# AS3200T AUTOMATIC SCRUBBER

Chemicals Equipment Programs

Process



#### 32" Automatic Scrubber

Built rugged for heavy use, this automatic scrubber will compliment any floor care program. Simple controls make training easy. It's large capacity increases productivity and the heavy duty aluminum squeegee assembly provides maximum water recovery.

#### **Applications**

- General cleaning
- · Heavy duty cleaning
- Stripping

#### **Features**

- Simple design (Easy training and operation)
- Large capacity (Enhances productivity)
- Heavy duty aluminum squeegee (Provides maximum recovery)
- Self propelled (Easy to maneuver)





AS3200T controls and features



#### Warranty

Tank: 10 Year

All other compents: 3 Year (except wear items)\*

\*Please refer to Betco Equipment Price/Product Guide for complete equipment warranty information.

#### **Specifications**

Cleaning path	32"
Pad driver	(2) 13"
Brush motor	
Brush pressure	
Brush speed	
Drive motor	
Vacuum motor	3-stage, 36 volt
Solution control	Gravity feed
Solution tank	
Recovery tank	
Length	60"
Width	
Height	
Weight	850 lbs. w/batteries
Volts	36 volt system
Batteries	
Run time	
Tires(2) 10'	heavy duty nonmarking
Casters(2) 5'	
Productivity	

#### Available In

AS3200T Automatic Scrubber: Item #E12333-00

Literature Item #E12333-92

02.05





## **AS3200T Automatic Scrubber**

Item #E12333-00

Operator's Manual Parts Schematic



Chemicals

Equipment

**Programs** 

Process



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# **SAFETY INSTRUCTIONS**

Hard bel	Ephnation or Description of bland bel
DANGER	Failure to follow safety instructions labeled could result in severe injury or death to the machine operator or others.
WARNING	Failure to follow safety instructions labeled could result in injury to the machine operator or others. Also, machine or property damage could occur.
(CAUTION)	Failure to follow safety instructions labeled could result in damage to the machine or damage to other property.
	Organists Type and Millertanierics with resident Southber May Toxicologists for the discussion
DANGER	This manual contains important information about your machine. Read and understand all instructions before operating the machine. Failure to read and follow the instructions could result in injury to the person operating the machine or injury to others. Damage to the machine or other property could occur if instructions are not followed.
DANGER	Do not operate this machine around any solvents, thinners, or other flammable liquids or materials. Electrical sparks can cause a fire or ever an explosion.
DANGER	Do not smoke around the machine. Also, keep all sparks and flames away from the batteries. The batteries generate gases that can cause ar explosion.
DANGER	Special care needs to be used when working on or near the batteries. Wear eye protection. Do not lay tools on batteries, as they may short out battery terminals. Do not wear metal jewelry, as it may short out battery terminals.
DANGER	Charging batteries can be dangerous. Be aware that the battery charger may have a relatively low voltage output, but the current output is very high and therefore dangerous. Do not operate the charger if any parts of the charger or charger cords are damaged. Do not stand on a wet floor when connecting or disconnecting charger to the power outlet or to the machine.

Safety Instructions are continued on the next page

## SAFETY INSTRUCTIONS (continued from previous page)

DANGER	Battery acid is dangerous. Wear eye and face protection, hand protection, and body protection when working on and around batteries. If you get acid on your skin, wash off immediately. If you get acid on your clothing, remove clothing and wash any skin that was in contact with the clothing. Baking soda mixed with water will help to neutralize the acid on your skin.
DANGER	The machine is very heavy, so be very careful when loading, transporting, and unloading the machine. Follow the "Procedures for Loading, Transporting, and Unloading Automatic Floor Scrubber" (on a separate page).
WARRING	Do not pick up dust; machine is for wet pick-up only.
WARNING	Keep all body parts, clothing, and objects away from moving parts.
WARNING	Operate machine from the rear, not from the side.
WARNING	Disconnect a wire to the batteries before working on the machine.
WAFRING	Do not operate machine with charger plugged in.
WAFMING	Do not operate machine with any parts damaged or missing.
WARRING	Do not operate close to stairs, loading docks, or other drop-offs. Do not park machine in such a manner that it could roll, forward or backward, off a drop-off.
WARNING	Authorized personnel must perform maintenance and repairs. Do not alter or modify the machine, unless authorized by the manufacturer.
WARNING	Do not expose the electrical components to water or excessive moisture.
WARNING	Always put caution signs around the areas that are being cleaned.
WARRING	Discharge wastewater property. Improper discharge of wastewater is illegal. Understand and follow all Federal, State, and Local laws regarding disposal of wastewater.
WATEHING	Do not use machine as a "ladder". Do not use machine as a "forklift" to push stuff around. Do not ride or let anyone ride on the machine.
CAUTION	Your machine warranty may be voided if parts other than PowerBuff parts are used.

# Procedures for Loading, Transporting, and Unloading Automatic Floor Scrubber



The machine is very heavy, so be very careful when loading, transporting, and unloading the machine. Use at least two people to load or unload the machine.

Loading Procedure Using a Ramp with a Traction Drive Scrubber

- Ramp must be long enough so that climb into van, truck, or trailer is no more than 20 degrees. (This would permit a height of 2'4" for a 7-foot ramp, 2'8" for an 8-foot ramp, and 3'0" for a 9-foot ramp).
- A short "pre-ramp" may be needed to prevent pad drivers from dragging.

o Ramp must be secured to vehicle, and be clean and dry.

Remove squeegee assembly and pad drivers.

Machine must be driven straight up the ramp and never at an angle.

Loading Procedure Using a Ramp with a Brush Drive Scrubber

o It is not recommended that a brush drive scrubber be loaded using a ramp with an incline of more than 7 degrees. The machine is not self-propelled and therefore it is not able to assist itself up a ramp. It is too heavy to manually push up a steep incline.

 If you must load with a ramp, the incline must be no more than 7 degrees. (This would permit a height of no more than one foot for an 8-foot ramp).

Ramp must be secured to vehicle, and be clean and dry.

Remove squeegee assembly and pad drivers.

Machine must be driven straight up the ramp and never at an angle.

Loading Procedure Using a Lift Gate

Lift gate must have ample capacity to lift the scrubber

- Lift gate must be long enough to accommodate scrubber in the direction that it will be loaded onto the van. Do not load scrubber sideways, because it is dangerous to turn the scrubber while on the lift gate.
- Wheels must be firmly chocked to prevent scrubber from rolling off the lift gate.

Securing Scrubber

- Scrubber must be secured, so that it will not roll or turn over. Use chocks and tie downs to secure scrubber.
- Please be aware that a scrubber is very heavy, and that a metal bulkhead in a van may not contain scrubber in the event of an accident. The equipment in a van can be more dangerous than the accident itself.

Unloading Procedure Using a Ramp with a Traction Drive Scrubber

 Ramp must be long enough so that removal can be controlled. Use same height restrictions as used for loading scrubber.

Ramp must be secured to vehicle, and be clean and dry.

A small pre-ramp may be needed to prevent pad drivers from dragging.
 Machine must be driven straight down the ramp and never at an angle.

Use slow forward speed to slow descent as needed.

Unloading Procedure Using a Ramp with a Brush Drive Scrubber

 Ramp must be long enough so that removal can be controlled. Use same height restrictions as used for loading scrubber.

Ramp must be secured to vehicle, and be clean and dry.

Machine must be driven straight down the ramp and never at an angle.

Do not let machine run over you or anyone else as it comes off ramp.

# **AUTOMATIC FLOOR SCRUBBER SPECIFICATIONS**

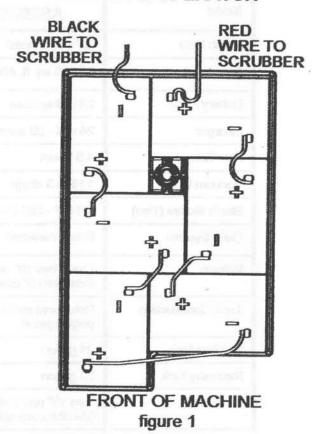
Model AS2600B		AS2600T	AS3200	
Scrub Path 26" offset head		26" offset head	32" symmetrical head	
Coverage	30,000 sq. ft. / hour	30,000 sq. ft. / hour	38,000 sq. ft. / hour	
Battery Pack	24 volt system	24 volt system	36 volt system	
Charger	24 volt - 20 amp	24 volt - 20 amp	36 volt - 20 amp	
Run Time	4.5 hours	4 hours	5.5 hours	
Vacuum Motor	1 HP - 3 stage	1 HP - 3 stage	1 HP - 3 stage	
Brush Motors (Two)	3/4 HP - 200 rpm	3/4 HP - 200 rpm	3/4 HP - 200 rpm	
Drive System	Brush Assisted	1/2 hp sealed transaxle	1/2 hp sealed transaxle	
Wheels	Front: two 10" solid Rear: two 5" castors	Front: two 10" solid Rear: two 5" castors	Front: two 10" solid Rear: two 5" castors	
Tank Construction	Rotational molded polyethylene	Rotational molded polyethylene	Rotational molded polyethylene	
Solution tank	24 gallon	24 gallon	24 gallon	
Recovery tank 26 gallon		26 gallon	32 gallon	
Brushes	Two 13" pad holders (Brushes are optional)	Two 13" pad holders (Brushes are optional)	Two 16" pad holders (Brushes are optional)	
Forward Speed	Walking speed	Variable to 290 ft/min (3.3 mph)	Variable to 290 ft/min (3.3 mph)	
Reverse Speed	Walking speed	Variable to 145 ft/min (1.6 mph)	Variable to 145 ft/min (1.6 mph)	
Brush Pressure	80 lbs and 200 lbs	80 lbs and 200 lbs	80 lbs and 220 lbs	
Brush Lifting	Mechanical	Mechanical	Mechanical	
Squeegee	34" heavy duty curved tracking squeegee	34" heavy duty curved tracking squeegee	40" heavy duty curved tracking squeegee	
Dimensions (no skirt, no squeegee)	52" long 25" wide 43" tall	52" long 25" wide 43" tall	60" long 25" wide 43" tall	
Weight with Batteries	685 lbs.	710 lbs.	850 lbs.	
Warranty	5 years on parts 10 year on tanks	5 years on parts 10 year on tanks	5 years on parts 10 year on tanks	

# **BATTERY INSTALLATION AND CHARGING**

BACK OF MACHINE TOWARD OPERATOR

## **BATTERY INSTALLATION**

- Turn off all switches.
- Drain solution tank and recovery tank.
- Disconnect recovery dump hose from hooks on rear of machine so that recovery tank can lift.
- Lift recovery tank lid and tilt up recovery tank.
- Install batteries as shown on figure 1.

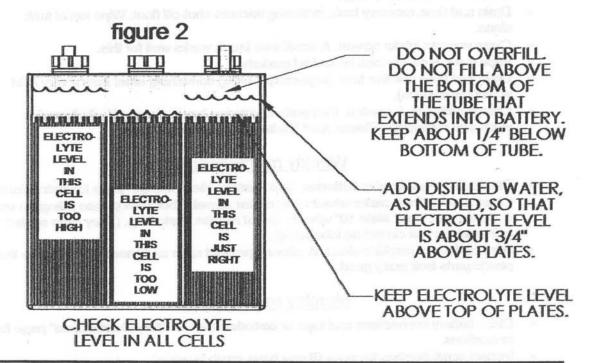


## **BATTERY CHARGING**

- Place the charger on a safe place. Make sure that air can circulate around the charger. Do not get the charger wet.
- · All switches on scrubber must be off.
- Do not remove battery caps (the caps are vented).
- Do not charge scrubber in a wet area.
- Do not stand in a wet area when plugging in charger to the 110 volt receptacle or plugging into the scrubber.
- Connect the charging plug from the charger to the charging plug on the back of the scrubber (item 16)
- Plug in the charger to a properly grounded 110 volt receptacle.
- Indicator needle will rise and then will fall slowly as batteries charge.
- Charger will shut off automatically when batteries are fully charged.

## **BATTERY MAINTENANCE**

- To receive the longest life from the batteries, charge them when they have between 25% and 50% of a full charge.
- Do not allow batteries to remain in a discharged state for very long, as this shortens the total battery life.
- Be aware that a discharged battery will freeze easily.
- Check the electrolyte level weekly. Top off with distilled water as shown in figure 2.
   Do not overfill. Make sure that all plugs are tight.
- Make sure battery connections are tight and free from corrosion. A baking soda and water solution and a wire brush are helpful when cleaning battery connections.
   Keep caps on when cleaning batteries, so that electrolyte is not contaminated.





!!! BATTERIES ARE DANGEROUS!!!
READ THE SAFETY INSTRUCTIONS
IN THE FRONT OF THIS MANUAL
FOR SPECIFIC WARNINGS

#### IF YOU WOULD LIKE TO LEARN MORE ABOUT BATTERIES

THERE IS A VERY INFORMATIVE PUBLICATION AVAILABLE. IT COVERS SUBJECTS SUCH AS BATTERY TERMS AND HOW A BATTERY WORKS TO SPECIFIC GRAVITY TESTING WITH A HYDROMETER AND DIAGNOSIS OF BATTERY PROBLEMS.

YOU CAN OBTAIN A COPY OF THE "BATTERY SERVICE MANUAL" FROM

BATTERY COUNCIL INTERNATIONAL 401 N. MICHIGAN AVENUE CHICAGO, IL 60611 PHONE 312-644-6610

## PREVENTATIVE MAINTENANCE ITEMS

#### Before starting work

- Inspect pads for wear. Replace if needed.
- Turn on brush motors and check battery indicator gauge to assure that there is enough charge to scrub floor.

## After you are finished using scrubber for the day

- Raise squeegee and leave up.
- · Raise brushes and leave up.
- Drain and rinse recovery tank, including vacuum shut-off float. Wipe top of tank clean.
- Clean vacuum intake screen. A small wire brush works well for this.
- Wipe down recovery tank lid and lid gaskets.
- Drain and rinse solution tank (especially if using something other than a very mild scrubbing solution).
- Charge batteries, if needed. Remember batteries have a longer life if allowed to discharge sufficiently. Please read "Battery Maintenance" page.

#### Weekly maintenance

- Check electrolyte level in batteries. See "Battery Maintenance" page for instructions.
- Clean and lubricate caster wheels and caster swivel. There are grease fittings to use a grease gun. Note: Main 10" wheels do not require lubricating. (They have sealed ball bearings that cannot be lubricated).
- Wipe surface of machine clean. A silicone product such as "Armor All" will make the plastic parts look really good.

## Monthly maintenance

- Clean battery connections and tops of batteries. See "Battery Maintenance" page for instructions.
- Inspect scrub brushes for wear (If you have scrub brushes).
- General visual inspection for problems.

#### Semi-annual maintenance

- Inspect carbon brush wear in brush motors.
- Lubricate all pivot points with a light oil. Porous bushings will absorb some oil to distribute over time.
- Lubricate brush lift arm sliding surface with a heavy grease. This is located behind the back panel. Bearing grease may be used.

#### As needed items

- Adjust squeegee tilt. See "Squeegee Information" page.
- Turn, flip, or replace squeegee blade for streak free pickup.
- Replace intake screen and intake screen gasket.

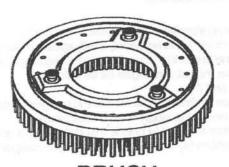
## PAD DRIVER AND AVAILABLE BRUSHES



PART NO. DESCRIPTION

AS32801 16" pad driver (must be used with an appropriate pad)\*

\* CONSULT YOUR JANITORIAL SUPPLIER FOR ADVISE ON THE PROPER PAD TO USE FOR YOUR APPLICATION. SCRUB AND STRIP PADS ARE COLOR CODED FROM LEAST AGRESSIVE TO MOST AGRESSIVE AS FOLLOWS: WHITE - RED - BLUE - GREEN - BROWN - BLACK

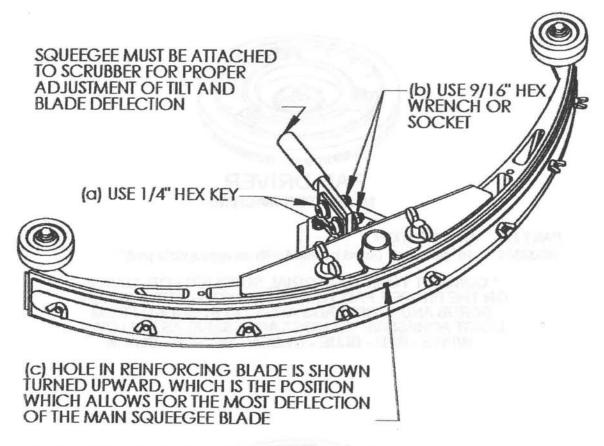


#### BRUSH NEED 2 PER MACHINE

PART NO.	DESCRIPTION	USES
AS32802	Polyscrub	Very light scrubbing (replaces white pads)
AS32803	Dynascrub	Light to medium scrubbing (replaces red pads)
AS32804	Powerscrub	Medium to aggressive scrubbing (replaces blue or green pads)
AS32805	Stratagrit	Very aggressive scrubbing or stripping (replaces brown or black pads)

### A BRUSH WILL OUTLAST A PAD AT LEAST 100 TO 1

## SQUEEGEE INFORMATION AND ADJUSTMENTS



Problem: Squeegee is leaving streaks at the center or the ends.

Cause: Squeegee is not level. If it is not level, it will streak in the center or at the ends.

Solution: Make sure that the tips and the center of main squeegee blade are uniformly deflected and not leaving streaks. Adjust squeegee tilt as follows:

Step 1: Loosen (a) and (b)

Step 2: Tilt squeegee in direction needed for squeegee to deflect uniformly along entire length.

Step 3: Tighten (a) and (b) enough to hold temporarily.

Step 4: Move scrubber forward to check that deflection is uniform.

Step 5: If correct, tighten (a) and (b) as much as you can; or if not correct, start over at step 1.

Problem: Squeegee is leaving streaks not related to squeegee being level.

Cause: (1) Trash under main squeegee blade.

(2) Blade edge is worn or nicked

Solution: (1) Clear trash.

(2) Turn the blade. All four edges can be used. If all edges have been used, then replace the main squeegee blade.

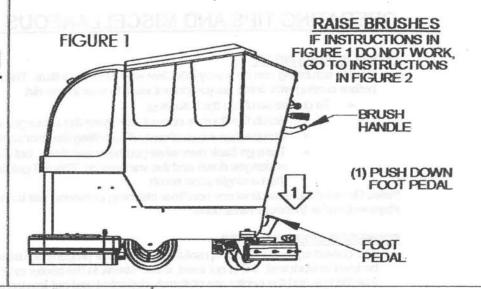
Problem: Main squeegee blade is deflecting too much or too little.

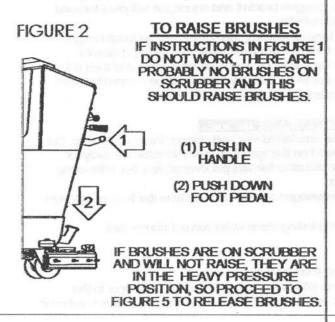
ause: Reinforcing blade is turned wrong for the floor conditions.

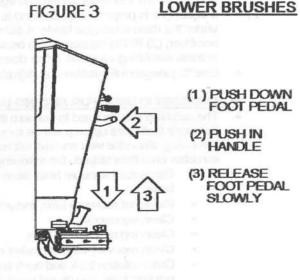
Solution: Holes on the reinforcing blade are offset. Blade can be flipped to put longer or shorter side toward floor. Longer side has a hole (c) at center. Facing the hole down makes the main blade stiffer and allows it to deflect less. Hole turned upward allows blade to deflect more.

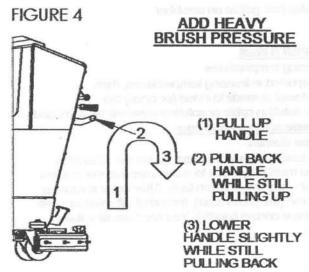
## BRUSH OPERATION

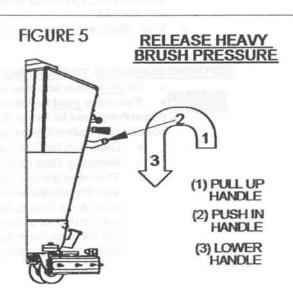
HOW TO:
RAISE BRUSHES,
LOWER BRUSHES,
ADD HEAVY PRESSURE
TO BRUSHES, AND
RELEASE PRESSURE
FROM BRUSHES











## **OPERATING TIPS AND MISCELLANEOUS INFORMATION**

#### FLOOR SCRUBBING TIP

- Double scrubbing can be a very effective way to clean a floor. This especially important before coating with finish, as you do not want to wax in any dirt.
  - To double scrub do the following:
    - Scrub the floor as normal, but leave the squeegee up and the vacuum off.
    - Scrub a few aisles ahead while letting the floor soak.
    - Then go back over what you have wet down, but this time with the squeegee down and the vacuum on. This will get the floor much cleaner than a single pass scrub.

**Note:** Do not double scrub where non-floor cleaning personnel will be walking, since the floor stays wet and is therefore hazardous.

#### SQUEEGEE OPERATING TIPS

- The curved squeegee picks up solution very well if property adjusted. The squeegee must
  be level to work well. If it is not level, it will streak in the center or at the ends. Make sure
  that the tips and the center are uniformly deflected and not leaving streaks. If squeegee is
  not level, then loosen the two bolts on squeegee bracket and squeegee will pivot forward
  and backward. Level squeegee and tighten bolts.
- If squeegee is properly adjusted and is leaving streaks, then there may be trash caught
  under the main squeegee blade. A little trick that will clear most trash is to (1) stop the
  scrubber, (2) lift the squeegee, (3) back up a little, (4) lower the squeegee, and then (5)
  resume scrubbing as usual. If this does not work, then the trash must be cleared by hand.
- See "Squeegee Information and Adjustments" page for more information.

#### IF SCRUBBER IS USED FOR PICKING UP WAX AND STRIPPER

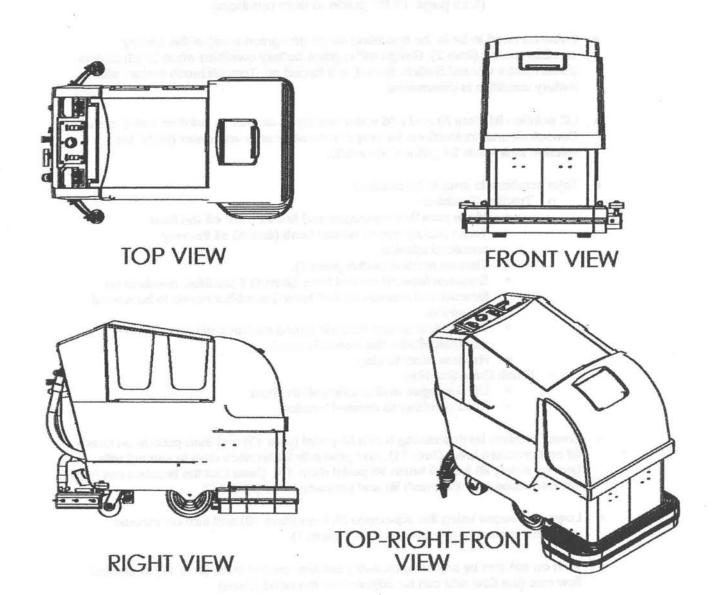
- The scrubber can be used to vacuum the emulsified wax and stripper from a floor strip. But, be aware that more upkeep will be required on the scrubber than if it were used only for scrubbing, since the wax and dirt will remain after the stripper evaporates. So, after using scrubber on a floor strip do the following.
  - Disconnect vacuum hose from squeegee and vacuum clean water through vacuum hose.
  - Rinse out recovery tank, including letting clean water run out dump hose.
  - Clean squeegee.
  - Clean top of recovery tank.
  - Clean recovery lid and gasket on recovery lid.
  - Drain solution tank and flush lines with clean water. (If you have stripper in the solution tank, you do not want it on the floor if the next job the scrubber is used on is just a scrub).
  - Wipe down anywhere where wax slop has gotten on scrubber.

#### **EXPOSING SCRUBBER TO FREEZING TEMPERTURES**

Do NOT leave scrubber in freezing temperatures

- If scrubber <u>must</u> be left or transported in freezing temperatures, then
  precautions must be taken. If an attempt is made to close (or open) the
  solution valve when it is frozen, the solution cable or solution valve will be damaged.
  - Drain Solution Tank and <u>leave solution valve open.</u>
  - Recovery Tank must also be drained.
  - Then after the scrubber is inside place to be used, do not yet attempt to shut the solution valve. You must first check to make sure that the solution valve is not frozen. Run hot water into solution tank. After water is running out the bottom of the machine (the brush area), then shut off solution valve (do not force the solution valve control handle). You can then fill solution tank and use the scrubber.

# DESCRIPTIONS OF VIEWS SHOWING PARTS ON SCRUBBER



IN THIS MANUAL, MANY OF THE PARTS IN THE DRAWINGS ARE SHOWN CORRECTLY ASSEMBLED, OR AT LEAST NEAR THE POSITIONS THEY ARE LOCATED ON THE SCRUBBER.

THIS METHOD WILL HELP TRACE A PROBLEM, FIND WHAT IS NEEDED TO CORRECT THE PROBLEM, AND THEN PROPERLY REASSEMBLE THE MACHINE.

THE ELECTRICAL LAYOUT HAS ALSO BEEN SIMPLIFIED, SO THAT PROBLEMS CAN BE EASILY TRACED AND REPAIRED.

## Operating Procedures

(See page 19 for guide to item numbers)

- Batteries need to be in the operating range (the green area) of the battery
  condition meter (item 2). Gauge will register battery condition when brush motors
  (Brush Motor Control Switch, item 6) are turned on. Turn off brush motors after
  battery condition is determined.
- Lift solution lid (item A) and add water and liquid cleaner to solution tank (item B).
   Consult cleaner instructions for proper ratio of cleaner and water (Note: the solution tank holds 24 gallons when full).
- Take scrubber to area to be cleaned
  - Traction Scrubber
    - Make sure that squeegee and brushes are off the floor.
    - Turn variable speed control knob (item 8) all the way counterclockwise.
    - Turn on traction switch (item 9).
    - Squeeze forward control lever (item 1) if scrubber needs to go forward and reverse control lever if scrubber needs to be moved backward.
    - Gradually increase variable speed control knob (item 8) until scrubber attains the needed speed.
    - Release lever to stop.
  - Brush Drive Scrubber
    - Lift squeegee and brushes off the floor.
    - Push scrubber to desired location.
- Lower brushes by depressing brush lift pedal (item 13) and then push in on brush
  lift and pressure lever (item 11), and gradually let brushes drop to contact with
  floor by slowly lift foot off brush lift pedal (item 13). (Note that the brushes can be
  lowered using only the brush lift and pressure lever (item 11)).
- Lower squeegee using the squeegee lift lever (item 18) and turn on vacuum using the vacuum motor control switch (item 7).
- Turn on solution by adjusting cleaning solution control lever (item 17) to desired flow rate (the flow rate can be adjusted as the need arises).
- Turn on brushes using the brush control switch (item 6) and immediately move scrubber forward.
  - Traction Scrubber adjust speed as needed with the variable speed control knob (item 8).
  - Brush Drive Scrubber push to desired speed. There is no need to keep the forward control lever depressed. The brush drive scrubber should move easily by pushing alone.

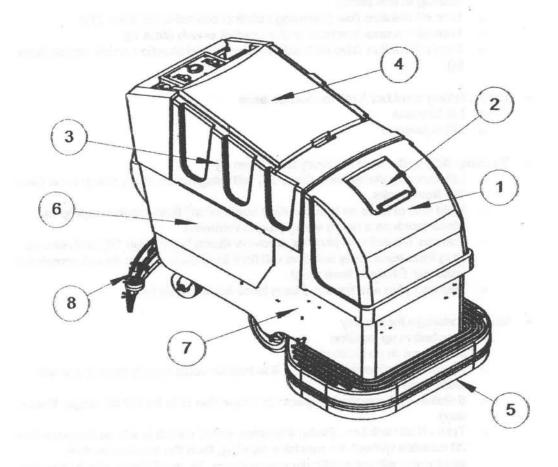
Operating procedures are continued on the next page

## **Operating Procedures**

(continued)

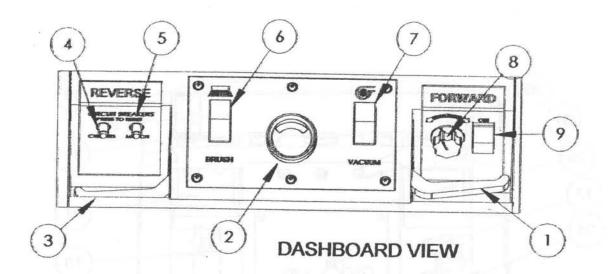
- When you stop scrubbing an area.
  - Turn off brushes (brushes or pads can wear through the wax if left running in one place)
  - o Turn off solution flow (cleaning solution control lever (item 17))
  - Turn off vacuum (vacuum motor control switch (item 7))
  - Turn off traction drive on traction drive model (traction on/off switch (item
     9))
- Before taking scrubber back to storage area
  - Lift brushes
  - Lift squeegee
- To dump dirty water from recovery tank (item C)
  - Lift recovery dump hose (item 12) with plug for recovery dump hose (item 10) from hooks.
  - Hold end of hose so that the dirty solution will flow into the appropriate place (such as a drain) when plug is removed.
  - Loosen T-handle on plug for recovery dump hose (item 10) and remove plug from hose. Dirty solution will flow from tank. (Note: do not completely unscrew T-handle from plug).
  - Replace plug and tighten. Hang hose back on hooks.
- Machine storage for the day
  - o Brushes in up position
  - Squeegee in up position
  - Recovery tank emptied (Note: it is best to occasionally rinse it out with clean water).
  - Solution tank emptied (especially if machine is to be left for longer than a day).
  - Turn off all switches. (Note: if traction on/off switch is left on for more than 20 minutes without the machine moving, then the traction control electronics will automatically power down. To reset them, simply turn the traction on/off switch off and then back on).

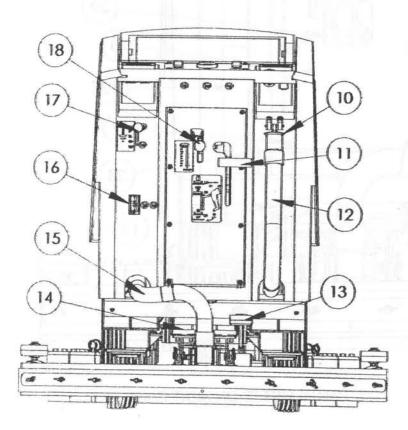
# MAIN SCRUBBER PARTS



TEM	PART#	DESCRIPTION AND NOTES
1	AS26/32755	Solution Tank (see Scrubber Tank and Lid page for other Tank parts)
2	AS26/32754	Solution Lid (see Scrubber Tank and Lid page for other Lid parts)
3	AS32753	Recovery Tank (see Recovery Tank and Lid page for other Tank parts)
4	AS26/32752	Recovery Lid (see Recovery Tank and Lid page for other Lid parts)
5	AS32751	Splash Skirt (see Splash Skirt page for other Splash Skirt parts)
6	AS26/32750	Plastic Base
7	AS321121	Main Frame
8	AS321802	Squeegee Assembly (entire assembly including yoke bar and blades)

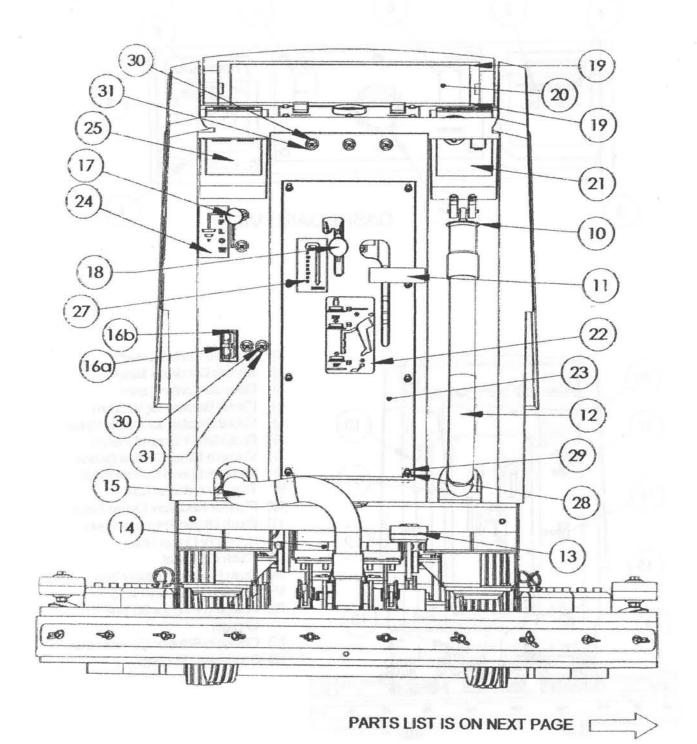
# SCRUBBER CONTROLS



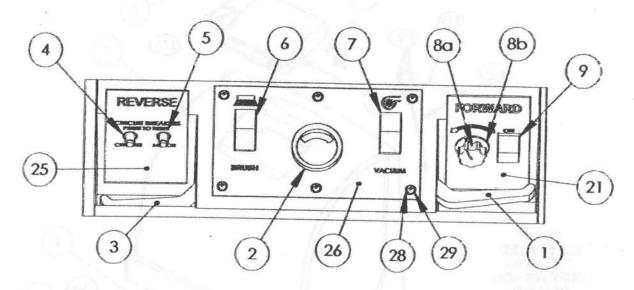


- 1) Forward Control Lever
- 2) Battery Condition Meter
- 3) Reverse Control Lever
- 4) Circuit Breaker for Vacuum
- 5) Circuit Breaker for Brush Motors
- 6) Brush Motor Control Switch
- 7) Vacuum Motor Control Switch
- 8) Variable Speed Control Knob
- 9) Traction on/off switch
- 10) Plug for Recovery Dump Hose
- 11) Brush lift and Pressure Lever
- 12) Recovery Dump Hose
- 13) Brush Lift Pedal
- 14) Drain Hose for Battery Tray
- 15) Vacuum Recovery Hose
- Charging Plug for 36 Volt Charger
- 17) Cleaning Solution Control Lever
- 18) Squeegee Lift Lever

## REAR VIEW OF SCRUBBER

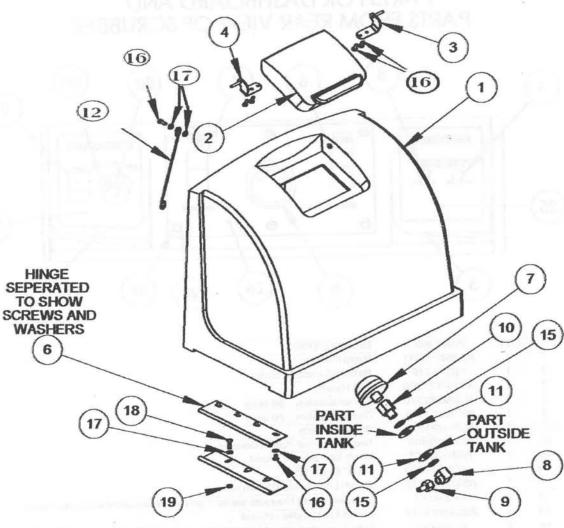


## DASHBOARD LAYOUT AND PARTS FOR DASHBOARD AND PARTS FROM REAR VIEW OF SCRUBBER



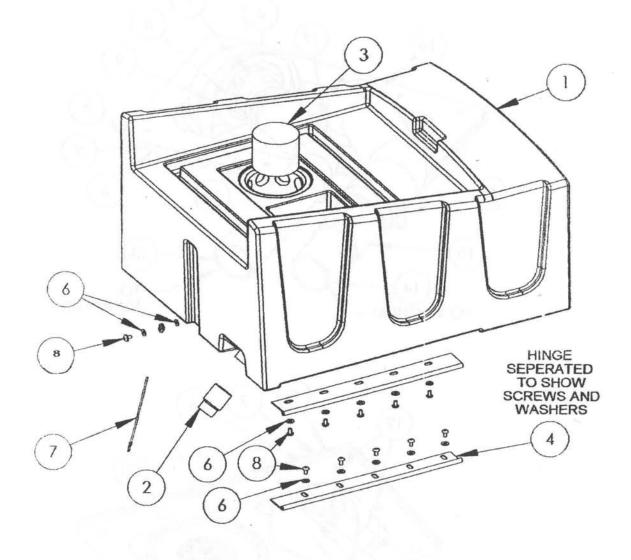
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	AS26/321301	Right Handle
2	1	AS321210	Battery Condition Meter
3	1	AS26/321300	Left Handle
4	1	AS26/321370	Circuit Breaker - 30 amp
5	1	AS26/321371	Circuit Breaker - 70 amp
,7,9	3	AS26/321372	Rocker Switch
8a	1	AS26/32850	Speed Control Polentiometer
86	1	AS26/32851	Knob for Speed Control
10	1	AS26/321230	1-1/2" Drain Plug
11	1	AS26/321118	Brush Lift Handle Weldment
12	1	>> see >>	for Recovery Drain Hose parts see the "Vacuum System and Solution System" pages
13	1	AS26/321127	Brush Lift Handle - Pedal
14	1	>> see >>	for the Battery Drain Hose parts see the "Vacuum System and Solution System" pages
15	1	>> see >>	for Vacuum Recovery Hose parts see the "Vacuum System and Solution System" pages
16a	1	AS32400	Charging Plug
16b	1	AS26/321104	Bracket for Charging Plug
17	1	AS32601	Solution Control Cable (includes knob)
18	1	>> see >>	for Squeegee Lift Handle parts see the "Brush Lift, Motor Mount, and Squeegee Lift pages
19	1	AS26/321275	Lid Flap
20	2	AS26/321109	Lid Flap Retainer
21B	1	AS26/321520	Forward Decal (for Brush Drive Scrubber)
1T	1	AS26/321531	Speed Control and Forward Devel (for Towns
22	1	AS26/321530	Speed Control and Forward Decal (for Traction Drive Scrubber)  Brush Position Decal
23	1	AS26/321102	Back Panel
24	1	AS321532	Flow Label
25	1	AS26/321500	Reverse Decal
26	7	AS26/321390	Dashboard
27	2	AS26/321510	Squeegee Decal
28	14	AS26/32352	Screw
29	14	AS26/32296	Nylon Washer
30	7	AS26/32353	Screw
31	7	AS26/32354	Flat Washer

# SOLUTION TANK AND SOLUTION TANK LID ASSEMBLY AND PARTS LIST



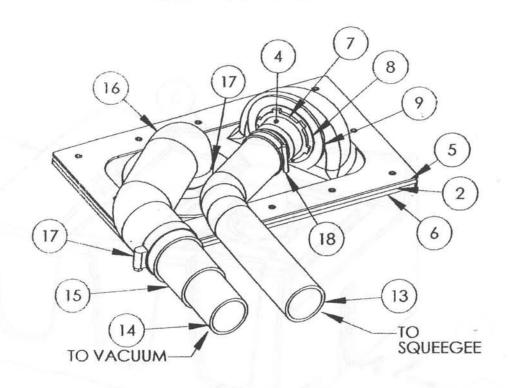
ПЕМ	QTY.	PART NO.	DESCRIPTION	
1	1	AS26/32755	Solution Tank (granite)	and the state of the state of
2	1	AS26/32754	Solution Tank Lid (black)	A somewhat is
3	1	AS26/321114	Hinge - solution lid - left	
4	1	AS26/321113	Hinge - solution lid - right	treatment &
5	4	AS26/32205	Bolt	COLUMN PROFESSION AND ADDRESS OF THE PERSON ADDRESS
6	1	AS26/32811	Hinge - Solution Tank	Service and the service of
7	1	AS26/321215	Solution Strainer	
8	1	AS26/32060	Hose fitting	4.100 - 1000 - 111
9	1	AS26/32054	Hose fitting	CALLES TO CALL
10	1	AS26/32063	Hose fitting	THE RESERVE
11	2	AS26/321260	Rubber Gasket	
12	1	AS26/321801	Restraining cable for solution tank	Comment of the commen
13	1	AS26/32206	Bolt	
14	2	AS26/32279	Washer	Anne ha
15	2	AS26/32275	Washer	
16	4	AS26/32268	Screw	
17	10	AS26/32274	Washer	-
18	3	AS26/32261	Screw	
19	3	AS26/32241	Nyloc nut	

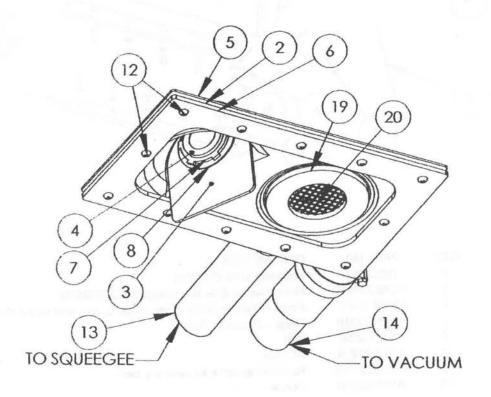
## RECOVERY TANK ASSEMBLY AND PARTS LIST



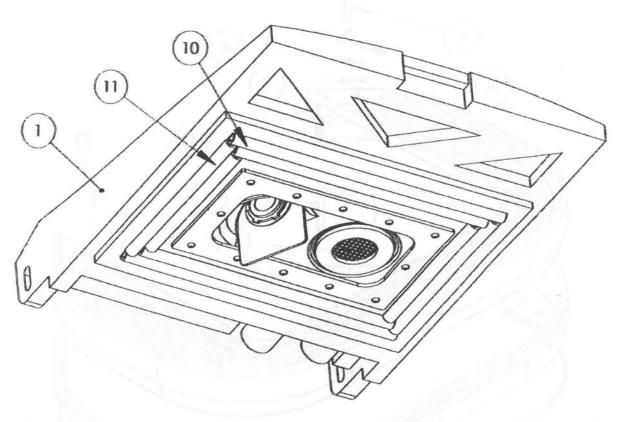
0704		
QIY.	PART NO.	DESCRIPTION
1	AS32753	Recovery Tank (Granite)
1	AS26/321815	Hose adapter (this is a modified AS26/32820)
1	AS26/ 32825	Foam Float assembly (float, weights, and cord come assembled)
1	AS26/32810	Hinge - Recovery Tank
1	AS26/32206	Bolt
12	AS26/32274	Washer
1	AS26/321800	Restraining cable for recovery tank
10	AS26/32268	Screw
	1	1 AS32753 1 AS26/321815 1 AS26/32825 1 AS26/32810 1 AS26/32206 12 AS26/32274 1 AS26/321800

# RECOVERY LID ASSEMBLY



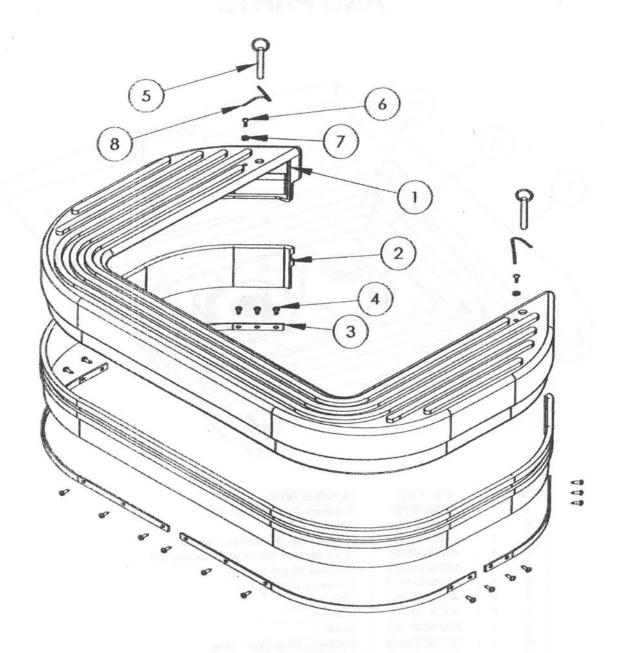


# RECOVERY LID ASSEMBLY AND PARTS



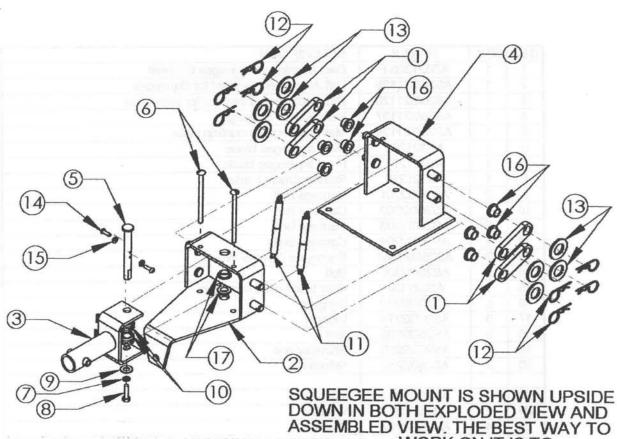
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	AS26/32752	Recovery Tank Lid (black)
2	1	AS26/32001	Vacuum Intake
3	1	AS26/321271	Rubber Flap (for vacuum intake)
4	1	AS26/32820	Hose adapter (for inside recovery lid)
5	1	AS26/321278	Vacuum intake gasket
6	1	AS26/321141	Recovery Lid Plate
7	2	AS26/32900	Pipe nut
8	2	AS26/32276	Washer
9	1	AS26/321261	Gasket
10	1	AS26/321818	Recovery lid gasket - long
11	1	AS26321819	Recovery lid gasket - short
12	12	AS26/32261	Screw
13	1	AS321803	Vac Hose - vac motor to recovery lid
14	1	AS26/321805	Vac Hose - squeegee to recovery lid
15	1	AS26/321355	Hose adapter
16	1	AS26/321806	Vac hose - inside recovery lid
17	2	AS26/32305	Hose Clamp
18	1	AS26/321000	Hose clamp
19	1	AS26/321274	Gasket for vacuum intake (self-adhesiv
20	1	AS26/32985	Vacuum intake screen

# SPLASH SKIRT ASSEMBLY AND PARTS LIST



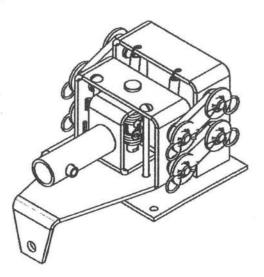
TEM	QTY.	PART NO.	DESCRIPTION
1	1	AS32751	Plastic Skirt
2	1	AS321272	Rubber Splash Skirt
3	1	AS321131	Skirt retainer, for splash skirt (includes all 4 pieces)
4	21	AS26/32257	Screw
5	2	AS26/32982	Detent Pin (single ball with grip ring)
6	2	AS26/32261	Screw
7	2	AS26/3224	Nyloc nut
8	2	AS26/32327	Lanyard for skirt detent pin

# SQUEEGEE MOUNT ASSEMBLY AND PARTS LIST



			MOOLIVIDE
ITEM	QTY.	PART NO.	DESCRIPTION
1	4	AS26/321120	Linkage Bar
2	1	AS26/321133	Squeegee mount housing
3	. 1	AS26/321140	Squeegee mount yoke
4	1	AS26/321129	Squeegee mount bracket
5	1	AS26/32830	Torsion pin
6	2	AS26/32328	Screw
7	1	AS26/32291	Lock washer
8	1	AS26/32206	Bolt
9	1	AS26/32279	Washer
10	2	AS26/32920	Torsion spring
11	2	AS26/32723	Squeegee mount return spring
12	8	AS26/32254	Hair pin cotter
13	8	AS26/32278	Washer
14	2	AS26/32329	Screw
15	2	AS26/32296	Nylon washer
16	8	AS26/32650	Flange Bushing
17	2	AS26/32653	Flange Bushing

WORK ON IT IS TO REMOVE IT FROM THE SCRUBBER AND TURN IT UPSIDE DOWN.

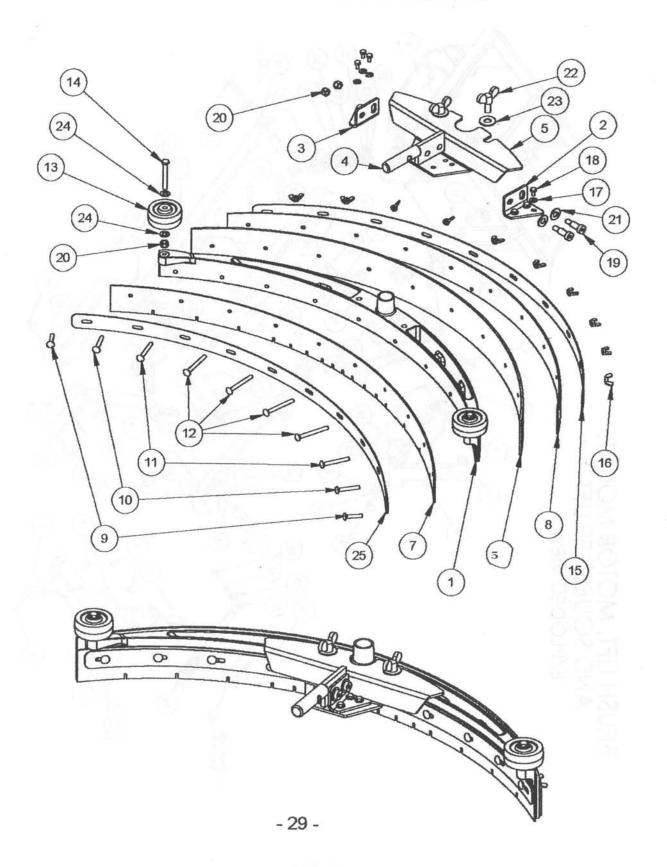


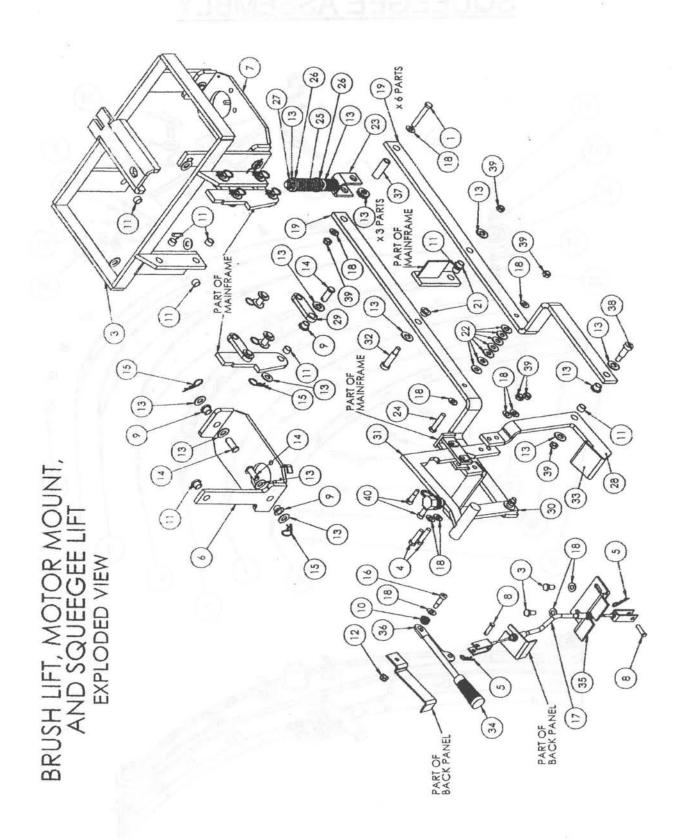
# SQUEEGEE ASSEMBLY PARTS LIST

ITEM	QTY.	PART#	DESCRIPTION
1	1	AS321325-F	Cast Aluminum Squeegee Channel
2	1	AS26/321125	Left Adjustment Bracket for Squeegee
3	1	AS26/321126	Right Adjustment Bracket for Squeegee
4	1	AS26/321137	Yoke Bar for Squeegee
5	1	AS26/321138	Main squeegee mounting plate
6	1	AS321269	Main squeegee blade
7	1	AS321273	Front squeegee blade
8	1	AS321270	Reinforcement blade
9	2	AS26/32201	Carriage Bolt
10	2	AS26/32202	Carriage Bolt
11	2	AS26/32203	Carriage Bolt
12	2	AS26/32204	Carriage Bolt
13	2	AS26/321381	Squeegee Bumper Wheel
14	2	AS26/32330	Bolt
15	1	AS321130	Rear blade retaining strap
16	8	AS26/32332	Wingnut
17	6	AS26/32279	Washer
18	6	AS26/32205	Bolt
19	2	AS26/32222	Shoulder bolt
20	2	AS2632244	Nylock nut
22	2	AS26/32231	Wingbolt
23	2	AS26/32277	Washer
24	4	AS26/32282	Washer
25	1	AS321110	Front blade retaining strap
26	1	AS321802	Entire Squeegee Assembly
*	1	AS26/32251	Clevis pin to connect squeegee to squeegee mount
*	1	AS26/32254	Har pin cotter for above clevis pin

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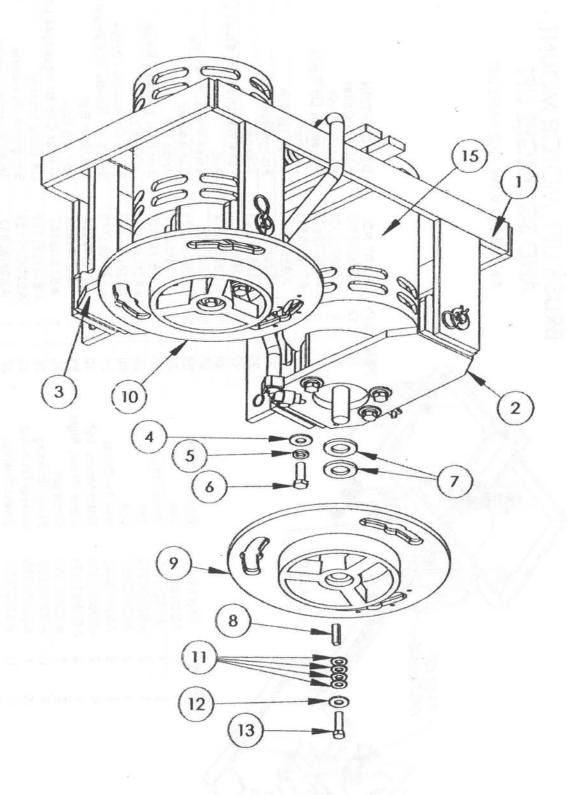
# **SQUEEGEE ASSEMBLY**



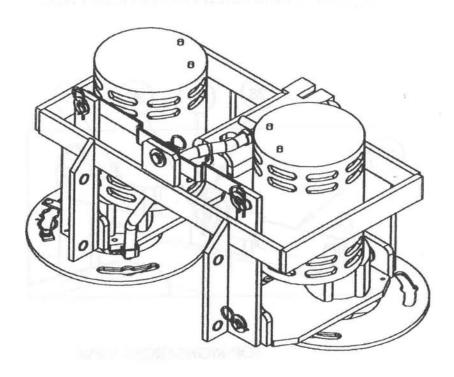


T Z	A S S S S S S S S S S S S S S S S S S S	BRUSH LIFT, MOTOR MOUNT, AND SQUEEGEE LIFT	ASSEMBLED VIEW AND PARTS LIST			ITEM QTY. PART NO. DESCRIPTION	 3 ASZ6/32226	1 AS26/32602	A S 26/32282		7	23 1 AS28/321139 Yoke Weldment for Brush Lift	1 AS26/32214	2 AS26/321221	1 AS26/32240	1 AS26/321127	4 AS26/321120	1 AS28/321128	31 AS26/321118	32 1 AS26/32224	33 1 AS26/32986	1 AS26/32992	35 1 AS26/321117	36 1 AS26/321135	1 AS26/32832	38 2 AS26/32222 Shoulder Bolt	
	A A A A A A A A A A A A A A A A A A A			4	1000	A	9	U		MIL				-111-	-		-		-4-						Notice of the Notice	Washer Washer	0000

# MOTOR FRAME AND MOTOR MOUNT



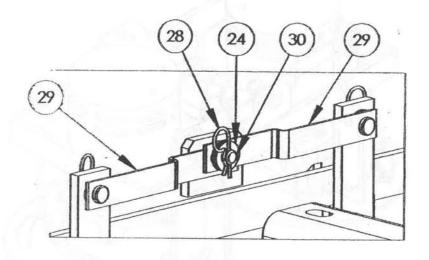
# MOTOR FRAME AND MOTOR MOUNT



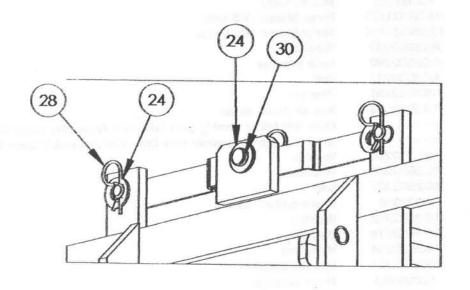
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	AS321122	Motor Frame
2	1	AS26/321123	Motor Mount - left side
3	1	AS26/321124	Motor Mount - right side
4	8	AS26/32283	Washer
5	8	AS26/32292	Lock Washer
6	8	AS26/32211	Bolt
7	4	AS26/32281	Washer
8	2	AS26/32338	Key for brush motor
9	1	>> see >>	Drive hub left assembly (see Drive Hub Assembly parts list)
10	1	>> see >>	Drive hub right assembly (see Drive Hub Assembly parts list)
11	16	AS26/32285	Washer
12	2	AS26/32286	Washer
13	2	AS26/32337	Bolt
15	2	AS32050	Brush motor - 36 volt
22	3	AS26/32282	Washer
24	6	AS26/32278	Washer
25	1	AS26/32244	Nyloc nut
28	6	AS26/32334	Hair pin cotter
29	2	AS321146	Motor Linkage
30	4	AS26/32248	Clevis pin

# MOTOR FRAME AND MOTOR MOUNT DETAILS





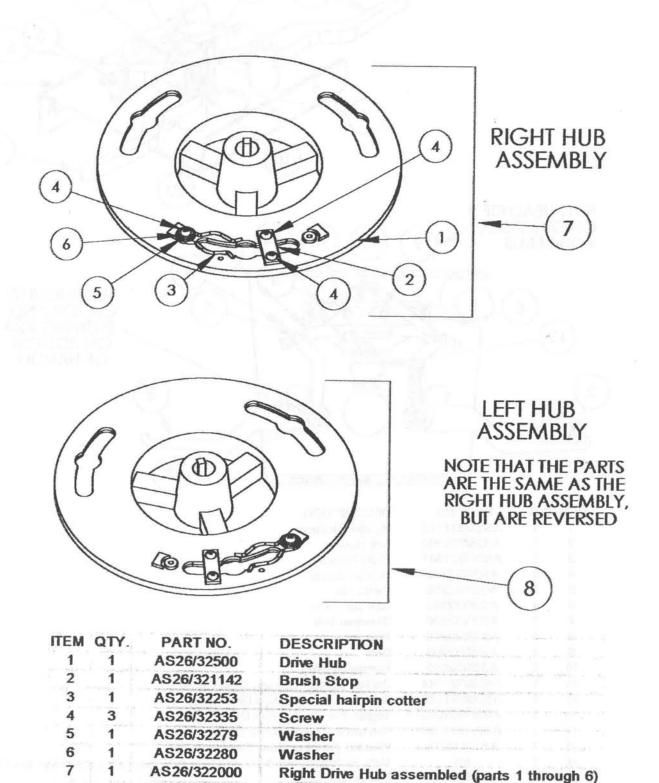
**TOP-RIGHT-FRONT VIEW** 



**BOTTOM-RIGHT-REAR VIEW** 

# DRIVE HUB ASSEMBLY AND PARTS LIST

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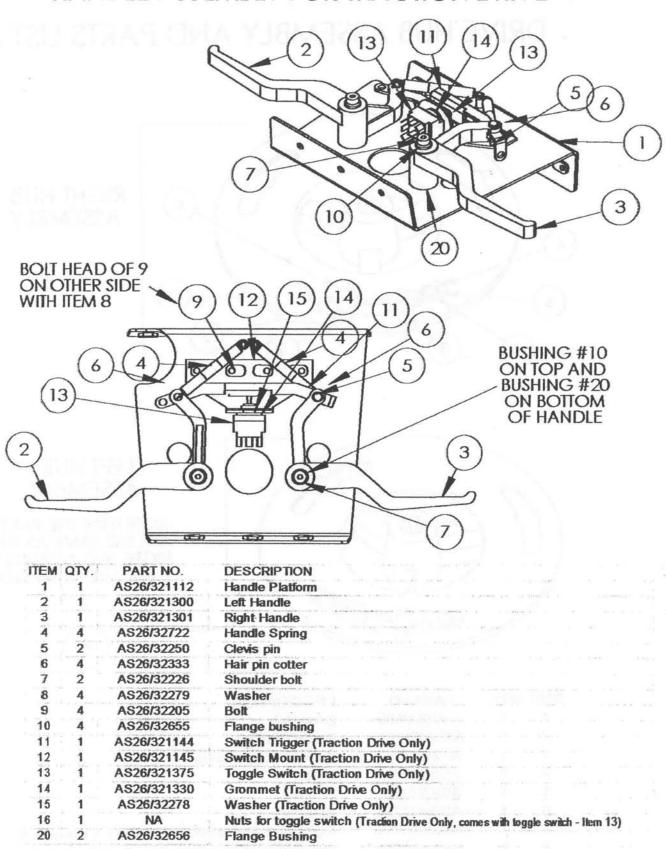
Left Drive Hub assembled (parts 1 through 6)

8

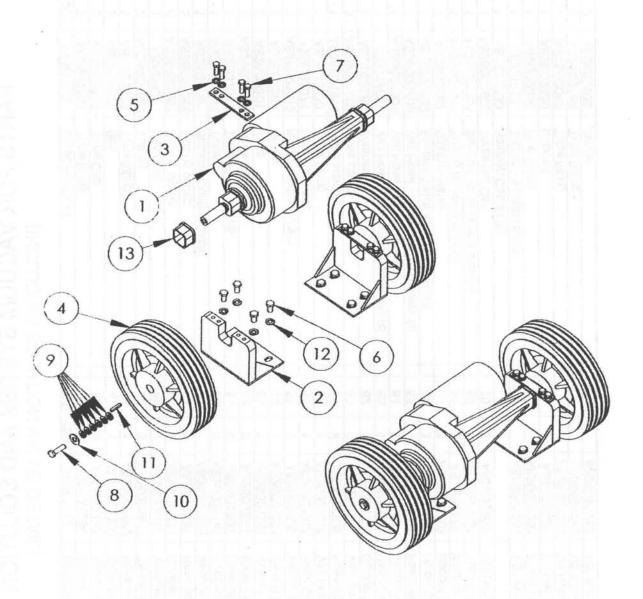
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AS26/322001

## HANDLE ASSEMBLY FOR TRACTION DRIVE



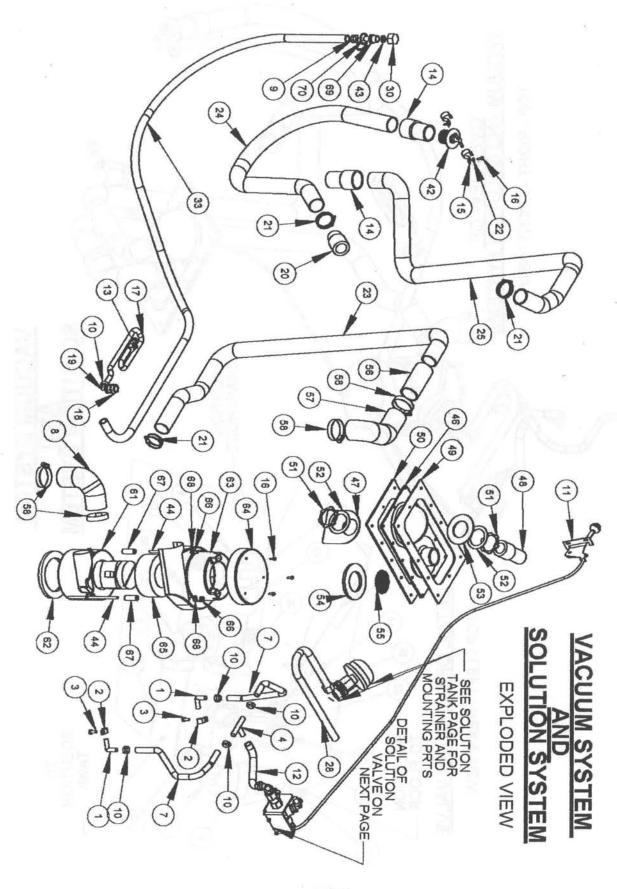
# TRANSAXLE ASSEMBLY AND PARTS LIST

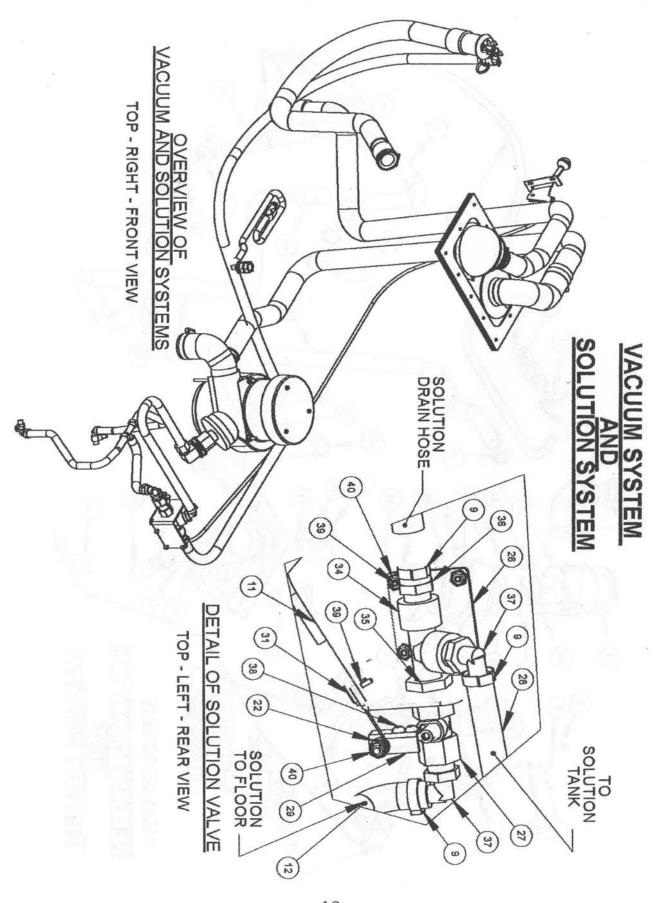


ITEM	QTY.	PART NO.	DESCRIPTION	177
1	1	AS32051	Transaxle	
2	2	AS26/321147	Transaxle Bracket	
3	2	AS26/321148	Transaxle Retainer	
4	2	AS26/321383	Wheel 10 inch (keyed for Transaxle)	10 (10)
5	16	AS26/32293	Lock washer	
6	8	AS26/32210	Bolt	
7	8	AS26/32337	Bolt	
8	2	AS26/32212	Bolt	
9	12	AS26/32292	Lock washer	-
10	2	AS26/32283	Washer	
11	2	A\$26/32336	Key for transaxle	
12	8	AS26/32292	Lock washer	
13	2	AS26/322002	Rubber mounting sleeve	

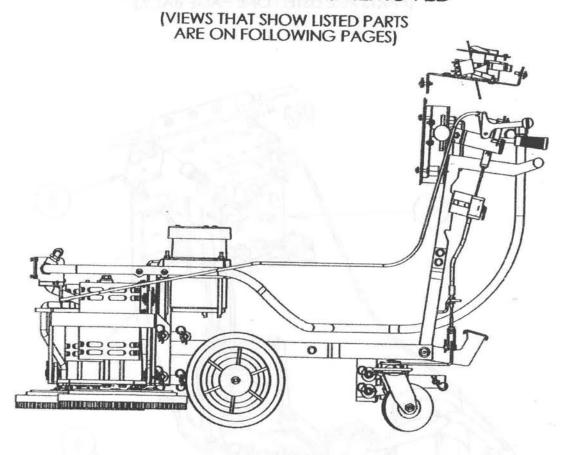
# PARTS FOR VACUUM SYSTEM AND SOLUTION SYSTEM (INCLUDING SOLUTION VALVE DETAIL)

38	37	36	35	34	33	3	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	5	14	13	12	11	10	9	8	7	4	ω	2	_	
2	N	_	_	_	1	_	_	_	_	_	_	1	1	-7	4	ω	_	_	N	_	O	2	2	_	_	_	O	4	_	2	_	2	2	N	6
AS26/32335	AS26/32058	AS26/32052	AS26/32350	AS26/32055	AS321812	AS26/32730	AS26/321900	AS26/321151	AS26/321811	AS26/32062	AS26/321132	AS26/321805	AS26/321804	AS321803	AS26/32280	AS26/321000	AS26/321815	AS26/32070	AS26/32071	AS26/321813	AS26/32269	AS26/32301	AS26/321353	AS26/32061	AS26/321810	AS26/32601	AS26/321266	AS26/321267	AS321807	AS26/321809	AS26/32073	AS26/32205	AS26/32339	AS26/32059	747 200
Screw	Tube fitting	Tube fitting	Locknut	Pipe fitting	Tubing - solution drain	Solution Cable Clip	Threaded Cap	Solution valve handle adapter	Tubing (to solution tank)	Solution Valve	Solution Valve and Cable Mount	Vac Hose - squeegee to recovery lid	Vac Hose - recovery drain	Vac Hose - vac motor to recovery lid	Washer	Hose clamp	Hose adapter	Tube fitting	Nylon lock nut	tubing - battery drain	Sorew	Jolip	Hose Cuff	Tube Pinch Clamp	Tubing	Solution Control Cable	Tubing clamp	Tubing clamp	Vac hose	Tubing	Tube fitting	Bolt	Tube Clip	Tube fitting	בחטכאַ דַ בַּכַצ
							70	69	68	67	66	o o	64	63	62	61	58	57	56	55	54	53	52	20,7	50	49	48	47	46	44	43	42	40	39	ITEM
							2	_	ω	ω	ω	-	1	_	_	_	4	_	_	_	_	_	N	2	_	_	_	_	_	ω	_	_	4	4	Q X
ひのいかいろう ひろいの	AS26/321265	AS26/321264	AS26/32826	AS26/321352	AS26/321351		AS26/32950	AS26/321901	AS26/32279	AS26/322003	AS26/32241	AS26/321279	AS26/32003-1	AS26/32003	AS26/321276	AS32050-1	AS26/32305	AS26/321806	AS26/321355	AS26/32985	AS26/321274	AS26/321261	AS26/32276	AS26/32900	AS26/321141	AS26/321278	AS26/32820	AS26/321271	AS26/32001	AS26/321817	AS26/321902	AS26/321230	AS26/32242	AS26/32264	TAX NO.
3/8" acid resistant tubing (by the foot)	1/2 Wire reinforced tubing (by the foot)	3/8 Nylon reinforced tubing (by the foot)	2" Heat Shrink Tubing (by the foot)	2" vac hose (by the foot)	1.5" vac hose (by the foot)		Spllt ring	Tube fitting	Washer	Spacer for vacuum cover	Nyloc nut	Foam gasket for vacuum motor cover	Vacuum motor cover - top	Vacuum motor cover - bottom	Gasket for bottom of vacuum motor	Vacuum motor	Hose clamp	Vac hose	Hose Cuff	Vacuum Intake Screen - stainless steel	Gasket for vacuum intake (self-adhesive	Rubber gasket	Steel washer	Locknut	Recovery Lid Plate	Vacuum intake gasket	Hose adapter	Rubber Flap (for vacuum intake)	Vacuum Intake	Threaded Rod	Hose washer	Drain Plug	Nyloc nut	Screw	DESCRIPTION





# VIEW OF SCRUBBER PARTS WITH MAJOR PLASTIC PARTS, MAINFRAME, AND VACUUM HOSES REMOVED

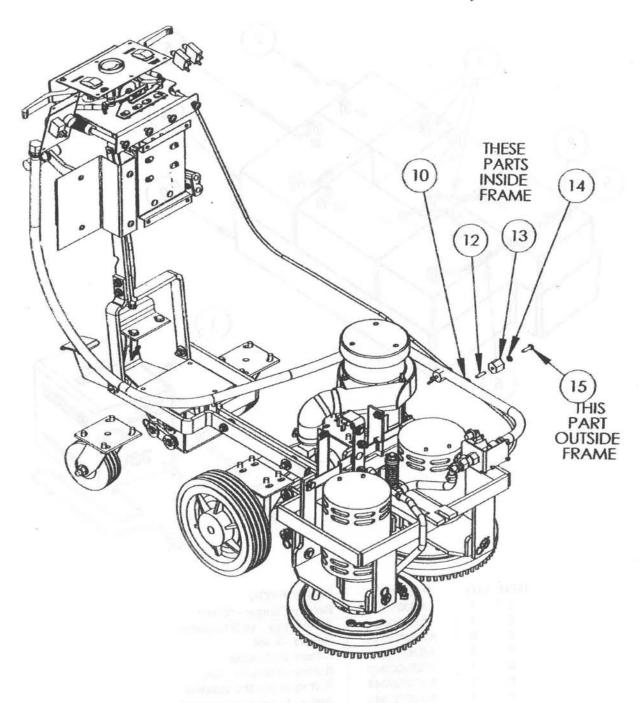


<b>ITEM</b>	QTY.	PART NO.	DESCRIPTION
1	2	AS32801	Pad Holder (please note that scrub and strip brushes are available)
2	2	AS26/321383	10" Wheel
3	2	AS26/321380	5" Swinal Caster
4	8	AS26/32210	Bolt
5	8	AS26/32292	Lock Washer
6	1	AS26/321149	Speed Control Mount
7	1	AS321600	Speed Control
8	1	AS26/321150	Speed Control Bracket
9	1 .	AS26/321108	Electrical Panel
10	5	AS26/32246	Wingnut
11	3	AS26/32317	Threaded rod
12	2	AS26/32302	Brass stud
13	2	AS26/32800	Terminal block
14	2	AS26/32232	Flanged nut
15	2	AS26/32261	Screw
			The second secon

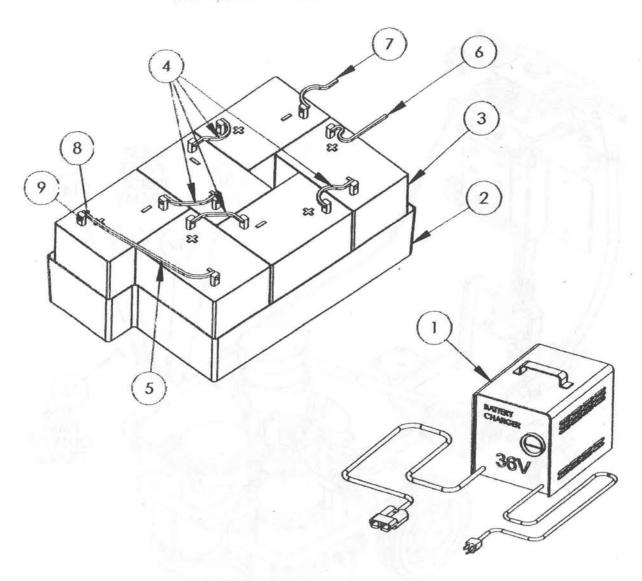
### VIEW OF SCRUBBER PARTS WITH MAJOR PLASTIC PARTS, MAINFRAME, AND VACUUM HOSES REMOVED (PARTS ARE LISTED ONE PAGE BACK)

PLEASE NOTE THAT SCRUB AND STRIP BRUSHES ARE ALSO AVAILABLE

## VIEW OF SCRUBBER PARTS WITH MAJOR PLASTIC PARTS, MAINFRAME, AND VACUUM HOSES REMOVED (PARTS ARE LISTED 2 PAGES BACK)

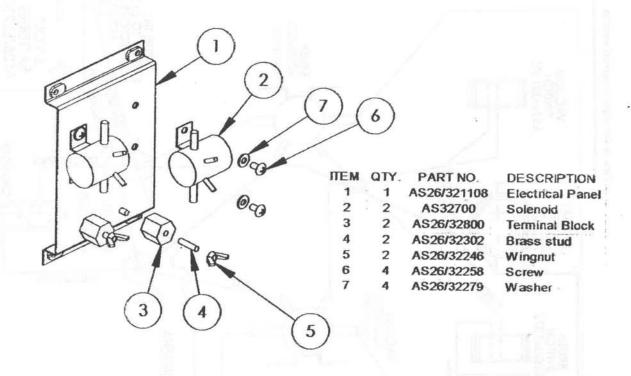


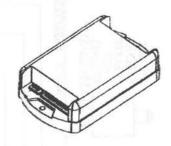
# BATTERIES AND CHARGER

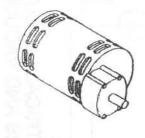


ITEM	QTY.	PART NO.	DESCRIPTION
1	1	AS32930	Battery Charger - 36 volt
2	1	AS32002	Battery tray - for 6 batteries
3	6	AS26/32710	Battery - 6 volt
4	4	AS26/32351	Battery connectors
5	1	AS26/32342	Battery connector - long
6	1	AS26/32342	Battery to positive terminal
7	1	AS26/32343	Battery to negative terminal
8	12	AS26/32209	Bolt
9	12	AS26/32232	Nut

# **ELECTRICAL PANEL AND PARTS** AND OTHER ELECTRICAL PARTS









**BRUSH MOTOR PARTS** Brush Motor - 36 volts

Commutator Bracket Assembly

(includes commutator bracket, brush board assy, brushes and springs)

Gear Box

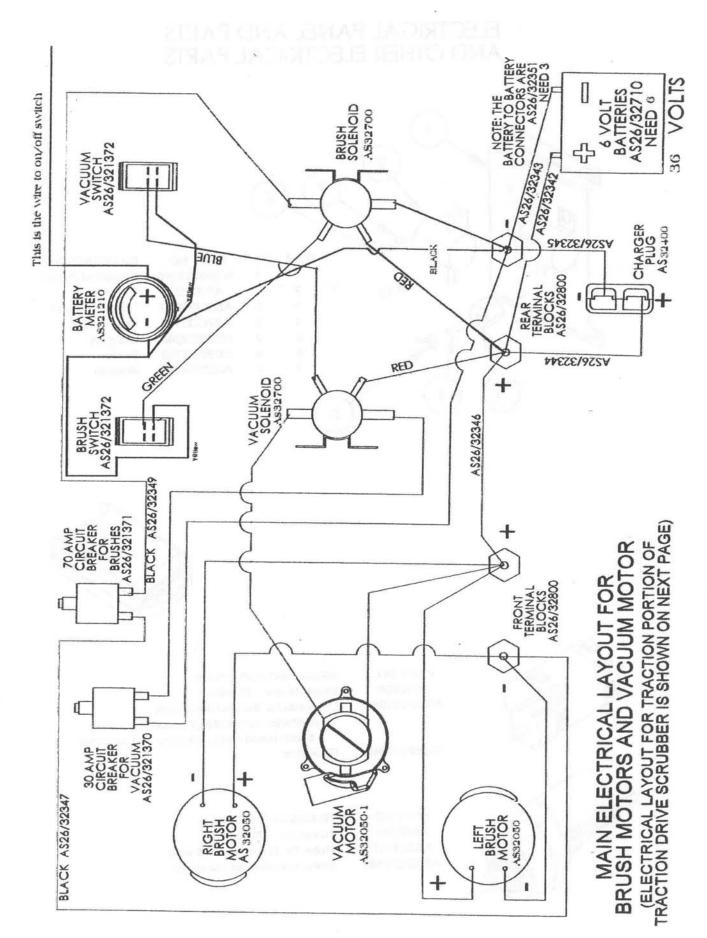


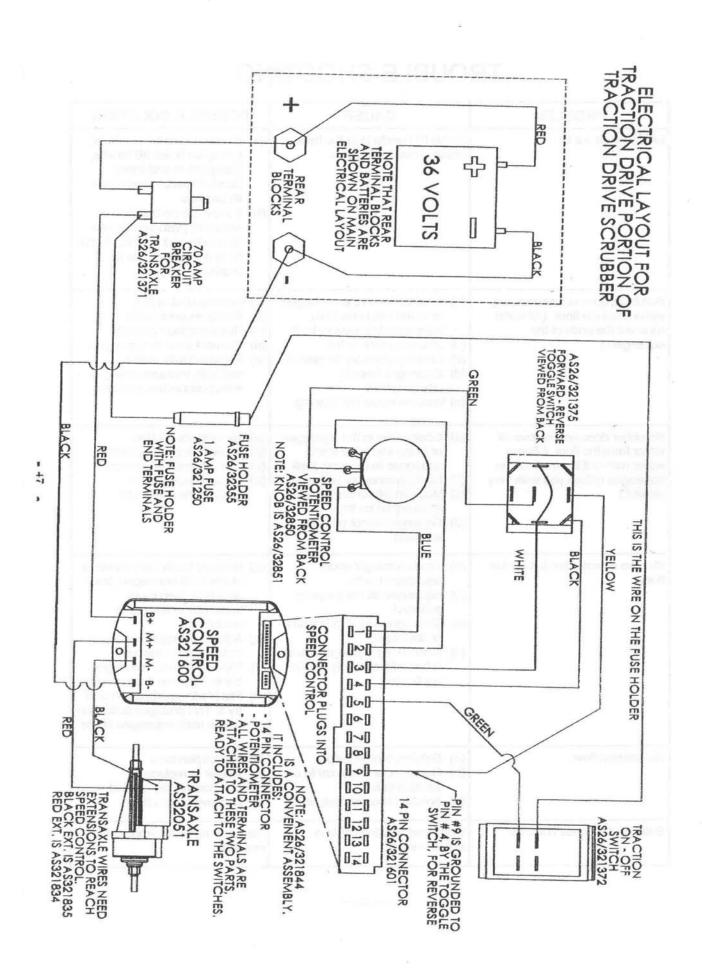


PART NO. AS32051 AS321847 AS26/321848 TRANSAXLE PARTS Transaxle - 36 volts

Motor for Transaxle - 36 volts Motor coupling for transaxle







# TROUBLE-SHOOTING

PROBLEM	CAUSE	POSSIBLE SOLUTION
Brushes will not lift	Brush lift handle is in the heavy brush pressure position.	<ul> <li>(a) If brushes are on scrubber, pull up on brush lift handle, then push in and lower. Brush lift pedal should now lift brushes.</li> <li>(b) If there are no brushes on scrubber, push in on brush lift handle and hold in. Brush lift pedal should now lift brushes.</li> </ul>
Scrubber does not remove any water from the floor. (All water runs out the ends of the squeegee.)	(a) Obstruction in the squeegee or in the vac hose from squeegee to recovery tank.  (b) Recovery tank is full.  (c) Leaking recovery lid gasket.  (d) Squeegee hose is disconnected.  (e) Vacuum motor not running.	(a) Remove obstruction. (b) Empty recovery tank. (c) Repair/replace gasket. (d) Connect hose to squeegee. (e) Replace faulty switch, solenoid, vacuum motor, or wiring connection problem.
Scrubber does not remove all water from the floor. (Some water runs out the ends of the squeegee unless you walk very slowlyf.)	(a) Obstruction in the squeegee or in the vac hose from squeegee to recovery tank.     (b) Leaking recovery lid gasket.     (c) Vacuum intake screen in recovery lid is dirty     (d) Squeegee is not properly adjusted.	(a) Remove obstruction. (b) Repair or replace gasket. (c) Clean screen or replace. (d) Adjust squeegee per instructions in manual.
Streaks of water are left on the floor.	<ul> <li>(a) Trash is caught under squeegee blade.</li> <li>(b) Squeegee tilt not properly adjusted.</li> <li>(c) Main squeegee blade wom or damaged.</li> <li>(d) Reinforcing squeegee blade is turned incorrectly for the application.</li> </ul>	(a) Remove trash. Sometimes it works to lift squeegee, back up a little, then lower squeegee and resume scrubbing.) (b) Adjust squeegee per instructions in manual. (c) Flip or turn main squeegee blade. Replace if necessary. (d) Flip blade upside down and try it. This changes deflection on the main squeegee blade.
No solution flow	(a) Solution tank is empty.     (b) Damaged solution cable or solution valve.     (c) Solution hose is obstructed.	(d) Fill solution tank. (e) Repair or replace components as needed. (f) Remove obstruction.
Solution flow does not stop	Damaged solution cable or solution valve.	Repair or replace components as needed.

# TROUBLE-SHOOTING

PROBLEM	CAUSE	POSSIBLE SOLUTION					
Cleaning is not even	<ul> <li>(a) Pads or scrub brushes are worn.</li> <li>(b) Solution is low.</li> <li>(c) Solution not flowing properly due to crimp in distribution hose.</li> <li>(d) Solution not flowing properly due to obstruction in distribution hose.</li> <li>(e) Brush motor or motors are not running.</li> </ul>	<ul> <li>(a) Replace as needed.</li> <li>(b) Fill solution tank.</li> <li>(c) Remove crimp from distribution hose.</li> <li>(d) Clear obstruction from hose.</li> <li>(e) Reset breaker. Check connections. (note: if breakers continue to trip, cal authorized service personnel.)</li> </ul>					
Total runtime is low	<ul> <li>(a) Battery terminals are dirty.</li> <li>(b) Water level in batteries is low.</li> <li>(c) Batteries are not fully charged.</li> <li>(d) Batteries are bad.</li> <li>(e) Charger is broken.</li> </ul>	<ul> <li>(a) Clean terminals and connectors.</li> <li>(b) Add distilled water to each battery cell. Do not overfill. (See instructions in manual.)</li> <li>(b) Charge batteries.</li> <li>(c) Replace batteries.</li> <li>(d) Fix or replace charger.</li> </ul>					
Scrubber is "dead". Nothing will work.	(a) Bad connection involving batteries.     (b) Dead batteries.     (c) Batteries are bad.     (d) Charger is broken.	(a) Check and clean connections. (b) Try charging batteries. (c) Replace batteries. (d) Fix or replace charger.					
The self-propelled traction drive model will not go forward or backward.	<ul> <li>(a) Traction drive switch was left on. Speed control powers down after 20 minutes.</li> <li>(b) Bad toggle switch in handle.</li> <li>(c) Circuit breaker is tripped.</li> </ul>	<ul> <li>(a) Turn switch off and back on.</li> <li>(b) Replace toggle switch.</li> <li>(c) Reset circuit breaker. (note: if breakers continue to trip, call authorized service personnel.)</li> </ul>					
The self-propelled traction drive model will go forward, but not backward; or otherwise does strange things.	(a) Potentiometer is bad. (b) Loose connection.	(a) Replace if bad.     (b) Check connections to switches. Check connections in connector at speed control.					
Nothing I find here fixes the problem.	Problem could have several causes. Everything cannot be covered here.	Call authorized service personnel.					

# **IMPORTANT**

- THE TROUBLE-SHOOTING TIPS ARE <u>NOT</u> INTENDED TO TAKE THE PLACE OF AUTHORIZED SERVICE PERSONNEL.
- IF YOU ARE UNSURE OF WHAT TO DO—THEN DO NOT DO ANYTHING, EXCEPT TO CONTACT AUTHORIZED SERVICE PERSONNEL.
- BEFORE WORKING ON THIS MACHINE, YOU MUST BE FAMILIAR WITH THE SAFETY INSTRUCTIONS IN THIS MANUAL.



When Performance Counts...You Can Count on POWERBUFF!

### **AUTOMATIC FLOOR SCRUBBER LIMITED WARRANTY**

PowerBuff, Inc. warrants new machines to be free from defects in material and workmanship under normal use and service to the original purchaser. This warranty period is subject to the conditions stated below.

### FIVE YEAR WARRANTY FOR PARTS AND SERVICE LABOR

Most parts are covered for five years. Please see other warranties and exclusions below.

### TEN YEAR WARRANTY ON SOLUTION AND RECOVERY TANKS

### **BATTERY AND BATTERY CHARGER WARRANTIES**

Battery warranty is for one year on a pro rated basis. Battery warranty is void if batteries are not maintained at the proper fluid level with distilled water. Battery charger is warranted for one year.

### **EXCLUSIONS**

This warranty does not cover normal wear and maintenance items including, but not limited to: carbon motor brushes, scrub brushes, squeegees, valves, gaskets, wheels, casters, and routine adjustments. This warranty does not cover damage or failure which is the result of misuse, negligent operation, handling or repair, or which is the result of modification or repair by any person other than an authorized PowerBuff, Inc. service representative.

### LIMITATIONS

STATED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. PowerBuff's liability under this warranty is limited to repair of the product and/or replacement parts and is given to purchaser in lieu of all other remedies, including incidental and consequential damages.

### WARRANTY DETAILS AND CLAIM PROCEDURES

PowerBuff, Inc. warrants to buyer that for the applicable shipment, such material will be free from defects in material and workmanship or failure to meet specifications (a defect) appears in the material; then seller will, at it's option, either repair or replace the defective goods without charge or credit or refund the purchase price of the defective material, provided that:

- 1) The defect appears within the applicable warranty period.
- Buyer notifies seller in writing of the claimed defect promptly after buyer knows or reasonably should know of the claimed defect.
- 3) Seller's examination if the material discloses that the claimed defect actually exists.

Buyer shall follow seller's instruction regarding return of defective material, and no material will be accepted for repair, replacement, credit, or refund without the written authorization of and in accordance with seller's instructions. In the case of any such return, buyer shall bear the risk if in-transit loss or damage; and shall prepay all transportation charges to seller. Repaired or replacement material will be shipped prepaid by seller, and buyer shall bear the risk of in-transit loss or damage. The replaced material shall become the seller's property.