

BP50 BRUSHLESS SYSTEM

OWNER'S MANUAL

Please take a moment to read this manual prior to operation!



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BP50 CONTROLLER



Set-Up

Place in a convenient location avoiding any moisture or chemicals.

All components should be connected prior to turning on the main power switch (#5). Make sure the power cord is securely attached in the rear (#1).

BP50 controller utilizes a state of the art microprocessor chip for programming of speed control, overload and safety and much more. This includes a memory feature to remember the last user settings before the main power is turned off.

- ① **Power Outlet:** Main power cord receptacle. This also contains a safety fuse drawer and if there is no power, you can use the fuse. This is the main power switch to prepare the unit.
- ② **Power Fuse:** Shows the fuse location and is conveniently located to access if needed (5x20mm - 2amp fuse).
- ③ **Speed Pedal Interface:** Variable speed foot control connects here.
- ④ **Operation Indicator:** LED speed display and error alerts.
- ⑤ **Main Power Switch:** Turns the unit on and off.
- ⑥ **Knob Speed Indicator:** Indicates operation in the hand mode has been selected, therefore the speed is controlled by the speed dial (#10).
- ⑦ **Motor:** When the main power switch is on, the controller waits attention and is ready for use in standby mode. Touch the motor button to start the operation.
- ⑧ **Reverse Light:** Indicates operation in reverse direction has been selected.
- ⑨ **Forward Light:** Indicates operation in forward direction has been selected.
- ⑩ **Speed Control Knob:** Used to adjust or vary the desired speed. In hand mode, the speed totally controls the handpiece speed. While using in foot pedal mode, the speed dial setting can also limit the top or maximum speed for greater control and safety.
- ⑪ **Handpiece Socket:** Connects the handpiece on the plug.
- ⑫ **Foot Speed Indicator:** Indicates operation by the foot pedal has been selected.
- ⑬ **Motor Button:** Engages the handpiece for operation and use or can disengage for stopping or taking a rest from operation while remaining ready.
- ⑭ **Control Mode Button:** To operate by the speed dial and hand control or with the foot pedal and speed dial as set.
- ⑮ **Forward/Reverse Button:** Controls handpiece direction to forward or reverse.

Standard

Model	Input	Output	MaxAmp	Rotate Speed	Power	L	W	H	Wt.
BP50	AC110V 50HZ-60HZ AC220V-50HZ	DC0-36V	0.35A	1000-50,000	50W	170mm	160mm	80mm	1.561kg

Items to Check If Operation Has Failed

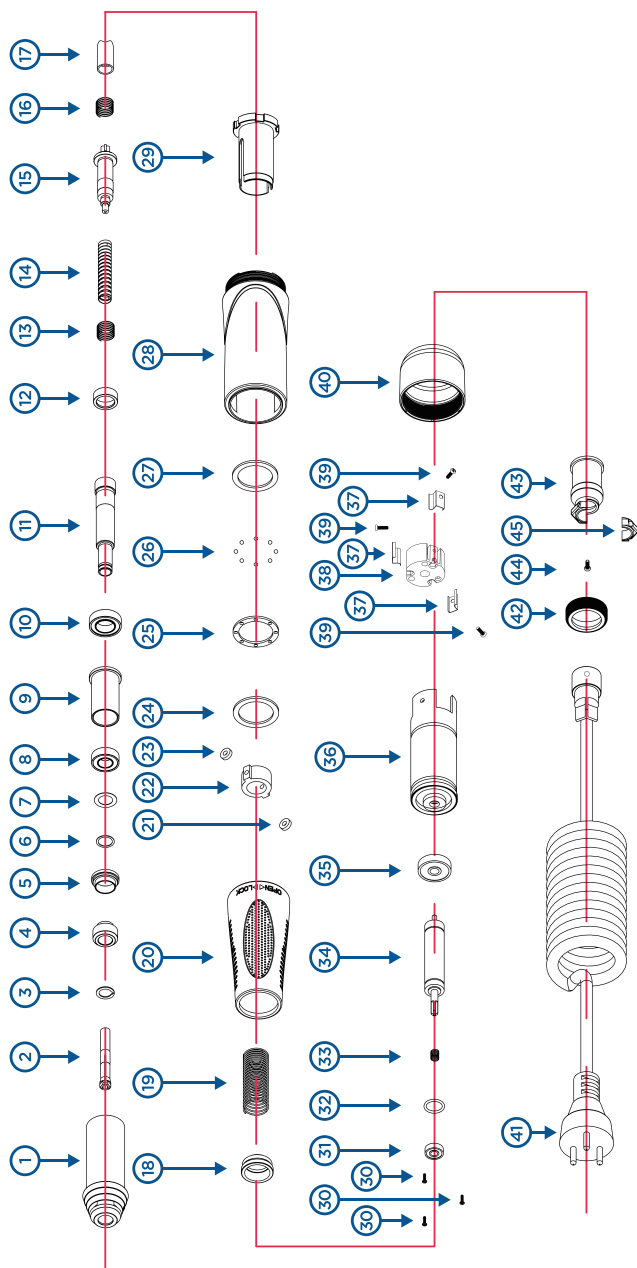
1. The controller has automatic detection for heat or temperature utilizes thermal sensors it will shut down the unit preventing operation and possible damages. The display window will flash as an alert. Turn off the main power switch (#5) and check for possible causes.
2. ALWAYS make sure that the proper input voltage is correct according to the label specifications.
3. In the event the unit does not operate, check all connections for the power cord at (#1) and the wall outlet, handpiece connection at (#11), and the foot pedal connection at (#3).

In the unlikely event of overheating, the unit will resume its operation after cooling.

Safety Tips!

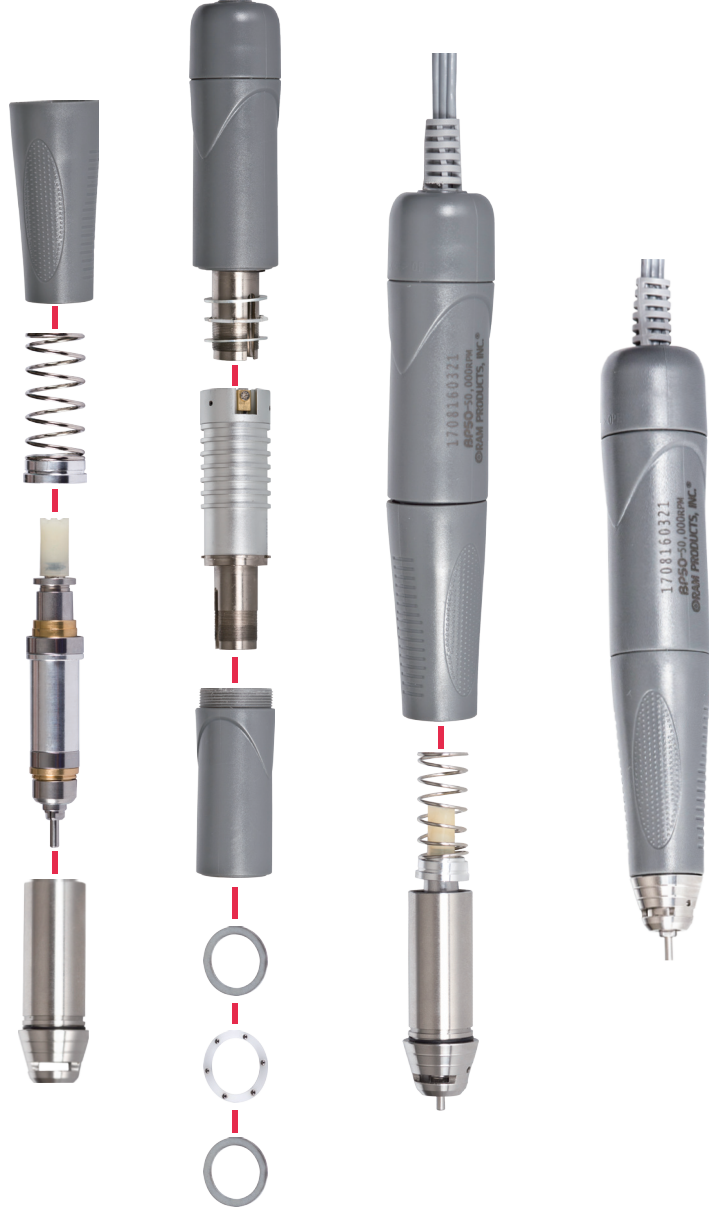
- Turn off the main power switch when not in use to avoid power and electric current to the controller.
- Always check the handpiece carefully for smooth operation prior to each use.
- Do not use with any other brands of equipment as brushless units are not compatible with other brands.

BP50 LAB TYPE HANDPIECE



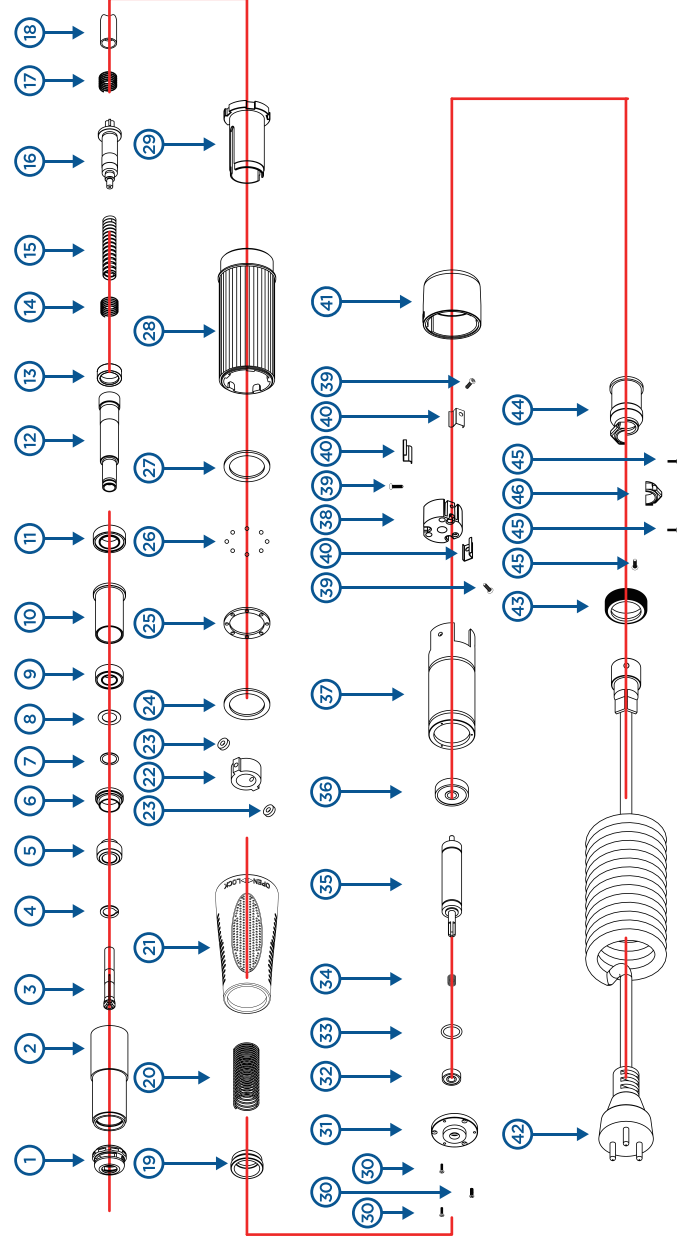
- | | |
|---------------------------|------------------------------|
| ① Front Sheath | ②④ Flat Washer |
| ② Chuck | ②⑤ Thrust Bearing Ring |
| ③ O Ring | ②⑥ Ball for Thrust Ring |
| ④ Dust Shield A | ②⑦ Flat Washer |
| ⑤ Dust Shield B | ②⑧ Motor Cover |
| ⑥ O Ring | ②⑨ Motor Stem |
| ⑦ Flat Washer | ③⑩ Small Screw |
| ⑧ 1260zz Bearing | ③⑪ 830zz Front Motor Bearing |
| ⑨ Spindle Bushing | ③⑫ Flat Washer |
| ⑩ 1480zz Bearing | ③⑬ Motor Spring |
| ⑪ Chuck Case | ③⑭ Magnetic Steel Rotor |
| ⑫ Aluminum Spring Ring | ③⑮ 830zz Rear Motor Bearing |
| ⑬ Aluminum Ferrule Spring | ③⑯ Motor Housing |
| ⑭ Coil Spring | ③⑰ Terminal Clip |
| ⑮ Chuck Joint | ③⑱ Plastic Motor Fitting |
| ⑯ Cross Plastic Spring | ③⑲ Housing Screw |
| ⑰ Delrin Fitting | ④⑰ Motor End Cap Cover |
| ⑱ Spring Holder | ④⑱ Coiled Cord Assy 1.5m |
| ⑲ Coil Spring | ④⑲ Air Tri-Nut |
| ⑳ Set Ring | ④⑳ Screws for Cord Connector |
| ㉑ Roller Rings | ④㉑ Cord Connector |
| ㉒ Roller | ④㉒ U For Cord Connector |
| ㉓ Roller Rings | |

Model	Rotate Speed	Max Torque	Lock Tool Intensity	Dimension	N.W	Cord Length	Concentricity
BP50	1000-50,000	8.5N·CM	4.5-5.5kg	152*17.72mm	200g	1.5m	0.015mm

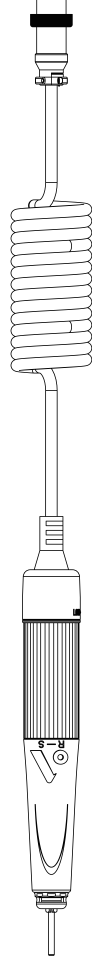


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BP50 SLIM TYPE HANDPIECE



6



- | | |
|--------------------------|------------------------------|
| ① Nose Tip | ②④ Flat Washer |
| ② Spindle Housing | ②⑤ Thrust Bearing Ring |
| ③ Chuck | ②⑥ Ball for Thrust Ring |
| ④ C-Clip | ②⑦ Flat Washer |
| ⑤ Dust Shield A | ②⑧ Motor Cover |
| ⑥ Dust Shield B | ②⑨ Motor Stem |
| ⑦ Flat Washer | ③⑩ Screws |
| ⑧ Flat Washer | ③⑪ Motor Cover for Bearing |
| ⑨ 1260zz Bearing | ③⑫ 830zz Bearing |
| ⑩ Spindle Bushing | ③⑬ Rubber Ring |
| ⑪ 1480zz Bearing | ③⑭ Motor Spring |
| ⑫ Chuck Case | ③⑮ Magnetic Steel Rotor |
| ⑬ Aluminum Spring Ring | ③⑯ 830zz Bearing |
| ⑭ Short Coil Spring | ③⑰ Motor Housing |
| ⑮ Long Coil Spring | ③⑱ Plastic Motor Fitting |
| ⑯ Chuck Joint | ③⑲ Housing Screw |
| ⑰ Short Coil Spring | ④⑰ Terminal Clip |
| ⑱ Delrin Joint | ④⑱ Motor End Cap Cover |
| ⑲ Spring Cover | ④⑲ Coiled Cord Assy 1.5m |
| ⑳ Spring | ④⑳ Air Tri-Nut |
| ㉑ Set Ring | ④㉑ Cord Connector |
| ㉒ Roller Ring | ④㉒ Screws For Cord Connector |
| ㉓ Roller for Roller Ring | ④㉓ U For Cord Connector |

Model	Rotate Speed	Max Torque	Lock Tool Intensity	Dimension	N.W	Cord Length	Concentricity
BP50	1000-50,000	7.5N·CM	4.5-5.5kg	152*17.72mm	200g	1.5m	0.015mm



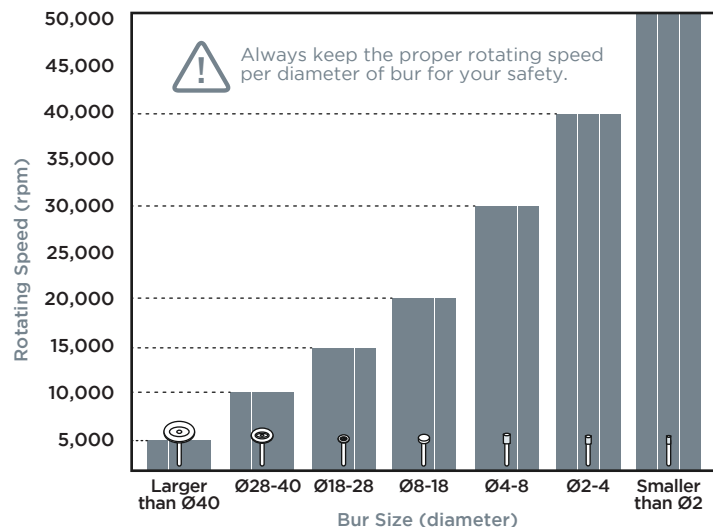
BP50 MAINTENANCE

Safety Precautions!

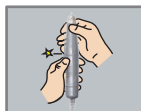
- Never use bent or damaged burs.
- Do not force any burs into the collet chuck and always check after insertion the bur is securely locked by pulling the bur.
- Always operate at a safe speed for the size and weight of the bur. Start at 0 while slowly increasing speed and securely gripping the handpiece. Operating at higher speeds often does not cut any better or faster and can increase wear on the bearings in the handpiece as well as the cutting tool.
- Follow basic safe speed operation according to the chart below and also the safety speed ratings of manufacturer of the burs.
- Never operate without a bur properly locked in the handpiece.
- After usage remove any excess dust or debris.
- Do not operate near water or moisture.
- Avoid any chemicals and disinfectants.

Safety Speed Table Guidelines

This chart for allowable rotation speed can be slightly different depending on bur materials or bur type.



- 1 Select the tools of BP50 product after examining the following conditions:
- Grinding tool performance
 - Workpieces to be ground
 - Grinding method



- 4 When mounting any kind of bur to your handpiece, insert it properly to the final depth. Secure proper mounting of the bur with the correct amount of overhang.



- 2 Do not drop the product. Dropping the motor may damage the ball bearing or weaken the durability of the motor.



- 5 Use suitable speed that has not exceeded the maximum value. Exceeding the BP50 motor's maximum speed may invite trouble including vibrations.



- 3 Inspect your BP50 before use without fail. Before using your BP50, through visual inspection, make sure that your BP50 has no flaw, crack or faulty adhesion.



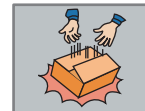
- 6 When using your BP50, wear safety goggles/glasses and dust respirators without fail. Flying chips may hurt you when grinding workpieces with hard materials. Use a coolant when grinding a workpiece at high or superhigh speed. Never touch tools with sharp edges directly.



- 7 If any abnormal vibration begins during use, stop operating your tool and remove the cause.



- 10 Never use BP50 for any purpose other than the original one, nor remodel it.



- 8 When taking your BP50 from the box, never let it tumble out or fall on the floor. Handle any BP50 product that is heavy or with sharp corners with special care.



- 11 Store BP50 in a dry place and shield from exposure to direct sunlight. Store your BP50 in a place with the lowest possible humidity and moisture content. Never miss daily inspection and maintenance.



- 9 For using any of the BP50 products, observe the operating instructions given in each manual.



- 12 Never leave your Motor Handpiece with the switch turned on, an accident may occur if it is over-heated.



Ram Website



BP50



Warranty Card Registration



How to Change Collet Chucks



How to Disassemble and Change All Bearings



Customer Service Request Form

WARRANTY PERIOD

Warranty is valid within the United States only.

ELECTRICAL EQUIPMENT - These products are under warranty for a period of ONE YEAR from the date of original installation by the purchaser.

HANDPIECES - These products are under warranty for a period of SIX MONTHS from the date of original installation by the purchaser. IT DOES NOT COVER MISUSE, NORMAL BEARING, OR CARBON BRUSH WEAR.

IN HOUSE OR FACTORY REPAIR - Repairs made under warranty will be honored until the completion of the original product warranty period. SHIPPING AND HANDLING CHARGES ARE NOT COVERED WITHIN THE WARRANTY.

PRODUCT WARRANTY

All returned items shall be free from defects/alterations in material, workmanship and original product design.

- The product shall have been used under the conditions for which it has been intended, and in a manner for which it has been designed.
- The product shall have been operated in a manner for which it was intended and in the proper environmental conditions.
- The customer must maintain the product as specified within the individual product instruction booklet.

Electrical and mechanical equipments and accessories which are mishandled, used incorrectly, and/or used for a purpose other than that for which they were designed and intended, will void the product warranty.

WARRANTY CLAIMS

Should your product require service attention within the warranty period, we will elect to make the necessary repair or replacement at no charge and providing the product is delivered prepaid to the proper address. However it is recommended that returns be adequately insured against carrier loss or damage.

All claims should describe the specific problem for accurate analysis and evaluation, the return date of the warranty card along with the supply house and/or dealer name.

No product replacement is permitted without prior authorization.

PRODUCT: _____
SERIAL NO.: _____
PURCHASE FROM: _____
PURCHASE DATE: _____
INSTALLATION DATE: _____

WARRANTY REGISTRATION

REGISTER ONLINE at www.ramhp.com/t-warranty-4.aspx

In order to validate your warranty, this card must be filled out completely and mailed within 10 days of purchase/installation.

PLEASE PRINT OR TYPE

NAME: _____
ADDRESS: _____

CITY: _____

STATE: _____ ZIP CODE: _____

PRODUCT: _____

CITY: _____

SERIAL NO(S): _____

PURCHASE DATE: _____

INSTALLATION DATE: _____

DEALER OR SUPPLY HOUSE NAME AND ADDRESS: _____

The short survey below is designed to improve the service and quality of product supplied to our customers. Please take a few minutes to complete the survey.

Did the item arrive in a satisfactory condition? **YES** or **NO**?
If NO please explain: _____

Did the instruction manual provide all details clearly for proper installation and operation? **YES** or **NO**? If NO please explain: _____

What factor(s) were involved in your decision to purchase this product:
☐ Advertisement ☐ Previous Purchase of a Ram Product
☐ Distributor Recommendation ☐ Recommendation by Colleague

Any feedback, comments or suggestions: _____

Thank you for your feedback.



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