

# PRIMUS 45 HANDPIECE

## OWNER'S MANUAL



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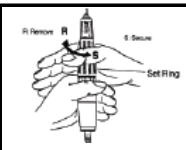
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#### A. BASIC SAFETY AND PRECAUTIONS

1. When using electric tools, use basic safety precautions in order to reduce risk of fire, electric shock, and personal injury.
2. Do not expose electric tools to water, or use in damp or wet locations.
3. Do not wear loose clothing or jewelry and secure long hair as they can be caught in the drill.
4. Wear protective eyewear, wear proper clothes for working with dust, always hold the handpiece securely, hold the handpiece while in operation with the power on.
5. Do not leave the equipment rotating on table or floor.
6. Keep away from children.

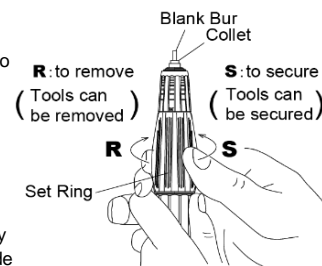
**Warning: NEVER TURN SET RING WHILE MOTOR IS ROTATING. PERMANENT DAMAGE TO THE MOTOR IS POSSIBLE.**



#### B. INSTRUCTIONS FOR CHANGING TOOL

Originally,  $\varnothing 2.34\text{mm}$  Blank Bur is mounted. Please use only the tools with  $\varnothing 2.34\text{mm}$  shank which have been authorized.

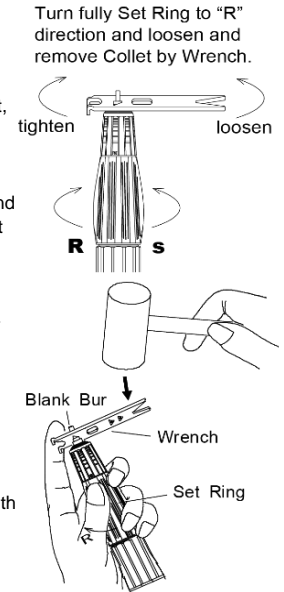
1. While holding the handpiece, turn the Set Ring fully toward (R) direction. Take out the Blank Bur and put the tool into the bottom Collet.
2. Turn the Set Ring to (S) direction, to secure your tool.
3. Spin the tool by fingers to confirm that the tool is securely fixed. Be careful with the blade (edge) of tool not to hurt the fingers.



#### C. INSTRUCTIONS FOR CHANGING COLLET CHUCKS

Originally,  $\varnothing 2.34\text{mm}$  Collet is mounted. It is possible to replace with other sizes of Collets according to demand. When replacing the Collet, insert the Blank Bur or tool and loosen or tighten the Collet using the wrench which has been supplied.

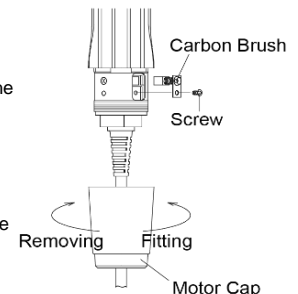
1. While holding the handpiece, turn the Set Ring fully toward (R) direction. Be sure that the Blank Bur is inside of Collet. Place the Wrench on the Collet, and turn it toward the direction of "loosen". If the Collet slips and impossible to loosen, try to hit the Wrench by Hammer at an instance, and remove the Collet. Be careful not to hit your fingers.
2. Place the other Collet and turn the Collet toward the direction of "tighten". Make sure to secure the collet firmly.
3. Take the Wrench out and turn the Set Ring back toward (S) direction.
4. Spin the tool by fingers to confirm that the tool is securely fixed. Be careful with the blade (edge) of tool not to hurt the fingers.



#### D. INSTRUCTIONS FOR CHANGING BRUSHES

When Carbon Brush is worn out, the Handpiece rotates unstably or stops. Please replace the Carbon Brush, we recommend to replace both sides of the Carbon Brush at the same time.

1. Turn the Motor Cap to the left and remove it.
2. Using Phillips Screw Driver, remove the screw that is securing the Carbon Brush. Be careful not to loose the screw.
3. Take the worn out Carbon Brush out, and replace with a new one and secure it by screw.
4. Turn the Motor Cap to the right to fit onto the Handpiece.



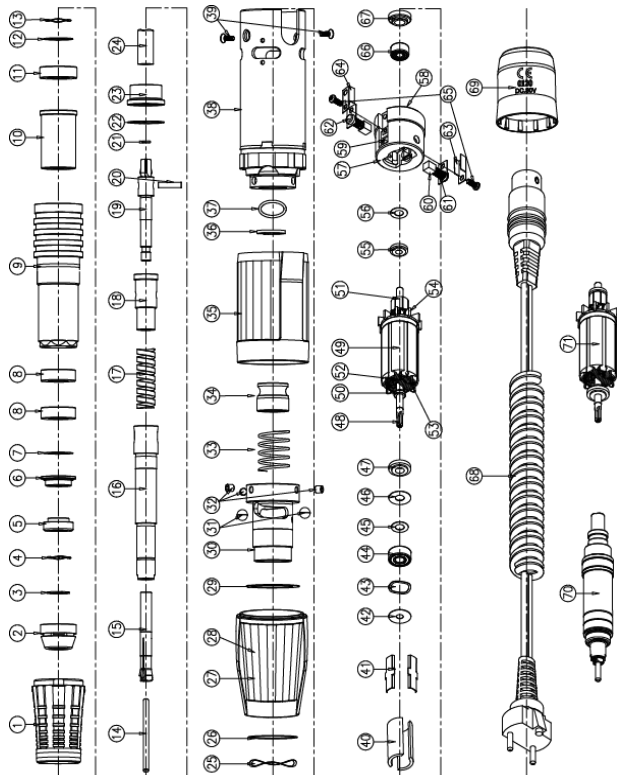
#### E. SUGGESTED MAINTENANCE AND TIPS

1. Open, inspect and test each item although we do test carefully prior to shipments. Upon receiving repaired items, to check or test as well.
2. All brush handpieces include a wrench tool which if needed can be used to remove the collet chuck for replacement or cleaning. All brush handpieces come with a spare set of 2 replacement carbon brushes. This is a normal wearing part and estimated at 1,000hrs.

Perhaps change/replace every year or inspect once a year for wear. It is suggested to tape these to the bottom of the controller and date it. For the laboratory, it is easier and only a few minutes to replace and maintain once a year as a minimal low cost maintenance. In the operator area, every 2-3 years should be adequate.

3. Never use chemicals for cleaning as often they are harsh and can corrode parts. Use only isopropyl alcohol in either sealed wipes or with a tissue to clean the exterior and any dust or debris that has accumulated.
4. Use good quality burs. Do not force any burs into the chuck, make sure burs are not eccentric. If any rust on the bur shaft, it is best to discard. Always leave a bur securely locked in the handpiece. Wait for the handpiece to stop spinning before changing burs.
5. After sterilization of burs make sure they are completely dry and avoid getting chemicals / disinfectants inside the handpiece.
6. Electric lab handpieces have grease sealed ball bearings. Please do not oil as you would air or high-speed handpieces as this would break down the grease sealed bearings.
7. For cleaning, it is suggested once a week to use a can of compressed air often sold at office supply, computer supply stores. (The compressed air at the bench is high pressure and can not only push any dust or dirt inside further but also can upset the small balls that are part of the bearings which are the life line of the handpiece.

### PARTS LIST FOR FOR PRIMUS 45 HANDPIECE



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NO.	PARTS NAME	NO.	PARTS NAME
1	HAND CAP COVER	36	SNAP RING
2	HAND CAP HEAD	37	1030 FIX O-RING
3	CHUCK HOUSING C-RING	38	MOTOR CASE
		39	MOTOR CASE BOLT
4	1370 WAVE WASHER	40	SM110 MAGNET C
5	COLLAR	41	SM110 MAGNET GUIDE
6	BEARING FIX WASHER	42	COPPER WASHER
7	1370 WASHER	43	1030 WAVE WASHER
8	BALL BEARING(1370ZZ)	44	BALL BEARING(1040ZZ)
9	HAND CAP BODY	45	1040 COPPER WASHER
10	BUSH	46	1040 TEFLON WASHER
11	BALL BEARING(1480ZZ)	47	1040 SPACER
12	1480 WASHER	48	SHAFT Ø4
13	1480 WAVE WASHER	49	CORE
14	TEST BUR	50	FRONT SHAFT BUSH Ø4
15	COLLET CHUCK 2.35	51	COMMUTATOR
16	CHUCK HOUSING	52	COIL
17	CHUCK SPRING	53	WEDGE
18	JOINT SHAFT BODY	54	FAN
19	JOINT SHAFT	55	830 SPACER
20	JOINT SHAFT FIX PIN	56	TEFLON WASHER
21	BH60 O-RING	57	BEARING HOUSING
22	BEARING BUSH COLLAR WASHER	58	BACK BEARING SIT
		59	BRUSH HOLDER
23	BEARING BUSH COLLAR	60	CARBON BRUSH
24	BH60 CONNECTOR	61	CARBON BRUSH SPRING
25	SET RING WASHER		
26	SET RING TEFLON WASHER	62	CARBON BRUSH CAP
		63	TERMINAL (L)
27	SET RING	64	TERMINAL (R)
28	SET RING INSERT	65	CARBON BRUSH BOLT
29	CAM TEFLON WASHER	66	BALL BEARING 1030ZZ
30	CAM	67	BR BRUSH BOLT
31	CAM BALL	68	MOTOR CORD
32	M2.5	69	CARBON HOUSING COVER
33	MOVING HOUSING SPRING		
34	MOVING HOUSING	70	PRIMUS 45 SPINDLE ASSEMBLY
35	MOTOR CASE COVER	71	ARMATURE ASSEMBLY

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### WARRANTY PERIOD

Warranty is valid within the United States only.

**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 - WARRANTY CLAIMS —

Please visit our website, [www.ramprodinc.com](http://www.ramprodinc.com), to download the **Customer Service Request Form** located at the top right of the website page. For warranty claims, please include a copy of your invoice or reference purchase date. Repairs carry a 90 day warranty.

We maintain parts for Ram and many other similar models to perform service. When sending items for service please pack it well with proper protection. It is your responsibility to get the unit to us. Return shipping and handling is covered by Ram Products, Inc.

### 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 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 within the warranty period, we will elect to make the necessary repair or replacement at no charge including return shipping. It is your responsibility to return the product to Ram Products and it is recommended that returns have tracking information and to 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.

### WARRANTY REGISTRATION

In order to validate your warranty, the form must be filled out completely on the website: [www.ramprodinc.com/warranty](http://www.ramprodinc.com/warranty) within 10 days of purchase/installation.

 **RAM PRODUCTS, INC.**<sup>®</sup>

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