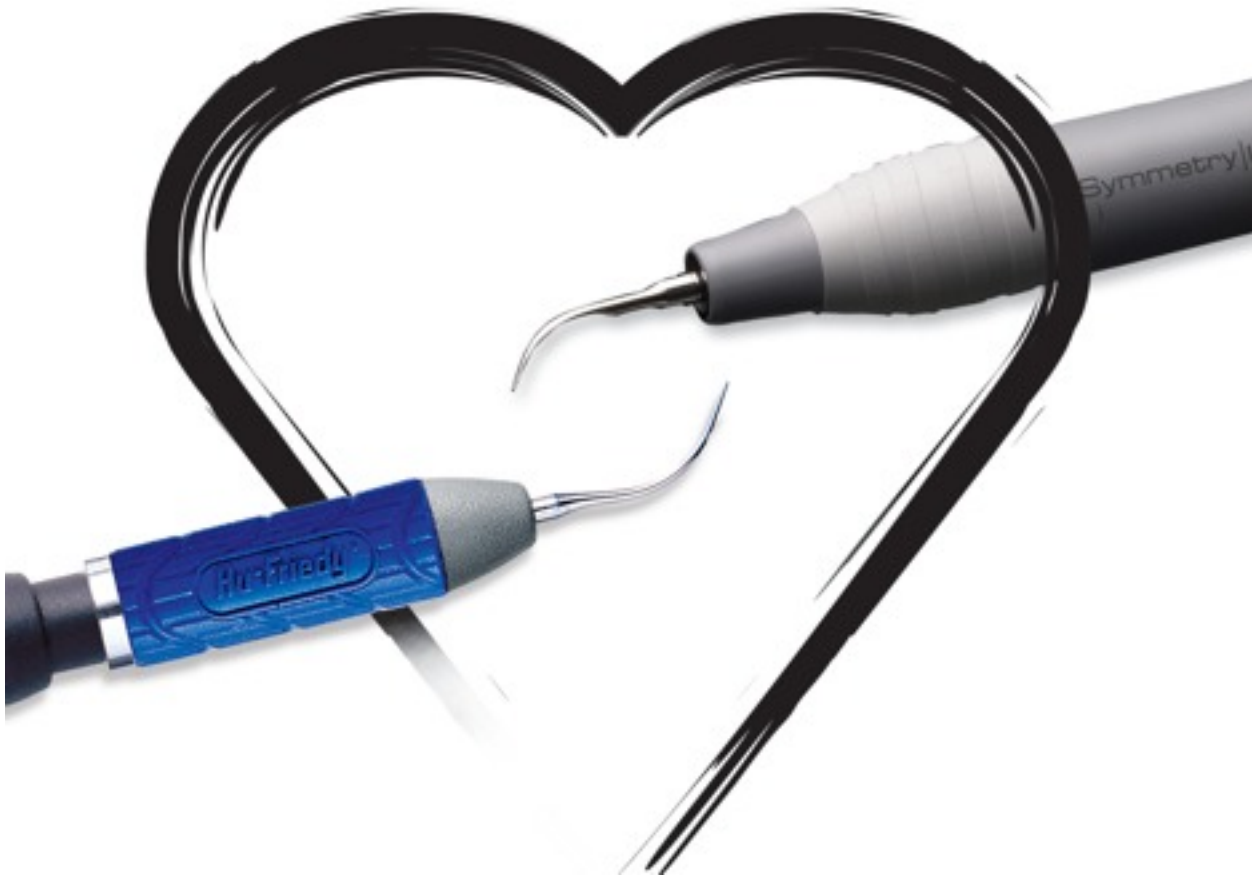


## LET'S GET TO THE HEART OF ULTRASONIC SCALING



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## **Course Description**

**This half-day "hands-on" workshop will provide an opportunity for each participant to ANALYZE and UTILIZE a variety of ultrasonic scalers (both magnetostrictive and piezoelectric) on typodonts. The physical designs of the working ends of the ultrasonic scalers in relation to the specific objectives of the treatment procedure and the morphological features of root surfaces will be the focus of the activity-based exercises.**

**This fast-paced workshop will include activities involving tactile sensitivity, root anatomy, care and maintenance, and instrumentation techniques. Guidelines will be offered to aid the clinician in selecting appropriate inserts to enhance the delivery of optimal treatment.**

## **Course Objectives**

**Upon completion of this workshop, the participant will be able to:**

- 1. Identify the design features of magnetostrictive inserts and piezoelectric tips.**
- 2. Cite the advantages and disadvantages offered by powered scalers in performing general and definitive debridement procedures.**
- 3. Select inserts and tips with regard to the challenges of individual root formations and the objective of the clinical treatment.**
- 4. Demonstrate the techniques for use of both magnetostrictive and piezoelectric ultrasonic scalers with emphasis on:
  - a. Grasp**
  - b. Fulcrum**
  - c. Adaptation**
  - d. Angulation**
  - e. Stroke Pattern**
  - f. Pressure****
- 5. Describe the recommended procedures for the care and maintenance of magnetostrictive inserts and piezoelectric units and tips**

## **Sonic Scaler Manufacturers**

**Kavo  
Discus  
Bonart  
Dentalez**

## **Piezoelectric Manufacturers Units and Inserts**

**Vista**

**NSK  
Prodentec  
Parkell  
J. Morita  
Hu-Friedy  
Satelec/Acteon  
Mectron  
Amdent**

## **Magnetostrictive Manufacturers: Units and Inserts**

**Dentsply/Cavitron®  
Coltene/Whaledent  
Parkell  
Tony Riso  
USI  
Brassler-NSK  
Discus  
Hu-Friedy**

## **Suction products discussed**

**Mirror Suction- Hager**

**Blue Boa-Blueboa.com**

**Free form suction-Crosstex**

**Isolite**

**Safe-flo**

## **Treatment goals & objectives**

**Periodontal debridement is the foundation of treatment offered by dental hygienists**

**The goals of periodontal debridement are to:**

**Arrest infection and maintain a healthy periodontium by eliminating the pathogenic microorganisms on the tooth and root surface.**

**Remove hardened calculus deposits and dental plaque biofilm from the sulcus or pocket.**

**Produce a biologically acceptable tooth/root surface.**

## **Sonic Technology**

**2,500 to 7,000 cps or Hz**

**Functions in the audible range**

**Attaches to a conventional handpiece**

**Driven by compressed air**

**Orbital or elliptical tip movement**

**All surfaces active**

## **Magnetostrictive Technology**

**Frequency 25-30 kHz**

**Functions above the audible range**

**Transducer - metal rod or metal stack**

**Stroke pattern - elliptical**

**Power dispersion- see diagram below**

**Calculus is commonly removed in chunks**

## **Piezoelectric Technology**

**Frequency - 34-45 kHz**

**Functions above the audible range**

**Transducer - crystal or ceramic**

**Stroke pattern - linear**

**Power dispersion - primarily lateral sides**

**Deposits are pulverized, forming a visible slurry**

## **Ultrasonic Power Considerations**

**Ultrasonic systems convert electrical energy into mechanical vibration of the instrument tip.**

**Frequency –**

**The number of times the  
tip travels back and forth per second**

**Cycles per second (CPS)**

**Amplitude –**

**The distance the  
tip travels with each stroke**

**Increasing power on ultrasonic machines = increased stroke length and tip vibration**

**Frequency (speed) + Amplitude (distance) = Power**

## Magnetostrictive Ultrasonic Techniques

Multiple instruments may be needed to adequately complete root planing procedure

Supra Gingival:

P10

100

1000

Triple bend

Beavertail

Sub Gingival:

AF Right

AF Left

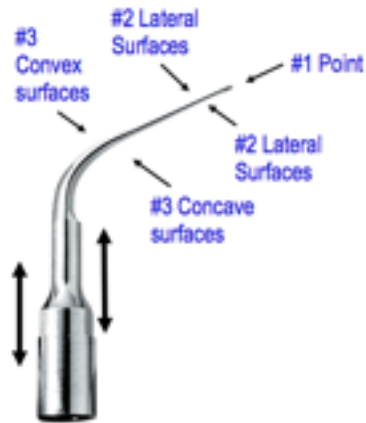
AF Straight

### Essentials of Power Dispersion Magnetostrictive Systems



# Essentials of Power Dispersion

## Piezoelectric Systems

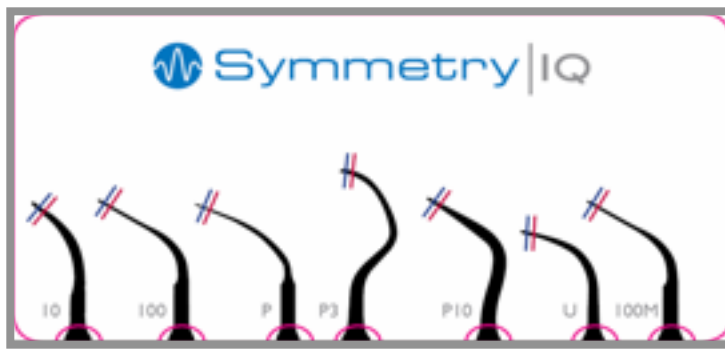


## Piezo Tips

There are many tips to choose from. These are some of the more popular designs



- Multiple instruments may be needed to adequately complete root planing procedure
  - P Universal
  - S10 Universal
  - #3 Perio
  - 100 Universal
  - After Five® Straight, Right and Left



**How much Pressure should you use?**

**Probe- less than 20 grams**

**Explorer- less than 20 grams**

**Scaler- biofilm 25 grams**

**Everything else depends on tenacity of deposit**

**Ultrasonic- 25 grams Power**

### **Medical Contraindications for the use of ultrasonic scalers**

**Cardiac pacemakers Modern pacemakers are shielded against electromagnetic interference.**

**However, some electronic devices do generate an electromagnetic field that potentially may interfere with the pacemaker.**

**Always consult with the patient's cardiologist before treatment .**

**Communicable diseases spread by aerosols (i.e. TB, Hepatitis)**

**Respiratory difficulties**

**Immune suppressed patients (ie. organ transplants, poorly controlled diabetes, Chemotherapy patients)**