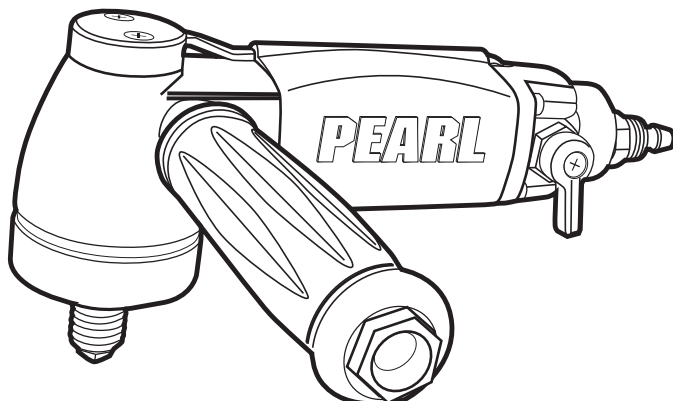


# PEARL®

**MODEL WP3000**  
**WET AIR POLISHER**  
OWNER'S/OPERATOR'S MANUAL



Thank you for purchasing the Pearl WP3000 wet polisher. The WP3000 is the premier wet polisher for the stone and countertop fabrication trades. Designed to wet polish natural stone, quartz, and engineered stone materials, the WP3000 is a high quality tool engineered for professional users.

REV. 2

**PEARL ABRASIVE CO. WET AIR POLISHER**



# INTENDED USE

This pneumatic tool is designed to be used with a backing pad (flexible dia) and appropriate abrasive for polishing stones. It should be used for such applications and within its marked capacity and ratings. Only accessories specifically recommended by PEARL should be used with this tool. Use in any other manner or with other accessories could lead to unsafe operating conditions.

# SPECIFICATIONS

MODEL	WP3000
Pad Size	4" (100mm) in round
R.P.M. without load	0-5000 RPM
Air Consumption	16CFM at 80-90 PSI
Output	0.24 KW
Compressor Output	3.76 KW (5 HP)
Max Working Pressure	0.6 MPa (6 bar/90 PSI)
Noise Level	83 dB*
Net weight	1.2 KG

\*This value is an emission level and is not sufficient risk evaluation. Manufacture reserves the right to change specifications without notice.

# FOR REPAIR INFORMATION, CALL:

Pearl Abrasive Co.: 800-969-5561

Please visit [www.pearlabrative.com](http://www.pearlabrative.com) for  
Authorized Repair Centers



## CAUTION

### **1. Read this instruction manual before use.**

2. Do not use this tool for a purpose other than designated by the manual.
3. Keep children and bystanders at a safe distance from work area
4. Do not use tooling that could be hazardous if it becomes wet. (i.e. grinding stones)
5. Never place hand or face near a moving accessory.
6. Do not force tool. Always use the correct tool for your application.
7. Use only genuine Pearl replacement parts for repairs
8. Always turn it off and disconnect from air compressor before installing and removing accessories, before adjusting or when making repairs.

### **9. Never use damaged accessories.**

10. Wear personal protective equipment such as safety glasses that conform to ANSI/ISEA Z87.1, and ear protection that conforms to ANSI/ISEA S12.6.
11. Always securely clamp and support work piece.
12. Do not use damaged air hoses.
13. Always wear proper respiratory protection. A dust mask or similar dust respirator should be used.
14. Keep tools clean and lubricated
15. Always disconnect tool when not in use, especially when changing tools.
16. Inspect before using, check alignment of moving parts and breakage or improper mounting.

### **17. Use the Pearl WP 3000 for wet polishing only.**

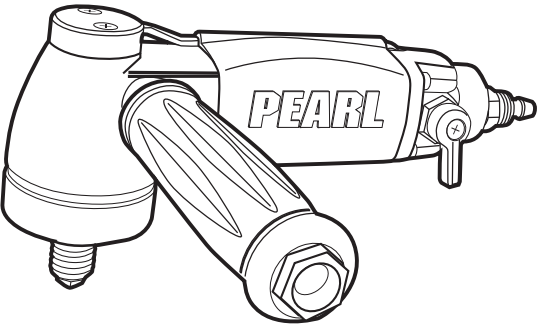
18. Only use a backing pad rated for 5000 RPM or higher.

### **1. Dress properly**

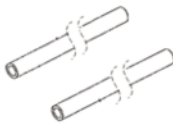
2. Do not wear loose fitting clothing or jewelry that could be caught in moving parts.
3. Do not cover or block exhaust. Blocked exhaust prevents the tool from working properly.
4. Immediately stop operating the tool if you feel the tool is not working correctly. If damaged have the tool serviced
5. Stay alert, be careful while operating this tool. Do not use tool while tired or under the influence of drugs, alcohol, or medications.

**BOX CONTENTS:**

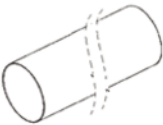
Contents	Qty
WP3000	1
Handle	1
Air Hose	1
Exhaust House	1
Hose Band	1
Air Hose Joint Assy.	1
Coupler	1
Instruction Manual	1



**Handle**



**Air Hose**



**Exhaust House**



**Hose Band**



**Air Hose Joint Assy**



**Coupler**

## **SAFETY WARNINGS**

- Read and understand all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

## **GENERAL AIR TOOL WARNING**

1. Read this instruction manual before use.
2. Do not use the tool for a purpose other than designated by the manual.
3. Do not depress the shaft lock while the tool is rotating. It may cause a serious injury or damage the tool.
4. Keep work area clean and well lit. Cluttered or dark areas invited accidents.
5. Always wear personal protective equipment such as safety goggles, hearing protectors and dust mask or respiratory protective equipment (PPE).
6. Follow ANSI Z87.1 or local/national standards for eye-wear and other personal protective equipment requirements. Everyday eyeglasses are not safety glasses.
7. Exposure to certain chemicals in dust generated from workpiece and/or abrasive materials can result in lung damage and other physical injury. Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to dust, work in a well-ventilated area and work with approved safety equipment designed to filter out microscopic particles.
8. Dress properly. Do not wear loose clothing or jewelry as they can be caught in moving parts. Contain long hair with a cap or a hair cover.
9. When operating an air tool outside, always wear gloves, safety shoes (preferably non-skid) and hard hat.
10. Use sound insulation walls if required by your local provisions and regulations.
11. Stay alert, be careful with what you are doing when operating an air tool. Do not use tool while tired or under the influence of drugs, alcohol or medication.
12. Do not overwork and have a rest before you get too tired.
13. Always check rotation direction before use.
14. Never place your hand or face near the rotating accessory
15. Do not operate the tool continually at full throttle without a work load on the tool.
16. Do not dismantle or modify the tool.
17. Do not direct the tool towards bystanders and/or animals. Fragments of workpiece or of a broken accessory may fly away and cause injury. Keep bystanders out of work area.

18. Do not abuse the hose. Never use the air hose for carrying. The tool can start suddenly and may cause injury. Keep the air hose away from sharp edges.
19. Do not use damaged air hose. Damaged air hose increase the risk of accident.
20. Never work near inflammable liquid or in a highly explosive area.
21. Make sure that the tool is off before connecting to the air compressor.
22. Always disconnect the tool from air supply before removing any accessory or maintenance work.
23. Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer.
24. If any physical hand/wrist discomfort is experienced, stop work promptly and seek medical attention. Hand, wrist and arm injury may result from repetitive work, motion and overexposure to vibration. Take frequent rest and limit daily time of use.
25. Handle the tool with care. Dropping the tool on a ground, crashing it into objects any cause the tool to deform and crack.
26. Use only an air compressor. Use of high pressure gas other than an air such as an oxygen and acetylene will increase the risk of explosion.
27. Pneumatic tool's exhaust air contains oil and contaminated moisture. Make sure it is not directed towards you or anyone within the work area.
28. Do not overreach. Keep proper footing and balance at all times.
29. When working at height, make sure that nobody is underneath, and ensure also that the tool is kept on a stable platform.
30. Always inspect wires and pipes inside the workpiece. Carefully use the tool so that the rotating part will not contact them. The rotating part contacting electric wires and gas pipes while operating the tool will increase the risk of electric shock and gas leak.
31. When polishing, pay attention to dust and sand on the surface of polishing pad or polishing buff, so that they do not leave scratches on the workpiece.
32. Do not press the tool too hard against the workpiece. It is not only inefficient but also may cause damages to the tool.
33. Never lay the tool until the accessory has come to a complete stop.

## **SPECIFIC WARNINGS FOR WP3000**

1. Only qualified/trained operators should use this tool.
2. Use clamps etc. to secure and support the workpiece.
3. Use accessories made for pneumatic tools.
4. Hold the tool firmly, especially when starting.
5. When using polishing pads with Velcro, always ensure that the pad is fixed centrally to the backing pad.

## **CAUTION**

1. Do not abuse the tool. Do not throw, drop or shock the tool.
2. Do not carry the tool by the air hose, and at the same time, do not pull it to disconnect.
3. Do not cover or block an exhaust. Blocked exhaust prevents the tool from working properly. Also, never direct exhaust air towards bystanders and/or animals.
4. Dress properly
5. Do not wear loose fitting clothing or jewelry that could be caught in moving parts.
6. Do not cover or block exhaust. Blocked exhaust prevents the tool from working properly.
7. Immediately stop operating the tool if you feel the tool is not working correctly. If damaged have the tool serviced.
8. Stay alert, be careful while operating this tool. Do not use tool while tired or under the influence of drugs, alcohol, or medications.

## **SPECIFIC CAUTION FOR MAINTENANCE**

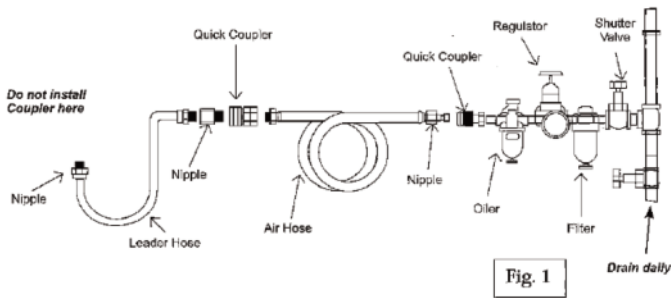
1. Immediately stop operating the tool whenever you feel that the tool is not working properly. If damaged, have the tool serviced.
2. Use appropriate pressure. Excessively high pressure will increase the number of revolutions or strokes causing potential failure and accidental injury.
3. Use only identical replacement parts when servicing.
4. Do not store unused accessories and tools in an area where temperature changes a lot and/or under the direct sunlight. Store them in a dry area and out of reach of children.



5. Inspect tool before use; check if parts and accessories are free from damage.
6. Do not use damaged accessory.
7. Never use solvents or other harsh chemicals to clean the non-metallic parts of the tool.
8. Before use each day place 2-3 drop of pneumatic tool oil in the air inlet of the tool. Run tool for 2-3 seconds to allow moving parts to become lubricated. Lubricating the tool before and during work is not needed. Excessive oil will turn into a tar-like substance inside the tool, causing the vanes to stick in the rotor and slow the tool down.
9. At the end of the shift disconnect air and water line and hang the tool upside down to allow any water to drain from the tool.
10. Clean coupler fittings on air hoses so that a motor will not ingest powder dust and sand. Also, use clean water from a tap.
11. If you notice deformation of a backing pad in any way, discontinue its use and replace the backing pad.
12. Do not submerge the tool in water. This will expose the inner moving parts to moisture that will shorten the life expectancy.
13. Do not leave accessories attached to the threads of the spindle. This can result in damage to the spindle or accessory. Excessive force to the spindle trying to remove corroded accessories could damage the gears and bearings.
14. If you notice any abnormal noise or vibration when operating the product, immediately discontinue its use. Inspect and replace any damaged parts. If abnormal noise or smell persist, return the machine for service or repair.
15. For further operational and handling information or for replacement of parts and components, please contact the agent from whom you purchased the tool.

## SPECIFIC CAUTION FOR AIR SUPPLY

1. Use a clean lubricated air supply that will give a measured pressure at the tool of 87 PSI/6 bar (0.6 MPa)
2. Air pressure for this tool **MUST NOT** exceed 87 PSI/6 bar (0.6 MPa); excessively high air pressure will increase the number of revolutions causing not only potential failure or breakage but could also lead to an unexpected accident or injury.
3. Equip the air compressor with a replaceable filter that can be easily cleaned.
4. Use safety shuttle valves so air flow can be stopped in case of a line break.
5. Use anti-whip devices across hose couplings to prevent hose from whipping in the event of hose failure or coupling disconnect.
6. Regularly clean the tool's air vents.
7. Connect the tool to the air supply as shown in Figure 1.



## ABOUT AIR PRESSURE AND VOLUME

1. The manufacturer specification on the tool is 5000 PM at 80-90 PSI. Pressure over 90 PSI exceeds the max speed rating for the rotor bearings that could potentially cause them to overheat and lock.
2. The air consumption of this polisher is very important. This tool requires 16 CFM (cubic feet per minute) for the tool to run at a constant speed. Each additional tool that is attached to an air compressor will require 16 CFM.

## ABOUT SILENCER

1. To comply with OSHA code 1926.52 Noise exposure Standard, this polisher comes fitted with an internal silencer. When operated within factory specifications (80-90 PSI @ 16 CFM) the silencer brings the noise to less than 84 db. The silencer also provides back pressure to help assure that you are getting a constant RPM level.

## ABOUT SHAFT LOCK SYSTEM

1. WP3000 is equipped with a Shaft Lock System, which promotes replacement of polishing pads by replacing backing pads.
2. With traditional method with Velcro, often polishing pads were attached off-center, i.e. away from the spindle, and this affected the drive shaft and damaged a bearing and a gear.
3. Since Shaft Lock System makes it easier to replace backing pad, you can simply replace backing pad to change polishing pad.
4. A shaft lock button, indicated in Figure 2, is provided to prevent the spindle from rotating when installing or removing a backing pad. To engage the lock, depress the button and rotate the spindle until you are unable to rotate any further.

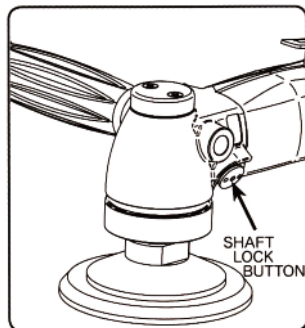
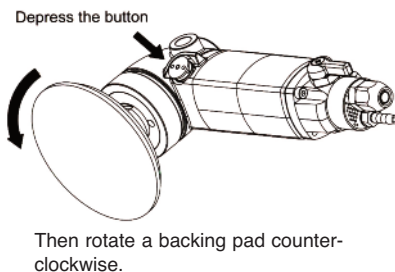


Fig. 2

## HOW TO REPLACE THE BACKING PAD

1. Hold the tool with the backing pad facing upwards.
2. Rotate the backing pad anti-clockwise, until you cannot rotate any further.
3. Detach the backing pad from the spindle.
4. Place a new backing pad onto the spindle
5. Rotate the backing pad clockwise, until you cannot rotate any further.



## CAUTION

**Do not depress the shaft lock while the tool is rotating. It may cause a serious injury or Saguchi Global damage the tool.**

# WET AIR POLISHER TOOL PREVENTATIVE MAINTENANCE AND SOLUTIONS

Learn how to prevent the 5 most common issues that cause pneumatic tool failures



## 1. RUNNING THE TOOL IN EXCESS OF THE RECOMMENDED 85 PSI OPERATING PRESSURE.

The Pearl WP3000 are designed to run at or below 87 PSI. This operating pressure is derived from the optimum speed and torque needed for most polishing applications, while staying below the maximum speed rating of the rotor bearings. By raising and lowering the air pressure, you change the speed at which the tool will run. The power or torque comes from the CFM or volume of air. If your compressor's CFMs are under-sized, your pressure will drop once the reserve in your tank is depleted. Raising the pressure to 100 PSI and higher will raise the RPM of the tool. At this point, you are reaching or exceeding the maximum speed rating of the 516-18 bearing of 28,000 RPM, causing it to heat up and wear out prematurely. Sudden changes in speed will also cause premature wear on the bearing, so you should turn the air on and off slower to allow the bearing time to accelerate and decelerate.



*Fig. 1: Worn Bearings*

## **2. CONTAMINATION AND WATER GETTING INSIDE THE TOOL**

One of the big differences between the Pearl WP3000 and others, is that our polishers are all steel inside. Air oil should be used to treat the steel inside the tool and prevent it from rusting when not in use. If water and contamination is allow to enter the tool, it will shorten the life of the vanes and bearings inside the rotor assembly. Contamination in the air will get into the vane slots on the rotor and cause the vanes to stick and stop floating.

## **3. EXCESSIVE OILING OR USING THE WRONG TYPE OF OIL**

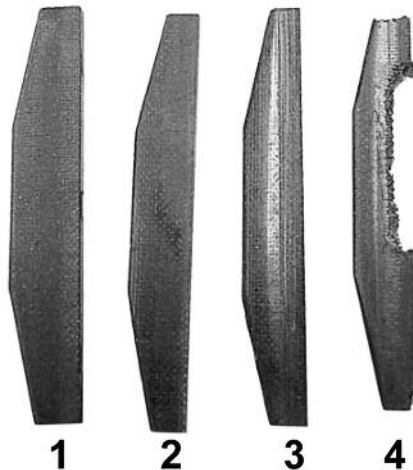
The Pearl WP3000 oil is designed to coat the inside of the tool and prevent it from rusting when the tool is not in use. For this tool to work effectively, we recommend adding the oil at the end of the day. The oil is not needed to run the tool, it is only added to prevent the tool from rusting. Adding the wrong oil or excessive oiling of the tool can cause a tar-like build-up inside the tool, causing the vanes to also stick in the rotor assembly.

***\* Air line lubricators are not recommended due to the excessive amount of oil.***

#### 4. EXCESSIVE DOWNWARD PRESSURE APPLIED DURING POLISHING

The WP3000 has four vanes in the rotor assembly which are used to trap the air and convert air flow into the torque needed to run the tool. In a no-load condition, the rotor will turn between 20,000 to 22,000 RPM, which allows the spindle shaft to turn at 4,000 RPM to 4,400 RPM. Under light downward pressure the rotor will slow down to 18,000 to 19,000 RPM, and the spindle will turn at 3,600 RPM to 3,800 RPM. As the rotor and vanes turn inside the tool, it goes through a power and vent cycle. During the power cycle, the vanes extend out from the rotor and the air pushing on the front side, cause the rotor to turn. About a quarter of the way through the rotation, that same vane transitions into the vent cycle and the air is exhausted from the tool. Therefore, one to two vanes are always loaded under pressure and creating the torque needed to turn the rotor. When excessive downward pressure is applied to the tool, the vanes will rub against the rotor on the backside causing a groove to form as the vane is pushed back into the rotor under pressure.

Over time, half of the vane will become worn away in the grooved area causing the vane to become brittle and crack, or splinter along the groove line. When the vane splinters, as shown in vane 4 in Figure 2, it is the pieces of the vane that break off that get trapped between the rotor and the cylinder causing the tool to lock up. Excessive downward pressure will also cause premature wear on the gears.



*Fig. 2:*

1. New vane
2. Used vane with no grooves
3. Used vane with grooves
4. Used vane cracked along the groove

## 5. HAMMERING OF THE TOOL INTO THE STONE

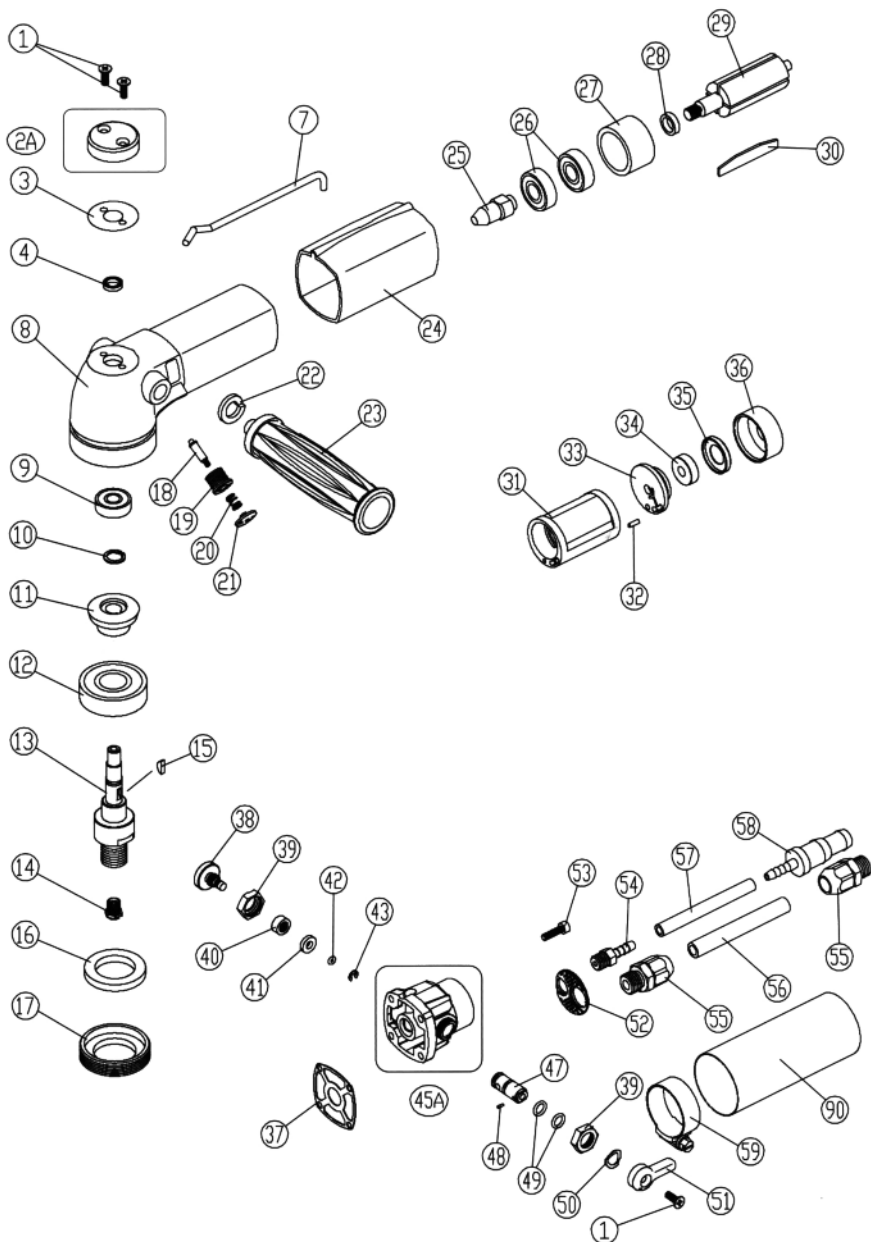
During the process of polishing and/or core drilling, you should slowly apply the polisher to the stone. Hammering or quickly impacting the polisher into the stone will cause the spindle to go from 4,000 RPM to 2,000 RPM or lower. This sudden impact will cause the gears to wear out and/or chip. This impacting is also evident by the play and indentation found on the woodruff key for the spindle gear.

*Please note: while core drilling, the gears can start to wear out or chip and the tool can continue to run for a week or two before locking up.*



To avoid some of the previously described potential issues, Pearl has created Filter/Regulator (F/R) manifold systems. These F/R manifold systems consist of a Filter/ Regulator with a shut off/dump valve, and a aluminum manifold with two or more aluminum quick disconnects. The filter/regulator will allow you to set the pressure at 85 PSI, remove and dump any water from your air, and remove contamination down to five microns. These new manifold systems and parts are available through our distributor network, and via our website.

# **PEARL WP3000** **(WATERFEED SYSTEM WITH CLEAR HOSE)** **REPLACEMENT PARTS LIST**





# PEARL WP3000

## (WATERFEED SYSTEM WITH CLEAR HOSE)

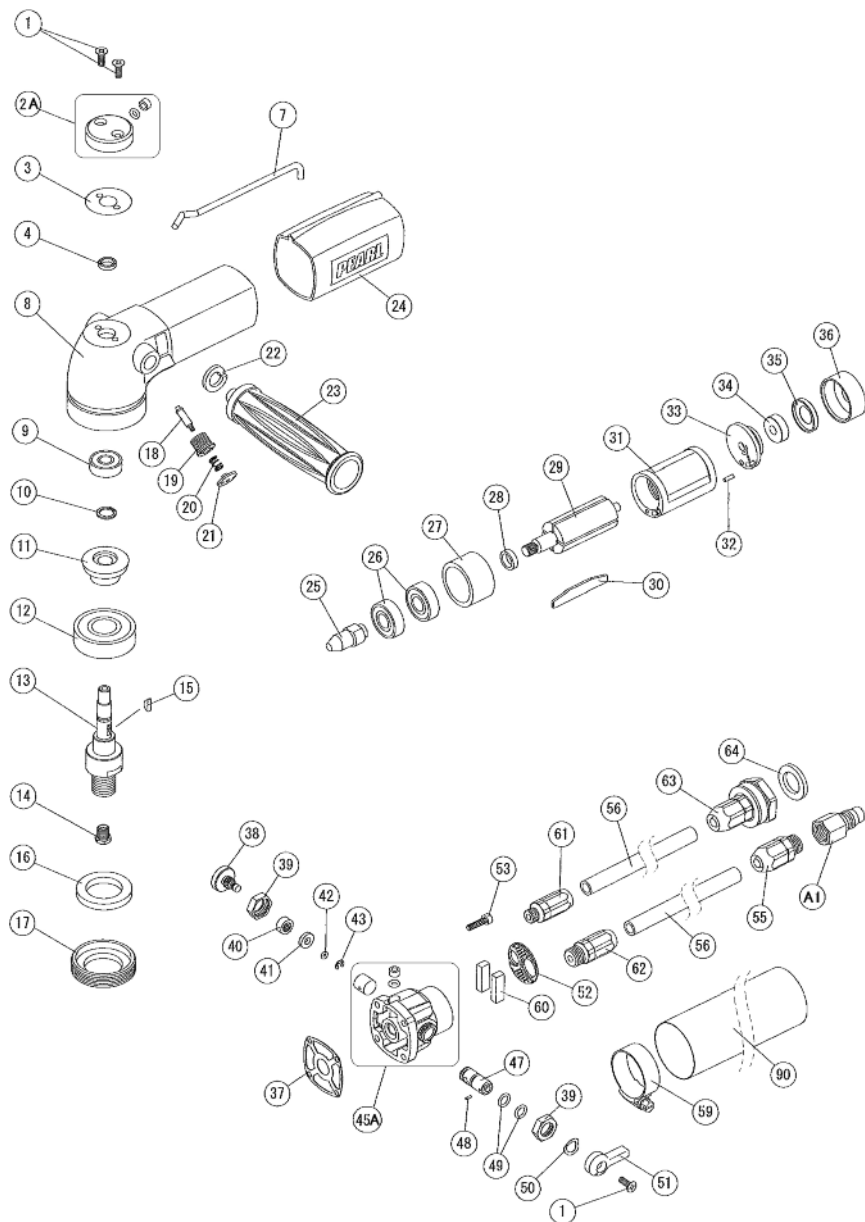
### REPLACEMENT PARTS LIST

Index No.	Code	Description	Qty
1	876751	Screw	3
2A	876711	Pipe Joint Assy	1 set
3	876712	Head Gasket	1
4	876713	Oil Seal	1
7	876714	Water Pipe	1
8	876715	Motor Case	1
9	871825	Ball Bearing	1
10	876716	Snap Ring	1
11	871809	Bevel Gear	1
12	871810	Ball Bearing	1
13	871811	Spindle	
14	876717	Nozzle	1
15	871814	Key	1
16	876718	Oil Seal	1
17	876719	Spindle Cover	1
18	876720	Lock Shaft	1
19	876721	Lock Body	1
20	876722	Spring	1
21	876723	Lock Switch	1
22	876724	Washer	1
23	876725	Handle	1
24	876726	Motor Case Cover	1
25	871815	Pinion Gear	1
26	871816	Ball Bearing	2
27	871817	Front Plate	1
28	871818	Spacer	1
29	871819	Rotor	1
30	871820	Vane	4
31	871821	Cylinder	1
32	871822	Spring Pin	1
33	871823	Rear End Plate	1
34	871824	Ball Bearing	1
35	876727	Bearing Cap	1
36	876728	Intake Cover	1
37	876729	Motor Gasket	1
38	876730	Water Adjust Valve	1
39	876731	Valve Nut	2
40	876732	Nut	1
41	876733	Valve Washer	1
42	876734	O-Ring	1

Index No.	Code	Description	Qty
43	876735	Retaining Ring	1
45A	876736	Valve Body Assy	1 set
47	876737	Valve Bush	1
48	876738	Needle Roller	1
49	876739	O-Ring	2
50	876740	Wave Washer	1
51	876741	Throttle Valve	1
52	876742	Silencer	1
53	876743	Cap Screw	4
54	876744	Water Hose Nipple	1
55	876745	Air Hose Joint Assy	2
56	876746	Air Hose	1
57	876747	Water Hose	1
58	876748	Hose Adapter	1
59	876749	Hose Band	1
90	876750	Exhaust Hose	1

\*Parts may be changed with/without notice.

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17	876719	Spindle Cover	1
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29	871819	Rotor	1
30	871820	Vane	4
31	871821	Cylinder	1
32	871822	Spring Pin	1
33	871823	Rear End Plate	1
34	871824	Ball Bearing	1
35	876727	Bearing Cap	1
36	876728	Intake Cover	1
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52	876742	Silencer	1
53	876743	Cap Screw	4
54	876744	Water Hose Nipple	1
55	876745	Air Hose Joint Assy	2
56	876746	Air Hose	1
57	876747	Water Hose	1
58	876748	Hose Adapter	1
59	876749	Hose Band	1
60	876752	Muffler	2
61	876753	Water Hose Joint Assy	1
62	876754	Air Hose Joint Assy	1
63	876755	Water Hose Joint Assy	1
64	876756	Packing	1
90	876750	Exhaust Hose	1
A1	876757	Coupler	1

\*Parts may be changed with/without notice.



## **LIMITED TIME WARRANTY OF PEARL WP3000**

Pearl Abrasive Co. warrants this product against material defect and defective workmanship for a period of 90 days from original purchase. Proof of purchase will be required. If Pearl receives notice of defective tool, under this warranty our obligation is limited to the repair or replacement of parts, without charge. This does not apply to accessories.

For warranty claims, send the complete tool to:

### **East Coast:**

Romedy Tool Repair - 770-932-8175  
121 Price Hills Trail, Sugar Hill, GA 30518

### **West Coast:**

Pearl Abrasive Co. - 800-969-5561  
4900 Zambrano Street, Commerce, CA 90040