

Technical Instructions

Talladium Tilite® "P"; Talladium Tilite® "S"; Talladium Tilite® "V" Alloys; Talladium Tilite® Ω Alloys



Talladium, Inc.

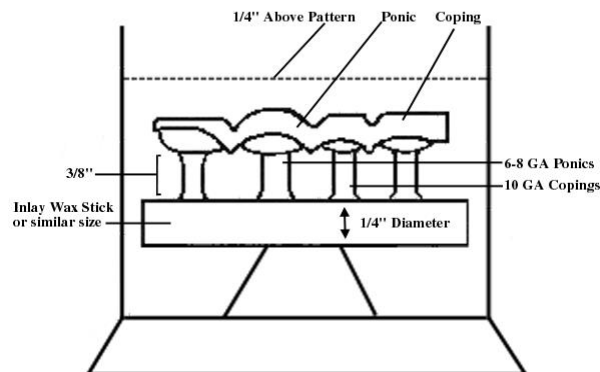
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WAXING

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 Talladium's Tilite® Ceramic Alloys high fluidity, more fluid than water, the patterns may be waxed and cast from .2 mm to .3 mm. This minimizes metal finishing and allows more room for porcelain, thus enhancing porcelain shades.

SPRUNG

The indirect spruing technique is recommended using a runner bar 1/4 inch in diameter, the size of a pencil. Inlay wax sticks work well for this. For copings use a 10 gauge sprue and for pontics use a 6-8 gauge or larger sprue. When using a 1/4 inch runner bar, the length of the sprues from the runner bar to the pattern, should be 3/8 of an inch long. See illustration.



Investing

Use a high heat casting investment like Talladium's **1700** or **Galaxy 2**. Follow the manufacturer's investing procedures. Do not use an alcohol based debubbler. Talladium only recommends using a water-based such as our **Pattern Prep Debubbler**. Spray the wax patterns and gently scrub the inside of the coping with a soft synthetic brush to help dissolve the die lube. Thoroughly rinse off the Pattern Prep solution with room temperature water. If using a metal ring use a ring liner that is one eighth of an inch thick like **Talladium's Ceramic Ring Liner**. For ringless, Talladium recommends **Talladium's "Best" Proven Ringless Casting System**. Be sure to only fill the ring 1/4 of an inch above the patterns. Talladium's investments do not need to be scraped.

Burnout

Mold temperature recommendation is 1700° F (927° C). Follow investment manufacturer's instructions.

Equipment

Use a casting torch with a multi-orifice tip with the capability to melt 2-3 ingots of Tilite in 12 seconds. If the operator uses a less effective torch that takes 20-30 seconds to melt 2-3 ingots, they might cause the alloy to burn.

Melting

The Tilite® Alloys may be melted by induction machine or with a gas-oxygen torch. For induction melting, the casting temperature is 2425° F (1329° C). When using a gas-oxygen torch, it is important that the torch have a multi-orifice tip. Introduce the gas and achieve an 18" to 24" flame. Now, introduce the oxygen. The oxygen should be set at 35-40 psi. The end result is a roaring/hissing flame.

Casting

Preheat a slotted quartz crucible with the torch. Place the ingots in the crucible and heat them to a bright orange-red hue. Take the ring out of the oven and place it in the casting cradle. At this point, hover over ingots until all are bright-orange. Then bring the torch 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 5 second prior to casting or risk a miscast.

Quenching Tilite® (Optional)

Remove investment mold from casting machine and open the oven door. If the inside of the oven is the same color as the metal button you may quench the mold. This will soften the alloy for easier cutting and grinding. During the degassing cycle, the alloy will be conditioned back to original hardness.

Metal Finishing

Metal finishing can be accomplished by using Talladium's **Wear-Ever Discs and T-2 Diamond**. The porcelain-bearing surface should be left rough not smooth. Do not use a white aluminum oxide stone, fine grit stones or carbide burrs to texture the porcelain-bearing surface. This will smooth the surface and trap impurities in the grain boundaries. Sintered diamond are not recommended as well since they will also contaminate the alloy.

Metal Preparation

Do not touch the porcelain bearing surface with your fingers. Air-abrade with Talladium's Brazilian (reddish-brown) aluminum oxide using a pressure range of 65-85 p.s.i. Now, rinse with distilled water in an Ultrasonic Cleaner for 1-2 minutes.

Tests performed by Talladium and a study done by the University of Minnesota School of Dentistry have proven that the Brazilian (reddish-brown) aluminum oxide creates a greater catalytic effect on the surface than white aluminum oxide, thus creating a superior bond.

Oxide Buildup (Degassing)

Place the metal work in a porcelain oven at 1000° F (538° C). Raise temperature 100° F (55° C) per minute to 1790°F (977°C) *no higher than 1800°F (982°C)* with vacuum and no hold time. The metal surface should have a straw, or honey colored oxide.

Do not sandblast after degassing. If the metal exhibits a dark red-brown oxide, this is an indication that the oxide firing was too high. Disc the oxide off to expose new metal and air-abrade. Repeat the oxide firing.

Opaque

1st Opaque: Fire wash to an eggshell sheen at 1850° F (1010° C) with vacuum and no hold time. This step is imperative to chemically compound the oxide with the opaque for a superior bond.

2nd Opaque: Follow manufacturer's directions.

Never do a rate of climb higher than 100° F (55° C) at any time with the Tilite Alloys.

Never do a slow cool down cycle with the Tilite® Alloys.

INSTRUCTIONS FOR CLEANING AFTER PLACED IN PATIENT'S MOUTH: Brush with any dental toothpaste as usual.

NOTE: Tilite Alloy can be safely cast to precision attachments or implants made of Platinum-Iridium type alloys that have a 2900° F/ 1593° C or higher melting point.

Tilite Premium
Tilite "V"
Tilite Star
Tilite Omega

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