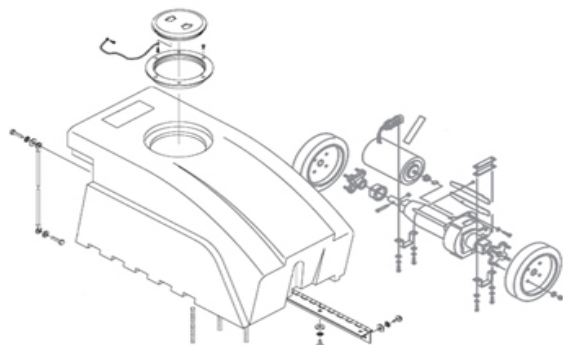


FP20 FiberPRO™ Walk Behind Extractor

**Operator's Manual
and Parts Schematic**

Item #87303



FLOOREQUIPMENTPARTS.COM

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TABLE OF CONTENTS

<i>Machine Data Log/Overview</i>	1
<i>Table of Contents</i>	2

HOW TO USE THIS MANUAL

<i>How to use this Manual</i>	1-1
-------------------------------------	-----

SAFETY

<i>Important Safety Instructions</i>	2-1
<i>Hazard Intensity Level</i>	2-2
<i>Grounding Instructions</i>	2-3

OPERATIONS

<i>Technical Specifications</i>	3-1
<i>Controls</i>	3-2
<i>Machine Operation</i>	3-3
<i>Filling the Solution Tank</i>	3-3
<i>Operating Procedure</i>	3-4
<i>Cleaning Procedure</i>	3-5
<i>Accessory Tool Usage</i>	3-7
<i>Brush Adjustment</i>	3-8

MAINTENANCE

<i>Periodic Maintenance</i>	4-1
<i>Daily/ Regular Maintenance</i>	4-1
<i>Wiring Diagram</i>	4-2
<i>Machine Troubleshooting</i>	4-3

GROUP PARTS LIST

<i>Frame Assembly</i>	5-1
<i>Pump Assembly</i>	5-3
<i>Brush Assembly</i>	5-5
<i>Solenoid & Manifold Assemblies</i>	5-7
<i>Vacuum Shoe Assembly</i>	5-9
<i>Lift Lever and Lower Tower Assembly</i>	5-11
<i>Upper Tower Assembly</i>	5-13
<i>Control Panel Assembly</i>	5-15
<i>Solution Tank Assembly</i>	5-17
<i>Recovery Tank Assembly</i>	5-19
<i>Suggested Spare Parts/Notes</i>	5-21

HOW TO USE THIS MANUAL

This manual contains the following sections:

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

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

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

MODEL _____
DATE OF PURCHASE _____
SERIAL NUMBER _____
SALES REPRESENTATIVE # _____
DEALER NAME _____
OPERATIONS GUIDE NUMBER _____
PUBLISHED _____

The model and serial number of your machine is on the bottom back-end of the machine.

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

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

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

- Periodic
- Daily/Regular

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

- **REF** – column refers to the reference number on the parts illustration.
- **PART NO.** – column lists the part number for the part.
- **QTY** – column lists the quantity of the part used in that area of the machine.
- **DESCRIPTION** – column is a brief description of the part.
- **SERIAL NO. FROM** – column indicates the first machine the part number is applicable to. When the machine design has changed, this column will indicate serial number of applicable machine. The main illustration shows the most current design of the machine. The boxed illustrations show older designs. If column has an asterisk (*), call manufacturer for serial number.
- **NOTES** – column for information not noted by the other columns.

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

IMPORTANT SAFETY INSTRUCTIONS

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

READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE.



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

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

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

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

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

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

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

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

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

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

When leaving unattended, secure against unintentional movement.

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

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

Do not handle the plug or machine with wet hands.

Do not unplug machine by pulling on cord. To unplug, grasp the plug, not the cord.

Do not use with damaged cord or plug. Follow all instructions in this manual concerning grounding the machine.

Do not pull or carry by cord, use cord as a handle, close a door on cord, or pull cord around sharp edges or corners.

Do not pull/run machine over cord. Keep cord away from heated surfaces.

Connect to a **properly** grounded outlet. See Grounding Instructions.

SAVE THESE INSTRUCTIONS

HAZARD INTENSITY LEVEL

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

HAZARD INTENSITY LEVEL

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

⚠ WARNING

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

⚠ CAUTION

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

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

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

FOR SAFETY:

DO NOT OPERATE MACHINE:

Unless Trained and Authorized.

Unless Operation Guide is Read and understood.

In Flammable or Explosive areas.

In areas with possible falling objects.

WHEN SERVICING MACHINE:

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

GROUNDING INSTRUCTIONS

THIS PRODUCT IS FOR COMMERCIAL USE ONLY.

ELECTRICAL:

In the USA this machine operates on a standard 15 amp 115V, 60 hz, A.C. power circuit. The amp, hertz, and voltage are listed on the data label found on each machine. Using voltages above or below those indicated on the data label will cause serious damage to the motors.

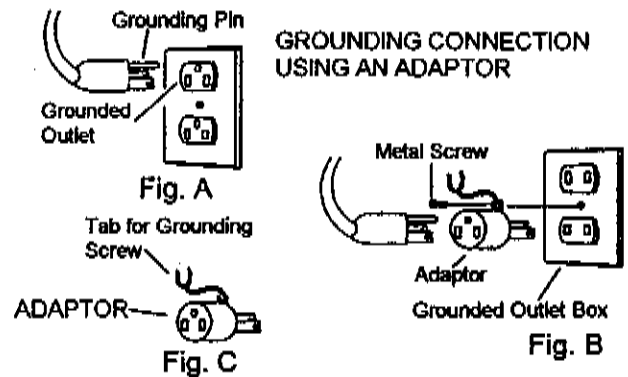
EXTENSION CORDS:

If an extension cord is used, the wire size must be at least one size larger than the power cord on the machine, and must be limited to 50 feet (15.5m) in length.

GROUNDING INSTRUCTIONS:

This appliance must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

This appliance is for use on a nominal 120-volt circuit, and has a grounded plug that looks like the plug in "Fig. A". A temporary adaptor that looks like the adaptor in "Fig. C" may be used to connect this plug to a 2-pole receptacle as shown in "Fig. B", if a properly grounded outlet is not available. The temporary adaptor should be used only until a properly grounded outlet (Fig. A) can be installed by a qualified electrician. The green colored rigid ear, lug, or wire extending from the adaptor must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by a metal screw.



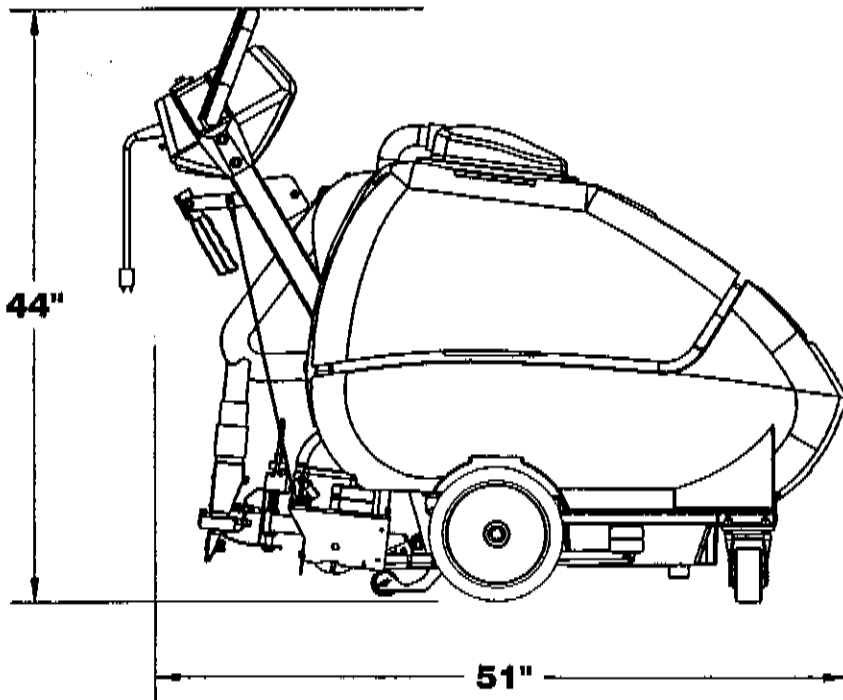
Note: Adaptors are not allowed in Canada.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance - If it will not fit the outlet, have a proper outlet installed by a qualified electrician.

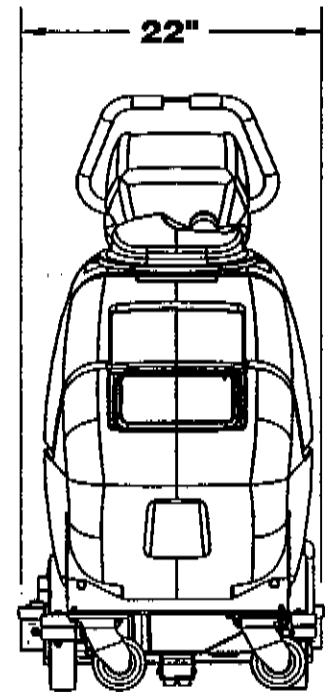
TECHNICAL SPECIFICATIONS

ITEM	DIMENSION/CAPACITY
ELECTRICAL	115V, 15A, 60Hz
ELECTRIC PROPELLING MOTOR	(1) - 1/4HP DC (186 WATTS) WITH VARIABLE SPEED FORWARD
DRIVE SYSTEM	TRANSAXLE UNIT VARIABLE SPEED OPERATING SPEED: 0-100FT/MIN (30M/MIN)
ELECTRIC VACUUM MOTOR	(1) - 3 STAGE, 1HP 99 CFM (2.8M ³ /MIN.)
WATERLIFT	117" (297 CM)
BRUSH	(1) 18" (45.8 CM)
BRUSH SPEED	1000RPM
SOLUTION PUMP	100PSI (6.9 BARS), DIAPHRAGM STYLE, DEMAND PUMP
SOLUTION CAPACITY	20 GALLONS (75 LTR)
SOLUTION SPRAY	2 QUICK CHANGE JETS
RECOVERY CAPACITY	20 GALLONS (75 LTR)
VACUUM SHOE	22" (56 CM)
WHEELS FRONT (2) REAR (2)	4" DIA. (10 CM) CASTERS BY 2.5" 10" DIA. (25 CM) WHEELS BY 2"
WEIGHT	215 LBS. (98 KG)
LENGTH	51" (130 CM)
HEIGHT	44" (111 CM)
WIDTH	22" (56 CM)
POWER CABLE	75' (23 M) 12 GAUGE

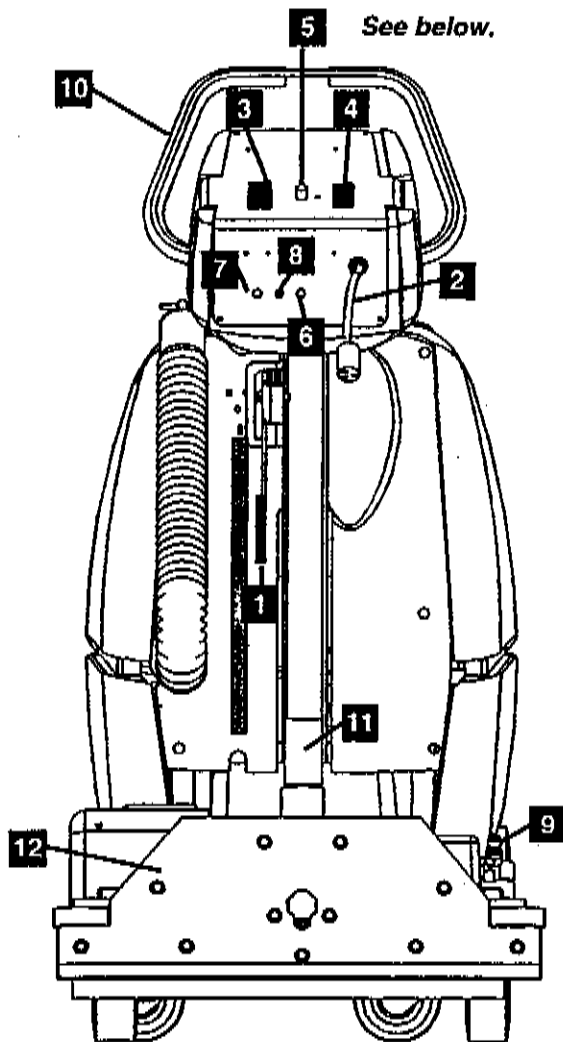
SIDE VIEW



FRONT VIEW

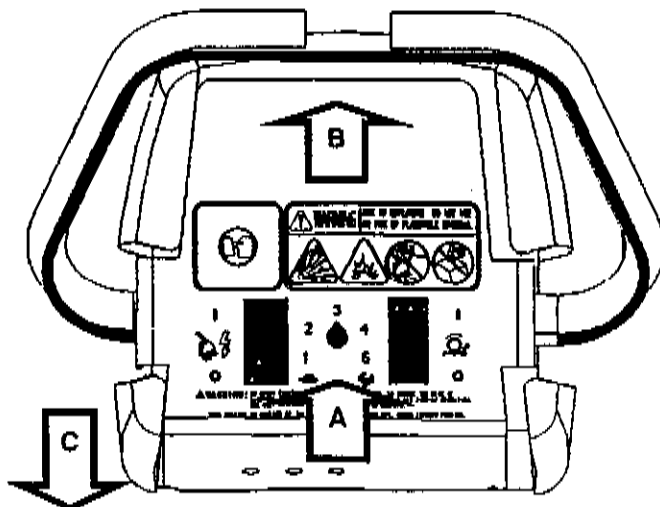


CONTROLS



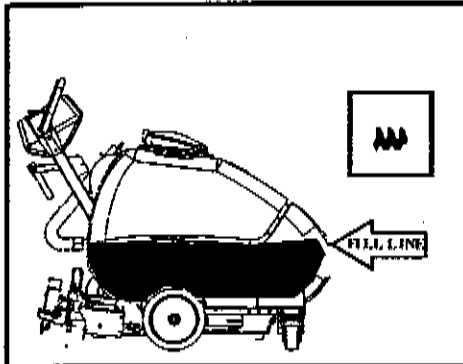
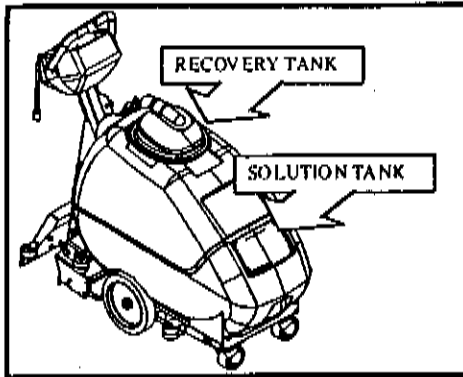
1. **Brush/Vac Shoe Lift Lever.** Raises and lowers both brush and vac shoe.
2. **Electrical Cord.**
3. **Main Power Switch.** Turns ON and OFF the vac motor/pump and machine.
4. **Brush/Solenoid Power Switch.** Enables the brush motor and solution spray (only when propelling).
5. **Speed Control Knob.** Adjusts the forward drive speed of the machine. See below.
6. **Drive Motor Circuit Breaker.** 6 amp, protects the drive motor mechanism.
7. **Vac Motor Circuit Breaker.** 15 amp, protects the vacuum motor.
8. **Brush Motor Circuit Breaker.** 8 amp, protects the brush motor.
9. **Solution Accessory Tool Hookup.** Used for various auxiliary cleaning tools.
10. **Main Handle.**
11. **Vacuum Accessory Tool Hookup.** To use accessory tool, remove hose from vac shoe and attach to accessory tool adaptor.
12. **Vac Shoe Assembly.**

DRIVE CONTROLS



- A. The speed, the machine will travel, is regulated by the knob located on the center of the control panel. Turn the knob to the right to increase the speed of the machine and to the left to decrease the speed of the machine.
- B. Squeezing the control lever will propel the machine forward at the selected speed. Machine will also engage the brush and spray if #4 is activated.
- C. To move the machine backwards, release the control lever and then pull back on main handle. *NOTE: The machine drive assembly is disengaged).* Do not pull back on the control lever.

OPERATIONS



FILLING THE SOLUTION TANK

NOTE: Use clean bucket of water to fill solution tank.

DO NOT PUT DEFOAMER, SOLVENTS, SPOTTER OR PRESPRAY CHEMICALS IN THE SOLUTION TANK.

CHEMICALS

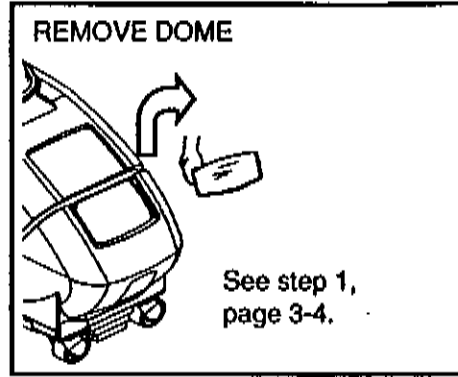
Suitable Chemicals

Alkalis
Detergents
Hydroxides
Soaps
Vinegar

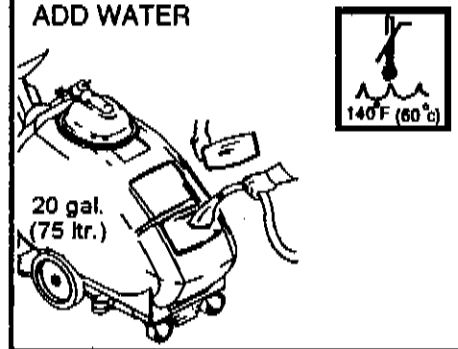
Non-Compatible Chemicals

Aldehydes
Aromatic Hydrocarbons
SP Butyls
Carbon Tetrachloride
Clorox*
Chlorinated Bleaches
Chlorinated Hydrocarbons
Lysol*
Methyl Ethel Ketone (MEK)
Perchlorethylene (perc)
Phenolics
Trichlorethylene

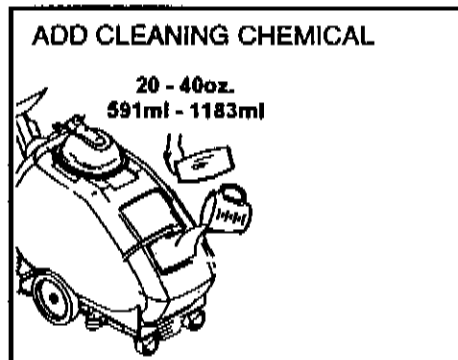
STEP 1



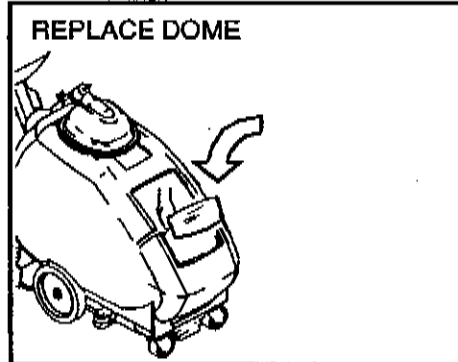
STEP 2



STEP 3



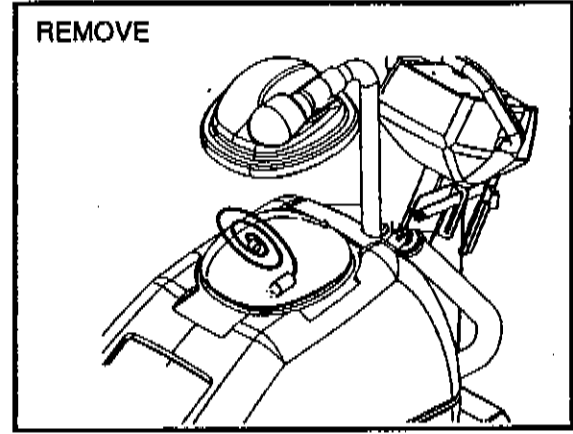
STEP 4



OPERATIONS

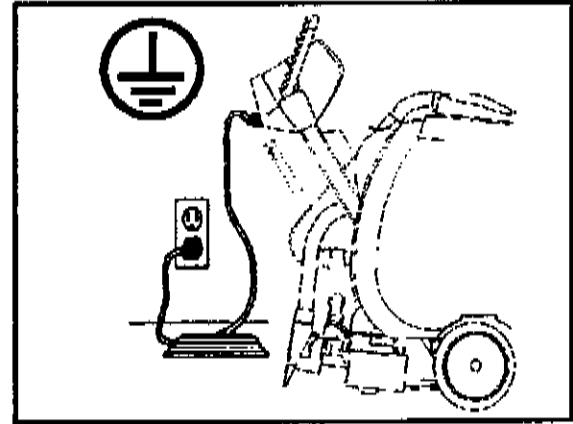
Remove electrical cord from recovery tank.

STEP 1



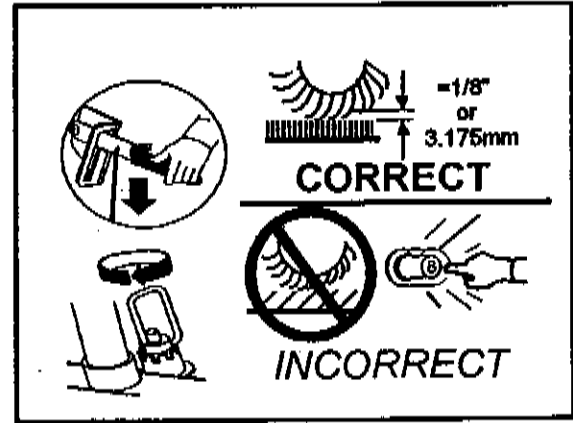
Plug cord into grounded outlet.

STEP 2



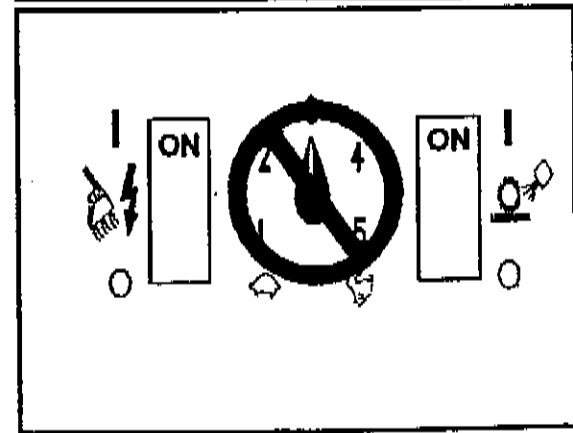
Adjust brush to proper setting (see page 3-8). Lower the brush.

STEP 3

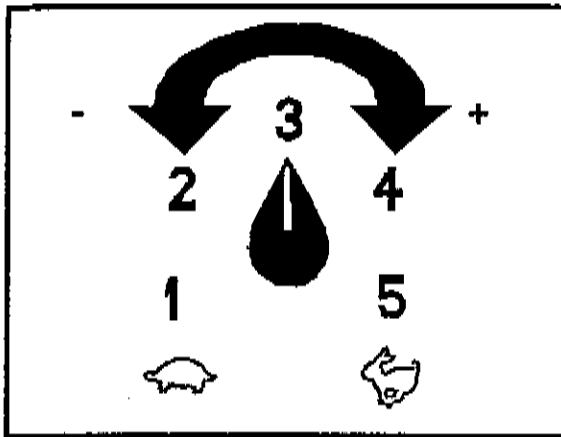


Turn Main Power/Brush Switch "ON"-"I"

STEP 4

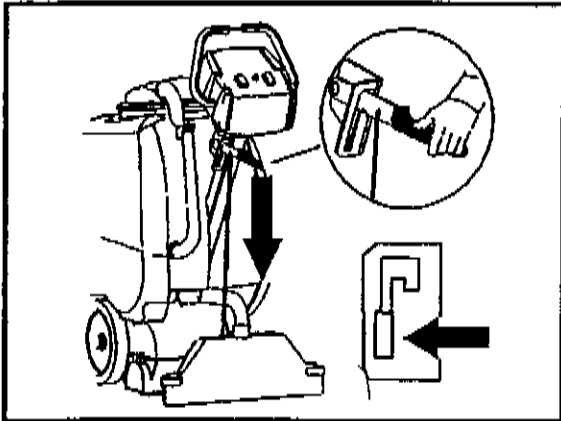


OPERATIONS



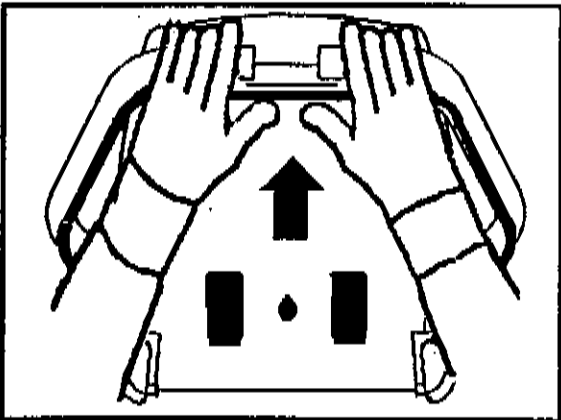
STEP
5

Adjust speed control knob to desired speed.



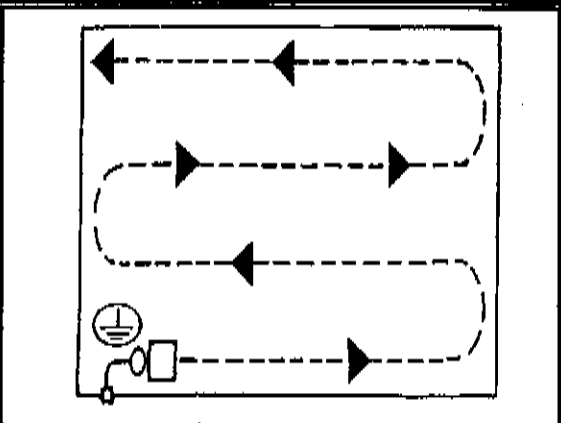
STEP
6

Lower brush assembly to floor.



STEP
7

Depress lever to propel machine forward and to activate brush and spray.



STEP
1

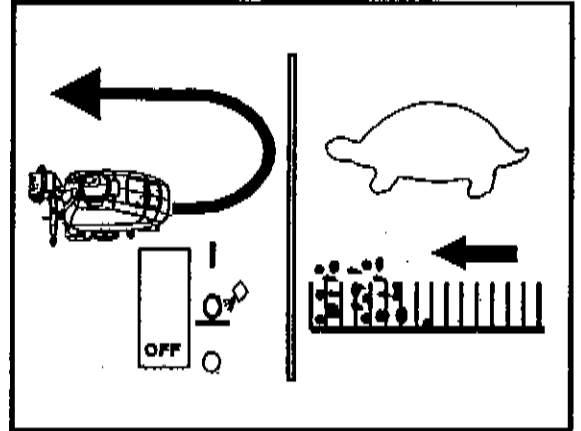
CLEANING PROCEDURE

Operate machine in parallel passes.
Clean perimeter last.

CLEANING PROCEDURE

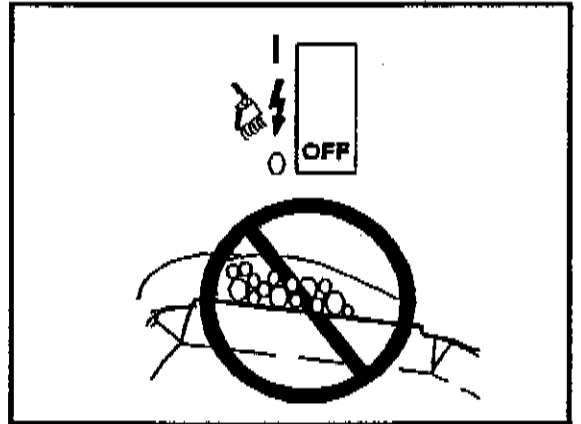
Turn "OFF" brush/solution switch in turns.
Go slow over heavily soiled carpet.

STEP 2



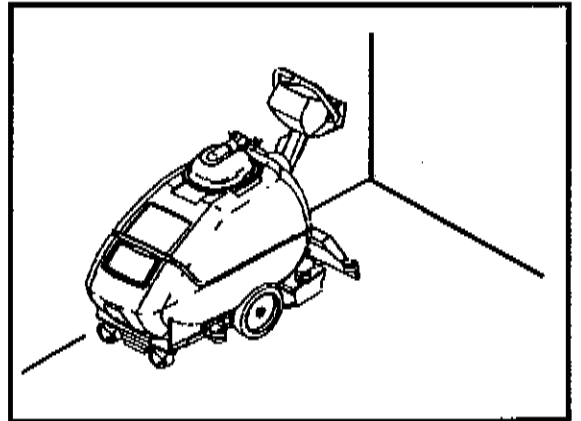
⚠ CAUTION

FOAM!! Turn off machine and add defoamer to recovery tank only.



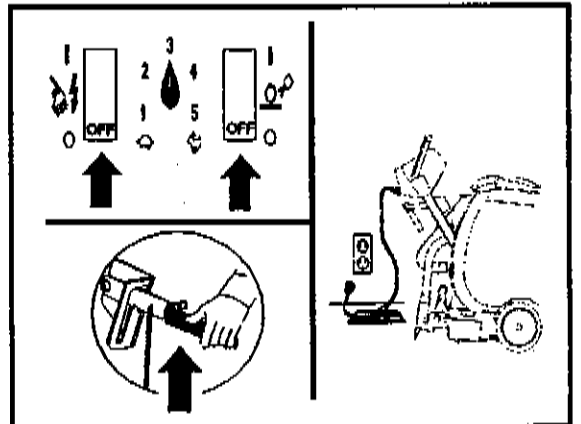
Use right side of machine for cleaning against walls.

STEP 3

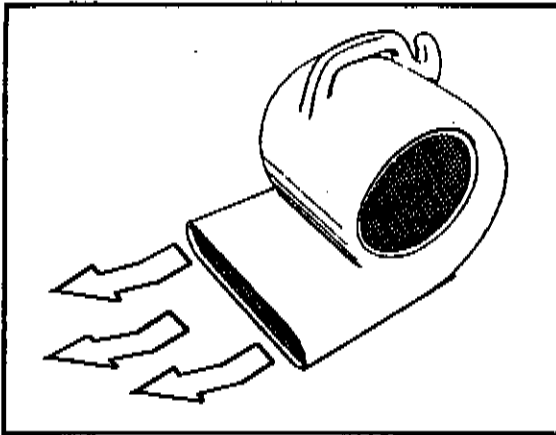


After cleaning, turn off all controls, raise brush assembly to storage position and carefully unplug machine.

STEP 4

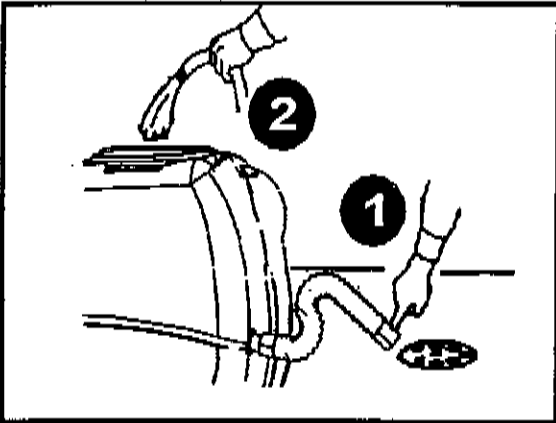


CLEANING PROCEDURE/ACCESSORY TOOL USAGE



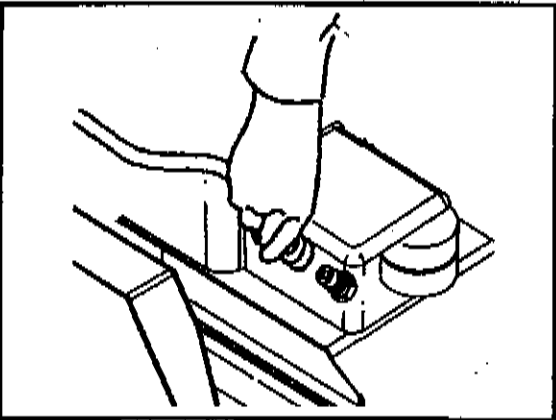
STEP
5

Use a fan, to speed dry.



STEP
6

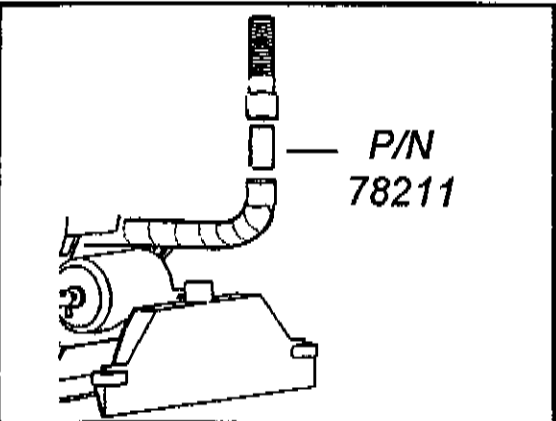
Empty recovery tank by releasing dump hose. Use a hose with cold water to clean out the recovery tank. Also drain solution tank after each use.



STEP
1

ACCESSORY TOOL USAGE

Insert collar over fitting.



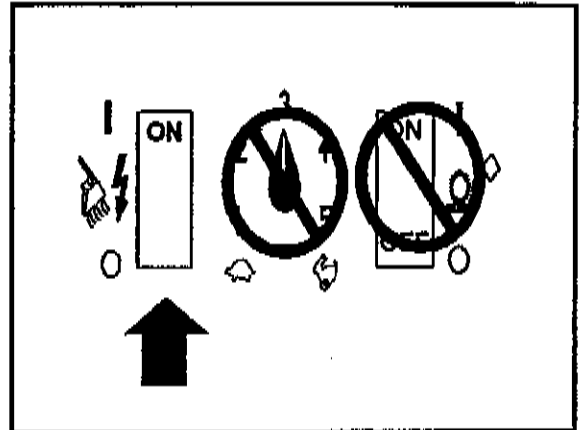
STEP
2

Insert adaptor into vac shoe hose. Then insert accessory tool cuff onto adaptor.

ACCESSORY TOOL USAGE/BRUSH ADJUSTMENT

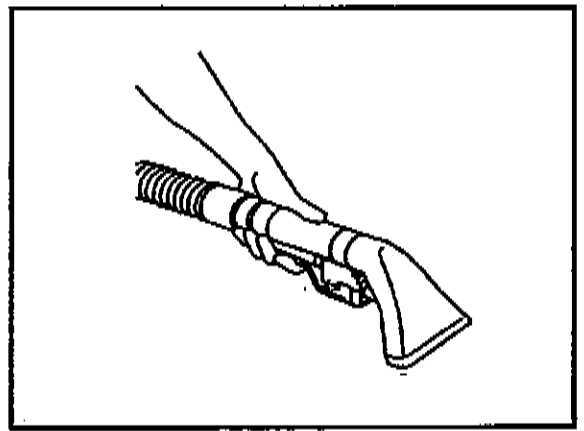
Turn Main Power Switch "ON" - "I"

STEP 3



Squeeze handle on accessory tool to begin cleaning.

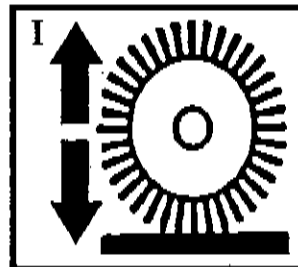
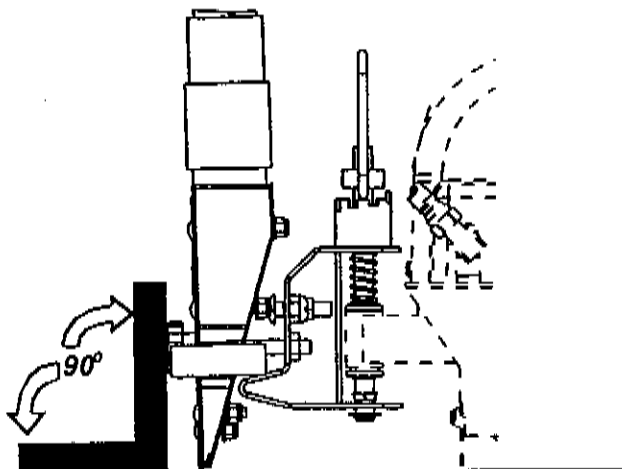
STEP 4



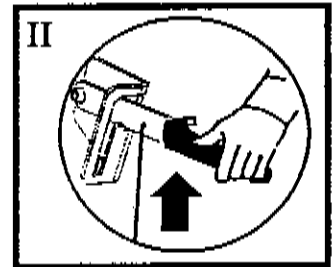
BRUSH ADJUSTMENT

NOTE: For good operation the brush must skim the carpet.

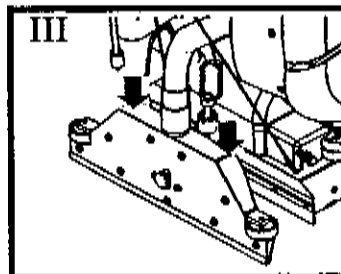
Adjust brush to 90°



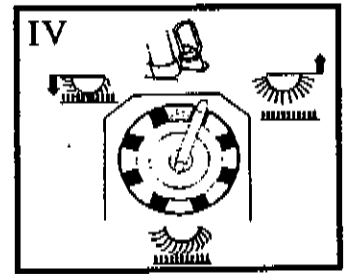
To adjust the brush



Raise handle to "Storage Position"



Push down on squeegee assembly



Adjust brush to correct height for carpet.

MAINTENANCE

PERIODIC MAINTENANCE

Twice a month, flush a vinegar solution (one quart vinegar to two gallons of water) or anti-browning solution (mixed as directed) through the extractor. This will prevent build-up of alkaline residue in the system. If spray jets become clogged remove the spray tips, wash them thoroughly and blow dry.

NOTE: Do not use pins, wire, etc. to clean nozzles as this could destroy spray pattern.

Periodically inspect all hoses, electrical cables and connections on your machine. Frayed or cracked hoses should be repaired or replaced to eliminate vacuum or solution pressure loss. The electrical cable must be well insulated and cable connector screws kept tight. If the cable insulation is broken or frayed, repair or replace it immediately. Don't take chances with electrical fire or shock.

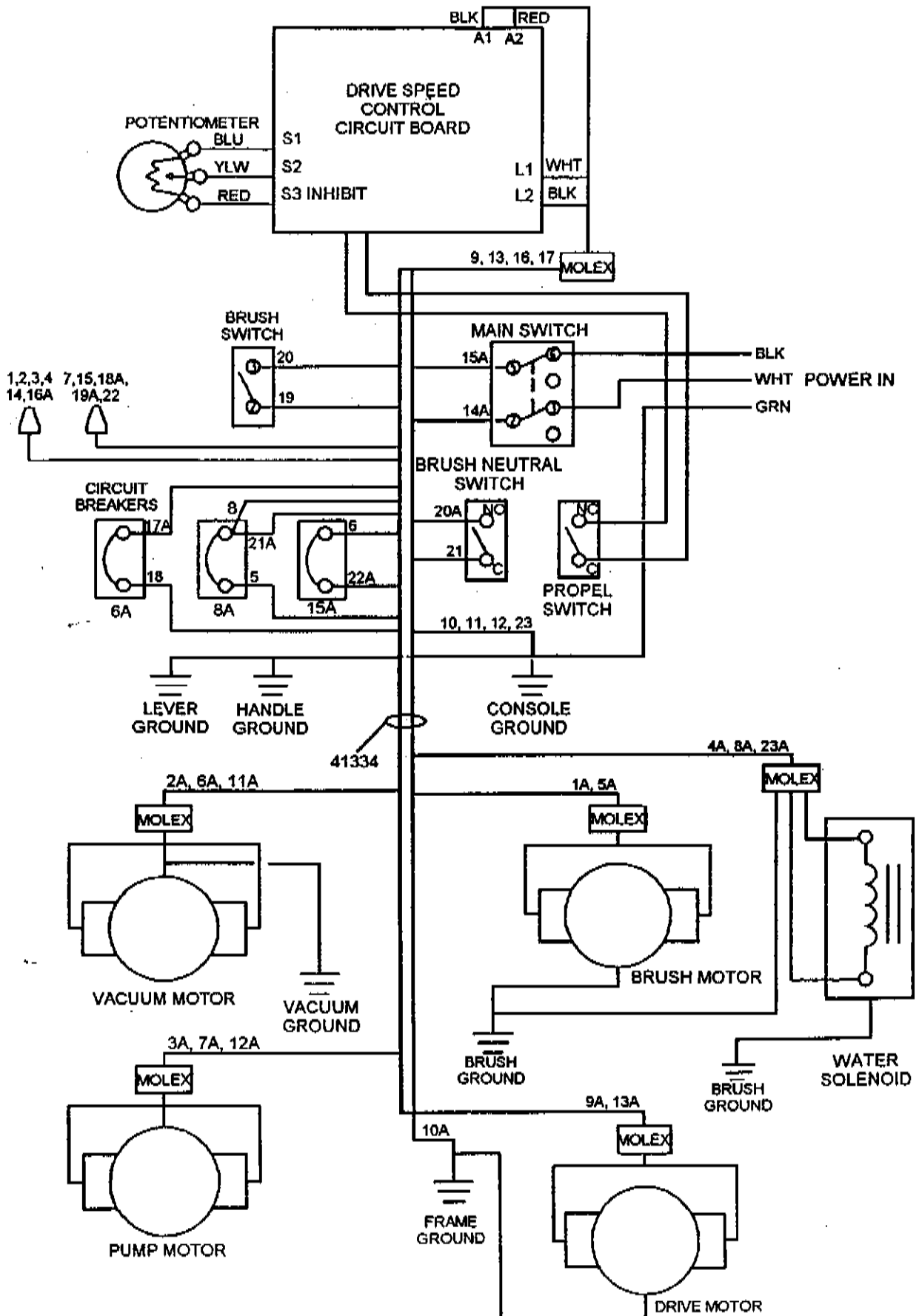
DAILY / REGULAR MAINTENANCE

Before making any adjustments or repairs to the machine, disconnect the power cord from electrical source.

1. Empty unused cleaning solution from the solution tank.
2. Inspect and clean filter screen in solution tank.
3. Flush pumping system with 4 to 7 liters of clean, hot water.
4. After each use, rinse tank with fresh water. Periodically inspect the recovery tank and decontaminate if necessary, using a Hospital Grade Virucide or a 1-10 bleach to water solution. Waste water should be disposed of properly.
5. Check for and remove any lint or debris around vac shoe.
6. Check spray jets for full-spray pattern.
7. Remove lint and dirt build-up from brush and housing.

NOTE: Always store machine with brush in "Store" position.

WIRING DIAGRAM

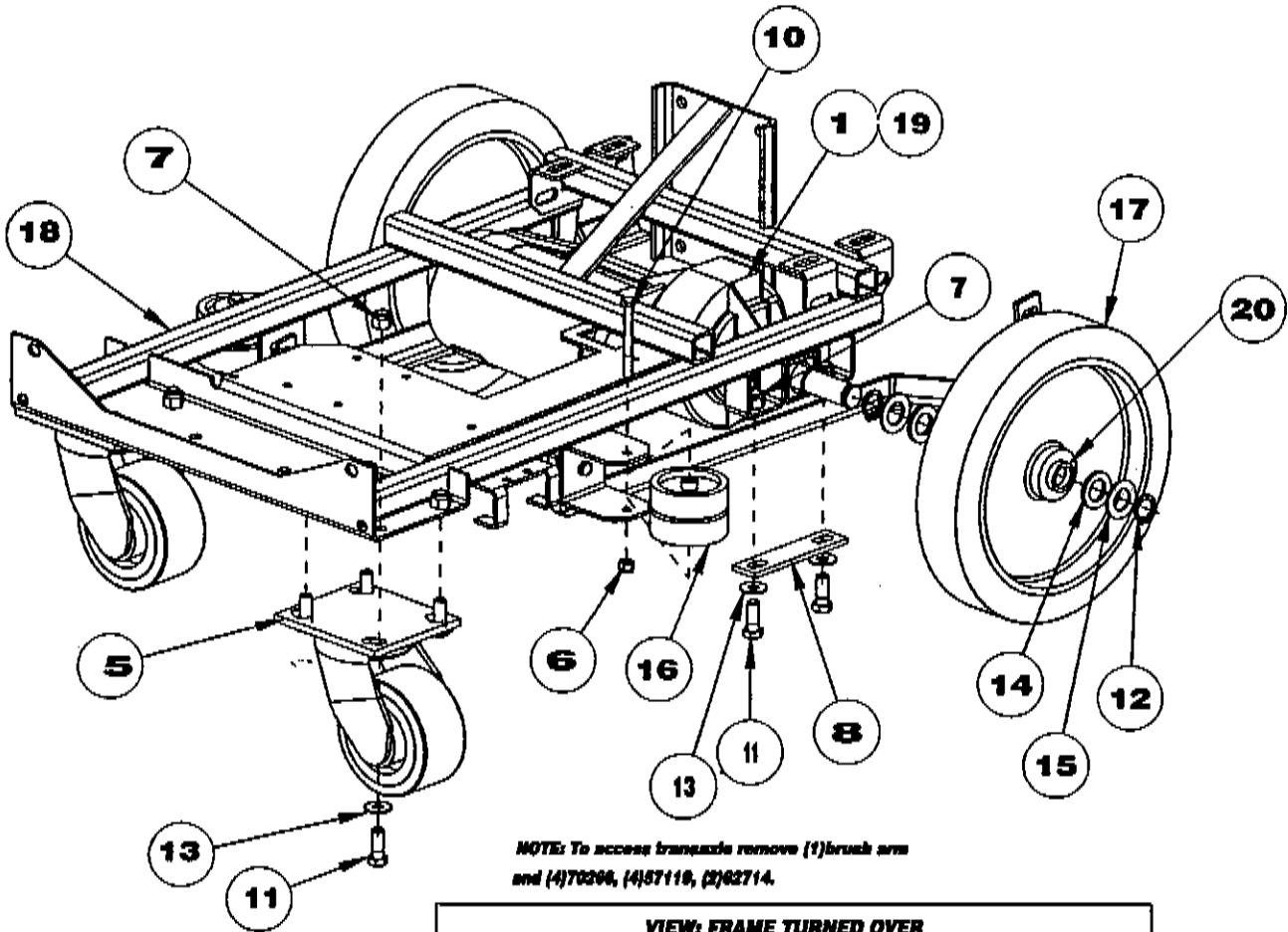


TROUBLESHOOTING

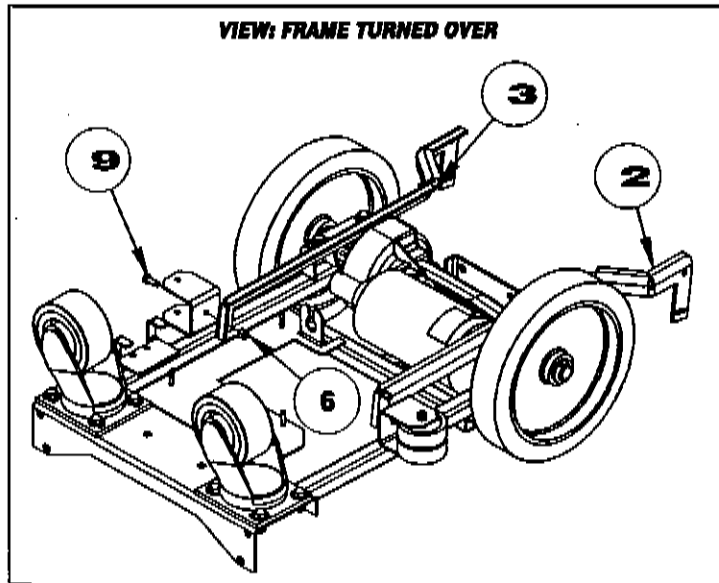
PROBLEM.	CAUSE	SOLUTION
No power, nothing runs	Is the cord plugged in?	Plug in cord.
	Circuit breaker tripped in building.	Reset breaker.
	Faulty Switch.	Call for service.
	Faulty power cord or pigtail	Call for service.
Vacuum motor will not run	Vacuum circuit breaker tripped.	Reset breaker.
	Faulty main vacuum switch.	Call for service.
	Loose wiring.	Call for service.
	Faulty vac motor.	Call for service.
Vacuum motor runs but suction is poor	Debris lodged in vac shoe.	Remove debris from vac shoe.
	Dome gasket defective or missing.	Replace as necessary.
	Vacuum hose cracked or hose cuff loose.	Replace or repair as necessary.
	Incorrect vac shoe angle.	Adjust as necessary.
	Recovery tank full / float ball stuck in the up position	Drain and rinse recovery tank, free float ball.
	Clamp loose on vacuum motor.	Call for service.
	Recovery tank inlet loose or gasket defective.	Call for service.
	Vac shut-off engaged.	Drain recovery tank.
Poor or no water flow (carpet is streaky)	Solution filter clogged.	Drain solution tank and clean solution filter.
	Jets clogged or missing.	Clean using a vinegar/water solution or replace.
	Faulty solenoid.	Call for service.
	Propel lever not engaged.	Brush switch must be on and propel lever squeezed to activate spray.
Brush does not spin	Brush switch on?	Turn on brush switch.
	Brush circuit breaker tripped.	Reset breaker.
	Propel lever not engaged.	Propel lever must be squeezed to activate brush.
	Brush belt broken.	Replace as necessary.
	Faulty brush motor.	Call for service.
Machine will not propel when handles are squeezed.	Circuit breaker tripped.	Reset breaker.
	Speed control knob set at zero.	Turn speed control knob between 1-5.
	Faulty speed control board	Call for service.
	Faulty propel motor.	Call for service.
Solution / brush turn on when brush switch engaged.	Faulty micro switch.	Call for service.

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FRAME ASSEMBLY



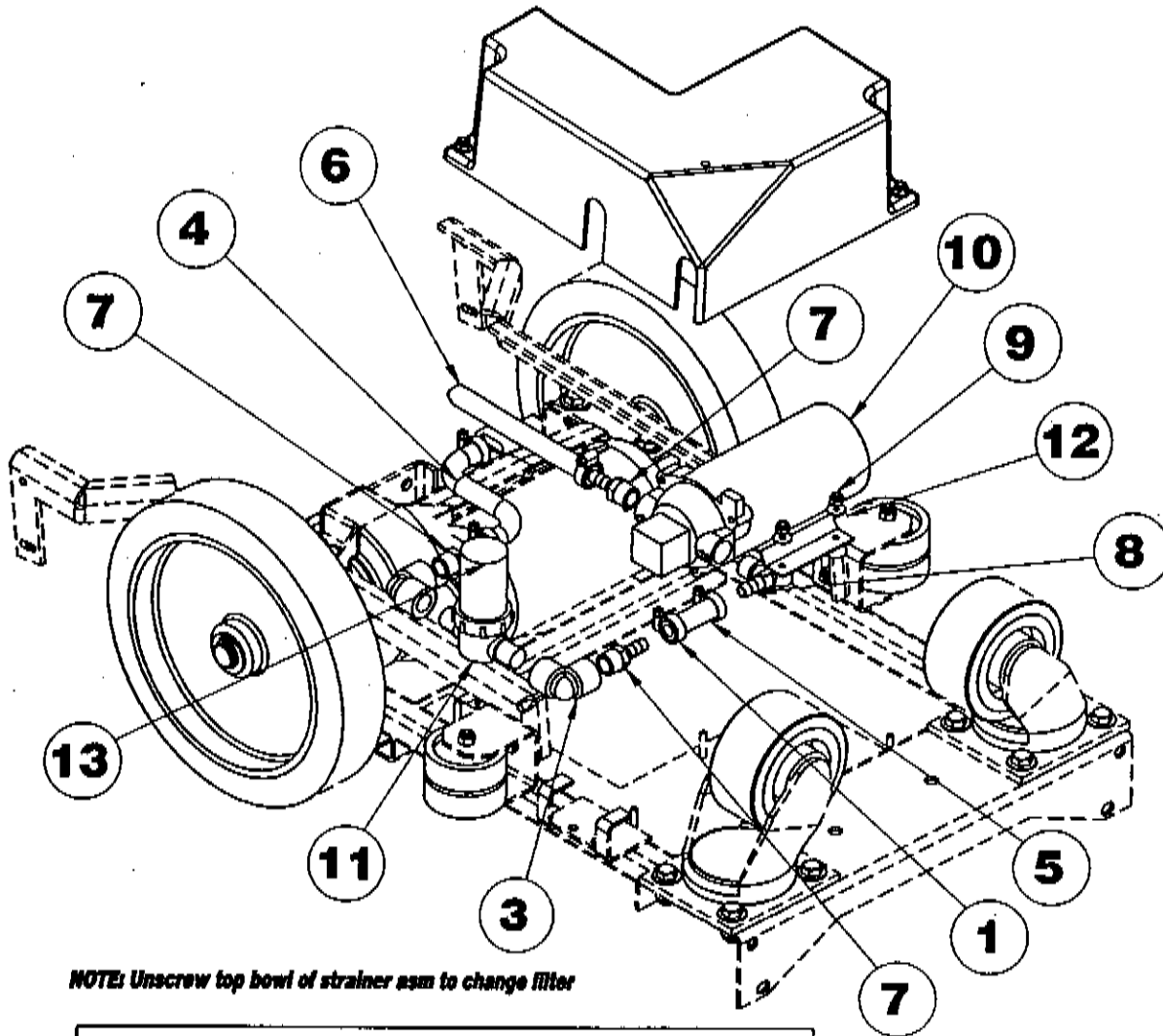
NOTE: To access transaxle remove (1) brush arm and (4) 70266, (4) 87118, (2) 62714.



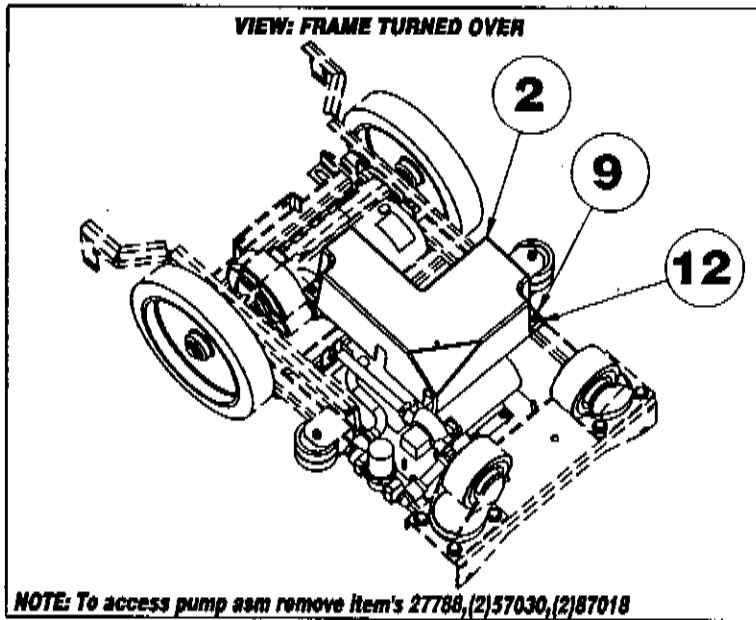
FRAME ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	05120	1	TRANSAXLE, 90VDC .13HP		
2	05130	1	ARM, BRUSH HOUSING RIGHT		
3	05131	1	ARM, BRUSH HOUSING LEFT		
4	OPEN	-			
5	18041	2	CASTER, 4 DIA X 2W X 3.56R		
6	57047	4	NUT, 1/4-20 HEX NYLOCK		
7	57119	12	NUT, 3/8-16 HEX NYLOCK		
8	62714	2	PLATE, DRIVE AXLE		
9	70015	2	SCR, 1/4-20x 3/4 HHCS SS		
10	70017	2	SCR, 1/4-20 X 2.50 HHCS SS		
11	70266	12	SCR, 3/8-16 X 1.00 HHCS GR5		
12	80623	4	RING, 3/4 RETAINING HD SH		
13	87003	12	WASHER, 3/8 X 7/8 FLAT SS		
14	87156	4	WASHER, 3/4 X 1.25 NYL		
15	87173	4	WASHER, .77 X 1.31 FLAT SS		
16	89051	4	WHEEL, VAC SHOE		
17	89196	2	WHEEL, 10OD X 2W X 1ID W/ BEARING		
18	89137	1	FRAME, WELDMENT		
19	140321	-	BRUSH SET, TRANSAXLE		SERVICE PART ONLY
20	09123	-	BEARING, ROLLER CLUTCH 1OD X .75ID		SERVICE PART ONLY

PUMP ASSEMBLY



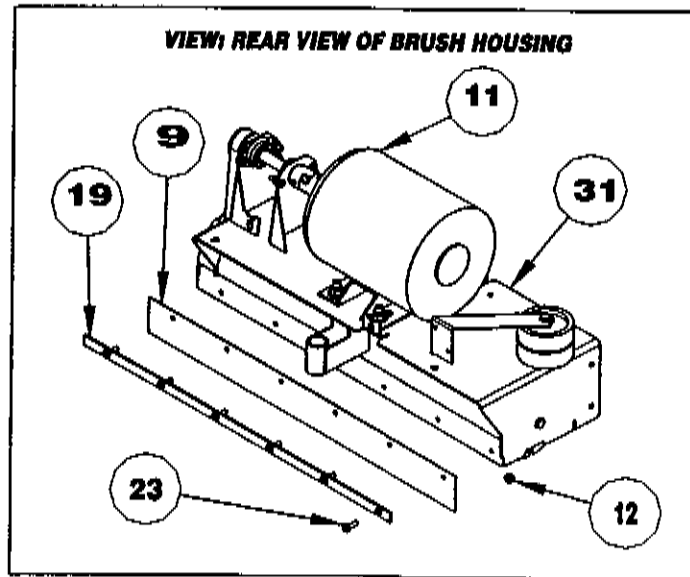
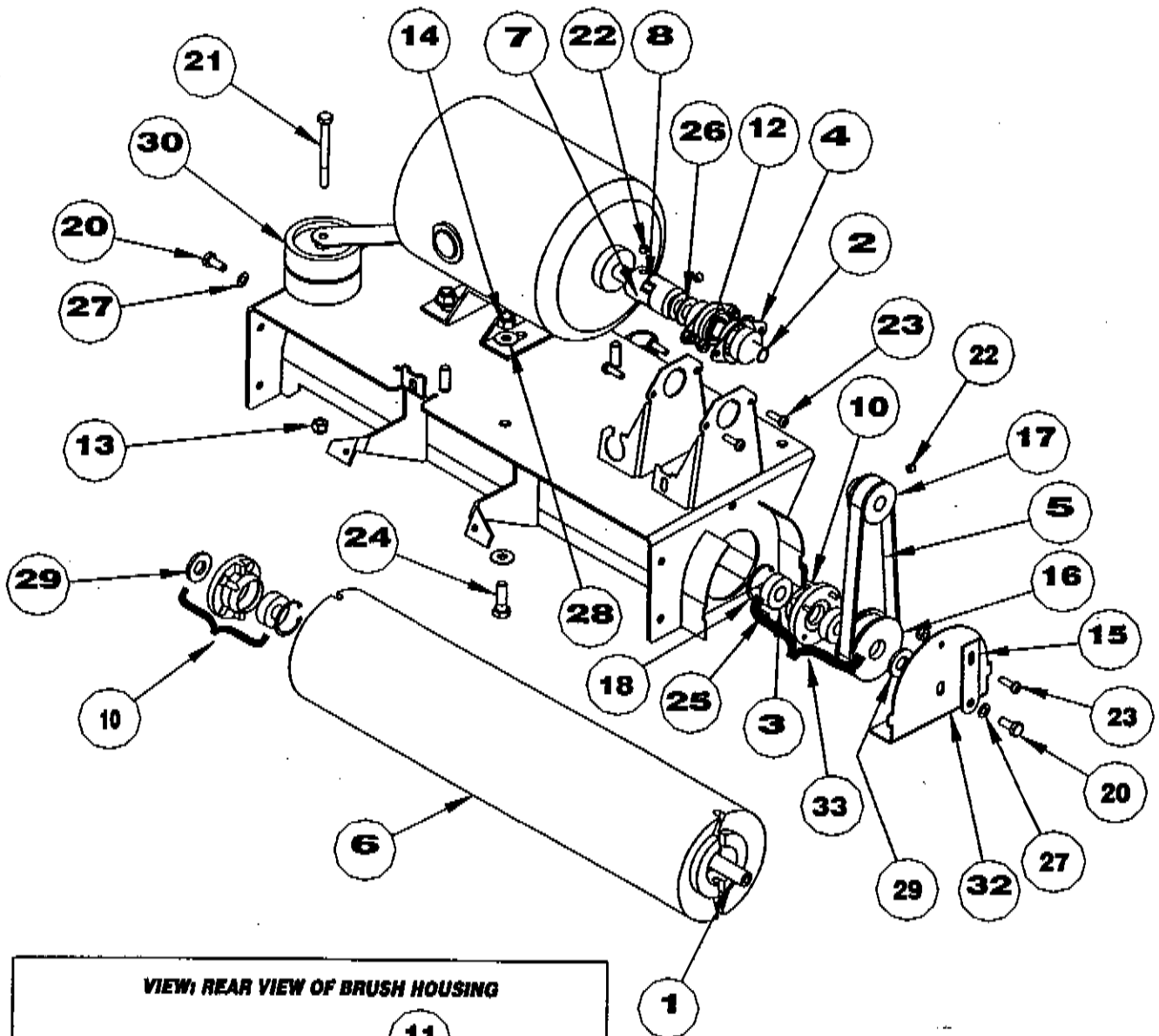
NOTE: Unscrew top bowl of strainer asm to change filter



PUMP ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	20042	5	CLAMP, 3/8 WORM GEAR		
2	27788	1	COVER, PUMP		
3	31068	2	ELBOW, 3/8 FPT PVC SCH 80		
4	39282	1	HOSE, 3/8 WIRE BOUND X 7		
5	39486	1	HOSE, 3/8 NYLOBRAID X 2		
6	39502	1	HOSE, 3/8 NYLOBRAID X 33		
7	40010	3	HOSEBARB, 3/8 MPT X 3/8		
8	40034	1	HOSEBARB, 3/8 MPT X 3/8 90D BRASS		
9	57030	6	NUT, 10-32 HEX NYLOCK		
10	65170	-	PUMP ASSEMBLY		SERVICE PART ONLY
11	73836	1	STRAINER, DEEP 3/8 NPT 80 MESH		
12	87018	6	WASHER, #10 X 9/16 FLAT		
13	73839	-	SCREEN, 80 MESH STAINER DEEP		SERVICE PART ONLY

BRUSH ASSEMBLY

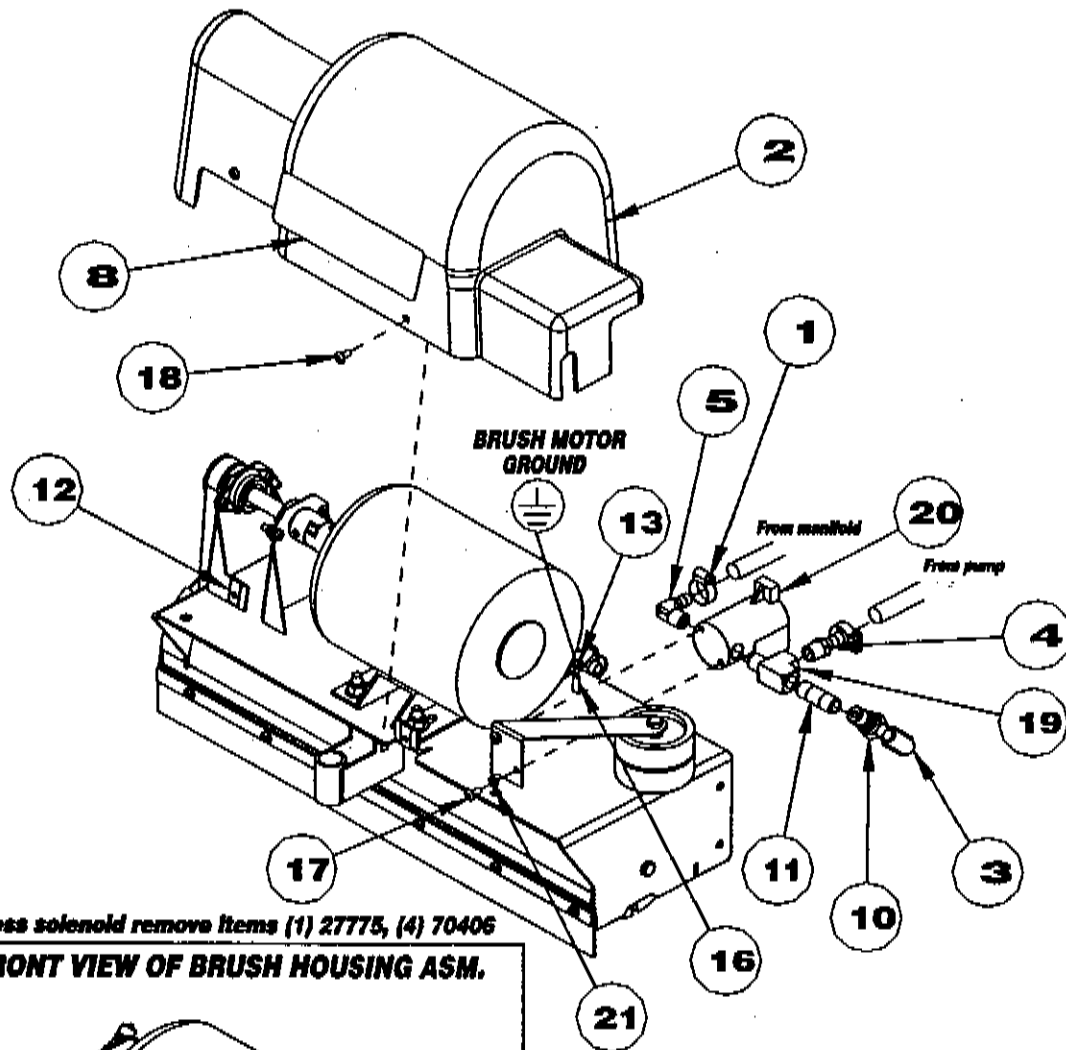


NOTE: To access brush/pulley asm. remove:
 (1) 70011, (2) 87025, (1) 140277.

BRUSH ASSEMBLY PARTS LIST

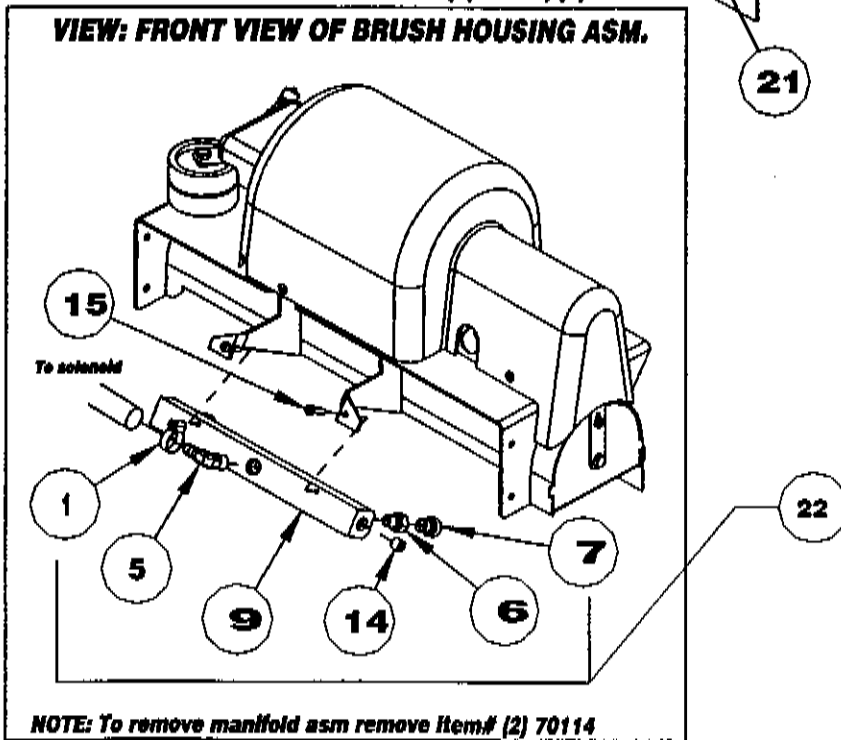
REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	03100	1	AXLE, .5 X 19.5 X 1/4-20		
2	03101	1	AXLE, .5 X 4.34 W/ FLATS		
3	09019	5	BEARING, 1.125OD X .50ID X .375		
4	09055	2	BEARING, FLANGE		
5	11043	1	BELT, TIMING .375P 16.5PL .5W		
6	12023	1	BRUSH, 18L X 4.5OD		
7	22087	2	COUPLER, 1/2 JAW		
8	22088	1	COUPLER, SPIDER		
9	36188	1	GUARD, SPLASH		
10	42072	-	IDLER ASSEMBLY, BRUSH		SERVICE PART ONLY - INCLUDES (1) 09019, (1) 42069, (1) 67093
11	53635	-	MOTOR ASSEMBLY, BRUSH		SERVICE PART ONLY - INCLUDES (1) 53093 W/ MOLEX CONNECTOR
12	57030	11	NUT, 10-32 HEX NYLOCK		
13	57047	1	NUT, 1/4-20 HEX NYLOCK		
14	57113	4	NUT, 5/16-18 HEX NYLOCK		
15	62747	1	PLATE, BELT ADJUSTMENT		
16	64094	1	PULLEY, TIMING 2.029PD X .375P		
17	64095	1	PULLEY, TIMING .375P 10T .5ID		
18	67093	2	RING, 1.13 RETAINING HO		
19	67395	1	RETAINER, SPLASH GUARD		
20	70011	2	SCR, 1/4-20 X 5/8 HHCS SS		
21	70017	1	SCR, 1/4-20 X 2.50 HHCS SS		
22	70124	3	SCR, 1/4-20 X 1/4 SH KCP		
23	70160	11	SCR, 10-32 X 5/8 PPHMS		
24	70302	4	SCR, 5/16-18 X 1.00 HHCS GR5		
25	70448	4	SCR, 6-32 X 1/2 PPHMS PLTD		
26	80613	2	WASHER, .506 X .94 NYL		
27	87025	2	WASHER, 1/4 EXT. STAR SS		
28	87029	8	WASHER, 5/16 X 3/4 SS		
29	87183	2	WASHER, 1/2 X 1.00 NYL		
30	89051	2	WHEEL, VAC SHOE		
31	89134	1	WELDMENT, BRUSH HOUSING		
32	140277	1	BRKT, BRUSH HOUSING END CAP		
33	64097	-	PULLEY ASSEMBLY, BRUSH		SERVICE PART ONLY - INCLUDES (2) 09019, (1) 42069, (1) 64095, (1) 67093, (4) 70448

SOLENOID AND MANIFOLD ASSEMBLIES



NOTE: To access solenoid remove items (1) 27775, (4) 70406

VIEW: FRONT VIEW OF BRUSH HOUSING ASM.

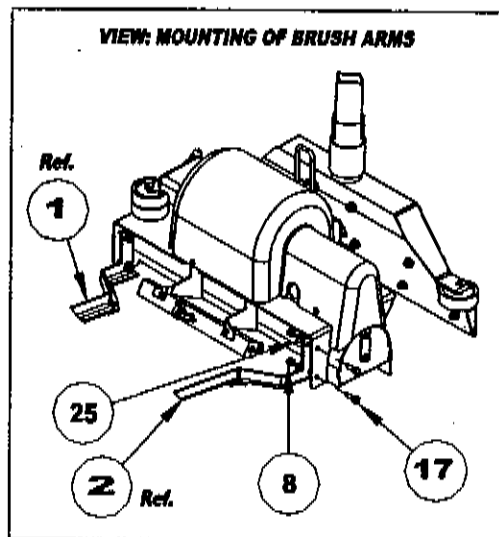
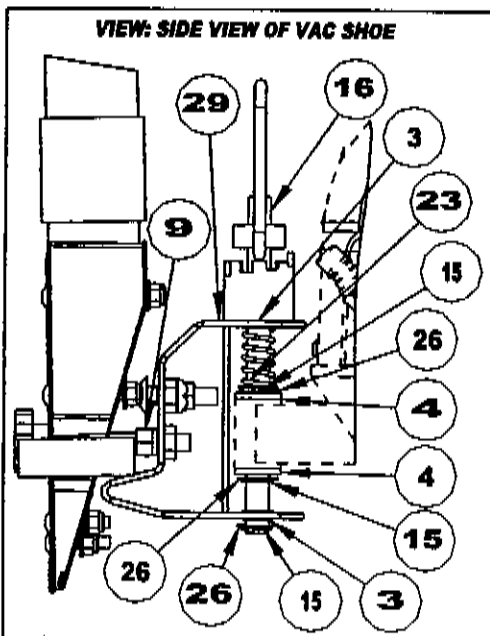
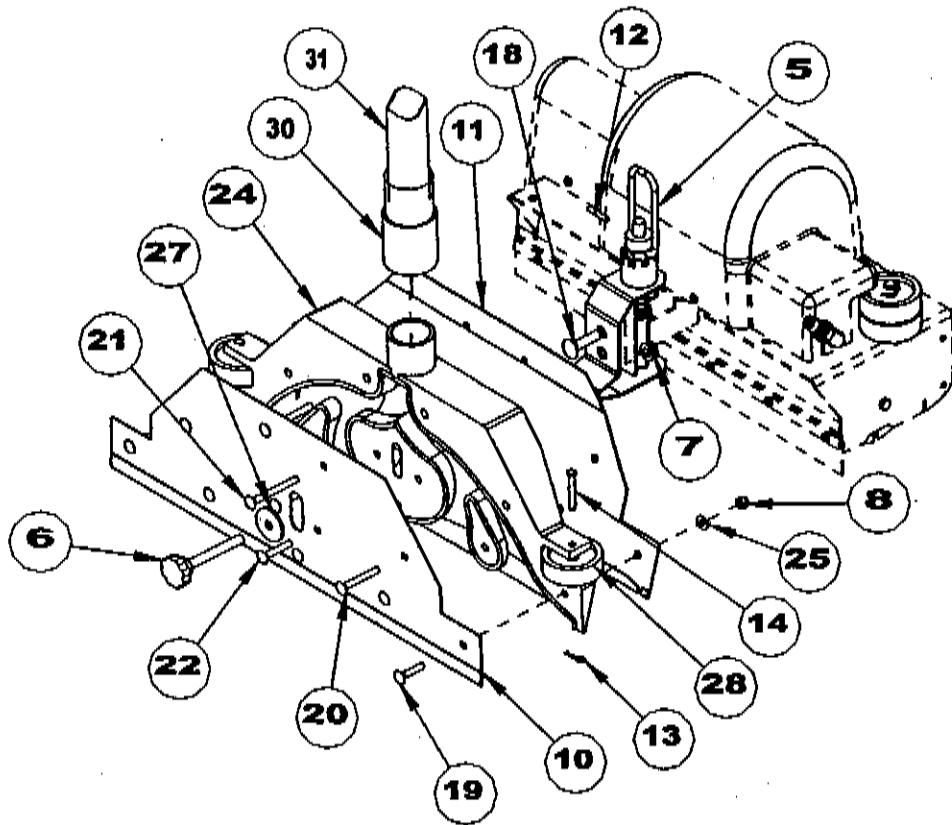


NOTE: To remove manifold asm remove item# (2) 70114

SOLENOID AND MANIFOLD ASSEMBLIES PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	20042	3	CLAMP, 3/8 WORM GEAR		
2	27775	1	COVER, BRUSH MOTOR		
3	31016	1	ELBOW, 1/4 NPT STREET		
4	40014	1	HOSEBARB, 1/4 MPT 3/8		
5	40033	2	HOSEBARB, 1/4 MPT X 3/8H 90°		
6	44067	2	JET, MINI PROMAX BODY		
7	44068	2	JET, MINI PROMAX 9504		
8	50947	1	LABEL, ADJ INSTRUCTION		
9	54165	1	MANIFOLD		
10	56012	1	NIPPLE, 1/4 FPT OD		
11	56023	1	NIPPLE, 1/4 X 1.5		
12	57028	4	NUT, 10-24 TINNEMAN		
13	57030	1	NUT, 10-32 HEX NYLOCK		
14	66095	2	PLUG, 1/8 MPT HEX BRASS		
15	70114	2	SCR, #10 X 3/4 PHST TYPE B		
16	70160	1	SCR, 10-32 X 5/8 PPHMS		
17	70162	2	SCR, 10-32 X 3/8 PPHMS SS		
18	70406	4	SCR, #10 X 3/8 PHSM TYPE B BLK		
19	78308	1	TEE, 1/4 STREET		
20	84157	-	SOLENOID ASSEMBLY		SERVICE PART ONLY - INCLUDES (1) 84148 W/ MOLEX CONN.
21	87016	3	WASHER, #10 EXT. STAR SS		
22	54168	-	MANIFOLD ASSEMBLY		SERVICE PART ONLY - INCLUDES (1) 54165, (2) 44067, (2) 44068, (2) 66095, (1) 40033

VACUUM SHOE ASSEMBLY

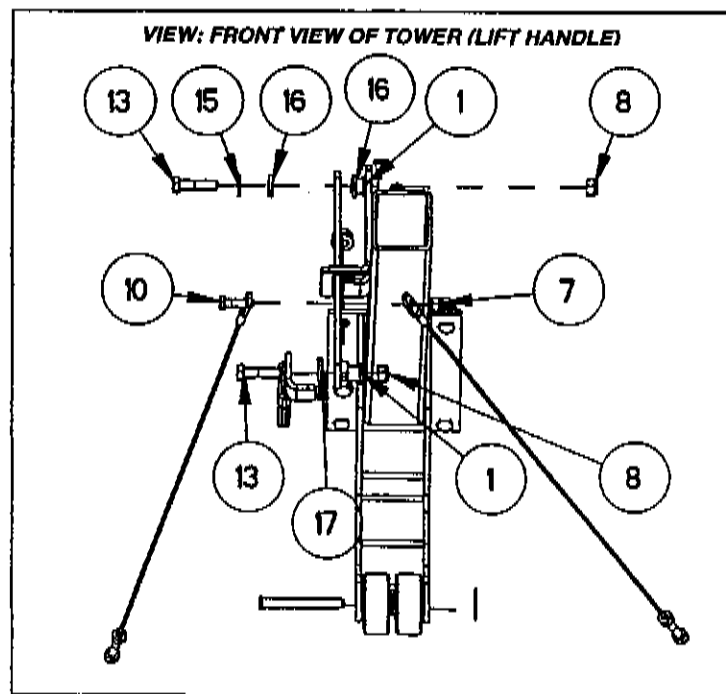
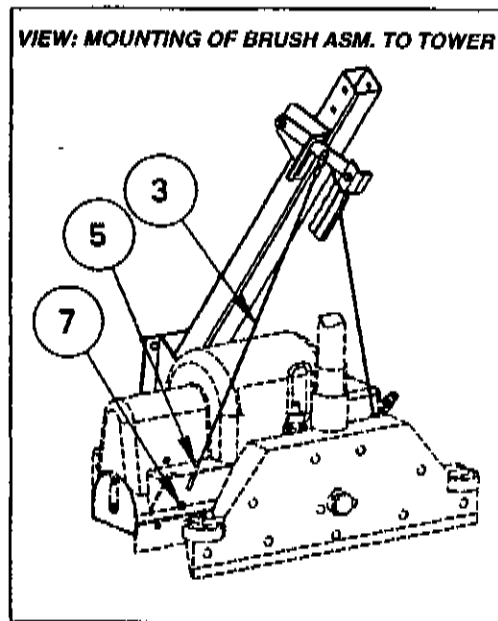
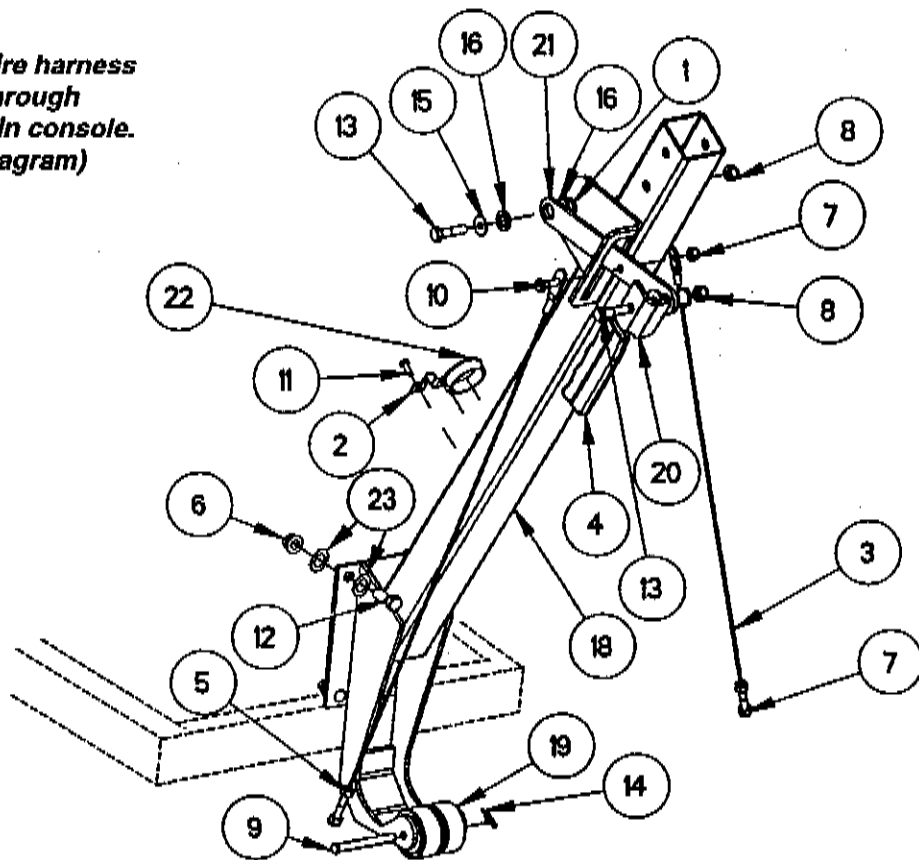


VACUUM SHOE ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	05130	1	ARM, BRUSH HOUSING RIGHT		
2	05131	1	ARM, BRUSH HOUSING LEFT		
3	09025	2	BEARING, 1/2 NYLINER SI		
4	14593	2	BUSHING, BRZ FLG .50 X .75 X .75		
5	27784	1	COLLAR ASM, HEIGHT ADJUSTMENT		
6	48071	1	KNOB, 1.38OD X 3/8-16 X 3.00		
7	57032	1	NUT, 3/8-16 HEX FLG		
8	57047	15	NUT, 1/4-20 HEX NYLOCK		
9	57119	1	NUT, 3/8-16 HEX NYLOCK		
10	62660	1	PLATE, VAC		
11	62664	1	PLATE, VAC TRAP		
12	66205	1	PIN, ROLL 3/16 X 1.13		
13	66219	2	PIN, COTTER HAIR .059 X 1		
14	66231	2	PIN, CLEVIS 1/4 X 1.75		
15	67132	3	RING, 1/2 RETAINING HD SH		
16	67394	1	ROD, VAC PIVOT		
17	70015	4	SCR, 1/4-20 X 3/4 HHCS SS		
18	70624	1	SCR, 3/8-16 X 1.5 CARRIAGE PLTD		
19	70634	5	SCR, 1/4-20 X 1.25 CARRIAGE		
20	70635	2	SCR, 1/4-20 X 2.0 CARRIAGE		
21	70636	2	SCR, 1/4-20 X 2.5 CARRIAGE		
22	70637	2	SCR, 1/4-20 X 1.5 CARRIAGE		
23	73907	1	SPRING, COMP .550ID X .720OD X .085W		
24	85036	1	VACUUM SHOE, INSERT		
25	87013	15	WASHER, 1/4 X 5/8 FLAT SS		
26	87136	4	WASHER, .52 X .88 FLAT		
27	87167	1	WASHER, .39 X 1.50 FLAT		
28	89051	2	WHEEL, VAC SHOE		
29	140294	1	BRKT, VAC SHOE ADJ. WELDMENT		
30	27814	1	CUFF, BLK VAC HOSE		
31	39492	1	HOSE, 1.5 BLK VAC X 30		

LIFT LEVER AND LOWER TOWER ASM.

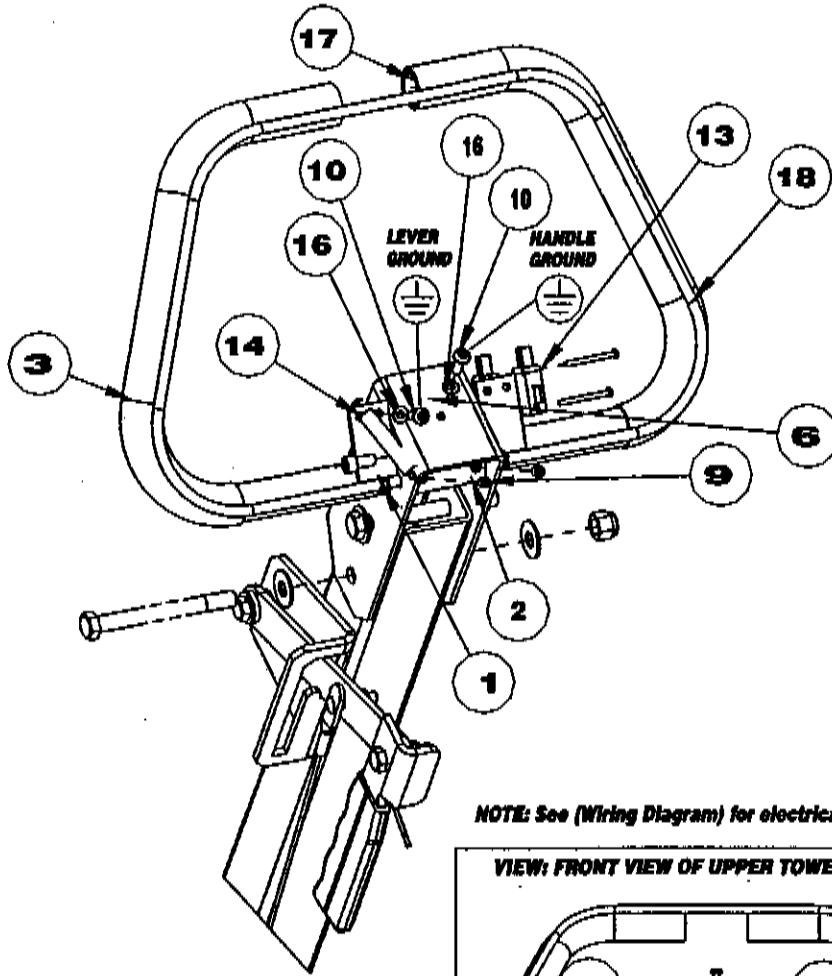
NOTE: Main wire harness from motors through bushing to main console. (Ref. Wiring Diagram)



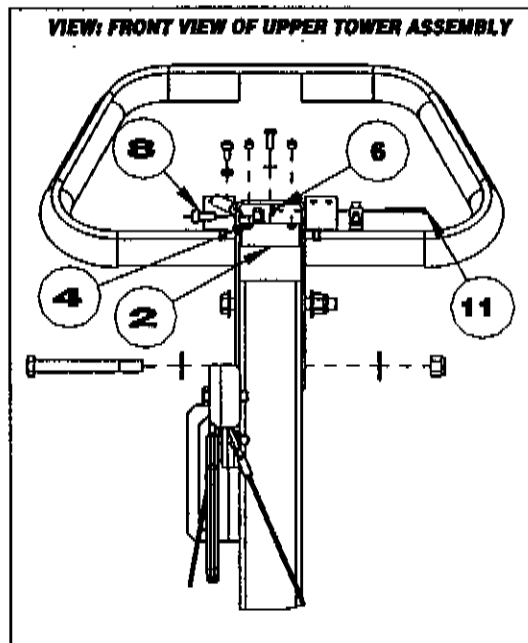
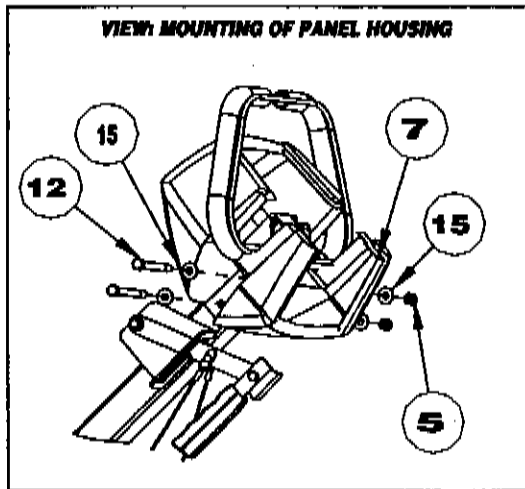
LIFT LEVER AND LOWER TOWER ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	09124	2	BEARING, FLANGED .313ID X .502OD		
2	20086	1	CLAMP, CORD		
3	27776	2	CABLE, 25 X 3/32 X 1/4 EYE X 1/4 STUD		
4	36133	1	GRIP, 3/16 X 1.0 FLAT BAR		
5	57006	2	NUT, 1/4-20 HEX		
6	57032	4	NUT, 3/8-16 HEX FLG		
7	57047	3	NUT, 1/4-20 HEX NYLOCK		
8	57113	2	NUT, 5/16-18 HEX NYLOCK		
9	66268	1	PIN, CLEVIS 5/16 X 2.75		
10	70018	1	SCR, 1/4-20 X 1.00 HHCS SS		
11	70187	2	SCR, 10-24 X 1/2 PHTC -F-		
12	70266	4	SCR, 3/8-16 X 1.00 HHCS GR5		
13	70325	2	SCR, 5/16-18 X 1.25 HHCS GR5		
14	80605	1	COTTER, 5/16 RING		
15	87029	1	WASHER, 5/16 X 3/4 SS		
16	87140	2	WASHER, WAVE 1/2ID X 3/4D X .125		
17	87183	1	WASHER, 1/2 X 1.00 NYL		
18	89128	1	WELDMENT, POST LOWER CONTROL		
19	89147	2	WHEEL, 2OD X .31ID X .88W PLASTIC		
20	140286	1	BRKT, LIFT LEVER HANDLE		
21	140287	1	BRKT, LIFT LEVER BASE		
22	140317	1	BUSHING, 1.5 HOLE SNAP		
23	87024	8	WASHER, 3/8 STAR		

UPPER TOWER ASSEMBLY



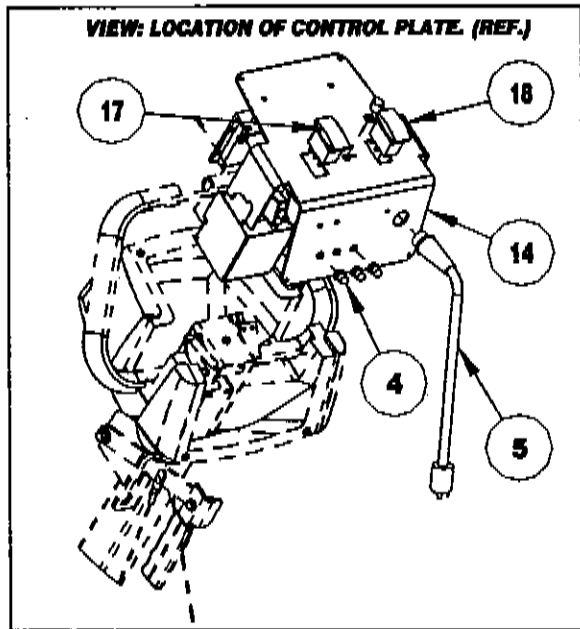
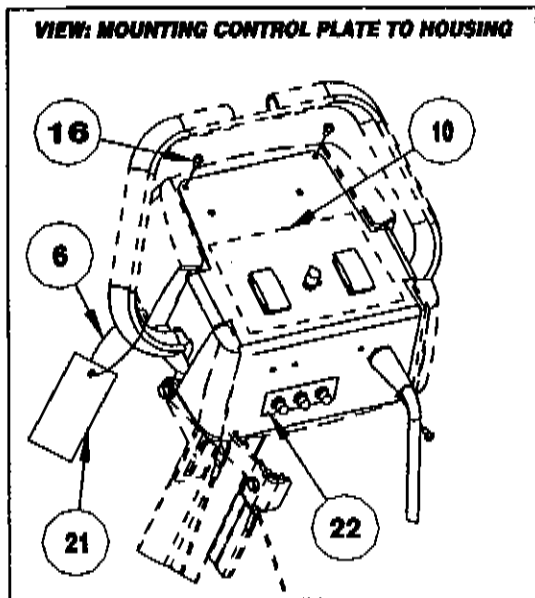
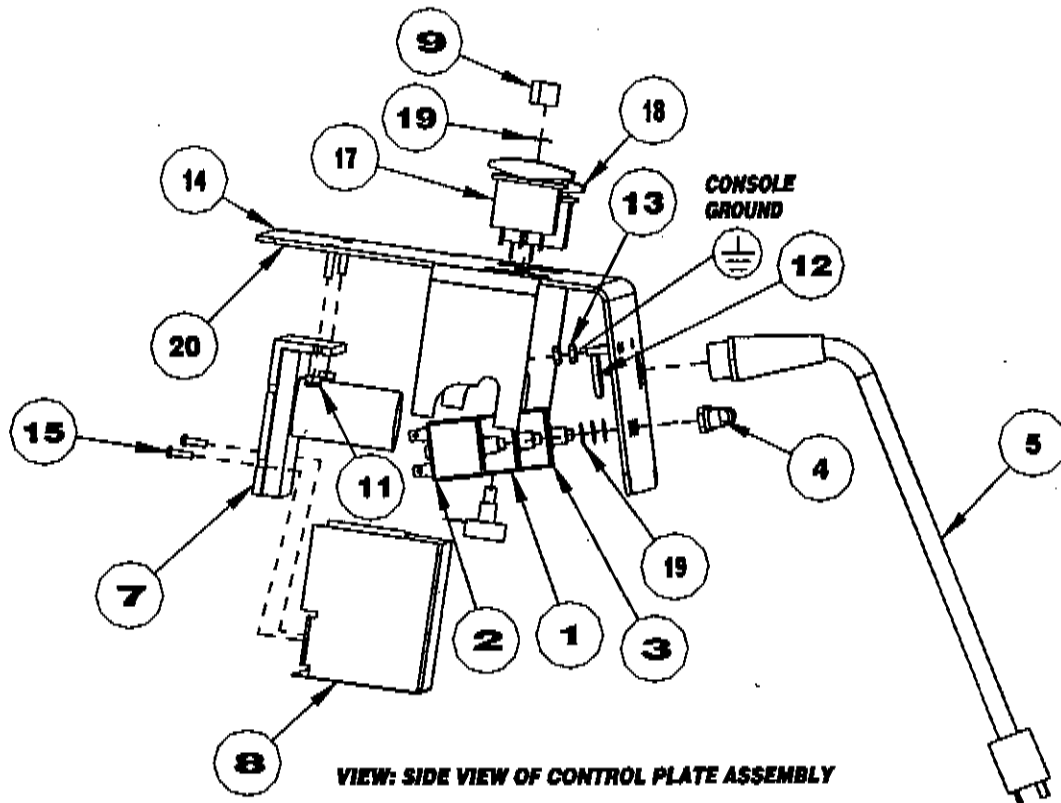
NOTE: See (Wiring Diagram) for electrical wiring layout.



UPPER TOWER ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	09128	2	BEARING, 1/4 NYLINER SI		
2	27779	1	COLLAR, .75OD X .281ID X 1.875		
3	36046	2	GRIP, .813ID X .085W X 13.0L PVC		
4	57047	1	NUT, 1/4-20 HEX NYLOCK		
5	57119	2	NUT, 3/8-16 HEX NYLOCK		
6	57163	2	NUT, 4-40 HEX W/ STAR		
7	61346	1	PANEL, CONTROL		
8	70094	1	SCR, 1/4-20 X 1/2 SHCS		
9	70124	2	SCR, 1/4-20 X 1/4 SH KCP		
10	70187	2	SCR, 10-24 X 1/2 PHTC -F-		
11	70401	2	SCR, 4-40 X 1.25 PPHMS		
12	70554	2	SCR, 3/8-16 X 3.50 HHCS GR5		
13	72157	2	SWITCH, 10A ROLLER MINI		
14	73210	1	SPRING, EXT .36D X 1.5L X .058W		
15	87003	4	WASHER, 3/8 X 7/8 FLAT SS		
16	87016	2	WASHER, #10 EXT STAR SS		
17	89133	1	HANDLE, WELDMENT		
18	89138	1	WELDMENT, PROPEL CONTROL		

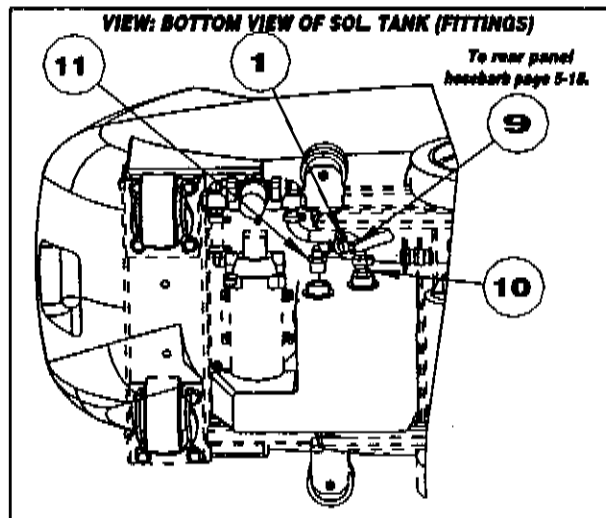
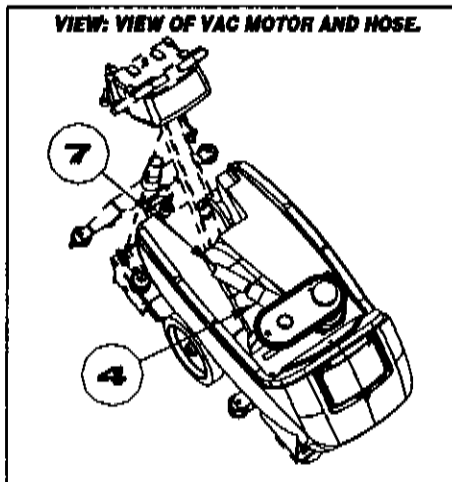
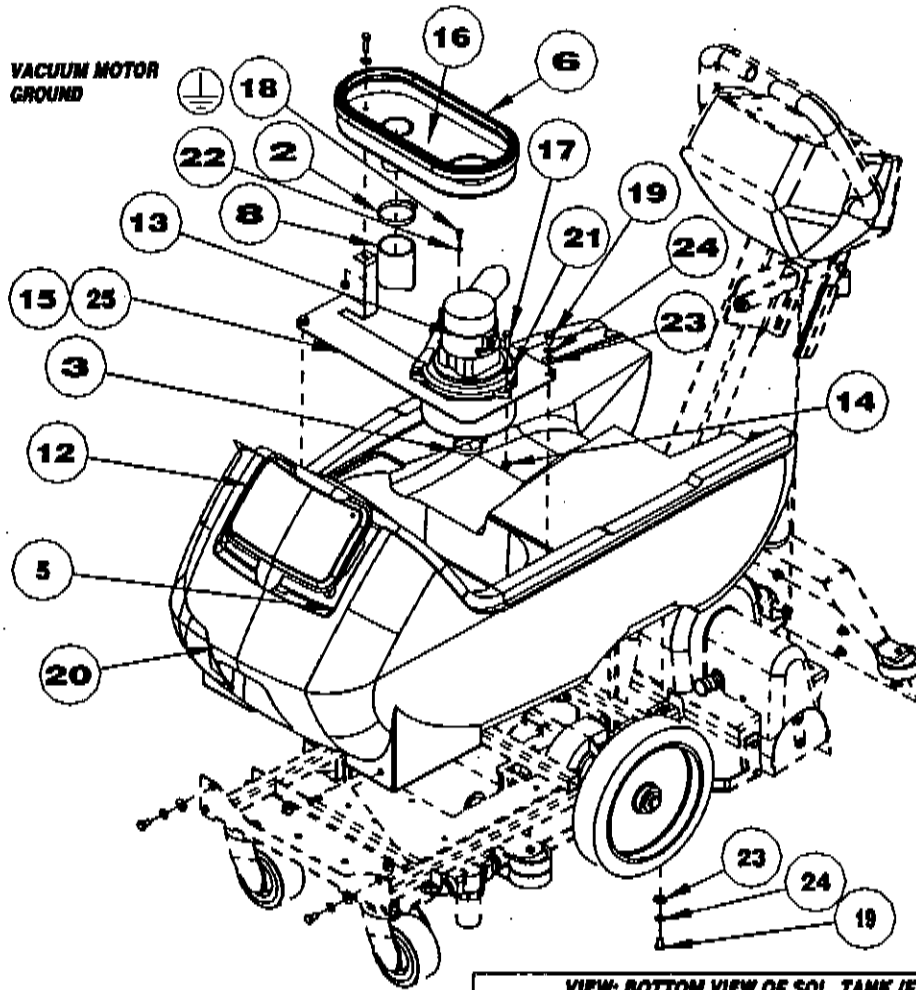
CONTROL PANEL ASSEMBLY



CONTROL PANEL ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	14668	1	BREAKER, 250VAC, 50VDC		
2	14700	1	BREAKER, 15A 250VAC, 50VDC		
3	14832	1	BREAKER, 6A VDE		
4	14942	3	BOOT, 3/8 CIRCUIT BREAKER		
5	23675	1	CORD ASM, 12/3 PIGTAIL X 24"		
6	27417	1	CORD, 99807 1/8 X 12		
7	27774	1	CONTROL PROPEL BOARD 115/240V		
8	27795	1	COVER, PROPEL BOARD		
9	48043	1	KNOB, SPEED CONTROL		
10	500234	1	LABEL, CONTROL PANEL		
11	57026	2	NUT, 8-32 HEX NYLOCK		
12	57040	1	NUT, 1/2 NPT CONDUIT		
13	57106	2	NUT, 8-32 HEX W/ STAR		
14	62666	1	PLATE, CONTROL PANEL		
15	70219	2	SCR, #6 X 1/2 SHT MTL BLK		
16	70406	4	SCR, #10 X 3/8 PHSM TYPE B BLK		
17	72128	1	SWITCH, DPDT 2-POSITION ROCKER		
18	72130	1	SWITCH, SPST 2-POSITION ROCKER		
19	87100	4	WASHER, 3/8 INT STAR		
20	99843	2.8'	GASKET, 1/8 X 1/2 1SDA FOAM BLK		
21	500235	1	CARD, INSTRUCTION		
22	500079	1	LABEL, CIRCUIT BREAKER		

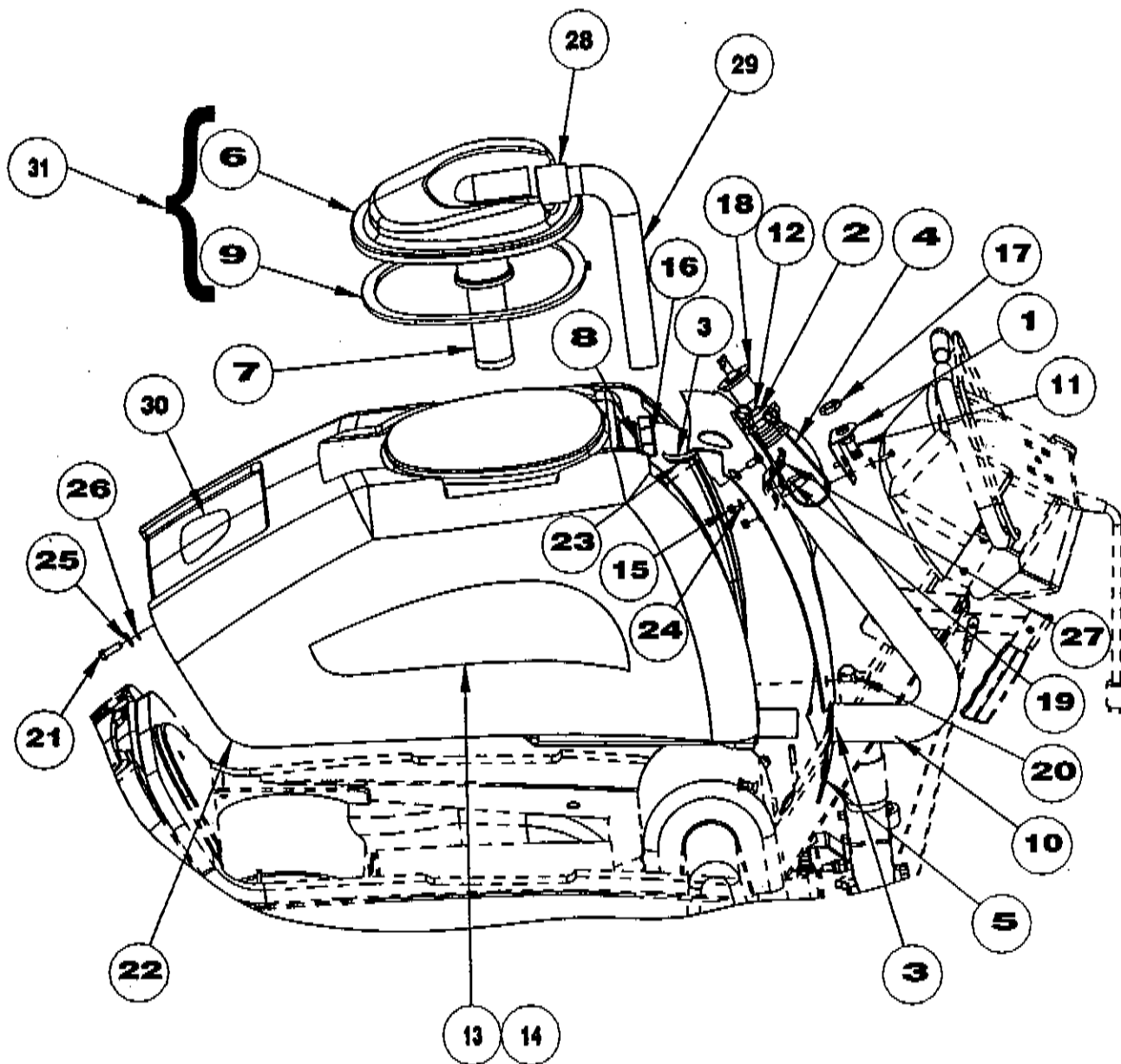
SOLUTION TANK ASSEMBLY



SOLUTION TANK ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	20042	1	CLAMP, 3/8 WORM GEAR		
2	20046	2	CLAMP, 2.25 WORM GEAR		
3	20063	1	CLAMP, 1.75 WORM GEAR X .312		
4	27814	1	CUFF, BLK VAC HOSE		
5	27417	1	CORD, 99807 1/8 X 12		
6	35226	1	GASKET, DOME 9ID X 30.75L		
7	39337	1	HOSE, 1.5 BLUE VAC X 24		
8	39239	1	HOSE, 2" VAC X 20"	1000019689	
9	39503	1	HOSE, DRAIN X 44"		
10	40023	1	HOSEBARB, 1/2 MPT X 3/8 NYLON		
11	40039	1	HOSEBARB, 1/2 MPT X 1/2 HOSE 90		
12	51296	1	LID, SOLUTION TANK		
13	53787	-	VAC MOTOR ASSEMBLY		SERVICE PART ONLY - INCLUDES (1) 53134 W/ MOLEX CONN.
14	57047	4	NUT, 1/4-20 HEX NYLOCK		
15	62691	1	PLATE, VAC MOTOR		
16	62754	1	PLATE, VAC MOTOR COOLING		
17	70018	4	SCR, 1/4-20 X 1.00 HHCS SS		
18	70187	1	SCR, 10-24 X 1/2 PHTC -F-		
19	70375	6	SCR, 5/16-18 X 1/2 HHCS GR5		
20	75243	1	TANK, SOLUTION		
21	87013	4	WASHER, 1/4 X 5/8 FLAT SS		
22	87016	1	WASHER, #10 EXT STAR SS		
23	87029	6	WASHER, 5/16 X 3/4 SS		
24	87067	6	WASHER, 5/16 INT STAR		
25	14445	-	BRUSH SET, VAC MOTOR		SERVICE PART ONLY

RECOVERY TANK ASSEMBLY



RECOVERY TANK ASSEMBLY PARTS LIST

REF	PART NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	14665	1	BRKT, SIGHT TUBE		
2	20002	1	CLAMP, 2.00 NYLON RATCHET		
3	20063	2	CLAMP, 1.75 WORM GEAR X .312		
4	27670	1	CORD ASM, DRAIN PLUG		
5	27765	1	COVER, REAR		
6	28057	1	DOME		
7	34329	1	FLOAT BALL, VAC SHUT OFF		
8	35219	1	GASKET, 1-1/2 COMPRESSION		
9	35221	1	GASKET, DOME		
10	39472	1	HOSE, 1.5 X 24.0 DRAIN		
11	40013	1	HOSEBARB, 3/8 MPT X 1/2 HOSE		
12	40019	1	HOSEBARB, 1.5 DOUBLE MCHD		
13	500230	1	LABEL, BFP20 RIGHT		
14	500231	1	LABEL, BFP20 LEFT		
15	57030	5	NUT, 10-32 HEX NYLOCK		
16	57033	1	NUT, 1.5 SLIP JOINT		
17	57044	1	NUT, 3/8 NPT HEX BRASS		
18	66227	1	PLUG, DRAIN HOSE		
19	70160	5	SCR, 10-32 X 5/8 PPHMS		
20	70274	6	SCR, 5/16-18 X 3/4 FHMS BLK OX		
21	70302	1	SCR, 5/16-18 X 1.00 HHCS GR5		
22	75321	1	TANK, RECOVERY BFP20		
23	78390	1	TUBE, 1.5 WASTE		
24	87018	10	WASHER, #10 X 9/16 FLAT		
25	87029	1	WASHER, 5/16 X 3/4 SS		
26	87067	1	WASHER, 5/16 INT STAR		
27	140133	1	BRKT, RECOVERY HOSE MTG		
28	27759	1	CUFF, HOSE 1.5" BLK A 2126		
29	39524	1	HOSE, 1.5 BLK VAC X 52"		
30	500057	1	LABEL, BETCO LOGO		
31	28059	-	DOME ASSEMBLY		SERVICE PART ONLY INCLUDES (1) 28057, (1) 35221, (1) 34329