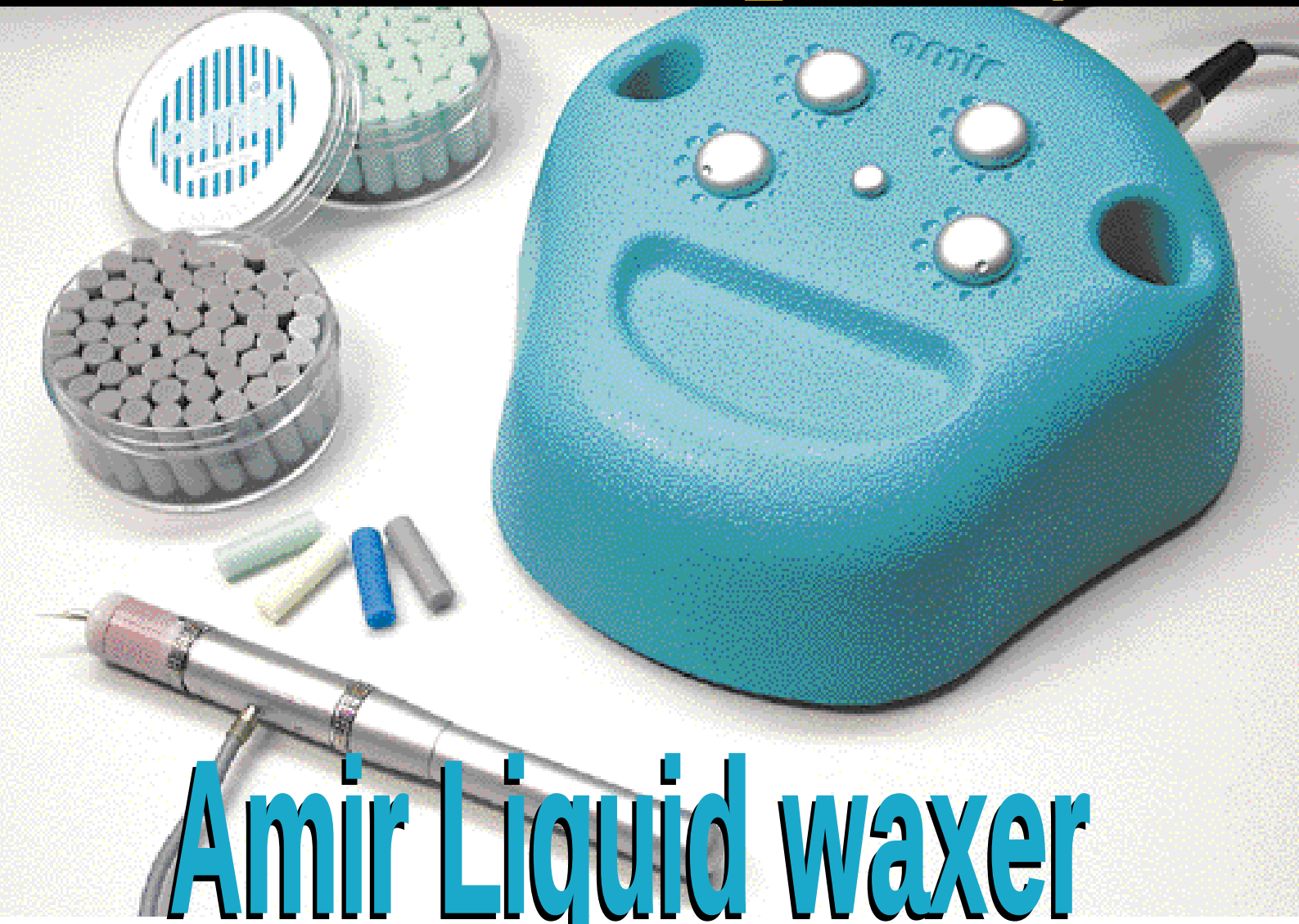
By Andrew Taylor,
Dental Technician



Amir Liquid waxer

For rapid, accurate waxing

"as is occasionally the case, a new need made me consider a new solution."

For years we got by with Bunsen burners when there was a need for molten wax in the dental lab. In the past two decades, a plethora of new solutions have been introduced to the market, such as induction coil gadgets that do an excellent job of heating an instrument, electric wax knives, heated pots and warm water baths.

I have access to all the above and was managing very well with them, but, as is occasionally the case, a new need made me consider a new solution.

Evolving needs in the lab

There has been a steady increase in the number of diagnostic wax-ups sent to my laboratory. These are of both the aesthetic and occlusal varieties and I was finding coping with the increase difficult, as diagnostics is a time consuming business.

I have never counted the number of visits needed by an instrument to a heat source and then the wax, but clearly, in a full mouth case, it can be hundreds.
The time spent loading and re-loading the instrument, chasing recalcitrant pieces of wax that refuse to be picked up and cleaning up after ambitious attempts to carry too much wax, quickly mounts up and the day begins to stretch into the evening...

An ideal solution

What is needed is a constant stream of molten wax that can be positioned accurately – and this is the solution provided by the Amir Liquid Waxer.
The liquid waxer is a pleasure to use; it allows for a high level of control and accuracy, and literally halves the time taken for wax-ups!

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The machine

First impressions of the machine are positive - it seems to be very well engineered.
The components are robust and well made.

It has a control unit that can power two handpieces simultaneously (though only one is supplied as standard); each one has its own dedicated and infinitely variable heat control and speed regulator (fig. 1).

The controls are rotary knobs positioned on the top surface of the unit and are flanked by handpiece 'holsters' that incorporate drip trays (fig. 2).

This arrangement allows either two operators to use the machine or the use of a different colour wax in each handpiece.

"The control unit can power two handpieces simultaneously."

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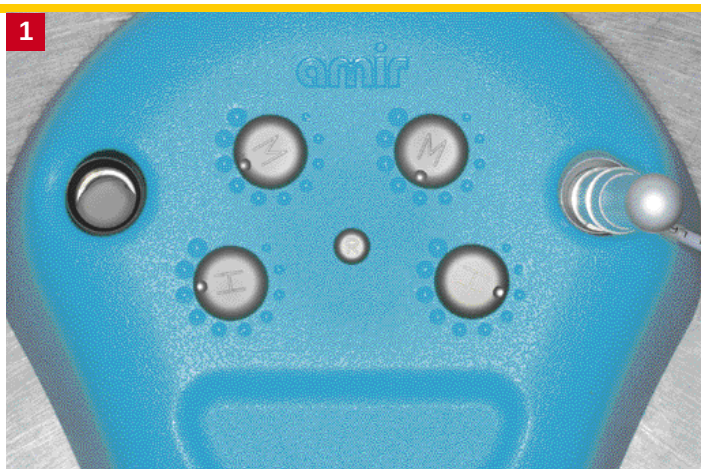

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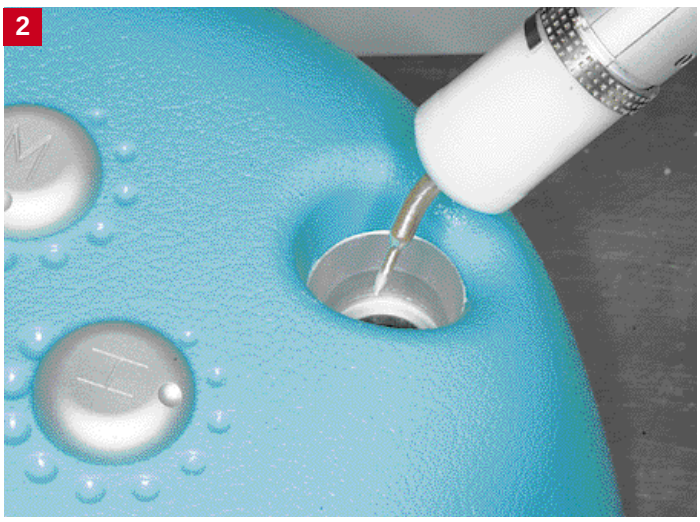


The hand piece

The hand piece is lightweight, and is attached to the control unit by a length of supple wire that provides power for a heater and a micro-motor (fig. 3).

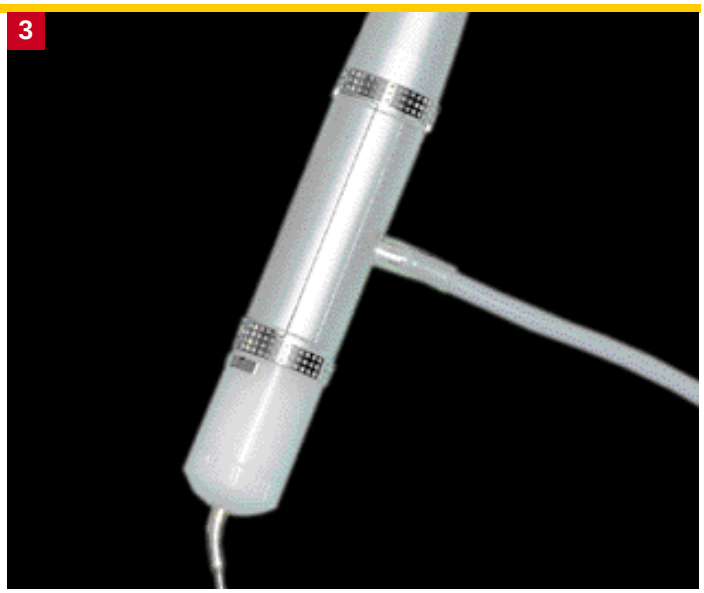
In an ideal world the connection would be wireless; no doubt someone, someday will provide technology that will make this possible but, for now, we must remain tethered.

Comfortable handling

The wire is attached to the centre of the wax cartridge chamber rather than at the end of the handpiece. I imagined that it would get in the way, but actually it provides a handy rest for otherwise redundant fingers and helps aid control (fig. 4).
The more obvious position for the wire – at the end of the handpiece – would add weight and drag the well-balanced design, perhaps making it feel cumbersome.

How it works

The metal body of the handpiece contains a micro-motor. When this motor receives power it rotates a screw thread that terminates in a plunger. As the thread travels forwards, the plunger presses the wax into the heating chamber where it is kept at a constant temperature until required.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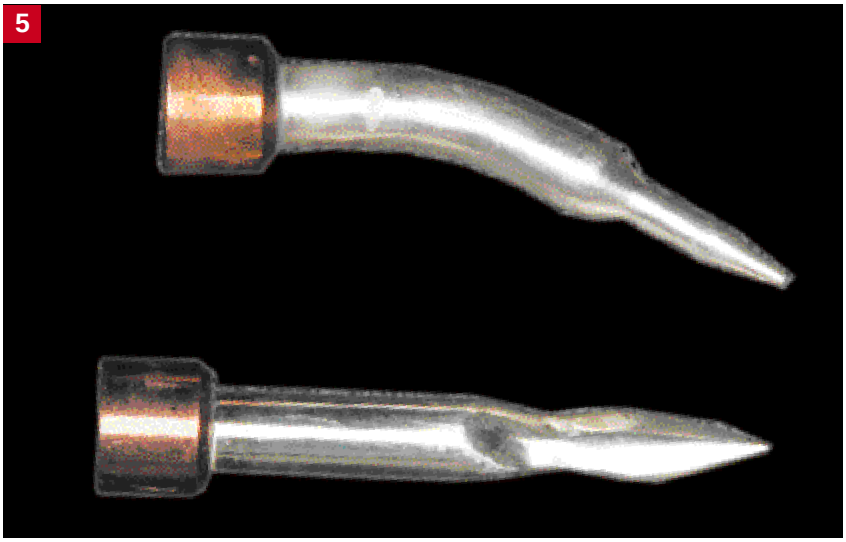
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Once the air gap has been eliminated and working pressure is reached wax is delivered through a small hole in the tip of the hand-piece.

The tip

The tip is available in two shapes, a fine tube and a slightly broader flatter unit (fig. 5). Each tip has its own micro filter, and I have yet to experience any blocking or interruptions in flow.

The Wax

The quality of the wax is tremendous! It hardens quickly (depending on ambient temperatures, obviously), it is very easy to carve, hardly shrinks and is available in three colours: dentine, mid blue and grey.
The waxes are reasonably opaque so positive edges can be seen and are also available in 65g tins for traditional waxing techniques.

Inserting the wax

The wax is provided in short (26mm) sticks and is placed into a well-machined chamber that is accessed by removing a cover. The cover is retained by rotating locking rings that positively resist movement until unlocking is required. Once the cover is removed, the threaded plunger that propels the wax into the heating chamber must be gently moved rearwards to provide a space for the wax (fig. 6a). The wax is then dropped into the chamber (fig 6b) and the cover replaced.

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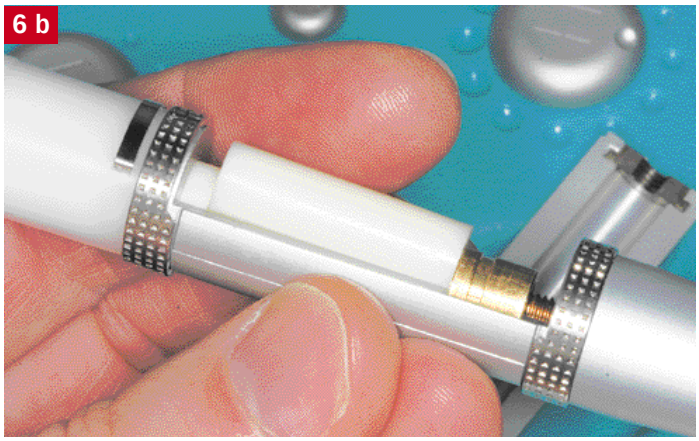


Getting started

The hand piece is gripped lightly between the thumb and index finger and is supported from beneath by the second finger in a standard pen grip. The index finger rests naturally on the foremost locking ring beyond which is the touch sensitive metal strip that switches on the micromotor (fig 7.)

Tip: The sensor responds to moisture in the skin, if the finger is very dry after plaster work or is greasy after handling wax; it may be necessary remove grease or make the finger tip very slightly damp.

When the sensor is touched, a light vibration is felt and the motor can be heard working faintly as the plunger moves into position.

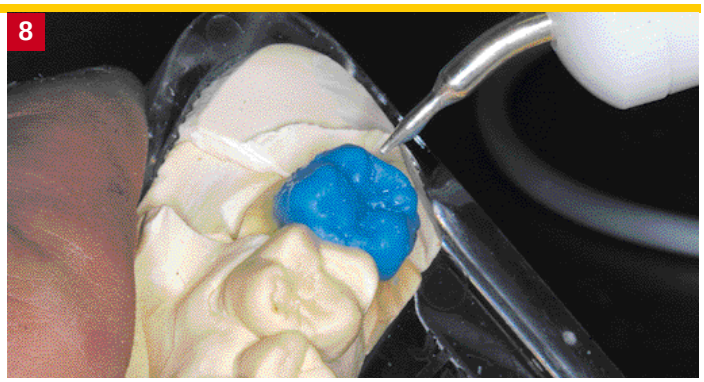
A constant supply of liquid wax will now be available until the chamber is empty. This can happen all too quickly if a large volume of wax is being applied; the event is heralded by a beep.

"A constant supply of liquid wax will now be available until the chamber is empty."

Introducing more wax into the chamber takes a matter of a few seconds and you are away again. I have never experienced a break in supply unless the wax runs out – it just keeps on coming until the sensor is released!

Application

The control is absolutely fingertip sensitive: the instant the fingertip is removed from the sensor the wax stops. This is important when building up cusp forms and allows extremely accurate and finely metered quantities of wax to be applied, as this wax-up done in 2 minutes demonstrates (fig 8).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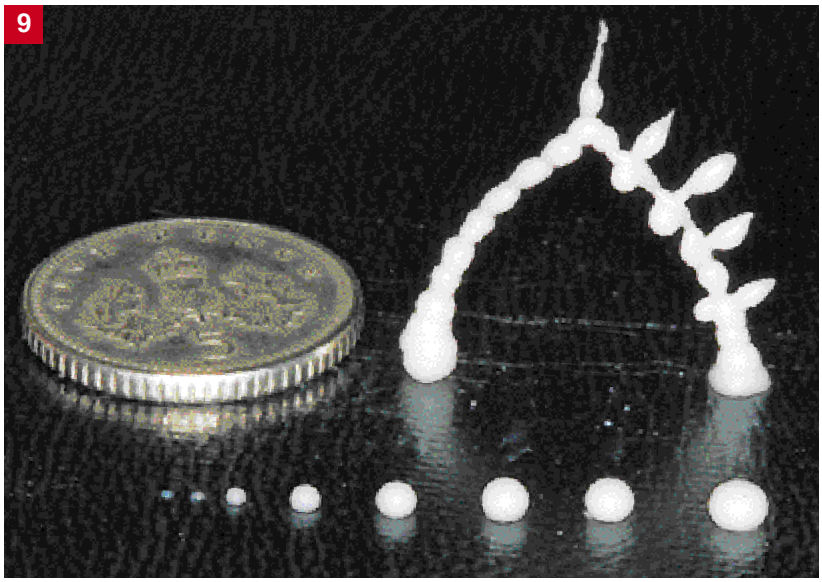
It is possible to almost 'carve' an occlusion as you go. With practice, wax can be delivered with pinpoint accuracy (fig.9), and once the fingertip is removed from the sensor, the heated waxer tip can be used to manipulate the wax further. This means that additional work with a traditional carving instrument is lessened.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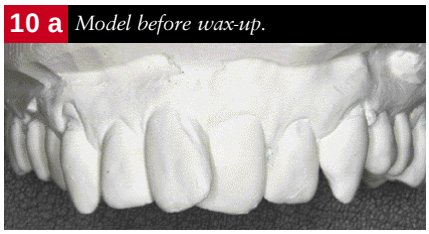
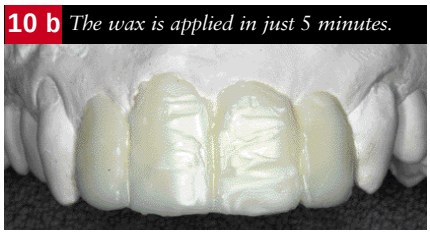
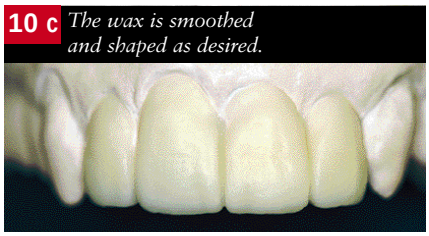
"With practice, wax can be delivered with pinpoint accuracy."

This makes the Amir Liquid Waxer a joy to use; I am confident that the time saved when waxing anything, from a FGC to a full diagnostic, is around 50%, as can be seen with this case (10a – 10c).


10 a *Model before wax-up.*


10 b *The wax is applied in just 5 minutes.*


10 c *The wax is smoothed and shaped as desired.*

Worth every penny

Whilst the old fashioned Bunsen burner will always have its place, the Amir Liquid Waxer is a contemporary and well executed solution to the problem of placing large volumes of wax very quickly and accurately.

I look forwards to the time when we just refer to it as an 'Amir' as we do a 'Bunsen'. There is no disputing that the cost of this machine is, by Bunsen standards, high; but we are not comparing like with like. The enormous time savings made possible by this machine make it worth every penny.

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