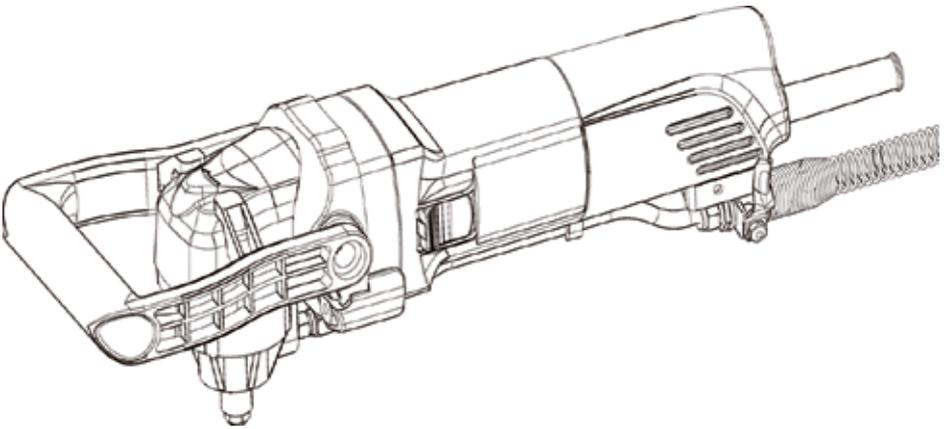


Alpha[®] Variable Speed Polisher Instruction Manual



Part No: VSP-110 / VSP-220

 **Alpha Professional Tools[®]**

103 Bauer Drive, Oakland, NJ 07436 • 800-648-7229 • Fax: 800-286-0114
www.alpha-tools.com

TABLE OF CONTENTS

Introduction.....	3
About the Symbols.....	3
Safety Instructions.....	3
For Safe Operation.....	3
Additional Precautions for Using the VSP-110.....	6
About Double Installation.....	7
Preparation Before Operation.....	8
Laws and Regulations Regarding Noise Levels.....	8
VSP-110 Overview.....	9
Specifications.....	9
Accessories.....	10
Before Use.....	11
Switching On and Off.....	11
Ground Fault Circuit Interrupter (GFCI).....	12
Testing In-line GFCI Unit.....	12
Variable Speed Adjustment.....	13
Water Control Valve.....	13
Side Handle Installation.....	14
Backer Pad and Other Approved Spindle Attachments.....	15
Water Feed Attachment.....	15
Maintenance.....	16
Daily.....	16
Periodic.....	16
Rear Cover Removal for Carbon Brush Replacement.....	17
VSP-110 Schematic.....	22
VSP-110 Parts List.....	23
EC Declaration of Conformity.....	25
Services and Warranty Information.....	26
Loaner Program.....	26
Need More Information.....	26
Warranty.....	26
Product Registration Card.....	27

INTRODUCTION

Thank you for purchasing the Alpha® Wet Polisher. Please read this instruction manual thoroughly to ensure safety and correct use of the polisher. Keep this manual in a place where operators can access it easily whenever necessary.

► ABOUT THE SYMBOLS

According to the hazard level, all safety notes in this manual are classified into “DANGER”, “WARNING”, and “CAUTION”.

 **DANGER!** Death or serious personal injury is imminent when handling this polisher incorrectly.

 **WARNING!** There is a possibility of death or serious personal injury when handling this polisher incorrectly.

 **CAUTION!** There is a possibility of personal injury or property damage when handling this polisher incorrectly.

Note: In some situations, failing to observe WARNING notes could result in death or serious personal injury. Be sure to read and observe the safety notes to ensure safety and correct use of the polisher.

 **CAUTION!**

The following are important notes for products, operation, and maintenance applicable to this polisher.

SAFETY INSTRUCTIONS

Read all these instructions before attempting to operate this product.
Save these instructions in a safe place for future reference.

Warning: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following.

► FOR SAFE OPERATION

1. Keep work area clean
Cluttered areas and benches invite injuries.

2. Consider work area environment
Do not expose power tools to rain. Do not use power tools in damp or wet locations without GFCI protection. Keep work areas well lit. Do not use the tool in presence of flammable liquids or gases.
3. Guard against electric shock
Prevent body contact with grounded surfaces. For example: pipes, radiators, ranges, and refrigerator enclosures; use grounded outlets.
4. Keep children and visitors away
Do not let visitors contact tool or extension cord. All visitors should be kept away from work area. Keep out of reach of children.
5. Tool Storage
When not in use, tools should be stored in a secure dry location. A locked storage area or high shelf out of children's reach is ideal.
6. Do not force the tool
It will do the job better and be safer at the rate for which it was intended.
7. Use the right tool
Do not force a small tool or attachment to do the job of a heavy-duty tool. Do not use the tool for purposes it is not designed for – (for example – do not use circular saw for cutting tree limbs or logs.)
8. Dress properly
Do not wear loose clothing or jewelry. Items such as these can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
9. Use safety glasses
Always wear safety glasses and if necessary, a face or dust mask also.
10. Do not abuse the electrical cord
Never carry the tool by the electrical cord or pull it to disconnect from receptacle. Keep the electrical cord away from heat, oil and sharp edges.
11. Secure workpiece
Use clamps or a vise to hold workpiece rather than using your hands.
12. Do not overreach
Keep proper footing and balance at all times.
13. Maintain tools with care
Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect the electrical cord periodically and if damaged, have it repaired by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean and free from oil and grease.
14. Disconnect tools
Disconnect the tool from the power supply when not in use, before servicing, and when changing accessories, such as blades, bits, cutters.

15. Remove adjusting keys and wrenches
Check to see that keys and adjusting wrenches are removed from the tool before turning it on.
16. Avoid unintentional starting
Do not carry a plugged-in tool with finger on switch. Be sure the switch is off when plugging in.
17. Outdoor use extension cords
When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
18. Stay alert
Use caution and do not operate tool when you are tired or on medication.
19. Check for damaged parts
Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Do not use the tool if it cannot be turned on and off by the switch.
20. Warning
The use of any other accessory or attachment other than recommended in this instruction manual or the catalog may present a risk of personal injury and could void the warranty.
21. Only qualified technicians should repair this tool
This electric tool is manufactured in accordance with the standard safety rules. Only experts may carry out the repair of electric tools; otherwise, it may cause considerable danger for the operator.

ADDITIONAL PRECAUTIONS FOR USING THE VSP-110

In addition to the general safety notes described on the preceding pages, please read and observe the following precautionary notes before using the polisher.



1. Check the working voltage.
Be sure the voltage available at power outlet matches specified voltage on the name-plate. If the polisher is used with higher voltage than specified, the motor will burnout. Any attempts to do so may damage the polisher or cause an accident or injury.
2. Inspect all polishing discs.
Never use cracked, chipped or damaged polishing discs.
3. Hold the polisher tightly at start-up.
Failure to do so may cause an injury due to high impact at initial start up.
4. Stop using the polisher immediately when noticing any malfunctions or any suspicious abnormal noises.
Turn the power switch OFF and contact your dealer or Alpha Professional Tools for repair.
5. Handle the polisher with care.
If you accidentally drop the polisher, do not use it until checking that it is not cracked, deformed, or damaged in any way.
6. Do not pour water or any liquids onto or inside the polisher.
It may cause electric shocks.
7. Do not hold the polisher in a vice.
8. Do not touch any rotating parts.
Never touch the polishing disc of the polisher during operation with your hands.
9. Do not leave the disc while spinning on the bench, floor or surface of your workpiece.
It may cause an accident or injury.

 **WARNING!**

10. Attach the backer pad and polishing disc correctly by following the procedure in this instruction manual.
Attaching the polishing discs incorrectly may cause an accident.
11. Observe any suspicious abnormal noises when a polishing disc is attached for the first time and polisher is turned ON.
It may cause bodily injury if the polishing disc flies off.
12. Do not touch the polishing disc while spinning.
The polishing disc spins very fast and you may hurt yourself.
13. Be careful of your surroundings when working in high places.
When working in high places, make sure there are no people below. Do not trap the power supply cord on anything or drop the polisher or any materials, otherwise, It may cause an accident.

► **ABOUT DOUBLE INSULATION**

This polisher is designed with double insulation. Two insulations are used between the conductor and the outer body of the polisher. An Electric Polisher with the double insulation highly improves safety from electric shocks. Do not attach or replace unspecified parts and do not assemble incorrectly. This may cause the insulation to malfunction.

► PREPARATION BEFORE OPERATION

1. GFCI Information.

- Since the Alpha® Wet Polisher is designed with double insulation, an in-line GFCI is provided as a standard accessory. For your safety and to prevent possible electric shocks, it is strongly advised to test the GFCI on a regular basis.

Note: The GFCI must be used for your safety when this polisher is used anywhere in a damp environment, when used with water, or when it is used on metal plates, steel frames or platens.

 **DANGER!**

Never attach a damaged extension cord to the polisher.

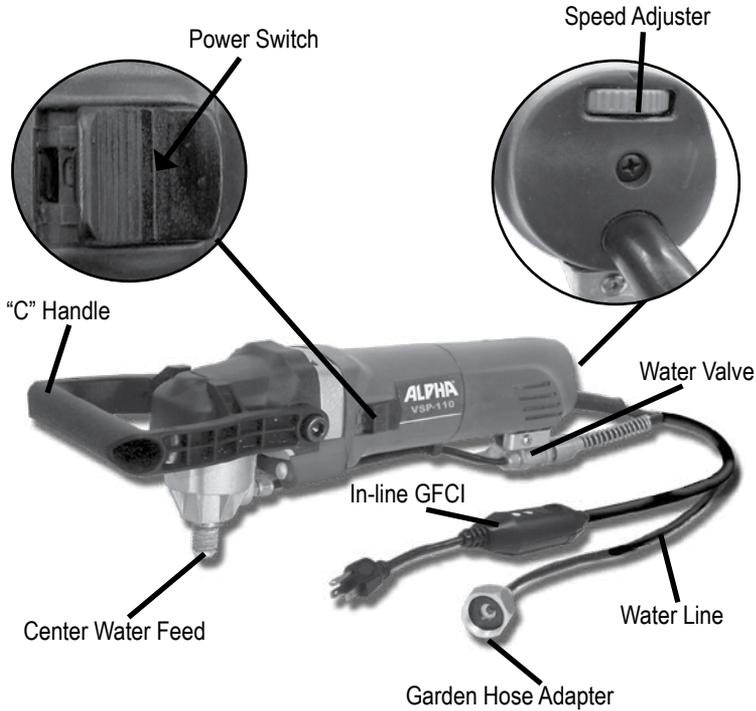
Note: Use the appropriate extension cord as referred below. The table shown below is for 115V use. For 220V use, the maximum length of a cord may be twice as long as the cord for 115V.

Gauge/AWG	Maximum Length
1.25mm ²	30 Ft / 10m
2mm ²	45 Ft / 15m
3.5mm ²	90 Ft / 30m

► LAWS AND REGULATIONS OF NOISE LEVELS

Please observe local laws and regulations regarding noise level in order to avoid disturbing surrounding areas. Install a soundproof wall if required to comply with the local laws and regulations.

VSP-110 OVERVIEW



► SPECIFICATIONS

Working Power Supply	Single-phase AC, 50/60 Hz				
Voltage	110V / 220V				
Plug Type	A (110V) / C (220V)				
Amperage	7.8A / 3.9A				
Wattage	800W				
Motor	Single-phase				
No Load	1600~2800 R.P.M.				
Polishing Disc Size	4" / 100mm				
Cord	10ft / 3m single-phase cable				
Weight	<table border="0" style="border-left: 1px solid black; border-right: 1px solid black;"> <tr> <td>6.96 Lbs / 3.15 kg</td> </tr> <tr> <td>Machine/Cord/GFCI/Water Line</td> </tr> <tr> <td>5.54 Lbs / 2.53 kg</td> </tr> <tr> <td>Machine Only</td> </tr> </table>	6.96 Lbs / 3.15 kg	Machine/Cord/GFCI/Water Line	5.54 Lbs / 2.53 kg	Machine Only
6.96 Lbs / 3.15 kg					
Machine/Cord/GFCI/Water Line					
5.54 Lbs / 2.53 kg					
Machine Only					

► ACCESSORIES



1



2



3

STANDARD ACCESSORIES:

1. Side Handle
2. Wrench
3. Spare Set of Carbon Brushes

BEFORE USE:

 DANGER!

Before using the polisher, check the following items before plugging the power supply cord into the power outlet.

1. Check the working voltage.
Be sure that the voltage specified on the name plate is the voltage available at the power outlet. Do not use polisher with voltage higher than specified on the name plate.
2. Make sure the ON/OFF switch is in the OFF position.

► SWITCHING ON AND OFF

Switching on:

Push power switch to the forward position until it locks into position as shown in Figure 1.

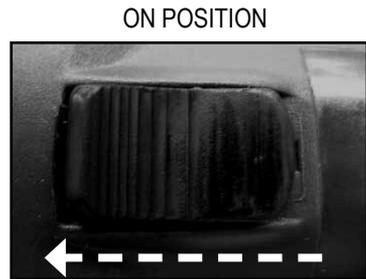


Figure-1

Switching off:

Push down on power switch to release to the rear position as shown in Figure 2.

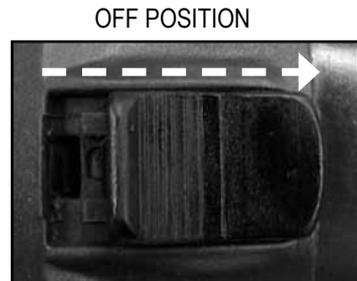


Figure-2

► GROUND FAULT CIRCUIT INTERRUPTER (GFCI)

A Ground Fault Circuit Interrupter is built in line with the power supply cord.

The GFCI goes OFF when water enters inside the tool's housing preventing the operator from electric shocks.

⚠ CAUTION

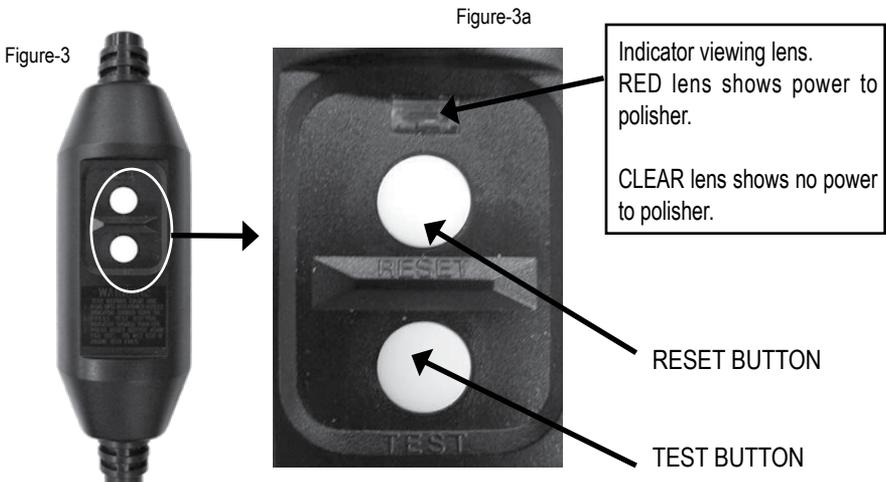
When the GFCI goes OFF, this could be the result of water entering the polisher housing.

1. Turn OFF the power switch, disconnect polisher from power supply and blow dry air inside the motor cover through the air vents.
2. Re-connect power supply and press the GFCI reset button. The polisher is ready to start working once the reset button is pressed down.

► TESTING IN-LINE GFCI UNIT (Before Each Use Of The Polisher)

1. Connect polisher to a single phase AC power supply.
2. Verify that the indicator lens shows red (indicating output voltage).
3. Press the test button to verify that the red in the indicator lens disappears.
4. Press the reset button to verify the red indicator is visible.
5. The GFCI is now ready for use.

NOTE - DO NOT USE IF ABOVE TEST FAILS



► VARIABLE SPEED ADJUSTMENT

This polisher is equipped with a variable speed control that will allow the spindle speed to be adjusted from 1,600 RPM to 2,800 RPM. Speed adjustment is controlled by rotation of the wheel as shown in the Figure 4.

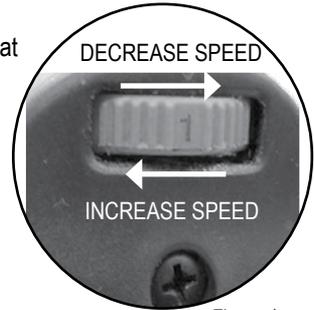


Figure-4

NOTE- Wheel numbers are for reference point of motor speed (#1 is 1,600 RPM and #6 is 2,800RPM).

► WATER CONTROL VALVE

This polisher is equipped with a center water feed system. Water flow to the spindle shower bolt can be controlled by throttling the valve stem as seen in Figure 5, Figure 6 and Figure 7.

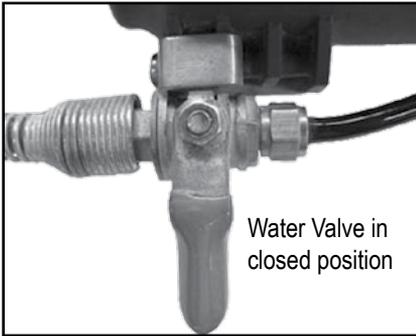


Figure-5

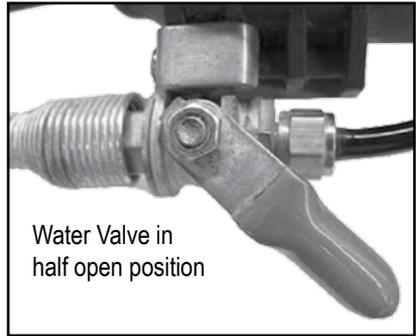


Figure-6

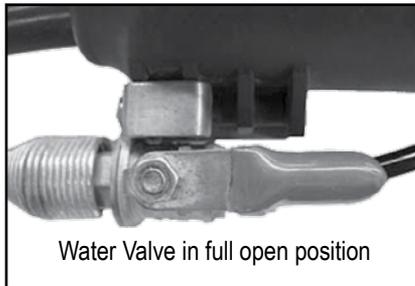


Figure-7

► SIDE HANDLE INSTALLATION

To switch from center handle to side handle follow the steps below:

STEP 1

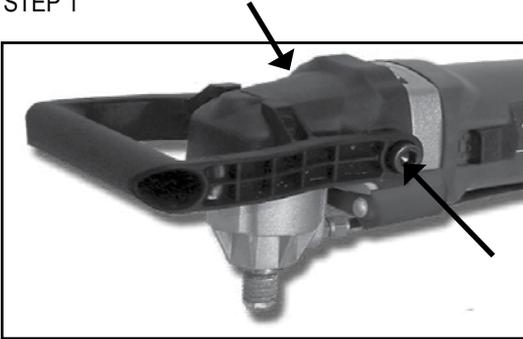


Figure-8

Remove both side screws from center handle as shown in Figure 8.

STEP 2

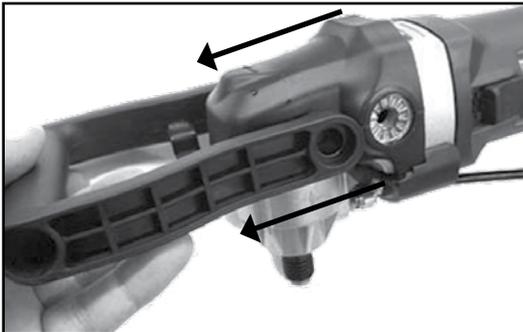


Figure-9

Pull handle forward and clear of polisher as shown in Figure 9.

STEP 3



Figure-10

Thread side handle into either the left or right side of the polisher, then thread one screw into the opposite side of handle as shown in Figure 10.

► BACKER PAD AND OTHER APPROVED SPINDLE ATTACHMENTS

This polisher has a 5/8" - 11 center water feed spindle thread.

To attach a polishing backer pad or other approved spindle attachments follow the steps below:

1. Screw the attachment onto the spindle by hand as shown in Figure 11.



Figure-11

2. Tighten with supplied wrench as shown in Figure 12.



Figure-12

NOTE - If attachment does not thread on freely, check threads on both surfaces for damage or dirt. Clean, repair or replace as needed to ensure a safe and tight connection to the polisher.

► WATER FEED ATTACHMENT

Attach the polisher water line fitting to any garden hose connection.

MAINTENANCE

► DAILY:



Before servicing polisher turn the switch off and disconnect from power supply.

1. Before daily start-up inspect polisher, power cord, GFCI, and water feed system for loose hardware and/or damage.
2. If damage has occurred, repair affected areas before use.
3. After daily use of the tool, clean exterior and drain center water-feed system.

► PERIODIC:

Carbon brushes wear out over time base on the polisher usage. If a carbon brush is worn out, it may cause the motor to malfunction or fail to run. Whenever the length of the carbon brush reaches the wear limit, replace with a new set.

NOTE - To maintain even wear, both brushes should be replaced at the same time. The carbon brushes in this polisher are located underneath the Rear Cover (Part # 52) as shown in Figure 13.



► REAR COVER REMOVAL FOR CARBON BRUSH REPLACEMENT

1. Gently pull water tube away from holder as shown in Figure 14.

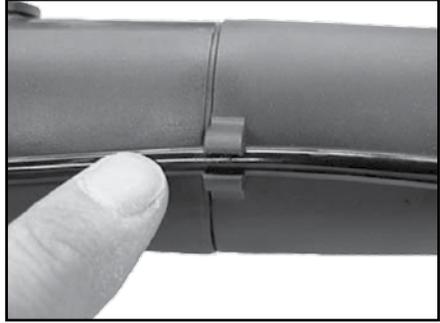


Figure-14

2. Release tube from holder as shown in Figure 15.

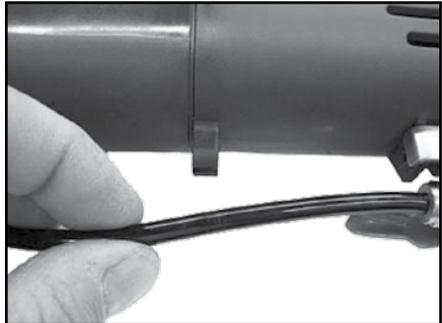


Figure-15

3. Unwrap 3 inches of coiled harness as shown in Figure 16.

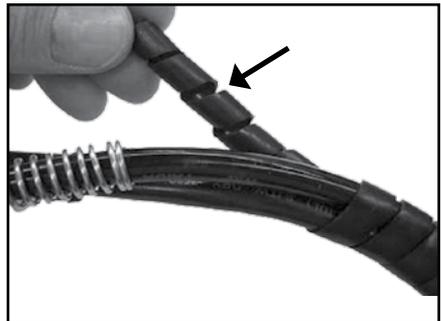


Figure-16

4. Remove 2 screws from valve bracket as shown in Figure 17.

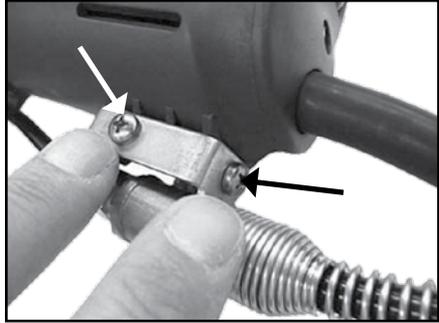


Figure-17

5. Pull valve assembly away from mount as shown in Figure 18.

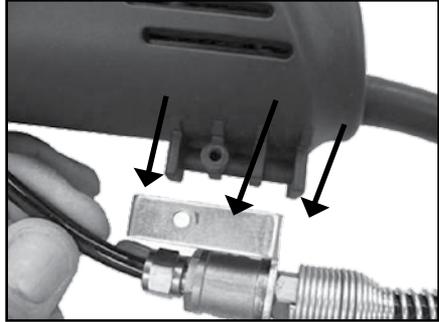


Figure-18

6. Remove rear case screw as shown in Figure 19.

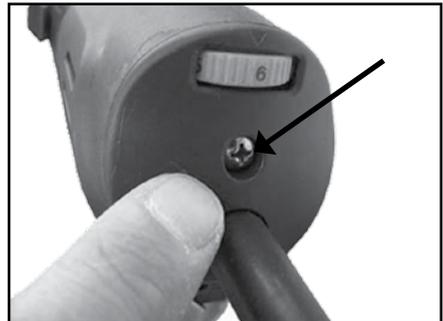


Figure-19

7. Hold polisher with left hand and pull rear case straight back with the other hand as shown in Figure 20.

NOTE: Do not twist case in a side to side motion when pulling back.



Figure-20

8. Pull back rear case until carbon brush assembly is exposed as shown in Figure 21.

NOTE: Do not pull rear case further back from this point.

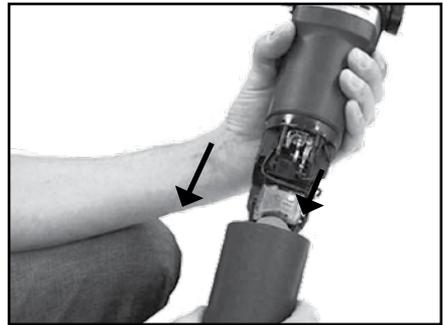


Figure-21

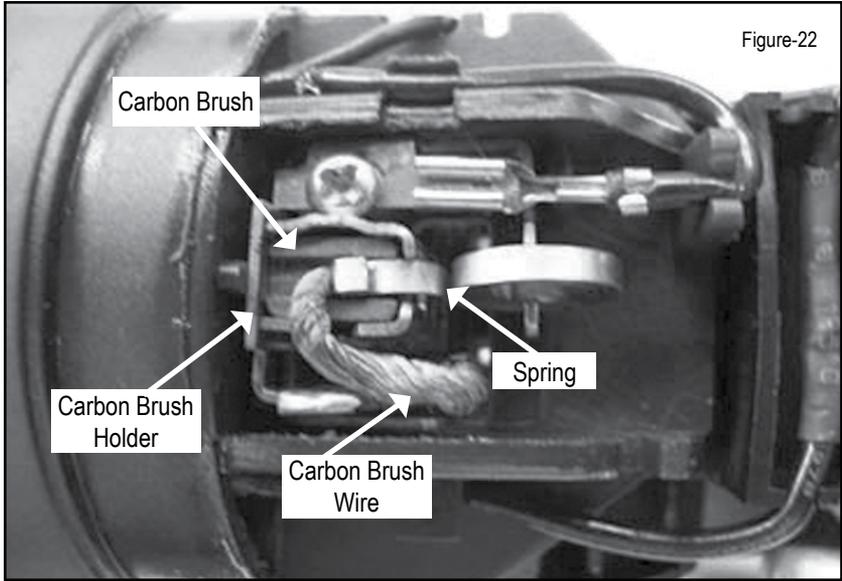


Figure-22

9. Lift spring from carbon brush and place on the side of the brush holder as shown in Figure 23.

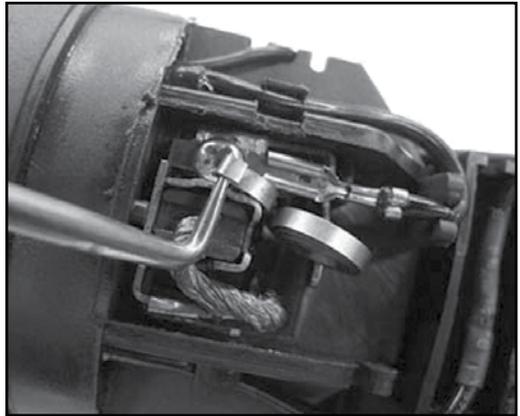


Figure-23

10. Remove carbon brush wire spade connector from terminal post as shown in Figure 24.

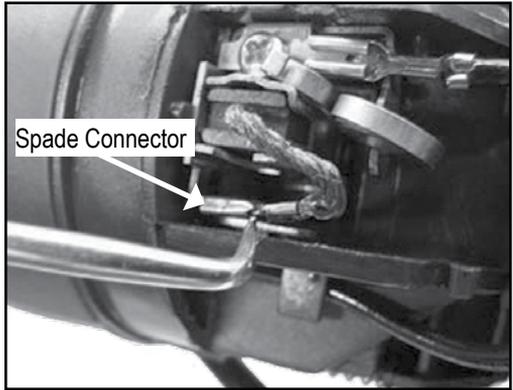


Figure-24

11. Remove carbon brush from holder as shown in Figure 25.

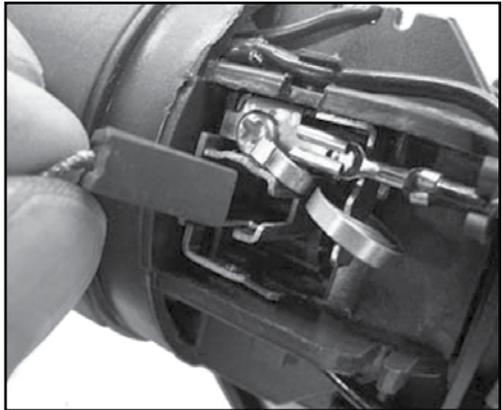
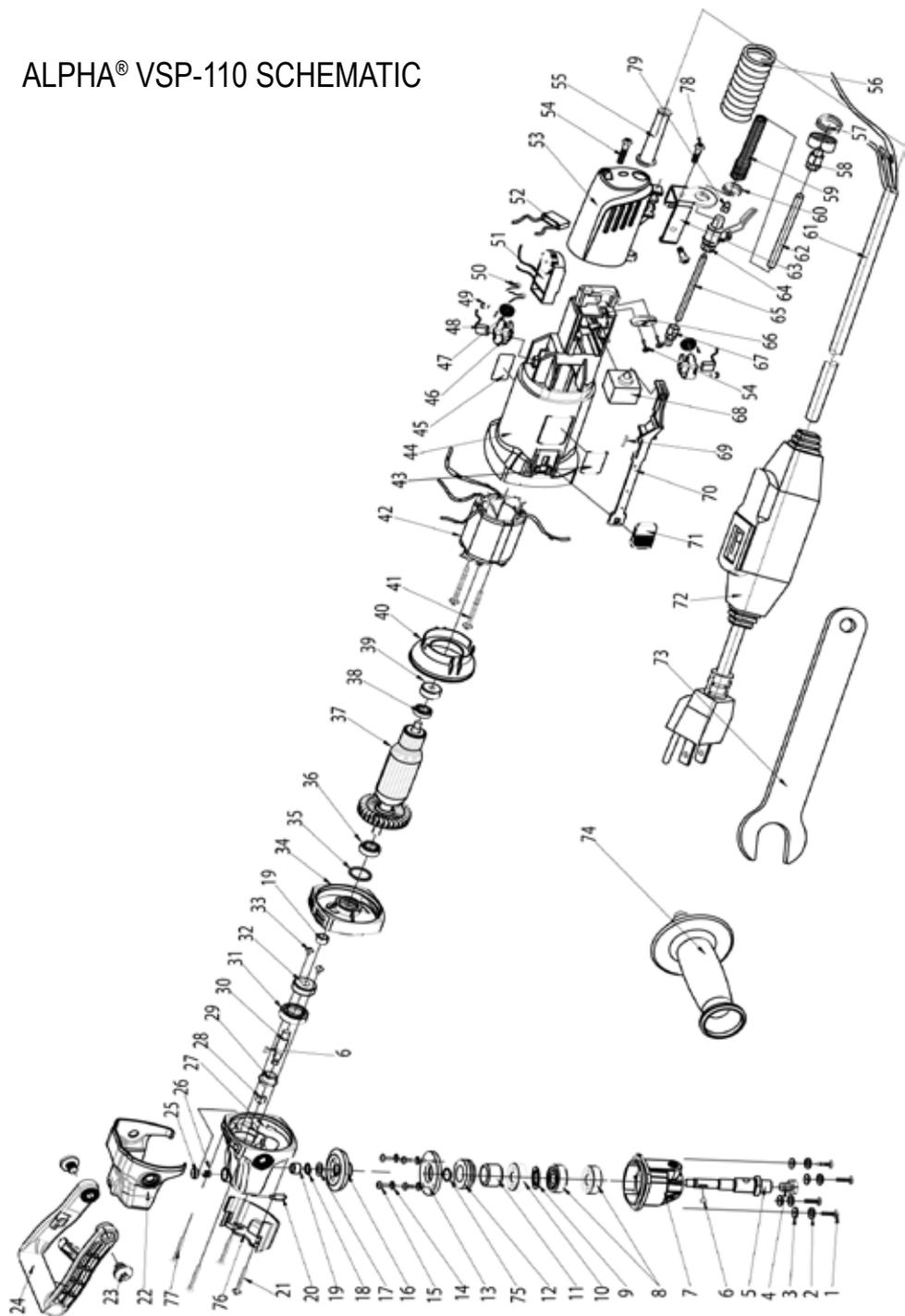


Figure-25

NOTE: Each polisher has 2 carbon brushes located on opposite sides of each other. After the replacement of the two brushes, assemble the polisher by reversing disassembly procedure.

ALPHA® VSP-110 SCHEMATIC



ALPHA® VSP-110 PARTS LIST

DRAWING NO.	PART NO.	DESCRIPTION	PIECES
1	210001	Screw M4x16	4
2	210002	Spring Washer 4	4
3	210003	Plain Washer 4	4
4	210004	Shower Bolt	1
5	210005/210080	Output Shaft 110V (5/8"-11) / 220V (M14-2)	1
6	210006	Key 3x10	2
7	210007	Gear Case Cover	1
8	210008	Oil lip seal B16x28x7D	2
9	210009	Bearing Washer	1
10	210010	Ball bearing 6201	1
11	210011	Gear Washer	1
12	210012	Thrust Bearing 15x28x6	1
13	210013	Bearing Clamp	1
14	210014	Spring Washer 5	4
15	210015	Screw M5x14	4
16	210016	Gear	1
17	210017	Wave Spring Lock Washer 10	1
18	210018	Circlip for Shaft 10	1
19	210019	Oil-impregnated Bearing 8x12x8	2
20	210020	Spindle-Lock Pin	1
21	210021	Screw ST4.2x45	2
22	210022	Case Plastic Cover	1
23	210023	Screw M10x22	2
24	210024	C-Handle	1
25	210025	Lock Pin Cap	1
26	210026	Pin Spring	1
27	210027	Gear Case	1
28	210028	Anti-loose Nut M6	1
29	210029	Pinion Z3	1
30	210030	Transmitting Shaft	1
31	210031	Ball Bearing 6200	1
32	210032	Bevel Gear Z2	1

ALPHA® VSP-110 PARTS LIST

DRAWING NO.	PART NO.	DESCRIPTION	PIECES
33	210033	Screw M4x12	2
34	210034	Bearing Retainer	1
35	210035	O-Ring 21.2x1.8	1
36	210036	Ball Bearing 608	1
37	210037/210081	Armature 110V / 220V	1
38	210038	Ball Bearing 607	1
39	210039	Rubber Bearing Seat	1
40	210040	Windshield	1
41	210041	Screw ST4.2x70	2
42	210042/210082	Field Coil 110V / 220V	1
43	210043	Brand Label	1
44	210044	Field Coil Case	1
45	210045	Data Label	1
46	210046	Carbon Brush Holder	2
47	210047	Coil Spring	2
48	210048/210083	Carbon brush 110V (PM825) / 220V (105S)	2
49	210049	Screw ST2.9x8	2
50	210050	Inductor (For 220V version only)	2
51	210051/210084	Speed Regulator 110V / 200V	1
52	210052	Capacitor 0.22F (For 220V version only)	1
53	210053	Rear Cover	1
54	210054	Screw ST4.2x14	3
55	210055	Cord Jacket	1
56	210056	Twist Strip	1
57	210057	Rubber Washer	1
58	210058	Inlet Tap	1
59	210059	Spring	1
60	210060	Plain washer	1
61	210061/210085	Power Supply Cord 110V / 220V	1
62	210062	Plastic Tube Dia 8	1
63	210063	Water Valve Bracket	1
64	210064	Water Valve Assembly	1

ALPHA® VSP-110 PARTS LIST

DRAWING NO.	PART NO.	DESCRIPTION	PIECES
65	210065	Plastic Tube Dia 6	1
66	210066	Cord Clamp	1
67	210067	Outlet Tap	1
68	210068	Switch	1
69	210069	Back Moving Spring	1
70	210070	Switch Push Lever	1
71	210071	Switch Push Button	1
72	210072/210086	GFCI 110V (American) / 220V (European)	1
73	210073	Wrench	2
74	210074	Side Handle	1
75	210075	O-Ring 15x2.65	1
76	210076	Dash Panel	1
77	210077	Screw ST4.2x40	2
78	210078	Screw ST4.2x10	2
79	210079	Water Valve Tap	1

SERVICES AND WARRANTY INFORMATION

► LOANER PROGRAM

Loaner tools can be issued to temporarily replace a tool that is being returned to Alpha® for repair. If more than one tool is being returned for repair, the number of loaner tools provided will be based on availability.

If a loaner tool is required, contact Alpha® Tool Department at (800) 648-7229 to receive a Loaner Tool Application. A valid credit card number must be provided as a security deposit. The credit card will only be charged if the loaner tool is not returned to Alpha® within 30 days. An authorized signature is required for the credit card being used. A second signature is required as an agreement of the overall policy.

► NEED MORE INFORMATION

For information on Alpha Professional Tools® complete product line, visit us on the web at www.alpha-tools.com

EC DECLARATION OF CONFORMITY

Name of Manufacturer: Alpha Professional Tools®

Address of Manufacturer: 103 Bauer Drive
Oakland, NJ 07436

USA

Herewith declares that:

ELECTRIC HAND TOOL: "Alpha® Wet Polisher"

Make: Alpha Professional Tools®
Type: VSP-110/VSP-220

-Does comply with the provisions of the Directive 98/37EC, 89/336EEC, 73/23EEC including the subsequent amendments.

And furthermore declares that:

-The following (parts/clauses of) harmonized standards have been applied:
EN292-1, EN292-2, EN60204-1, EN50 144, EN55 104, EN50 014, EN60 555 and HD400.

Year of affix CE Marking: 2005

Oakland, New Jersey USA

September / 2005



Nao Takahashi
(President)

► WARRANTY

Limited Warranty of Alpha® Wet Polisher

Alpha Professional Tools® warrants this product against defects in material and workmanship for a period of 180 days from the date of original retail purchase (proof of purchase required). If Alpha Professional Tools® receives notice of such defects during the warranty period, our obligation assumed under this warranty is limited to the repair or replacement of parts, without charge. This warranty does not apply to tool accessories.

For Warranty Claims: Send complete tool with all your information and details of the problem to the address printed on the cover of this manual, transportation prepaid. Do not send tool accessories.

PRODUCT REGISTRATION CARD

Model No. _____

Serial No. _____

Company Name: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____

Purchase Date: _____

Dealer's Name: _____

Note: Serial & Model Number must be included for proper registration.



Alpha Professional Tools®

(800) 648-7229



Mail or Fax to:

Alpha Professional Tools®

103 Bauer Drive, Oakland, NJ 07436

Fax: 800-286-0114

Photocopy of product registration form will be accepted.



103 Bauer Drive, Oakland, NJ 07436 • 800-648-7229 • Fax: 800-286-0114
www.alpha-tools.com

Copyright © 2005 Alpha Professional Tools. All rights reserved.