Crown MAR 301-10

Gas Tungsten Arc Welding (GTAW) **TIG Wire** **DCEN** **All Position**

Tool Steel

"The Royal Line"
CROWN ALLOYS COMPANY
30105 Stephenson Hwy, Madison Heights, MI 48071
(248) 588-3790 (800) 521-7878 www.crownalloys.com

Premium Maraging Tool Steel TIG Alloy

Typical Applications

Crown MAR 301-10 is a nickel, cobalt, molybdenum TIG alloy designed to build-up and repair hot working dies and tools made from all grades of maraging steels used in the aluminum, magnesium and zinc die casting industry. The as welded hardness (RC 30-33) permits machining prior to artificial age hardening (maraging). This characteristic allows **Crown MAR 301-10** to also be used to build-up on H-11 and H-13 tool steels when machining in the as welded condition is desirable. After machining, **Crown MAR 301-10** will respond to any subsequent artificial aging in order to optimize the resistance to hot wear and alternating temperatures. When used in aluminum and zinc die casting dies, the weld deposits will harden in service. **Crown MAR 301-10** is used specifically on plastic and rubber injection molds, extrusion dies, cold forging dies, mandrels, dummy blocks, cold heading dies, punching dies, cold and hot cutting knives and Al-die cast molds.

Specifications

AISI/SAE Maraging 250

Typical Chemical Composition

Nickel	18.5%	Manganese	0.10% max
Cobalt	7.50%	Carbon	0.03% max
Molybdenum	4.80%	Others, Total	0.500% max
Titanium	0.40%	Iron	Balance

- Hardness (as welded) 30 – 33 Rockwell C
- Machinability (as welded) Good

- Tensile Strength* 260,000 psi
- Yield Strength* 255,000 psi
- Elongation* 11%
- Hardness* 49 – 53 Rockwell C

*Typical properties after post weld heat treatment. Heat to 900ºF and hold for three hours (see table below for other hardness values based on different aging schedules)

Heat to 600ºF/3hrs	34 – 36 Rockwell C
Heat to 700ºF/3hrs	38 – 41 Rockwell C
Heat to 800ºF/3hrs	42 – 45 Rockwell C
Heat to 850ºF/3hrs	46 – 49 Rockwell C

Procedure

Prepare area to be welded by grinding out cracks and other defects. Remove all contaminants. Maraging steels do not require a preheat, however, other steels should be preheated to their recommended preheat temperature prior to welding. Use DC straight polarity (DCEN) with argon shielding gas (20 – 40 cfh). Adjust the amperage according to the base metal thickness and the amount of deposit required. Keep work as cool as possible during welding.

Sizes and Part Numbers

Diameter	Part Numbers	
	1# Package	5# Package
1/16 x 36"	TT301/TL-BP	TT301/TL
3/32 x 36"	TT301/TN-BP	TT301/TN
1/8 x 36"	TT301/TO-BP	TT301/TO

!!!! WARNING !!!!

WELDING FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.

BEFORE USING THIS PRODUCT THE WELDER (END-USER) MUST READ AND UNDERSTAND THE COMPLETE PRODUCT WARNING LABEL AND THE NEW 16 SECTION SAFETY DATA SHEET (SDS).

THE SAFETY DATA SHEET (SDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE SDS PORTION OF THIS WEBSITE. IT IS ALSO AVAILABLE FROM YOUR EMPLOYER AND WELDING SUPPLY DISTRIBUTOR.

DO NOT PROCEED WITH USE OF THIS PRODUCT UNTIL YOU READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) AND PRODUCT WARNING STATEMENT.

BE SURE TO CONSULT THE LATEST VERSION OF THE SDS.

SEE THE PRODUCT WARNING LABEL AND SDS FOR COMPLETE WARNING INFORMATION.