

# CASTELL

## NOBLE YELLOW TYPE 3 CROWN & BRIDGE ALLOY

**CASTELL** is a 20% Gold noble crown and bridge alloy. CASTELL'S chemistry is based on the gold-palladium-indium system which enhances the gold color of the product, making CASTELL a rich-yellow alloy that is corrosion resistant, tarnish resistant, and very economical. CASTELL has a low density, which results in more castings per ounce.

PROPERTIES		CHEMISTRY	
Melting Range	1560° to 1735°F (850° to 945°C)	Silver	38%
Density	11.0 g/cm <sup>3</sup>	Gold	20%
Hardness	175 HV	Palladium	20%
Tensile Elongation	8%	Indium	17%
Tensile Yield Strength	40,800 psi (280 MPa)	Zinc	4%
Ultimate Tensile Strength	75,000 psi (520 MPa)	Copper	1%
		Au & Pt group - 40%	
		Classification - Noble	

### PROCESSING TECHNIQUE

#### SPRUIING

The indirect method is recommended for multi-units. Use an 8 gauge runner bar with 10 gauge connectors. If preferred, the direct method may be used on both single units and small bridges. Use a 10 gauge sprue 1/4" (6mm) to 3/8" (9mm) long. Sprues longer than 3/8" (9mm) should have a reservoir 1/16" (1.5mm) from pattern. Patterns should be a maximum of 1/4" (6mm) from top of investment.

#### INVESTMENT

Gypsum investment (e.g. Beauty-Cast) is recommended and should be used at a burnout temperature of 1200°F (650°C). Phosphate investments may be used at a burnout temperature of 1300°F (705°C). Hold at the burnout temperature for a minimum of one hour. Add ten minutes for each larger ring size and each additional ring.

#### MELTING AND CASTING

Extra winds of the casting arm are not required. Melt with a reducing flame using gas and compressed air or gas and oxygen with 5 psi gas and 10 psi oxygen. DO NOT HEAT TO POINT OF ALLOY FORMING A BALL. Cast as soon as a consolidated pool is formed. DO NOT USE CASTING FLUX. The casting temperature is 1750°F (960°C). Water quench from a dull red heat.

#### DEVESTING AND FINISHING

Remove castings from investment. Blast with aluminum oxide to remove investment particles and oxidation. Do not pickle. Finish and polish using standard techniques.

#### SOLDER AND FLUX

Solder: 615 Fine Solder  
Flux: Brown Fluoride Flux

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