Use this assessment guide weekly to ensure top clinical efficiency of your magneto inserts and piezo tips.

MAGNETO INSERTS & PIEZO TIPS

PERFORMANCE ASSESSMENT GUIDE

How the best perform
Your patients’ oral health is your top priority. Keeping your magneto inserts and piezo tips healthy is just as important. Inserts and tips in poor condition compromise patient comfort and safety. Plus, you have to work harder to achieve optimal clinical outcomes.

Use this guide for regular evaluation of your inserts/tips – and advance the effectiveness of your power scaling.

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We’ve provided a calculator to help you estimate your insert/tip cost per procedure. Use this calculator and guide to see how Hu-Friedy inserts/tips along with educational support from a world-renowned company can be yours...all at an attractive per procedure cost.

You can also visit our online tool at [hu-friedy.com/costcalculator](hu-friedy.com/costcalculator) to estimate your insert/tip cost per procedure.

### Calculate the Number of Times an Insert/Tip is Used per Year

**EXAMPLE**

\[
\begin{align*}
50 & \times 4 = 200 \\
200 & \times 3 = 600
\end{align*}
\]

- **50** work weeks per year
- **4** work days per week
- **200** work days per year
- **3** times per day single insert/tip is used
- **600** number of procedures per year per insert/tip

**YOUR OFFICE**

\[
\begin{align*}
& \times \\
& \times
\end{align*}
\]

- **work weeks per year**
- **work days per week**
- **work days per year**
- **times per day single insert/tip is used**
- **number of procedures per year per insert/tip**

### Calculate the Insert/Tip Cost per Procedure

**EXAMPLE**

\[
\begin{align*}
$200 & \div 600 = 33¢
\end{align*}
\]

- **$200** retail price per insert/tip
- **600** number of procedures per year per insert/tip
- **33¢** insert/tip cost per procedure

**YOUR OFFICE**

\[
\begin{align*}
& \div \\
& =
\end{align*}
\]

- **retail price per insert/tip**
- **number of procedures per year per insert/tip**
- **insert/tip cost per procedure**

*NOTE: Many factors affect insert/tip wear including number of inserts/tips per operatory, number of inserts/tips used per procedure, patient load, periodontal type, and sterilization processes. Your usage/costs may be higher or lower due to these or other factors.*
What are signs of o-ring wear?

- Dry, brittle or cracked appearance
- Leaking at the junction of the handpiece and insert
- Insert doesn’t seem secure in the handpiece

Can I use oil, petroleum jelly or other lubricants on the o-ring?

Lubricate the o-ring with water only. Oil based products such as petroleum jelly can cause drying/cracking of the o-ring and result in unwanted foreign matter within the water channel.

How do I change the o-ring?

- Using a pair of dressing pliers pull the worn o-ring off over the metal stack.
- To replace the o-ring: Slide a wide drinking straw over the metal stack. Apply a new o-ring to the bottom of the straw and roll the o-ring up until it reaches the o-ring slot.

What should the stack look like?

The leaves of the stack should uniformly nest together. Check to make sure stack leaves are not:

- Splayed
- Bent
- Fractured
- Detached

In these cases you may experience inadequate power – or possibly the tip will not vibrate at all.

How do I keep the stack in good condition?

- Handle the insert by the grip rather than the stack
- Use cassettes during cleaning and sterilization as these protect the insert from the weight of instruments that may be stacked on top

What should I do if my insert stacks are bent, broken or detached?

- Inserts with compromised stacks should be taken out of use and replaced.
Piezo tips are available in two thread pattern styles.

- **E Series**
- **S Series**

Piezo handpieces are compatible with either E or S series tips so it is critical to know which series tips work with your unit.

- E-Series tips are compatible with the Piezon® 150/250, Piezon® Master 700, AIR-FLOW® S2 and the AIR-FLOW Master Piezon®
- S-Series tips are compatible with Symmetry IQ, Acteon and NSK devices*

**Differences between E and S Series tips**

- E-Series tips have four flats
- S-Series tips have two flats
- Using an E-Series tip in an S-Series handpiece may result in damage to the tip and/or the handpiece

**WRENCHES**

Each piezo tip comes with a torque wrench which:

- Houses the tip during cleaning, sterilization and storage
- Protects you by preventing you from having to touch the tip

Wrenches should be inspected regularly for cracks, wear, and to ensure the tips stay securely within. Worn or cracked wrenches should be replaced in order to protect the piezo tip.

*Acteon and NSK are trademarks of Acteon® Group and Nakanishi, Inc., respectively.
ALL MAGNETO INSERTS AND PIEZO TIPS SHOULD BE CLEANED AND STERILIZED BEFORE EACH USE.

BEST PRACTICES

Optimal infection control and prevention will be facilitated by using tools that allow for improved efficiency and safety. Instrument cassettes will allow you to move inserts/tips from chairside through cleaning without touching or damaging the instruments. The inserts/tips also receive superior protection from the weight of other instruments while in the protective cassette. Piezo tips should remain within the wrench during the cleaning and care cycle.

If cassettes are not used, carefully place the insert/tip in the ultrasonic cleaner either alone or in a location where it will not be subject to the weight of other dental instruments.

1. CLEANING

To clean, rinse thoroughly or fully immerse in a mild ultrasonic cleaning solution (pH 7-10.5) like Hu-Friedy’s IMS® Enzymax® or Enzymax Earth™ cleaning solutions. When using the IMS Cassette System, the ultrasonic cleaning time has to be at least 16 minutes, unless a longer exposure time is required by the manufacturer of the detergent. Thoroughly rinse the insert with tap water and dry completely prior to sterilization.

2. RINSING

Thoroughly rinse with tap water and dry completely prior to sterilization

3. STERILIZATION

Sterilize inserts in an instrument cassette or paper pouch in a steam autoclave. Steam sterilize for at least 4 minutes at 270°F/132°C or 30 minutes at 250°F/121°C. Do not heat above 275°F/135°C.

4. DRYING

Thirty minutes of drying time is recommended after steam sterilization, prior to use.
**What effect will repeated instrument processing have on the lifespan of my inserts/tips?**

Repeated instrument processing will have little to no effect on the lifespan of inserts/tips. The lifespan of insert/tips is primarily determined by tip wear.

**Can I put ultrasonic inserts in an ultrasonic cleaner?**

Yes, ultrasonic inserts may be cleaned in an ultrasonic cleaning unit with a mild ultrasonic solution. The mild ultrasonic solution will not harm the insert nor will the cavitation produced by the ultrasonic cleaning unit. Recommended ultrasonic solutions are Enzymax and Enzymax Earth.

**Can I wipe down or spray the inserts/tips with a surface disinfectant?**

Do not use chemical or surface disinfectants as deterioration of the material may occur. Avoid contact with corrosive chemicals such as chlorides, sulfates and surface disinfectants. Do not expose inserts to solutions containing phenols. Chemical vapor sterilization, rapid heat transfer sterilization and cold liquid/chemical sterilants are not recommended and may void the warranty.

**Can I place inserts/tips in a washer/disinfector?**

Please refer to the washer/disinfector instructions and closely follow manufacturer recommendations for magneto inserts and piezo tips.

**For more information on Instrument Reprocessing, please visit Hu-Friedy.com/education.**
## Troubleshooting

### Magneto Inserts

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low vibration</td>
<td>Warped, bent, separated or broken stack leaves</td>
<td>Replace insert as stack leaves should be straight and intact for optimal vibration</td>
</tr>
<tr>
<td></td>
<td>Worn tips</td>
<td>Check tips on wear guide, replace when indicated</td>
</tr>
<tr>
<td>Water leak at junction of handpiece and insert</td>
<td>Worn o-rings</td>
<td>Weekly check o-rings and replace when cracked/brittle</td>
</tr>
<tr>
<td></td>
<td>Worn handpiece</td>
<td>Replace handpiece</td>
</tr>
<tr>
<td>Water flows excessively after releasing foot pedal</td>
<td>Air trapped in water line</td>
<td>Remove insert. Flush line for at least 30 seconds. Hold handpiece vertically and fill to the brim with water when placing insert</td>
</tr>
<tr>
<td></td>
<td>Generator issues</td>
<td>Check generator water line including PSI (refer to generator instruction manual)</td>
</tr>
<tr>
<td>Low/no water flow</td>
<td>Water line blocked from sediment or highly mineralized water</td>
<td>Weekly check external water filter for build-up. Replace when discolored or build-up is visible.</td>
</tr>
<tr>
<td></td>
<td>Insert clogged from water sediment</td>
<td>Replace insert</td>
</tr>
<tr>
<td>Insert pop-out</td>
<td>Worn o-rings</td>
<td>Weekly check o-rings and replace when cracked/brittle</td>
</tr>
<tr>
<td></td>
<td>Generator water pressure (PSI) too high</td>
<td>Refer to generator manual for optimal PSI water settings</td>
</tr>
<tr>
<td>Handpiece: Heat build-up</td>
<td>Generator power setting too high</td>
<td>Refer to insert package instructions for appropriate power setting range</td>
</tr>
<tr>
<td></td>
<td>Air trapped in handpiece</td>
<td>Remove insert. Flush line for at least 30 seconds. Hold handpiece vertically and fill to the brim with water when placing insert</td>
</tr>
<tr>
<td></td>
<td>Clogged generator water line filter</td>
<td>Weekly check external water filter for build-up. Replace when discolored or build-up is visible</td>
</tr>
</tbody>
</table>

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**TROUBLESHOOTING**

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### PIEZO TIPS

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little to no vibration</td>
<td>Tip not firmly attached to handpiece</td>
<td>Use wrench to tighten tip to handpiece</td>
</tr>
<tr>
<td></td>
<td>Worn tips</td>
<td>Check tips on wear guide, replace when indicated</td>
</tr>
<tr>
<td>Tip does not stay in wrench</td>
<td>Slot in wrench may be worn</td>
<td>Discard wrench; reorder new wrench</td>
</tr>
<tr>
<td>Tip does not stay in</td>
<td>“Flats” on base of tip may be worn</td>
<td>Replace tips</td>
</tr>
<tr>
<td>handpiece</td>
<td>Handpiece threads may be worn</td>
<td>Replace handpiece</td>
</tr>
<tr>
<td>Tip won’t attach to handpiece</td>
<td>Wrong “series” of tip</td>
<td>Use E or S series tips according to generator manufacturer specifications</td>
</tr>
<tr>
<td>No/low water flow</td>
<td>Water lines blocked from sediment or highly</td>
<td>Weekly check external water filter for build-up. Replace when discolored or build-up is visible</td>
</tr>
<tr>
<td></td>
<td>mineralized water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tip clogged from water sediment</td>
<td>Replace tip</td>
</tr>
</tbody>
</table>
WORN OR BENT TIPS

Worn tips can significantly diminish your scaling efficiency!

- 1 millimeter of tip loss results in a 25% loss of efficiency
- 2 millimeters of tip loss results in a 50% loss of efficiency

What is the clinical result of worn inserts/tips

- Apply more pressure on the insert, which can dampen the vibration
- Turn up the power on the generator, often to high levels for which the tip may not be designed

Both actions can result in inferior tip performance, more time to remove calculus and stain and more discomfort for you and your patient.

Use a Wear Guide to check your tips weekly!

Maximize the efficiency of your ultrasonic tips by regularly using a wear guide.

- First, evaluate the shape of the tip against the wear guide. If the shape does not match the silhouette, discard the insert.
- Second, match the tip to the corresponding outline to measure its length and discard, reorder or scale away depending on the tip length.

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Use a Wear Guide to check your tips weekly!

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FACTORS AFFECTING THE LIFESPAN OF MAGNETO INSERTS AND PIEZO TIPS include usage frequency and amount/type of hard deposit per patient. An insert/tip used once per day on light debris will likely last longer than one used several times per day on heavy debris. In addition, the lifespan of an insert or tip can be shortened by many factors including:

- incorrect power settings
- applying too much pressure
- not matching the tip to the application
- improper sterilization and maintenance
- too much wear

Check your inserts and tips for wear EVERY WEEK and use Hu-Friedy’s Ultrasonic Insert and Tip Trade-In program to help maximize your power scaling efficiency.

ULTRASONIC INSERT & TIP TRADE-IN PROGRAM

IT’S EASY AS 1-2-3!

*Receive one ultrasonic insert or tip free when you purchase two ultrasonic inserts or tips and trade in any three!

For more information about Hu-Friedy magneto inserts or tips visit Hu-Friedy.com/inserts

MAGNETO INSERT WEAR GUIDE

Worn inserts can diminish your scaling efficiency. Check your inserts every week to maintain optimal performance.

HOW TO USE YOUR WEAR GUIDE

1. Locate the diagram of the insert to be measured (use color as guide).
2. Position point A to point B as shown and join the curvature of the tip (circled) to match the guide.
3. Rotate insert until tip is flat against the card.
4. Evaluate tip condition, comparing length to red/blue bars.

Reorder tips when 25% efficiency loss (blue bar) Discard tip when 50% efficiency loss (red bar)
MAGNETO INSERTS

<table>
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<tr>
<th>TIP DESIGN, 30KHZ INSERTS</th>
<th>SWIVEL DIRECT FLOW, 30KHZ</th>
<th>SWIVEL, 30KHZ</th>
<th>STREAMLINE DIRECT FLOW, 30KHZ</th>
<th>STREAMLINE, 30KHZ</th>
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</thead>
<tbody>
<tr>
<td>#10</td>
<td>U1030D01D</td>
<td>U1030S10</td>
<td>U1030F10</td>
<td>U1030K</td>
</tr>
<tr>
<td>#100 Thin</td>
<td>U1030D0100</td>
<td>U1030S100</td>
<td>U1030F100 Thin</td>
<td>U1030000S</td>
</tr>
<tr>
<td>#1000 Triple Bend</td>
<td>U1030D01000</td>
<td>U1030S1000</td>
<td>U1030F1000</td>
<td>U10000030K</td>
</tr>
<tr>
<td>After Five Left</td>
<td>U1030D010</td>
<td>U1030S01</td>
<td>U1030F01</td>
<td>U10100030K</td>
</tr>
<tr>
<td>After Five Straight</td>
<td>U1030D015</td>
<td>U1030S015</td>
<td>U1030F015</td>
<td>U1010003015</td>
</tr>
<tr>
<td>Thin Triple Bend</td>
<td>U1030D010X1B</td>
<td>U1030S010X1B</td>
<td>U1030F010X1B</td>
<td>U1010003010X1B</td>
</tr>
<tr>
<td>XT - Extra Thin</td>
<td>U1030S01T</td>
<td>U1030S01T</td>
<td>U1030F01T</td>
<td>U101000301T</td>
</tr>
</tbody>
</table>

For a complete listing of Hu-Friedy’s magneto inserts and piezo tips, go to Hu-Friedy.com
For more information on Hu-Friedy’s magneto products, see Hu-Friedy.com/inserts

PIEZO TIPS

HOW TO USE YOUR WEAR GUIDE

1. Locate the diagram of the tip to be measured (use color as guide). Position point A to point B as shown and/or align the curvature of the tip (circled) to match the guide.
2. Rotate tip until it is flat against the card.
3. Evaluate tip condition, comparing length to red/blue bars.
4. Evaluate tip condition, comparing length to red/blue bars.

PIEZO TIP WEAR GUIDE

For more information about Hu-Friedy’s piezo tips, see Hu-Friedy.com/piezont
For more information on Hu-Friedy’s piezo tips, see Hu-Friedy.com/piezont

For a complete listing of Hu-Friedy’s magneto inserts and piezo tips, go to Hu-Friedy.com
For more information on Hu-Friedy’s magneto products, see Hu-Friedy.com/inserts

For a complete listing of Hu-Friedy’s piezo tips and tips, visit Hu-Friedy.com

For more information about Hu-Friedy’s Total Solutions visit

HU-FRIEDY.COM

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