

FOREDOM®

Operation and Maintenance Manual for 1045 Micro Motor Kit



For Your Safety:

- Read this Manual before operating your Foredom Micro Motor Power Tool.
- Always wear eye protection while using the Foredom Micro Motor Handpiece.

Safety Instructions

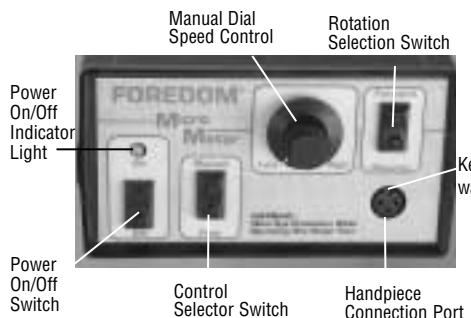
- **ALWAYS** wear proper eye and face protection. Safety glasses have been provided with your new Micro Motor. For your own protection, they should be worn (or a face shield) whenever you operate a Foredom® or any power tool to prevent serious eye or face injuries.
- **ONLY** use accessories rated for 45,000 rpm or higher speeds when operating this micro motor.
- **ALWAYS** find out the manufacturer's speed rating before using any accessory.
- **NEVER** use or continue to use any accessory which appears to be damaged, loose, vibrating or out of balance. Inspect each accessory for cracks or flaws before using it.
- **ALWAYS** insert the shank or arbor of an accessory or mandrel into the collet or chuck of the handpiece as far as possible in order to provide proper support and close the collet or chuck securely.
- **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 you from inhaling harmful dust or debris from grinding, carving or other operations performed with this power tool.

A Micro Motor 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.

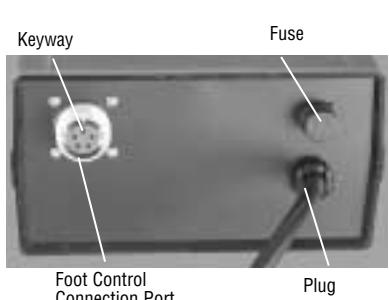
Assembly Instructions

Do not plug into power outlet before connecting handpiece or foot pedal.

Front Panel (Figure 1)



Rear Panel (Figure 2)



Connecting Handpiece:

Attach the handpiece to the control by plugging the coiled cord into the handpiece connection port on the lower right side of the front control panel (see Figure 1). Be sure to align pins properly using keyway when plugging in the cord.

NEVER turn or start the MH-145A Handpiece while chuck is in open (unlocked) position. This can damage the handpiece. Always operate it with a bur or other accessory in the chuck and with the chuck in the closed position.

DO NOT operate the handpiece in the presence of any flammable liquid or gas.

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.

Connecting Foot Pedal:

The Foot Pedal Control can be used with either 115 Volt or 230 Volt models of the control. Attach it by inserting the foot pedal connector pins into the foot control connector port on rear panel of control (see Figure 2) using keyway to properly align pins. Then tighten the threaded locking collar by turning it clockwise. (It is not necessary to have the foot pedal connected to the control box to operate the dial speed control.) The Micro Motor control and handpiece are now ready to operate.

Connecting Power Cord:

Before connecting power cord plug (see Figure 2) to a power outlet, put the On/Off Selector Switch in the OFF position and turn the dial to the LOW speed position. **Be sure that the handpiece chuck is closed with (or without) an accessory in it.** (Operating the handpiece with the chuck in the open position can severely damage the motor of the handpiece.) Now plug in the power cord to a 115 Volt (or 230 Volt) AC current outlet. Refer to the section below for selecting the Manual/Foot and Forward/Reverse switches.

Operating Instructions

FM3545 Control

Power On/Off Switch and Indicator Light:

With the Power On/Off Switch in the ON position and the Control Selector Switch in the MANUAL position, the Power Indicator Light will go on immediately and the handpiece will run at the speed set on the Dial Speed Control.

With the Power On/Off Switch in the ON position and the Control Selector Switch in the FOOT position, the Power Indicator Light will go on but the handpiece will not rotate until the Foot Pedal is depressed.

Control Selector Switch:

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

Forward/Reverse Rotation Selection Switch:

With Power On/Off Switch in OFF position, select the desired handpiece direction by moving switch to FORWARD or REVERSE position. **Do not change handpiece direction while it is running.** This can damage the handpiece motor.

Manual Dial Speed Control:

The dial control will vary handpiece speed from low to full speed. It will only function while Power On/Off Switch is in ON position and Control Selector Switch is in MANUAL position.

Handpiece Overload Protection:

If the Handpiece is used with a locking ring left in the "R" position or in overload condition, it will trigger the overload circuit protector. The Power ON light will change in color from green to red and handpiece will stop. Immediately turn off control by putting Power ON/OFF switch in OFF position. Put power switch in ON position again when overload condition is corrected.

Fuse Protection:

The transformer and control circuit board are protected from power line current surges or shorts by a 1.5 Amp fuse in fuse holder in rear panel of control (see Figure 2, page 3). It can be checked or replaced by unscrewing cap and inserting a new fuse if necessary.

MH-145A Micro Motor Handpiece:

The MH-145A Micro Motor Handpiece is intended only for fine finishing and detailing work. It should not be used to remove large amounts of material in carving or other applications. If the handpiece is misused or abused, it will not be covered under warranty.

Changing Accessories:

Burs and other accessories can be inserted or removed from the handpiece collet when the collet is open.

To open the collet—

1. Put the power switch on control box in OFF position and wait for handpiece to stop rotating.
2. Twist locking ring toward "R" until collet snaps open.
3. Insert shank of accessory fully (about $1\frac{1}{8}$ ") into collet for maximum support.
4. Twist knurled grip toward "S" until it snaps to lock collet.

Never turn power on to handpiece when collet is open. The spindle is in a locked position and will not turn which will result in damage to the motor.

Collets Available for the MH-145A Handpiece:

Part No. HP813516: 3/32" (2.35mm) Collet (supplied)

Part No. HP813517: 1/8" Collet (supplied)

Part No. HP813518: 3mm Collet (optional)

Collet Adapters:

Use collet adapters with different shank size accessories without having to change collets.

Collet Size	Accessory Shank Size
Part No. HPLA-3234:	1/8" to 1/16" 1/16"
Part No. HPLA-3235:	3mm to 3/32" 3/32"
Part No. HPLA-3236:	1/8" to 3/32" 3/32"

Installing/Changing Collets:

The 1045 Micro Motor Kit comes with a 3/32" collet in your handpiece and a 1/8" collet that is quick and easy to install with the collet changing wrench shown below in Figure 3.

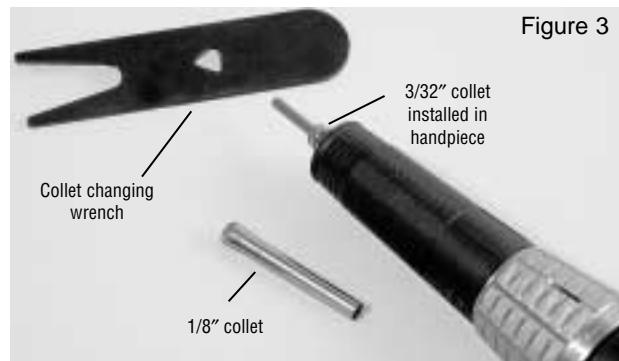


Figure 3

1. Twist locking ring on handpiece toward "R" position until collet snaps open. In this open position, the spindle remains locked in place and cannot spin freely.

Figure 4



2. Place collet changing wrench over front of collet with triangle shaped hole aligned as shown in Figure 4.
3. Loosen collet by turning wrench counterclockwise while looking down on the upturned handpiece like a clock face. Remove collet.
4. Insert new collet. Finger tighten down in a clockwise motion until you meet some resistance. Apply wrench and continue making several more turns for a secure fit.

Caution: Collet must be tightened with a wrench until it cannot be turned farther. This will involve several turns beyond the initial perceived spot of resistance achieved by finger tightening. If collet is too loose or absent, spindle will not turn.

Maintenance

The MH-145A 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 Motor Handpiece is used for woodcarving, it should be cleaned after every use.** Open handpiece and wipe dirt, chips or dust out with a clean cloth. A cloth with a small amount of alcohol solution can be used to clean outside of handpiece if necessary. **Do not use any other cleaning fluids or immerse handpiece in any liquid. The MH-145A Handpiece is not autoclaveable.**

Checking/Changing Carbon Brushes:

A spare set of carbon 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 the 2mm (5/64") long.

To Check/Replace Motor Brushes:

1. Unscrew protective cap from rear of motor (see Figure 5) by turning in counterclockwise direction while gripping handpiece body. (It has a standard right hand thread.)
2. With small crosspoint screwdriver remove screws and brush assemblies one at a time. Check length of carbon brush from spring to curved side of brush. **Brushes should be removed, examined, and replaced (if necessary) one at a time. Pay careful attention to the orientation of the brush curve in relation to the curve of the motor armature. This same orientation must be maintained when replacing brushes.**
3. Re-insert brush assembly or new brush assembly into brush tube. Replace and tighten screws.
4. Screw protective cap back onto rear of motor housing so that top of brush assembly is completely covered.

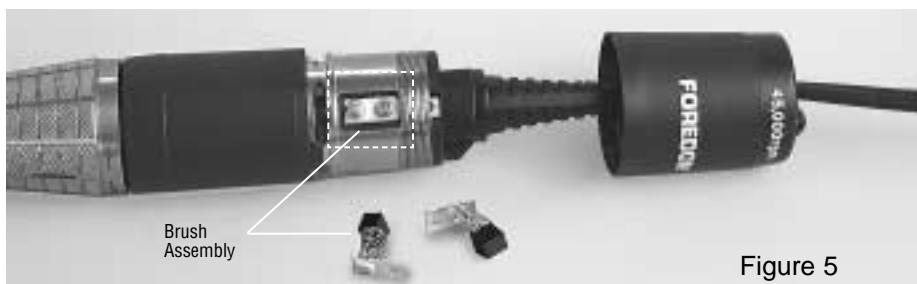


Figure 5

Repair Services

Authorized repair service is available at the Foredom factory in Bethel, CT. Send items for repair to the factory marked "Attention: Repair Department". Enclose the item(s), a packing list, and information regarding the problem or repairs required. Estimates of repair cost will be made upon request. It is our policy not to proceed with a repair without your approval if the cost (labor plus parts) is more than fifty percent of the cost for a new replacement. You will be notified by mail and advised of the cost to repair and to purchase a new replacement. Please allow three business days for an estimate to be done and five to seven business days for repair work to be completed after we receive your approval to proceed.

Owner's Registration Card

Send your Owner's Registration Card to Foredom right away. We will keep your card in our Owner's Registration File.

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 on line at: www.foerdom.com**