

# LIGHTNING™ 1500

Ultra High Speed Burnisher



## INSTRUCTION MANUAL



■ CARE

■ SERVICE

Patent pending

**Model L1500-20**



WINDSOR INDUSTRIES, INC., 1351 W. Stanford Ave., Englewood, CO 80110 USA • 303/762-1800 • FAX 303/762-0817

# IMPORTANT SAFETY INSTRUCTIONS

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

**READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE**

This machine is for commercial use.

---

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

1. Use only as described in this manual. Use only manufacturer's recommended attachments.
2. Use indoors only. Do not use outdoors and do not expose to rain.
3. Machines can cause a fire when operated near flammable vapors or materials. Do not operate this machine near flammable fluids, dust, or vapors.
4. Do not handle the plug or machine with wet hands.
5. Do not leave the machine unattended. Unplug machine from outlet when not in use and before servicing.
6. Turn off all controls, before unplugging the machine.
7. Do not unplug machine by pulling on cord. To unplug, grasp the plug, not the cord.
8. Do not use with damaged cord or plug. Follow all instructions in this manual concerning grounding the machine.
9. If the machine is not working properly, has been dropped, damaged, left outdoors, or dropped into water, return it to an Authorized service center.
10. 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.
11. Do not pull/run machine over cord. Keep cord away from heated surfaces.
12. Do not allow to be used as a toy. Close attention is necessary when used by or near children.
13. Keep hair, loose clothing, fingers, and all parts of the body away from openings and moving parts.
14. Do not use machine as a step.
15. Maintenance and repairs must be done by qualified personnel.
16. To reduce the risk of fire, use only commercially available floor cleaners and waxes intended for machine application.

**SAVE THESE INSTRUCTIONS**

## INSPECTION

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

## ELECTRICAL

This rotary polisher is designed to operate on a standard 15 amp, 115 volt, 60 hz, AC household current. Check that the voltage shown on the serial number plate is suitable for the supply available. Voltages below 105 volts or above 125 volts could cause damage to the motor.

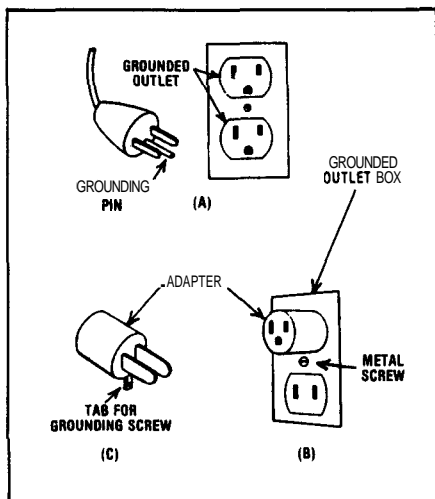
**NOTE** 230 volt 50 hz model is available.

## GROUNDING INSTRUCTIONS

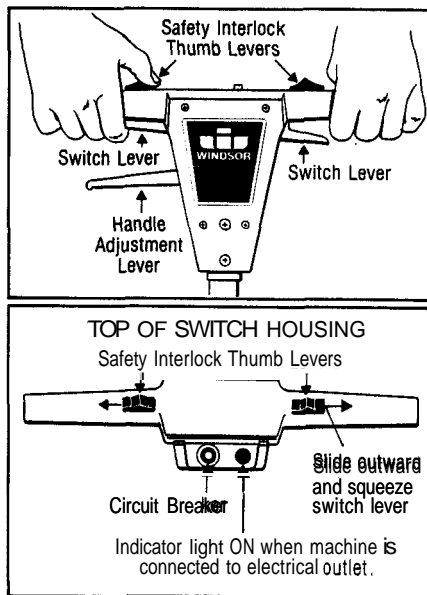
This machine must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This machine is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be plugged into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

**WARNING:** 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.

This machine is for use on a nominal 120-volt circuit, and has a grounded plug that looks like the plug illustrated in Fig. A. A temporary adapter that looks like the adapter illustrated in Figs. B and 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 adapter 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 the like extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by a metal screw.



## CONTROLS



To put machine in "store" position... squeeze handle adjusting lever and fold main handle forward. Release adjusting lever to lock handle. Lift up on main handle to store machine.

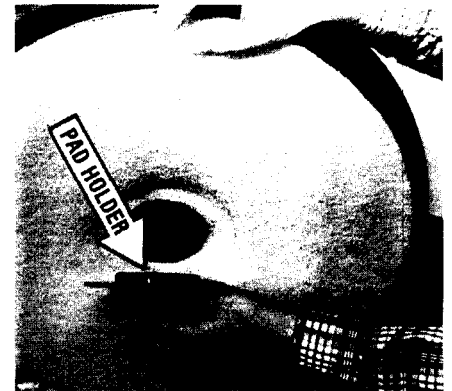
## MACHINE PREPARATION

**WARNING:** Always remove the power cord from the electrical outlet before installing or changing the polishing pad.

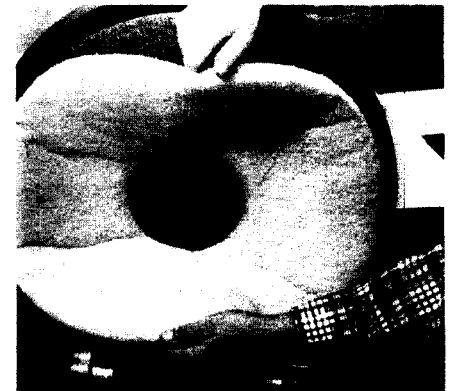
The drive pad is bolted to the machine. A threaded pad holder holds the polishing pad to the driver.

To install polishing pad

1. With the handle locked in the upright position, tilt the machine back until the handle is resting on the floor exposing the drive pad.
2. Remove the pad holder by turning counterclockwise.
3. Put the polishing pad on the drive pad making sure the pad is centered. Install the pad holder by turning clockwise.



Pull polishing pad away from drive pad in several places to insure pad is centered on drive pad.



With the pad properly installed return machine to upright position.

## OPERATING THE MACHINE

The L1500-20 is a high speed floor polishing machine and should be operated in a straight line — forward and rearward — not side to side as you would a low speed polisher. Use the machine for polishing. **DO NOT USE THE MACHINE FOR WET SCRUBBING.**

**CAUTION:** To prevent possible damage to the floor surface, always keep the machine moving when the pad is in contact with the floor. **DO NOT LIFT UP ON THE HANDLE TO APPLY PAD PRESSURE. KEEP THE WHEELS ON THE FLOOR AT ALL TIMES.**

## TO START THE MACHINE

**CAUTION:** Because of the high starting torque of the machine make sure you hold the handle with both hands.

1. Plug machine into the power supply and check that the red indicator light (located on top of switch housing) is on.
2. Pull up on the adjusting lever and lower the handle to a comfortable working height. Release adjusting lever to lock handle in place.

- Two safety interlock thumb levers are located on top of switch housing handle.
- Slide thumb levers outward and apply pressure to switch levers to activate main switch.

**NOTE** The switch levers can be operated Independently of each other.

- To stop the machine release the switch levers.

**NOTE** The machine is equipped with a circuit breaker to protect the motor in the event an overload condition occurs. The circuit breaker is located at the top of switch housing. Push the reset button to restart the machine. If the breaker trips again, correct the cause of overloading before proceeding. The most common cause is an excessively soiled polishing pad which should be turned over, cleaned or replaced.

- At the end of daily cleaning cycle, put machine in "STORE" position. Do not let machine rest on pad.

## MAINTENANCE INSTRUCTIONS FOR L1500-20

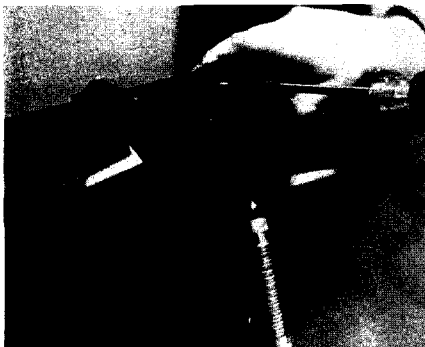
**WARNING:** Remove machine power cord from electrical source before making any adjustments or repairs to the machine. Only qualified maintenance personnel are to perform repairs.

### SWITCH HOUSING

**CAUTION:** When replacing switches or other electrical parts make sure wire leads are connected to proper terminals. Refer to wiring diagram in service manual for assistance.

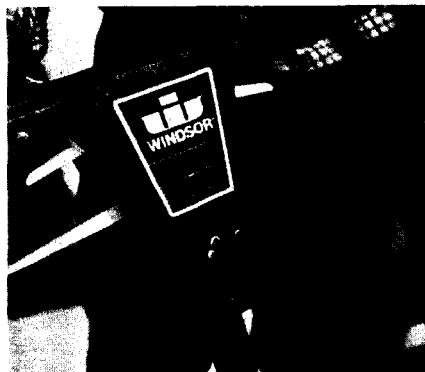
### CIRCUIT BREAKER — INDICATOR LIGHT

- Remove (4) screws from rear cover.



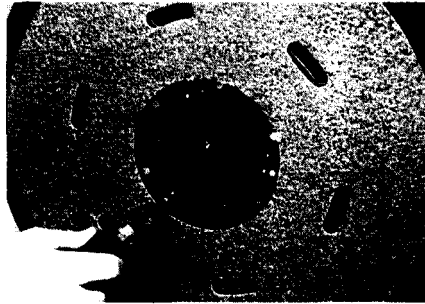
### MAIN SWITCH — LEVERS

- Remove screw at each end of handle.
- Remove (6) screws from front housing.
- Replace parts as needed.

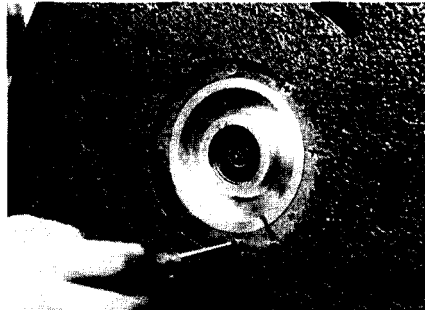


### DRIVE PAD

- Remove (3) screws holding pad holder plate.



- Remove (8) screws holding pad to pulley. Install new pad as needed.

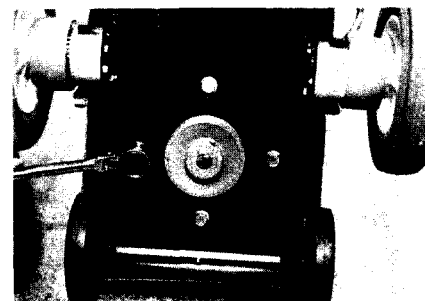


### BELT

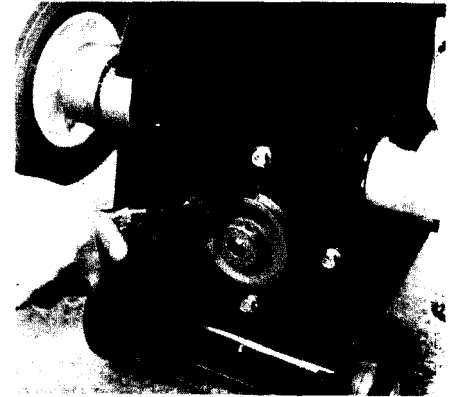
- Remove drive pad.
- Remove (4) screws holding brush shroud and (4) screws holding rear belt cover.



- Loosen (4) bolts holding motor and slide motor forward. Roll belt off pulley.



- Adjust belt tension by inserting screw driver between frame and pulley and applying downward pressure. Retighten motor mounting bolts.



### WHEELS — HANDLE PIVOT BRACKETS

- Wheels — Remove the center screw holding wheel axle. When reinstalling wheels add a small amount of silicone lubricant to axle.
- Pivot Brackets — Remove wheel axle screw. Remove (4) socket head screws holding bracket to main frame. Repair as needed.



### PAD DRIVER PULLEY

- Remove (4) bolts holding pulley to main frame.



### PULLEY BEARINGS

- Remove snap ring from shaft. Use arbor press or hammer with rod and tube to remove bearings. Replace bearings as needed.

**NOTE** If bearings are seized in pulley use a propane torch to apply a small amount of heat to bearing boss.



### MOTOR

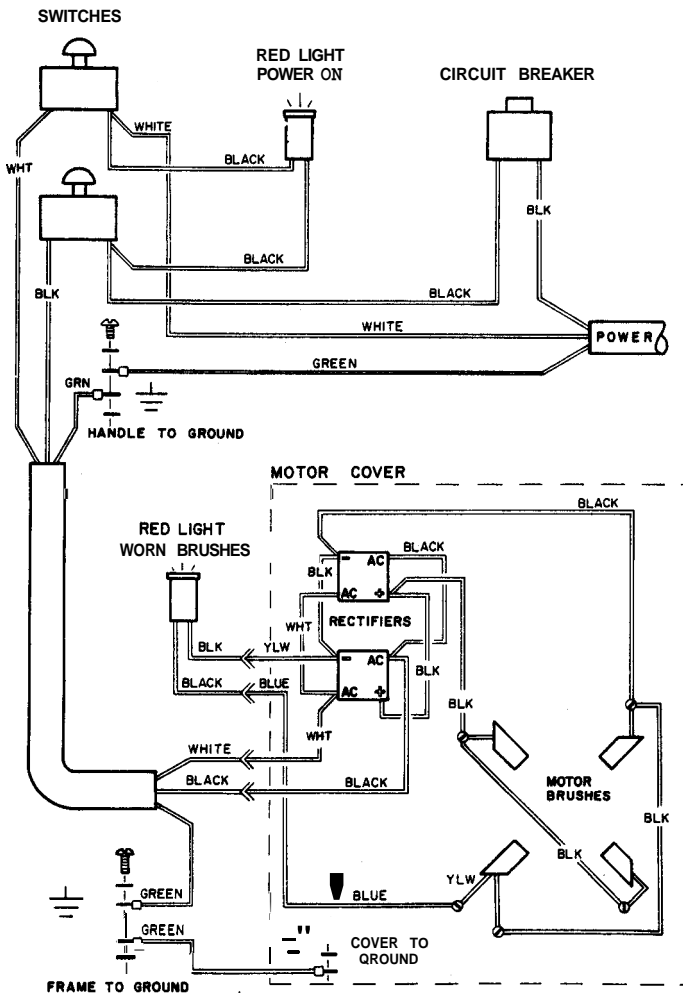
The L1500-20 is equipped with a rectified DC permanent magnet motor. An external mounted warning light will "light up" when the carbon motor brushes become worn and replacement is required.



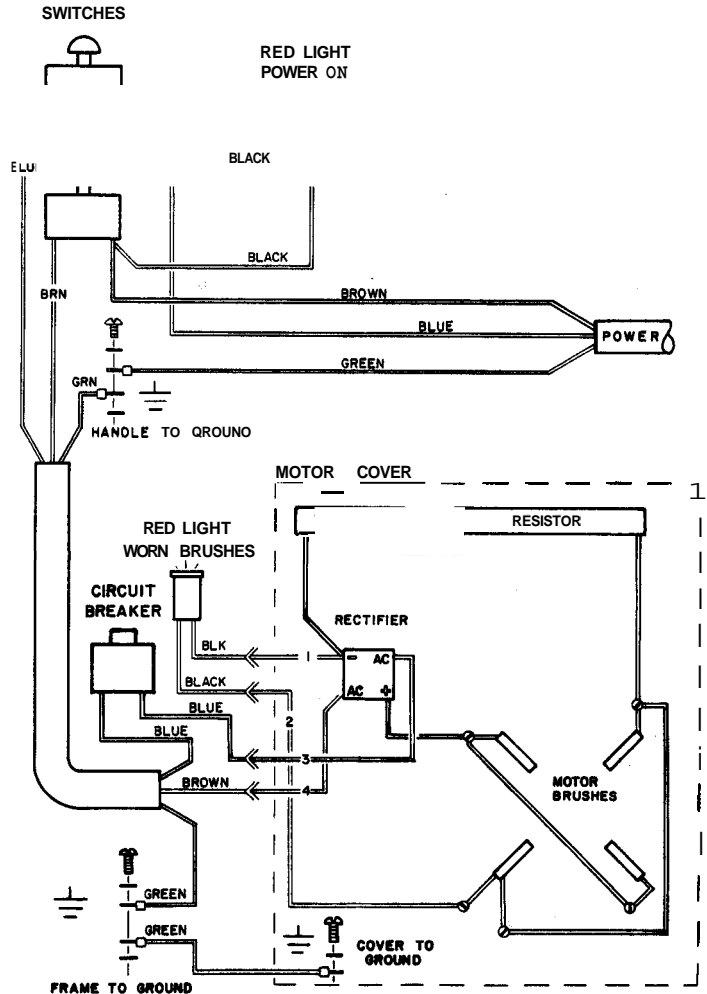
1. To access motor — remove (4) screws holding motor cover.
2. Remove rear transport wheels and axle.
3. Remove (2) screws holding motor shroud. (Located front and rear)
4. Remove inspection band from motor.
5. Use a hook to pull brush springs out of the way. Pull old brushes out of the holder. install the new brushes making sure the brush lead does not prevent free movement of the brushes in the holder.

**CAUTION:** Make sure the brush with the YELLOW sensor lead is installed in the same holder as the old brush.

## 115 VOLT WIRING DIAGRAM

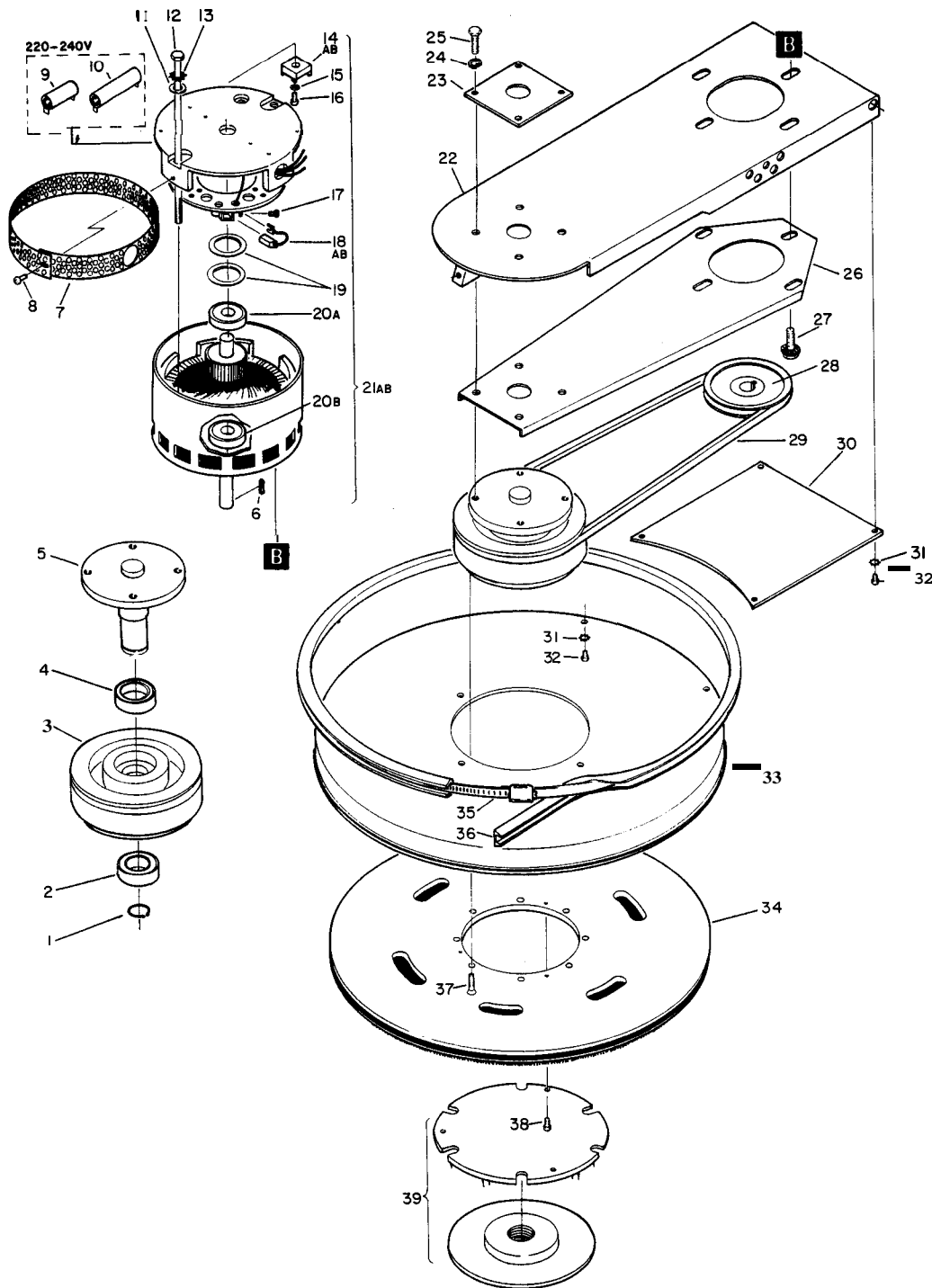


## 230 VOLT WIRING DIAGRAM



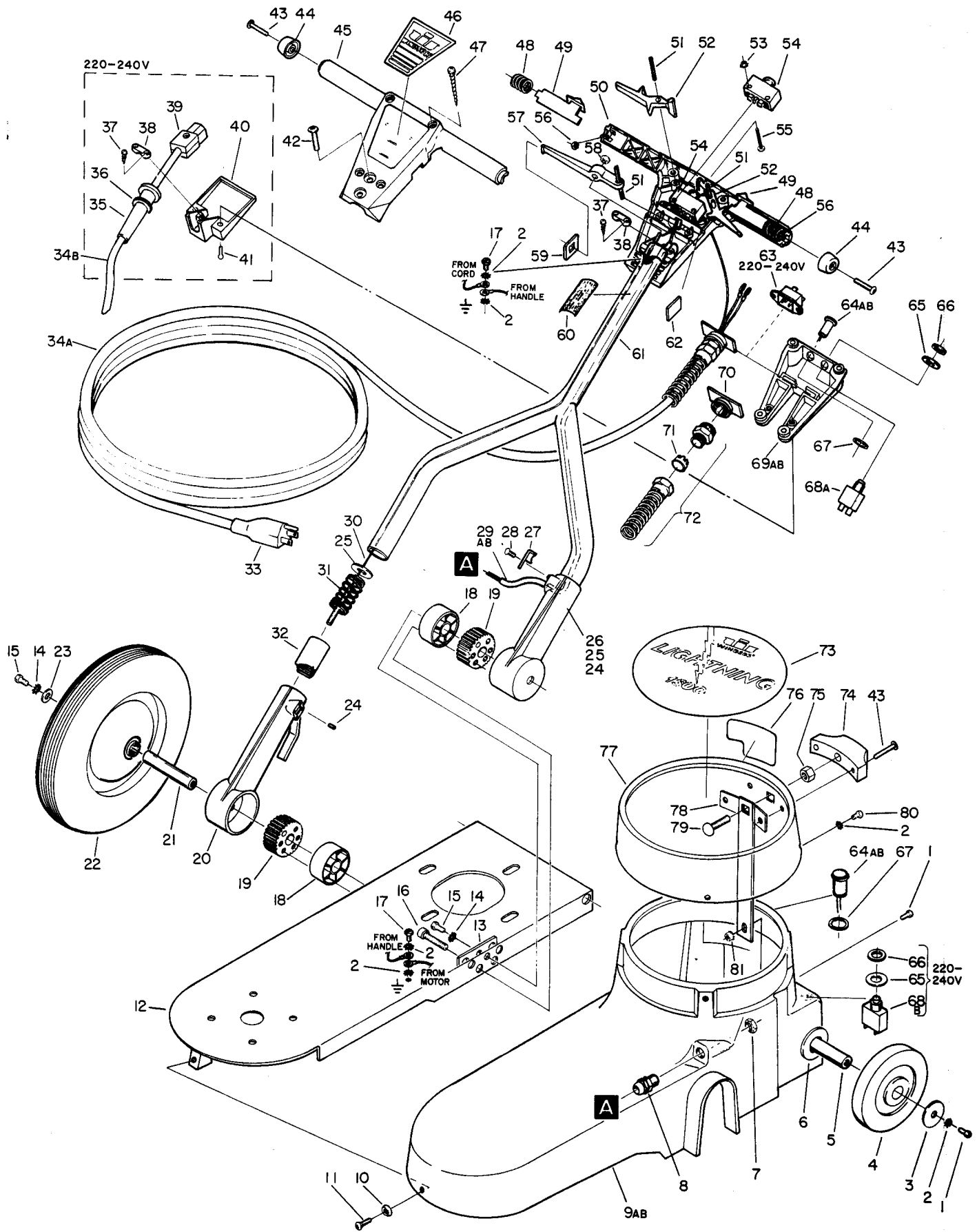
### MOTOR. FRAME, DRIVER

KEY	PART NO.	DESCRIPTION
1	67162	Ring, 3/4 Ext Snap
2	09030	Bearing, .75 x 2.00
3	64048	Pulley, Brush
4	09033	Bearing, 1.00 x 2.00
5	03049	Axle, Pad Driver
6	48010	Key, 3/16 Square x 1"
7	73381	Screen, Motor
8	70086	Scr, 10-24 x 1/2 PHMS
9	67167	Resistor, (200-240V)
10	67168	Resistor, (220-240V)
11	87013	Washer, 1/4 Flat
12	70343	Scr, 1/4-20 x 7"
13	87025	Washer, 1/4 Star
14A	67169A	Rectifier Bridge MP14040A (115V)
14B	67170B	Rectifier Bridge MP14060A (220-240V)
15	87014	Washer, #8 Int Star
16	70013	Scr, 8-32 x 3/4 PHMS
17	70344	Scr, 10-32 x 1/2 PHMS Brass
18A	14610	Brush Set 115V L1500 Replacement
18B	14611	Brush Set 220-240V L1500 Rplcmnt
19	87103	Thrust Washer Set (4)
20A	09036	Bearing, Upper Armature
20B	09037	Bearing, Lower Armature
21A	53539	Motor Asm, 115V L1500
21B	53540	Motor Asm, 220-240V L1500
22	34166	Frame, L1500 Main
23	62241	Plate, Axle Mount
24	87083	Washer, 5/16 Split Lock
25	70337	Scr, 5/16-18 x 3/4 HHTF
26	71067	Support, Frame
27	70102	Scr, 3/8-16 x 3/4 WHZ Bolt
28	64049	Pulley, V-Belt Driver
29	11022	Drive Belt
30	62242	Belt Guard
31	87016	Washer, #10 Star
32	70323	Scr, 10-32 x 1/4 PHTF
33	73301	Brush Shroud
34	66136	Pad Driver
35	20070	Clamp, 21 x .50 W
36	14560	Shroud Bumper
37	70328	Scr, 1/4-20 x 1 FHTF
38	70233	Scr, #10 x 3/8 PHST
39	41161	Holder Asm, L1500 Center Lock



ZZZ	PART NO.	DESCRIPTION	KEY	PART NO.	DESCRIPTION	KEY	PART NO.	DESCRIPTION	KEY	PART NO.	DESCRIPTION
1	70088	Scr, 10-32x 1/2 PHMS	22	89064	Wheel, 8 x 5	42	70329	Scr, 1/4-20 x 3/4 PHTF	64A	51041	Light, Neon Indicator (115V)
2	87016	Washer, #10 Star	23	87008	Washer, 1/4 ID x 1.25 OD	43	70336	Scr, 10-32x 1 THMS	646	51044	Light, Neon Indicator (220-240V)
3	87093	Washer, #10 x 1.0	24	70330	Set Scr, 5/16-18 x 112 Cone PT	44	27316	Handle End Cap	65	50394	Label, Circuit Breaker
4	89063	Wheel, 5 x 1 x 3/8 - Transport	25	87086	Washer, M10 x 30 PLTO	45	41162	Handle Front Handle	66	57024	Nut, 3/8-27 Panel
5	03050	Axle, Rear Wheel	28	41141	Handle Pivot	46	50398	Label, Windsor Polisher	67	87101	Washer, 1/2 ID Spring
6	87003	Washer, 3/8 ID x 7/8 OD	27	20069	Clamp, Cord	47	70247	Scr, #10 x 1.5 Sht Metal -A-	68A	14586	Circuit Breaker, 15A (115V)
7	57040	Nut, 1/2 NPT Conduit	28	70177	Scr, 10-32x 1/2 FHMS	48	73308	Spring, Polisher Handle	68B	14312	Circuit Breaker, 7A (220-240V)
8	73195	Strain Relief, 1/2 NPT	29A	80442	Wire Asm, 115V Handle	49	51079	Lock, Switch	69A	41164	Housing, Strain Relief (115V)
9A	27330	Cover (115V)	29R	88443	Wire Asm, 220-240V Handle	50	41163	Housing, Rear Handle	696	41164R	Housing, Strain Relief (220-240V)
9B	27346	Cover (220-240V)	30	27308	Cable, Handle Lock	51	66111	Pin, 7/32 x 2	70	04068	Strain Relief Adaptor
10	87004	Washer, #12 Dress	31	73307	Spdng, Polisher Lock	52	51027	Lever, Handle Switch	71	14587	Ferrule
11	70050	Scr, 10-32x 3/4 OHMS	32	51078	Lock, Handle Position	53	57106	Nut, 18-32 w/Star Washer	72	73366	Strain Relief, 1/2 NPT
12	34166	Frame, L1500	33	28006	Cord End, 115V Replacement	54	72062	Switch, Polisher Replacement	73	50397	Label, 1500 Lightning
13	62259	Plate, Handle Mounting	34A	23130	Cord Sel, 14/3 x 75R (115V)	55	70334	Scr, 8-32 x 2 25 PHMS	74	14574	Bumper, Motor Cover
14	87025	Washer, 1/4 Star	346	23134	Cord Set, 1413x 75 ft (220-240V)	56	57014	Nut, 10-32 Hex	75	57111	Nut, 3/8-16 Hex
15	70020	Scr, 1/4-20 x 112 HHMS	35	73121	Strain Relief (220-240V)	57	51029	Lever, Handle Release	76	50400	Label, Brush Wear
16	70345	Scr, 5/16-18 x 2 SHCS	36	87052	Washer, 22 x 17 x 2 5 (220-240V)	58	57030	Nut, 10-32 Lock	77	27309	Motor Cover
17	70335	Scr, 10-32x 1/2 PHTF	37	70333	Scr, #8 x 3/4 Sht Metal -A-	59	62251	Plate, Handle Lever	78	14590	Motor Cover Bracket
18	73324	Spacer, Handle Pivot Gear	38	20034	Clamp, Cable	60	50399	Label, Polisher Warning	79	70332	Scr, 3/8-16 x 2 Carriage Bolt
19	36081	Gear, 40T - Handle Pivot	39	28023	Cord End (220-240V)	61	38138	Handle, L1500	80	70162	Scr, #10-32 x 3/8 PHMS
20	41143	Handle Pivot with Hook	40	27348	Cover, Cord End (220-240V)	62	62252	Plate, Lever Plug	81	57104	Nut, #10-32 w/Star Washer
21	03054	Axle, Wheel	41	70142	Scr, M4 x 12 PHMS (220-240V)	63	73104	Receptacle (220-240V)			

# HANDLE AND COVER ASSEMBLY





**Limited Warranty:** Windsor Industries warrants that the Windsor machine covered by this warranty is free from defects in workmanship and materials under the following terms:

**6 YEARS:** On Rotationally Molded Polyethylene Tanks.

**3 YEARS:** On Traverse Drive Motors, Gear Units, AC Induction Polisher Motors, all Metal Chassis and Metal Frames.

**1 YEAR:** On all other parts which are not specifically referenced herein, plus an extra year (2 years total) on Rectified DC Polisher Motors and Scrubber Brush Motors.

The warranty period shall commence at the date of first purchase from an authorized Windsor distributor and applies to defective parts only, not to failure caused by abuse or normal wear.

Windsor will, at its option, repair or replace without charge, except for normal transportation costs, parts that fail under normal use and service when operated and maintained in accordance with the Owners Instruction Manual and the Preventive Maintenance Guide where applicable. This warranty shall apply to defects in material and workmanship only and does not apply to: a) transportation damages, b) alterations by unauthorized persons, c) misuse or abuse (including use of incompatible or corrosive chemicals or overloading of capacity), d) failure caused by lack of proper maintenance and cleaning, e) batteries and chargers which are warranted by the original manufacturer for one year, and f) normal wear on items such as belts, brushes, bearings, capacitors, carbon brushes, clutches, cords, filters, finishes, gaskets, hoses, pulleys, relays, rectifiers, and switches.

This warranty is in lieu of all warranties, expressed or implied, and releases Windsor from all other obligations and liabilities. It is applicable only in the U.S.A. and Canada. Windsor Industries is not responsible for costs of repairs performed by persons other than those specifically authorized by Windsor. This warranty does not apply to damage or loss of income due to malfunctioning of the machine. USE OF PARTS NOT APPROVED BY WINDSOR WILL VOID WARRANTY.

If a difficulty develops with this machine, contact the Dealer from whom you purchased the product.



INDUSTRIES, INC., 1351 W. Stanford Ave., Englewood, CO 80110 USA • 303/762-1800 • FAX 303/762-0817