



INSTRUCTIONS



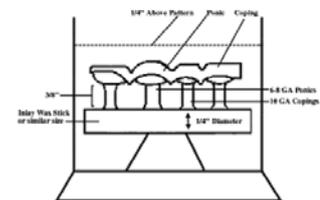
TILITE'S TECHNICAL INSTRUCTIONS

WAXING

The wax-up procedure differs slightly from that used for precious ceramic alloys. The main difference is the thickness of the wax patterns. Due to the high fluidity of Tilite, more fluid than water, the patterns may be waxed and cast from 2 to 3 mm of thickness, which minimizes the metal finishing and allows more room for porcelain, thus enhancing porcelain shades.

SPRUING

The **indirect spruing technique** is recommended using a runner bar ¼ inches in diameter, the size of a pencil. For copings use a 10 gauge sprue and for pontics use a 6-8 gauge or larger sprue. When using a ¼ inch runner bar, the length of the sprues from the runner bar to the pattern should be 3/8 of an inch long (illustration).



The **direct spruing technique** consists of placing the plastic sprues with ball of 2.5 directly on the copings. It is not necessary to place the sprue directly on pontic pieces, unless we have a stretch of 3 pontics or more, then place a thinner sprue in the central pontic.

INVESTING

It is recommended a high heat investment such as Talladium's **"1700 Casting Investment"**. Follow manufacturer's instructions.

For your debubbler do not use an alcohol base debubbler. Talladium recommends the **"Pattern Prep Debubbler"**. Thoroughly dry the tension reducing.

With the **"Micro Fine 1700"** investment you can make both fast and controlled castings (read the manufacturer's instructions).

PRE-HEATING

The preheating temperature of the oven is 850°. In case of using machined abutments with a Tilite milled base, the final preheat temperature of the ring will be 820°.

Ring's timing in the oven (slow precision casting):

Range	Rising Time	Temperature	Maintenance	Rising degrees
R.1	35 min.	220°C.	45-60 min.	6° per min.
R.2	50 min.	620°C.	30 min.	8° per min.
R.3	25 min.	850°C.	30-50 min.	10° per min.

Important: The maintenance time will depend on the number of rings that are in the oven.



MELTING

The Tilite alloy may be melted by induction or with a gas-oxygen torch.

Induction: adjust the temperature to 1329°C. - 1340°C., although is advisable to do it visually.

Torch: use a multi-orifice tip. Set the oxygen between 2.41-2.76 bar and the gas around 0.14 bar. An ingot has to be melted in 12 -14 seconds.

The necessary amount of metal to make the casting is the weight of the wax multiply per 7.7.

1st step) Preheat a slotted quartz crucible with the torch or put it in the oven.

Place the ingots in the crucible and heat them to a bright orange-red hue.

2nd step) Take the ring out of the oven and place it in the casting cradle. At this point bring the torch very aggressively down one inch from the top of the ingots. When the ingots lose definition and puddle, release the casting arm. It is very important not to leave the ring out of the oven any longer than 4-5 seconds prior to casting, due to the fact that there is an extreme drop in the temperature of the ring in a matter of seconds. Once the metal is melted and cast let it stand until the button loses the reddish colour and be able to catch it with the hand. Do not precipitate the cooling process.

FINISHING

Metal finishing can be accomplished by using diamond burs or polishing discs. The surface of the metal should be left rough not smooth. Sandblast the structure with aluminum oxide (50-110 microns).

DEGASSING

To create a desirable oxide control that the color light gray of the structure is uniformed. If you find areas with darker colour, polish the area, sandblast it and make the oxidation program again*. If the metal exhibits a dark red-brown oxide, this is an indication that the oxide firing was too high. In this instance, you will need to disc off the oxide, clean and repeat the oxide firing.

NEVER SANDBLAST, NOT REVIEW and NOT TOUCH the structure after degassing.

*Oxidation program:

- Initial temperature 500°C - 540°C
- Under full vacuum: raise 55°C per minutes until 982°C
- Once reached final temperature, release vacuum and remove from oven immediately.

OPAQUING

Once cleaned and degreased the structure make the opaque bakes as indicated by the manufacturer of the ceramic.

Optional treatment: Only on the first layer the final temperature will be about 1010°C (like eggshell color). Place in the oven at 538°C with vacuum according to the manufacturer's instructions raise the temperature to 55°C per minutes, release the vacuum. There is no hold time. This step is imperative to completely compound the oxide with the opaque porcelain for a strong bond. For the rest of bakes, both opaque and ceramic, follow the manufacturer's instructions.

Note: Tilite alloys can be safely cast to precision attachments or implants made of Platinum-Iridium alloys that have a 1593°C or higher melting point.