



Steel Rod for Repair and Joining
of Air-Hardening Tools & Dies

TigTectic® 5AH



- For A-Series Steels
- Maintains properties In-Service
- Heat-Treatable

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TigTectic 5AH TIG rod is specially designed to weld A-series tool steels and particularly Grade A-2. This grade of rod is an air-hardening steel with superior non-deforming properties. Deposits show minimum heat crazing and are tolerant of high and in-service quenching operations. Deposits maintain shape and tolerance dimensions during service.

Weld deposits maintain impression profiles over many forging cycles and resist time-in-service tempering while maintaining superior toughness.

TECHNICAL DATA

Typical Values	
Hardness:	50 - 55 HRC as-deposited
Annealing Temperature:	1550 - 1600°F (843 - 871°C)
Hardening Temperature:	Heat slowly to 1300 - 1400°F (704 - 760°C)
Tempering Temperature:	500 - 1000°F (260 - 537°C) depending on hardness required
Preheat Temperature:	300 - 400°F (149 - 204°C)
Inter-pass Temperature:	±50°F of Preheat range for general applications
Current & Polarity:	DCEP (+) and AC

SUGGESTED WELDING PARAMETERS:

Diameter	Amperage	Shielding Gas
1/16" (1.6mm)	70 - 150	100% Argon @ 30 - 45 scfh

Note: Amperages are recommended based on the diameter of the Tungsten Electrode and NOT the filler.

PROCEDURE FOR USE

PREPARATION: Clean weld area of scale and/or oxide and degrease using VOC-free cleaners. Dye penetrant test to locate cracks. Prepare cracks by grinding so as to generate a "U" profile. For enclosed cracks without an end point continue the preparation some 1" (25mm) ahead of the crack. Preheat slowly according to the grade and heat treated condition of the tool or die.

TECHNIQUE: Start the arc by using impulse high-frequency or by using a copper startblock. Do not use a carbon block as this will contaminate the weld deposit! Deposit stringer beads. Do not weave more than 2x, as wide beads can cause distortion.

POST WELDING: Parts should be covered with a heat-retardant blanket or placed in a pre-heated furnace for controlled cool-down.

TYPICAL APPLICATIONS

Cold-work tool steels such as those used in drawing dies, coining dies, blanking and shaping dies, etc.



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