

**ANEXOS**

## ANEXO I – Propriedades do fio de NiTi de 0,155mm de diâmetro da empresa NDC.

### Material Data Sheet

### Nitinol SE508 Wire\*

#### PHYSICAL PROPERTIES

Melting Point:	2390°F	1310°C
Density:	0.234 lb/in <sup>3</sup>	6.5 g/cm <sup>3</sup>
Electrical Resistivity:	32 µohm-in	82 µohm-cm
Modulus of Elasticity:	6-11 x 10 <sup>6</sup> psi	41-75 x 10 <sup>3</sup> MPa
Coefficient of Thermal Expansion:	6.1 x 10 <sup>-6</sup> /°F	11 x 10 <sup>-6</sup> /°C

#### MECHANICAL PROPERTIES

Ultimate Tensile Strength (UTS):	160-200 x 10 <sup>3</sup> psi	1100-1150 MPa
Total Elongation (min):	10%	10%

#### SUPERELASTIC PROPERTIES

Loading Plateau Stress @ 3% strain (min):	65 x 10 <sup>3</sup> psi	450 MPa
Permanent Set (after 6% strain) (max):	0.2%	0.2%
Transformation Temperature (A <sub>p</sub> ):	41 to 64° F	5 to 18° C
Nickel (nominal):	55.8 wt. %	
Titanium:	Balance	
Oxygen (max):	0.05 wt. %	
Carbon (max):	0.02 wt. %	

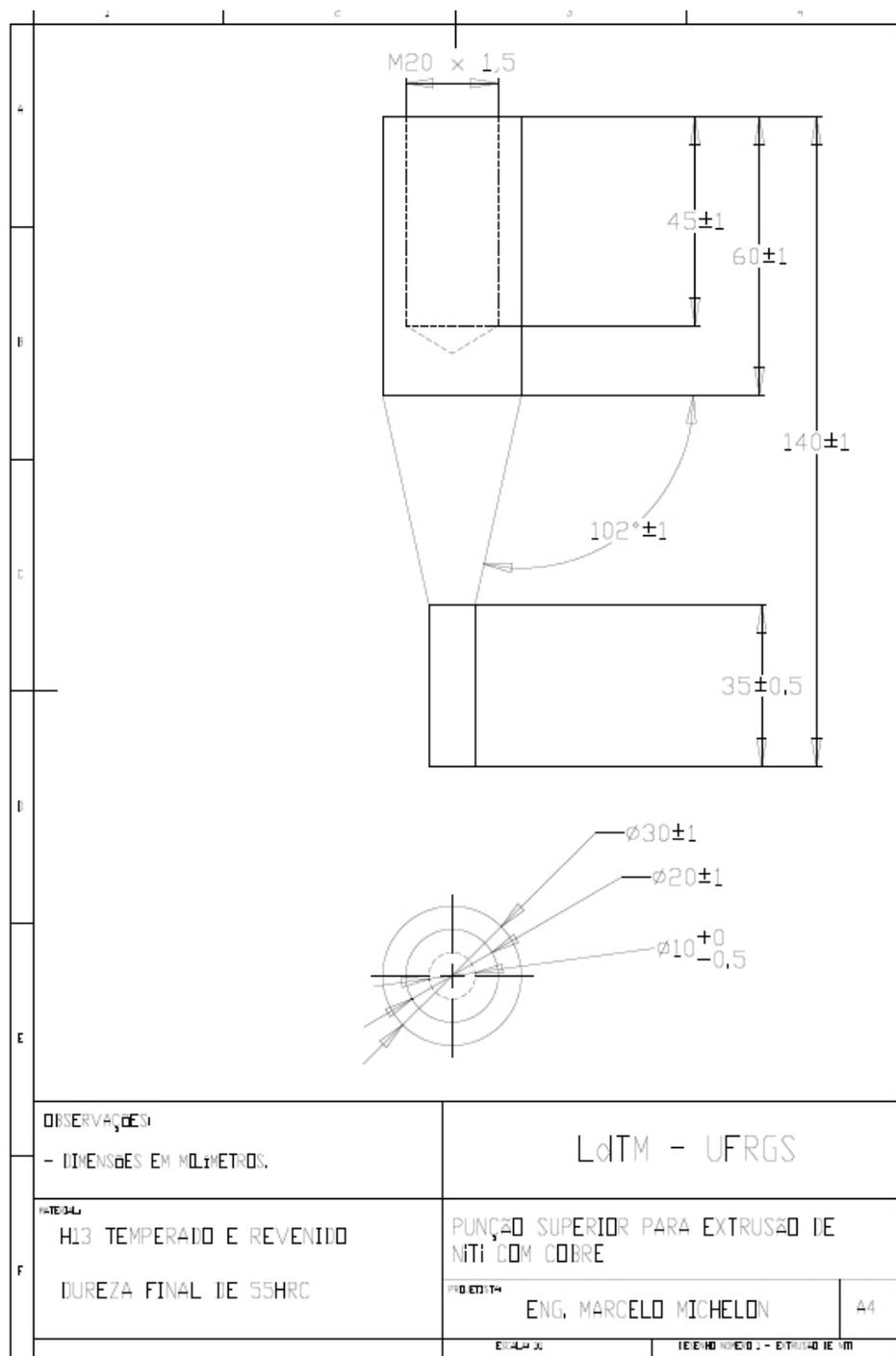
#### COMMENTS

These values should only be used as guidelines for developing material specifications. Properties of Nitinol Alloys are strongly dependent on processing history and ambient temperature. The mechanical and superelastic properties shown here are typical for standard superelastic straight wire at room temperature tested in uniaxial tension. Bending properties differ, and depend on specific geometries and applications. Modulus is dependent on temperature and strain. Certain shapes or product configurations may require custom specifications. Materials are also available in the cold-worked or annealed conditions.

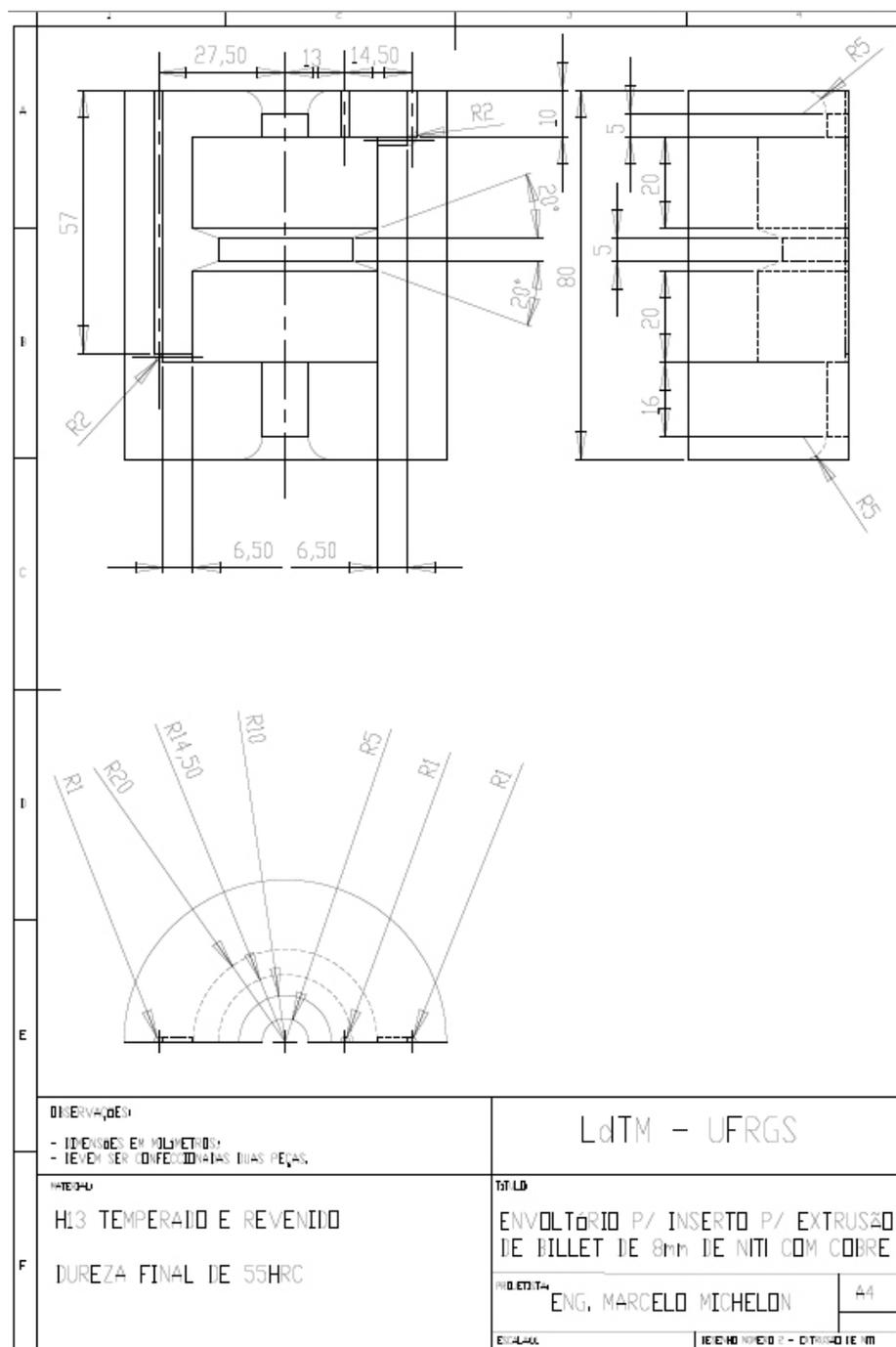
*\*All values are typical, at room temperature. SE508 is a binary alloy suitable for superelastic applications at room and/or body temperature.*



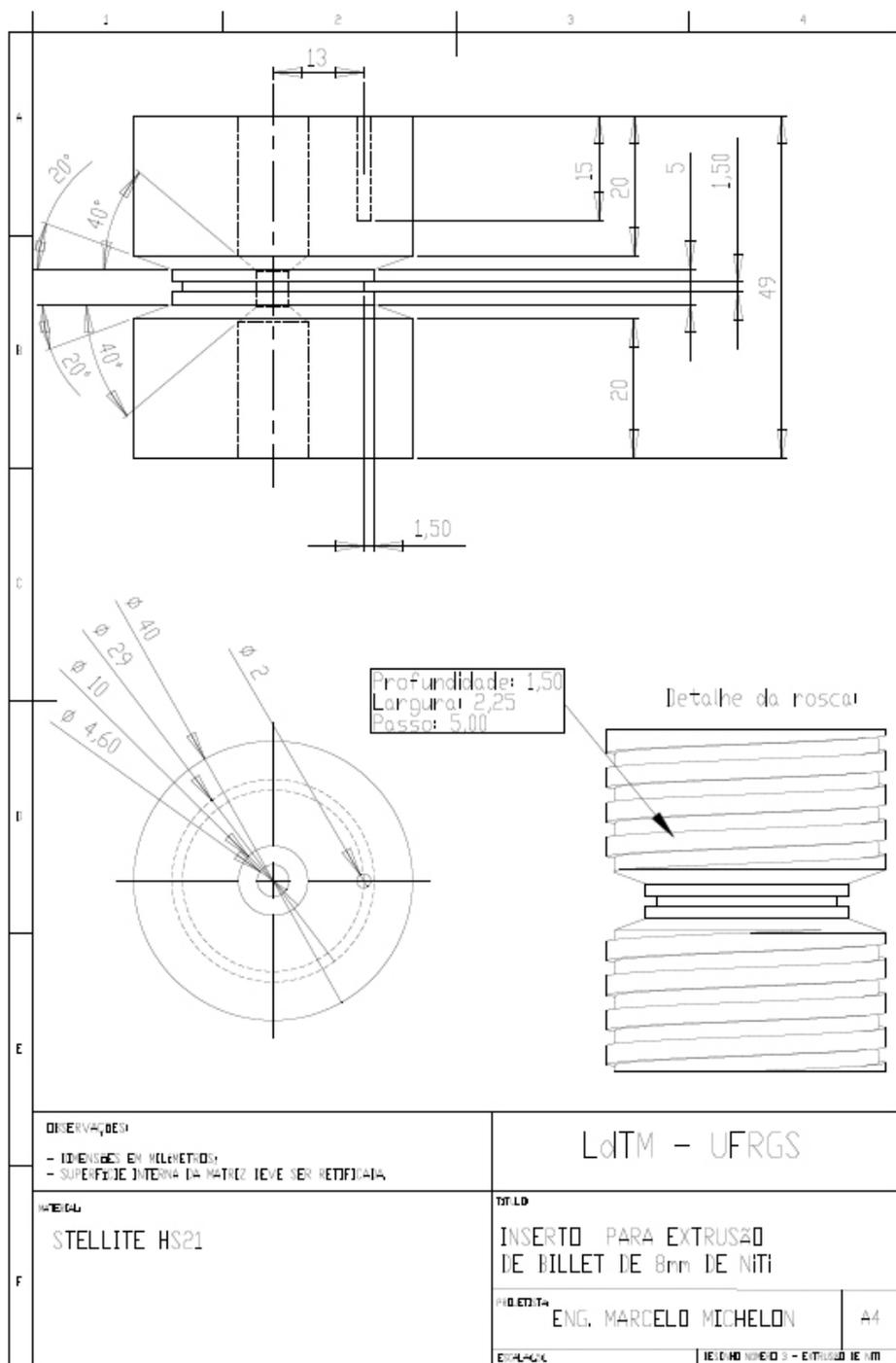
## ANEXO II – Punção de extrusão para *billets* de Nitinol.



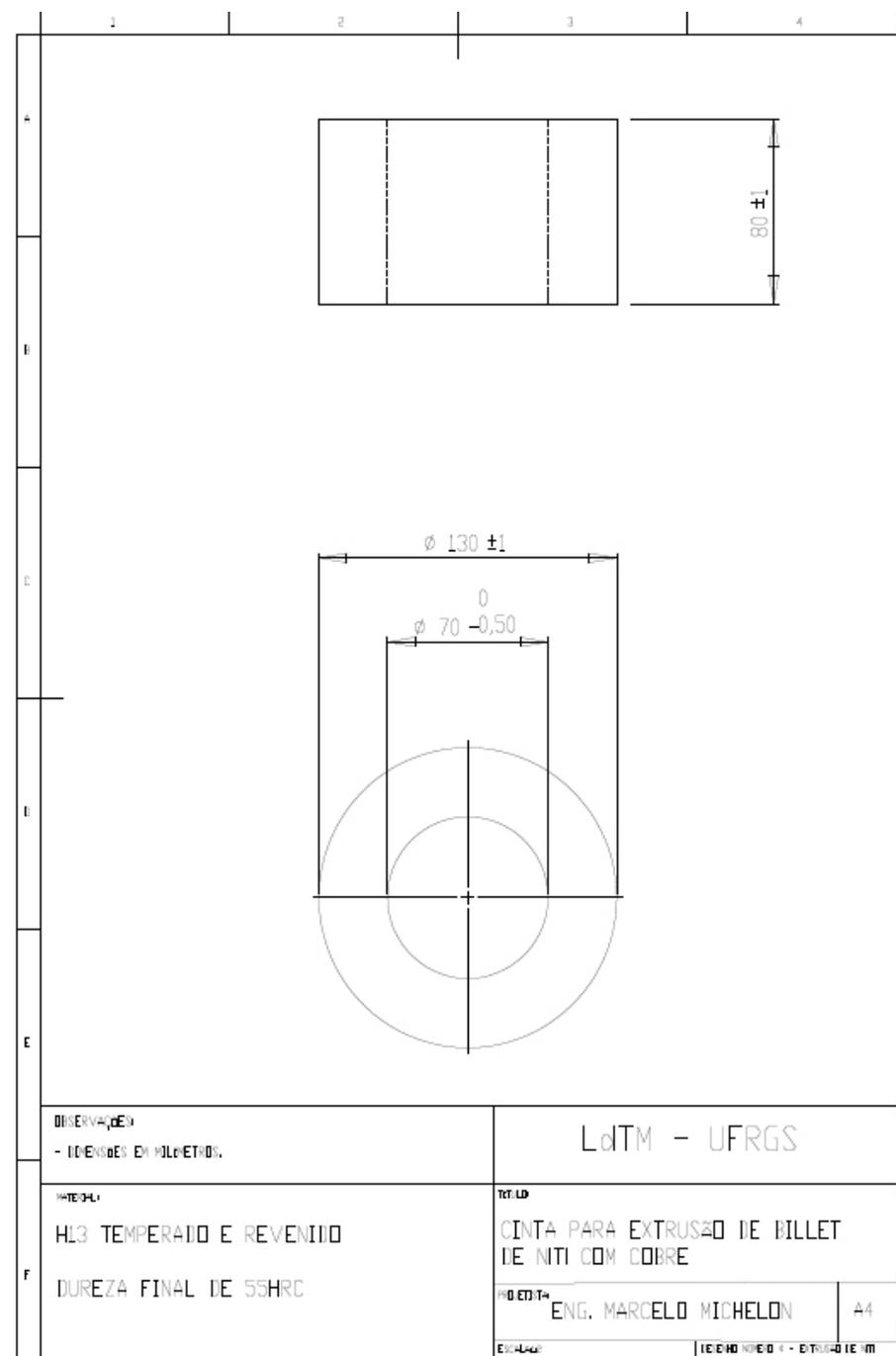
### ANEXO III – Envolvório bipartido para extrusão de *billet* de Nitinol.



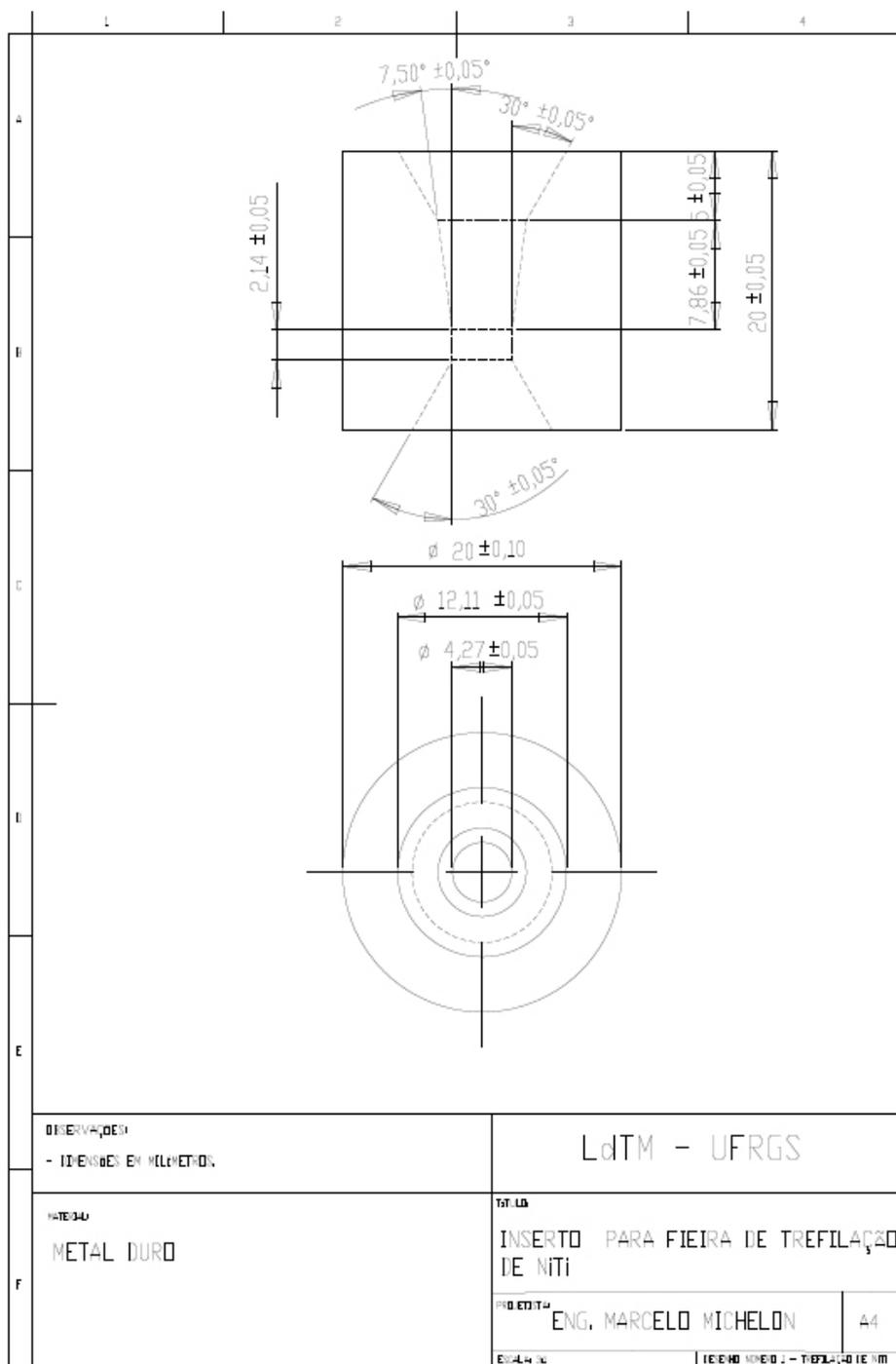
## ANEXO IV – Inseto para extrusão de *billets* de Nitinol.



## ANEXO V – Cinta para fixação de matriz bipartida de extrusão.



## ANEXO VI – Feira para trefilação de Nitinol.



## ANEXO VII – Carcaça para fieira de trefilação de Nitinol

