

BAT2500 20" Battery Burnisher

Operator's Manual and Parts Schematic

Item #87300

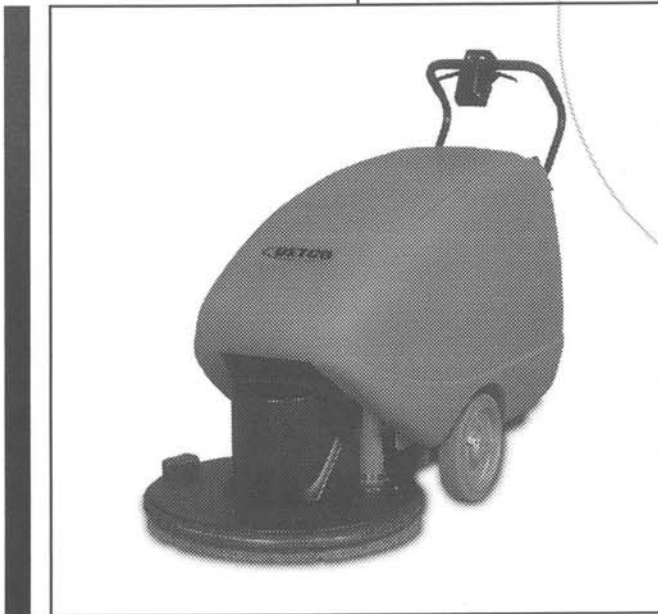


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INSPECTION

Carefully unpack and inspect your machine for shipping damage. Each unit is operated and thoroughly inspected before shipping, and any damage is the responsibility of the carrier, who should be notified immediately.

IMPORTANT SAFETY INSTRUCTIONS

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 Windsor approved replacement parts.

WARNING

This appliance has been designed for use with the brushes specified by the manufacturer. The fitting of other brushes may affect its safety.

WARNING

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

When using battery powered machines basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING MACHINE

WARNING

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

1. Use only indoors. Do not use outdoors or expose to rain.
2. Do not allow machine to be used as a toy. Close attention is necessary when used by or near children.
3. Use only as described in this manual. Use only manufacturer's recommended components and attachments.
4. Do not operate machine with any opening blocked. Keep openings free of debris that may reduce air flow.
5. Keep hair, loose clothing, fingers and all parts of the body away from openings.
6. Do not use machine as a step.
7. Machine can cause a fire when operating near flammable vapors or materials. Do not operate this machine near flammable fluids, dust, or vapors.
8. This machine is not suitable for picking up health endangering dust.
9. Maintenance and repairs must be done by qualified personnel. Maintain adjustments on machine as specified.
10. Make sure all warning and caution labels are legible and properly attached to the machine.
11. Keep hands, feet, strings and ties from all moving parts while the machine is in operation.
12. Do not allow engine to run unattended.
13. Do not leave the machine unattended. Turn machine off when not in use and before servicing.
14. If the machine is not working properly, has been dropped, left outdoors or dropped into water, return it to an authorized service center.

WARNING

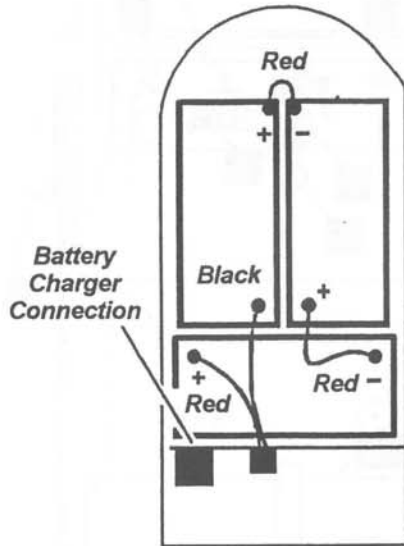
Hazardous Voltage. Shock can result. Disconnect batteries before working on machine. Only qualified personnel should work inside machine

WARNING

Machine can emit excessive noise. Consult with your regulatory agency for exposure limits. Hearing loss can result. Wear hearing protection.

SAVE THESE INSTRUCTIONS

BATTERY ARRANGEMENT



Battery Maintenance:

1. When cleaning batteries use a solution of baking soda and water. (Do not allow cleaning fluid to enter inside battery cells.)
2. Keep a proper electrolyte level in battery cells.
3. Wipe down the battery tops at least once a week. If a cell should accidentally overflow, clean immediately.
4. Test battery condition with a hydrometer at least once a week.
5. Ensure that all connections are tight and that all corrosion is removed.
6. Every 4 to 6 months remove batteries from the machine and clean the battery compartment.

Battery Charging Procedure:

Charge the batteries once the amber charge level light comes on. The amber light indicates that there is about 20% charge left in the batteries. **Do not let the batteries completely drain before charging.** Avoid charging the batteries before the amber light comes on. The machine will run for hours on fully charged, well maintained batteries.

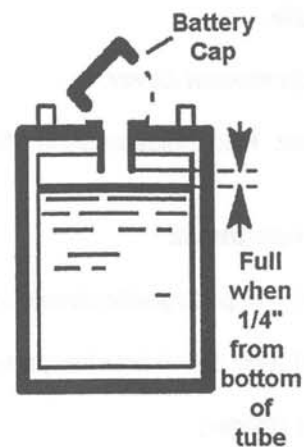
WARNING:

DO NOT SMOKE, HAVE OPEN FLAMES, OR SPARKS NEAR BATTERIES AT ANY TIME.

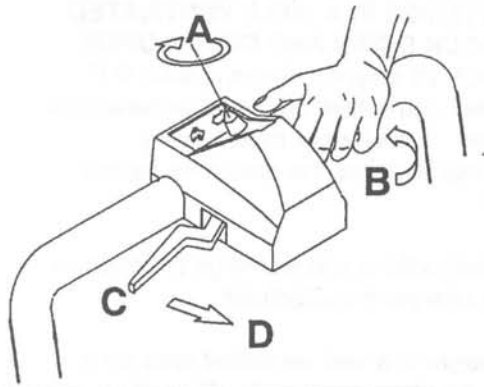
WEAR EYE PROTECTION AND PROTECTIVE CLOTHING WHEN WORKING WITH BATTERIES.

CHARGE BATTERIES IN A WELL VENTILATED AREA WITH DECK DOWN AND COVER OPEN.

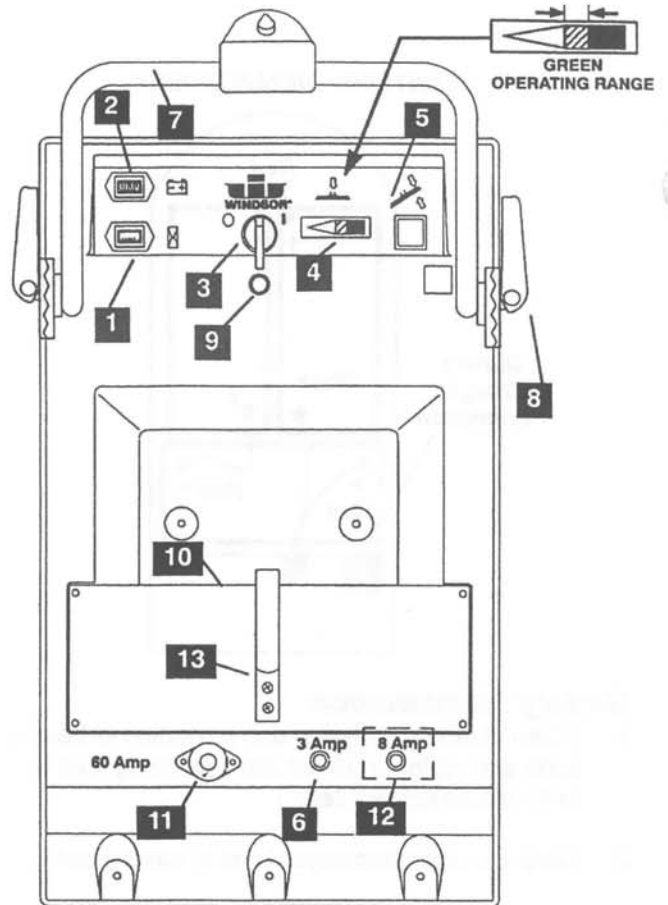
1. Use a 36 volt, 20 amp maximum output, D.C. charger which turns itself off, when batteries are fully charged. The charger must have a connector that matches the machines battery connection.
2. Read the instructions and warnings provided by the battery charger manufacturer.
3. Set the charger in a well ventilated area on a level surface. Make sure cords will easily reach outlets on both machine and wall.
4. **Connect charger to D.C. outlet on machine first.**
5. Connect the A.C. power cord to properly grounded wall socket. **NEVER MAKE THE A.C. CONNECTION FIRST, HAZARDOUS SPARKS MAY RESULT.**
6. After the batteries are completely charged disconnect the charger from the A.C. wall socket.
7. Once the charger is disconnected from the A.C. wall socket, it is safe to disconnect the charger from the machine.
8. When the batteries are fully charged, check the electrolyte level by removing, the caps on top of the batteries. If necessary fill the cells with distilled water as shown in the diagram below. Be careful not to overfill cells.



CONTROLS:



- A. The speed the machine will travel is regulated by the knob located on the controls which are found on the main handle. Turn the knob to the right to increase the speed of the machine.
- B. Squeezing one or both of the controls levers will propel the machine forward at the selected speed, and turn on the pad motor.
- C. Releasing both controls levers will stop the machine.
- D. Pressing forward on the levers moves the machine backwards at the selected speed. (Pad motor does not run in reverse).

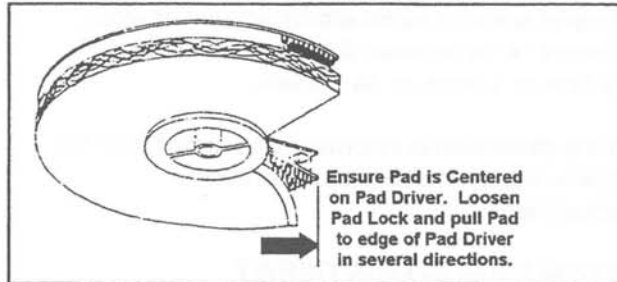


1. **Hour Meter.** Records machine use time.
2. **Battery Condition Light.** Indicates the charge condition of batteries.
3. **Main Power Switch.** Turns On and Off the machine.
4. **Pad Pressure Meter.** "Green Area" indicates correct pad pressure range.
5. **Buffing Deck Switch.** Raises and lowers buffing deck, adjusts #4.
6. **3 Amp Circuit Breaker.** Thermal circuit breaker protects lift mechanism. Press to reset.
7. **Main Handle.**
8. **Handle Adjustment Lever.**
9. **Brush Wear.** Red indicator light. Worn carbon brushes need to be replaced before damage to motor occurs.
10. **Utility Compartment.**
11. **Breaker.** 60 amp magnetic circuit breaker, protects pad driver motor. To reset turn to "ON" position.
12. **Breaker.** 8 amp circuit breaker protects propel motor. Press to reset.
13. **Spare Pad Holder.**

STARTING & MAINTENANCE PROCEDURE

BEFORE STARTING THE WORK PERIOD:

1. Disconnect the battery charger. (See battery charging procedure).
2. Close the cover.
3. To raise the deck: Turn on the main power switch and press the buffing deck switch.
4. Turn or install a new buffing pad as needed.



5. Check wheels and other pivot points for proper lubrication.

OPERATING THE MACHINE:

1. If using a machine which was already set up, check to make sure the pad is properly installed.
2. Adjust the operating control handle to a comfortable position using the handle lock lever.
3. Turn on the main power switch.
4. Lower or raise deck by pressing buffing deck switch.
5. The pad motor will only run when the buffing deck is lowered to within 4 inches of the floor.
6. The drive controls are shown on page 5.
7. The pad pressure is adjusted using the switch which raises and lowers the front deck. The operator monitors the amp draw using the meter located on the control panel and ensures that the needle remains in the "green" operating range. (See page 5, #4 & 5).



CAUTION

To prevent possible damage to the floor surface, always keep the machine moving while the pad is spinning.

8. When the drive lever is squeezed, the pad motor runs and the machine is propelled forward.
9. When the drive lever is released, the drive motor and pad motor will stop.
10. Return the machine to the battery charger when the battery light indicator light is amber. Do not operate machine when indicator is flashing red.

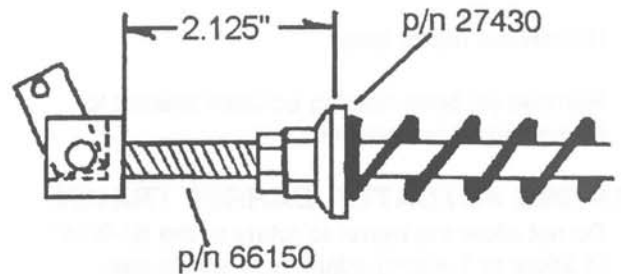
FILTER BAG

The filter bag is accessed under the cover.

FELT DUST CONTROL SKIRT

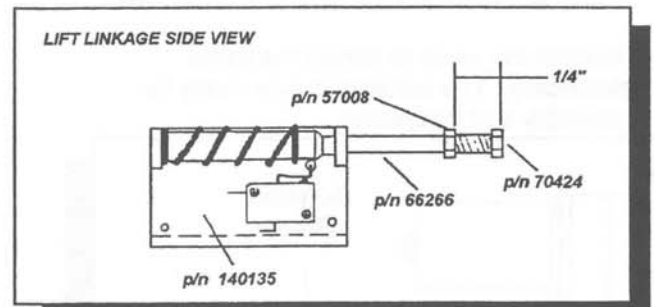
Replace skirt (p/n 73620) when excessively soiled, worn, torn, or damaged in any way that allows dust to escape.

Located inside the shroud the dust control skirt is easily replaced. Each slot on the skirt slips onto a tee nut inside the shroud.



ACTUATOR SPRING

To ensure pad pressure consistency, the distance between the bottom of the cap spring (p/n 27430) and the flange on the actuator pivot (p/n 66150) should be 2.125" (see above).



LIFT LINKAGE

To ensure that the pad is at the proper height when in the "ready" position, the distance between the edge of the safety switch bracket (p/n 140135) and the end of the plunger assembly (see above) must be 1/4".

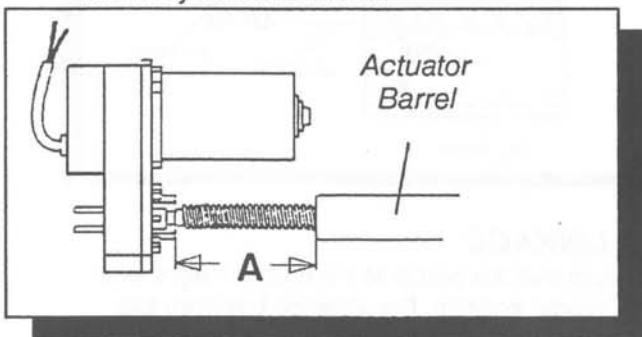
ACTUATOR INFORMATION

ACTUATOR REMOVAL

1. Switch on main switch and lower buffing head to floor. Switch off main switch.
2. Remove main cover and batteries.
3. Lay machine on left side.
4. Remove actuator connecting lift link #42 on page 16.
5. Disconnect motor leads.
6. Remove (4) bolts holding actuator bracket to frame and lift out actuator.

TESTING ACTUATOR BARREL TRAVEL

1. Do not allow the barrel to rotate or the $\frac{1}{2}$ "-9/16" (1.25cm to 1.40cm) adjustment will be lost.
2. Connect white wire to the (+) positive post and the black wire to the (-) negative post of the 36VDC power supply to retract the barrel to the lower limit.
3. Black wire to the (+) positive post and the white wire to the (-) negative post of the 36VDC power supply to extend the barrel to the upper limit.
4. Reverse the wires to retract the barrel electrically. The actuator is now ready for assembly and installation.



LOWER ADJUSTMENT

1. Connect the white wire to the (-) negative post of a 36VDC power supply and the black wire to the (+) positive post. This will retract or close the actuator barrel. Maintain the connection until the limit switch shuts the power off.
2. Disconnect both wires from the power supply. Set "A" (barrel to frame gap) at between $\frac{1}{2}$ and 9/16 of an inch (1.25cm to 1.40 cm) rotating by hand.

UPPER ADJUSTMENT

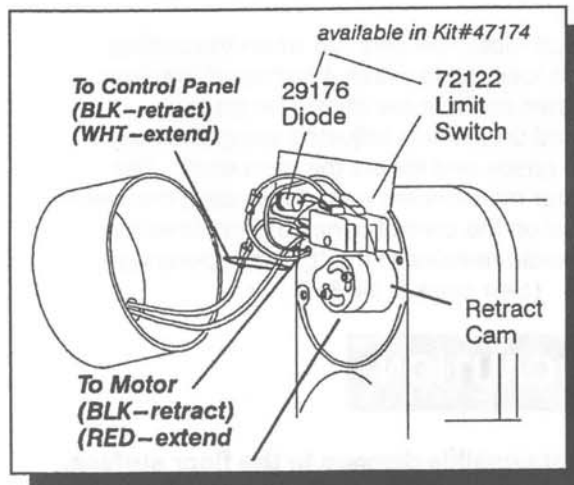
1. **Hold Barrel With Hand**
Reverse the wire connections to the 36VDC power supply, white wire to the (+) positive post and the black wire to the (-) negative post. This will extend or open the actuator barrel.
Do not allow barrel to rotate.
2. Extend actuator barrel electrically until it stops. Ensure "A" is between $3 \frac{3}{4}$ and $3 \frac{7}{8}$ inches (9.5cm to 9.9cm) on all models.
3. If the dimension is incorrect, disconnect from the power supply and set the switch cam adjustment.

SWITCH CAM ADJUSTMENT

1. Remove the two cam switch covers screws (TORX T15) and remove cam switch cover.
2. Loosen the two cam lock screws (TORX T20) on the cams.

CAUTION

Do not allow retract cam to rotate.



3. If the "A" dimension is incorrect, turning the cam clockwise will INCREASE "A": counterclockwise will DECREASE "A".
4. Tighten the two cam lock screws and cycle the actuator. **Do Not Allow The Barrel To Rotate.** Check the extended "A" dimension. If it is correct, replace the cover with screws. If not, repeat #3 above.

WEEKLY MAINTENANCE

1. Use a hydrometer to check the condition of each battery cell.
2. Check battery cable clamps. Ensure clamps are tight on battery terminals.
3. Clean tops of batteries with a wet cloth and a solution of water and baking soda. Wipe battery tops dry after cleaning.
4. Check pad lock for looseness or damage.
5. Check filter and filter seals. Airflow should be unobstructed through filter.
6. Ensure that the chain, the pivot points and casters are properly lubricated.
7. Tighten any loose screws or nuts.

4 TO 6 MONTH MAINTENANCE

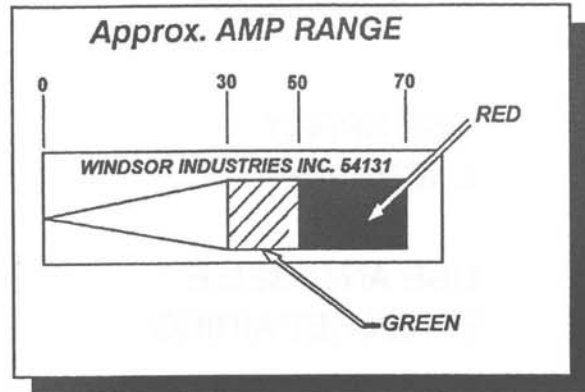
1. Remove batteries-clean battery tray and battery compartment.
2. Clean battery cable clamps and battery terminals.
3. Check the drive chain tension. Tighten, clean and lubricate if necessary.
4. Check the carbon motor brushes in the pad driver motor. (#17 on page 20)
5. Use a vacuum to remove lint or dust build-up from motor windings.

AT THE END OF EACH WORK PERIOD:

1. Wipe down the exterior of the machine.
2. Lower the deck.
3. Open the cover.
4. Charge the batteries. (See battery charging procedure on page 4.)

SHUNT ADJUSTMENT (Cont.)

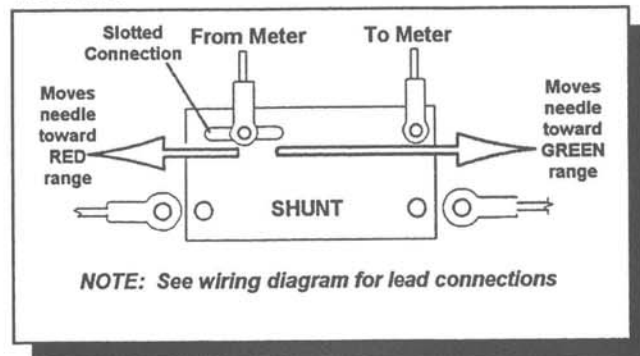
Check the amp range when nuisance tripping of the circuit breaker indicates that the shunt may be out of adjustment.



1. Connect a DC ampere meter to the positive battery lead. Running the machine with a pad: lower the pad to the floor until it is operating at 50 amps.
2. Moving the wire in the slot, adjust the pad pressure meter until the needle sets at the line between the green and red areas.
3. Check the other points indicated in the diagram above. The high end should trip the circuit breaker. Replace the pad pressure meter if the approximate amp ranges shown can not be set.

SHUNT ADJUSTMENT

This pad pressure meter adjustment is factory set. Over the course of time it may become necessary to adjust this setting using the slotted connection on the shunt.



LUBRICATION & NOTES

The following symbols found throughout the manual indicate items requiring lubrication:



APPLY GREASE



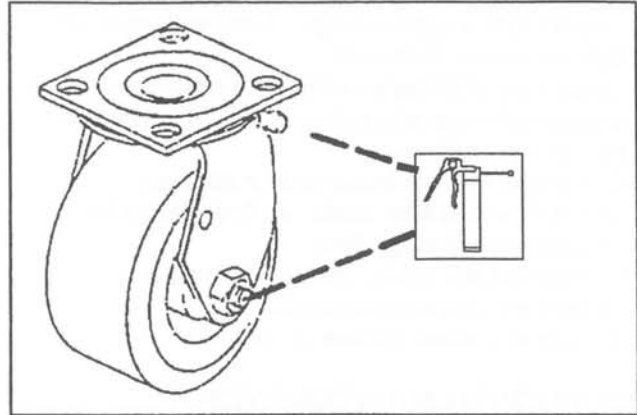
USE SPRAY
LUBRICANT



USE ANTI-SEIZE
WHEN REPAIRING



PERMANENT (RED)
THREAD LOCK TIGHT

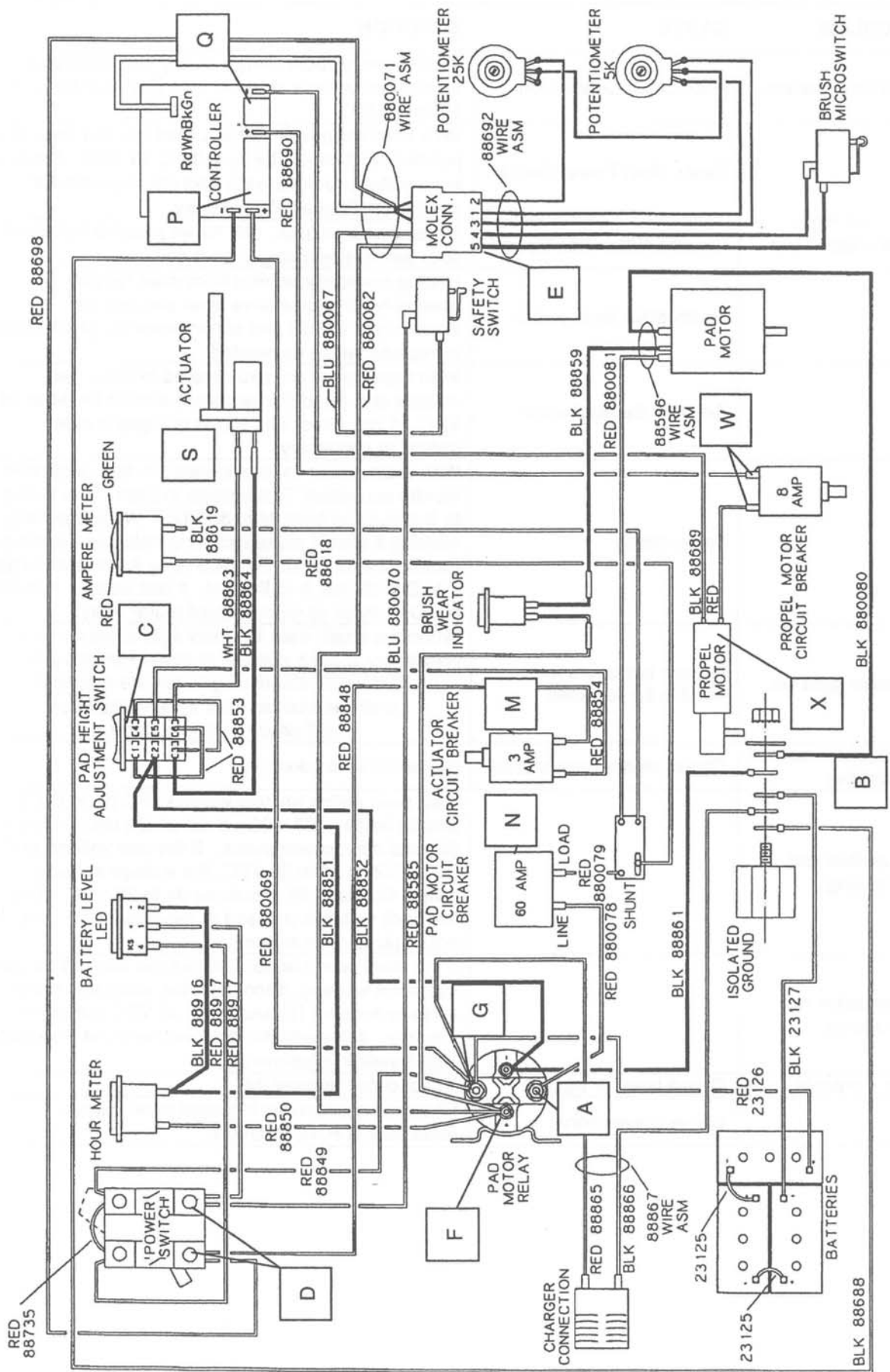


CAUTION: Do not use pressure washers to clean sealed gear boxes or bearings.

If it becomes necessary to clean under machine with a pressure washer; Ensure all items noted are re-lubricated

NOTES:

ELECTRICAL SCHEMATIC



TROUBLESHOOTING CHART

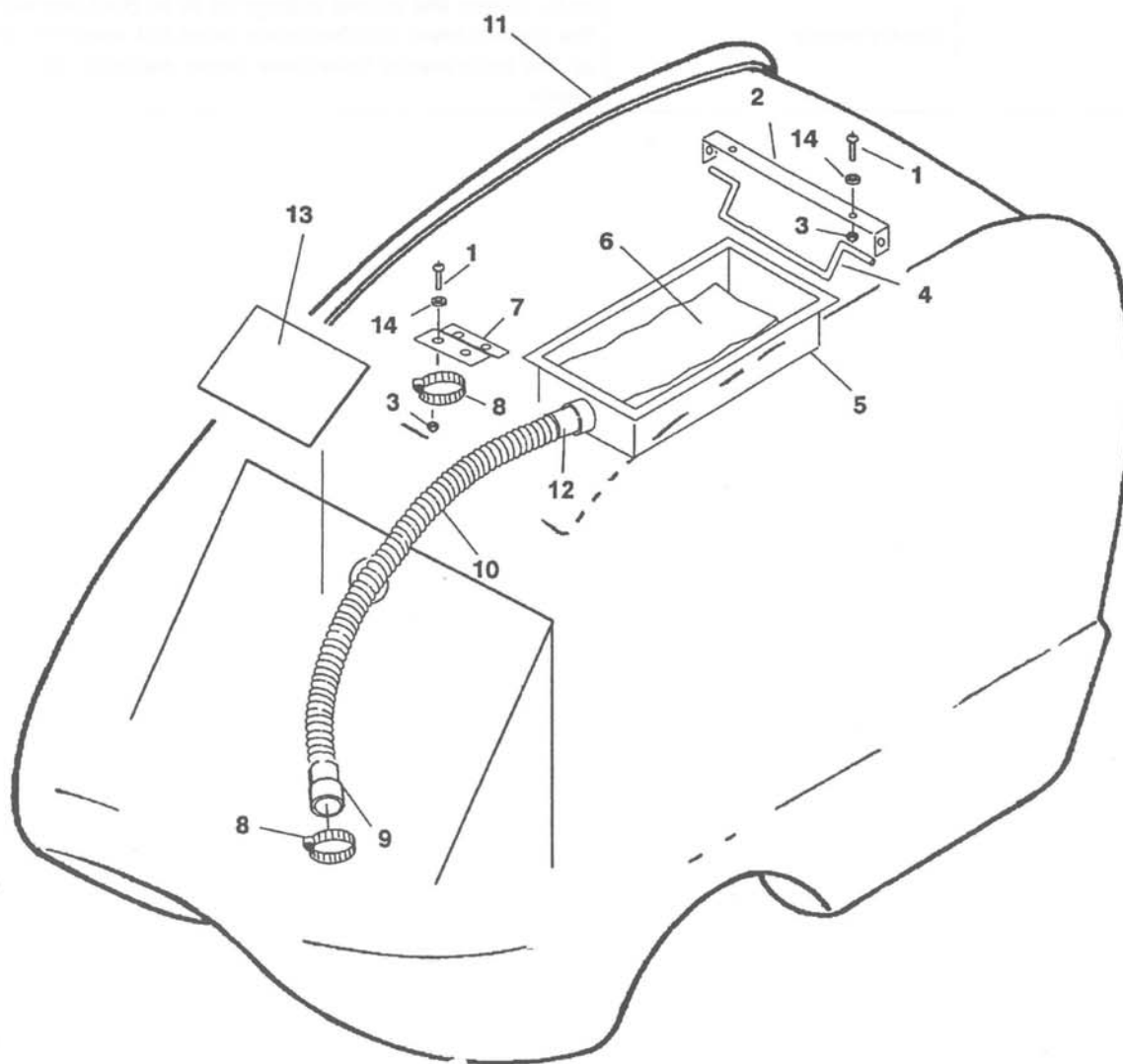
PROBLEM.	CAUSE	SOLUTION
No power to machine	Poor Cable Connection	Clean battery cable clamps of any corrosion and tighten test voltage at points G to B should be from 34 to 38 VDC.
	Faulty Main Power Switch	With the main power switch turned on, test voltage at points D to B should be from 34 to 38 VDC. If there is no voltage remove leads and check switch for continuity. Replace if necessary
Pad motor won't run	Circuit breaker has tripped	Reset circuit breaker. (N) Raise pad 2-3 inches off floor before attempting to start pad motor.
	Faulty drive lever switch	Unplug connector coming from main handle assembly. Squeeze drive lever and test for continuity at handle end of connector E. (4-5) Adjust or replace switch as needed.
	Actuator Safety Switch	With main power on, pad lowered to floor, test voltage at E (4) to B (rear panel) should be 34 to 38 VDC. If not, check and adjust or replace safety switch as necessary.
	Faulty Relay	With main power on, pad lowered to floor and drive handle squeezed: Test voltage at points F to B and A to B should be from 34 to 38 VDC. When the relay is working it should make a clicking noise as the drive handle is squeezed. Replace relay if the test voltage F to B is OK but A to B is not. If test voltage F to B is not OK, check all wiring to pad motor relay.
Brush wear light on	Carbon motor brushes need to be replaced	When the brush wear indicator light comes on it is necessary to put a new set of carbon brushes in. <i>CAUTION: Continuing to run the machine, until the brushes wear away completely, will cause motor damage.</i>
Deck lift mechanism not working	Circuit breaker has tripped	Reset circuit breaker (M).
Deck switch not working		With main switch on, test voltage at C (5) to C (2) should be 34 to 38 VDC. If not check circuit breaker (M) and main power switch. If the test voltage at C (5) to C(2) is 34 to 38 VDC, the voltage at deck switch C(3) to C (6) should be 34 to 38 VDC when the deck switch is pressed to raise/lower the pad. If not, replace deck switch.
Deck actuator not working		If the deck switch tested OK, but the deck lift actuator still is not working, disconnect the white and black wires to actuator (S) and apply 36 VDC directly to actuator. If the actuator does not respond, see page 7 limit switch adjustments.
Drive Controls	Circuit breaker tripped.	Reset circuit breaker (M).
	Loose connections	Check all connections in propel motor circuit especially at P, Q, W and G.

TROUBLESHOOTING CHART

PROBLEM.	CAUSE	SOLUTION
Drive Controls (continued)	Faulty Potentiometer	With the drive motor disconnected at Q, test the output voltage to the drive motor. The output voltage at Q should vary from 0 to 36V FWD 0-24 REV. as the control levers are squeezed. Resistance of the potentiometers can be tested at the white and black leads found at the molex connector at E. With the speed knob turned to maximum, the resistance should vary from 2500-5000 ohms as the lever is squeezed (forward drive). The resistance should vary from 2500-0 ohms as the lever is pushed to the front (reverse drive). The resistance should be 2500 ± 300 ohms with the lever centered in neutral. If this fails, the potentiometers will both need to be replaced.
	Faulty drive control board	Test voltage at P (+) to P (-) should be from 34 to 38 VDC. If the voltage at P is good but the propel motor won't respond, and all the tests above have been done, replace the drive control board.
	Faulty motor	Squeeze the control levers and test the voltage at W to B. When the output voltage at W or B varies with the control lever but the motor does not respond, and all the tests above have been done, replace the motor.

HOOD PARTS & PARTS LIST

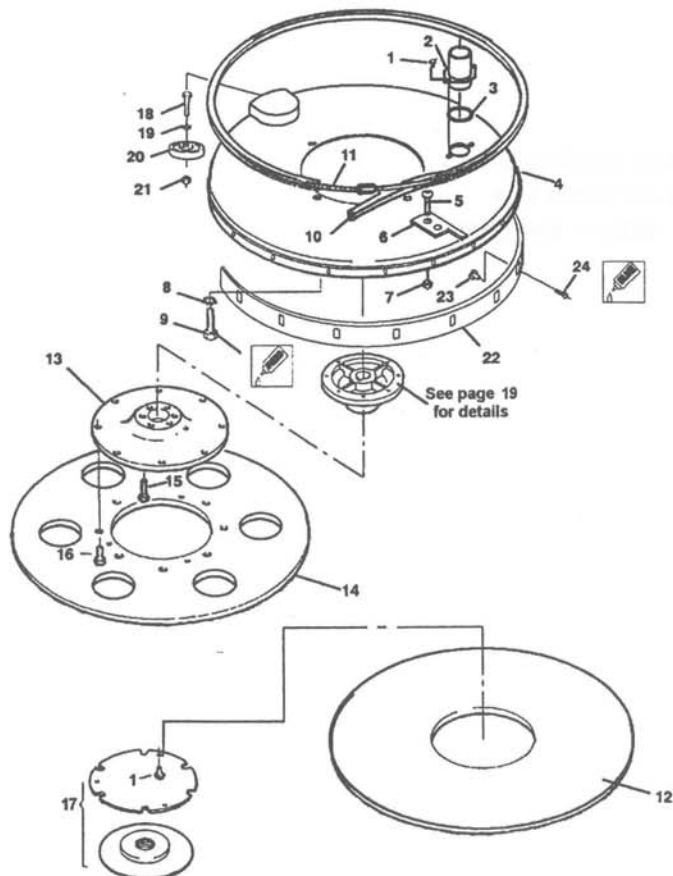
REF	PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	70088	Screw, 10-32 x 1/2 PPHMS		
2	14883	Bracket, Housing Holder		
3	57104	Nut, 10-32 w/ Star Washer		
4	14884	Bracket, Folding Housing Holder		
5	41235	Housing, Filter Bag		
6	2003	Filter Bag Packs 10/package		
7	14882	Bracket, Bag Housing Holder		
8	20046	Clamp, 2.25" Worm Gear		
9	27814	Cuff, Blk 1.9ID Vac Hose x 4.07		
10	39492	Hose, 1.5 Blk Vac x 30"		
11	27847	Cover, Betco Main		
12	27759	Cuff, Hose 1.5" Blk A 2161		
13	500057	Label, Betco Logo		
14	87108	Washer, #10 X 9/16 O.D.		



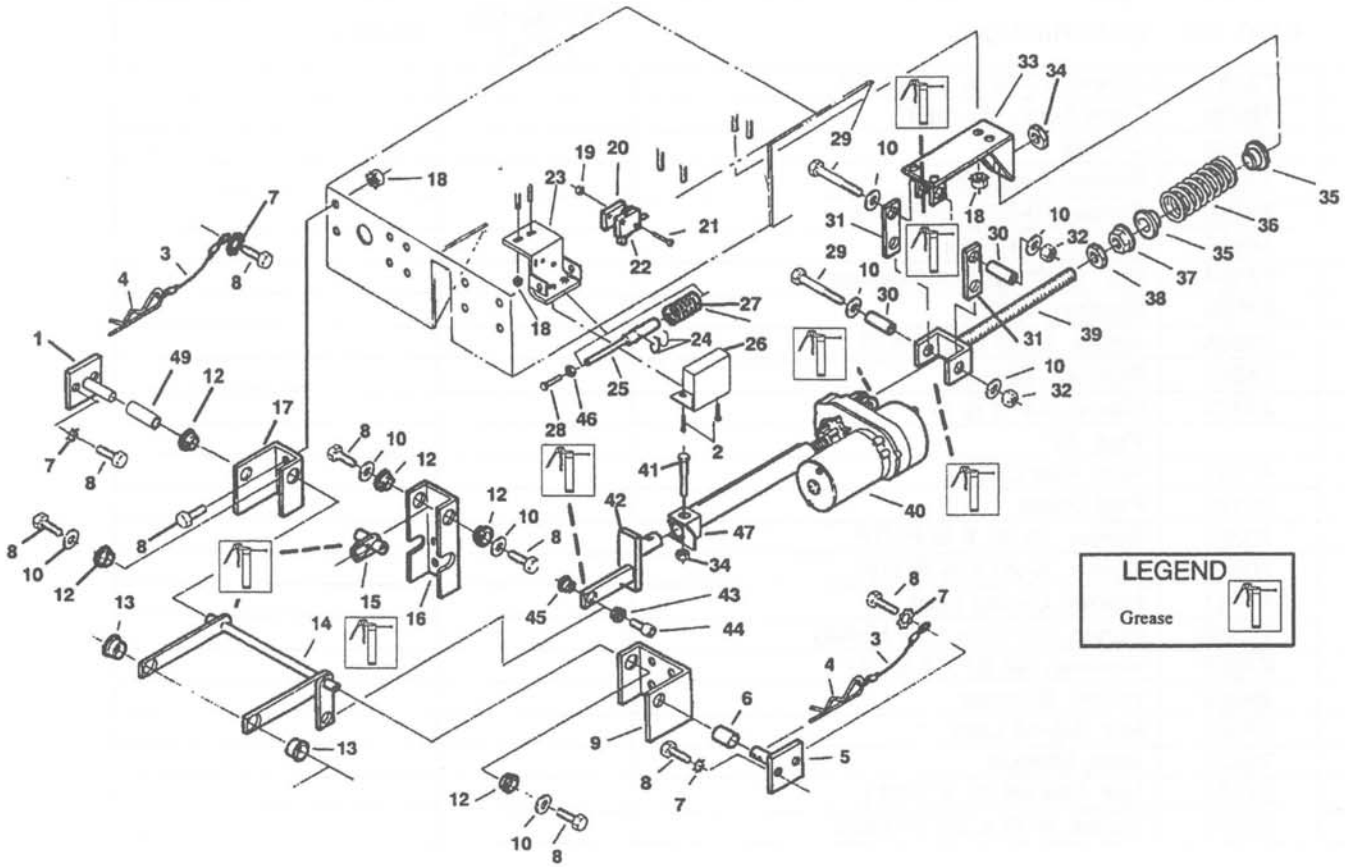
SHROUD ASSEMBLY & PARTS LIST

REF	PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	70351	Screw, 10-32 X 3/8 HHTR		
2	78330	Tube Asm., No dust		
3	59033	O-Ring		
4	73550	Shroud Assembly		
5	70088	Screw, 10-32 x 1/2 PHMS		
6	14927	Bracket, Air Flow		
7	57104	Nut, 10-32 w/ Star Washer		
8	87025	Washer, 1/4 Star		
9	70015	Screw, 1/4-20 x 3/4 HHCS		
10	14560	Bumper, Shroud		
11	20076	Clamp, 24" x 1/2 W		
12		Pad, 20"		
13	41187	Hub, Flex Disk		
14	66185	Pad Driver		
15	70383	Screw, 10-32 X 3/4 PHTF		
16	70384	Screw, 1/4-20 X 1/2 PHTF		
17	41161	Holder, Center Lock		
18	70368	Screw, 3/8-16 x 1.75 HHMS		
19	87003	Washer, 3/8 ID X 7/8 OD		
20	89059	Wheel, Bumper		
21	57022	Nut, 3/8-16 Lock		
22	73620	Skirt, Shroud		
23	57177	Nut, Tee #8-32 X 7/16 L		
24	70174	Screw, 8-32 x 3/8 PPHMS		

SHROUD ASSEMBLY



LIFT LINKAGE

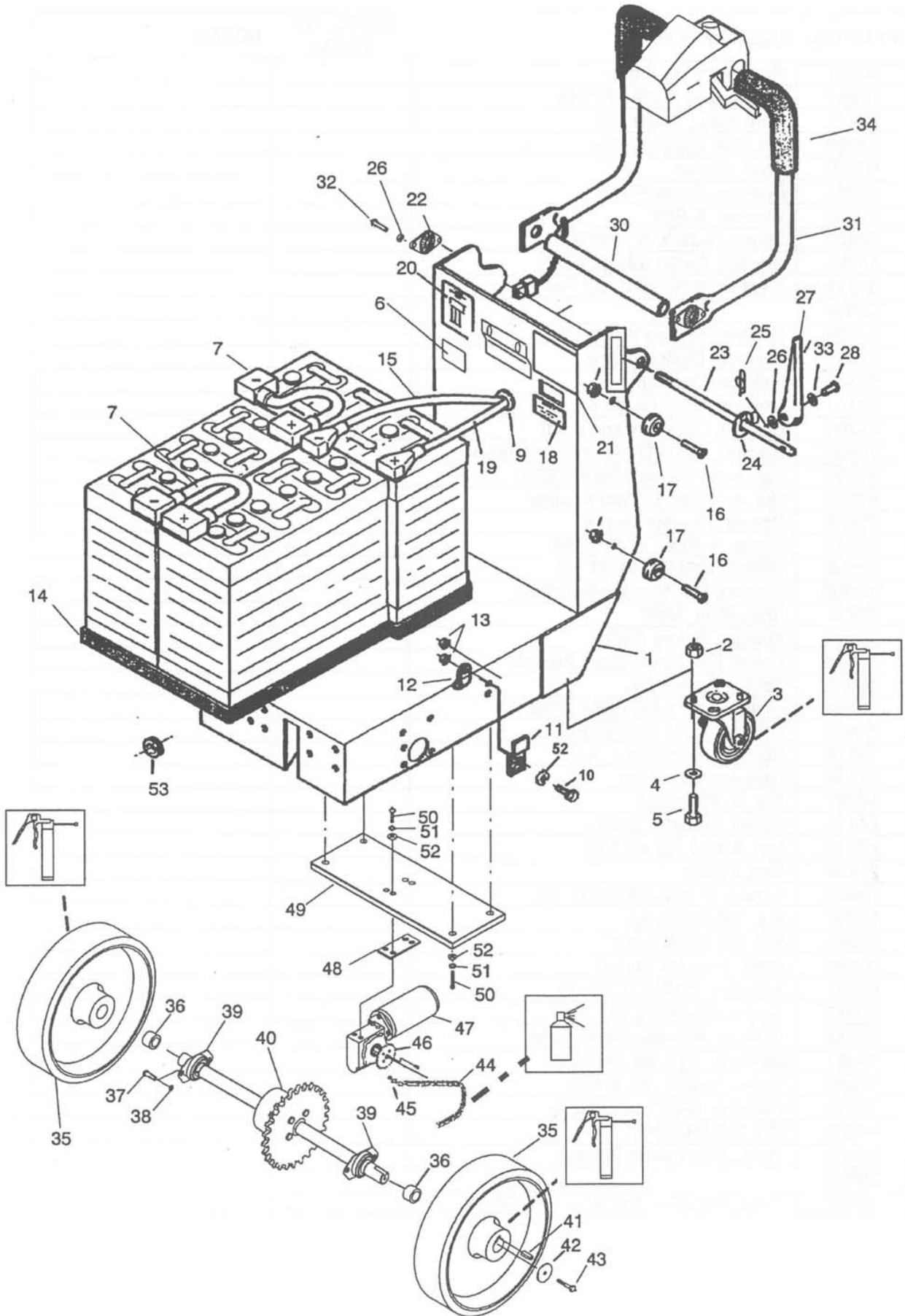


NOTE: If the actuator continues running beyond the set limits use page 7 to adjust or replace switches.

LIFT LINKAGE PARTS LIST

REF	PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	66201	Pivot Asm, RH Cover		
2	70067	Screw, 6-32 X 3/8 PPHMS		
3	27457	Cord Asm., Cover Pin		
4	66092	Pin, Hair Spring Cotter		
5	66149	Pivot, Center		
6	14725	Bushing, Cover Pivot		
7	87025	Washer, 1/4 Star		
8	70020	Screw, 1/4-20 X 1/2 HHMS		
9	14704	Bracket, Deck Linkage (Left)		
10	87013	Washer, 1/4 ID x 5/8 OD Flat		
11	OPEN			
12	14708	Bushing, Flange 1/2 x 3/4 OD		
13	14593	Bushing, Deck Linkage		
14	51147	Linkage, Deck Lift		
15	51151	Linkage, Deck Guide Adj (F)		
16	14705	Bracket, Deck Linkage (Mid)		
17	14706	Bracket, Scrub Deck Linkage (Rear)		
18	57105	Nut, 1/4-20 Hex w/ Star Washer		
19	57163	Nut, 4-40 Hex w/ Star Washer		
20	73456	Spacer, Plunger Switch		
21	70580	Screw, 4-40 x 1.0" PPHMS		
22	72053	Switch, 125VDC SPST NC		
23	140135	Bracket, Ext. Microswitch Mntg.		
24	27721	Snap Ring, 7/16"		
25	66266	Plunger, Safety Switch		
26	23670	Cover, Ext. Microswitch Bracket		
27	73576	Spring, Comp. Blk.		
28	70424	Screw, 8-32 x 5/8 HHMS Pltd		
29	70105	Screw, 1/4-20 x 1.75 HHMS		
30	14714	Bushing, 1/4 x 3/8 x 1 1/4 L		
31	51152	Link, Actuator Pivot		
32	57047	Nut, 1/4-20 Nylock		
33	54134	Mount, Actuator Spring		
34	57119	Nut, 3/8-16 Nylock Pltd		
35	27430	Cap, Spring		
36	73443	Spring, 3" 240Lb/In Cmp. Blk.		
37	57032	Nut, 3/8-16 Flange		
38	57085	Nut, 3/8-16 Hex Jam		
39	66150	Pivot, Actuator Spring		
40	05051	Actuator, 36VDC 3" Stroke		
41	70070	Screw, 3/8-16 x 2 HHCS		
42	51153	Linkage, Actuator Connecting		
43	14491	Bushing, .25 x 3/8 SHCS		
44	70346	Screw, 1/4-20 x 3/8 SHCS		
45	14580	Bushing, 1/4-20 x .28 Flange		
46	57008	Nut, 8-32 Hex Pltd		
47	62460	Plate, Microswitch Plunger		
48	OPEN			
49	78323	Tube, 5/8 OD x .058 W x .930 CRS		

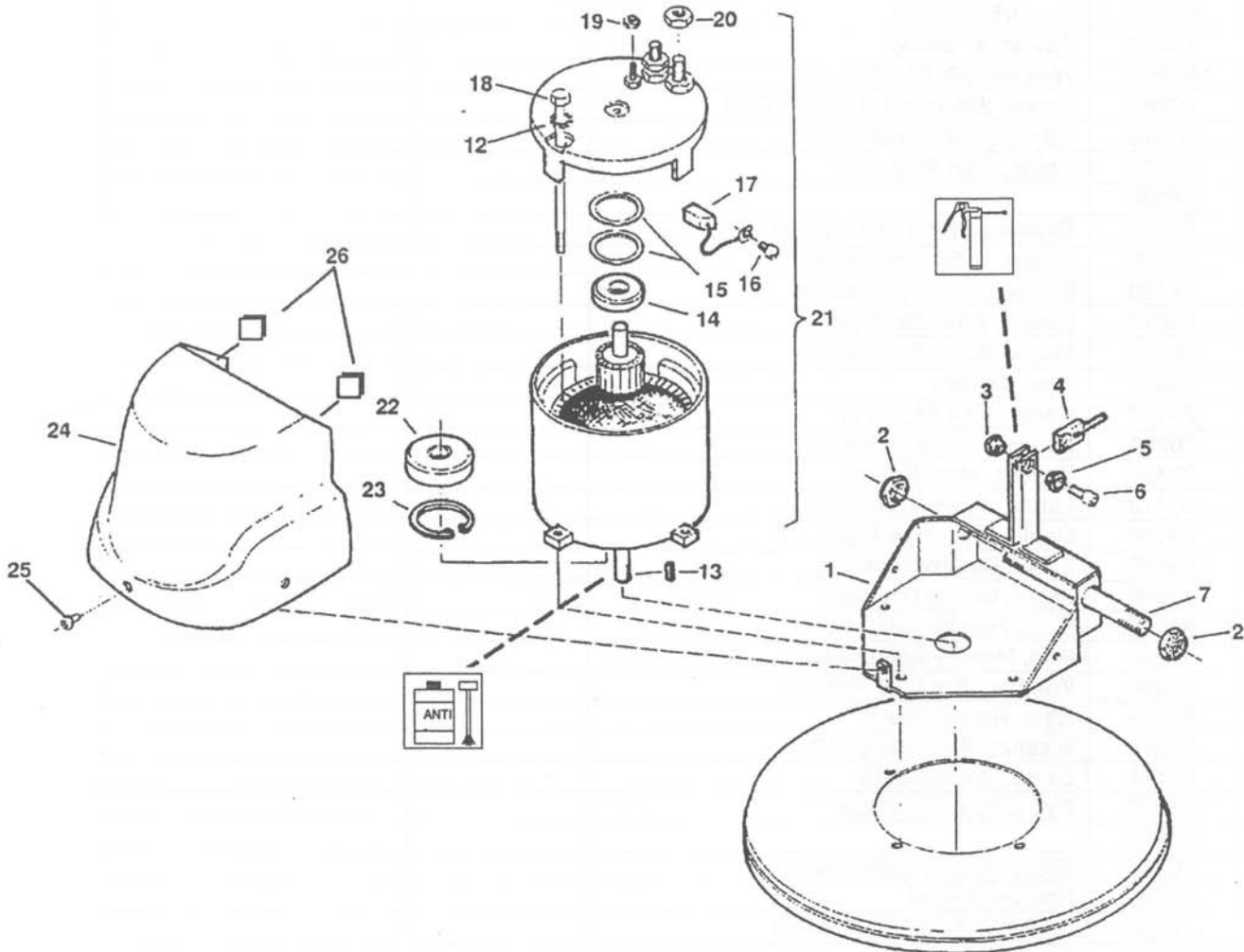
CHASSIS/DRIVE ASSEMBLY



CHASSIS/DRIVE ASSEMBLY PARTS LIST

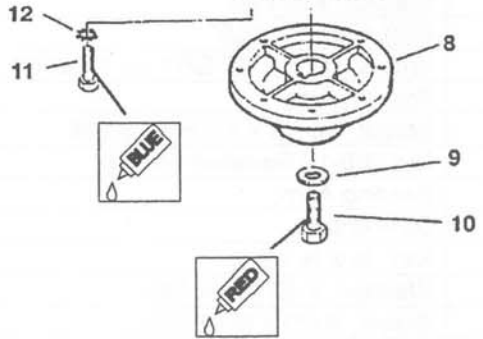
REF	PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	34235	Frame Asm.		
2	57119	Nut, 3/8-16 Lock		
3	18027	Caster, 4" Swivel		
4	87003	Washer, 3/8 ID x 7/8 OD		
5	70266	Screw, 3/8-16 x 1.0 HHCS Gr 5		
6	50926	Label, Operational Slope		
7	23125	Cable, 4GA Red x 12"		
8	OPEN			
9	36020	Grommet, 5/8ID x 1.12 OD		
10	70020	Screw, 1/4-20 x 1/2 HHCS		
11	14730	Bracket, Battery Retainer		
12	20015	Clamp, 9/16 Dia. Nylon		
13	57105	Nut, 1/4-20 w/ Star Washer		
14	78231	Tray, Battery		
15	23127	Cable, 4GA BLK x 27"		
16	70201	Screw, 1/4-20 x 3/4 FHCS		
17	73454	Spacer, Main Cover		
18	50413	Label, Charger Warning		
19	23126	Cable Asm, 4GA Red x 27"		
20	50497	Label, Battery Warning		
21	50669	Label, Wiring Diagram		
22	51184	Lock, Handle Adjustment		
23	67233	Rod, Handle Adjustment		
24	87080	Washer, .5 x 1.25 Flat Gr8		
25	80604	Ring, Rue Cotter 1/4"		
26	87018	Washer, #10 x 9/16 OD		
27	51142	Lever, Handle Lock		
28	66133	Pin, 3/16 x 7/8 Clevis		
29	OPEN			
30	78269	Tube, Handle Adjustment		
31	38195	Handle, Propel		
32	70228	Screw, 3/8-16 x 1.5 HHMS		
33	87095	Washer, #10 Flat		
34	36123	Grip, Handle x 9.5"		
35	89078	Wheel, 10" x 2 1/2" GRY w/ 1" bore		
36	73614	Spacer, Axle		
37	70266	Screw, 3/8-16 x 1.0 HHCS Gr5		
38	57032	Nut, 3/8-16 Serrated Flange		
39	09066	Bearing Asm.		
40	29170	Differential		
41	48052	Key, 1/4 x 1/4 x 2 1/2		
42	87008	Washer, 1/4 ID x 1 1/4 OD		
43	70020	Screw, 1/4-20 x 1/2 HHCS		
44	27553	Chain, #40, 1/2" Pitch x 40		
45	27343	Chain, Master link, #40, 1/2		
46	73565	Sprocket, #40B11 F 1/2		
47	53208	Motor, 36VDC Gear		
48	62389	Plate, Motor Spacer		
49	62388	Plate, Propel Motor		
50	70015	Screw, 1/4-20 x 3/4 HHCS		
51	87025	Washer, 1/4 Lock Ext Star SS		
52	87013	Washer, 1/4 ID x 7/8 OD SS		
53	36125	Grommet, 3/4 ID x 1.38 OD		

DECK LIFT MECHANISM



	ANTI-SEIZE
	RED THREAD LOCKING ADHESIVE
	BLUE THREAD LOCKING ADHESIVE
	GREASE

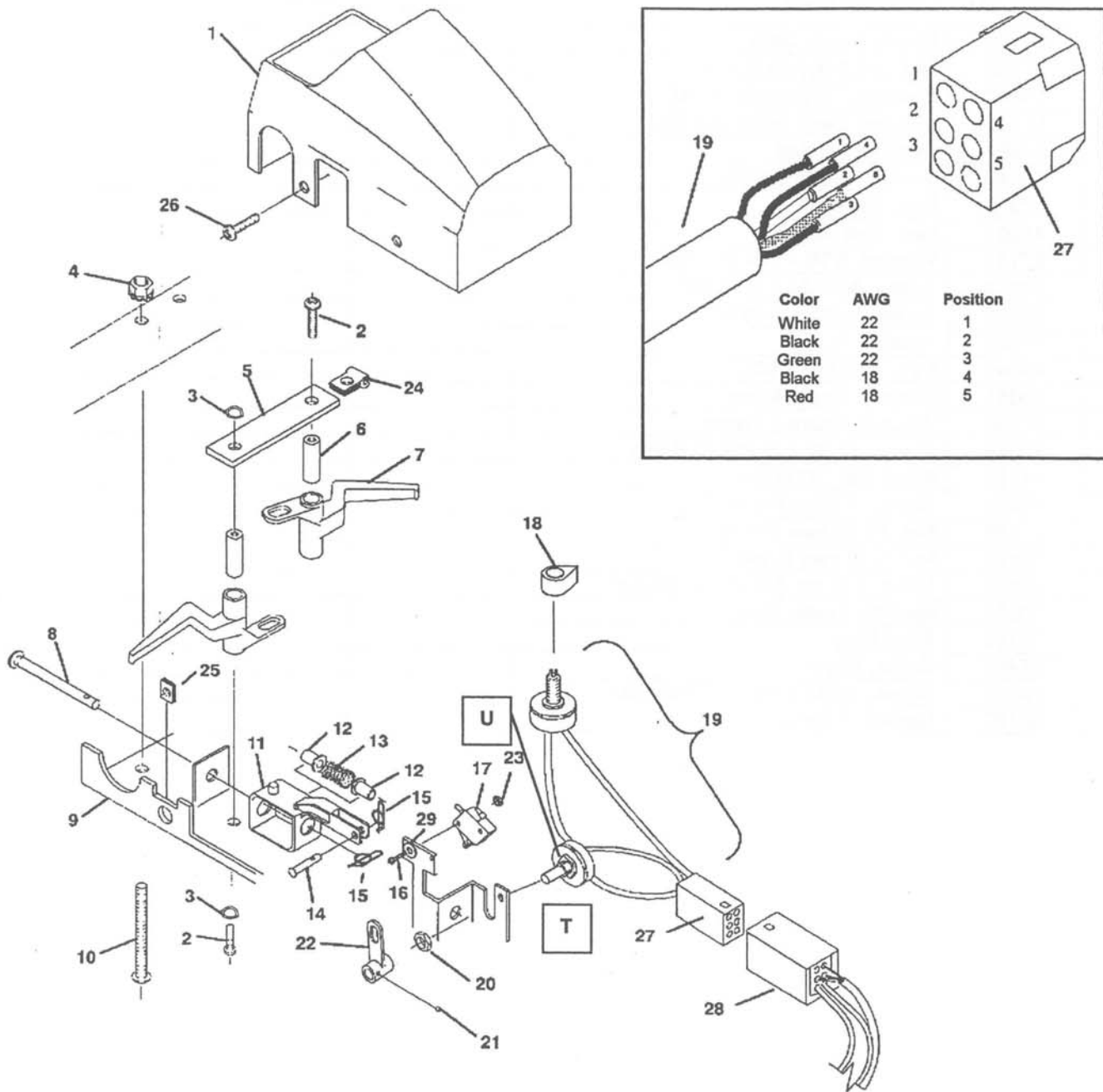
****LEGEND****



DECK LIFT MECHANISM PARTS LIST

REF	PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	54130	Mount, Scrub Deck		
2	57153	Nut, ½-13 Nylock (Thin)		
3	14580	Bushing, Threaded (1/4-20)		
4	51149	Linkage, Deck Guide Adj (M)		
5	14491	Bushing, Socket		
6	70346	Screw, ¼-20 x 3/8 SHCS		
7	67238	Rod, Deck Lift		
8	41201	Hub, Pad Driver		
9	87102	Washer, 5/16 x 1 ¼ OD Flat		
10	70244	Screw, 5/16-24 x ½ HHMS		
11	70015	Screw, ¼-20 x ¾ HHMS		
12	87025	Washer, ¼ Star		
13	48045	Key, 3/16 SQ x 1/2L		
14	09051	Bearing, Upper Motor		
15	87106	Washer, Bearing Thrust		
16	70344	Screw, 10-32 x ½ PHMS Brass		
17	14728	Brush Set, 2000 rpm		
18	70408	Screw, ¼-20 x 7 ½ HHCS		
19	57168	Nut, 10-32 Hex Brass		
20	57125	Nut, 5/16-Hex Brass		
21	53190	Motor, 2 ½ hp, 36VDC, 2000 rpm		
22	09052	Bearing, Lower Motor		
23	67142	Snap Ring		
24	27427	Cover, Motor		
25	70351	Screw, 10-32 x 3/8 HHTF w/ Star		
26	35187	Gasket, Tube Seal		

DRIVE CONTROL ASSEMBLY



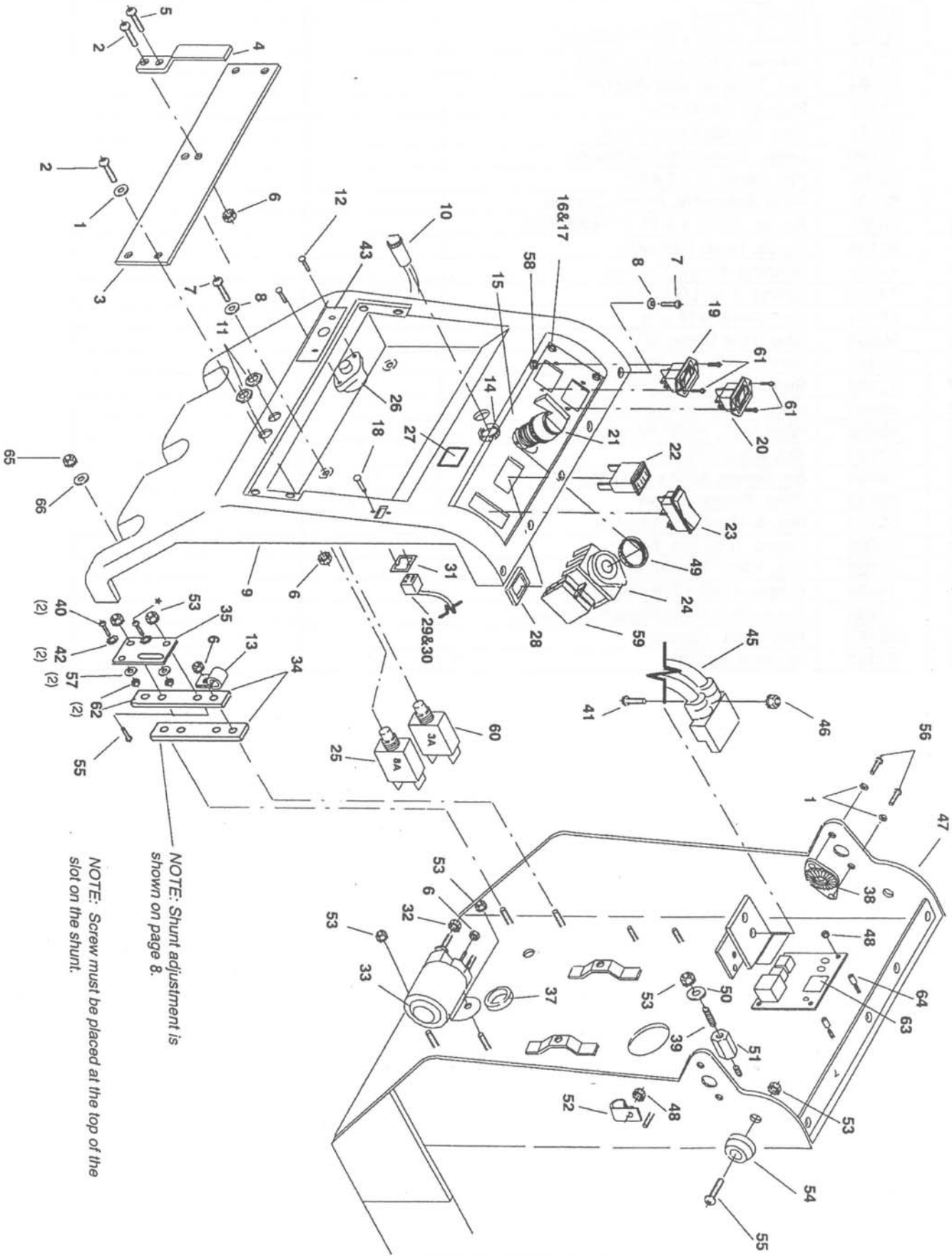
Adjustment of potentiometer for drive control

1. Turn the speed potentiometer (U) fully clockwise. (Max.speed).
2. Measure the potentiometer resistance at connector (#27) white and black wires. The resistance should measure 2200-2800 ohms in neutral, 4800-5000 ohms in forward, and 0-200 ohms in reverse. If adjustment is necessary loosen set screw (#21) and adjust potentiometer (T) for 2500 ohms in Neutral. Tighten set screw (#21).
3. Turn the main power switch on.
4. If the machine moves, when control lever is in neutral, adjust the direction potentiometer until movement stops.

DRIVE CONTROL ASSEMBLY

REF	PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	27568	Cover, Propel		
2	70162	Screw, 10-32 x 3/8 PHMS SS		
3	87016	Washer, #10 Lock Ext. Star		
4	57104	Nut, 10-32 w/ Star Washer		
5	71116	Support, Lever Pivot		
6	67271	Rod, Handle Lever Pivot		
7	51186	Lever, Propel Control Handle		
8	66184	Pin, Clevis 1/4 x 2.438		
9	62705	Plate Assembly, Propel Control		
10	70209	Screw, 10-32 x 1.75 PPHMS Pltd		
11	36136	Guide, Lever Centering		
12	14866	Bushing, Propel Control		
13	73236	Spring, 1 1/2" LG Comp.		
14	66191	Pin, Clevis 3/16 x 1/2		
15	80604	Ring, Rue Cotter 1/4"		
16	70245	Screw, 4-40 x 3/4 PHMS Pltd.		
17	72093	Switch, 125VDC SPST N.O.		
18	48043	Knob, PT26/32 Speed Control		
19	88692	Wire Asm., F22P Potentiometer		
20	57024	Nut, 3/8-27 Panel		
21	70084	Set Screw, 8-32 x 3/16 KCP		
22	66183	Pivot, Potentiometer		
23	57163	Nut, 4-40 w/ Star Washer		
24	20005	Clamp, 5/16 Dia. Nylon		
25	57028	Nut, 10-24 Tinnerman		
26	70406	Screw, #10B x 3/8 PHSM Blk		
27	27554	Connector, 6 Pin Recept. Molex		
28	880071	Wire Asm., Control		
29	87161	Washer, #6 Flat		

ELECTRICAL CONTROLS



NOTE: Shunt adjustment is shown on page 8.

NOTE: Screw must be placed at the top of the slot on the shunt.

NOTE: This controller needs to be separated from the frame.

ELECTRICAL CONTROLS PARTS LIST

REF	PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	87018	Washer, #10 x 9/16 OD		
2	70066	Screw, 10-32 x 3/4 PHMS		
3	27434	Cover, Storage		
4	41144	Hook, Cord		
5	70088	Screw, 10-32 x 1/2 PHMS		
6	57104	Nut, 10-32 w/ Star Washer		
7	70406	Screw, 10B x 3/8 PHSM (Blk)		
8	87117	Washer, #10 Flat (Blk)		
9	27719	Cover, Rear		
10	51292	Light Asm., L2020B Brush Ind		
11	57024	Nut, 3/8-27 Panel		
12	70067	Screw, 6-32 x 3/8		
13	20005	Clamp, 5/16 Nylon		
14	87101	Washer, 1/2 ID Spring		
15	62334	Plate, Switch Panel		
16	70394	Screw, 6-32 x 1/2 THMS (Blk)		
17	57157	Nut, 6-32 U-Tinnerman		
18	67240	Rivet, 1/8 x 1/2 Aluminum Blk		
19	54092	Meter, DC 0-60 VDC Hour		
20	54144	Light, Battery Charge Lvl. LED		
21	72051	Switch, Main Rotary		
22	54131	Meter, 70 Amp DC		
23	72084	Switch, 3 Position DPDT MOM		
24	72088	Switch, Contact Block Chip		
25	14668	Breaker, 8 Amp Circuit		
26	140182	Breaker, 60 Amp Circuit		
27	50776	Label, Warning for Safety		
28	62283	Plate, Meter Retaining		
29	27555	Connector, 6 Pin F-Molex		
30	76014	Terminal, Male Pin Molex		
31	62390	Plate, Molex Mounting		
32	57117	Nut, 5/16-24 Hex		
33	67315	Relay, 36VDC 100A heavy duty		
34	14729	Bracket, Shunt Mounting		
35	73445	Shunt, 50MV 70 Amp		
36	Open			
37	36125	Grommet, 3/4 ID x 1.38 OD		
38	51184	Lock, Handle Adjustment		
39	70251	Set Screw, 1/4-20 x 1/0 HHCS		
40	70615	Screw, 6-32 x 3/8 SRHMS BR		
41	70239	Screw, 6-32 x 3/4 PHMS		
42	87026	Washer, #6 Ext. Tooth Zinc Pltd.		
43	73829	Spacer, Circuit Breaker		
44	OPEN			
45	88867	Wire, 14" Blk 18 76035x 76075L		
46	57012	Nut, 6-32		
47	34235	Frame Asm.		
48	57116	Nut, 6-32 w/ Star Washer Pltd.		
49	57107	Nut, M22,5		
50	87092	Washer, 5/16 x 3/4 Brass		
51	73659	Standoff, Insul. 1.L Hex 1/4 x 20		
52	20015	Clamp, 9/16 Dia. Nylon		
53	57105	Nut, 1/4-20 w/ Star Washer		
54	73454	Spacer, Main Cover		
55	70201	Screw, 1/4-20 x 3/4 FHMS		

ELECTRICAL CONTROLS PARTS LIST (continued)

56	70228	Screw, 10-32 x ¼ PHMS SS		
57	87187	Washer, #6 Flat BR		
58	57049	Nut, 6-32 Hex Nylock SS		
59	72089	Switch, Contact Module		
60	14717	Breaker, 3 Amp		
61	70394	Screw, 6-32 x ½ THMS Blk		
62	57256	Nut, 6-32 Hex BR		
63	27579	Controller, 36VDC 1.8 Sec. Dly.		
64	73734	Spacer, 3/8 OD x .218 ID x 1/4L		
65	57030	Nut, 10-32 Hex Nylock		
66	87093	Washer, #10 x 1.0 Flat		

SUGGESTED SPARE PARTS

PART NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
14717	Breaker, 3 Amp		
140182	Breaker, Circuit 60 Amp		
18027	Caster, 4" Polyurethane Swivel		
23125	Cable Asm, Battery Jumper x 15		
23126	Cable Asm, 4Ga Red x 27"		
23127	Cable Asm, 4Ga Blk x 27"		
41161	Holder, Centerlock		
66185	Pad Driver		
67315	Relay, 36VDC 100A		
72051	Switch, Main Rotary		
72053	Switch, 125VDC SP NC Roller		
72088	Switch, Contact Block Clip		
72089	Switch, Contact Module No.		
72093	Switch, 125VDC SPST N.O.		
73620	Skirt, Shroud		
89059	Wheel, Squeegee Bumper		
14668	Breaker, 8 Amp		
02100	Hydrometer		
02101	Battery Post Cleaner		
02143	Battery, 12VDC, 20Amp, 185 Amp Hour		
02104	Charger, 36VDC, 20Amp, Auto Shut-Off		(115V)
23125	Cable, 12" Red		
78231	Battery Tray		