

# LION<sup>®</sup> Alloy T-900

## DESCRIPTION

LION<sup>®</sup> alloy T-900 is a new cobalt base, Laves-phase containing alloy with improved crack resistance over the traditional LION alloy T-800. Unlike alloy T-800 which requires a preheat of 1000<sup>o</sup>F or higher, the new T-900 powder can be welded with a preheat of 500<sup>o</sup>F.

Like other alloys in the LION alloy family, it is hardened by an intermetallic compound, i.e., a Laves phase, not by carbides as in the more common hardfacing materials. The wear test results indicate that alloy T-900 has similar wear resistance to alloy T-800 under low loads and outperforms the traditional alloy under high loads.

Because of the fact that the Laves phase retains its hardness up to 1450<sup>o</sup>F, the alloy has a good high temperature wear resistance. In addition, the high molybdenum content in the alloy imparts good localized corrosion resistance.

## TYPICAL DEPOSIT CHEMISTRY (wt%)

	T-800	T-900
Carbon	<0.08	<0.08
Chromium	18	18
Molybdenum	28	23
Silicon	3.4	2.7
Nickel	<1.0	16
Cobalt	Balance	Balance
Hardness (HRC)	57	53

## STANDARD PRODUCT FORMS, SIZES & PACKAGING

Diameter	Packaging	Part #
1/4" (6.4mm)	10# Bare Rod	11836100
3/16" (4.8mm)	10# Bare Rod	11858100
3/16" (4.8mm)	10# VacPak Coated	11858500
5/32" (4.0mm)	10# Bare Rod	11858200
5/32" (4.0mm)	10# VacPak Coated	11858400

## TYPICAL DEPOSIT CHARACTERISTICS

	Alloy T-800	Alloy T-900
Wear Volume (in <sup>3</sup> ) - 90 lb load	7 x 10 <sup>-6</sup>	12 x 10 <sup>-6</sup>
Wear Volume (in <sup>3</sup> ) - 150 lb load	66 x 10 <sup>-6</sup>	19 x 10 <sup>-6</sup>
Wear Volume (in <sup>3</sup> ) - 210 lb load	94 x 10 <sup>-6</sup>	24 x 10 <sup>-6</sup>
Mean Wear Scar Width (in) - 90 lb	0.06	0.07
Mean Wear Scar Width (in) - 150 lb	0.13	0.09
Mean Wear Scar Width (in) - 210 lb	0.15	0.09
Friction Force (lb) - 90 lb	41	39
Friction Force (lb) -150 lb	64	59
Friction Force (lb) -210 lb	77	80
Hardness Values (HRC)	57	53

## WEAR TEST DATA

- Test Method - Block-on-ring
- Block - Alloy Specimen
- Ring - SAE 4620 Steel, Rc 58-63, RMS 22-28 microns
- Load - 90#, 150# and 210#
- Sliding Distance - 220 meters (2000 revolutions)

*Note: The data presented is based on experimental and trial results. They are considered to be accurate but do not, in any way, constitute a specification of guarantee.*