Eureka Welding Alloys
2000 E. Avis Drive
Madison Heights, MI 48071

Dated: October 13, 2000
Revised: March 19, 2008

INTRODUCTION

Eurekamatic No. 640 Alloy Cored Wire was developed for the replacement of large diameter welding electrodes. The advantages of wire welding outweigh those of electrode welding in that (1) cored wire welding is 95 - 97 percent efficient as opposed to electrode welding being only 60 percent efficient; (2) wire welding displays a much lower current density; therefore, allowing longer welding times without huge amounts of heat build up. **Eurekamatic No. 640 Alloy Cored Wire** has very little slag to contend with, therefore, eliminating costly positioning time.

METALLURGICAL CHARACTERISTICS

Eurekamatic No. 640 Alloy Cored Wire is a carefully balanced Nickel, Chromium, and Molybdenum combination designed such that its physical and mechanical properties correspond with standard die block. This alloy displays high impact properties and moderate abrasion resistance.

RECOMMENDED APPLICATIONS

Eurekamatic No. 640 Alloy Cored Wire is generally used to fill obsolete impressions that are no longer utilized. This allows for die block reclamation and minimizes die inventory. It is also useful for full impression repair where standard block properties are acceptable, such as low volume forging where high production is not encountered. Forge components can be successfully repaired such as rams, sow blocks, die holders, etc., where additional hardness is needed.

PREPARATION AND WELDING PROCEDURE

1. Use a stiff wire wheel to remove all surface dirt, scale, or any fatigued metal.

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PREPARATION AND WELDING PROCEDURE

(continued)

2. All cracks and heat checks must be removed entirely. This can be accomplished by grinding or machining and or air carbon arc gouging. Note: If air carbon arc gouging is to be utilized. Then preheating prior to gouging will be necessary. In stock removal, allow at least 1/2" per side and deeper of the impression to guard against dilution or admixture with the base metal.

3. Select a preheat temperature according to the base metal (heat for one hour per inch maximum cross sectional thickness at temperature.)

4. Select D.C. reverse polarity.

5. Select the proper diameter wire according to job size or repair area.

6. Select the proper combination of voltage and amperage to effectively weld so as not to overheat or disturb the base. (See chart under welding parameters)

7. Utilize good welding techniques – peening thoroughly after each welding session to offset shrinkage and welding stress in the crater of the weld.

8. Control interpass temperature as close as possible to preheat temperature.

9. After welding, **post heat** at the temperature used to preheat to equalize thermal gradients.

10. After post heating, slow cool the die by covering it with heat resistant blankets (Kaowool, Cerawool) to 150°F. minimum.

11. Return the die or component to the furnace for tempering. Temper the die or component according to the temper chart of the welding alloy for desired hardness.

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(continued)

12. Remove from furnace and slow cool. (Same as Step 8)

13. Double temper. (Highly recommended)

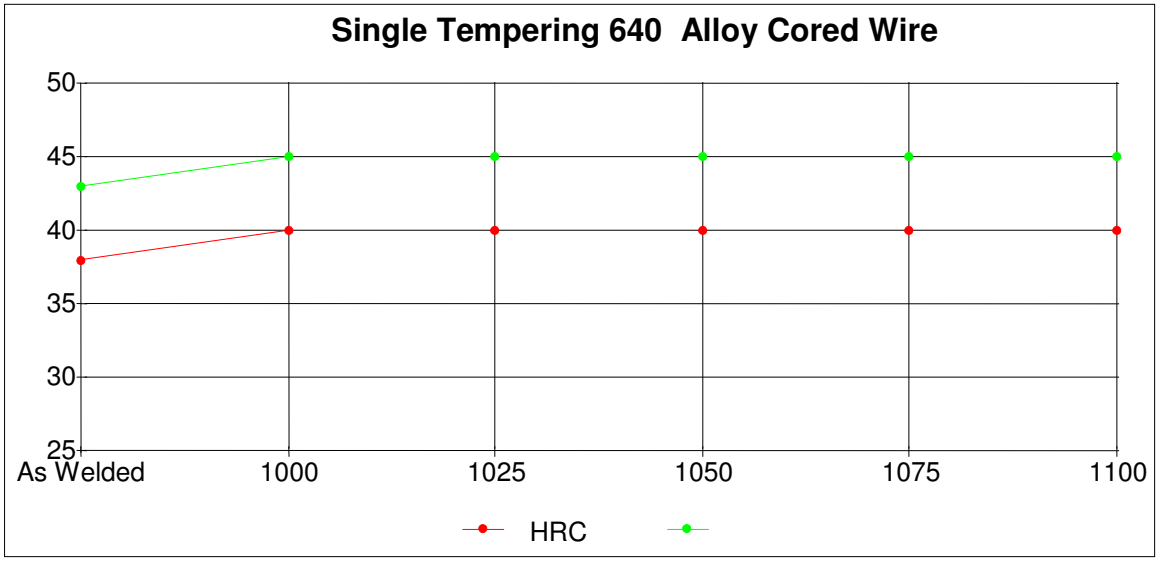
WELDING PARAMETERS

Type	Size	Amp Range	Volts
640 A.C.W.	3/32”	500 – 575	29 – 33
	1/8”	600 – 900	30 – 34
Use 75% Argon, 25% Co2 shielding gas at 60 – 90 C.F.H.*			

***Cubic foot per hour**

HARDNESS DATA

Hardness as welded 39 -45 HRC.



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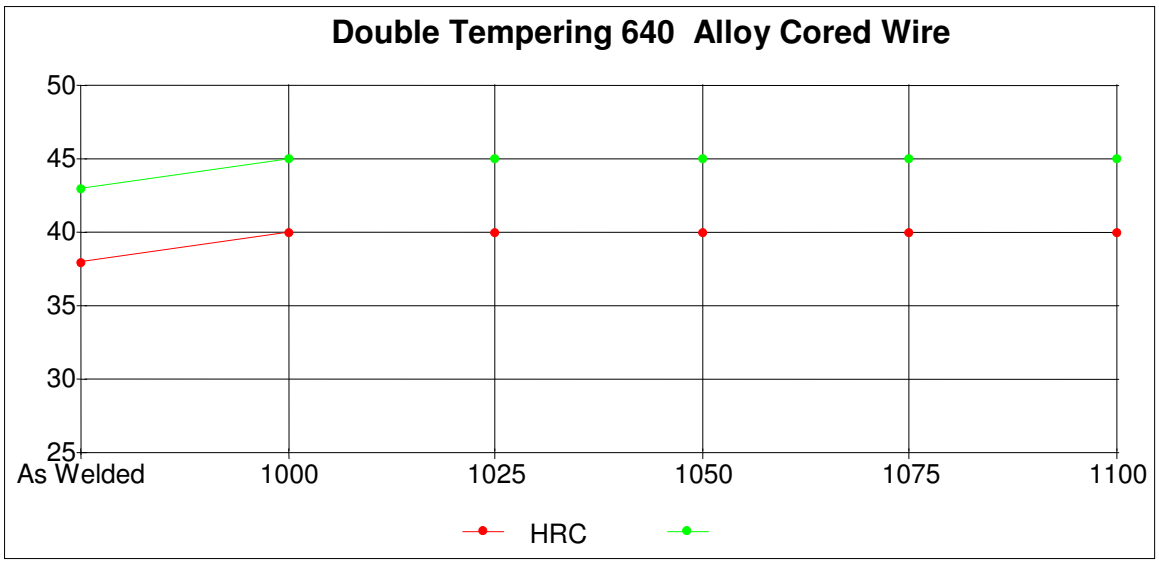

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