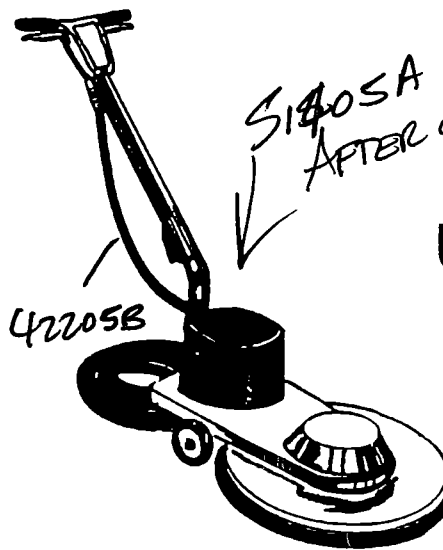


ALTO[®]

CLARKE TECHNOLOGY

Operator's Manual



ULTRA SPEED BURNISHER 1700

READ THIS BOOK

This book has important information for the use and safe operation of this machine. Failure to read this book prior to operating or attempting any service or maintenance procedure to your Clarke machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. If you cannot read English, have this manual explained fully before attempting to operate this machine.

All directions given in this book are as seen from the operator's position at the rear of the machine.

For new books write to: ALTO U.S. INC., 2100 Highway 265, Springdale, Arkansas 72764.

Table of Contents

Operator Safety Information	1
Features and Specifications	2
Pad Selection Chart	2
120 Volt Instructions for Electrical Connection	3
About the Machine	4
How to Prepare Machine for Operation	4
How to Operate the Machine	5
Care and Maintenance	6
How to Correct Problems in the Machine	7

Section II - Parts and Service Manual

Maintenance	10
Assembly Drawing	12
Assembly Parts List	13
Electrical Schematic	14
Motor Drawing and Parts List	15

OPERATOR SAFETY INSTRUCTIONS



WARNING














AVERTISSEMENT







ADVERTENCIA

DANGER means:	Severe bodily injury or death can occur to you or other personnel if the DANGER statements found on this machine or in this Owner's Manual are ignored or are not adhered to. Read and observe all DANGER statements found in this Owner's Manual and on your machine.
WARNING means:	Injury can occur to you or to other personnel if the WARNING statements found on your machine or in this Owner's Manual are ignored or are not adhered to. Read and observe all WARNING statements found in this Owner's Manual and on your machine.
CAUTION means:	Damage can occur to the machine or to other property if the CAUTION statements found on your machine or in this Owner's Manual are ignored or are not adhered to. Read and observe all CAUTION statements found in this Owner's Manual and on your machine.

-  **DANGER:** Failure to read the Owner's Manual prior to operating or attempting any service or maintenance procedure to your machine could result in injury to you or to other personnel; damage to the machine or to other property could occur as well. You must have training in the operation of this machine before using it. **If you or your operator(s) cannot read English, have this manual explained fully before attempting to operate this machine.**
-  **DANGER:** Machines can cause an explosion when operated near flammable materials and vapors. Do not use this machine with or near fuels, grain dust, solvents, thinners, or other flammable materials. Precautions should be taken during the use of this machine to prevent formation of a combustible mixture of flyings and air. Use this machine only in a well ventilated area.
-  **DANGER:** Operating a machine that is not completely or fully assembled could result in injury or property damage. Do not operate this machine until it is completely assembled. Inspect the machine carefully before operation.
-  **DANGER:** Electrocuting could occur if maintenance and repairs are performed on a unit that is not disconnected from the power source. Disconnect the power supply before attempting any maintenance or service. Always remove the electrical plug from the electrical outlet before changing the brush, pad or other attachment and before leaving the machine.
-  **DANGER:** Using a machine with a damaged power cord could result in an electrocution. Do not use the machine if the power cord is damaged. Do not use the electrical cord to move the machine.
-  **WARNING:** Maintenance and repairs performed by unauthorized personnel could result in damage or injury. Maintenance and repairs must be performed by authorized personnel only. Keep all fasteners tight. Keep adjustments according to specifications.
-  **WARNING:** Electrical components of this machine can "short-out" if exposed to water or moisture. Keep the electrical components of the machine dry. Wipe the machine down after each use. For storage, keep the machine in a dry building.
-  **WARNING:** Always use a three-wire electrical system connected to the electrical ground. For maximum protection against electric shock, use a circuit that is protected by a ground fault interrupter. Consult your electrical contractor.
-  **WARNING:** To prevent damage to the power cord, do not let the brush, pad, pad driver or wheels touch the power cord when the machine is running. Always lift the cord over the machine. Do not pull the power cord to move the machine.
-  **WARNING:** Operating a machine without observing all labels and instructional information could result in injury or damage. Read all machine labels before attempting to operate. Make sure all of the labels and instructional information are attached or fastened to the machine. Get replacement labels and decals from your authorized distributor.
-  **WARNING:** Use of this machine as a step or furniture could result in injury or damage. Do not use this machine as a step or furniture. Do not ride on this machine.

OPERATOR SAFETY INSTRUCTIONS (cont.)

-  **WARNING:** To avoid injury keep hands, feet and loose clothing away from all moving parts of this machine.
-  **CAUTION:** The machine is heavy. Get assistance before attempting to transport or move it.
-  **CAUTION:** To prevent serious damage to the floor surface, when using burnisher, make sure the machine is always moving forward or backward when the pad driver is in contact with the floor.
-  **CAUTION:** To prevent overloading motor, do not use burnisher for wet scrubbing. There is no skirt on burnisher to contain water. Water could splatter.

FEATURES AND SPECIFICATIONS

The direct drive electric burnishers are floor polishing machines. They are operated by moving them forward and backward across the floor. **Note: Do not use the machine for wet scrubbing.**

-  **CAUTION:** To prevent serious damage to the floor surface, make sure the machine is always moving forward or backward when the pad driver is in contact with the floor.

Specifications

Model	01193A
Voltage	120V AC
Frequency	60 Hz
Current	12.5A
Operators Handle	metal
Pad Driver	20"
Burnishing Swath	20"
Pad Speed	1700 rpm
Motor	1.5 hp
Power Cable	50'
Weight	82
Warranty	1 year parts and labor
Noise	<70 dBA
Vibration	<2.5 m/s/s

19" (48cm) 3M Burnishing Pad Selection Chart

Part No.	Description	Application	Use	RPM	Color	Finish
976289	Top Line	Burnish	Dry	1500-3000	Peach	Hard finish/high traffic Soft finish/low traffic
976326	Natural Blend	Burnish	Dry	1500-3000	Off White	Hard finish/high traffic Soft finish/low traffic High traffic/low Maintenance
976235	UHS Tan Buffer	Burnish	Dry	1500-3000	Tan	Hard finish/high traffic Wet-look hard finish
976236	UHS Aqua Buffer	Burnish	Dry	1500-3000	Aqua	Soft finish/low traffic Wet-look soft finish
976234	SHS Buffer	Buff	Dry/Spray Spray	600-1500	Beige	Glossy finish

120 VOLT MACHINES

Instructions for connection to the power supply and the electrical ground.

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electrical shock. This product 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.

- ⚠ 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 product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This product is for use on a nominal 120 volt circuit and has a grounding attachment plug that looks like the plug illustrated in Figure 1. Make sure that the product is connected to an outlet having the same configuration as the plug. No adaptor should be used with this product.

- ⚠ WARNING:** To prevent possible electric shock, protect the machine from rain. Keep the machine in a dry building.
- ⚠ WARNING:** To prevent possible electric shock, always use a 3-wire electrical system connected to the electrical ground. For maximum protection against electrical shock, use a circuit that is protected by a ground fault circuit interrupter. Consult your electrical contractor.
- ⚠ WARNING:** Do not cut, remove or break the ground pin. If the outlet does not fit the plug, consult your electrical contractor.
- ⚠ WARNING:** Have worn, cut or damaged cords replaced by an authorized service person.

EXTENSION CORDS

Use only an approved extension cord with three conductors, a plug with three terminals, and a connector body with three holes. The machine has a power cord with wire size 14 AWG.

- ⚠ WARNING:** If you use an extension cord, use an extension cord with minimum wire size 12 AWG. Do not use an extension cord longer than 50 feet. Do not join two extension cords.

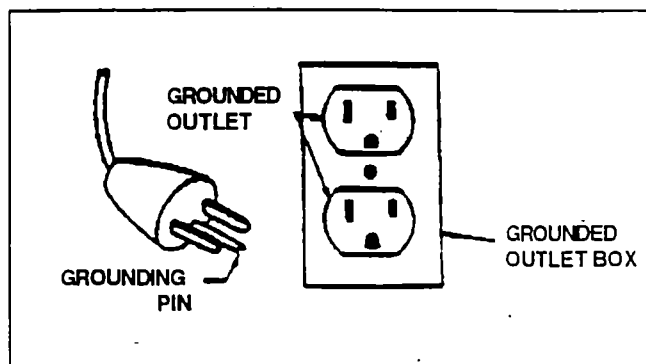


Figure 1

ABOUT THE MACHINE

How To Assemble

This machine is shipped with the handle assembly separate from the base. Assemble as follows:

1. Loosen but do not remove the two square head knobs on the rear of the machine.
2. Insert the handle tube between the frame and handle clamp until it bottoms.
3. Tighten the two square head knobs to secure the handle tube.
4. Connect cord set to the motor pigtail.

Install a pad and the machine is ready to operate.

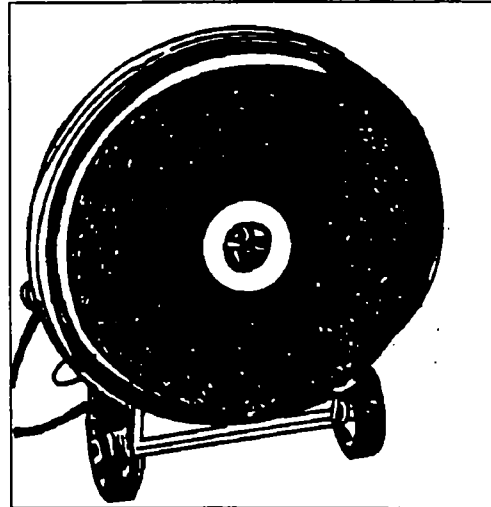


Figure 2

HOW TO PREPARE THE MACHINE FOR OPERATION

How To Install the Pads

⚠ WARNING: Always remove the electrical plug from the electrical outlet before installing or changing the pad.

The pad driver assembly is on the bottom underside of the machine. The pad holder holds the pad in position. The machine has a screw-on pad holder. To install the pad, follow this procedure:

1. With the handle locked in the operating position, tilt burnisher back on the handle until the underside of the burnisher is fully exposed. (See figure 2).
2. Remove the retainer from the pad holder by unscrewing (turn counterclockwise).
3. Remove the center scored circle from a pad.
4. Place pad on pad driver.
5. Be sure pad is properly centered on the driver.
6. Reinstall the retainer on the pad holder until pad is tightly secured (turn clockwise).

NEVER OPERATE BURNISHER WITHOUT A PAD.

HOW TO OPERATE THE MACHINE

WARNING: Machines can ignite flammable materials and vapors. Do not use with or near flammables, such as: gasoline, grain dust, solvents and thinners.

CAUTION: Allowing the machine to run without moving forward or backward can cause serious damage to the floor surface. Make sure the machine is always moving when the pad is rotating.

NOTE: You must have training in the operation of this machine before you use it.

How To Start/Stop The Machine

WARNING: Never start a polisher when the handle is in the vertical position.

The normal position of this burnisher, with the pad stationary, is tilted back with the pad off the floor.

1. Remove cable completely from cable hooks.
2. With the handle in operating position and the power cable plugged into the proper outlet, depress the interlock button and squeeze the levers beneath the handle grips.
3. As the motor reaches full speed (1-2 seconds), bring the pad into contact with the floor.

NOTE: Make sure you hold the handle with both hands.

How To Operate the Machine

For best results, use a clean pad and change frequently as pad loads up. A motor overload could result from a dirty, loaded pad. If the built-in circuit breaker trips, turn off the machine, wait five (5) seconds, then depress the reset button on the circuit breaker. Change the pad.

The Circuit Breaker

A circuit breaker is used to protect the motor. If the motor draws high amperage, the circuit breaker will stop the motor. The circuit breaker reset button is near the pad pressure meter. Push the reset button to restart the motor. If the motor continues to stop, consult an authorized service person.

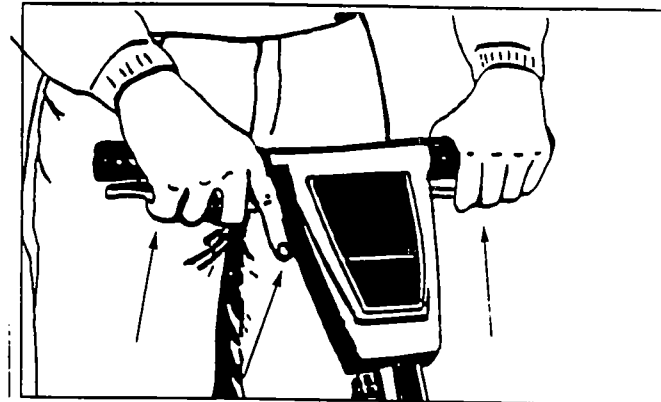
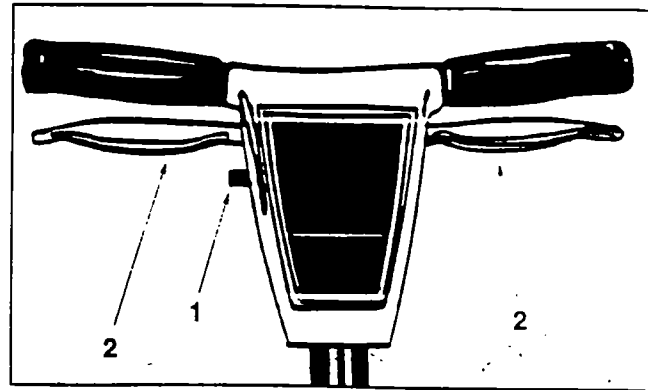



Figure 7

CARE AND MAINTENANCE

 **WARNING:** Always remove the electrical plug from the electrical outlet before installing or changing the bag.

This burnisher will give you many years of trouble-free service provided it is given proper care. Throwing, dropping, bumping across the thresholds and other misuse may result in a damaged unit and invalidate the warranty. When storing your burnisher, always remove the pad.

Pads can be cleaned by washing in warm water and a mild detergent, rinsing, and hanging up to dry.


The pad driver spindle bearings should be re-lubricated once a year. Do not over lubricate. Allow grease to enter bearings slowly.

NOTE: Do not store the machine resting on the pad driver, the pad driver will warp and cause vibration.

Inspections and Repairs

Take the machine to the nearest Clarke authorized repair location once a year for the maintenance inspections.

To make any repairs, take the machine to the nearest Clarke authorized repair location.

 **WARNING:** Maintenance and repairs must be done by authorized personnel only

HOW TO CORRECT PROBLEMS IN THE MACHINE

	Cause	Action
The machine will not run.	The machine may not have any power.	Make sure the machine is connected to the correct voltage and frequency and that all connections are tight or. Make sure the machine is plugged in.
	The power cord may be damaged.	Contact an authorized service person
	There is too much pad pressure.	Decrease the pad pressure
	The pad is worn or dirty.	Clean the pad. If the pad is worn, replace it.
	The main switch is defective.	Contact an authorized service person.
	The circuit breaker is defective.	Contact an authorized service person.
The machine is noisy.	The motor is defective.	Return to service center.
	The bearings are dry.	Grease the bearings or return to service center.
	The belt is slipping.	Re-tension the drive belt.
The brush warning light illuminates.	The carbon brushes need replacing.	Contact an authorized service person.
The machine is vibrating excessively.	The pad is not installed correctly.	Remove the pad. Install the pad correctly. Center the pad properly.
	The pad is worn or damaged.	Install a new pad.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



**Ultra Speed[®]
Burnisher
1700**

**Section II
Parts and Service Manual**

(70127A)

MAINTENANCE



WARNING: Maintenance and repairs must be done by authorized personnel only



WARNING: To prevent electric shock, always remove the electrical plug from the electrical outlet before doing any repairs or maintenance to the machine.



WARNING: Do not operate this machine unless it is completely assembled.



WARNING: Keep all fasteners tight. Keep adjustments according to specifications.

Maintenance of the Motor

This machine has a DC permanent magnet motor that uses a commutator, carbon brushes, and a rectifier.

Keep the machine clean. It will need fewer repairs and have a longer life. Remove or blow dust from the motor frequently.

The Indicator Light

This machine has an indicator light that illuminates. The commutator must be inspected each time the brushes are changed. After the brushes have been replaced two times, have the commutator made new. Have an authorized service person make the repairs.

How to Check the Commutator and the Carbon Brushes



WARNING: Electrical inspections must be made by a person authorized to do maintenance. Electrical repairs must be made by a person authorized to make electrical repairs.

To check the commutator and the carbon brushes, follow this procedure:

1. Remove the two top screws of the motor cover.
2. Remove the cover.
3. Remove the two screws that hold the brush band cover.
4. Pull back each spring and pull the brush out of the holder. Keep the lead wire connected.
5. Turn the pad driver and look at the part of the commutator that the brushes touch.

6. Take the machine to an authorized repair location if you see any of the following conditions:

- 1.) Small holes in the surface of the commutator. See Figure 9 "A".
- 2.) Uneven color. Look for an even dark brown color. Clean areas or very dark areas indicate a problem. See Figure 9 "B".
- 3.) High mica. The mica insulation must be lower than the commutator bars. See Figure 9 "C".

7. Replace all four carbon brushes if any carbon brush is shorter than 7/16 inch. To replace the carbon brushes in the motor, follow this procedure:

- 1.) Remove the screws. Replace the brush and lead. Install the screw.
- 2.) Use a hook to pull the spring out of the way. Install the brush into the slot. Put the spring into position on the end of the brush. The lead must not prevent free movement of the brush in the holder.
- 3.) Install the brush band cover and the motor cover.

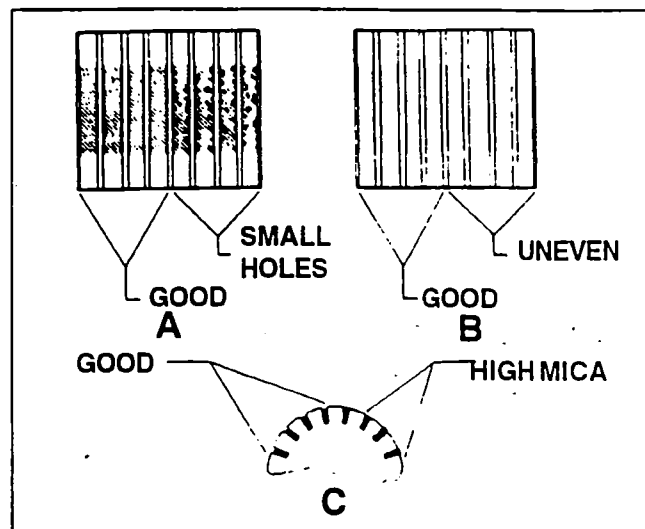
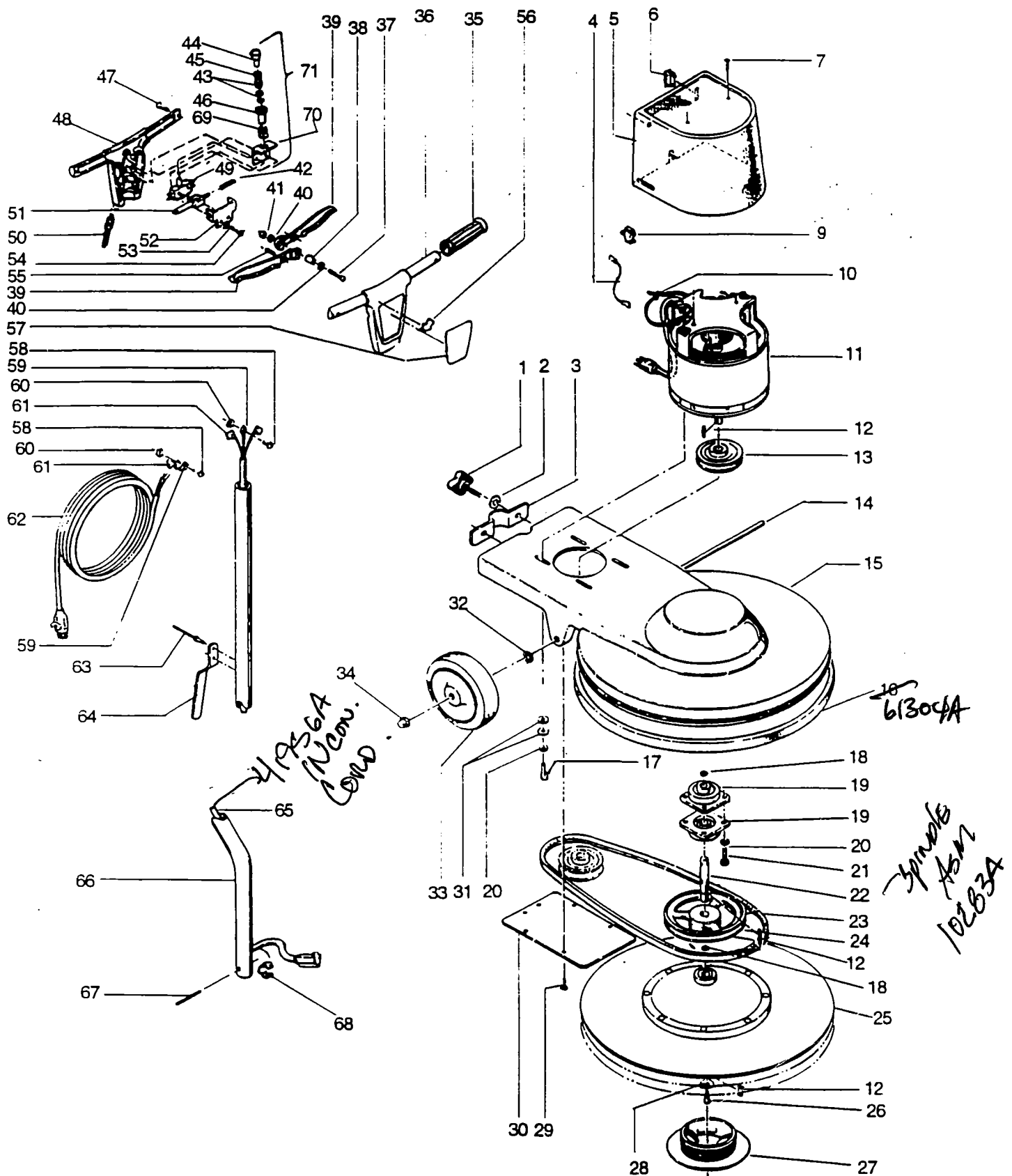


Figure 9

Rectifier

If the machine has been adjusted, and still blows fuses and runs at half speed, the rectifier may be damaged. Take the machine to an authorized repair location to have a Clarke authorized repair person replace the rectifier.

CLARKE TECHNOLOGY Ultra Speed Burnisher 1700
Assembly Parts List 1/99

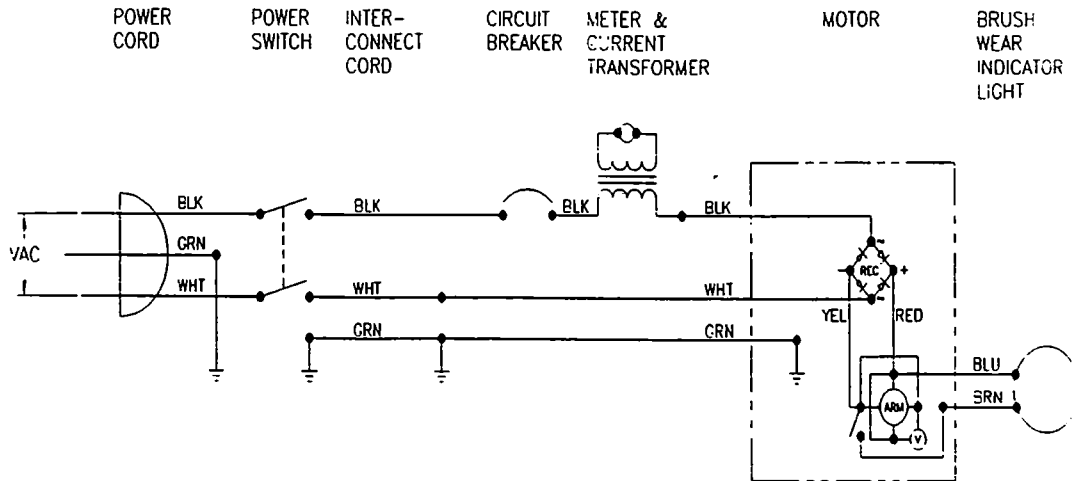


CLARKE TECHNOLOGY Ultra Speed Burnisher 1700
Assembly Parts List 1/99

Ref #	Part No.	Description	Qty
1	36000A	Knob	2
2	87038A	Washer, Flat	2
3	62423A	Clamp	1
4	49310A	Wire	1
5	32369A	Cover	1
6	44201A	Light	1
7	85517A	Screw	2
8	77371A	Label, ALTO (not illustrated)	1
9	41419A	Circuit Breaker	1
10	699202	Cable Tie	1
11	45025A	Motor (includes one #12)	1
12	915044	Key (one included w/#11)	(3)
13	57262A	Pulley	1
14	60193A	Axle	1
15	20006A	Frame	1
16	30035A 61304A	Bumper	1
17	170820	Screw	4
18	57714A	Retaining Ring	2
19	51185A	Bearing	2
20	980638	Lockwasher	8
21	85703A	Screw	4
22	69047A	Spindle	1
23	50921A	Belt	1
24	57261A	Pulley	1
25	56925A	Pad Driver (Includes 27)	1
26	962714	Screw	1
27	57369A	Retainer (included w/25)	(1)
28	67921A	Disc Spring	1
29	962968	Screw	6
30	63930A	Belt Guard	1
31	170860	Washer, Flat	8
32	980681	Washer, Wave	2
33	39857A	Wheel	2
34	920346	Palnut	2
35	54501A	Grip, Handle	2
36	24529B	Housing, Front	1

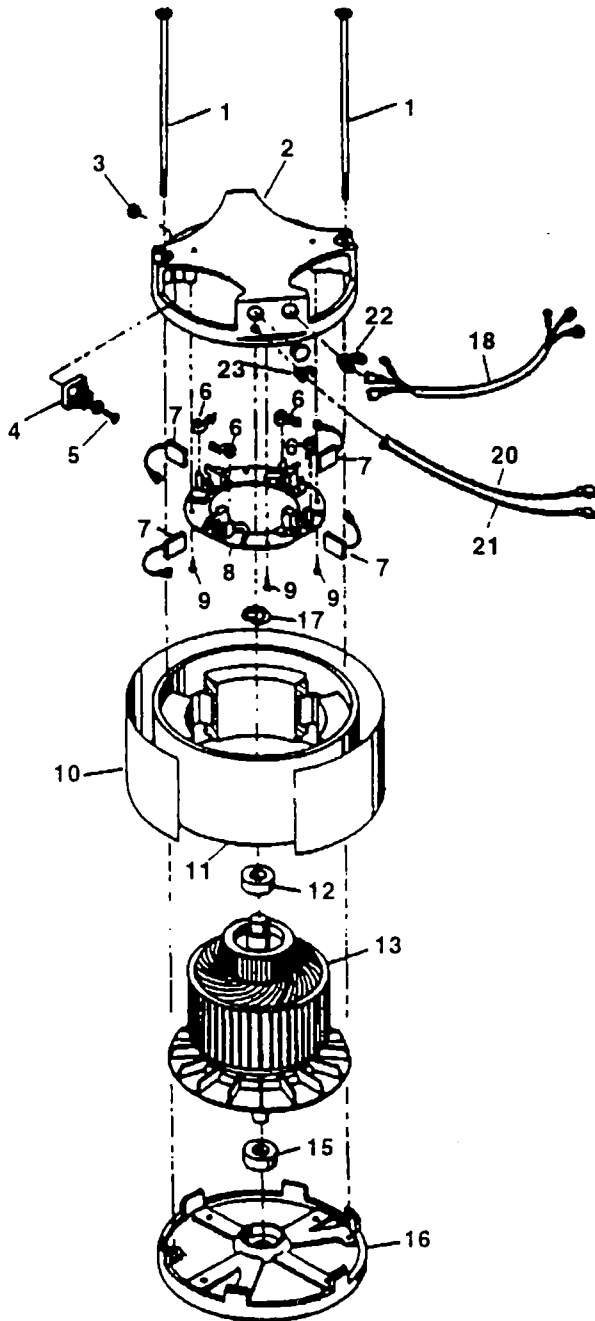
Ref #	Part No.	Description	Qty
37	962794	Screw	1
38	508204	Spacer	1
39	445174	Lever	2
40	980982	Washer, Flat	2
41	920296	Locknut	1
42	58665A	Spring	1
43	87023A	Washer, Flat	3
44	51512A	Bushing	1
45	58664A	Spring	1
46	30117A	Adaptor	1
47	962487	Screw	5
48	24530B	Cover, Rear	1
49	911690	Switch	1
50	467504	Strain Relief	1
51	448573	Stop, Switch	1
52	440873	Bracket	1
53	980607	Lockwasher	2
54	962980	Screw	2
55	925189	Pin	2
56	445178	Label, Interlock	1
57	70108A	Label, Handle	1
58	962065	Screw	2
59	911933	Terminal, Ring	1
60	980621	Lockwasher	2
61	911594	Terminal, Quick Disc.	2
62	42089A	Cord, Power Supply	1
63	930005	Rivet	2
64	64325A	Cord Hook	1
65	41956A	Cord (Incl. #59 & #61)	1
66	69124A	Handle Tube	1
67	66542A	Pin	1
68	747553	Strain Relief	1
69	58547A	Spring	1
70	69914A	Bracket, Spring Support	1
71	16029A	Kit, Switch Adaptor	(1)
NI	77378A	Label, Clarke Technology	2

CLARKE TECHNOLOGY Ultra Speed Burnisher 1700 w/Metal Handles
Electrical Schematic 120Volts 1/99



CLARKE TECHNOLOGY Ultra Speed Burnisher 1700
Motor Drawing and Parts List 1/99

*AFTER SER# 51405A
USE 51405A.*



Ref	Part No.	Description	Qty
1	50717A	Thru-Bolt	2
2	52045A	Commutator Bracket	1
3	56282A	Hex Nut	1
4	912287	Rectifier	1
5	962054	Screw	1
6	448396	Spring	4
7	40819A	Brush Assembly	4
8	51435A	Brush Board Assembly	1
9	962730	Screw - Brush Board	4
10	77040B	Label, Motor Black	1
11	58057A	Stator Frame	1
12	902547	Bearing - Upper	1
13	50136A	Armature 115V	1
14			
15	902550	Bearing - Lower	1
16	53528A	Bottom End Plate	1
17	980076	Wave Washer	1
18	55646A	Lead Assembly	1
19	59606A	Varistor 115V	1
20	55647A	Yellow Lead	1
21	55648A	Red Lead	1
22	831102	Strain Relief	1
23	58056A	Strain Relief	1
24	52046A	Commutator Bracket w/ Rectifier	1