

## Repair Services

Other service or repairs should be done by a competent repair person or you can return your Foredom equipment to the factory. If you wish, send your Micro Grinder directly to the factory marked "Attention: Repair Department". Include a brief note describing the problem, your name, address, phone numbers, and email address.

If you are unable or do not wish to unsolder and solder motor brushes and your H.MH120 handpiece needs new motor brushes installed, follow the directions above. Our Repair Department will replace your old motor brushes with new ones for \$20.00 if you send your spare pair of motor brushes with the handpiece. **Add \$15.00 if you want us to provide new motor brushes.**

## Register Your Power Tool

Please take the time to complete the Warranty Registration Form for your new Micro Grinder Kit on our website: [www.foredom.com](http://www.foredom.com). If you prefer, you can register your unit over the phone by calling Foredom Customer Service: 203-792-8622, Monday – Friday, 8am to 4:30pm ET. We will keep your information and serial number on file.

## Replacement Part List

Motor Brush (pair)	HP2-326
Chuck Key with handle	HPCK-O

# FOREDOM®

## Operation and Maintenance Manual for K.1020 Micro Grinder Kit

### Warranty

Foredom warrants its product to be free of defects in material or workmanship for a period of one year after purchase. During the warranty period, the defective product will be repaired or replaced without charge or, at our option, the purchase price will be refunded. This warranty does not cover damage caused in transit or by accident, misuse, or ordinary wear.

ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF FITNESS AND MERCHANTABILITY, ARE HEREBY LIMITED IN DURATION TO A PERIOD ENDING ONE YEAR FROM DATE OF PURCHASE, AND WE WILL NOT BE LIABLE OR RESPONSIBLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES.

Repair or replacement will be made at our option if the product is returned postpaid to: **The Foredom Electric Company, 16 Stony Hill Road, Bethel, CT 06801**

All warranty repairs must be done at the factory at the address above. We will not pay any shipping or transportation charges.

This warranty only covers the original purchaser of the product. Proof of purchase may be requested.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### For More Information

For more information on Foredom machines, handpieces or accessories, contact your local dealer. When no local dealer is available, write, call or fax: The Foredom Electric Company, 16 Stony Hill Road, Bethel, CT 06801 203-792-8622, Fax: 203-796-7861

Visit our website: [www.foredom.com](http://www.foredom.com)



### For Your Safety:



Read this Manual before operating your Foredom Micro Grinder Power Tool.



Always wear eye protection while using the Foredom Micro Grinder Handpiece.

# Safety Instructions



A Micro Grinder Handpiece is a high speed rotary power tool which can be dangerous and cause serious injury if it is not used properly.

**NEVER** operate it without wearing eye protection.

- **ALWAYS** wear proper eye and face protection.
- **ONLY** use accessories rated for speeds of 20,000 rpm or higher when operating this micromotor.

- **ALWAYS** observe the manufacturer's maximum speed rating when using any accessory.

- **NEVER** use or continue to use any accessory which appears to be damaged, loose, vibrating, bent, or out of balance. Inspect each accessory for cracks or flaws before use.

- **ALWAYS** insert the shank or arbor of an accessory or mandrel into the chuck of the handpiece as far as possible in order to provide proper support and close the chuck securely. **DO NOT** use accessories with shanks that are less than 1" long.

- **NEVER** use excessive side pressures which may tend to bend or break the shank or arbor of an accessory. Let the speed of the accessory do the work.

- **DO NOT** stall the motor by jamming or using excessive pressure on the mounted point, buff, wheel or accessory. This can result in damage to the motor.

- **WEAR** a dust protector to prevent the inhalation of harmful dust or debris from grinding, carving or other operations performed with this power tool.

- **DO NOT** cover the ventilation slots or handpiece motor with cloth or tape. Air must pass freely through the intake and exhaust ventilation slots to properly cool the motor.

- If the power cord or plug to the handpiece is damaged, repair or replace immediately. **NEVER** operate with a damaged power cord.

- **USE** a dust collector (vacuum system) to pull sawdust, grinding dust, or other debris away from the work area and the control box and handpiece intake vents.

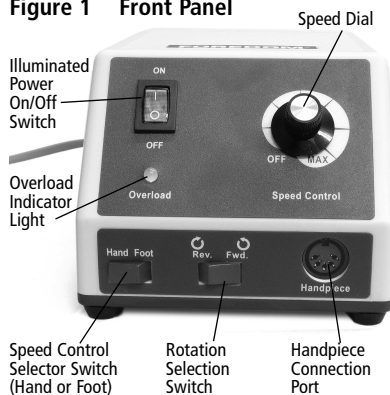


- **NEVER** plug the Handpiece into the Variable Speed Foot Control Connection Port on the back of the Control Box.
- **ALWAYS** plug the Handpiece into the Handpiece Connection Port on the Front of the Control Box.
- **DO NOT** operate the handpiece in the presence of any flammable liquid or gas.

## Assembly Instructions

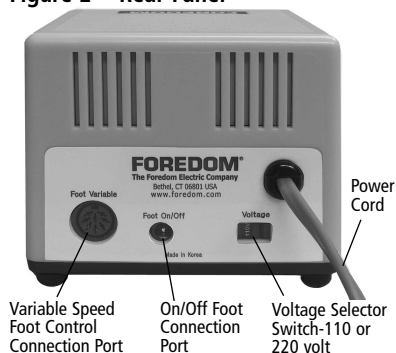
**Do not plug into a power outlet before connecting the handpiece or foot pedal. Check to see that the voltage selector switch on the back of the control box, is set to the voltage to be used—110 or 220 volt.**

Figure 1 Front Panel



Speed Control Selector Switch (Hand or Foot)      Rotation Selection Switch      Handpiece Connection Port

Figure 2 Rear Panel



Variable Speed Foot Control Connection Port      On/Off Foot Connection Port      Voltage Selector Switch-110 or 220 volt

## Connecting Handpiece

Attach the Micro Grinder handpiece to the control box by plugging the coiled cord into the Handpiece Connection Port on the lower right side of the front control panel (Figure 1). Use keyway for proper alignment when plugging in the cord.

**NEVER** plug the handpiece into the Variable Speed Foot Control Connection Port.



## Connecting the Variable Speed Foot Control

The Variable Speed Foot Control is suitable for either 110 or 220 volt operation. Attach it

by inserting the connector into the Variable Speed foot control connection port on the rear panel of the control (Figure 2) using the keyway for proper alignment. It is not necessary to have the foot pedal connected to the control box to operate the dial speed control. The Micro Grinder control and handpiece are now ready to operate.

## Connecting Power Cord

Before connecting the power cord plug (Figure 2) to a power outlet, select the proper voltage (110 or 220v) on the back of the control box. Put the On/Off Selector Switch in the OFF position and turn the dial speed control to the OFF speed position. Now plug in the power cord to an AC current outlet.

## Connecting Optional On/Off Foot Switch

This switch (p/n HP4-927) is available separately and attaches by inserting the connector into the On/Off foot connection port on the rear panel of the control (Figure 2) using keyway for proper alignment. This switch allows you to turn the motor on and off without changing the speed set by the dial.

HP4-927



## Operating Instructions for HP4-917 Control Box

### 1. Power On/Off Switch

When the Power On/Off Switch is in the ON position the switch lever will light up. This switch must be in the ON position for the handpiece to run with either the dial speed control or the foot speed control selected.

Always turn the Dial and Power On/Off Switch to the Off position when not in use.

### 2. Hand or Foot Selector Switch

With the Dial and Power On/Off Switch in the OFF position, select either foot or hand speed control.

- With the Speed Control Selector Switch in the Hand position, the handpiece will run at the speed set by the Dial Speed Control.
- With the Speed Control Selector Switch in the Foot position, the handpiece will not operate until the Foot Pedal is depressed.

### 3. Forward/Reverse Rotation Selection Switch

With the Power On/Off Switch in OFF position, select the desired handpiece rotation by moving the switch to Fwd. for FORWARD or Rev. for REVERSE rotation.

**Changing handpiece rotation direction while in operation is not recommended.**

### 4. Regulating Speed

- The Dial Speed Control varies the speed of the handpiece from minimum to maximum when the Speed Control Selector Switch is in the Hand position.

- The Dial also controls the maximum speed that can be reached when using a foot pedal.

**To achieve maximum speed with a foot pedal, the dial speed control must be turned all the way to the Max setting.**

### 5. Handpiece Overload Protection

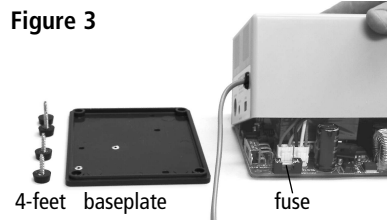
The red overload light will come on with an audible alarm, and the handpiece will stop when too much load is placed on the handpiece. Immediately turn off control by putting the Power ON/OFF switch in OFF position. Put power switch in ON position again when overload condition is corrected. There may be a time delay of several seconds before the overload trip resets.

## 6. Fuse Protection

The internal circuit is protected by a 3.15 Amp, 5mm x 20mm, Bussman Type GDC-3.15A or equivalent fuse. A blown fuse usually indicates a short circuit condition on the circuit board.

The blown fuse should require that the board be checked by a qualified technician. Disconnect the power cord, unscrew the four feet and remove the baseplate. The fuse is located in the top left corner of the circuit board. Replace fuse and reassemble the baseplate with four feet. Re-connect the power cord and test unit operation.

Figure 3



## H.MH-120 Micro Grinder Handpiece Changing Accessories:

Burs and other accessories can be inserted or removed from the handpiece chuck when the jaws are open. These handpieces have a geared 3-jaw #0 chuck. To Open the Chuck— Put the power switch on control box in OFF position and wait for handpiece to stop rotating.



Open chuck jaws as far as necessary with key provided.



Insert shank of accessory fully into the chuck.



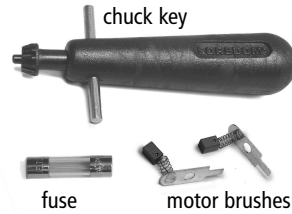
Tighten each of the jaws with chuck key until accessory is secure and centered.

If accessory does not run true, reopen jaws, rotate accessory and retighten.

To release accessory, simply reopen chuck jaws with key and pull out accessory.

## Supplied with Micro Grinder

The K.1020 Micro Grinder Kit comes supplied with a chuck key for changing accessories, a spare pair of motor brushes, and a spare fuse.



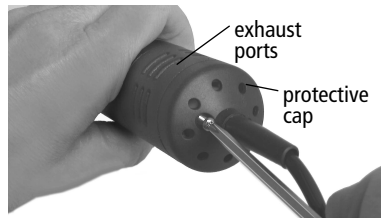
## Maintenance

The H.MH-120 handpiece has permanently lubricated ball bearings that do not require lubrication. Putting even a small amount of oil into the handpiece can damage it.

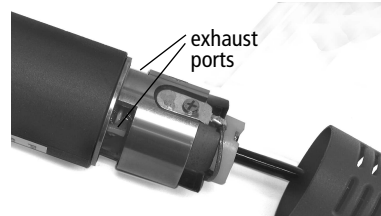
## Cleaning Handpiece:

Use the Handpiece in as clean and dust free an environment as possible.

**If the Micro Grinder Handpiece is used for woodcarving, it should be cleaned after every use.** With handpiece power cord disconnected from control box, remove the two screws securing the protective cap (shown below) and use a clean cloth to wipe dirt, chips or dust off from the exhaust ports and inside the cap.



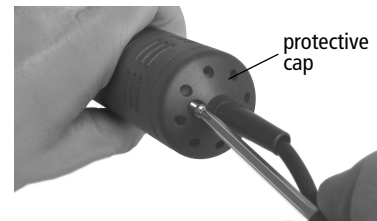
A cloth with a small amount of alcohol solution can be used to clean the outside of the handpiece if necessary. **Do not use any other cleaning fluids or immerse handpiece in any liquid. The H.MH-120 Handpiece is not autoclaveable.**



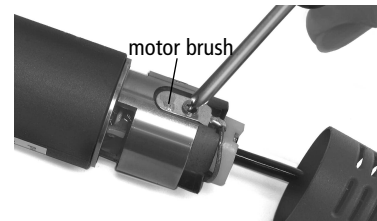
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## Checking/Changing Carbon Brushes:

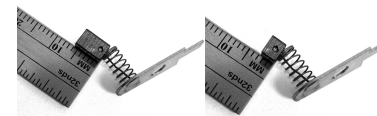
A spare set of motor brushes is supplied with each handpiece. Depending on how long the handpiece is used each day, the brushes should be checked for wear periodically (about every 200 hours of use) and replaced when the brush is less than 2.5mm (3/32") long.



1. With handpiece power cord disconnected from control box, remove the two screws securing the protective cap from rear of motor (see Figure 10). Remove the protective cap.



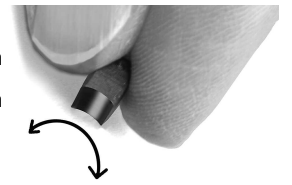
2. With small crosspoint screwdriver remove screws and brush assemblies one at a time when reusing existing brushes. Check length of carbon brush from spring to curved side of brush. **Brushes should be removed, and replaced if less than 2.5mm (3/32") long.**



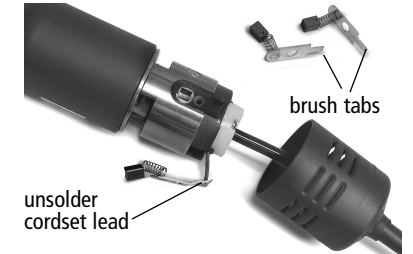
new motor brush worn motor brush

If you are unable or do not wish to unsolder and solder motor brushes and your H.MH120 handpiece needs new motor brushes installed, follow the directions under 'Repair Services'. Our Repair Department will replace your old motor brushes with new ones for \$20.00 if you send your spare pair of motor brushes with the handpiece. Add \$15.00 if you want us to provide the motor brushes.

when you reinsert a motor brush the curve should align with the handpiece contour

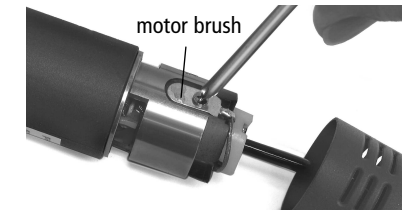


**If the motor brush is long enough to continue using be sure that when you reinsert a motor brush the curve aligns with the contour of the outside of the housing and the curve of the motor armature within.**

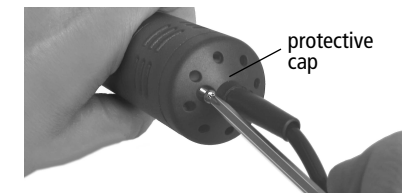


3. If new brushes are needed, **Always replace both motor brushes** even if one is less worn than the other. First, unsolder cordset leads one at a time, from old brush tab and solder lead to new brush tab.

4. Reinsert brush assembly or new assembly into brush tube. Replace and tighten screws.



5. Screw protective cap back onto rear of motor housing so that top of brush assembly is completely tightened.



6. If new brushes are used, run the handpiece for 30 minutes at half-speed no load to confirm proper function, then use.

5