

Metal Forming

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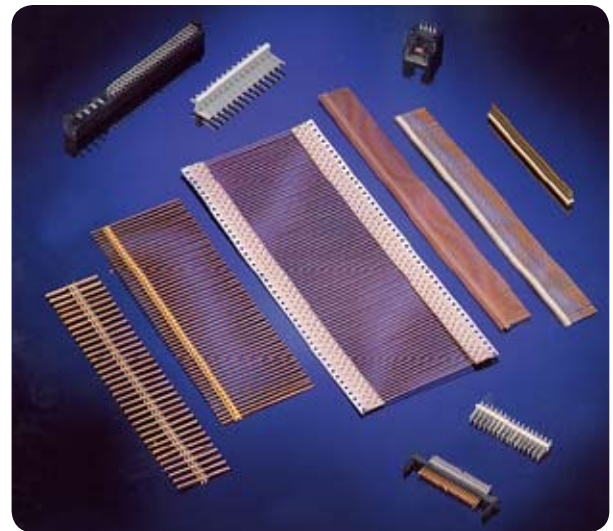
Tooling Update

Tooling Change Generates 350-Percent Productivity Increase

Intricate Metal Forming Co. (IMF), Roanoke, VA, performs high-speed progressive stamping of electronic contacts of square, round and rectangular wire, including stamping of 0.009-in. Type 1006 cold-rolled steel to manufacture bandoliers with U-shaped channels that seat the pins for trimming and shaping.

Recently, the firm experienced excessive tooling wear when stamping the bandolier or carrier strip to support the electrical contact. Presses were running at speeds of 1200 strokes/min., yielding 17 coils—at 100,000 parts per coil—before the tooling needed to be sharpened. Production manager Larry Rehak turned to carbide supplier General Carbide, Greensburg, PA, to help engineer a solution, which came during the third quarter of 2009 when IMF switched to General Carbide's GC-813CT bi-modal tooling made with additions of chromium carbide and tantalum carbide.

General Carbide produces tungsten carbide preforms and blanks used for wear, cutting and metalforming operations. GC-813CT (rated to a hardness of 90.5 to 91.5 HRA), reports Rehak, has reduced corrosion and galling, and has enabled IMF to run as many as 65 coils per tool sharpening and experience a 350-percent productivity increase. With its previous tooling, IMF changed tooling once each day; now, tools remain in the press for four days. GC tooling now runs in three IMF presses.



Telephone: 724.836.3000
www.generalcarbide.com



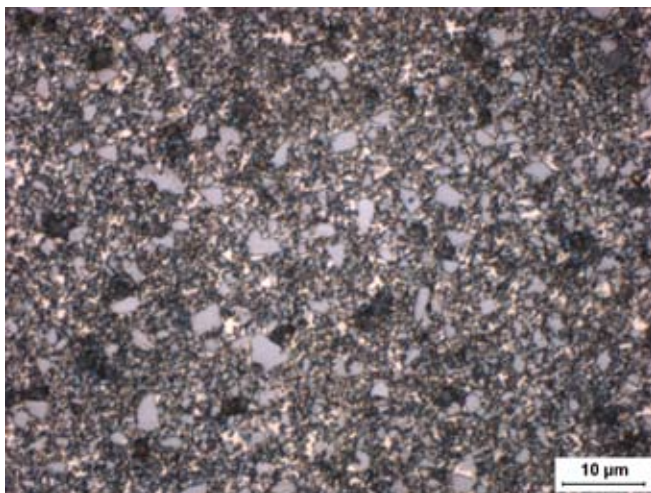
GRADE SPECIFICATIONS

Grade: GC-813CT

Composition: Tungsten Carbide:	86.5%
Cobalt:	10.5%
Tantalum Carbide:	2.0%
Other:	1.0%

Physical Properties:

Hardness, HRA (ASTM B294)	90.5 - 91.5
Density, g/cc (ASTM B311)	14.24 - 14.36
Average Transverse Rupture Strength, psi (ASTM B406)	460,000
Typical Porosity (ASTM B276)	A02-B00-C00



Performance Characteristics	
Wear	Mod--High
Impact	Moderate
Galling	Mod--High
Corrosion.....	High

Grade Attributes: The carbide particle's multi-grain size matrix coupled with the medium binder content provides an excellent wear resistant grade with resistance to impact. The tantalum carbide addition efficiently withstands galling that often occurs in cold rolled steel and stainless steel stamping and it provides thermal edge deformation resistance.

Other alloying agents ensure resistance to corrosion in the EDM process and prevent atmospheric corrosion from residual lubrication on die surfaces at tooling stores.

Typical Applications: All lamination tooling, large EDM blocks, stamping punches, dies and powder metal tooling.



GENERALCARBIDE

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