



Gas-Shielded Wire for the
Cladding or Repair of Mild
and High Speed Tool Steels

EnD0tec®

D0*06



- Low heat input for low dilution
- Maximum weld metal recovery
- Great flexibility in operation
- Exceptional all - position weldability
- High deposition rate for reduced labor costs

EnDOTec® DO*06

EnDOTec DO*06 is a gas-shielded, metal-cored, alloy wire ideal for manufacture and repair applications where the properties of high speed tool steels are desired or necessary.

The smooth, slag-free deposits are heat treatable and can be nitride. It is ideal for coating carbon steels, low alloy and high speed tool steels. Precise alloying creates dense, hard phases which ensure good resistance to adhesive wear and impact up to service temperatures of 1112°F (600°C).

TECHNICAL DATA

Typical Values	
Typical Hardness as-deposited:	62-64 HRC
Current & Polarity:	DC (+) electrode positive
Power Source Type:	Constant voltage & Integrated Wire Drive
Shielding Gases:	98% Ar + 2% O ₂ (1st) 100% Ar 98% Ar, 2% CO ₂
Shielding Gas Flow Rate:	30-40 SCFH

1/16" (1.6MM)	VOLTS	AMPS
Spray Arc	27-31	270-325
Short Arc	16-20	110-300

PROCEDURE FOR USE

Caution: Although a 2-roll wire drive assembly will work the optimum for maintaining arc voltage stability and consistent & smooth wire feeding is a serrated 4-roll drive assembly. Smooth drive rolls are not recommended!

Step 1: Remove all "old" cracked or spalled weld metal down to a sound base.

Step 2: When re-building, a cushion layer is advised. For 12-14% Mn steels, use EnDOTec DO*05, and for other alloy steels, EnDOTec DO*68S is recommended.

Step 3: Preheat the part to be hardfaced depending on its air hardenability potential and/or carbon level. For most constructional steels a nominal preheat of 150°F (65°C) is suggested and for medium alloy steels, ~250°F (~121°C). Prior to repair of HSS tools, parts should be annealed 2-5 hours at 1490°F (810°C). After cooling to room temperature a preheat of 932°F (500°C) should be used, followed by slow cooling in an insulating environment.

Note: Do not heat high manganese steels such as Hadfield Castings!

Step 4: After checking that the welding conditions are optimal by testing on scrap metal, position the gun head at a 70-80° angle and use a "push" technique for downhand welding. For fully automated welding such as hardfacing cylindrical parts, the wire should exit at about a 10° lagging angle from top dead center. Using this technique will assure a smooth and regular weld deposit profile with the optimum level of fusion.

Note: If welding is interrupted and the part being welded cools to room temperature, make sure to reheat to the original preheat temperature. For hardenable steels slow cooling is advised using silicone blankets, vermiculite, or other environmentally suitable heat-retardant material.

Step 5: For most applications, other than a superficial grind, finishing is not required. If some level of profiling is needed, grinding can be used for more precise shaping as deposits are non-machinable.

TYPICAL APPLICATIONS

Protective coatings to resist combined wear phenomena like pressure, impact and metal to metal adhesion at high temperatures up to 1112°F (600°C). Composite coating of high speed steel quality deposits on carbon steels or repairs of hot or cold working tools and dies used for cutting or forming.



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