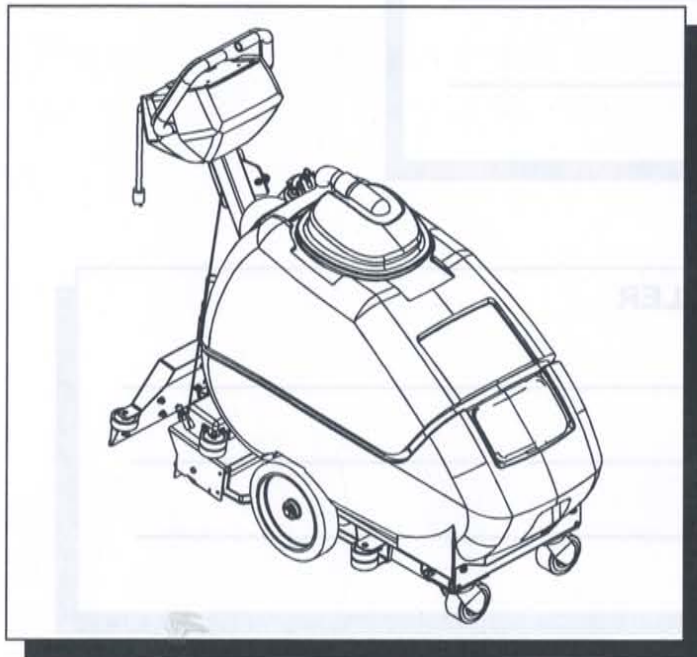


Fiber PROTM 20

BETCO.



Operating Instructions (ENG)

MODEL: BFP20 - 10086040

Power Source: 115V Electric

Read instructions before operating the machine.

M

86038490 05/11/07

PRV NO. 98777

MACHINE DATA LOG/OVERVIEW

MODEL _____

DATE OF PURCHASE _____

SERIAL NUMBER _____

SALES REPRESENTATIVE # _____

DEALER NAME _____

OPERATIONS GUIDE NUMBER _____

PUBLISHED _____

YOUR DEALER

Name: _____

Address: _____

Phone Number: _____

MODEL: BFP20 - 1008040
Power Source: 115V Electric

Read instructions before operating the machine.



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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.
- **PRV NO.** – reference number.
- **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.



WARNING:

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.

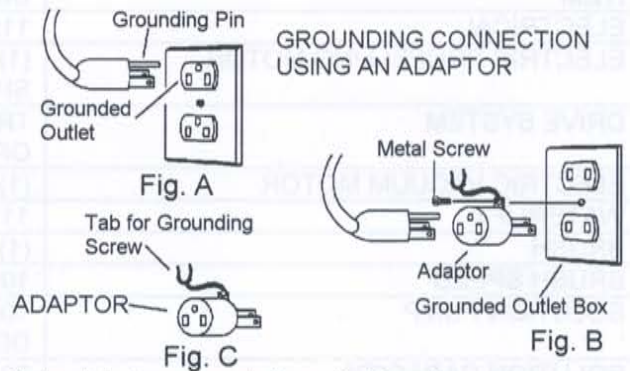
EXTENSION CORDS:

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.

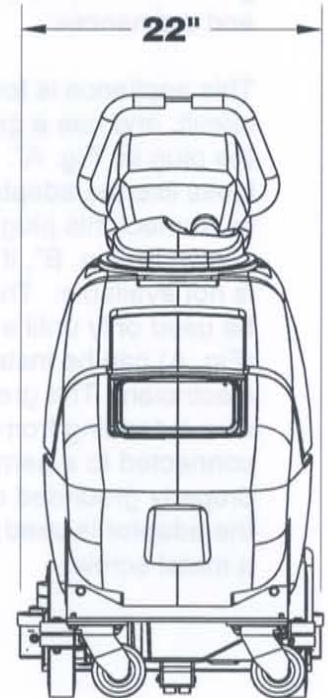
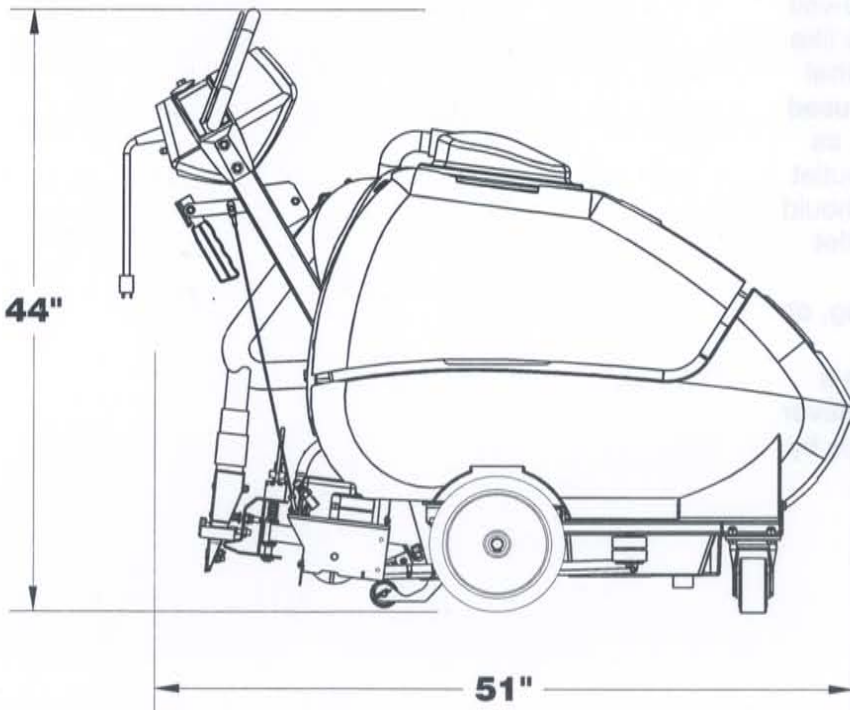
Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance - if it will not fit the outlet,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

TECHNICAL SPECIFICATIONS

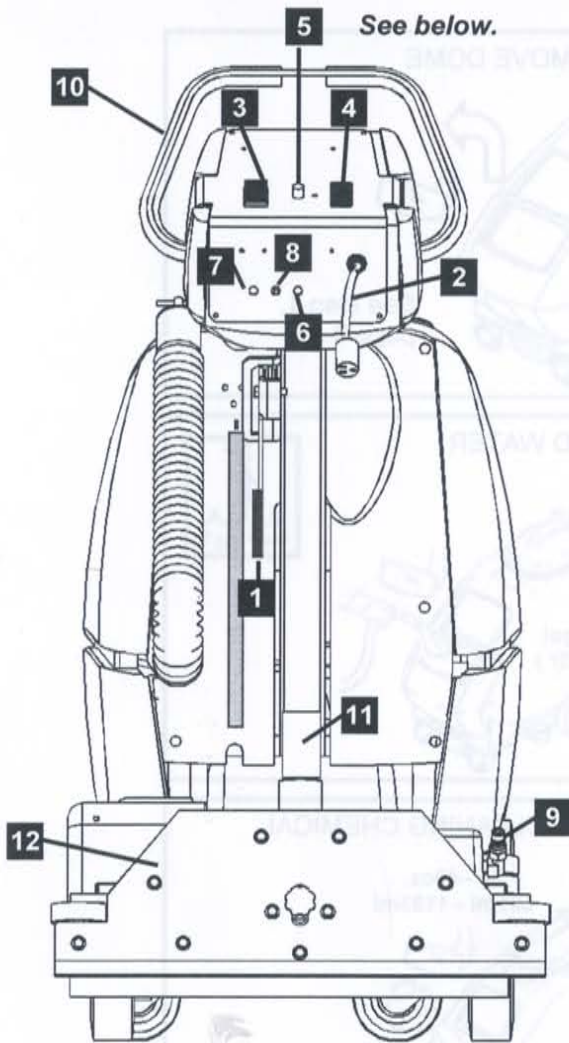
ITEM	DIMENSION/CAPACITY
ELECTRICAL	115V, 15A, 60Hz
ELECTRIC PROPELLING MOTOR	(1) - 1/4HP DC (186 WATTS) WITH VARIABLE SPEED FORWARD
DRIVE SYSTEM	TRANSAXLE UNIT VARIABLE SPEED OPERATING SPEED: 0-100FT/MIN (30M/MIN)
ELECTRIC VACUUM MOTOR	(1) - 3 STAGE, 1HP 99 CFM (2.8M ³ /MIN.)
WATERLIFT	117" (297 CM)
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)	4" DIA. (10 CM) CASTERS BY 2.5"
REAR (2)	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

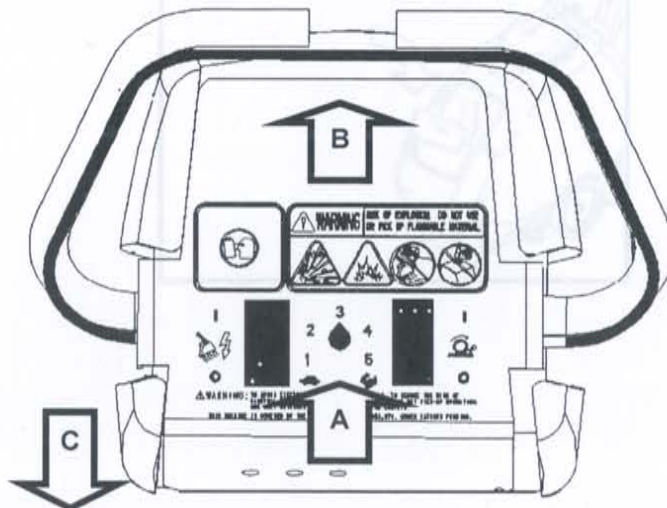
FRONT VIEW



CONTROLS



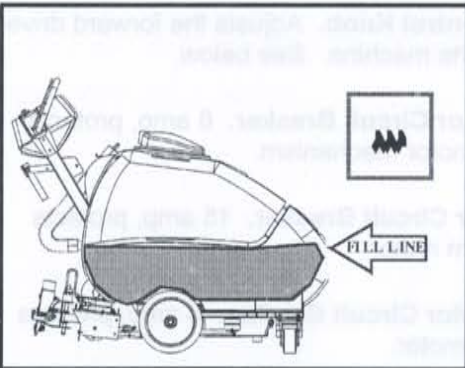
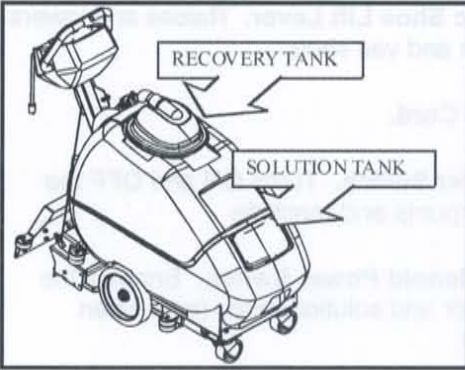
1. **Brush/Vac Shoe Lift Lever.** Raises and lowers both brush and vac shoe.
2. **Electrical Cord.**
3. **Main Power Switch.** Turns ON and OFF the vac motor/pump and machine.
4. **Brush/Solenoid Power Switch.** Enables the brush motor and solution spray (only when propelling).
5. **Speed Control Knob.** 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

REMOVE DOME



See step 1, page 3-4.

STEP 2

ADD WATER



20 gal.
(75 ltr.)



STEP 3

ADD CLEANING CHEMICAL



20 - 40oz.
591ml - 1183ml

STEP 4

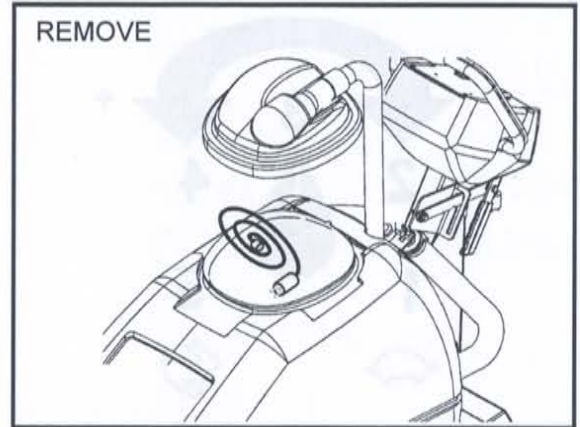
REPLACE DOME



OPERATIONS

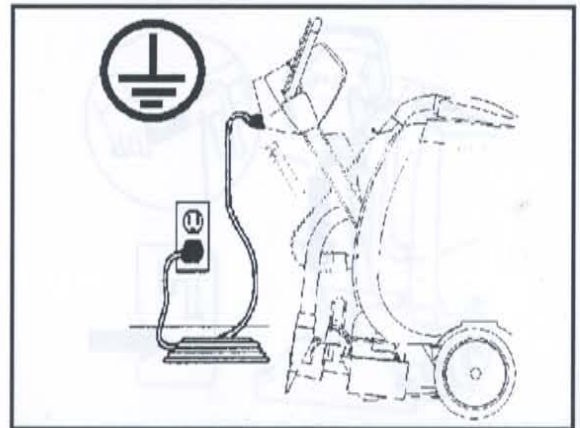
Remove electrical cord from recovery tank.

STEP 1



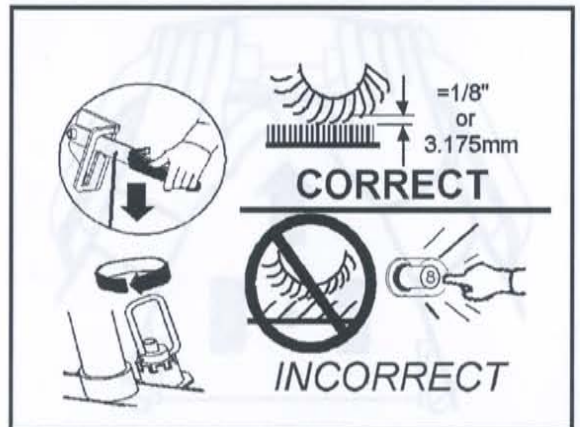
Plug cord into grounded outlet.

STEP 2



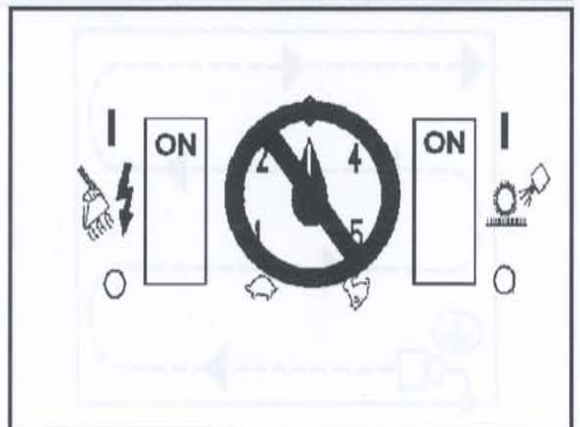
Adjust brush to proper setting (see page 3-8). Lower the brush.

STEP 3

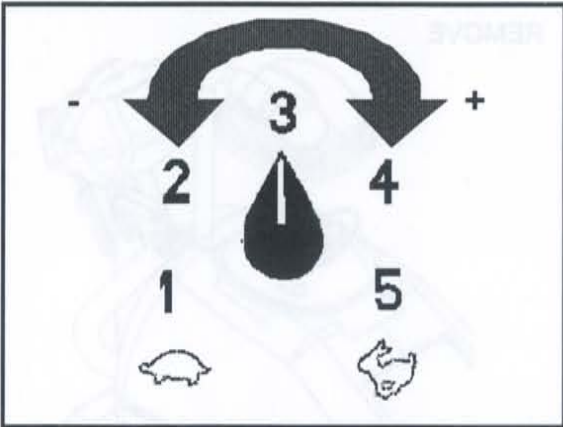


Turn Main Power/Brush Switch "ON"-|"

STEP 4

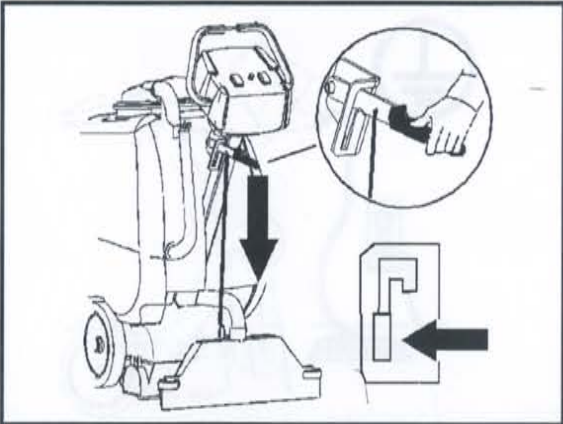


OPERATIONS



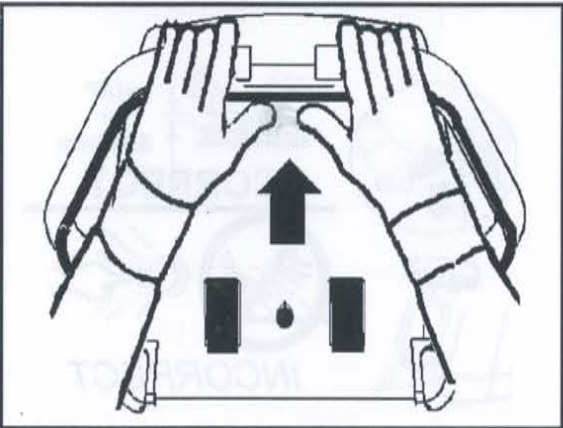
STEP
5

Adjust speed control knob to desired speed.



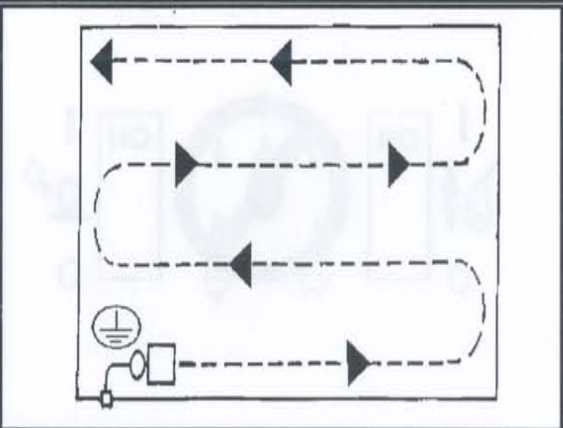
STEP
6

Lower brush assembly to floor.



STEP
7

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



STEP
1

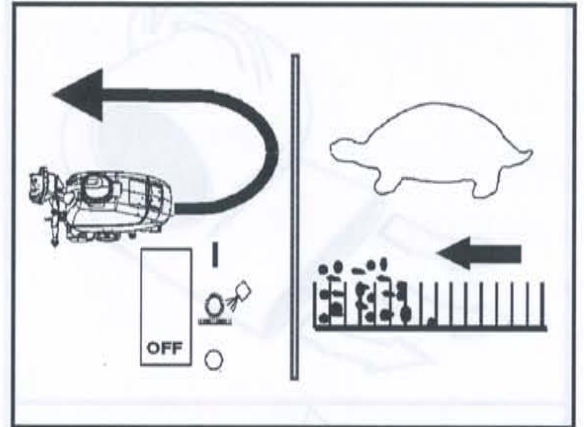
CLEANING PROCEDURE

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



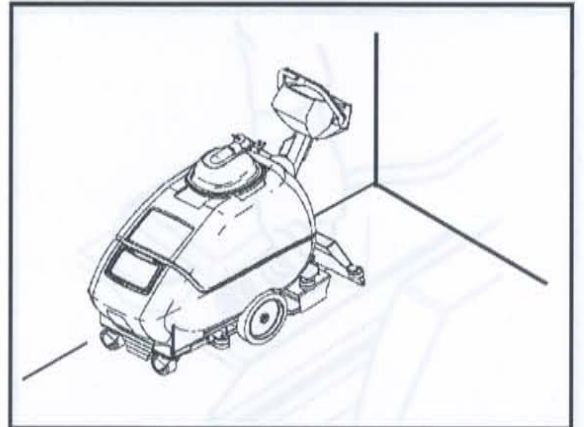
CAUTION

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



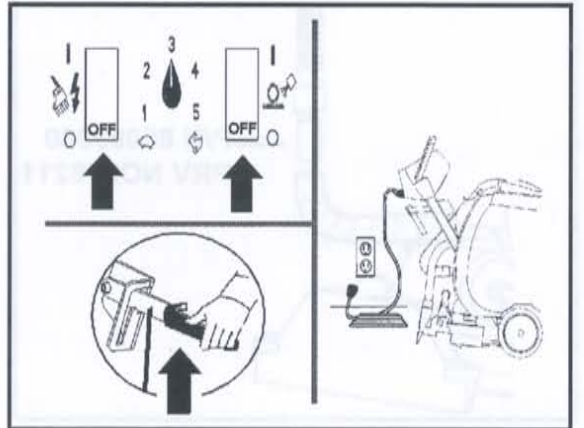
Use right side of machine for cleaning
against walls.

STEP
3

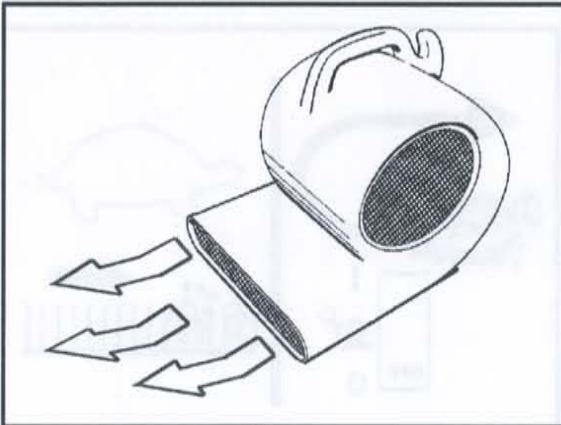


After cleaning, turn off all controls, raise
brush assembly to storage position and
carefully unplug machine.

STEP
4

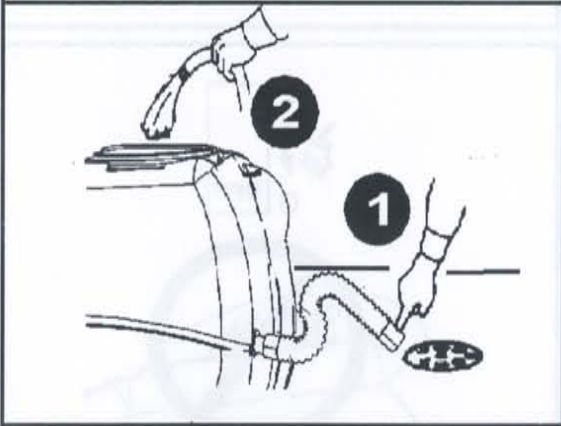


CLEANING PROCEDURE/ACCESSORY TOOL USAGE



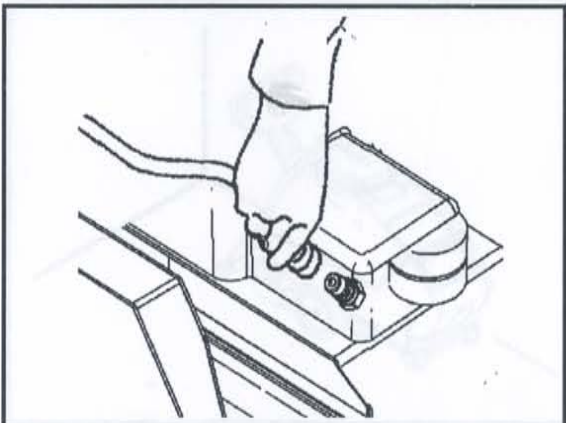
STEP
5

Use a fan, to speed dry.



STEP
6

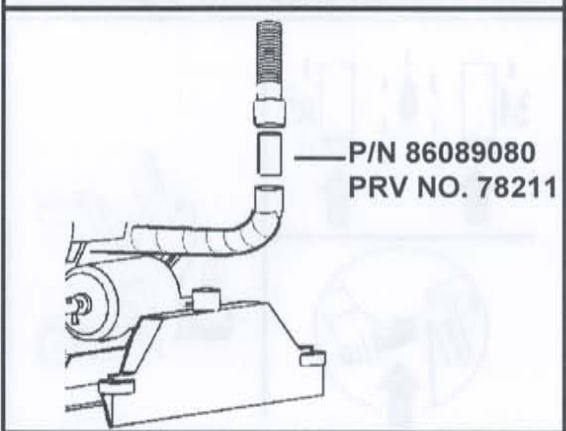
Empty recovery tank by releasing dump hose. Use a hose with cold water to clean out the recovery tank. Also drain solution tank after each use.



STEP
1

ACCESSORY TOOL USAGE

Insert collar over fitting.



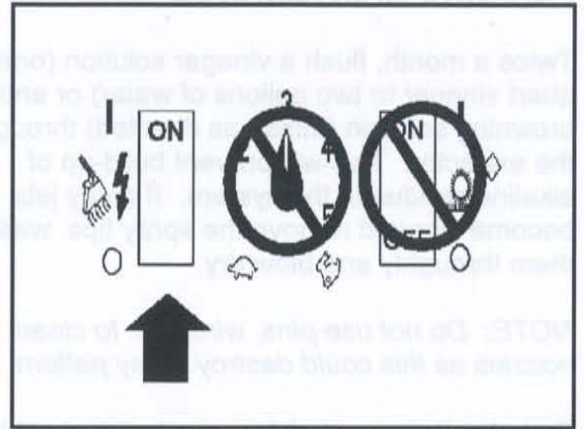
STEP
2

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

ACCESSORY TOOL USAGE/BRUSH ADJUSTMENT

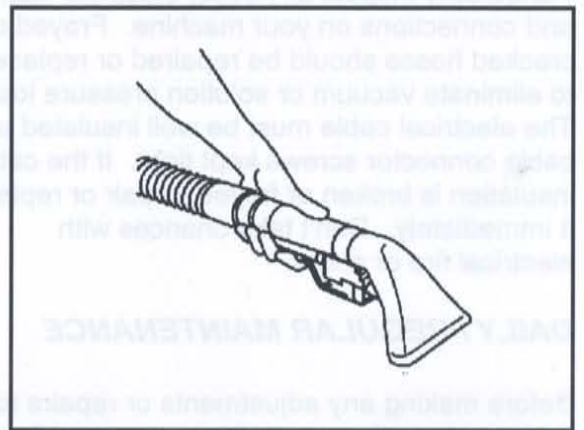
Turn Main Power Switch "ON" - "I"

STEP 3



Squeeze handle on accessory tool to begin cleaning.

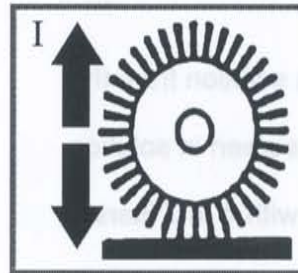
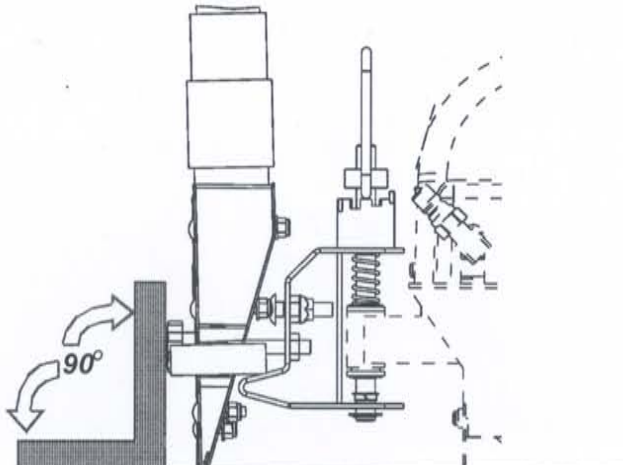
STEP 4



BRUSH ADJUSTMENT

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

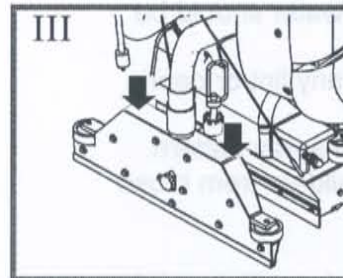
Adjust brush to 90°



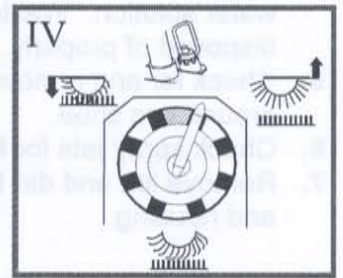
To adjust the brush



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

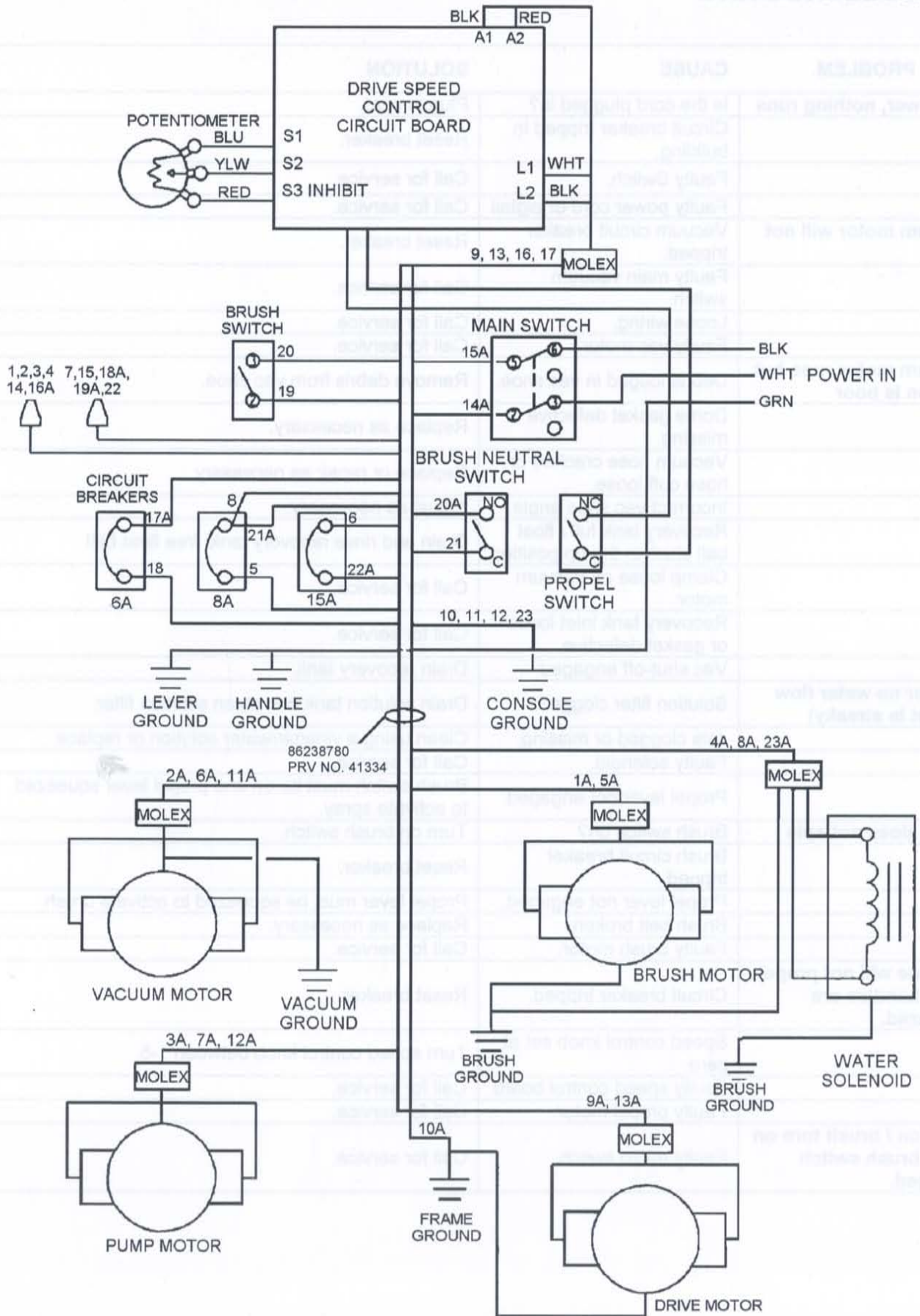
Before making any adjustments or repairs to the machine, disconnect the power cord from electrical source.

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.



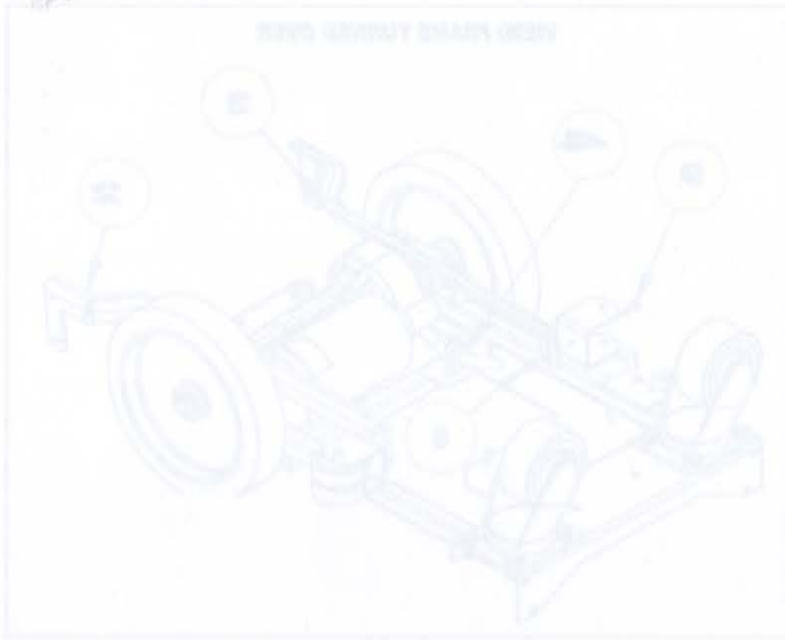
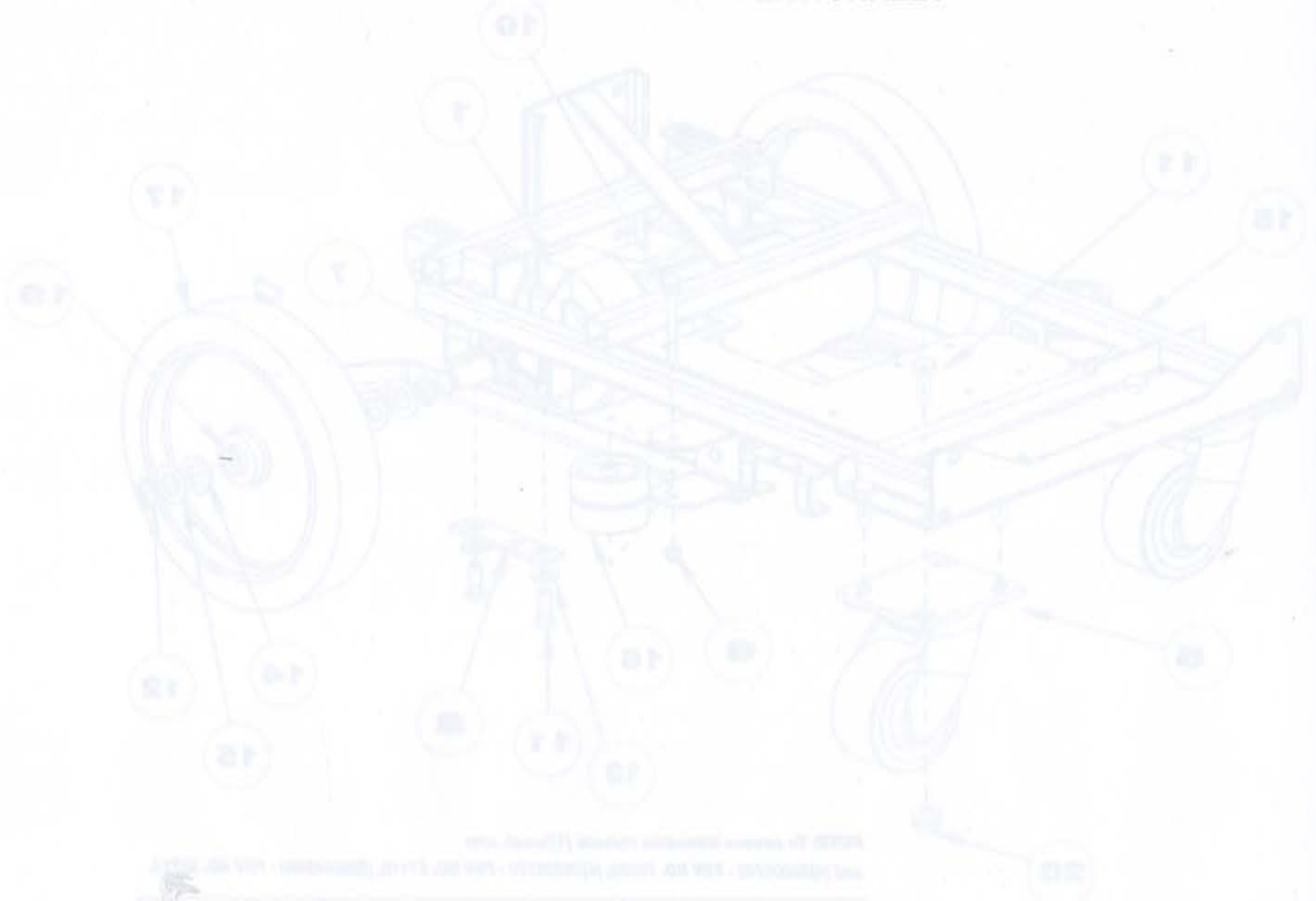
WIRING DIAGRAM



TROUBLESHOOTING

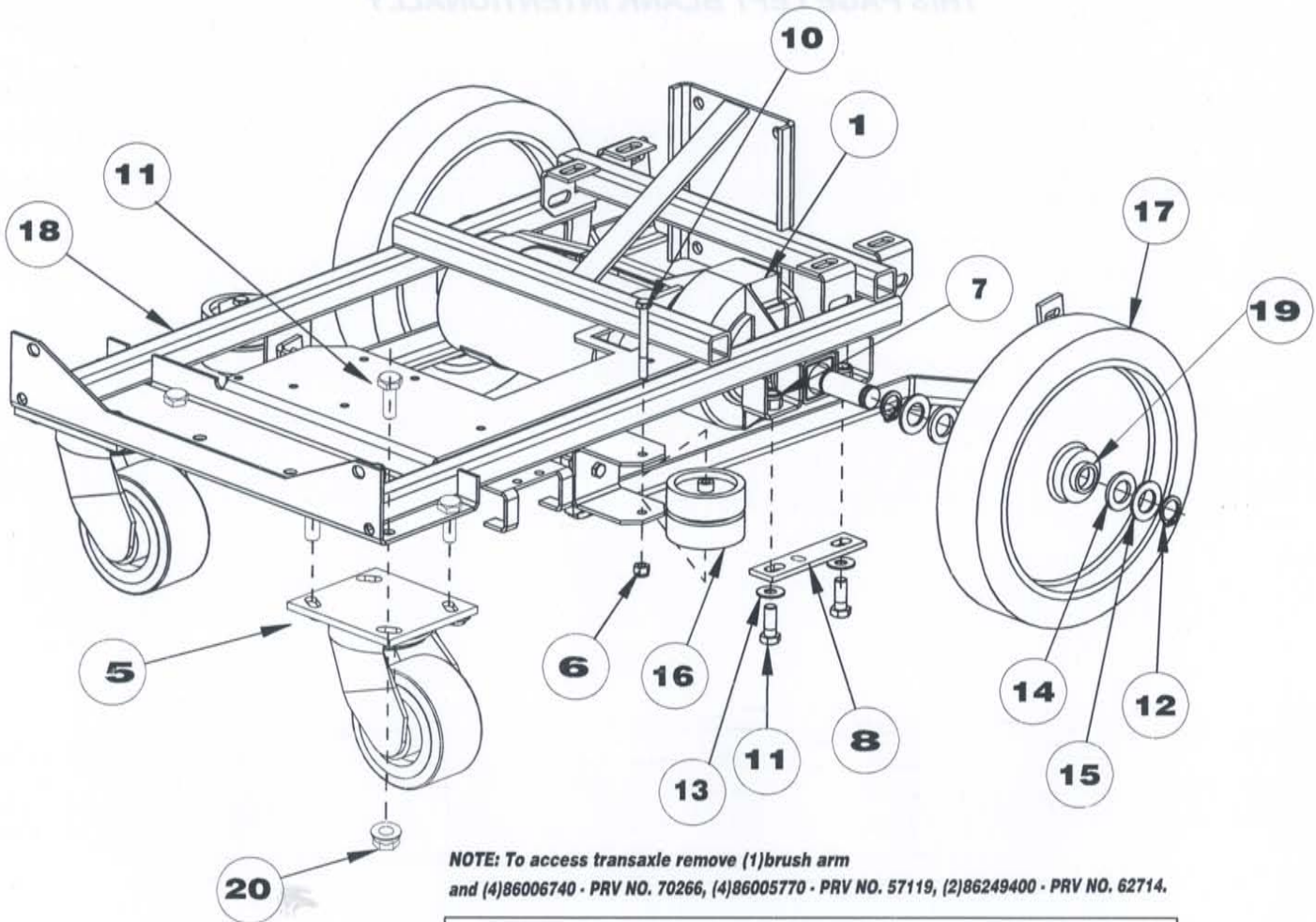
PROBLEM.	CAUSE	SOLUTION
No power, nothing runs	Is the cord plugged in?	Plug in cord.
	Circuit breaker tripped in building.	Reset breaker.
	Faulty Switch.	Call for service.
	Faulty power cord or pigtail	Call for service.
Vacuum motor will not run	Vacuum circuit breaker tripped.	Reset breaker.
	Faulty 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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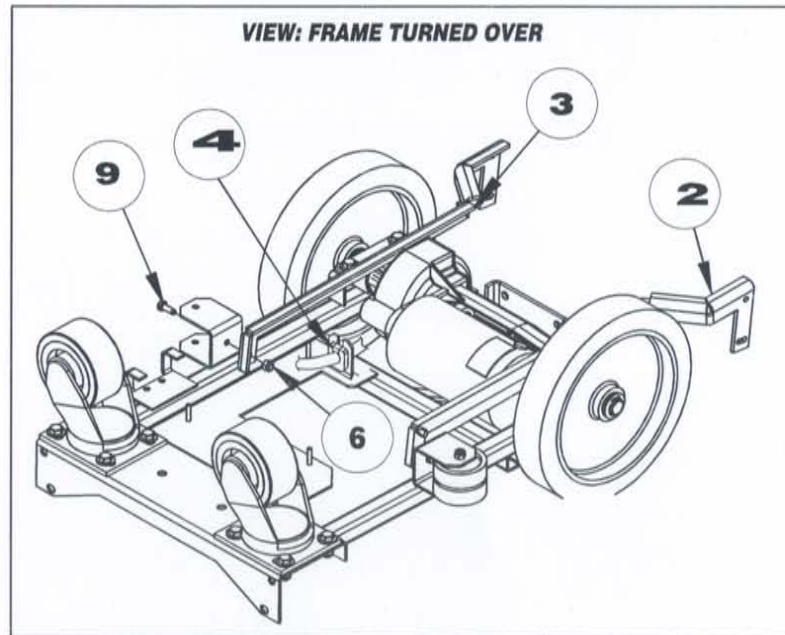


FRAME ASSEMBLY

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NOTE: To access transaxle remove (1) brush arm and (4) 86006740 - PRV NO. 70266, (4) 86005770 - PRV NO. 57119, (2) 86249400 - PRV NO. 62714.

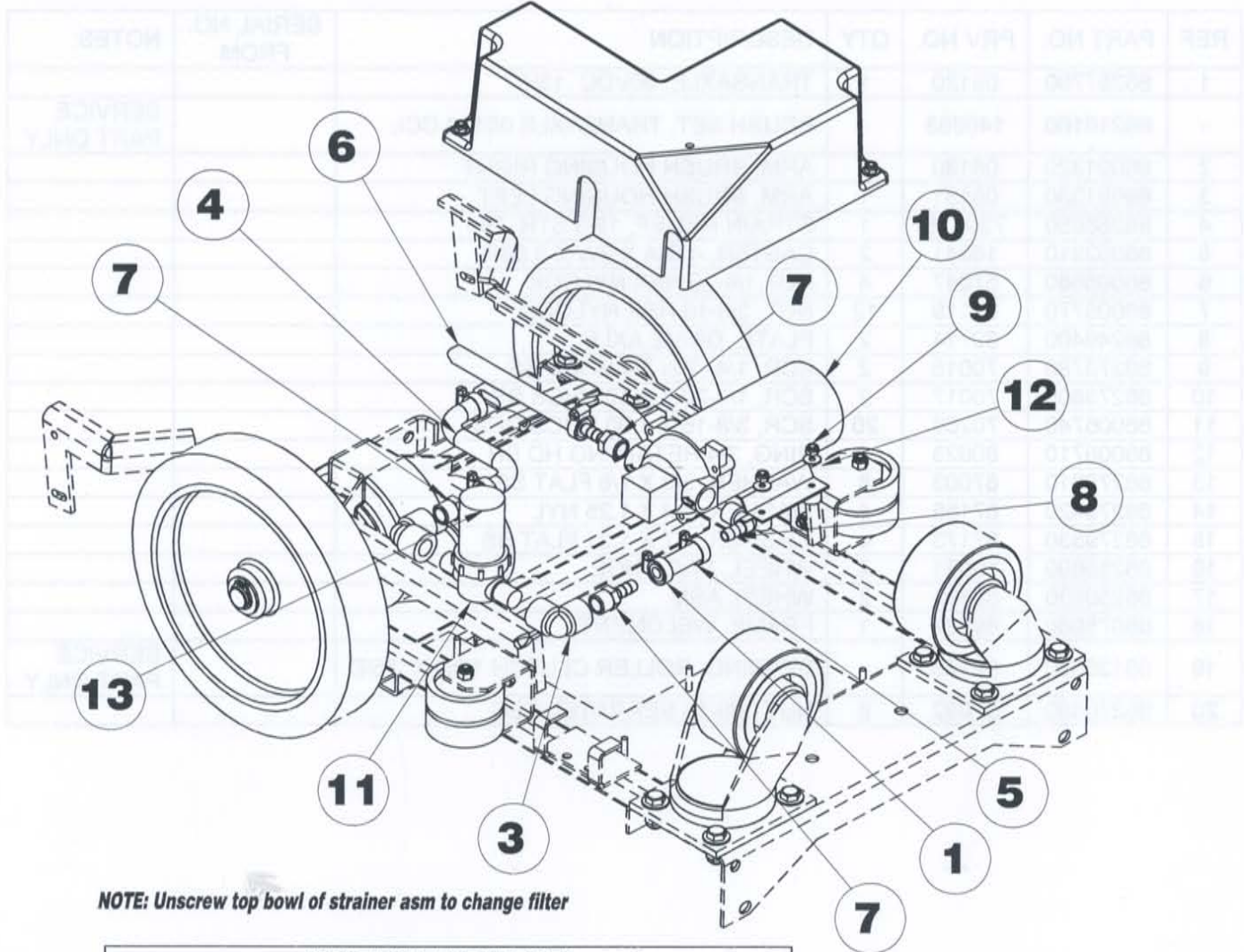


FRAME ASSEMBLY PARTS LIST

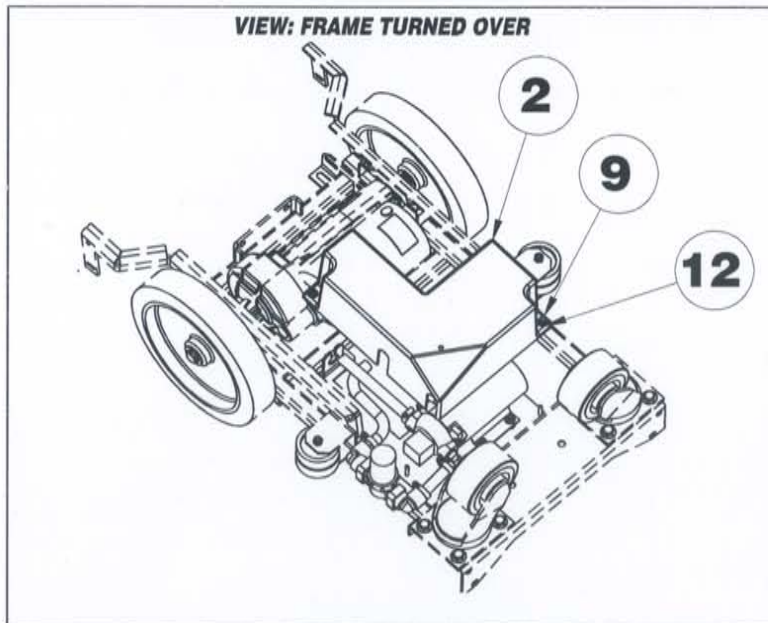
Item	SKU	QTY	Description
1	E87678	1	TRANSAXLE, 90VDC.13HP
	140593	-	BRUSH SET, TRANSAXLE 05120 CCL
2	05130	1	ARM, BRUSH HOUSING RIGHT
3	05131	1	ARM, BRUSH HOUSING LEFT
4	730175	1	STRAIN RELIEF, 18/3 STR.75
5	E87635	2	CASTER, 4 DIA X 2W X 3.56R
6	E85358	4	NUT,1/4-20 HEX NYLOCK
7	E87636	12	NUT, 3/8-16 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	E87637	20	SCR, 3/8-16 X 1.00 HHCS GR5
12	80623	4	RING, 3/4 RETAINING HD SH
13	E87638	8	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	E87680	2	WHEEL ASM.
18	89137	1	FRAME, WELDMENT
19	E88360	-	BEARING, ROLLER CLUTCH 1OD X.751D
20	E87260	8	NUT, 3/8-16 SERRATED FLG

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PUMP ASSEMBLY



NOTE: Unscrew top bowl of strainer asm to change filter



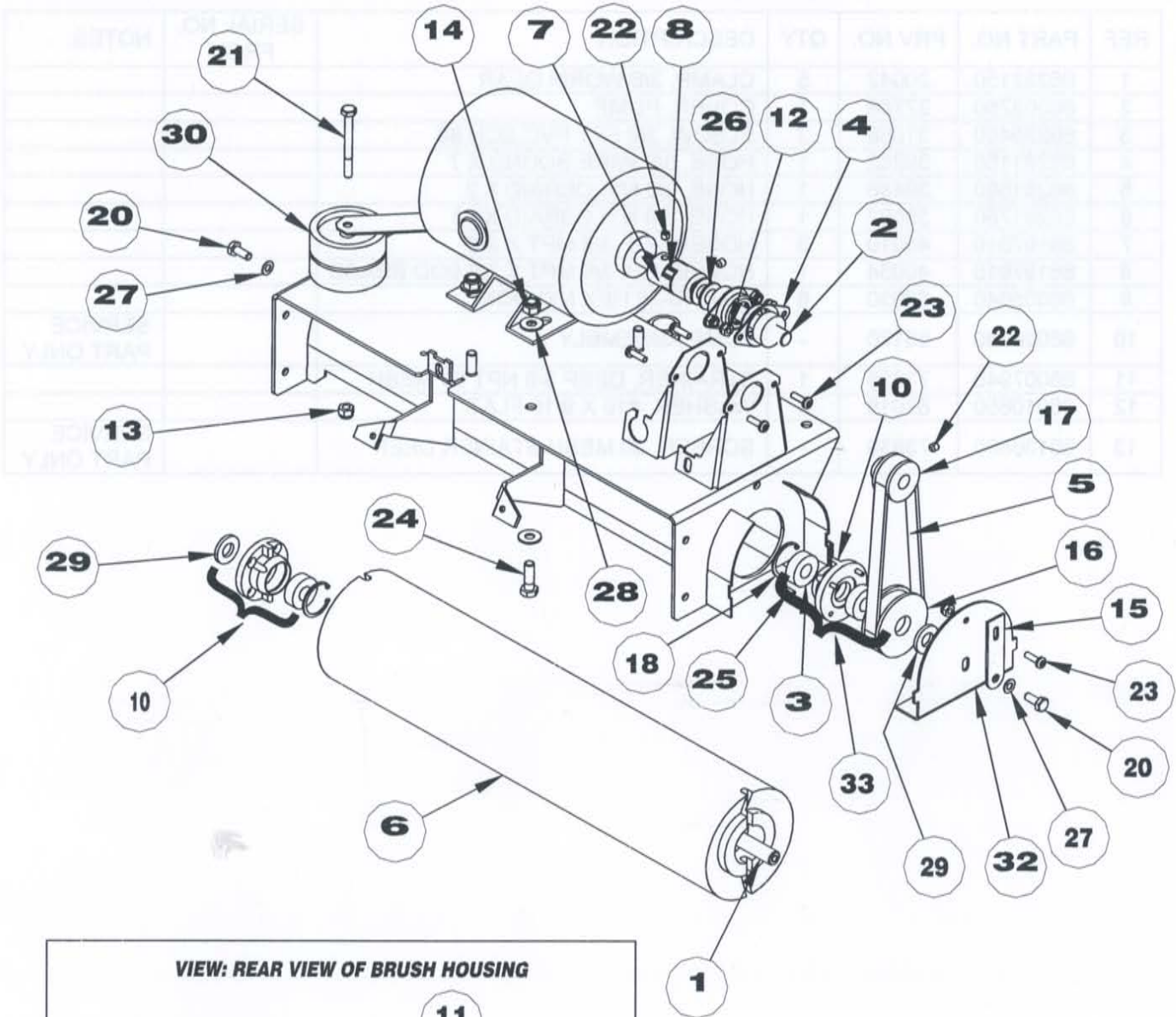
NOTE: To access pump asm remove items 86063750 – PRV NO. 27788, (2)86005640 – PRV NO. 57030, (2)86010650 – PRV NO. 87018

PUMP ASSEMBLY PARTS LIST

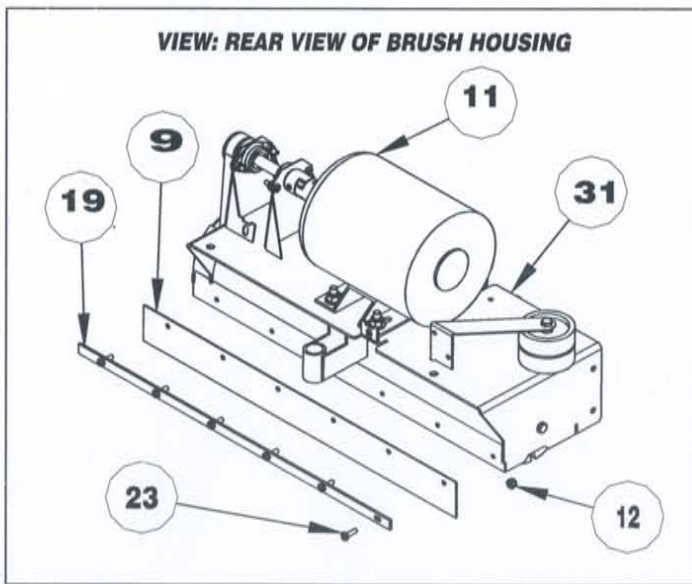
Item	SKU	QTY	Description
1	20042	5	CLAMP, 3/8 WORM GEAR
2	E87272	1	COVER, PUMP
3	E87526	2	ELBOW, 3/8 FPT PVC SCH 80
4	E87248	1	HOSE, 3/8 WIRE BOUND X 7
5	E87249	1	HOSE, 3/8 NYLOBRAID X 2
6	E87250	1	HOSE, 3/8 NYLOBRAID X 33
7	40010	3	HOSEBARB, 3/8 MPT X 3/8
8	40034	1	HOSEBARB, 3/8 MPT X 3/8 90D BRASS
9	E87515	6	NUT, 10-32 HEX NYLOCK
10	E87401	-	PUMP ASSEMBLY
11	E87400	1	STRAINER, DEEP 3/8 NPT 80 MESH
12	E87561	6	WASHER, #10 X 9/16 FLAT
13	E87599	-	SCREEN, 80 MESH STAINER DEEP

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BRUSH ASSEMBLY



VIEW: REAR VIEW OF BRUSH HOUSING

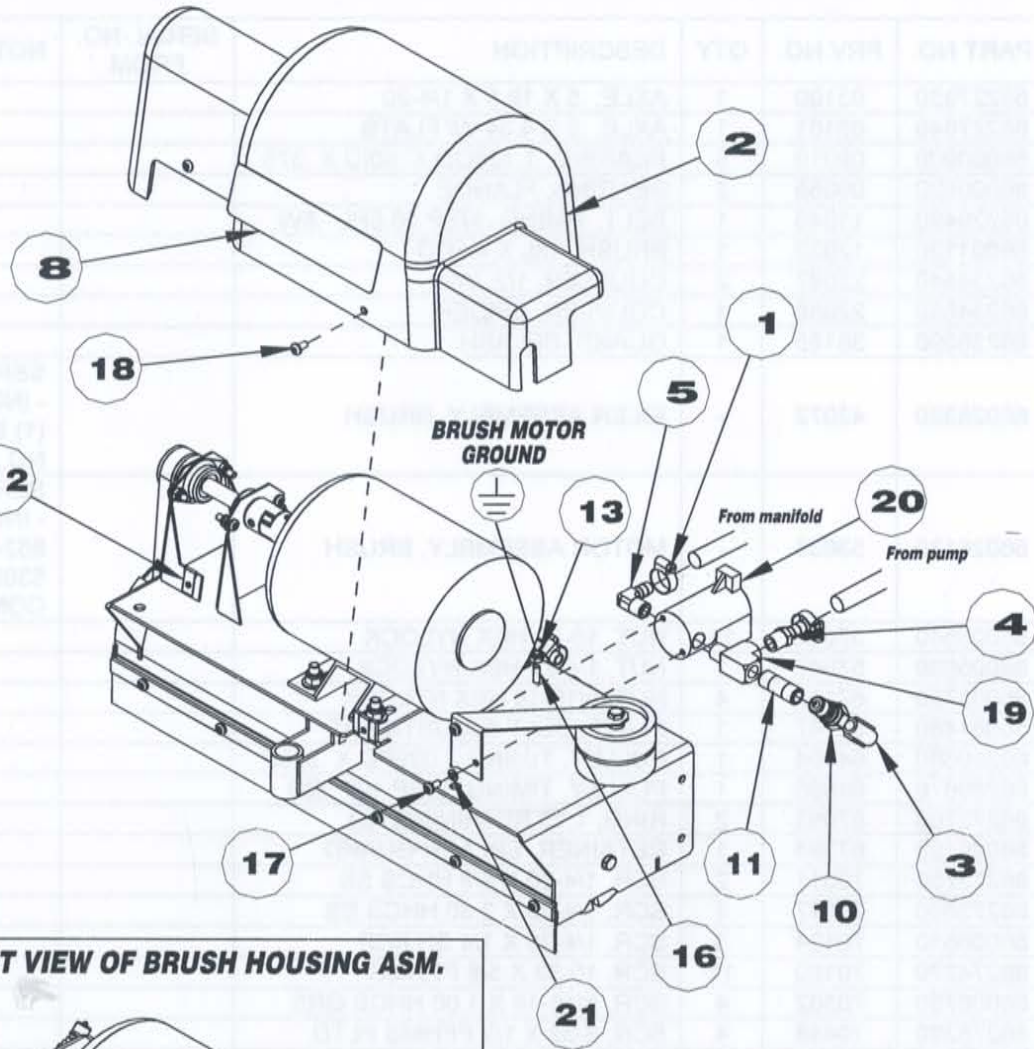


NOTE: To access brush/pulley asm, remove (1) 86273750 - PRV NO. 70011, (2) 86010660 - PRV NO. 87025, (1) 86078630 - PRV NO. 140277.

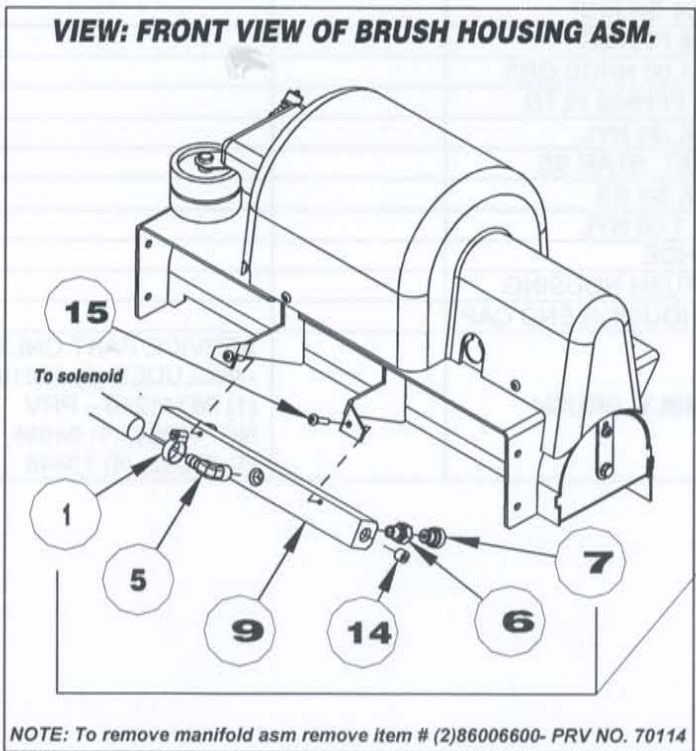
BRUSH ASSEMBLY PARTS LIST

Item	SKU	QTY	Description
1	E87543	1	AXLE, .5 X 19.5 X 1/4-20
2	E87540	1	AXLE, .5 X 4.34 W/ FLATS
3	E87500	5	BEARING, 1.1250D X .501D X.375
4	E87733	2	BEARING, FLANGE
5	E87402	1	BELT, TIMING.375P 16.5PL .5W
6	E87403	1	BRUSH, 18L X 4.50D
7	E87383	2	COUPLER, 1/2 JAW
8	E87384	1	COUPLER, SPIDER
9	E87727	1	GUARD, SPLASH
10	E87719		IDLER ASSEMBLY, BRUSH
11	E87718		MOTOR ASSEMBLY, BRUSH
12	E87515	11	NUT, 10-32 HEX NYLOCK
13	E85358	1	NUT, 1/4-20 HEX NYLOCK
14	57113	4	NOT, 5/16-18 HEX NYLOCK
15	E87243	1	PLATE, BELT ADJUSTMENT
16	E87477	1	PULLEY, TIMING 2.029PD X.375P
17	E87433	1	PULLEY, TIMING.375P 10T .SID
18	E87478	2	RING, 1.13 RETAINING HO
19	E87269	1	RETAINER, SPLASH GUARD
20	E87246	2	SCR, 1/4-20 X 5/8 HHCS SS
21	70017	1	SCR, 1/4-20 X 2.50 HHCS SS
22	E87259	3	SCR, 1/4-20 X 1/4 SH KCP
23	E87244	11	SCR, 10-32 X 5/8 PPHMS
24	70302	4	SCR, 5/16-18 X 1.00 HHCS GR5
25	E87476	4	SCR, 6-32 X 1/2 PFHMS PLTD
26	E87268	2	WASHER, .506 X.94 NYL
27	E87247	2	WASHER, 1/4 EXT. STAR SS
28	E87623	8	WASHER, 5/16 X 3/4 SS
29	E87693	2	WASHER, 1/2 X 1.00 NYL
30	89051	2	WHEEL, VAC SHOE
31	E87223	1	WELDMENT, BRUSH HOUSING
32	E87245	1	BRKT, BRUSH HOUSING END CAP
33	E87596	-	PULLEY ASSEMBLY, BRUSH

SOLENOID AND MANIFOLD ASSEMBLIES



VIEW: FRONT VIEW OF BRUSH HOUSING ASM.



NOTE: To access solenoid remove items
 (1) 86063740 - PRV NO. 27775,
 (4) 86278530 - PRV NO. 70406

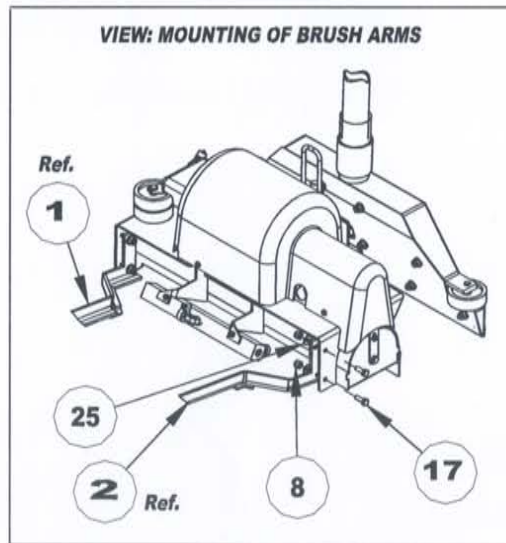
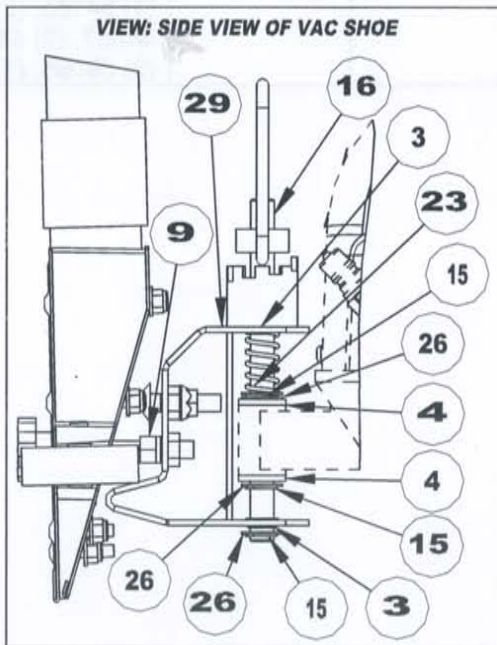
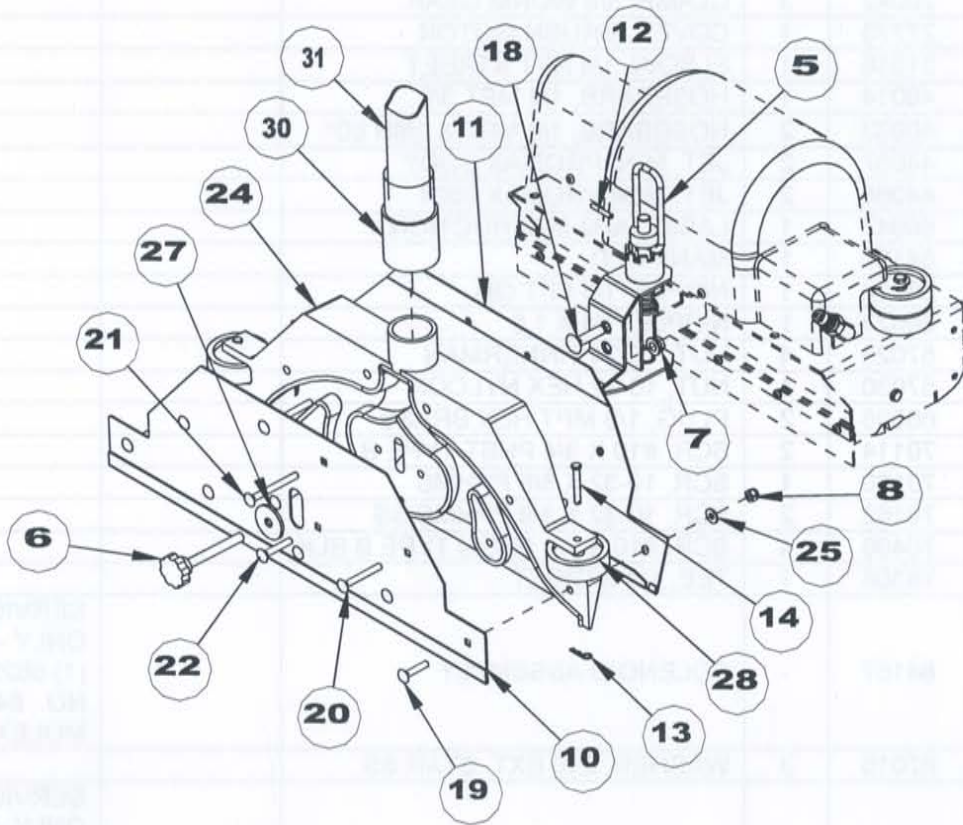
NOTE: To remove manifold asm remove item # (2)86006600- PRV NO. 70114

**SOLENOID AND MANIFOLD
ASSEMBLIES PARTS LIST**

Item	SKU	QTY	Description
1	20042	3	CLAMP, 3/8 WORM GEAR
2	E87308	1	COVER, BRUSH MOTOR
3	E87276	1	ELBOW, 1/4 NPT STREET
4	E87275	1	HOSEBARB, 1/4 MPT 3/8
5	E87273	2	HOSEBARB, 1/4 MPT X 3/8H 900
6	E87512	2	JET, MINI PROMAX BODY
7	E87728	2	JET, MINI PROMAX 9504
8	50947	1	LABEL, ADJ INSTRUCTION
9	E87532	1	MANIFOLD
10	E85638	1	NIPPLE, 1/4 FPT QD
11	E87306	1	NIPPLE, 1/4 X 1.5
12	57028	4	NUT, 10-24 TINNERMAN
13	E87515	1	NUT, 10-32 HEX NYLOCK
14	66095	2	PLUG, 1/8 MPT HEX BRASS
15	E87491	2	SCR, #10 X 3/4 PHST TYPE B
16	E87244	1	SCR, 10-32 X 5/8 PPHMS
17	E87270	2	SCR, 10-32 X 3/8 PPHMS SS
18	E87541	4	SCR, #10 X 3/8 PHSM TYPE B BLK
19	E87307	1	TEE, 1/4 STREET
20	E87726	-	SOLENOID ASSEMBLY
21	E87560	3	WASHER, #10 EXT. STAR SS
22	E87488	-	MANIFOLD ASSEMBLY

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VACUUM SHOE ASSEMBLY

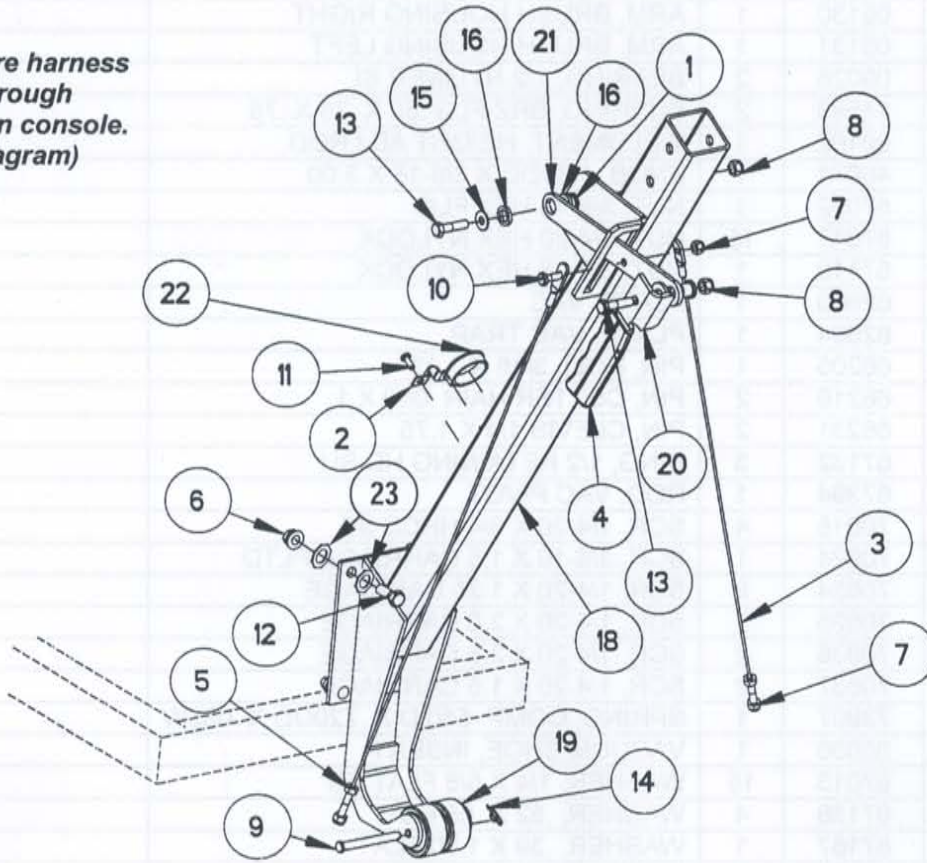


VACUUM SHOE ASSEMBLY PARTS LIST

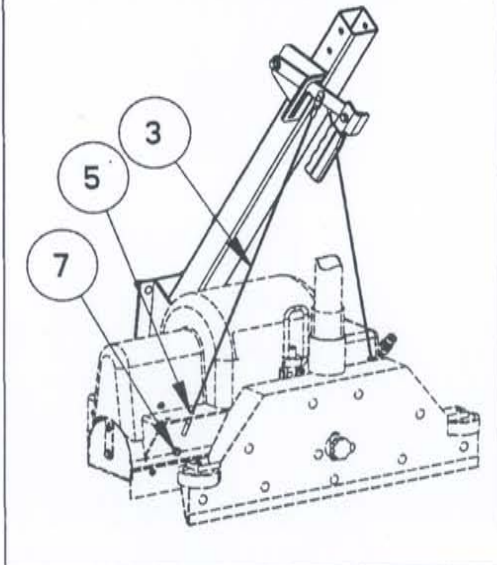
Item	SKU	QTY	Description
1	05130	1	ARM, BRUSH HOUSING RIGHT
2	05131	1	ARM, BRUSH HOUSING LEFT
3	E88576	2	BEARING, 1/2 NYLINER SI
4	E87386	2	BUSHING, BRZ FLG.50 X.75 X.75
5	89162	1	WELDMENT, HEIGHT ADJ ROD
6	E87742	1	KNOB, 1.380D X 3/8-16 X 3.00
7	E87260	1	NUT, 3/8-16 HEX FLG
8	E85358	15	NUT, 1/4-20 HEX NYLOCK
9	E87636	1	NUT, 3/8-16 HEX NYLOCK
10	E87535	1	PLATE, VAC
11	E87537	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	E87253	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 .5501D X.7200D X.085W
24	E87574	1	VACUUM SHOE, INSERT
25	E87414	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	E87261	1	BRKT, VAC SHOE ADJ. WELDMENT
30	E87442	1	CUFF, BLK VAC HOSE
31	E87443	1	HOSE, 1.5 BLK VAC X 30

LIFT LEVER AND LOWER TOWER ASM.

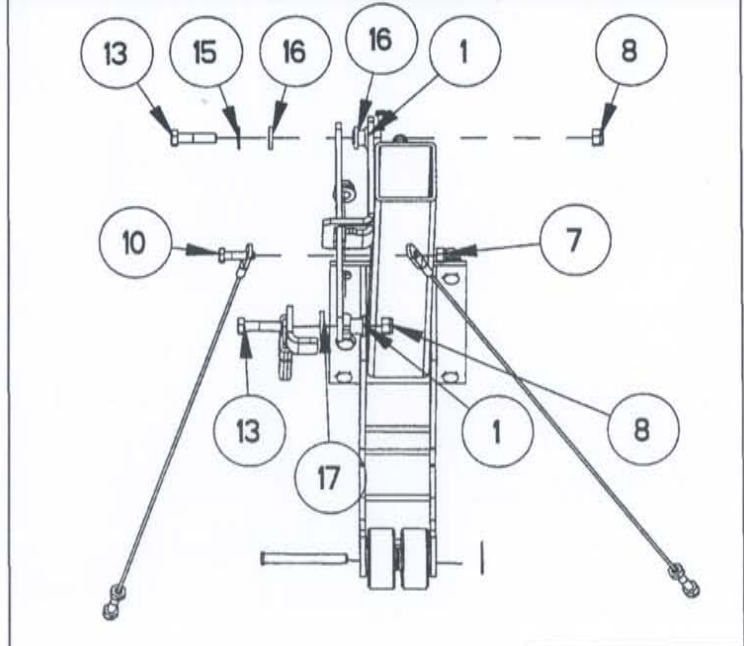
NOTE: Main wire harness from motors through bushing to main console. (Ref. Wiring Diagram)



VIEW: MOUNTING OF BRUSH ASM. TO TOWER



VIEW: FRONT VIEW OF TOWER (LIFT HANDLE)

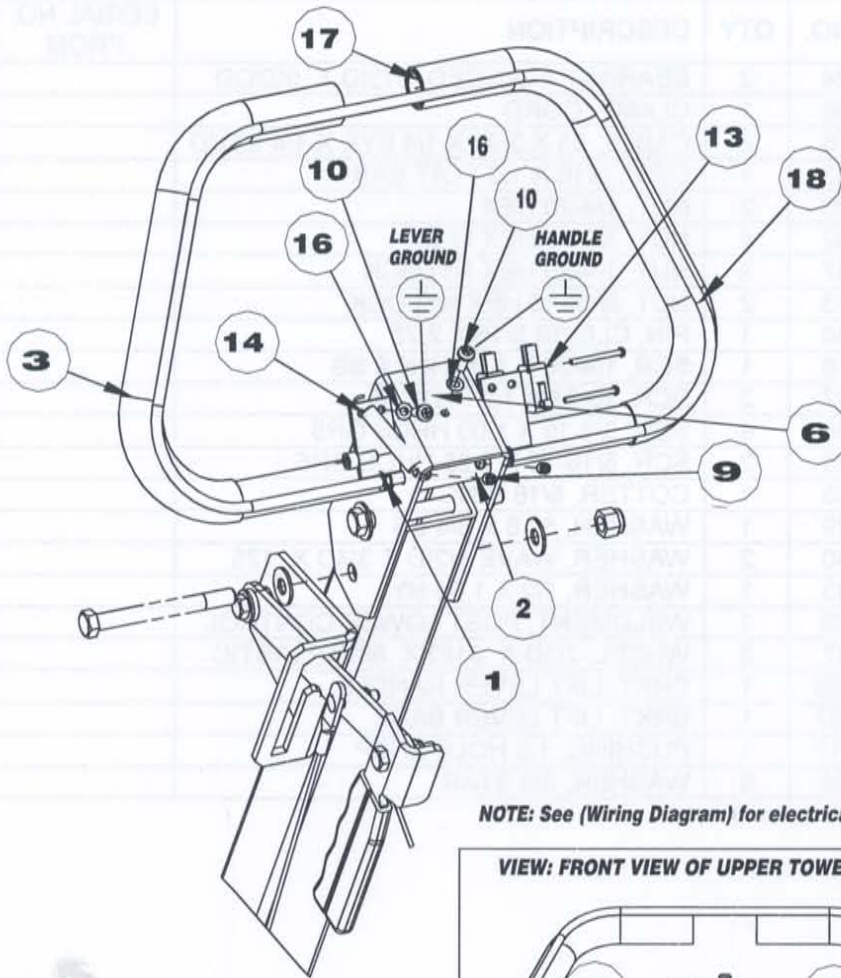


**LIFT LEVER AND LOWER TOWER ASSEMBLY
PARTS LIST**

Item	SKU	QTY	Description
1	E87539	2	BEARING, FLANGED.3131D X.5020D
2	20086	1	CLAMP, CORD
3	E87438	2	CABLE, 25 X 3/32 X 1/4 EYE X 1/4 STUD
4	E87162	1	GRIP, 3/16 X 1.0 FLAT BAR
5	E87441	2	NUT, 1/4-20 HEX
6	E87260	4	NUT, 3/8-16 HEX FLG
7	E85358	3	NUT, 1/4-20 HEX NYLOCK
8	E81063	2	NUT, 5/16-18 HEX NYLOCK
9	E87597	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	E87637	4	SCR, 3/8-16 X 1.00 HHCS GR5
13	E87239	2	SCR, 5/16-18 X 1.25 HHCS GR5
14	E87598	1	COTTER, 5/16 RING
15	E87623	1	WASHER, 5/16 X 3/4 SS
16	E83269	2	WASHER, WAVE 1/21D X 3/4D X.125
17	E87693	1	WASHER, 1/2 X 1.00 NYL
18	E87697	1	WELDMENT, POST LOWER CONTROL
19	E87538	2	WHEEL, 20D X.31 ID X.88W PLASTIC
20	E87163	1	BRKT, LIFT LEVER HANDLE
21	E87590	1	BRKT, LIFT LEVER BASE
22	140317	1	BUSHING, 1.5 HOLE SNAP
23	87024	8	WASHER, 3/8 STAR

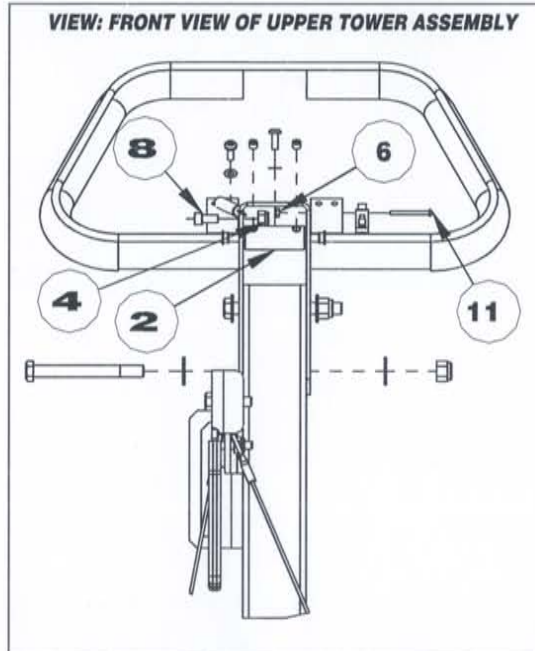
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UPPER TOWER ASSEMBLY

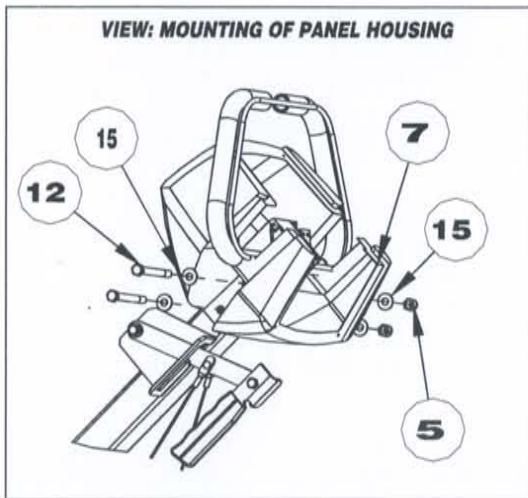


NOTE: See (Wiring Diagram) for electrical wiring layout.

VIEW: FRONT VIEW OF UPPER TOWER ASSEMBLY



VIEW: MOUNTING OF PANEL HOUSING

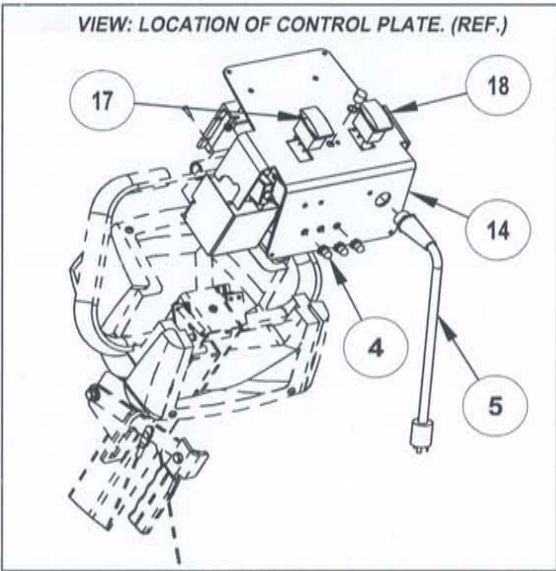
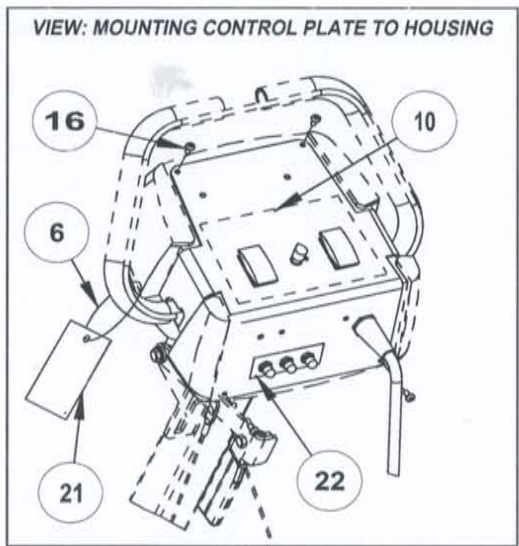
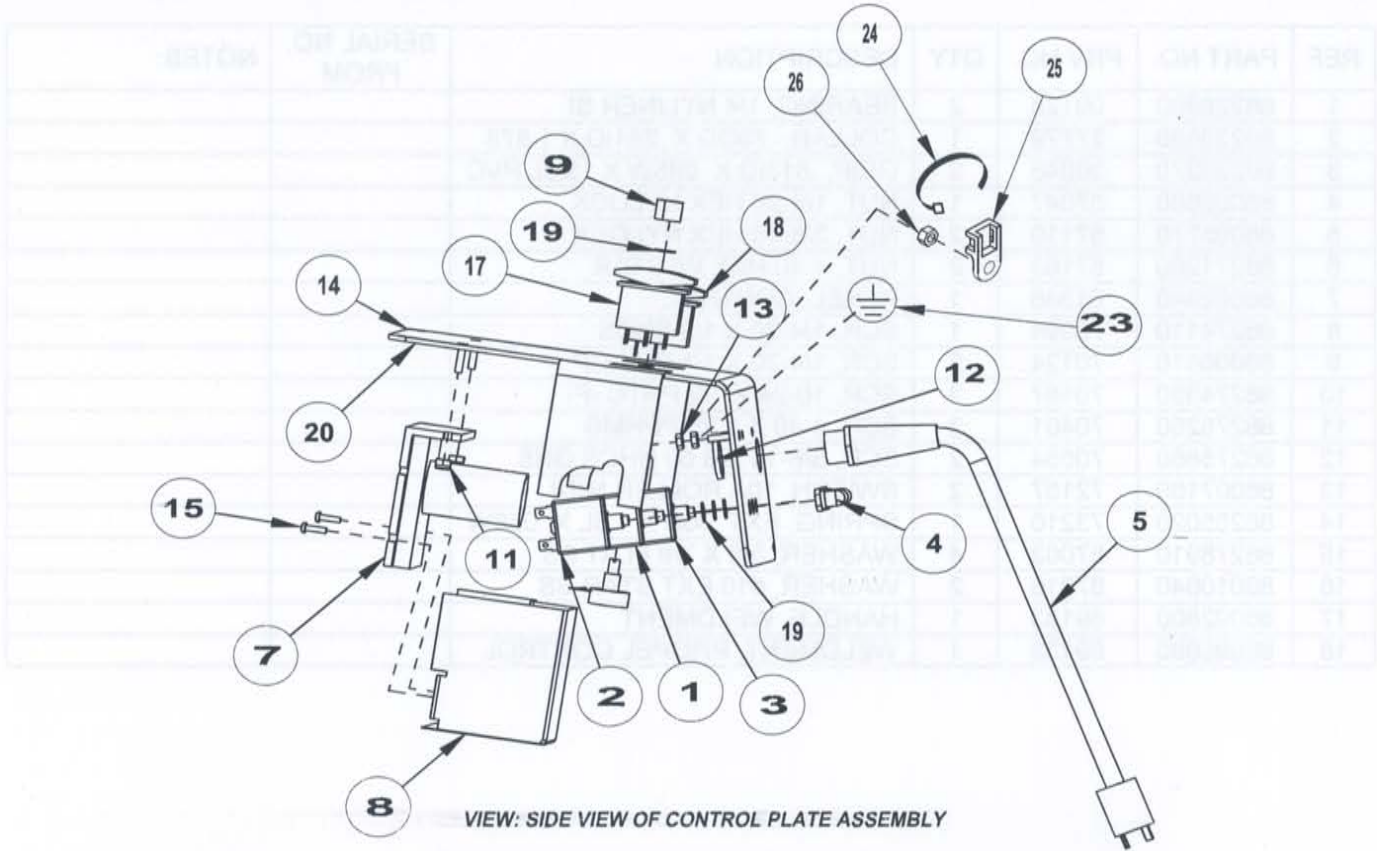


UPPER TOWER ASSEMBLY PARTS LIST

Item	SKU	QTY	Description
1	9128	2	BEARING, 1/4 NYLINER SI
2	27779	1	COLLAR, .750D X.281 ID X 1.875
3	E87412	2	GRIP, .8131D X .085W X 13.0L PVC
4	E85358	1	NUT, 1/4-20 HEX NYLOCK
5	E87636	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	E87259	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	E87529	2	SWITCH, 10A ROLLER MINI
14	73210	1	SPRING, EXT.36D X 1.5L X.058W
15	E87638	4	WASHER, 3/8 X 7/8 FLAT SS
16	E87560	2	WASHER, #10 EXT STAR SS
17	89133	1	HANDLE, WELDMENT
18	89138	1	WELDMENT, PROPEL CONTROL

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CONTROL PANEL ASSEMBLY



CONTROL PANEL ASSEMBLY PARTS LIST

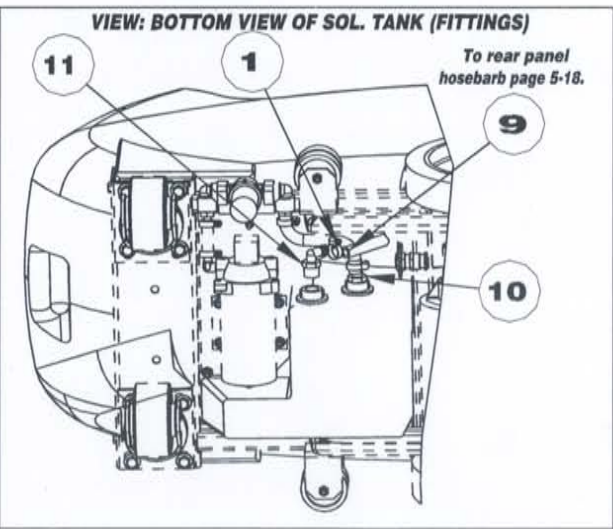
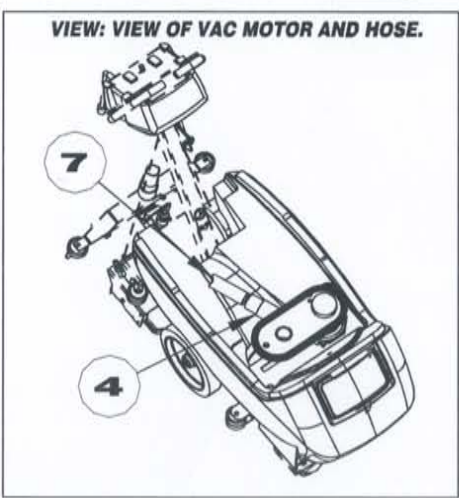
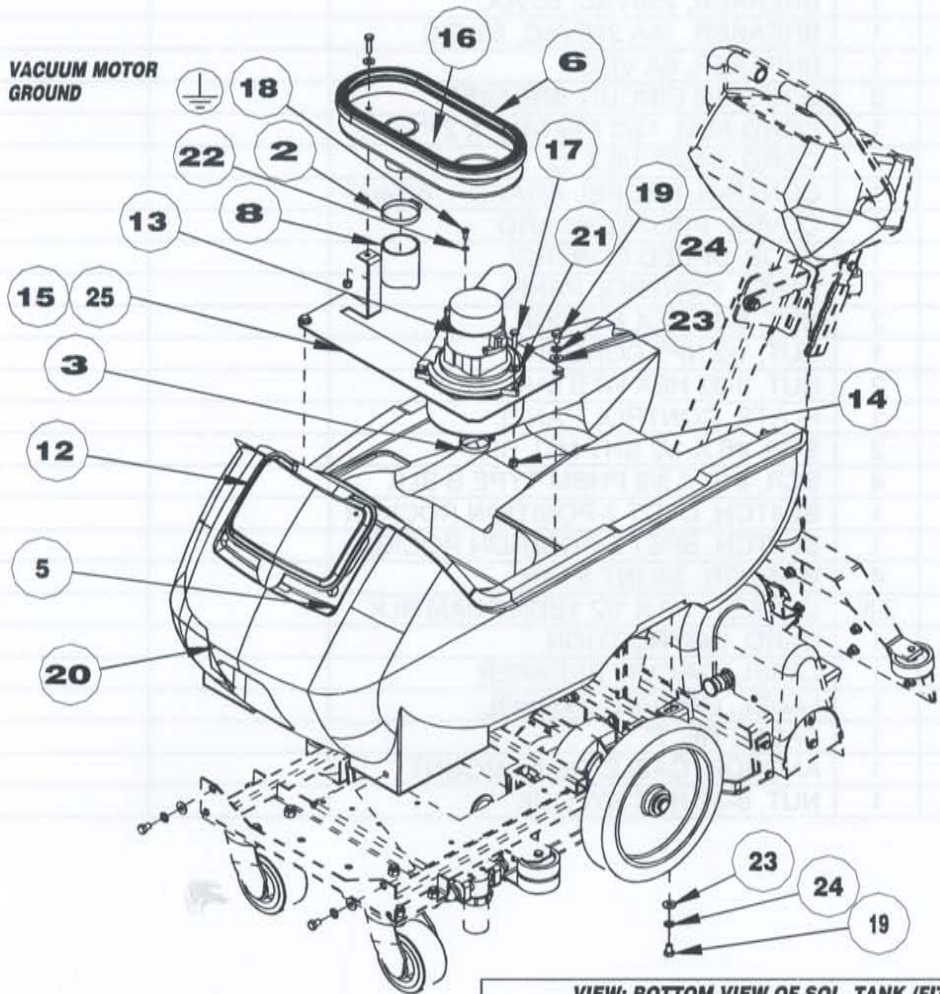
Item	SKU	QTY	Description
1	E87352	1	BREAKER, 250VAC, 50VDC
2	E87503	1	BREAKER, 15A 250VAC, 50VDC
3	E87504	1	BREAKER, 6A VDE
4	E87505	3	BOOT, 3/8 CIRCUIT BREAKER
5	E87404	1	CORD ASM, 12/3 PIGTAIL X 24"
6	27417	1	CORD, 99807 1/8 X 12
7	E87409	1	CONTROL PROPEL BOARD 115/240V
8	27795	1	COVER, PROPEL BOARD
9	E87344	1	KNOB, SPEED CONTROL
10	E87981	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	E87293	1	PLATE, CONTROL PANEL
15	70219	2	SCR, #6 X 1/2 SHT MTL BLK
16	E87541	4	SCR, #10 X 3/8 PHSM TYPE B BLK
17	E87405	1	SWITCH, DPDT 2-POSITION ROCKER
18	E87609	1	SWITCH, SPST 2-POSITION ROCKER
19	87100	4	WASHER, 3/8 INT STAR
20	E87294	2.8'	GASKET, 1/8 X 1/2 1SDA FOAM BLK
21	500235	1	CARD, INSTRUCTION
22	500079	1	LABEL, CIRCUIT BREAKER
23	50279	1	LABEL, GROUND SYMBOL
24	27049	1	CABLE TIE, 7"
25	5153	1	ANCHOR, CABLE TIE #8 MOUNT
26	57049	1	NUT, 6-32 HEX NYLOCK

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SOLUTION TANK ASSEMBLY

REF	PART NO.	QTY	DESCRIPTION	REF
1				
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VACUUM MOTOR
GROUND

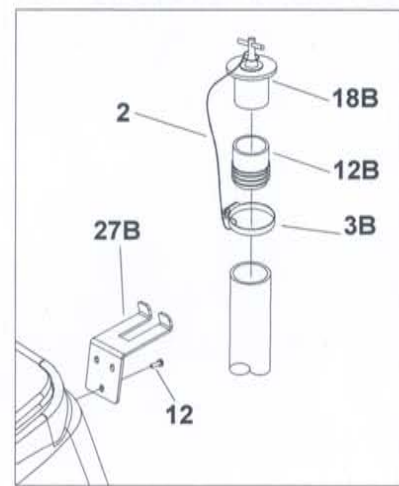
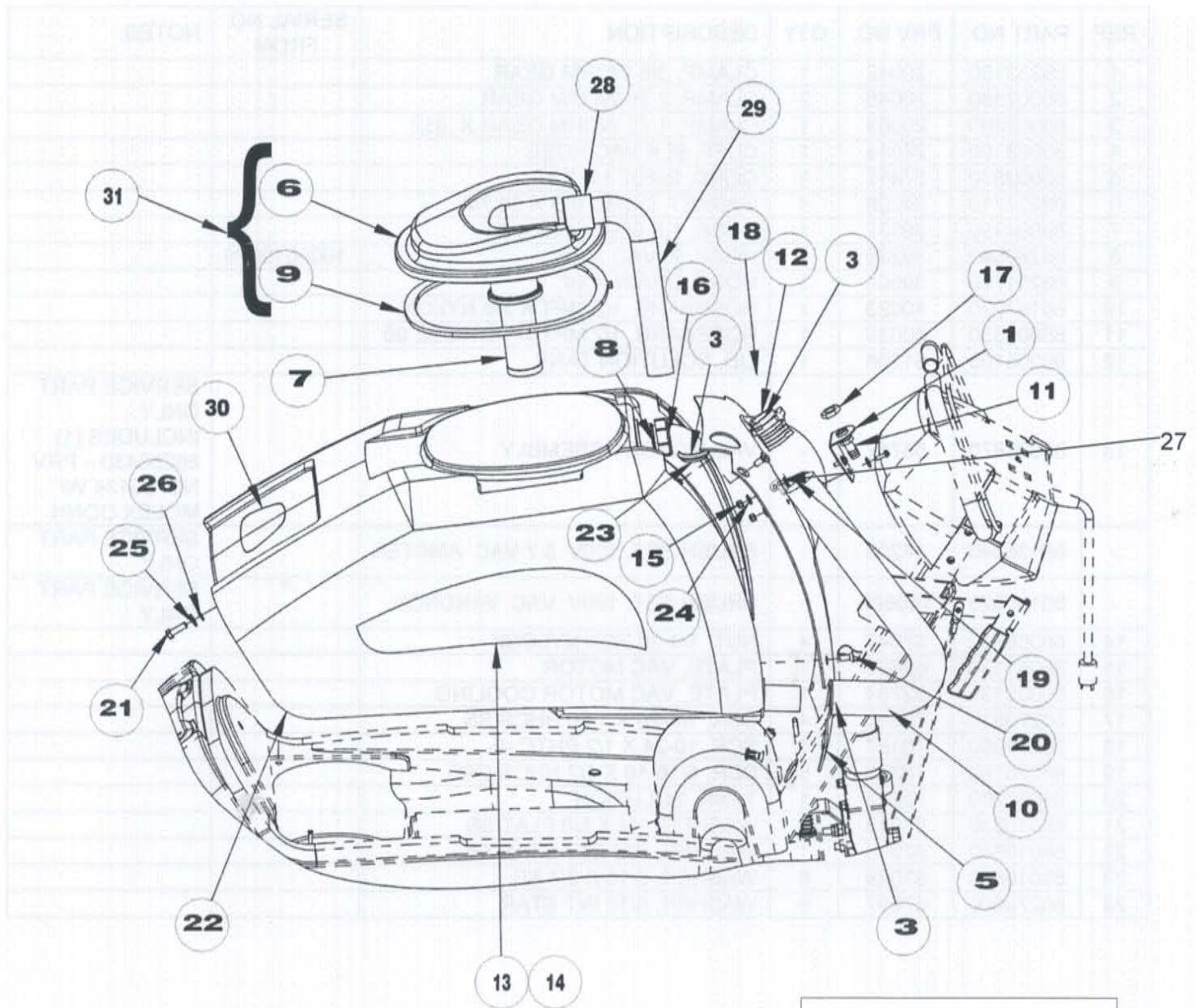


SOLUTION TANK ASSEMBLY PARTS LIST

Item	SKU	QTY	Description
1	20042	1	CLAMP, 3/8 WORM GEAR
2	E87613	2	CLAMP, 2.25 WORM GEAR
3	20063	1	CLAMP, 1.75 WORM GEAR X.312
4	E87442	1	CUFF, BLK VAC HOSE
5	27417	1	CORD, 99807 1/8 X 12
6	35226	1	GASKET, DOME 91D X 30.75L
7	39337	1	HOSE, 1.5 BLUE VAC X 24
8	E87633	1	HOSE, 2" VAC X 20"
9	E87251	1	HOSE, DRAIN X 44"
10	E87496	1	HOSEBARB, 1/2 MPT X 3/8 NYLON
11	E87497	1	HOSEBARB, 1/2 MPT X 1/2 HOSE 90
12	E87393	1	LID, SOLUTION TANK
13	E87406	-	VAC MOTOR ASSEMBLY
-	E87161	-	BRUSH SET, 120V 5.7 VAC AMETEK
-	E87271	-	BRUSH SET, 120V VAC WINDSOR
14	E85358	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	E87471	1	TANK, SOLUTION
21	E87414	4	WASHER, 1/4 X 5/8 FLAT SS
22	E87560	1	WASHER, #10 EXT STAR SS
23	E87623	6	WASHER, 5/16 X 3/4 SS
24	87067	6	WASHER, 5/16 INT STAR

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RECOVERY TANK ASSEMBLY



RECOVERY TANK ASSEMBLY PARTS LIST

Item	SKU	QTY	Description
1	14665	1	BRKT, PT17 SIGHT TUBE
2	E87615	1	TETHER, DRAIN PLUG
3A	E85458	3	CLAMP, 2.0 WORM GEAR X.312
3B	E85358	1	CLAMP, 2.0" NYLON RATCHET
5	27765	1	COVER, CMD20 REAR
6	E87407	1	DOME, CMD20
7	E87408	1	FLOAT BALL, VAC SHUT OFF
8	E87489	1	GASKET, 1-1/2 COMPRESSION
9	E87410	1	GASKET, CMD20 DOME
10	E87616	1	HOSE, 1.5 X 24.0 DRAIN
11	40013	1	HOSEBARB, 3/8MPT X 1/2HOSE
12A	E87168	1	HOSE, INSERT
12B	E87619	1	HOSEBARB, 1.5 DOUBLE MCHD
13	50911	1	LABEL, CMD20 RIGHT
14	50912	1	LABEL, CMD20 LEFT
15	E87515	4	NUT, 10-32 HEX NYLCK
16	E87490	1	NUT, 1.5 SLIP JOINT
17	57044	1	NUT, 3/8 NPT HEX BRASS
18A	E87573	1	HOSE,CAP
18B	E87620	1	PLUG, DRAIN HOSE
19	E87244	4	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	75244	1	TANK, RECOVERY CMD 20
23	78390	1	TUBE, 1.5 WASTE
24	E87561	8	WASHER, #10 X 9/16 FLAT
25	E87623	1	WASHER, 5/16 X 3/4 SS
26	87067	1	WASHER, 5/16 INT STAR
27A	140408	1	BRKT, HOSE HOOK
27B	E87563	1	BRKT, RECOVERY HOSE MTG
28	E87542	1	CUFF, HOSE 1.5" BLK A 2126
29	E87252	1	HOSE, 1.5 BLK VAC X 52"
30	E87551	1	LABEL, BETCO LOGO (GRAY)
31	E87411	-	DOME ASSEMBLY

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SUGGESTED SPARE PARTS

SKU	Description
E87500	BEARING, 1.1250D X .5001D X .375
E87402	BELT, BRUSH DRIVE
E87741	CORD SET, 14.3 SJTW-A X 50' YELLOW
E85135	CORD END, 125V 15A M NEMA5-15P
E87442	CUFF, BLK 1.91D VAC HOSE X 4.07
E87410	GASKET, DOME
36054	GUARD, THREAD
E87252	HOSE, 1.5 BLU VAC X 52"
44051	JET SEAL, MINI-QUICK
44062	JET, 110015 MINI-QUICK
72004	SWITCH, 125V SPST LIT RCKR
73250	STRAINER, 3/8 FPT 80 MESH
E87402	BELT, TIMING.375P 16.5PL .5W
E87403	BRUSH, 18L X 4.50D
E87352	BREAKER, 8A CIRCUIT
E87503	BREAKER, 15A 250VAC 50VDC
E87504	BREAKER, 6A VDE CIRCUIT
E87438	CABLE, 25 X 3/32 1/4 EYE X 1/4 STUD
E87411	DOME ASM
E87410	GASKET, DOME
39315	HOSE, 1.5 BLU VAC X 28"
E87719	IDLER ASM, BRUSH
E87728	JET, MINI PROMAX 9504
E87406	VAC MOTOR ASM
E87488	MANIFOLD ASM
E87596	PULLEY ASM, BRUSH
E87401	PUMP ASM, 115V
E87405	SWITCH, DPDT 2-POSITION ROCKER
E87609	SWITCH, SPST 2-POSITION ROCKER
E87599	SCREEN, 80 MESH STRAINER DEEP
E87726	SOLENOID ASM
E87161	BRUSH SET, 120V 5.7 VAC AMETEK
E87271	BRUSH SET, 120V VAC WINDSOR

BETCO US WARRANTY POLICY

10 year coverage

Subject to the conditions stated below, Betco warrants parts and labor on rotationally molded polyethylene tanks/ housings and injection molded vacuum head assemblies to be free from defects in materials and workmanship for a period of ten years to the original purchaser.

3 Year Coverage

Subject to the conditions stated below, Betco warrants parts and labor on all other Betco components to be free from defects in materials and workmanship for a period of three years to the original purchaser.

1 Year Coverage

Subject to the conditions stated below, Betco offers a limited warranty on parts and labor on the following equipment: parts and accessories to be free from defects in materials and workmanship for a period of one year to the original purchaser.

- PowerUp™ 14 Upright Vacuum: #E29990-00
- Bac Pac Lite Vacuum: #85903-00
- FiberPRO® Floor Dryer: #85507-00
- WORKMAN™ Series Vacuums: #85024-00, #85025-00, #83012-00, #85027-00
- All Tools and Accessories
- All Battery Chargers
- All Batteries are pro-rated for 1 year

Allowable Travel Time Warranty Reimbursement:

Eligible equipment: All battery and propane powered equipment products. Warranty period: 90 days from date of sale to the original purchaser. A maximum 180 mile round trip at 50 cents per mile will be allowed for warranty consideration.

Propane Machine Warranty:

Kawasaki engines are warranted by Kawasaki for a period of 2 years against manufacturer defects. All other components (except wear items)* are warranted by Betco for a period of 3 years.

***Wear Items exempt from Warranty consideration include but may not be limited to: power cords, transport wheels, vacuum bags, belts, squeegee blades, pad drivers, clutch plates, handle grips, filters, screens, throttle cables, brushes and carbon brushes.**

Subject to the conditions and exceptions stated in this warranty, Betco warrants the Betco products to be free from defects in material and workmanship, under normal use and service, for the periods listed under the warranty policy to the original purchaser. At any time during the warranty period, Betco will furnish replacement parts for the Betco parts to the original purchaser. Such parts will be furnished and charged including transportation costs, to the original owner through any Betco authorized Service Distributor. If the original part is returned within the warranty policy period from date of delivery for inspection by Betco and is found to be defective the owner will be credited for the cost of replacement parts plus shipping and handling. Replacement parts that have become defective through wear or abuse are not included in this warranty.

This warranty does not apply to damage or defect caused by accident, misuse, negligence, fire, or to any Betco product which has been serviced or repaired by other than an authorized Betco Service Distributor or Betco factory personnel. This warranty is void if products are used for any purpose other than that which was intended. There are no other warranties expressed or implied. In no event shall Betco be liable for incidental or consequential damages or any damage to person or property. (Please note some states do not allow the exclusion or limitations for incidental and consequential damages).

