

# J-7

## NOBLE WHITE TYPE 3 CROWN & BRIDGE ALLOY

J-7 is a noble, white crown and bridge alloy with a low melting range. This low melting range gives J-7 very similar properties to High Gold Alloys. For example, J-7 uses the same investment and has the same burnout range as gold-based alloys. This means you can use the same techniques to process J-7 as you might with High Noble Alloys. J-7 is excellent for applications with high stress such as post and core.

PROPERTIES		CHEMISTRY	
Melting Range	1680° to 1810°F (915° to 985°C)	Silver	59.5%
Density	10.1 g/cm <sup>3</sup>	Palladium	25%
Hardness	235 HV	Copper	14%
Tensile Elongation	20%	Zinc	1.5%
Tensile Yield Strength	57,700 psi (400 MPa)	Contains less than 1% Ruthenium	
Ultimate Tensile Strength	75,400 psi (520 MPa)	Au & Pt group - 25%	
		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 AND BURNOUT

Either gypsum or phosphate bonded investment may be used following the manufacturer's instructions. The burnout temperature should be at least 900°F (480°C) and should not exceed 1200°F (650°C).

#### MELTING AND CASTING

Wind casting arm one turn more than normal. Gas/compressed air or gas/oxygen flame with 5 psi gas pressure and 10 psi oxygen pressure is recommended. J-7 will fully puddle and form a ball before it is ready to cast. DO NOT OVERHEAT. The casting temperature is 1900°F (1040°C).

#### DEVESTING AND FINISHING

Bench cool - quench when bottom of button turns dark. Remove castings from investment. Blast with aluminum oxide to remove investment particles and oxidation. Finish and polish using standard techniques.

#### SOLDER AND FLUX

Solder: 1400 Solder  
Flux: Brown Fluoride Flux

5042Y r1

