Technical Procedures

STERNGOLD 66

WAXING AND SPRUING

Direct Spruing 610059 Rev F

The direct technique may be used for spruing single units. Use a 10 gauge (2.6mm Ø) sprue.

Indirect Spruing

The indirect technique is always preferred for spruing bridges, multiple units, and single units. With bridges use 10 gauge (2.6mm Ø) feed sprues 1/16 inch (1.6mm) long. For multiple units use the same size feed sprue. Attach the feed sprues along the length of a 8 gauge (3.3mm Ø) runner bar and connect the runner bar by two 6 gauge (4.1mm Ø) indirect sprues to the crucible former.

INVESTING AND BURNOUT

Technique: Invest the pattern in non-graphite, phosphate bonded investment. Follow the investment manufacturer's instruction.

Place the ring in a furnace preheated to 600˚F (316˚C) for 15 minutes. Raise the temperature to 1300˚F (704˚C) and let the ring heat soak at this temperature for approximately one hour.

If there is any plastic in the mold, a two-stage burnout is required. Place the ring in a cold furnace and raise the temperature at a rate of 10˚F (6˚C)/minute to 600˚F (315˚C). Heat soak at this temperature for 30 minutes. Raise the temperature to the normal burnout temperature at a normal rate and heat soak.

Allow additional burnout time for large rings, multiple rings, and very thin patterns.

CASTING

Technique: Use oxygen, at approximately 10 psi, combined with natural gas. If you use propane or butane, set the oxygen pressure at about 5 psi.

Take an extra wind on the casting machine. Use a 1:1 ratio of old alloy to new alloy. Preheat the crucible. melt the button and add a oral type flux. Then add the new metal ingots to the melt. Seat the ring in the casting machine. Continue heating the alloy until it spins…then cast.

Let the button cool until it is dark (about 5 minutes), then plunge in water and devest.

SOLDERING

Technique: Use borax paste flux or a fluoride flux, such as Sigma Lo Flux, on both the solder and the cast units. The highest temperature solder appropriate for each alloy is as shown on the back of this card. Lower temperature solders can also be used. Keep in mind that using other than the recommended solder may not match the alloy color as well as the listed combinations. If color is not a consideration, Post-Soldering low fusing Stern Chrome 2 white solder may be used.

HEAT TREATMENT

Technique: To anneal (soften) the alloy, place the casting in a furnace at 1300˚F (704˚C) and hold it here for 15 minutes. Then quench the casting in water.

To harden the alloy, first anneal it as described above, After quenching, place the casting in a furnace at 750˚F (400˚C) for 15 minutes. Then remove the casting and allow it to bench cool.