

Multi purpose polishing system 3N1

1. Product features:

- ⊙ Power supply of AC90-240V at 50/60Hz.
- ⊙ High-efficiency microprocessor, with more flexible and user-friendly functions.
- ⊙ Regulated power supply for low power consumption and over heating.
- ⊙ Overload protective circuit and load indicator incorporated to enable safe and continuous usage.
- ⊙ Ultrasonic function, DC rotary and DC brushless rotary functions incorporated and one single unit.
- ⊙ High torque and high power output for DC and Dc brushless motor output.

Specification:

Power supply	AC90-240V 50/60Hz
Max. power consumption	300 Watts
Ultrasonic frequency range	18-26 KHz
Adjustment of Ultrasonic output	Continuous
Ultrasonic amplitude	3-40 μ M
Method of frequency adjustment	Auto-tracing
Suspension detection & protective circuit	Yes
Output of DC rotary tool	5-32V DC, continuous adjustment
Output Brushless DC rotary tool	1,000-50,000 r.p.m, continuous adjustment
DC brush output power	Max. 180 Watts
DC brushless output power	Max. 250 Watts
Overload protection circuit	Yes
Load indicator	5 level led lamps
Fuse	3A 20mm time-lag type
Dimensions	W170xD240xH140 mm
Weight	2.5 Kg

2. Parts and descriptions of Main Unit



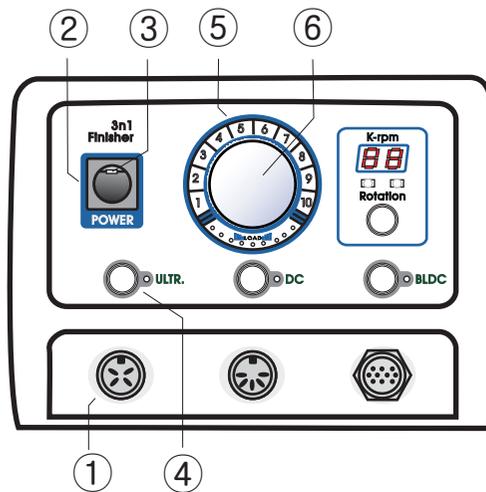
1. Power switch and indicator lamp
2. Function selector:
 - 2A. Ultrasonic function selector
 - 2B. DC rotary function and selector
 - 2C. DC Brushless rotary function and selector
3. Function indicator lamps.
4. Forward/reverse selector of rotary hand-piece.
5. Forward/reverse indicator lamp.
6. DC brushless rotary speed indicator ($\times 1000\text{rpm}$) .
7. Output speed and power adjusting knob.
8. Output speed indicator.
9. Load indicator.
 - Green LED Normal usage
 - Yellow LED Heavy load.
 - Red LED - Overloading
10. Ultrasonic hand-piece socket.
11. DC Brush hand-piece socket.
12. DC Brushless hand-piece socket.
13. Foot switch socket (at the rear).
14. Power input socket (at the rear): including 20mm fuse holder.
15. Handle

3. Usage

3-1 Ultrasonic lapping tools

- 1) Please confirm the voltage before connecting the power supply.
- 2) Install a correct holder or tool on to the Ultrasonic handpiece. (Please use the tool changing rack to avoid damage.)
- 3) Insert the hand-piece plug into the socket ① on both handset and main unit.

- 4) Turn on the power switch ②. The power indicator lamp ③ will light up, push button ④ output speed indicator lamp ⑤ will blink, which shows it is tracing the correct frequency. In about 3 seconds, the output speed indicator lamp will stop blinking and indicate min. level, and it is now ready to use.



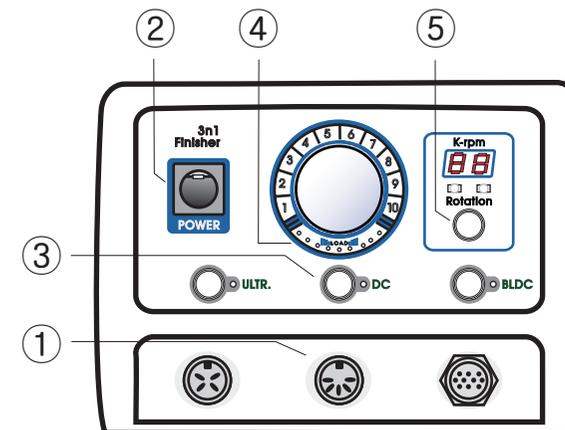
- 5) Adjust the output power.

During usage, the output power can be adjusted by turning the Output speed and power adjusting knob ⑥.

- 6) Tools and clamp horns must be securely fastened; otherwise full power will not be utilized. And the power pack cannot adjust to the correct frequency.
- 7) If the tool is not securely fastened and/or the clamp horn fully clamped a high pitched noise will be emitted. Please secure all joints. If the noise persists replace the tool clamp horn, switch power off and restart to activate the automatic frequency adjustment.

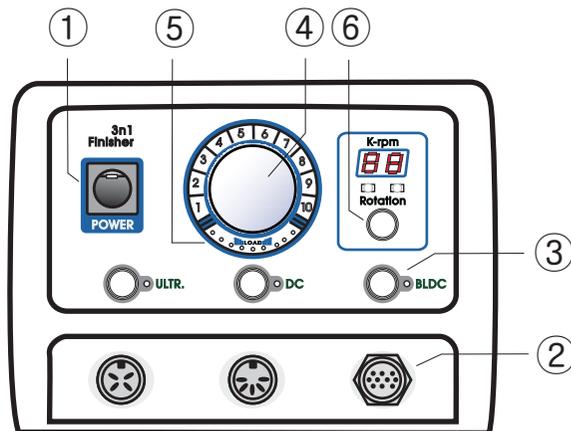
3-2 DC rotary tools

- 1) The 3N1 power pac is intended for D.C30V micro motor hand pieces.
- 2) Please turn off the power before using the rotary tools.
- 3) Connect the rotary tool to the jack ① on the main unit, and install the proper polishing tool.
- 4) Turn on the power of the main unit ②, and the main unit will enter the last user's mode. Please press the Function selector button to switch to DC rotary mode.
- 5) Push the DC rotary function and output button ③ then the DC rotary hand-piece will start running. Adjust to the required speed.
- 6) When the tool is rotating, the load indicator ④ starts functioning, keep load below the red LED level.
- 7) When using the foot control keep depressed to maintain rotation.
- 8) Change in rotation is actioned by depressing the forward/reverse selector button ⑤.
- 9) Switch the function off to change tools.
- 10) In the case of abnormal load. The overload function will stop and the overload light will indicate, in which case the power switch should be switched off and on again to recommence operation.
- 11) When there is a machine failure, do not attempt to disassemble the unit. Please contact your supplier for repair.



3-3 Brushless DC rotary tools

- 1) Please turn off the power① before using the Brushless DC rotary hand-piece.
- 2) Connect the hand-piece to the jack② on the main unit, and install the proper polishing tool.
- 3) Turn on the power of the main unit, and the main unit will enter to last user's mode. Please press the button③ function and output switch to Brushless DC rotary mode.
- 4) Adjust to the required speed by knob④.
- 5) When the tool is rotating, the Load indicator⑤ will indicate the tool loading. To protect your hand piece please do not operate over the red light level.
- 6) When using foot switch, keep depressing it to produce output.
- 7) To change between forward and reverse rotations, it is possible to press on the Forward/reverse selector button⑥ during use.
- 8) Please turn off the power before changing tools, to avoid accidents.
- 9) In case of abnormal use or overload, the overload protection will cut off the output and the function indicators lamp will blink. Please turn the power switch off and on again to restart.
- 10) If there is a machine failure, do not attempt to disassemble the unit. Please contact your supplier for repair.



3-4 Foot switch [ON/OFF-type foot switch]

- 1) This switch can be plugged in any time during use, when using the foot switch, keep depressing it to produce output.
- 2) The output (speed) indicator lamp blink after the foot switch is connected, but will light up at the level set by the knob after the foot switch is depressed.



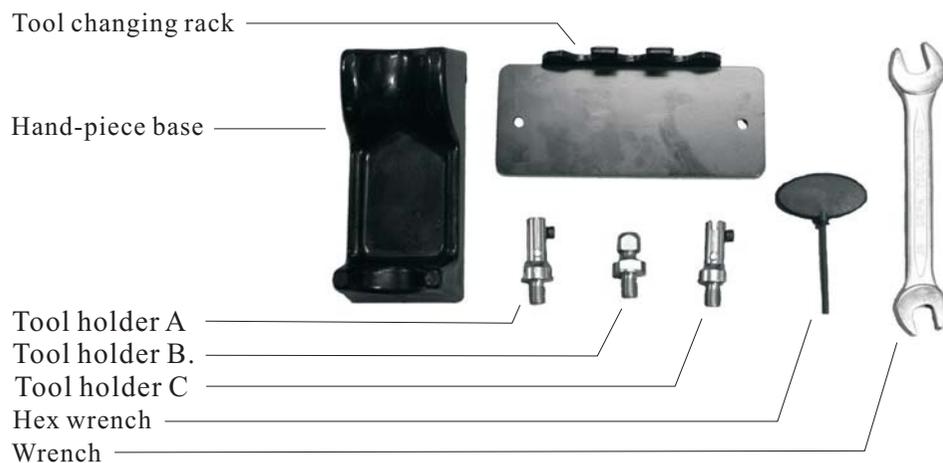
3-5 Other notices

- 1) It is necessary to turn off the power before changing lapping and polishing tools each time.
- 2) Use only correct tools (Ultrasonic tool changing rack and wrenches) when changing tools to avoid damage.
- 3) On the ultrasonic function please switch the Power off & on to allow the unit to adjust to the correct frequency.
- 4) Insure your 3in1 equipment is protected from impact; moisture or corrosive materials.

4. 3N1 Accessories

4.1 Standard contents.

No.	Item	Article-No	Specification	Q/T
1	Small Hand-piece		Φ26mm×116mm 36 Watts	1
2	Hand-piece base		L112xD51xH35 mm	1
3	Plug/Power cord		18AWGx3C 180 cm	1
4	Small Hand-piece cord	31-PSAK	150 cm	1
5	Tool box		L225xD53xH25 cm	1
6	Tool changing rack of small hand-piece		For W:10mm	1
7	Wrench		10mm/12mm	1
8	Hex wrench		2.5mm	1
9	Spare fuse		3A time-lag type	1
10	Tool holder A. T 1.1mm M6	31-PSW1	T 1.1mm M6 For ceramic oilstones	1
11	Tool holder B. Φ3.0mm M6	31-PSW2	Φ3.0mm For φ 3 shank	1
12	Tool holder C. T 3.1mm M6	31-PSW3	T 3.1mm M6 For oilstones	1
13	Foot switch (ON/OFF function)		Cord length:190cm Dimension: L73xD103xH33 mm	1



Plug/Power cord



Spare fuse



Tool box



Foot switch

4.2 3N1 Optional Accessories

No.	Item	Article-No	Specification	Q/T
1	Large Hand-piece		φ 33x147 mm 45Watts	
2	Large Hand-piece cord		150 cm	
3	Tool changing rack of Large hand-piece		For W:12mm	
4	Large Tool holder A. T 1.1mm M8		T 1.1mm M8 For ceramic oilstones	
5	Large Tool holder B. Φ3.0mm M8		Φ3.0mm M8 For φ 3 shank	
6	Large Tool holder C. T 3.1mm M8		T 3.1mm M8 For oilstones	
7	USA plug/Power cord		18AWGx3C 180 cm	
8	Hand-piece Adaptor NSK bldc hand-piece adaptor			
9	M6/M4 Adaptor			

The specifications and models contained in this manual are subject to actual delivery. Changes and modifications, if any, will not be further noticed.