

# The MM1500 Sonic Air Endo Handpiece for Cleansing, Shaping and Disinfecting the Canal System



## Operating Instructions & Procedure Guidelines

The MM1500 Sonic Air is an air-driven handpiece and is adaptable to the air-line couplings of dental units (two, three or four-hole connectors). The air pressure in the MM1500 handpiece transmits sonic waves along endodontic instruments having an adjustable frequency range of zero to 1500 Hz.

Continuous irrigation of the canal system is achieved through water (from the dental unit) being channeled through the spout directly below the instrument cradle on the MM1500 handpiece.

The MM1500 is used with the following instruments:

-**RISPISONIC**® instruments are used to debride the coronal two-thirds.

-**SHAPERSONIC**® instruments are for simultaneous debriding of the apical and coronal thirds.

## Installation

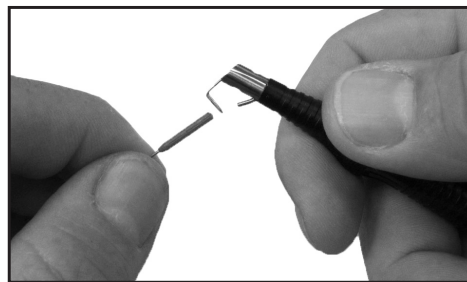
Adjust the air-line on the dental unit to 30-40 psi. (Note: While in use, the air restrictor valve in the MM1500 handpiece will cause the line pressure in the dental unit to show a higher psi). Place the MM1500 Sonic Air handpiece on the air-line. Place a RispiSonic instrument into the MM1500 handpiece (see placement of instruments below). While fully depressing the rheostat pedal, slowly turn the tuning ring (at the base of the handpiece) from the off position towards the red direction. You should hear a distinct humming sound coming from the handpiece.

**Note:** To operate the MM1500 handpiece at maximum efficiency, always fully depress the foot pedal.

## Placement of Instruments Into the MM1500 Sonic Air Handpiece

Pull the spring-loaded cone down toward the base of the handpiece (see illustration). Place the plastic hub (head) of a RispiSonic or ShaperSonic instrument through the cradle of the wire stop into the open hole in the handpiece. Inserting the instrument into the handpiece may require the spring-loaded cap to be pressed down with the free hand. Tighten the instrument in place at the desired length by simply releasing the spring loaded cone

**Note:** Do not use a rubber stop on the sonic instruments. Measure instrument length from the wire stop on the MM1500 handpiece.



RISPISONIC® instruments are the more aggressive cutting instruments. An instrument cross section reveals eight pointed cutting edges and has a 2.5mm safe end.

-Length 19mm and 22mm

-Individual Sizes: n° 0 to 6

SHAPERSONIC® instruments are substantially less aggressive than RispiSonics. An instrument cross section reveals sixteen rounded edges and has a 1.5mm safe end.

-Length 21mm and 25mm

-Individual Sizes: n° 10 to 40

Note: Both RispiSonic and ShaperSonic instruments can be adjusted to a wide range of

lengths by simply pushing or pulling the plastic handle of each instrument in the MM1500 Sonic Air handpiece while holding the spring-loaded cone down:

- RispiSonic 19mm instruments can be safely adjusted from 15mm to 23mm.

- RispiSonic 22mm instruments can be safely adjusted from 18mm to 26mm.

- ShaperSonic 21mm instruments can be safely adjusted from 17mm to 25mm.

- ShaperSonic 25mm instruments can be safely adjusted from 21mm to 29mm.

**Note:** Efficient and safe shaping of canals with RispiSonic and ShaperSonic instruments is accomplished by removing canal debris on the upstroke.

## Adjustment of Instrument Amplitude

The MM1500 Air Sonic handpiece offers the unique advantage of tuning for the correct frequency and amplitude regardless of size and length of instrument.

Once the RispiSonic or ShaperSonic instrument is locked into the handpiece, tuning is accomplished by slowly turning the tuning ring from the rest (stationary) position towards the red arrow. This increases the air pressure and also the amplification of the instrument. The MM1500 handpiece is properly tuned when the visible vibration of the instruments are agitating approximately half a millimeter on both sides of the instrument from the rest position.

## Cleansing & Shaping with Rispi-Sonic and Shaper-Sonic Instruments

Cleansing and shaping of the root canal system with the MM1500 handpiece follows the basic principles of enlargement as suggested for hand instrumentation:

1. Confine the instrument within the canal.
2. Maintain the basic anatomy of the canal.
3. Use sequential instrumentation.
4. Use copious irrigation.
5. Maintain patency.

**Note:** Do not use the MM1500 Air Sonic handpiece to gain initial access into canals.

### Coronal Two-Thirds Flaring

After gaining access, finding canals, achieving patency and establishing working length with a #10 hand reamer or file, flaring of the coronal two-thirds of the canal can now be accomplished.

Depending on canal curvature and length, the RispiSonic or ShaperSonic instrument (usually a size 0 or 1 Rispi; or a size 10 or 15 Shaper) is placed two-thirds of working length down the canal and then activated (remember to fully depress the rheostat pedal). The instrument is applied in a circumferential movement and kept in constant contact with the canal walls while a vertical movement of 3-5mm is maintained. Within a few seconds, the instrument will move freely, and if additional shaping is desired, progression to the next size is applicable. The action of the sonic instruments, combined with an outstroke shaping motion and a consistent water flow from the MM1500 Sonic Air handpiece, will safely and rapidly remove dentin.

**Note:** Coronal flaring with a RispiSonic or ShaperSonic instrument in the MM1500 Air Sonic handpiece will normally eliminate the need for orifice openers associated with rotary niti instrumentation systems.

### Apical Shaping

Also depending on canal curvature, length, or difficulty in gaining apical patency, apical shaping may be performed using sonic instrumentation. Once working length has been established, each canal should be instrumented to at least a size 10 file before a sonic instrument is inserted. Once a canal has been enlarged to this extent, it will easily accommodate a 10 ShaperSonic to sonic length (SL). Sonic length refers to a point 1mm short of the apex (or 1mm short of the working length). The sonic instrument is inserted into the canal to sonic length and then activated. The instrument is kept in constant contact around the canal walls while a vertical movement of 2-3mm is maintained. Within a few seconds, the instrument will move freely, and if additional apical shaping is desired, progression

to the next size is applicable. Apical shaping is usually accomplished with sizes 10, 15 and 20 ShaperSonic. To minimize any chance of impacting dentinal debris, recapitulate with a #10 hand instrument to full working length before introducing the next size sonic instrument into the canal.

**Note:** In difficult cases, many clinicians prefer to complete apical shaping using either hand instrumentation or engine-driven niti instrumentation systems.

### Canal Disinfection Using The MM1500 Air Sonic Handpiece

After completing the cleaning and shaping aspects of the root canal procedure, complete canal system disinfection can now be accomplished by using the MM1500 Air Sonic handpiece to cavitate irrigating solutions within the canals. The cavitating action of the irrigant allows the solution to discover, open and debride lateral canals and/or an isthmus, which otherwise would not be achieved without the acoustic streaming of the sonic. The high-speed bubbling action safely removes tissue and bacteria and significantly reduces sterilization time.

**Note:** Before the MM1500 Air Sonic handpiece is used to cavitate irrigating solutions, be sure to turn off the water to the handpiece from the dental unit.

Using a syringe, place an irrigating solution (sodium hypochlorite, aqueous EDTA, chlorhexidine 2%) into the canal before introducing a sonic irrigation file. Insert a sonic irrigating file into the MM1500 Air Sonic handpiece (the #15 ShaperSonic is recommended and is used passively in the canal to cavitate the irrigating solution). The irrigating file is then placed into the canal and can be taken to sonic length (SL) if desired. Fully depress the rheostat pedal and maintain a 3-5mm vertical motion for 1-2 minutes per irrigating solution.

### Handpiece Maintenance and Sterilization

Maintenance after each patient:

- Scrub externally with germicidal detergent. Rinse away solution by scrubbing under tap water.

- Dry.

Never submerge the sonic handpiece in cleaning liquids or in ultrasonic cleaning devices.

**Note:** The MM1500 handpiece needs only one drop of oil at every 5th autoclave. Excessive lubrication can clog the motor which will stop it from oscillating. Also, never apply disinfectants or handpiece cleaners on or into the sonic handpiece before sterilization.

Place one drop of Micro-Mega lubricant oil into the air inlet tube at the base of the MM1500 Air Sonic handpiece. Connect the sonic handpiece and purge for 5 to 10 seconds.

Place the MM1500 handpiece into a sterilization bag and autoclave at 250° Fahrenheit (max 275°). **Do not leave in the autoclave overnight!** Do not oil after autoclaving. Cool to room temperature before using the sonic handpiece.

### MICRO-MEGA® Guarantee

Your MICRO-MEGA® instrument is an accurate medical device, produced under maximum quality and test conditions. To guarantee traceability of its medical devices, MICRO-MEGA would like you to return the guarantee card, duly filled in, within 10 days of your purchase.

You can also register the guarantee for your instrument on our website: [www.micro-mega.com](http://www.micro-mega.com).

MICRO-MEGA® guarantees your instrument for 6 months against any hidden manufacturing defect, excluding faults due to:

- Improper use.
- Inappropriate maintenance or application, not in accordance with our recommendations and instructions for use.
- Accidental damage (fall, impact).
- Attempted repair by personnel not approved by MICRO-MEGA® .
- Attempted modification.