle	5°

POWER TYPE

Type	Quantity	Volts	Ah Rating	Weight
Batteries	2	12	130 @ 20 hr rate	30 kg (66 lb)
	2	12	180 @ 20 hr rate	53 kg (117 lb)

Type	Use	VDC	Kw (hp)
Electric Motors	Scrub brush	24	0.56 (0.75)
	Vacuum fan	24	0.56 (0.75)
	Propelling	24	0.15 (0.20)

Type	VDC	amp	Hz	Phase	VAC
Chargers	24	15	60	1	115
	24	20	60	1	115

TIRES

Location	Type	Size
Front (2)	Solid, non-marking	8 x 2 in
Rear (1)	Solid, non-marking	4 x 1.38 in

PLACING AN ORDER

The components used in this machine have been carefully selected for performance and safety. Use only Manufacturer's specified or equivalent parts.

When ordering parts, please furnish all of the following information:

1. Machine serial number - shown on the machine data plate.
2. Company name.
3. Shipping address.
4. Billing address.
5. Name, first and last - of person ordering parts.
6. Telephone number.
7. Purchase order number.
8. Part number, description, and quantity - of each item on the order.

Do not order parts by key number or the figure number of the illustrated parts. Indented items indicate parts of assemblies. Standard hardware is furnished only when part of a purchased assembly. Please get hardware from a local hardware supplier.

If the old part cannot be identified, send it to us with the quantity needed specified on the order.

Any claim for loss or damage to a shipment in transit should be filed promptly against the transportation company making the delivery. Shipments will be complete unless the packing list or order acknowledgment indicate items back ordered.

If parts received are suspected to be incorrect or defective, please write, wire, or phone the representative from whom you ordered the part. They will give authorization for return and/or handle replacement shipments when required.

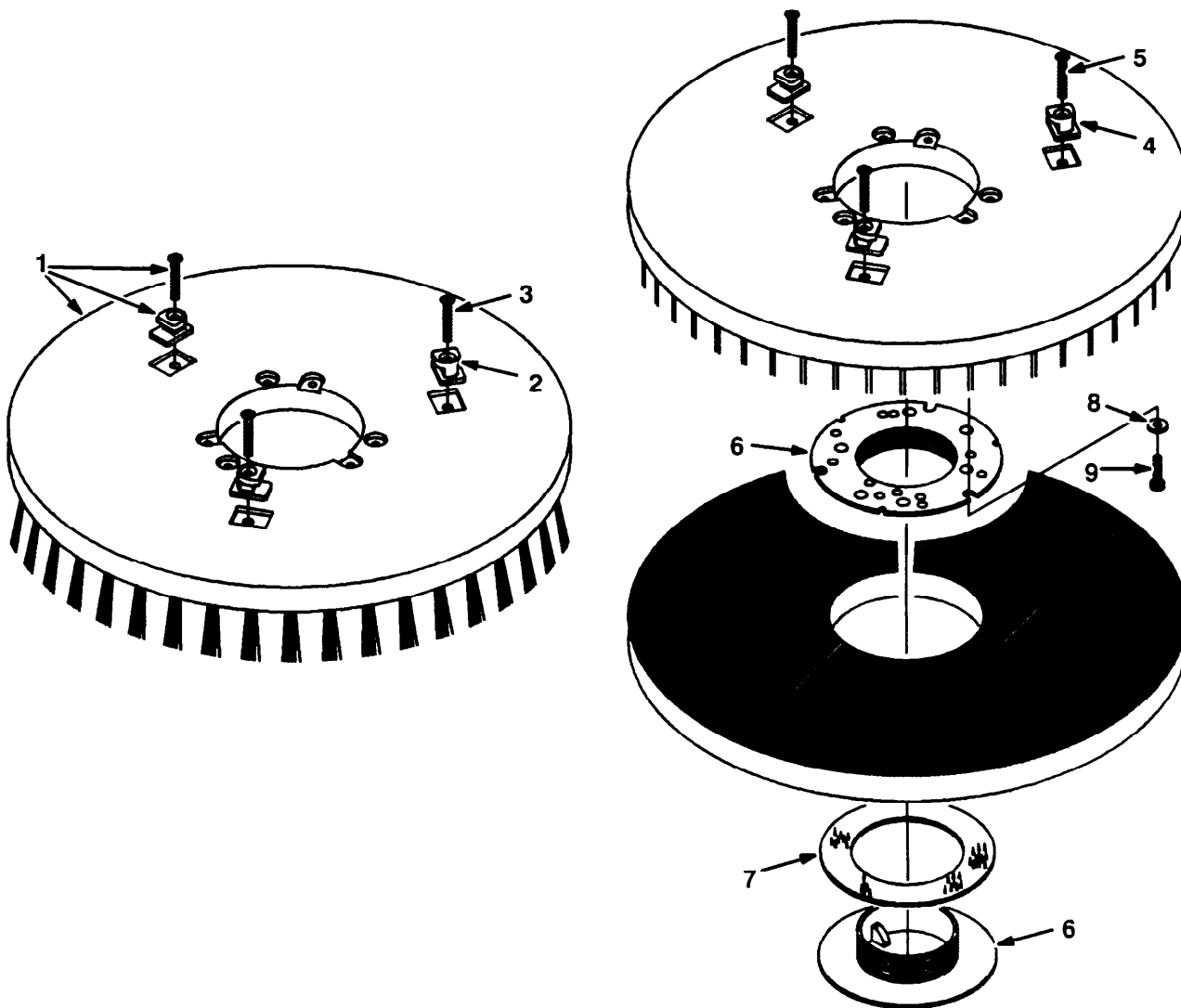
SI UNITS OF MEASURE (INTERNATIONAL SYSTEM)

FASTENER STRENGTH IDENTIFICATION

Fasteners required to have high-strength qualities equivalent to SAE Grade 8 are identified throughout this catalog by the description GR 8. Unless identified by this description, all standard fasteners are SAE Grade 5.

(Specifications and design subject to change without notice.)

Fig. 1 - Replacement Brushes



03-88 03-23

Fig. 1 - Replacement Brushes

Ref.	Part No.	Description	Qty.
▽ 1	222301	Brush-Disk Scr -20D Assy Nyl	1
▲ 2	630214	Stud, Brush Plastic	3
▲ 3	140193	Scr-Flt M 6X1.0 40 4.8 Pltd	3
▽ 1	222300	Brush-Disk Scrub-20D Assy Poly	1
▲ 2	630214	Stud, Brush Plastic	3
▲ 3	140193	Scr-Flt M 6X1.0 40 4.8 Pltd	3
▽ 1	222302	Brush-Disk Scr -20S Assy Ab	1
▲ 2	630214	Stud, Brush Plastic	3
▲ 3	140193	Scr-Flt M 6X1.0 40 4.8 Pltd	3
▽	222303	Brush-Pad Drive -20D Assy Poly	1
▲ 4	630214	Stud, Brush Plastic	3
▲ 5	140193	Scr-Flt M 6X1.0 40 4.8 Pltd	3
▲ 6	630473	Pad Holder, Threaded	1
▲ 7	630472	Washer Brush Pad Retainer	1
▲ 8	140007	Washer, Flat 08 Ss	3
▲ 9	200 070 351	Scr-Panssm 4X0.7 25 Nylonloc	3

Fig. 2 - Scrub Brush Drive Group

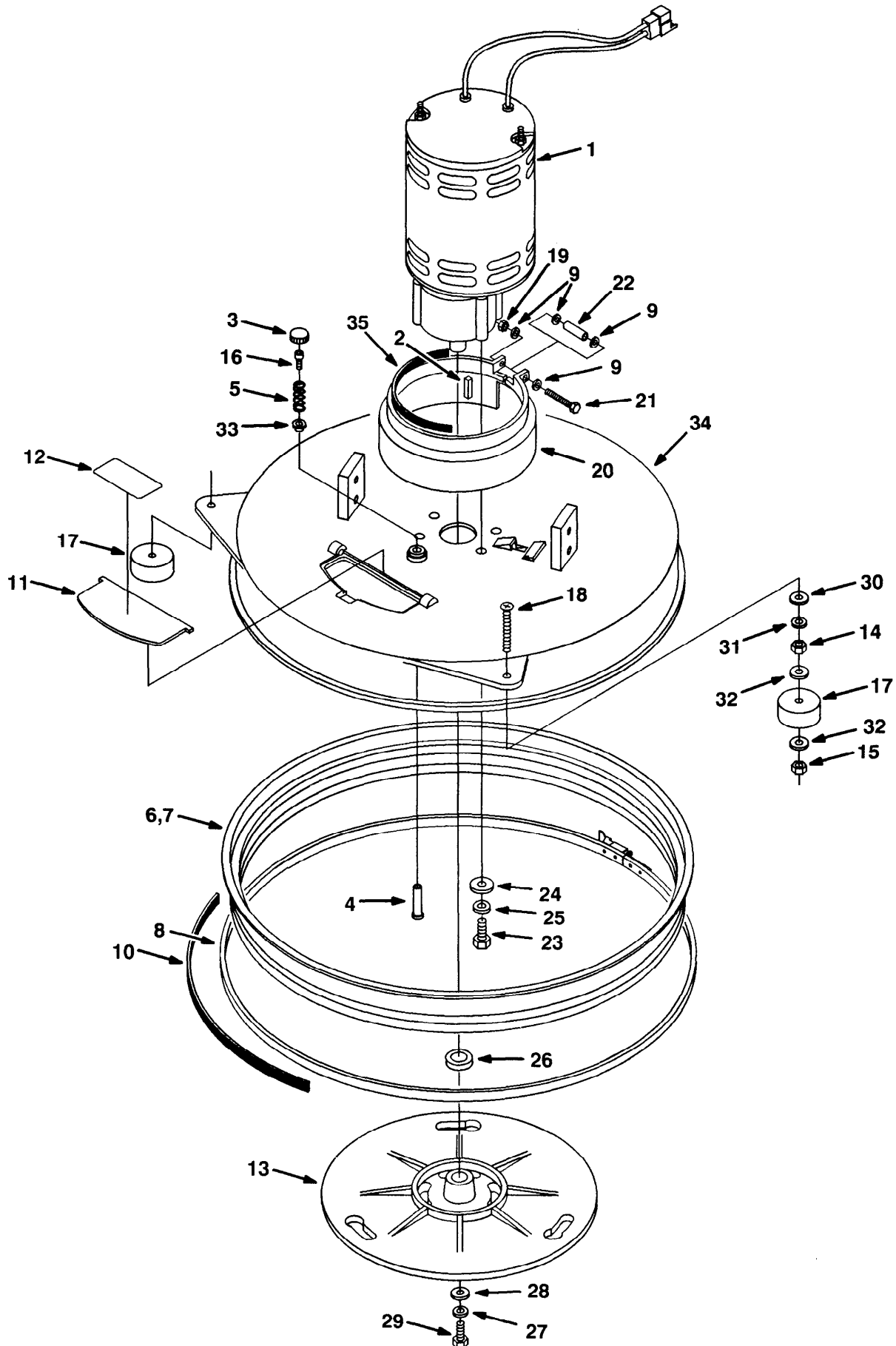


Fig. 2 - Scrub Brush Drive Group

Ref.	Part No.	Description	Qty.
▽ 1	630035	Motor, Ele, 24Vdc .75Hp 270Rpm (for breakdown see page 99)	1
▲ 2	630454	Key, Square	1
3	579013	Knob, Hub Lock	1
4	630308	Pin, Head Stop, 5300	1
5	630310	Spring, Head Stop, 5300	1
6	630027	Skirt, Scrbr Head,	1
7	630506	Skirt, Scrbr Head, Heavy Duty	1
8	630049	Band Assy, Skirt	1
9	069 760 090	Washer, Flat, #12, Zp	4
10	630613	Skid Strip	1
▽ 11	630603	Door, Access, Brush	1
▲ 12	578269	Label, Moving Parts	1
13	630039	Hub, Drive, Brush, 20", Machnd	1
14	200 101 017	Nut, Hex Jam, M8	2
15	200 160 017	Nut, Hex Lock, M8	2
16	630437	Screw, Soc Hd, M 6 X 12Mm, Zp	1
17	579184	Wheel, Head, Brush	2
18	630430	Screw, Flat Hd, Phil. M8 X 50Mm Zp	2
19	579028	Nut Hxlocnyln M 6X1.0	1
20	630213	Shield, Water	1
21	630432	Screw, Hx Head, M 6 X 50Mm	1
22	630272	Spacer, .275" .375" 1.3Lg, Nyl	1
23	059 650 308	Scr Hex .38-16X1.00	4
24	140028	Washer Flt .38 Hard	4
25	069 760 100	Washer, Lock, Spg, ANSI .38", ZP	4
26	069 760 023	Washer, Flat, .77", 1.26, .03	1
27	630455	Washer, Lock, Spg, ANSI .31", ZP	1
28	069 764 631	Washer, Flat, 08.4MM, 25.4, 4.8	1
29	069 764 634	Scr Hexss.38-18X1.00	1
30	069 760 079	Washer, Flat, ANSI .31", ZP	2
31	200 370 019	Washer, Lock, Int., .31", Zp	2
32	630446	Washer, Nylon, .31"	4
33	630309	Bearing	1
34	630026	Head, Scrubber 20"	1
35	630475	Gasket, Water Deflector	1

Fig. 3 - Scrub Head Lift Group

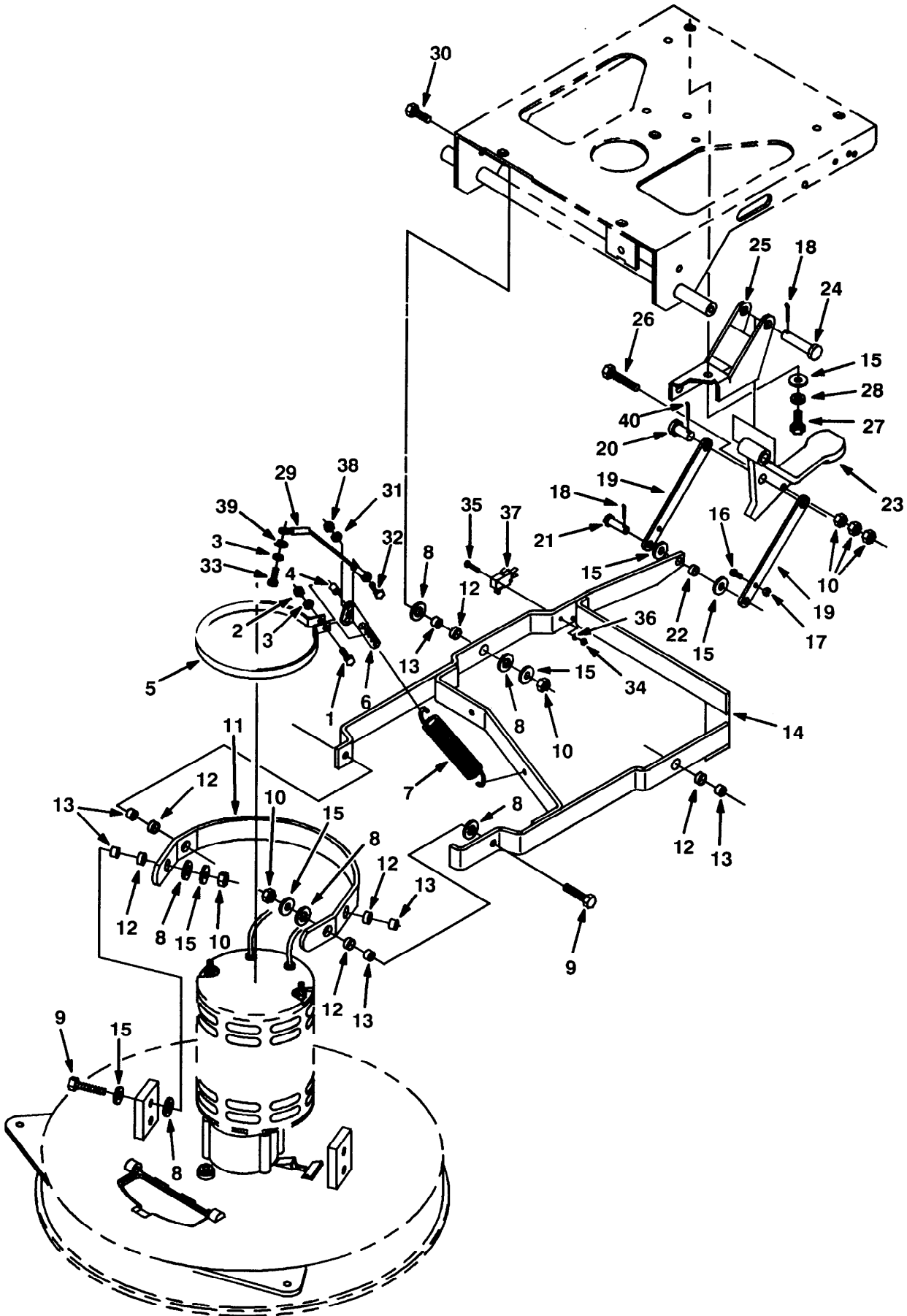


Fig. 3 - Scrub Head Lift Group

Ref.	Part No.	Description	Qty.
1	200 031 444	Scr Hex M6 X 30, Zp	1
2	579029	Nut-Hx Std M 6X1.0	1
3	579205	Washer-Loc Int M 6 Pltd	2
4	140154	Spacer, .26 X .375 X .312	1
5	630050	Band, Motor Spring Mnt 5300	1
6	630377	Bracket, Scrub Head, Level	1
7	630208	Spring, Counter Torque, Motor	1
8	630447	Washer, Nylon, 12.7, 25.4, .8	12
9	200 031 496	Scr Hex M8X1.25 35	4
10	200 160 017	Nut, Hex, Lock M8, Zp	9
11	630177	Bracket, Pivot, Motor	1
12	630188	Bearing, Journal .50"ld .25"Lg	6
13	630189	Sleeve, Brg 12.7Mm Od 8.7ld 08	6
14	630176	Lift, Head Traction Drive	1
15	069 760 079	Washer Fit .31 Hard	11
16	579259	Screw, Pan Hd, Phil, M4 X 12MM	1
17	200 160 014	Nut, Hex, Lock M4, Zp	1
18	578419	Pin, Haircotter, .50D	2
19	630182	Arm, Link, Head Lift	2
20	630257	Pin, Clevis .50"D X 1.0Lg, Zp	1
21	630258	Pin, Clevis .38"D X 1.0Lg, Zp	1
22	630259	Bearing 9.5ld 12.7Od 6.4Lg,Brz	1
23	630181	Pedal, Foot, Head Lift	1
24	630448	Pin, Clevis, .50"Dia X 2.25"LG	1
25	630206	Bracket, Head Lift Assy	1
26	200 032 503	Scr-Hex M 8X1.25 60	1
27	200 031 488	Scr-Hex M 8X1.25 20 8.8 Pltd	1
28	200 370 019	Washer Loc Int M 8	1
29	630384	Cable, Head Level	1
30	200 031 538	Scr-Hex M 8X1.25 25	2
31	069 760 090	Washer Fit .25 Hard	2
32	200 031 436	Screw, Hex Hd, M6 X 20Mm	1
33	200 031 436	Screw, Hex Hd, M6 X 16MM	1
34	579211	Nut, Hex Lock, M3, SS	2
35	579213	Screw, Hex Hd, M3 X 20MM	2
36	601 127 000	Washer, Fit 3.7Mm 8.0 .5 Zp	2
37	630096	Switch, Limit, Normal Open	1
38	579028	Nut, Hex Lock, M6, Zp	1
39	069 760 090	Washer, Flat, #12, Zp	1
40	612254	Pin, Haircotter, .38" D	1

Fig. 4 – Solution Tank and Vacuum Fan Group

Ref.	Part No.	Description	Qty.
1	630001	Tank, Solution, 20" Scrbr, Dc	1
2	069 760 079	Washer Flt .31 Hard	2
3	200 031 488	Scr-Hex M 8X1.25 20 8.8 Pltd	2
4	200 370 019	Washer Loc Int M 8	2
5	630024	Filter, Solution Feed, 60 Mesh	1
6	630371	Ftg-E90 10Bm/08Pm	1
7	601105	Sleeve, Strainer	1
8	612146	Ftg-Pls Str 12Pm/12Bf	1
9	630018	Hose, .75ld	1
10	630019	Plug, Expansion, .75ld	1
11	630369	Clamp, Hose .50-1.1	1
▽	630606	Vacuum Fan Assembly	1
▲	12 578424	Gasket, Foam	1
▲	13 603015	Motor, Ele 24Vdc 2-Stage, Vac	1
▲	603803	Brush, Motor	2
▲	14 630013	Gasket, Brkt-Vac Motor	1
▲	15 578 258 000	Scr, S-Tap, Pan Hd, Phil, #10 X 5/8"	4
▲	16 630014	Bracket, Vac Motor, 20" Scrbr	1
▲	17 630456	Connector	1
▲	630443	Terminal	2
18	069 762 098	Screw, Flat Hd, Phil, M6 X 16	4
19	630015	Cover, Vac Motor, 20" Scrbr	1
20	630006	Screen, Solution Fill	1
▽	21 630602	Cover Assy, Solution Tank	1
▲	22 630338	Cover, Sol Fill, 5300, Neoprene	1
▲	23 630341	Stiffener, Sol Fill Cover	1
▲	24 579027	Washer Loc Int M5	1
▲	25 578 201 000	Scr, Pan Hd, Phil, #10 -32 X 5/8", Ss	1
▲	26 578301	Knob, Cover	1
27	630007	Door, Access, Sol Tank, Abs	1
28	630301	Scr, #6 Hilo, .38", Pn Phil Zp	2
29	579210	Washer, Flat, 6.4MM, 18.0, 1.5	3
30	15752.14	Washer-Loc Int M 6 Pltd	3
31	200 031 438	Scr, Pan Hd, Phil, M6 X 25,ZP	1
32	630012	Bracket, Mtg, Vac Trans	1
33	630011	Tube, Vac Trans, Fing & Brb	1
34	630016	Ring, Retaining, Ext 1.82"Dia	1
35	630267	Spring, Comp 50.8Free, 54.0Dia	1
36	200 031 436	Scr, Pan Hd, Phil, M6 X 16,ZP	2
37	630146	Plug, Nylon, .38Npt	1
38	630021	Cable Assy, Tank Sppt, 20.5"	1
39	630360	Label, Flammable Matl, 50X84	1
40	630380	Gasket, Vac Cover, 191Mm	2
41	630381	Gasket, Vac Cover, 233Mm	2
42	200 070 340	Scr, Pan Hd, Phil, M4 X 12,ZP	2
43	579202	Washer, Lock, Int, 4.3, Zp	2
44	200 301 014	Washer, Flat, 4.3, 10.0, 1.0, Zp	2
45	630343	Clamp, Wire, 7/8"ID	2
46	630017	Screen, Cover-Vac Fan, 20" Scrbr	1
47	200 301 014	Washer, Flat, .15", .56", .04", Zp	2
48	578428	Clamp, Hose	1

Fig. 5 - Solution Control Group

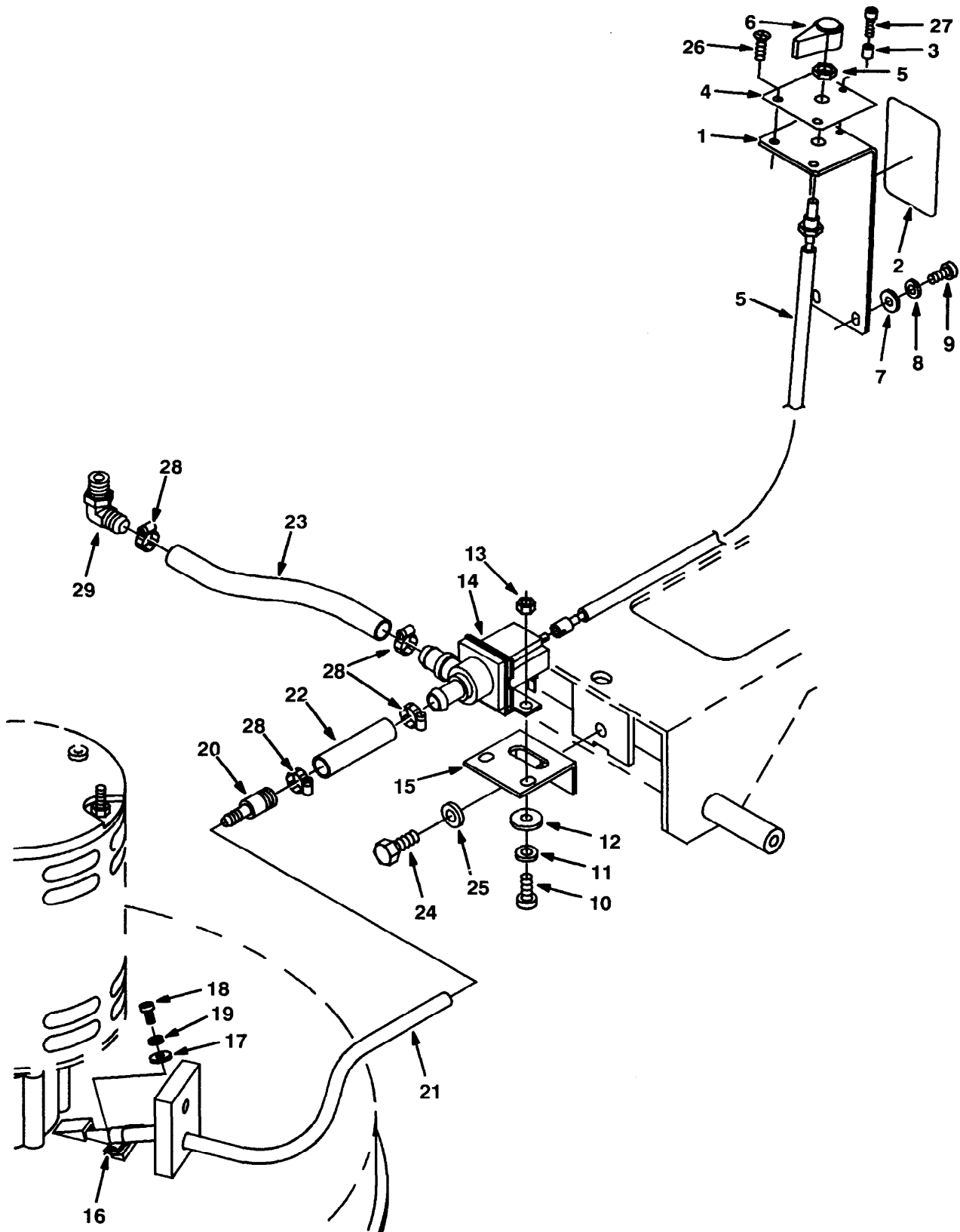


Fig. 5 - Solution Control Group

Ref.	Part No.	Description	Qty.
▽ 1	630604	Bracket, Knob-Adj, Solution	1
▲ 2	578229	Label, Read Manual	1
3	630452	Spacer	1
4	630233	Label, Flow Control 5300	1
5	630117	Cable, Cont, Water Flow, 44"Lg	1
6	630116	Knob, Adj, Valve	1
7	200 031 016	Washer, Flat, 5.3MM, 15.0, 1.6	2
8	140018	Washer Loc Int M5	2
9	575 569 000	Scr, Pan Hd, Phil, M5 X 16	2
10	578 321 000	Scr, Pan Hd, Phil, M6 X 16,Zp	2
11	1575.14	Washer-Loc Int M 6 Pltd	2
12	069 760 090	Washer, Plain, ANSI-A #12 Wide, Zp	2
13	579029	Nut-Hx Std M 6X1.0	2
14	630022	Valve, Solenoid, 24Vdc	1
15	630059	Bracket, Valve	1
16	630271	Clamp, Cable .38"Dia,Black	1
17	200 301 014	Washer Flt 10	1
18	579259	Screw, Pan Hd, Phil, M4 X 8MM	1
19	579202	Washer-Loc Int M 4	1
20	630164	Frg-Str, .50Hose .25Hose	1
21	630366	Hose, .25ld	1
22	630370	Hose, .50ld	1
23	630379	Hose, .50ld	1
24	200 031 488	Scr-Hex M 8X1.25 20 8.8 Pltd	1
25	200 370 019	Washer Loc Int M 8	1
26	069 764 140	Screw, Flat Hd, Phil, M5 X 16MM	2
27	200 001 343	Screw, Soc Hd, M4 X 12MM	1
28	575500	Clamp, Hose .50-1.1	4
29	601104	Ftg-E90 08Bm/08Pm Plstc	1

Fig. 6 - Recovery Tank Group

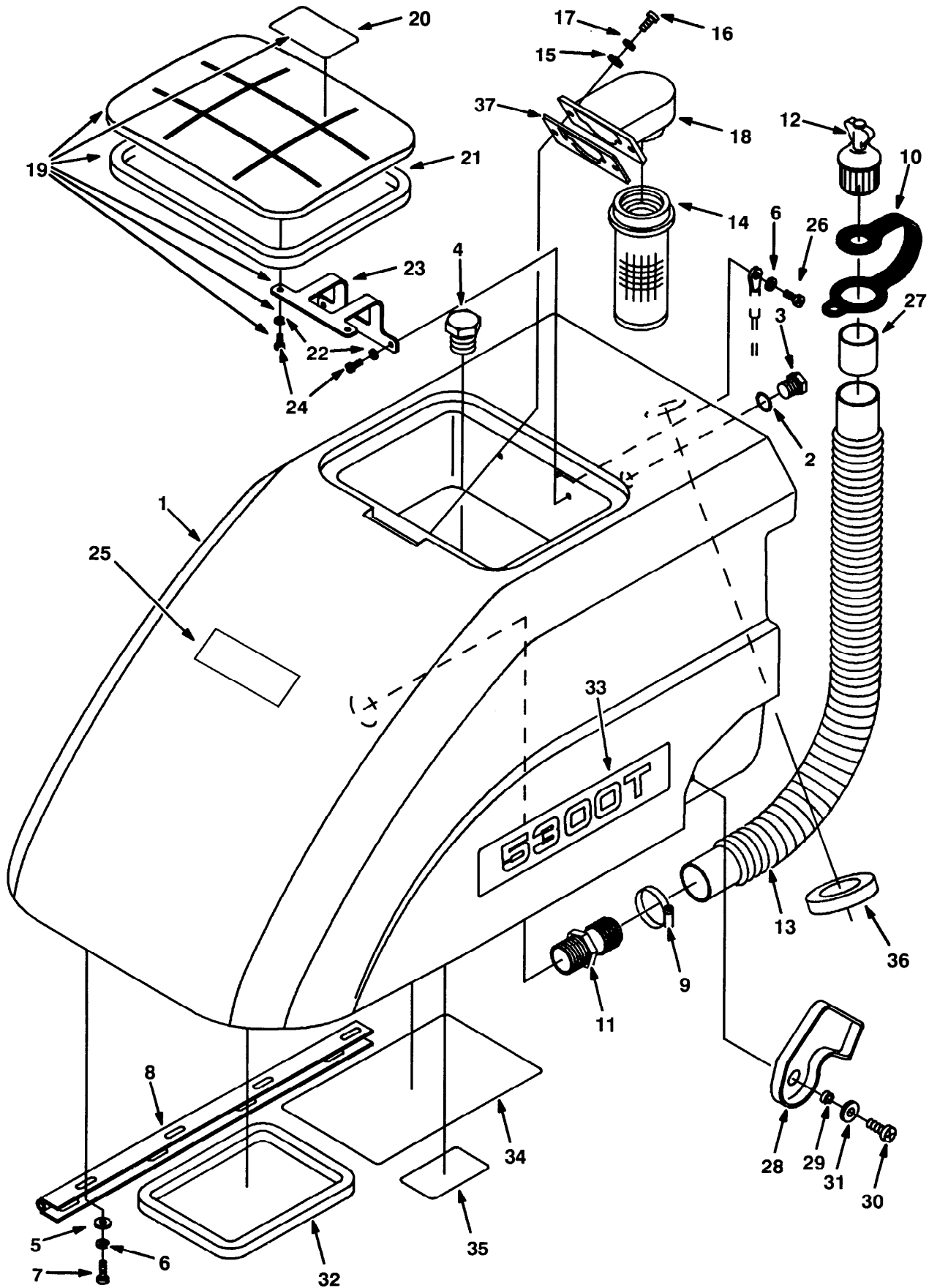


Fig. 6 - Recovery Tank Group

Ref.	Part No.	Description	Qty.
1	630051	Tank, Recovery, 20" Scrubber	1
2	630134	Seal, O-Ring, 16Mm X 3.5Mm Tk	1
3	630139	Ftg-Plg, Hex .38-19Rsp	1
4	630147	Plug, Nylon, .75Npt	1
5	069 760 090	Washer, Plain, ANSI-A #12 Wide, Z	8
6	15752.14	Washer, Lock, Int, 6.4Id	9
7	578 321 000	Screw, Pan Phil M 6 X 16Mm, ZP	8
8	630048	Hinge, .25Pin 17.9Lg 1.9 Open	1
9	578428	Clamp, Hose	1
10	578441	Strap, Drain Hose	1
11	621277	Ftg-Str, 20Pm/24Bm	1
12	621324	Plug, Expansion, 1.5Dia Nylon	1
13	630068	Hose, Drain 38.1Mm Id, 20" Scrbr	1
14	630052	Cage, Float W/Ball, 12X12 Scm	1
15	059 650 283	Washer, Flat, 6.4MM, 18.0, 1.6, SS	2
16	578 187 000	Screw, Pan Phil M6 X 12Mm, SS	2
17	578244	Washer, Lock, Int, 6.4ID, 10MM, SS	2
18	630053	Mount, Float Cage, 20" Scrbr	1
▽ 19	630601	Cover Assy, Tank Cleanout	1
▲ 20	630360	Label, Flammable Matl, 50X84	1
▲ 21	630367	Gasket	1
▲ 22	63039	Washer, Flat, .15", .56", .04", Zp	4
▲ 23	630056	Hinge, Cover, Sol Tank 5300	1
▲ 24	630301	Scr, #6 Hilo, .38", Pn Phil Zp	4
▲ 25	120215	Decal, Nobles Logo	1
▲	630229	Decal, Tennant Logo	1
26	578 321 000	Screw, Pan Hd, Phil, M6 X 10, Zp	1
27	630394	Sleeve, Drain Hose	1
28	630074	Leg, Sppt, Tank (Blue)	1
	101064	Leg, Sppt, Tank (Gray)	1
29	630075	Spacer, 8.5Mm Id 12.7Od 5.3Lg	1
30	575029	Screw, Pan Phil M 8 X 20Mm, Ss	1
31	069 760 079	Washer, Plain, ANSI-A, .31"Wd, ZP	1
32	630368	Gasket	1
33	630227	Label, Numerals 5300T, Set Of 2	1
34	630231	Label, Wiring W/Options 5300T	1
35	630360	Label, Flammable Matl, 50X84	1
36	630010	Gasket, 70Mm Od, 43Mm Id, 12.7 Tk	1
37	630255	Gasket, Float Mount	1

Fig. 7 - Main Frame Group

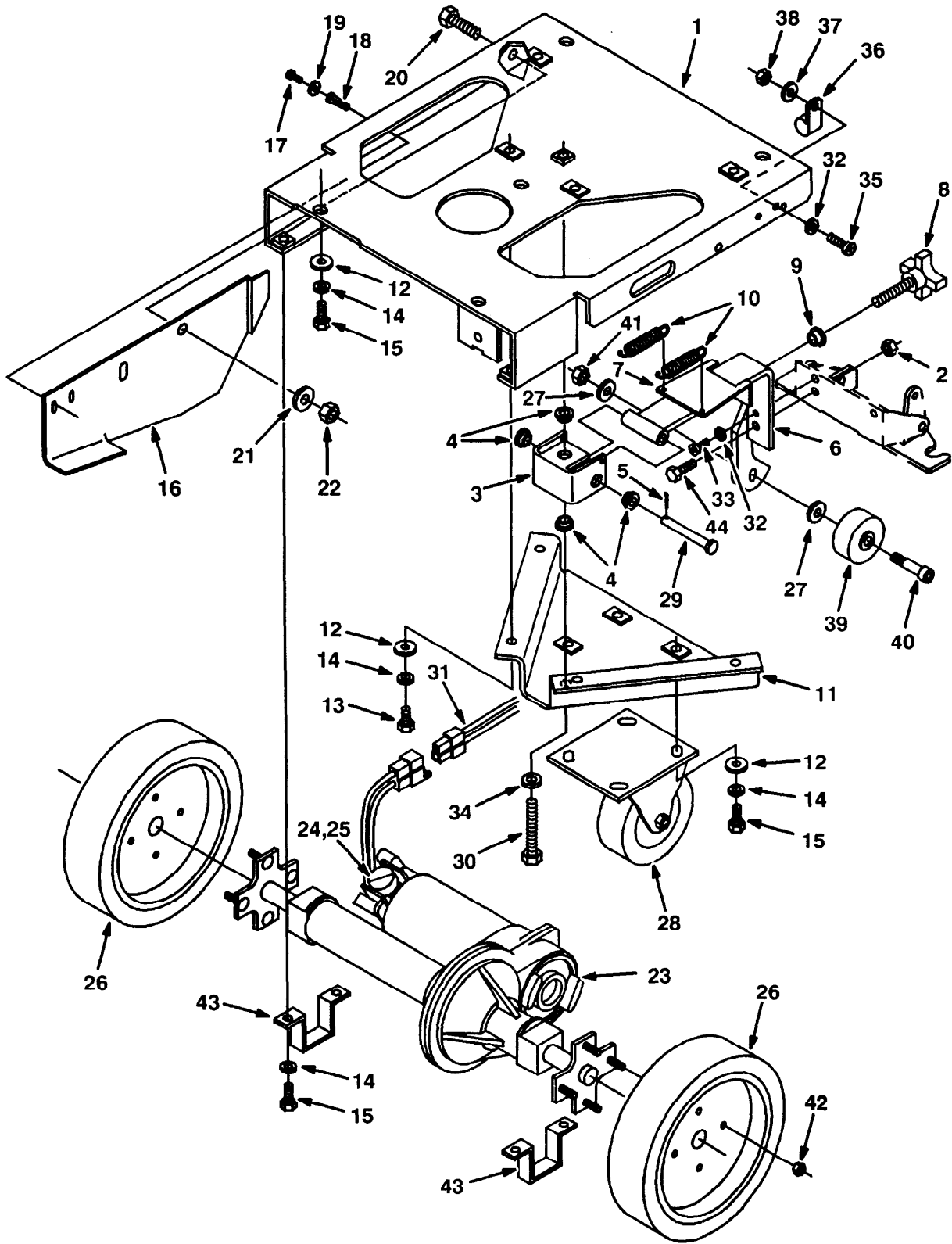


Fig. 7 - Main Frame Group

Ref.	Part No.	Description	Qty.
1	630131	Frame, 20" Traction	1
2	200 160 017	Nut Hxlocnyln M 8X1.25	1
3	630045	Bracket, Lift, Squeegee	1
4	630095	Bearing, Flng .38" .50" .25"Lg	4
5	578420	Pin, Cotter, .09D X .75Lg	1
6	630044	Arm, Pivot, Squeegee 5300	1
7	630043	Bracket, Spring Slide	1
8	630046	Knob, .38-24 X 2" Lg Stud, Ss	1
9	630292	Bearing, Knob, Sqge Arm	1
10	630042	Spring, Ext 2.3Mm Wire 63.5 Lg	2
11	630003	Frame, Mtg, Caster	1
12	069 760 079	Washer Flt .31 Hard	13
13	200 031 488	Scr-Hex M 8X1.25 16 8.8 Pltd	4
14	200 370 019	Washer Loc Int M 8	17
15	200 031 488	Scr-Hex M 8X1.25 20 8.8 Pltd	13
16	630307	Bracket, Safety & Limit	1
17	590137	Screw, Truss Hd, Phil, #6-32X.38", Zp	2
18	578329	Anchor, #6, Nylon	2
19	069 764 053	Washer, Flat, Ansi, #6	2
20	200 031 538	Scr Hex M10X1.5 20	1
21	069 764 053	Washer Flt .38 Hard	1
22	200 160 018	Nut-Hxlocnyln M10X1.5	1
23	630126	Transaxle, 20", .50 Hp	1
24	630504	Brush, Tansaxle	2
25	630503	Cap. Transaxle Brush	2
26	640013	Wheel, 8"D 2"W, Neoprene	2
27	200 651 019	Washer, Flat, 8.4, 17.0, 1.6, Ss	1
28	630002	Caster, 4"D 1.38W, 400Lb Cap	1
29	630047	Pin, Clevis	1
30	630345	Screw, Shoulder Bolt, .38" 5/16-18	1
31	630132	Harness, Traction Drive	1
32	15752.14	Washer-Loc Int M 6, Zp	2
33	200 055 433	Screw, Pan Hd, Phil, M6 X 12Mm, Zp	1
34	200 370 019	Washer, Lock, Spg, ANSI, .38", ZP	1
35	578 321 000	Screw, Pan Hd, Phil, M6 X 16Mm, Zp	1
36	630428	Clamp, Cable, 1.0" Id	1
37	579210	Washer, Flat, 6.4, 18.0, 1.6	1
38	579029	Nut, Hex Std, M6, Zp	1
39	630477	Wheel, 2" OD, Squeegee Support	1
40	630478	Screw, Shoulder Bolt, .38" 5/16-18, Zp	1
41	601 108 000	Nut, Hex Lock, .31"-18, Zp	1
42	630268	Nut, Hex Lock, .25"-28, Zp	8
43	630127	Bracket, Transaxle Mount	2
44	200 031 488	Screw, Hex Hd, M8 X 18MM	3

Fig. 8 - Rear Squeegee Group

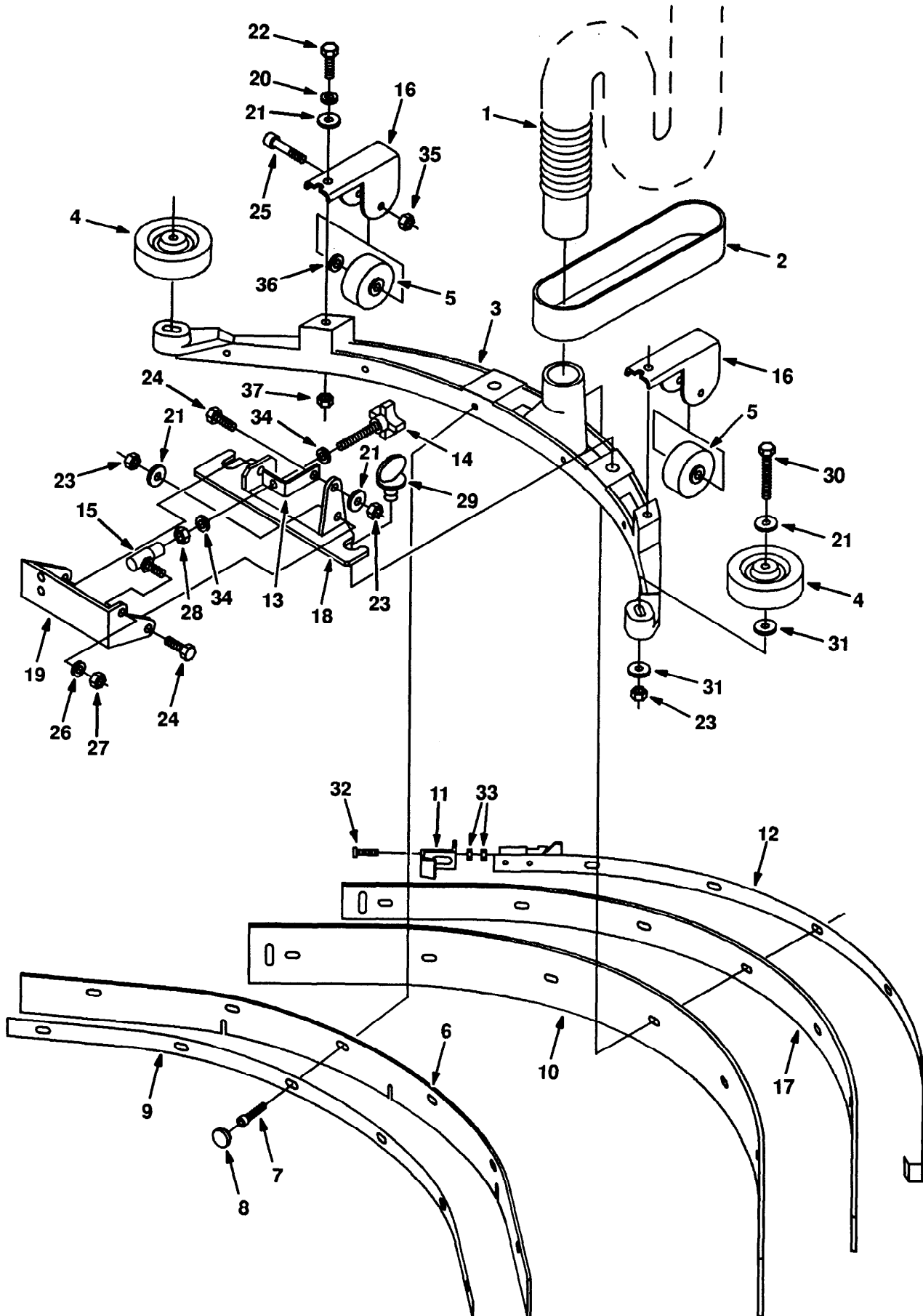


Fig. 8 – Rear Squeegee Group

Ref.	Part No.	Description	Qty.
1	630339	Hose Assy, Sqge, 5300	1
2	630333	Strap, Sqge Hose, 5300	1
3	630311	Squeegee, Curved 5300T	1
4	630450	Wheel, Rubber, Dia 76 X 22 WD	2
5	579184	Wheel, Head, Brush	2
6	630291	Blade, Squeegee, Semi Front 3.2Tk	1
7	630437	Screw, Soc Hd, M6 X 12Mm, Zp	6
8	579013	Knob	6
9	630313	Squeegee, Band, Front Curved	1
10	630344	Blade, Squeegee, Curved Rear 4.8T	1
11	630481	Clip, Squeegee Band	1
12	630350	Squeegee, Band Assy, Curved	1
13	630279	Bracket, Pivot, Tip Adjust	1
14	630281	Knob, Tip Adjust, Sqge	1
15	630364	Swivel, Tip Adjust, Sqge	1
16	630314	Bracket, Sqge Backup Wheel	2
17	630340	Back Up Strip, Semi-Curve	1
18	630277	Bracket, Sqge Attachment	1
19	630278	Bracket, Tip Adjust	1
20	200 370 019	Washer Loc Int M 8	2
21	200 303 019	Washer, Flat, 8.4MM, 18.0, 1.6	7
22	200 031 494	Screw, Pan Hd, Phil, M8 X 20Mm, Zp	2
23	200 160 017	Nut Hxlocnyln M 8X1.25	5
24	200 031 488	Scr-Hex M 8X1.25 20 8.8 Pltd	3
25	630480	Screw, Shld., 5/16", 1-1/4" Shld, Zp	2
26	630455	Washer, Lock, Spg, ANSI, .31" ZP, 08	1
27	069 762 144	Nut, Hex, .31-24 UNF, Zp	1
28	630388	Nut, Hex Lock, .31-24 UNF, Zp	1
29	630393	Thumb Screw Assy	2
30	630424	Screw, Hx Head, M8 X 70Mm, Zp	2
31	630303	Washer, Flt 8.4 25.4 2.0, Zp	4
32	630389	Screw, Pan Hd, Phil #10-32 X 1.75	1
33	630391	Nut, Hx Lock #10-32	1
34	630446	Washer, Nylon, .31"	2
35	578323	Nut, Hex Lock, .25-20	2
36	200 651 019	Washer, Flt, 8.4, 17.0, 1.6, Ss	2
37	200 640 017	Nut, Hex, M8, Ss	2

Fig. 9 - Rear Squeegee Lift Group

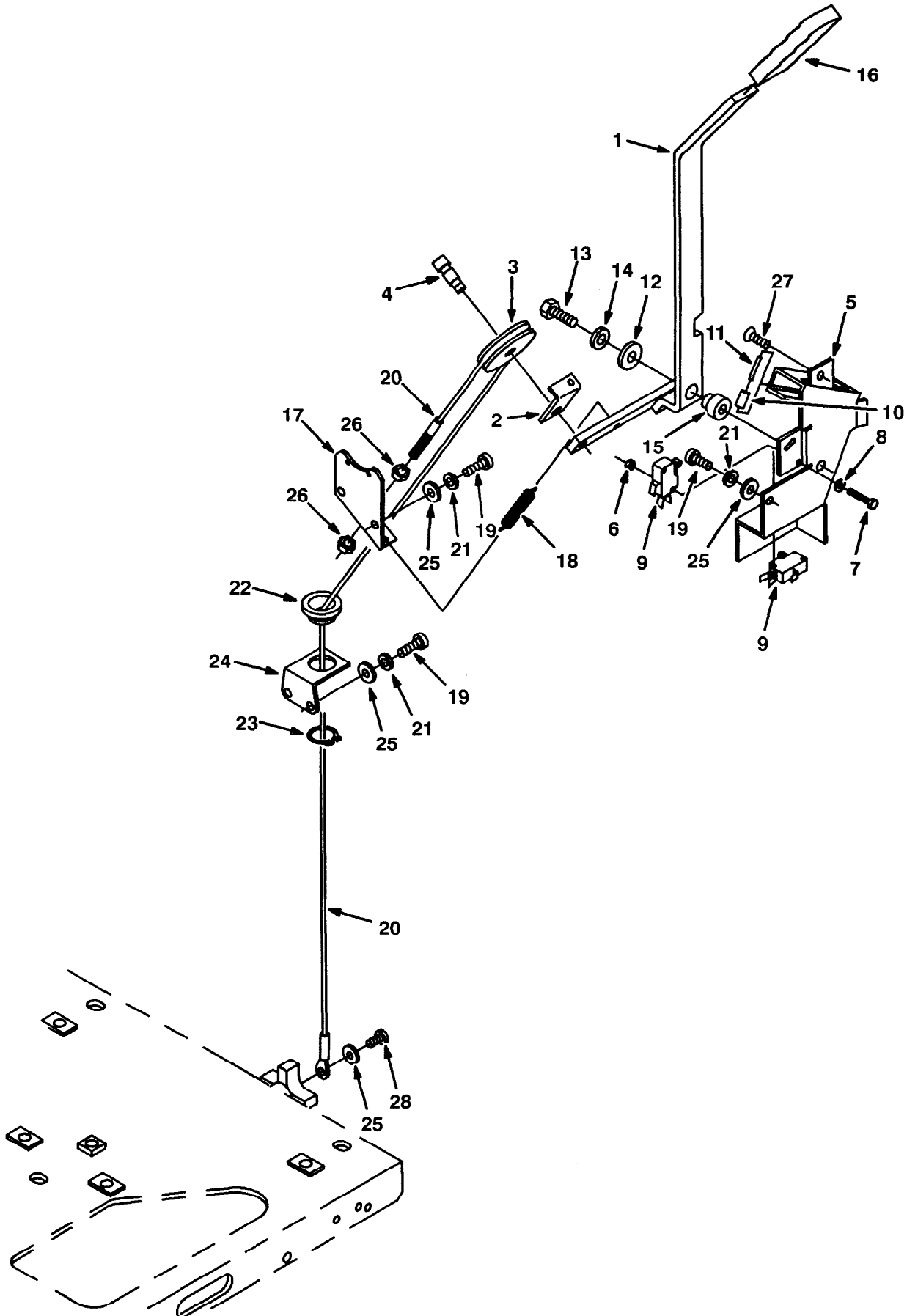


Fig. 9 - Rear Squeegee Lift Group

Ref.	Part No.	Description	Qty.
1	630151	Arm, Lift, Squeegee	1
2	630427	Bracket, Sqge Sheave	1
3	630426	Pulley, Cable	1
4	630470	Scr-Shld .375Dx1.00L .31-18	1
5	630150	Bracket, Arm, Sqge Lift	1
6	579211	Nut, Hex Lock, M3, SS	4
7	579213	Screw, Hex Hd, M3 X 20MM	4
8	601 127 000	Washer, Flt 3.7Mm 8.0 .5 Zp	4
9	630096	Switch, Limit, Normal Open	2
10	630207	Wheel, Brkt, Sqge Lift	1
11	630262	Pin, Roll .09D X .75Lg, Zinc	1
12	069 760 082	Washer Flt .25 Hard	1
13	200 031 496	Scr-Hex M 8X1.25 30	1
14	200 370 019	Washer Loc Int M 8	1
15	630160	Bushing, Arm, Pivot	1
16	630209	Grip, Sqge Lift	1
17	630155	Bracket, Cable, Sqge	1
18	630158	Spring, Ext .36 3.00 .37	1
19	578 321 000	Scr, Pan Hd, Phil, M6 X 16,ZP	5
20	630156	Cable, Lift, Sqge, 28" Lg	1
21	15752.14	Washer-Loc Int M 6 Pltd	5
22	621235	Bushing, Cable	1
23	621236	Ring, Retaining .810 Dia	1
24	630157	Bracket, Guide, Cable	1
25	069 760 090	Washer Plain, #12	6
26	069 760 094	Nut, Hex, Jam, .25-20UNC	2
27	069 762 098	Screw, Flat Hd, Phil M6 X 16MM,	1
28	573268	Screw, Pan Hd, Phil, .25 20 X .75", Ss	1

Fig. 10 - Scrub Brush Down Pressure Group

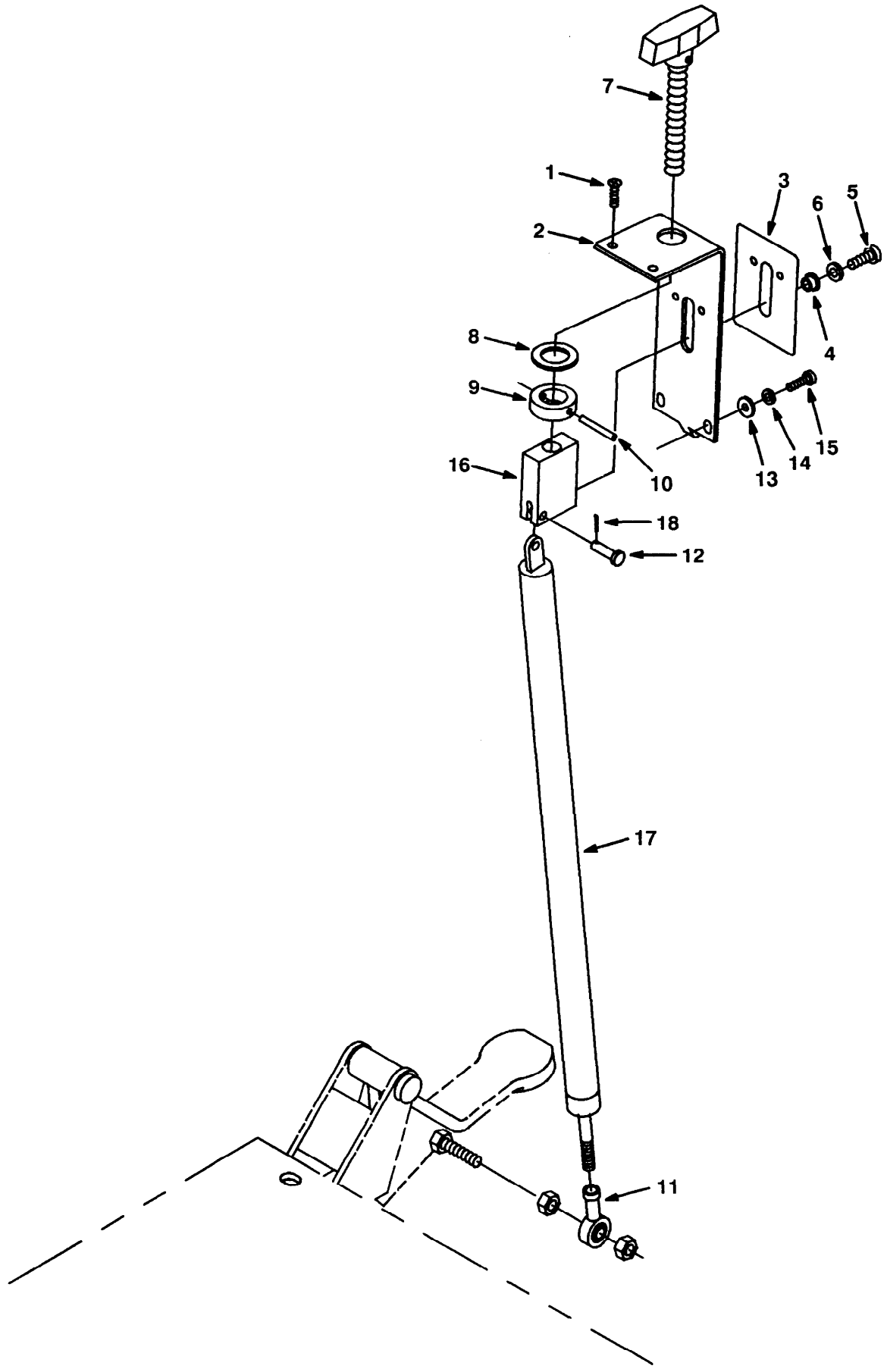


Fig. 10 – Scrub Brush Down Pressure Group

Ref.	Part No.	Description	Qty.
1	069 764 140	Screw, Flat Hd, Phil M5 X 16MM	2
2	630197	Bracket, Down Pressure	1
3	630234	Label, Down Pressure 5300 & T	1
4	630482	Bearing, Flange	1
5	200 055 433	Screw, Pan Hd, Phil M6 X 12MM, ZP	1
6	579205	Washer-Loc Int M 6 Pltd	1
7	630195	Knob, Tee, .50-13 3.5"Lg	1
8	630358	Washer, Nylon .75" 1.0" .03Tk	1
9	630355	Collar, 19.0Id 31.8Od 9.5W	1
10	630382	Pin, Spring, .16" X 1.25", Zp	1
11	630353	Rod-End, Shock	1
12	630357	Pin, Clevis, 5.9Mm Dia X 20.2Mm Lg	1
13	200 315 016	Washer, Flat, 5.3MM, 15.0, 1.6	2
14	140018	Washer Loc Int M5	2
15	575 569 000	Scr, Pan Hd, Phil, M5 X 16	2
16	630354	Coupler, Down-Pressure Shock	1
17	630352	Shock, Head Down Pressure	1
18	578421	Pin, Cotter, .12" X 1.00"Lg	1

Fig. 11 - Console Group

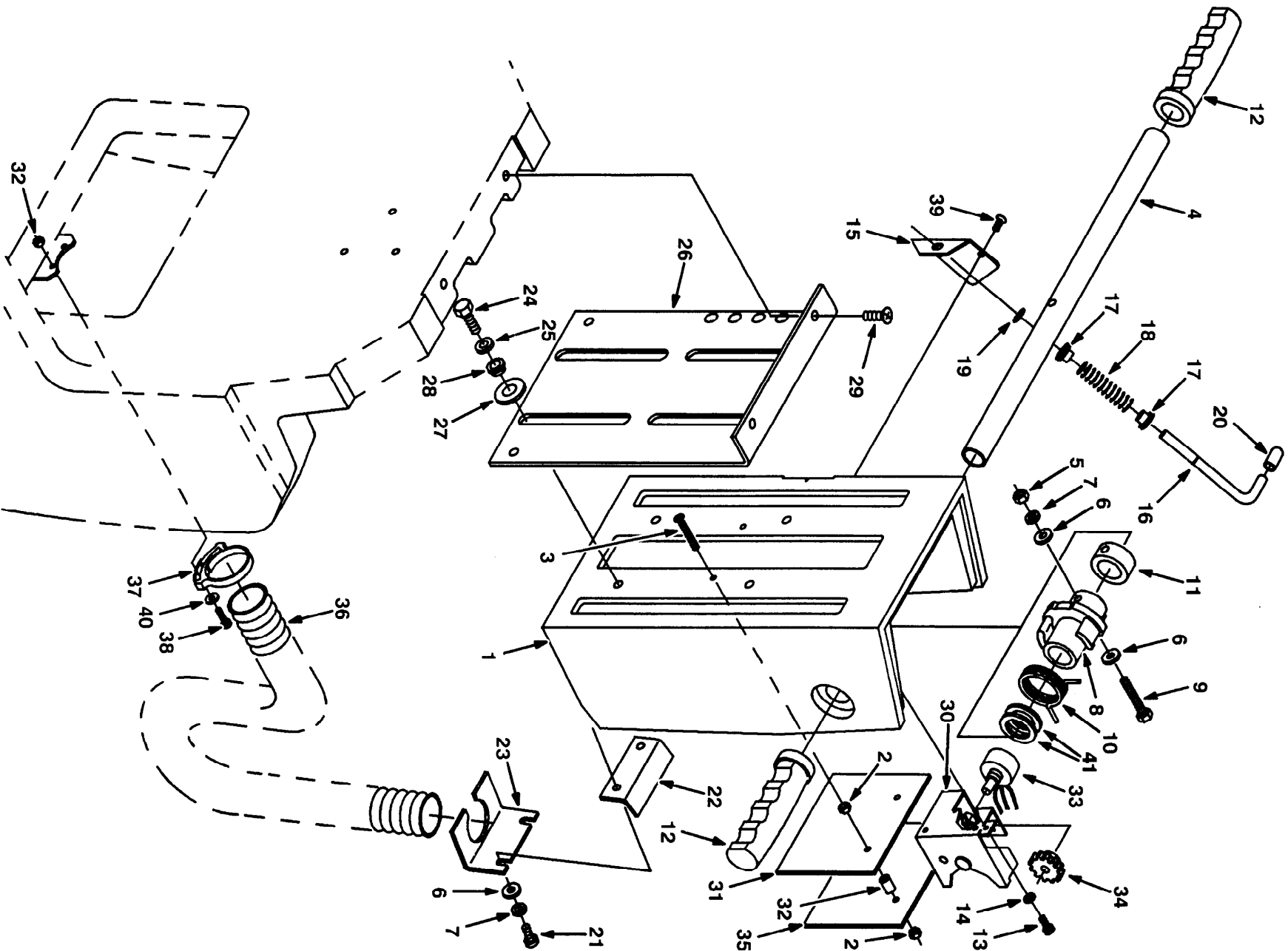


Fig. 11 – Console Group

Ref.	Part No.	Description	Qty.
1	630076	Console, 20" Scrubber, Dc	1
2	200 160 014	Nut, Hex Lock, M4	4
3	630304	Scr, Flthd, Phil, M4 35Mm, Zp	2
4	630093	Handlebar, .88Od 15.5Lg, Zp	1
5	579029	Nut-Hx Std M 6X1.0	1
6	579210	Washer, Flat, 6.4MM, 18.0, 1.5	4
7	579205	Washer-Loc Int M 6 Pltd	3
8	630109	Gear & Hub Assy, 22.4ld, 20" Scr	1
9	630431	Screw, Hx Head, M 6 X 40Mm	1
10	630088	Spring, Centering .072"Mw, Zp	1
11	630217	Collar, .88"ld 1.38Od .63 Lg	1
12	630190	Grip, Handlebar, Textured	2
13	200 070 340	Screw, Pan Hd, Phil M4 X 8MM	2
14	579202	Washer, Lock, Int 4.3ID	2
15	630087	Plate, Retainer-Latch	1
16	630081	Lever, Latch, Console Adjust	1
17	630083	Bushing, Latch	2
18	630082	Spring, Comp .42" 1.75 .035	1
19	630084	Ring, Retaining, Ext	1
20	630094	Grip, Lever-Console Adjust	1
21	578 321 000	Screw, Pan Hd, Phil M6 X 16MM, ZP	2
22	630086	Plate, Strainrelief	1
23	630108	Bracket, Mtg, Conduit	1
24	200 031 486	Scr-Hex M 8X1.25 16 8.8 Pltd	4
25	200 370 019	Washer Loc Int M 8	4
26	582078	Plate, Console Slide, 20" Scrub	1
27	630077	Washer, Flt 12.8 23.9 1.63, Nyl	4
28	630095	Bearing, Flng .38" .50" .25"Lg	4
29	630306	Scr, Flthd, Phil, M8 16Mm, Zp	2
30	630079	Bracket, Mtg, Limit Switch	1
31	630128	Plate, PMC, Heat Sink	1
32	630261	Spacer, .19"ID, .31"OD, .50", Alum	2
33	130094	Potentiometer, w/o Fuse	1
34	630099	Gear, 28T, 24P	1
35	630104	Speed Control, PMC Board, 55 Amp	1
36	630113	Conduit, Convoluted, Green	1
37	630254	Clamp, Adj 37.5-43.7Mm, #Snp-36	1
38	200 070 266	Screw, Pan Hd, Phil, M3 X 16Mm	2
39	630114	Screw, Flat Hd, Phil M4 X 6Mm, Zp	2
40	200 301 012	Washer, Flat, 3.2Mm, 7.0, .5	2
41	069 760 582	Washer, Nylon, 23 ID, 34 OD	2

Fig. 12 - Instrument Panel Group

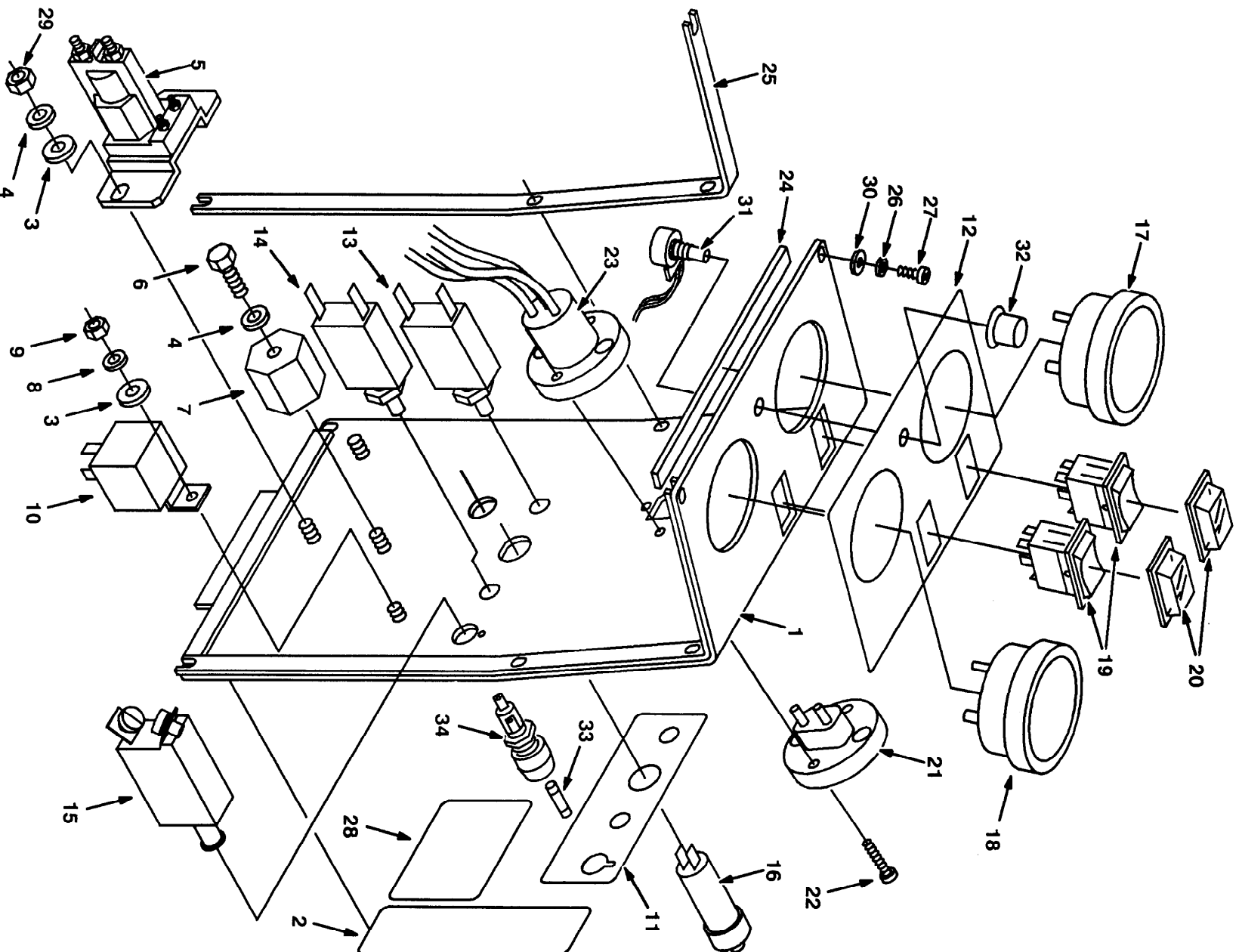


Fig. 12 - Instrument Panel Group

Ref.	Part No.	Description	Qty.
▽ 1	630605	Plate, Switch Panel, 20" Push	1
▲ 2	630362	Label, Batt Chrg, Vert 32X117	1
3	069 760 090	Washer, Plain, ANSI-A #12	3
4	579205	Washer-Loc Int M 6 Pltd	3
5	603008	Contact, 24Vdc 100A Spno	1
6	069 762 126	Scr Hex .25-20X0.62	1
7	578427	Standoff, Terminal	1
8	579 027 000	Washer Loc Int M5	1
9	575380	Nut, Hex, #10-32 Zp	1
10	630089	Relay, 40/30A, 24V, 360Ohm Res	1
11	630241	Label, Circuit Breakers 5300T	1
12	630243	Label, Gauge/Switch Panel 5300T	1
13	630274	Circuit Breaker, 15A	1
14	20796	Circuit Breaker, 17A	1
15	130756	Circuit Breaker, 35A Dc	1
16	630102	Circuit Breaker, 7A	1
17	630090	Gauge, Br Pressure, 10-35 Amp	1
18	630091	Meter, Battery, 24Vdc	1
19	630419	Switch, Rckr, Spst, 24Vdc, Amb	2
20	578720	Splash Guard, Rocker Switch	2
21	630106	Plug, Jumper, Male	1
22	578243	Screw, Pan Hd, M4 X 20, ZP	4
23	630085	Harness, Main, Push	1
24	630453	Gasket, Console	2
25	630119	Gasket, Console 3.1X8.0X420	2
26	579202	Washer Loc Int 4.1ID,SS	8
27	200 070 340	Screw, Pan Hd, M4 X 8, Zp	8
28	630244	Label, Data Plate 5300T	1
29	059 650 595	Nut Hx Std .25-20	2
30	200 301 014	Washer, Flat, 4.3,10.0, 1.0, ZP	8
31	630133	Resistor, 0-20K, Speed Control	1
32	630265	Knob, Speed Limit	1
33	601091000	Fuse, 2A	1
34	578418	Holder, Fuse	1

Fig. 13 - Battery Cable Group

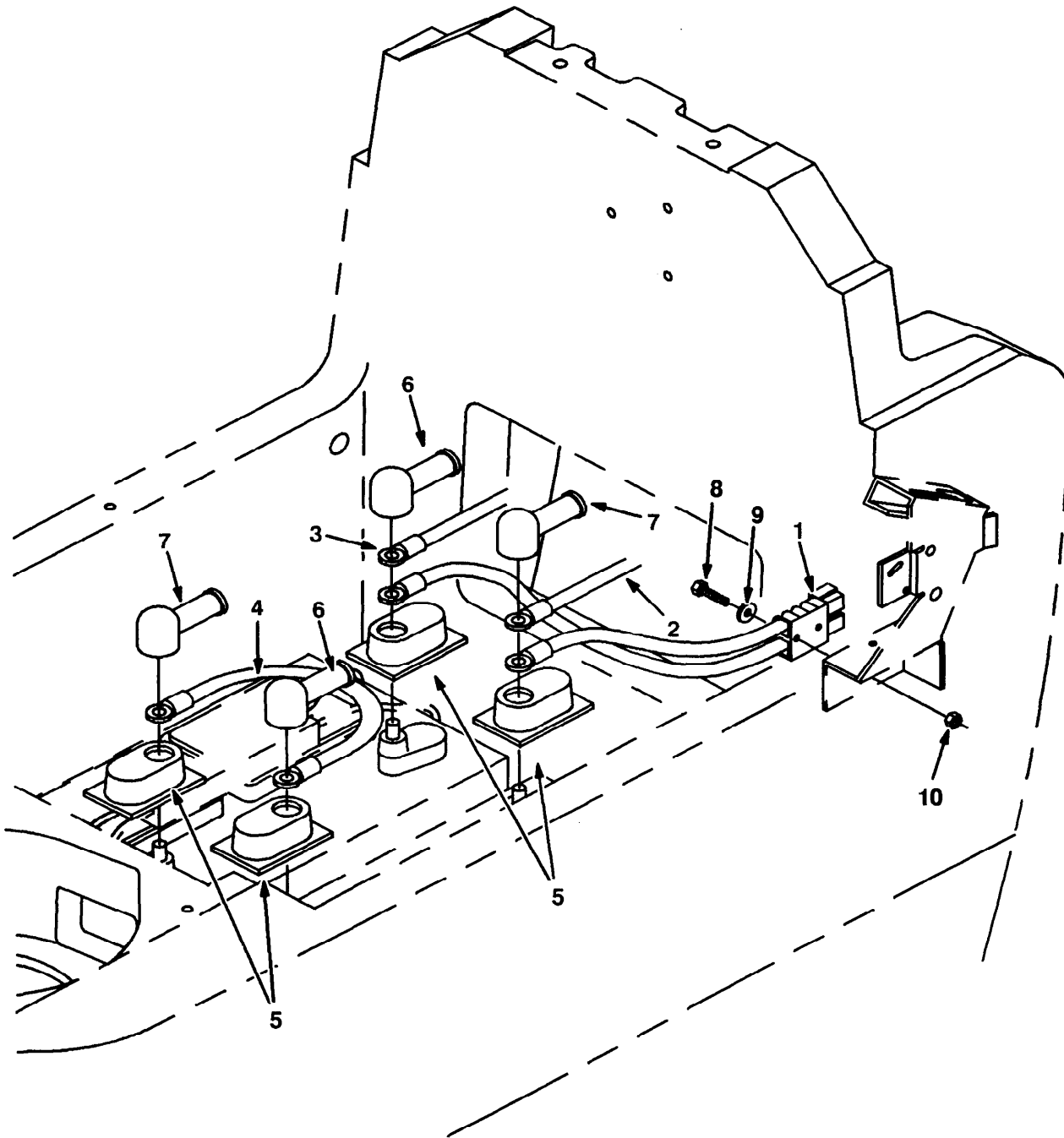


Fig. 13 - Battery Cable Group

09150/09126

Ref.	Part No.	Description	Qty.
1	630118	Cable, Battery, W/Charge Plug	1
2	630110	Cable, Battery, 4Ga 813Mm, Red	1
3	630111	Cable, Battery, 4Ga 864Mm, Blk	1
4	603061	Cable, Battery 6Ga Red, 305Mm	1
5	611223	Cover, Terminal	4
6	611221	Boot, Cable, Batt, Black	2
7	611222	Boot, Cable, Batt, Red	2
8	579213	Screw, Hex Hd, M3 X 20Mm, Zp	2
9	601 127 000	Washer, Flat, 3.7 8.0, .5, Zp	2
10	579211	Nut, Hex, Lock, M3, Zp	2

Fig. 14 - Electrical Schematic

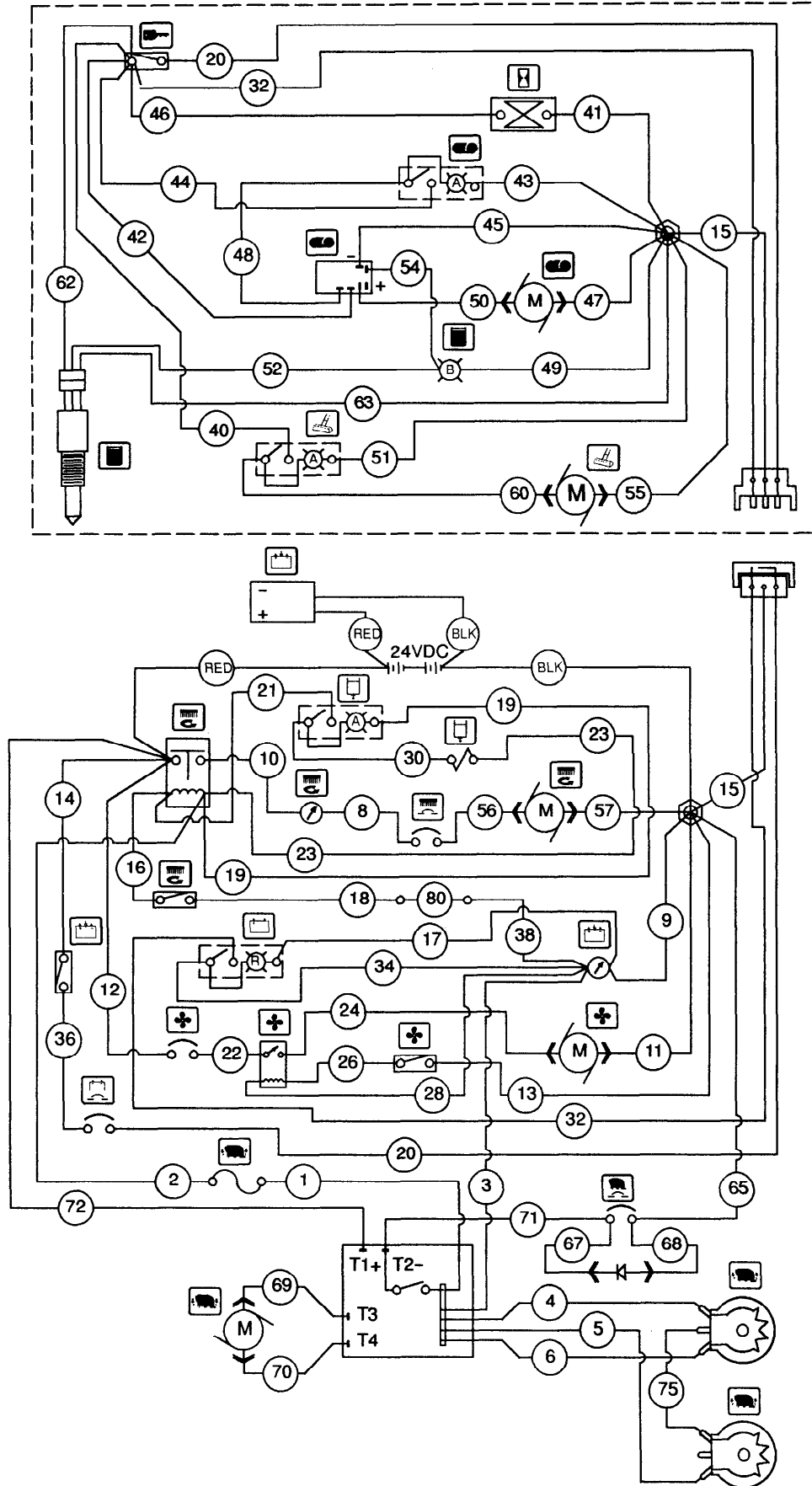


Fig. 1 – Power Wand Assembly

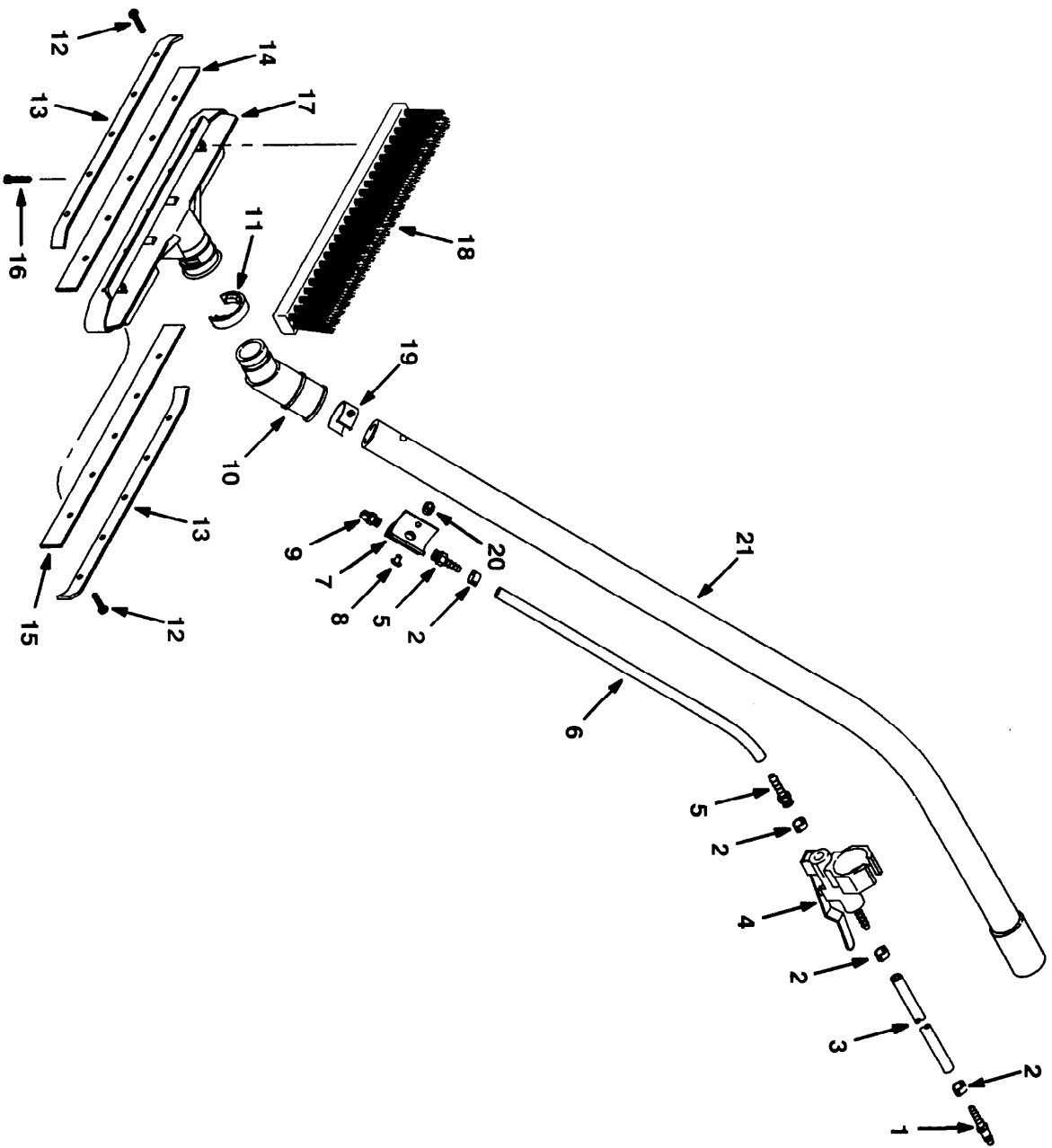


Fig. 1 - Power Wand Assembly

Ref.	Part No.	Description	Qty.
▽	579908	Wand Assy, E150, Sngl Bn Nohse	1
▲ 1	579095	Plug, Quick Connect, 1/4" Hose	1
▲ 2	578160	Clamp, Hose, 11-13Mm Od, Crimp	3
▲ 3	579168	Hose, Relief, .25, .44", .110 M	1
▲ 4	579107	Valve, Water Cont. Hanger And	1
▲ 5	579145	Ftg, Str, .25 Hose, .12 Npt	2
▲ 6	579146	Hose, Wand Water Feed, 150E	1
▲ 7	579112	Adaptor, Spray Nozzle	1
▲ 8	579198	Rivet, Pop 04 Dia X 10	2
▲ 9	579137	Spray Nozzle, .125 Npt, 100Deg	1
▲ 10	579113	Swivel, Wand Attachment	1
▲ 11	579132	Ring, Attachment	1
▲ 12	579135	Screw, Self TD United	10
▲ 13	579103	Retainer, Wand Blade, 150E	2
▲ 14	579239	Squeegee, Blade, Front Wand	1
▲ 15	579230	Squeegee, Blade, Rear Wand	1
▲ 16	579147	Screw, Self - Tap, #6, 1.5"	2
▲ 17	579101	Head, Wand, 150E	1
▲ 18	579102	Brush, Wand (Two Row)	1
▲ 19	579187	Clip, Spring 32Mm Dia.	1
▲ 20	579148	Fitting, Plug, 125 Npt	1
▲ 21	579109	Wand, Single Bend 31.8	1

Fig. 2 - Hard Floor Wand Assembly

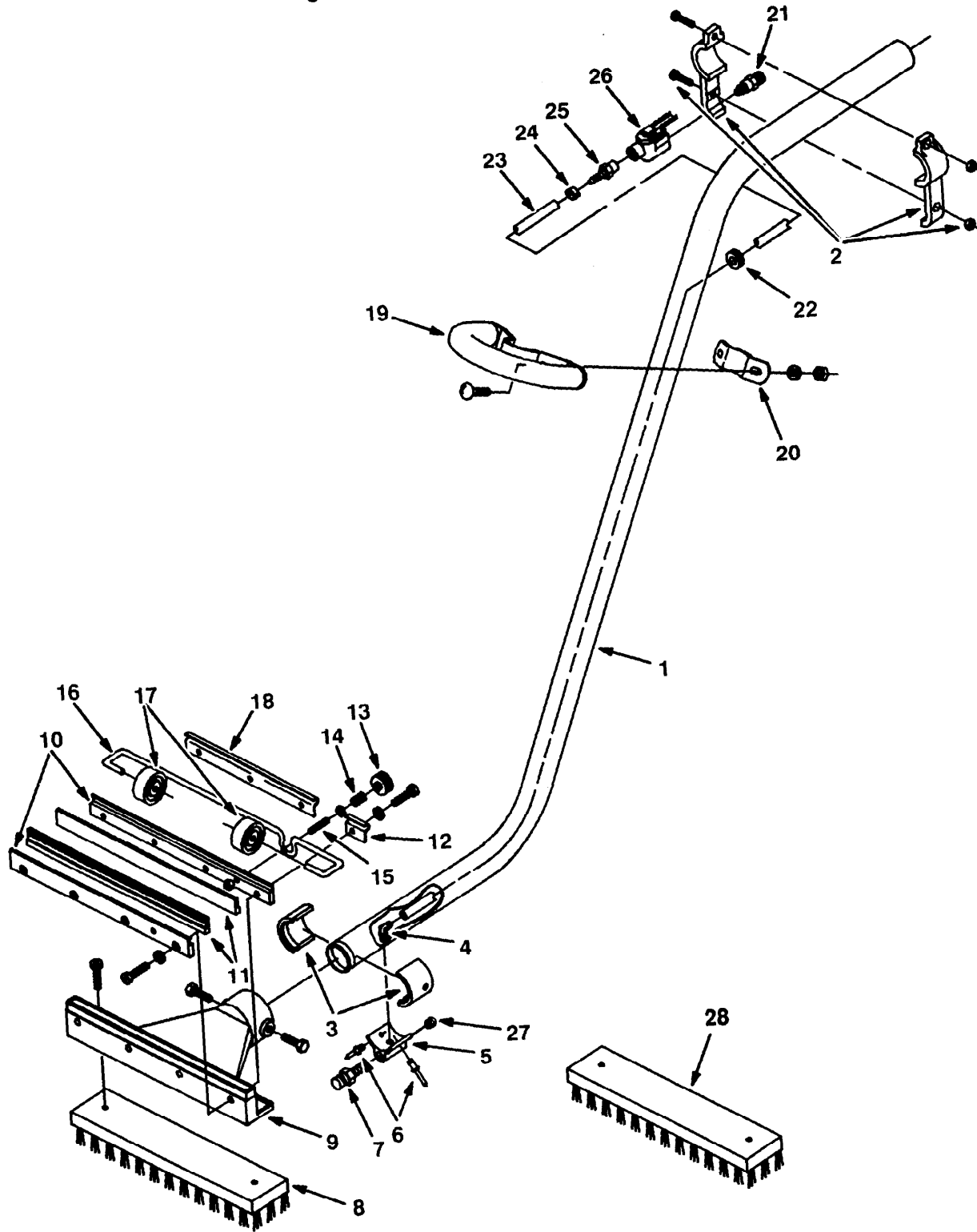


Fig. 2 – Hard Floor Wand Assembly

Ref.	Part No.	Description	Qty.
▽	578905	Wand Assembly	1
▲ 1	578060	Wand, Double Bend, Dia 38.1MM	1
▲ 2	578077	Bracket, Valve Mounting, Wand	1
▲ 3	578061	Adapter, Head/Wand	2
▲ 4	578214	Fitting, Elbow, 0.25"Hose, 0.12"NPT	1
▲ 5	579112	Adapter, Spray Nozzle	1
▲ 6	579198	Rivet, Pop, S-2500 Driveblock	2
▲ 7	578066	Spray Nozzle, .125" NPT, 75 Deg.	1
▲ 8	578073	Brush, Wand Attachment	1
▲ 9	578063	Head, Wand	1
▲ 10	578078	Retainer, Squeegee Wand	2
▲ 11	578074	Blade, Squeegee Wand	2
▲ 12	578124	Bracket, Axle, 1-Hole	1
▲ 13	578439	Nut, Thumb, M06 X Dia 30MM	1
▲ 14	578228	Spring, Compression, .63", .42", .04	1
▲ 15	578143	M6, 40mm Lg., Adjust. Stud	1
▲ 16	578126	Axle, Wand	1
▲ 17	578125	Wheel, Guide, Wand	2
▲ 18	578123	Bracket, Axle, 3-Hole	1
▲ 19	578155	Handle, Wand	1
▲ 20	578154	Bracket, Handle, Wand	1
▲ 21	578091	Male Quick-Conn., 1/4"NPT	1
▲ 22	578164	Grommet, .38"ID, .63"OD, .06"OW	1
▲ 23	578821	Hose, Solution, Wand	1
▲ 24	578161	Clamp, Hose, 8-11MM OD, Crimp	2
▲ 25	578094	1/4 Hosebarb, 3/8NPT Male Pipe	1
▲ 26	578064	Valve, Water Control, Wand	1
▲ 27	579148	Fitting, Plug	1
28	65582	Brush-Scrub, Retang, Block-AB	1

Fig. 3 - Non-Power Wand Assembly

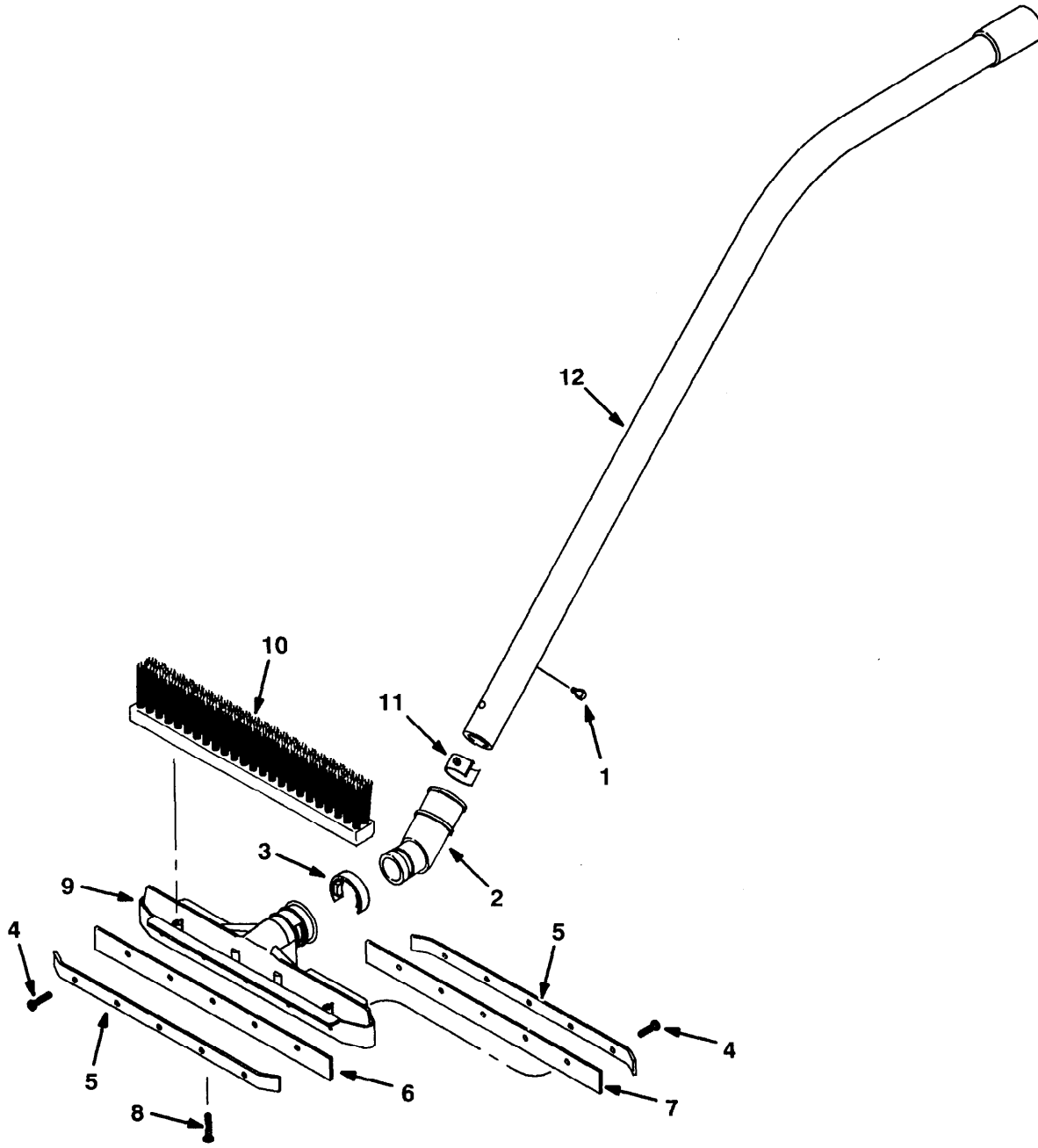
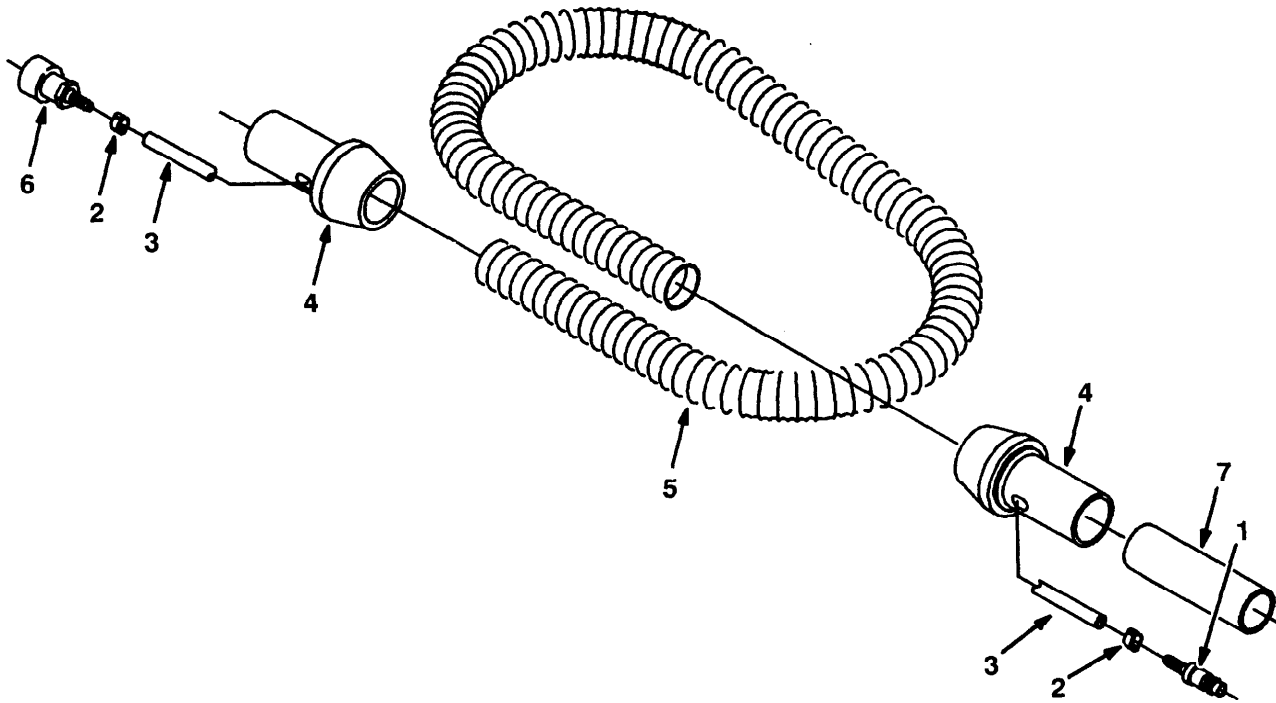


Fig. 3 - Non-Power Wand Assembly

Ref.	Part No.	Description	Qty.
▽	630732	Wand Assembly	1
▲ 1	630269	Plug, Mushroom	2
▲ 2	579113	Swivel, Wand Attachment	1
▲ 3	579132	Ring, Attachment	1
▲ 4	579135	Screw, Self TD United	10
▲ 5	579103	Retainer, Wand Blade, 150E	2
▲ 6	579239	Squeegee, Blade, Front Wand	1
▲ 7	579230	Squeegee, Blade, Rear Wand	1
▲ 8	579147	Screw, Self - Tap, #6, 1.5"	2
▲ 9	579101	Head, Wand, 150E	1
▲ 10	579102	Brush, Wand (Two Row)	1
▲ 11	579187	Clip, Spring 32Mm Dia.	1
▲ 12	579109	Wand, Single Bend 31.8	1

Fig. 4 - Power Wand Hose Assembly

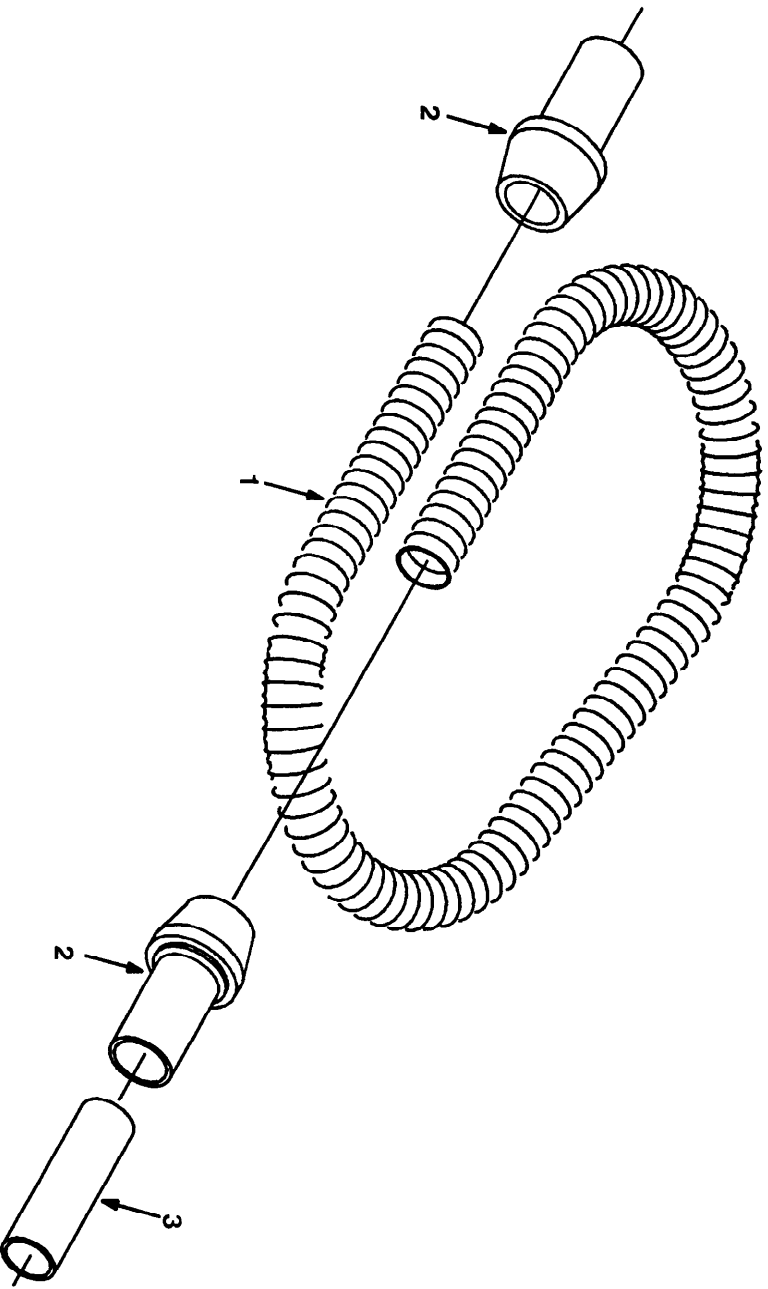


09160/09161

Qty.

Ref.	Part No.	Description	Qty.
▽	578903	Power Wand Hose Assembly.	1
▲ 1	578318	Fitting, Quick conn.	1
▲ 2	578160	Clamp, hose	2
▲ 3	578820	Hose	1
▲ 4	578072	Cuff, swivel	2
▲ 5	578276	Hose, vacuum	1
▲ 6	578071	Connector, quick F.	1
7	573265	Hose Coupling	1

Fig. 5 - Non-Power Wand Hose Assembly



09168/09167

Ref.	Part No.	Description	Qty.
▽	630739	Non-Power Wand Hose Assembly	1
▲	578276	Hose, vacuum	1
▲	630449	Cuff, swivel	2
▲	573265	Hose Coupling	1

Fig. 6 - Power Wand Pump and Fittings Group

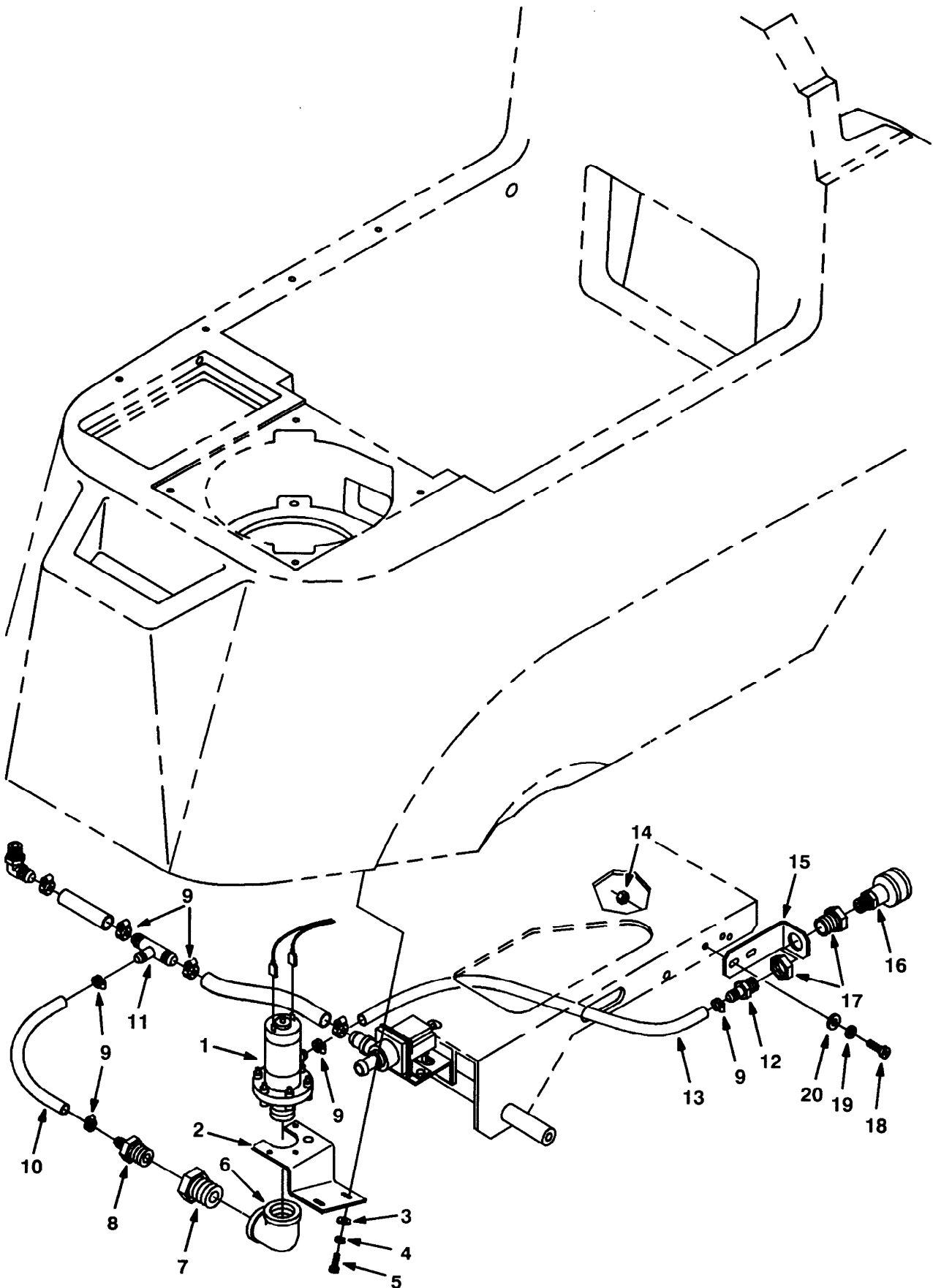


Fig. 6 – Power Wand Pump and Fittings Group

Ref.	Part No.	Description	Qty.
1	630136	Pump, 24Vdc	1
2	630335	Bracket, Mtg, Pump	1
3	059 650 274	Washer, Flat	2
4	579027	Washer Loc Int M5	2
5	200 070 384	Screw, Pan Hd, Phil	2
6	630251	Ftg-E90, .75 Forged	1
7	630252	Ftg, Bushing, 12Pm/06Pm	1
8	575229	Ftg-Str, 06Pm/06Bm	1
9	575500	Clamp, Hose .31-.87 Dia	6
10	630417	Hose	1
11	630372	Ftg-Tee 08Bm/08Bm/06Bm	1
12	630373	Ftg-Str 06Bm/04Pm	1
13	630418	Hose	1
14	200 070 382	Nut-Hx Std M 6X1.0	2
15	630256	Bracket, Mtg	1
16	575520	Ftg, Quick Disc. 04Pm/06Qf	1
17	578215	Ftg-Str, 04Pf/04Pf, Anchor	1
18	578 321 000	Screw, Pan Hd, Phil, M6 X 16MM, ZP	2
19	579205	Washer-Loc Int M6 Pltd	2
20	579210	Washer, Flat	2

Fig. 7 - Accessory Console Group

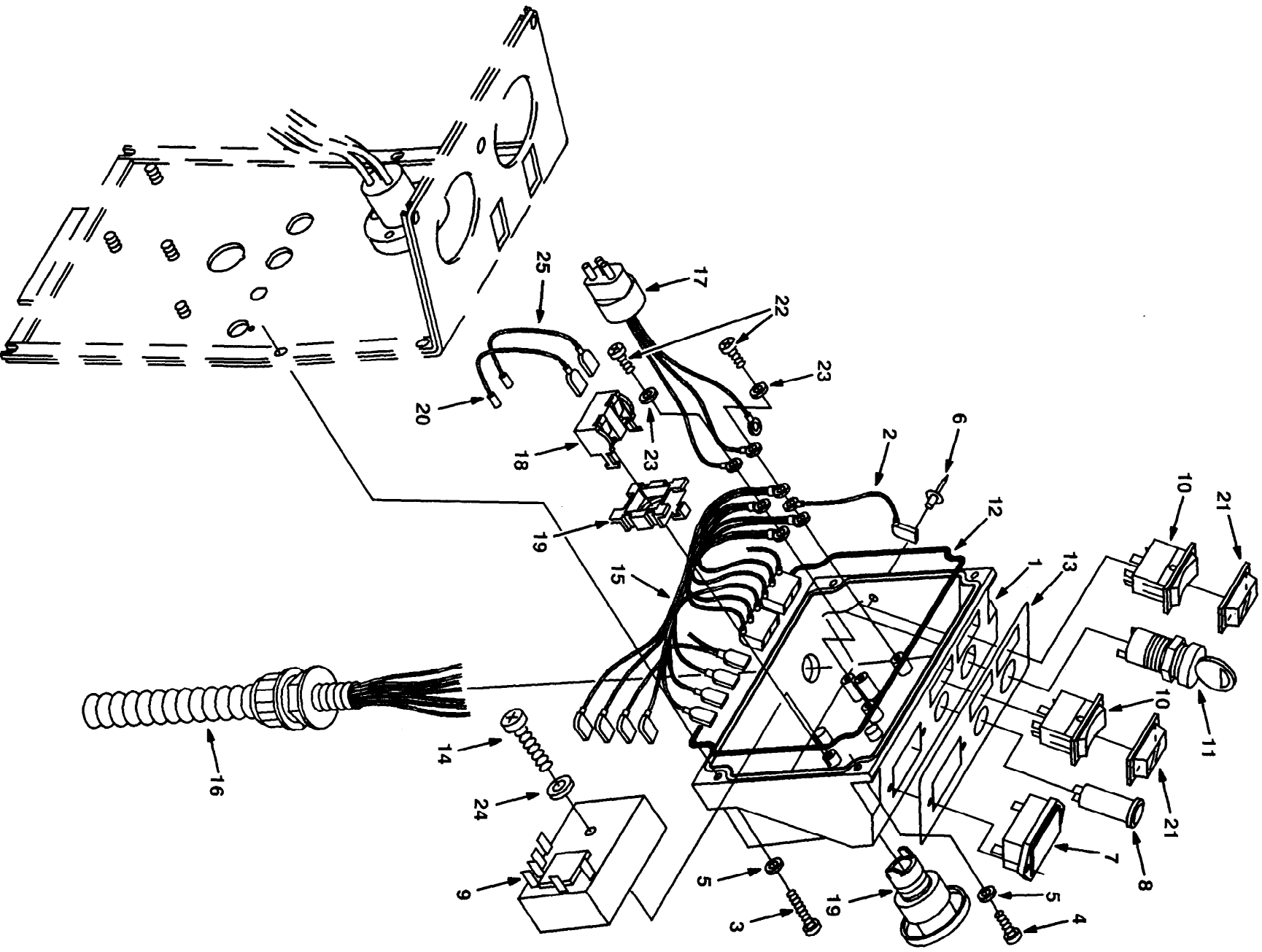


Fig. 7 - Accessory Console Group

Ref.	Part No.	Description	Qty.
1	630140	Console, Options, 20" Scrubber	1
2	630331	nWire Assy, Key Switch	1
3	200 070 354	Screw, Pan Hd, Phil, M4 X 30	2
4	578 243 000	Screw, Pan Hd, Phil, M4 X 20	2
5	579202	Washer-Loc Int M 4	4
6	578852	Rivet, Snap	1
7	630143	Meter, Hour, 18-60Vdc	1
8	630142	Light, Pilot, 24V, Blue	1
9	630145	Timer, 24Vdc, Range: 30Sec	1
10	630419	Switch, Rckr, Spst, 24Vdc, Amb	2
11	612462	Switch, Keylock	1
12	630442	O-Ring, Sponge, .125	1
13	630237	Label, Es/Key/Hr/Light/Wp	1
13	630236	Label, Es/Key/Hr Mtr/Light	1
13	630238	Label, Wand Pump	1
13	630239	Label, Key/Hr/W. Pump	1
13	630235	Label, Key/Hour Meter	1
14	630334	Screw, S-Tap, #6	1
15	630200	Harness, Es Option, 5300	1
16	630342	Harness, Es Option, 5300	1
17	630107	Plug, Accessory, Male	1
18	630097	Switch, Contact Block	1
19	630100	Switch, Pushbutton	1
20	630266	Wire Assy, #14, 180Mm,Foc/Butt	2
21	578720	Splash Guard, Rocker Switch	2
22	200 070 382	Screw, Pan Hd, Phil M5 X 10	2
23	579027	Washer Loc Int M5	2
24	059 650 274	Washer, Flat, ANSI, #6, Zp	1
25	630494	Wire Assy, #14	1

Fig. 8 - Extended Scrub Group

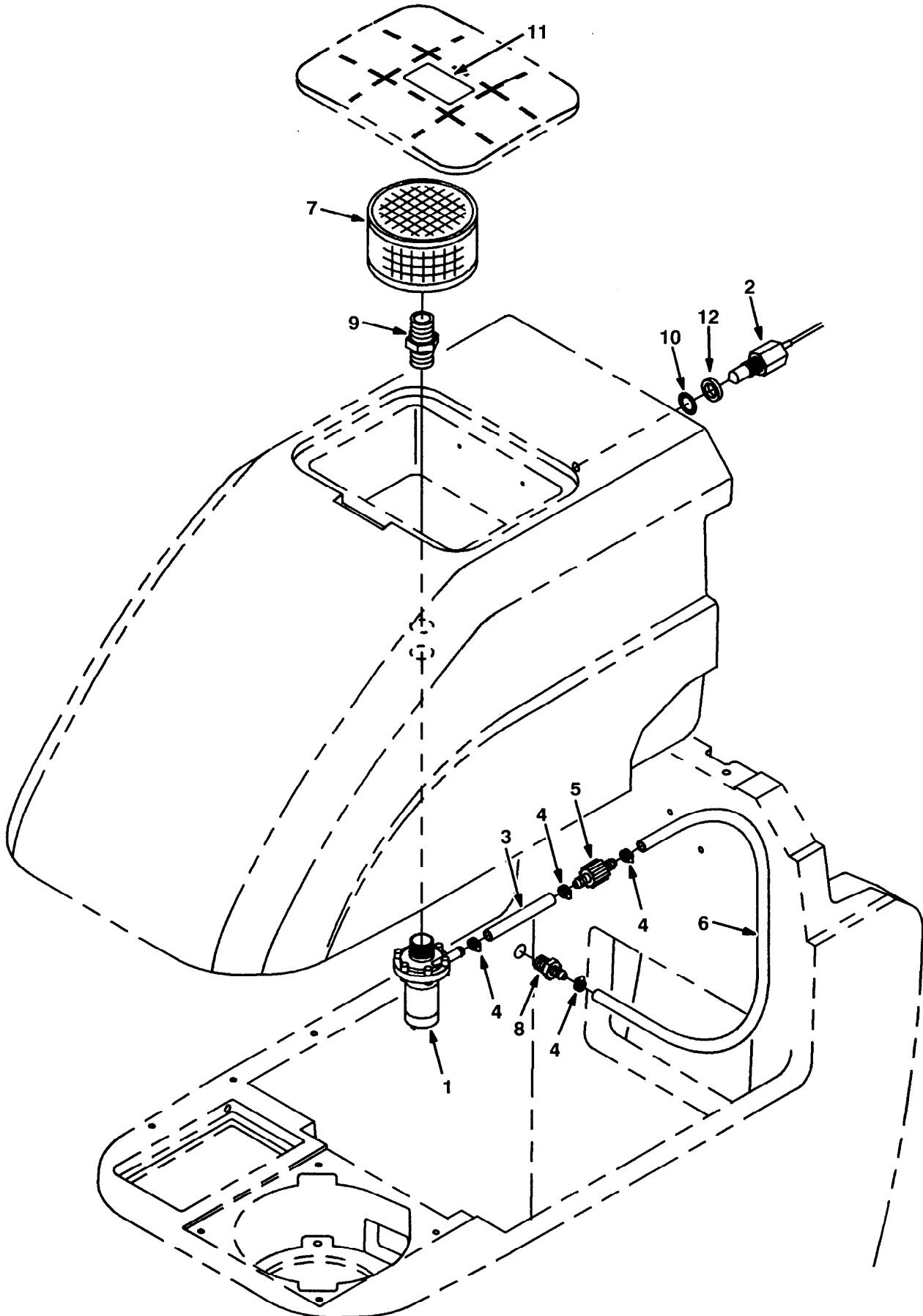
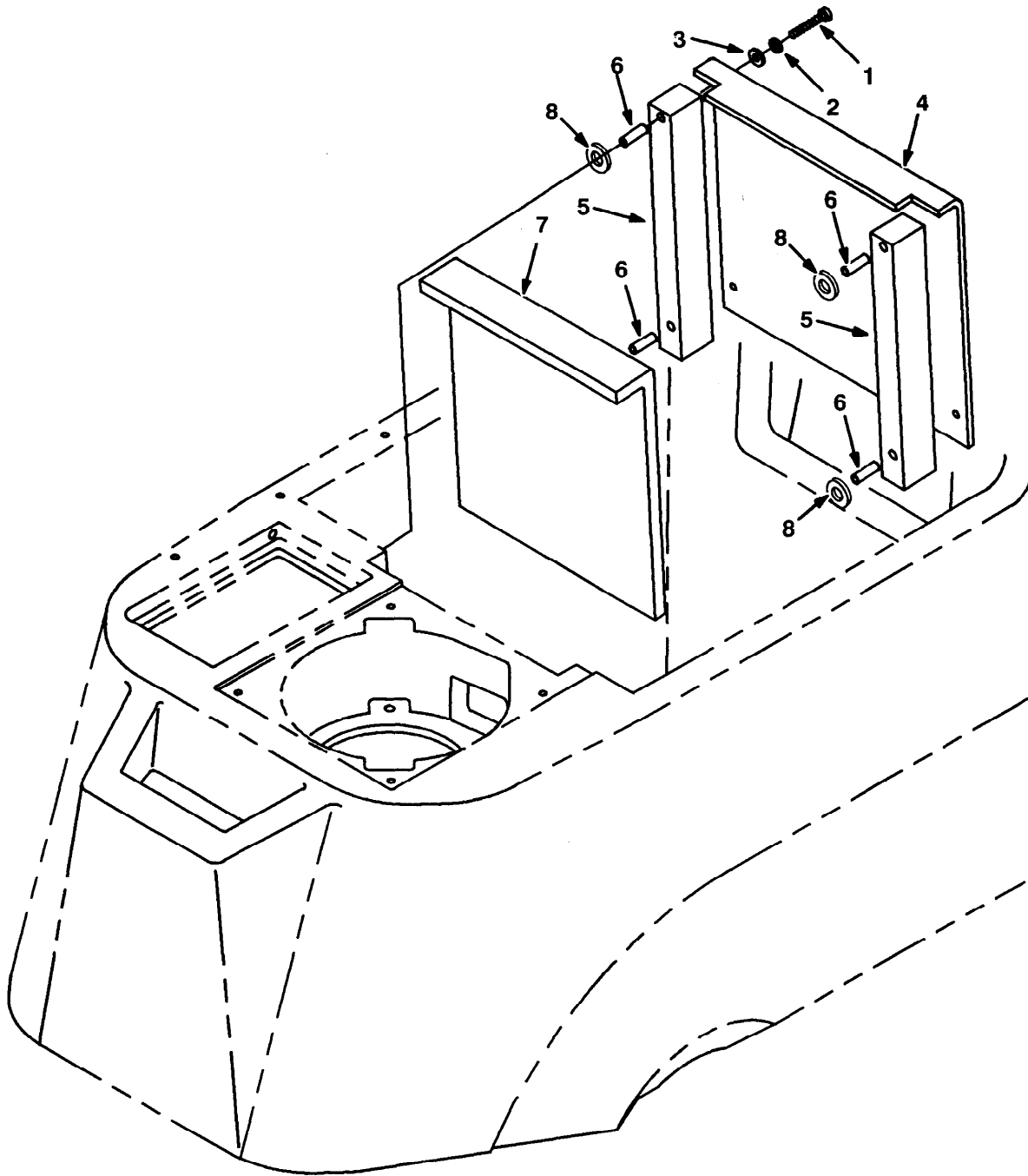


Fig. 8 - Extended Scrub Group

Ref.	Part No.	Description	Qty.
1	630136	Pump, 24Vdc	1
2	630137	Sensor, Water Level	1
3	630438	Hose, .38ld	1
4	575500	Clamp, Hose .31-.87 Dia	4
5	630148	Valve, Check, .38Brb, 3Psi	1
6	630439	Hose, .38ld	1
7	630138	Filter, Screen, 100Mesh, 5300	1
8	575229	Ftg-Str, 06Pm/06Bm	1
9	630385	Ftg, Nipple 12Pm/12Pm, Nylon	1
10	630134	Seal, O-Ring, 16Mm X 3.5Mm Tk	1
11	630440	Label, Do Not Remove Filter	1
12	630479	Washer, Nylon, .68", 1.0", .19"	1

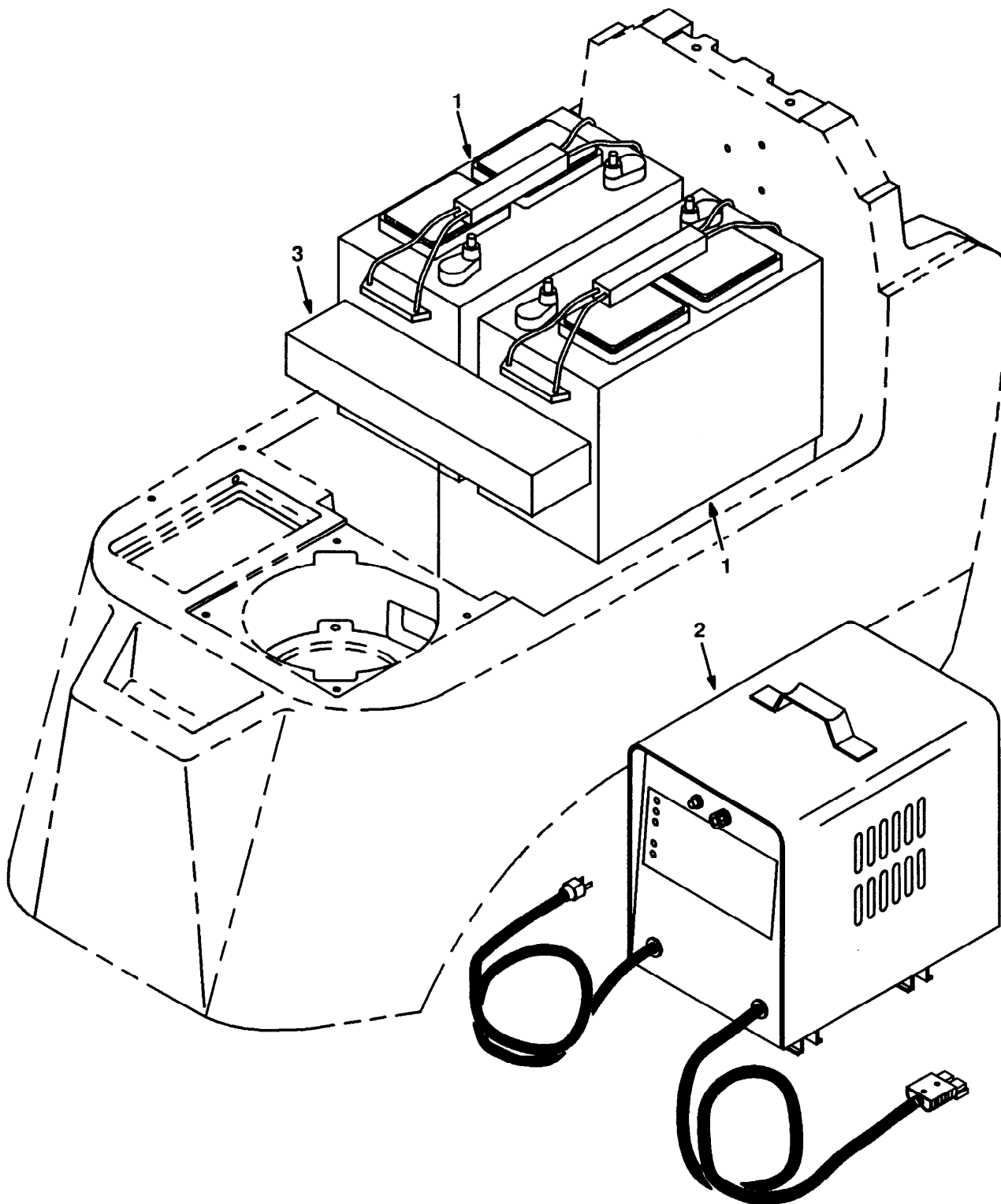
Fig. 9 – Sound Kit



09154/09138

Ref.	Part No.	Description	Qty.
1	572 008 000	Screw, Pan Hd, Phil, M5 X 40MM	4
2	579027	Washer Loc Int M5	4
3	200 301 016	Washer Flat M5, Id	4
4	630395	Sound Cover, Plate	1
5	630397	Sound Side, Foam	2
6	630398	Spacer	4
7	630441	Sound Cover, Foam	1
8	200 315 016	Washer, Flat	4

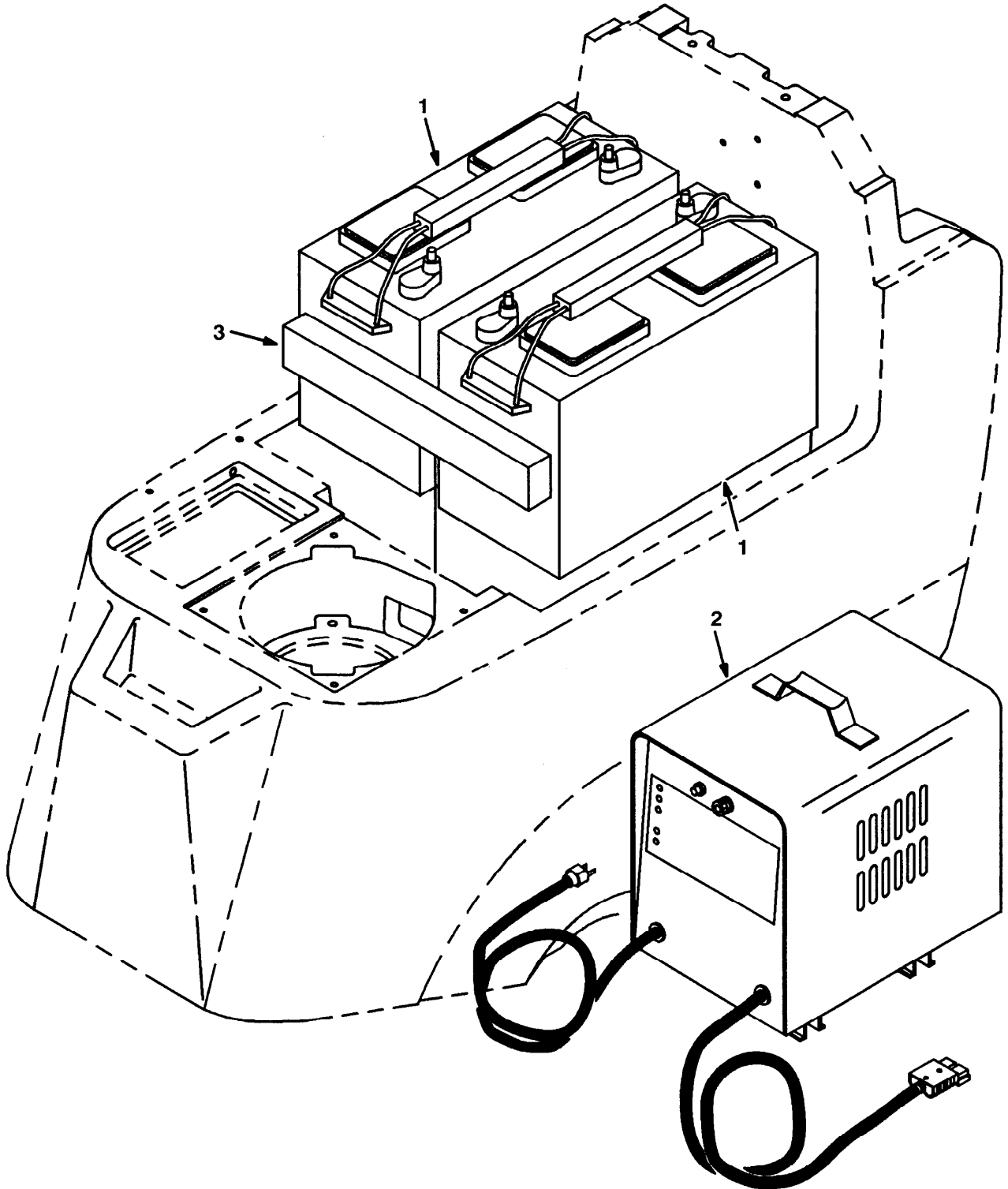
Fig. 10 - Battery Group-130 Ah



Ref.	Part No.	Description	Qty.
1	630123	Battery, 12V 130Ah	2
2	603065	Charger, 24V 15A 60Hz 110V	1
3	630375	Stop, Battery	1

09164/09131

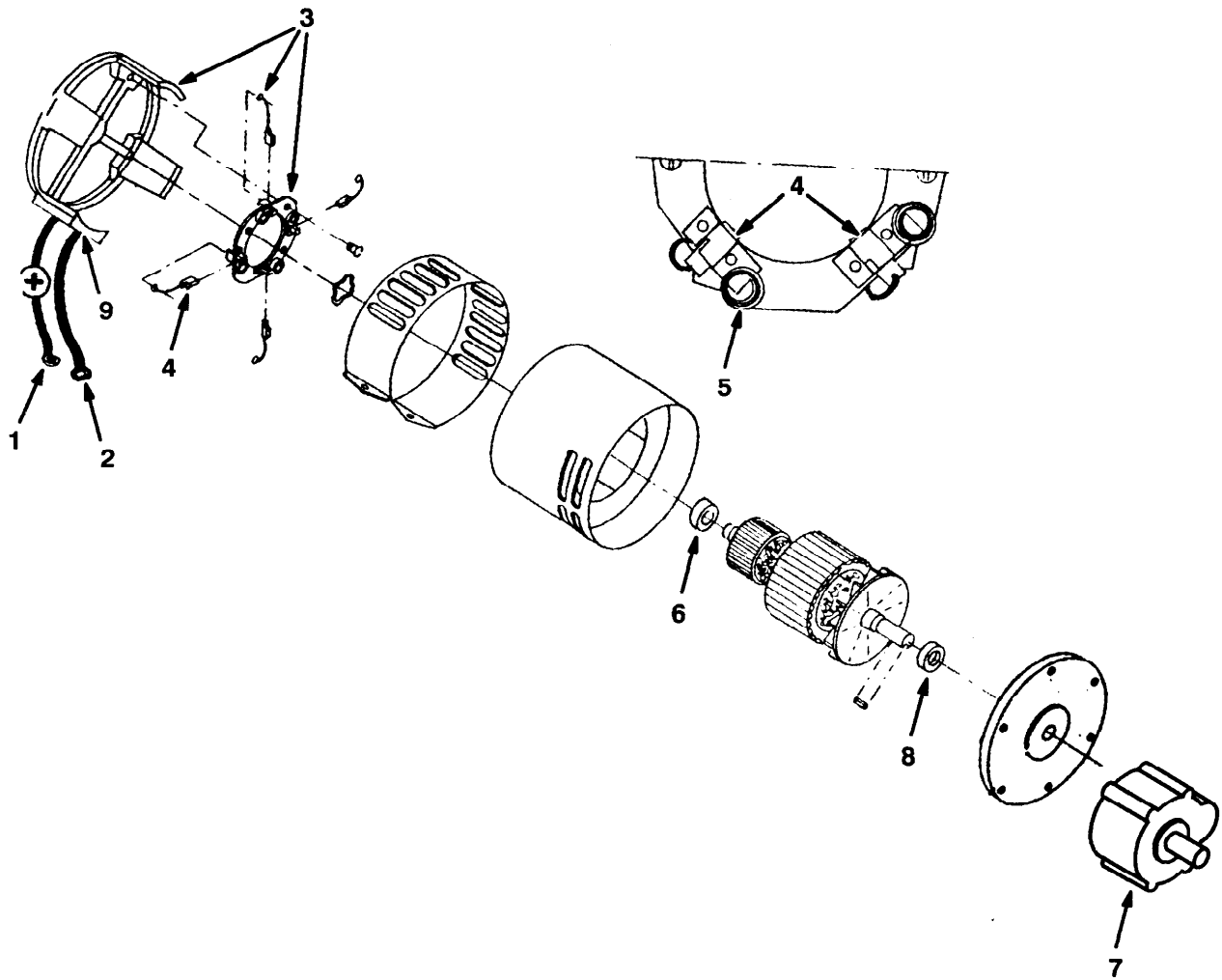
Fig. 11 – Battery Group-180 Ah



Ref.	Part No.	Description	Qty.
1	630124	Battery, 12V 180Ah	2
2	630121	Charger, 24V 20A 60Hz 120V	1
3	630376	Stop, Battery	1

09165/09132

Fig. 1 - Electric Motor Breakdown, 630035



09174/09173

Ref.	Part No.	Description	Qty.
▽	630035	Electric Motor	1
▲ 1	630610	Lead Assembly (Positive)	1
▲ 2	630611	Lead Assembly (Negative)	1
▲▽ 3	630608	Commutator Bracket Assy (Including Brush Board Assy)	1
▲▲ 4	612410	Brush Assembly	4
▲▲ 5	602131	Brush Spring	4
▲ 6	602088	Bearing	1
▲ 7	630609	Gearbox Assembly	1
▲ 8	630607	Bearing	1
▲ 9	630612	Strain Relief	2

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