Foredom®

Buffing and Polishing Guide

1. Safety Recommendations

Always wear safety glasses to prevent eye injury caused by flying debris or injury from a piece that is thrown back by the wheel.

Do not wear loose clothing which might get caught in the equipment.

Always wear a respirator and work in a well-ventilated area to avoid inhaling dust into your lungs. Foredom’s new Filter Hood helps remove hazardous dust – see listing inside.

Always hold your work firmly. Gloves are a practical way to hold items that become hot. Small pieces should be held with a hand vise or wedge clamp.

Buff 3” and larger are for use on tapered spindles at 5,000 RPM Max Speed.

Use 1” and 2” buffs with an A-M78 mandrel at 20,000 RPM Max Speed.

2. Applying Foredom compounds to buffing wheels on lathes

A. While the wheel is revolving toward you, pass a bar of compound lightly across the face of the wheel, slightly below the motor spindle (See Fig. 1), until the face of the wheel is lightly coated. Always apply the compound to the wheel and never to the article itself.

B. Spread the compound evenly by holding a clean piece of flat metal against the wheel face. When the compound is evenly distributed, the wheel is ready for buffing or polishing. Apply additional compound as needed with a wiping motion.

3. Applying Foredom compound to buffs mounted on mandrels (flex shaft handpieces)

A. Pass the bob or wheel lightly over the bar of compound. Be careful not to overload.

B. Spread the compound over the surface of the bob or wheel by lightly rubbing it on a piece of clean, flat metal, until the compound is evenly distributed.

C. Reapply in the same manner, when needed.

4. Applying compounds to previously used wheels

It is best to use a separate wheel for each type of compound to avoid contamination and scratches. When absolutely necessary, used wheels should be cleaned by holding a file edge or the edge of a hack saw blade against the revolving wheel. Only coarser compounds than the one used previously should be applied to the used wheel. Never use a final polishing or coloring compound on a wheel or buff that has been previously used for coarse cutting or buffing.

5. Buffing and Polishing

A. Make sure the wheel is revolving toward you from top to bottom. Grasp your workpiece firmly, remembering that metal will become hot during buffing or polishing operations. Small articles can be held with hand vises or wedge clamps, and chains can be wrapped around a piece of wood. Keep the upper edge of the workpiece away from the wheel to avoid having it torn from your hands.

B. Press the workpiece firmly against the revolving wheel, slightly below the center. The compound will stick to the article if you are pressing too lightly; and the wheel will slow down if you are pressing too firmly. See Fig. 2.)

Buffing and Polishing continued

C. Keep the workpiece in constant motion, turning it quickly. This will help avoid buffing or scratch marks. As a rule of thumb, 80%–90% of the operation will be spent on buffing (usually with Tripoli), and 10%–20% will be spent on the final polishing operation usually with platinum white or red rouge.

6. Cleaning

Always clean the residue of a compound off the workpiece before switching to another compound. Generally, a hot water solution with a few drops of ammonia works well. An ultrasonic cleaner can also speed up the cleaning operation. Dry thoroughly.

7. Terms and Definitions

Burnishing – A metal surface is brightened with a highly polished tool. Often used to remove deep scratches or to add contour, such as a beveled edge.

Buffing (Coarse) – “Cutting down” with a coarse compound, such as Emery, to remove surface blemishes. A thin layer of metal (scratch deep) is actually removed. Requires surface speed. Prepares surface for polishing.

Coloring – Bringing out the natural color and luster of precious metals. Usually accomplished with softer or finer compounds (ie. Platinum White or Red Rouge).

Compound – The material applied to the wheel or bob for the desired finished effect – ranging from coarse Emery cake with grit, to ultra-smooth rouges with no grit.

Cutting Down – The initial stage of buffing, using an abrasive compound to remove a layer of metal (scratch deep).

Polishing – Adds color and luster to the final stage of finishing. Usually accomplished with the smoother compounds. Requires a slower wheel speed than buffing.

Surface Speed – The surface speed per minute (SFPM) is the speed of the buffing wheel as it revolves. The size of the wheel has a direct relationship to the surface speed.

Formula for calculating SFPM:

SFPM = 1/4 of the diameter of the wheel (in inches) x RPM of motor

For example: A Foredom BL Bench Lathe with a 4” diameter muslin wheel at the maximum speed of 7,000 RPM.

1/4 of the diameter of the wheel = 1 inch.

1 inch x 7,000 RPM = 7,000 SFPM (Ideal for buffing.)

8. Choosing the right wheel or bob for your needs

Buffing instruments vary in size, hardness, material composition, and shape. Selecting the appropriate one for each buffing or polishing operation may require some experimentation. Solid felt buffs and bobs can be used for all types of buffing and polishing operations with gritty or smooth compounds. They come in various shapes and hardnesses from medium to rock hard. Small shapes, such as cones, balls, square edge wheels or knife edge wheels are used for hard-to-reach areas inside grooves or rings.

Loosely-stitched soft cotton buffs are for delicate work on precious metals, and for polishing. Closely-stitched hard or stiff cotton wheels and rock hard felt buffs are used for cutting down and coarse buffing operations on hard metals. Foredom’s complete selection of 4” and smaller diameter buffs and compounds is shown in this guide.

After selecting the buff and compound that seems appropriate for the work, it is a good idea to experiment on a piece of scrap metal to determine what finish will result at various speeds.
Buffing and Polishing Compounds

Extra thickness eliminates need for leather reinforcements. 40 L/S A-CBY6
50 4 S* A-CBC75
40 3 L/S A-CBY5
40 1 S A-CBF2
35 A-LCB35
40 3 S A-CBY4
Chemically treated (86 x 80)
40 1 S A-CBC2
40 A-LCB3
40 3 S A-CBF3
40 3 S A-CBC3
40 1 S A-CBC1
40 A-LCB4
50 4 S A-CBY65
30 3 S A-CBY43
40 1 S A-CBF1
28 L/S A-CYR4
40 3 S A-CBF4
40 3 S A-CBC4
50 4 S A-CBY65-S

Nickel. Not for plated items. On plastics and hard metals like platinum, a high luster on wood and painted surfaces. Also regarded for its tough and wear resistant qualities. It is especially good for producing a high luster on wood and painted surfaces.

Red Rouge A-4004 — An excellent compound for a final coloring and high polish for precious metals like gold, silver, silver plate, pewter or nickel. Not for burned surfaces.

Platinum Blue A-4007 — For pre-polishing and cutting down of platinum and other metals.

Platinum White A-4006 — For final polishing to produce a deep luster on platinum, other metals, and acrylics (8000 grit).

Carnauba A-4008 — The hardest natural wax available. Non-tacky and highly regarded for its tough and wear resistant qualities. It is especially good for producing a high luster on wood and painted surfaces.

Emery A-4001 (Black) — Contains coarse emery grit. Excellent for removing surface imperfections such as scratches, scale, rust, corrosion or burrs. Used for very fast cutting of iron, steel and other hard metals. Not for gold, silver or plated items.

Tripoli A-4002 (Brown) — The most popular general compound for cutting down and buffing base metals. Gives a smooth, finished look with a moderate luster to brass plating, copper, aluminum, pewter, gold, plastic and painted surfaces. Also ideal for preliminary coloring operations.

White Diamond Rouge A-4003 — A fast cutting compound that produces a high gloss finish and will not discolor. Excellent on plastics and hard metals like platinum, white gold, stainless steel, chrome and nickel. Not for plated items.

Loose White Muslin Buffs

These buffs have only one row of stitching around the arbor hole which is reinforced with leather and shellac (LS). Made of Finex (80 x 80 weave) muslin with combed edges. The open layers provide a softer polishing action and conform to contours and curves. Use with rouge for coloring or final polishing operations.

Razor Edge Yellow Treated Buffs

Made with chemically treated extra fine (86 x 80 weave fabric, these buffs are stiffer than untreated ones. They will cut faster and last 2 to 3 times longer than white muslin buffs. Combed edges hold compounds without break in or combing. Center pin holes are reinforced with shellac (S).


**Flannel (Canton) Buffs**

These cotton buffs are made with thicker, softer fabric. Excellent for final polishing with rouge on precious metals (especially good on high karat gold and silver). Center pin holes are reinforced with shellac (S) for a tight fit on tapered mandrels.

<table>
<thead>
<tr>
<th>Dia.</th>
<th>Ply</th>
<th>Rows of Stitching</th>
<th>Center Hole</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>3/16&quot;</td>
<td>16</td>
<td>2</td>
<td>A-CB2</td>
</tr>
<tr>
<td>1&quot;</td>
<td>3/8&quot;</td>
<td>40</td>
<td>2</td>
<td>A-CBF1</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>3/16&quot;</td>
<td>16</td>
<td>3</td>
<td>A-CB12</td>
</tr>
</tbody>
</table>

**Square Edge Solid Felt Buffs**

Made from tightly compressed, top quality wool felt in medium and hard density, these are used for polishing and lapping flat surfaces. They hold an edge for working in angles and corners, and have pin hole centers for use on tapered mandrels. Use with all compounds for cutting or polishing.

<table>
<thead>
<tr>
<th>Dia.</th>
<th>Thick</th>
<th>Hardness</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8&quot;</td>
<td>3/16&quot;</td>
<td>Medium</td>
<td>A-SE4M</td>
</tr>
</tbody>
</table>

**Small Diameter Buffs**

These smaller diameter buffs can be mounted on mandrels for use in Foredom Handpieces. The CBF1 can be used with the M16. The other buffs are suitable with M1, M6, M7, M13, and M15 mandrels. Muslin buffs are made from fine (80 x 80) weave muslin for use with all types of compounds and have shellac (S) reinforced center holes. Felt buffs are made from wool felt.

<table>
<thead>
<tr>
<th>Dia.</th>
<th>Ply</th>
<th>Rows of Stitching</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>1/8&quot;</td>
<td>2</td>
<td>A-FB3</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>1/8&quot;</td>
<td>3</td>
<td>A-SE3M</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>1/4&quot;</td>
<td>Medium</td>
<td>A-SE3H</td>
</tr>
</tbody>
</table>

**Cotton Buffs**

- 1" Flannel Buffs: 3/16" (16, 2, A-CB2), 3/8" (40, 2, A-CBF1), 1/2" (16, 3, A-CB12)
- 1/2" Flannel Buffs: 3/16" (16, 2, A-CB2), 3/8" (40, 2, A-CBF1), 1/2" (16, 3, A-CB12)
- 3/8" Flannel Buffs: 3/16" (16, 2, A-CB2), 3/8" (40, 2, A-CBF1), 1/2" (16, 3, A-CB12)

**NEW! MAFH25 Filter Hood**

Developed to work with Foredom’s Bench Lathe, the Filter Hood is compact, powerful and portable for use in jewelry making, dental labs, or industry. It collects dust and larger particles produced by light grinding and polishing and can also be used with other lathes, flex shafts or micromotors.

- Strong suction removes hazardous dust and filters precious metal for reclaiming
- Variable speed motor for 110 or 220 volt
- Heavy gauge steel construction
- CE compliant
- Removable metal tray, gooseneck mounted bright, LED light, polycarbonate shield.
- Comes with three filters – easy to change and ship to a refiner.
- One Year Warranty

**Scotch-Brite™ Radial Bristle Discs**

These discs are popular among jewelers and dental technicians because their thin flexible bristles get into hard to reach areas. Use for cleaning metal surfaces, fire scale and oxide removal, finishing, blending, texturing, pre-polishing and polishing, Scotchbrite Radial Bristle Discs generate little or no dust, last far longer than rubber wheels, regular brushes, and buffs, and do not produce the heat associated with rubber wheels. They work well on gold, silver, platinum, brass, copper, titanium, stainless steel, plastic, acrylic, and wood. No compounds, rouges or pastes are required. Bristles contain abrasives.

**For 2” discs**

- 30,000 RPM Max Operating Speed
- Recommended Speed for most applications is 5,000–18,000 RPM

<table>
<thead>
<tr>
<th>Grit</th>
<th>Color</th>
<th>Part No. per 6-Pack</th>
<th>2” Discs</th>
<th>3” Discs</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>yellow</td>
<td>A-4542-6</td>
<td>A-4552-6</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>white</td>
<td>A-4543-6</td>
<td>A-4553-6</td>
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<tr>
<td>220</td>
<td>red</td>
<td>A-4544-6</td>
<td>A-4554-6</td>
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</tr>
<tr>
<td>400</td>
<td>blue</td>
<td>A-4545-6</td>
<td>A-4555-6</td>
<td></td>
</tr>
<tr>
<td>pumice</td>
<td>pink</td>
<td>A-4546-6</td>
<td>A-4556-6</td>
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<tr>
<td>5micron</td>
<td>peach</td>
<td>A-4547-6</td>
<td>A-4557-6</td>
<td></td>
</tr>
<tr>
<td>1micron</td>
<td>lt.green</td>
<td>A-4548-6</td>
<td>A-4558-6</td>
<td></td>
</tr>
</tbody>
</table>

**For 3” discs**

- 20,000 RPM Max Operating Speed
- Recommended Speed for most applications is 5,000–18,000 RPM

<table>
<thead>
<tr>
<th>Part No. per 6-Pack</th>
<th>2” Discs</th>
<th>3” Discs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(shown above) for right side of lathe</td>
<td>3/8” Tapered Spindle Adapter A-4561</td>
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**For left side of lathe:**

<table>
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<tr>
<th>Grit</th>
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**NEW! MAFH25 Filter Hood**

- Mandrel with ScotchBrite discs

**FOREDOM®**

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