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Recommendations for Welding DYNA-BLUE®

I. Die Preparation

We recommend that the die/mold be cleaned of all residuals (plastics, aluminum, etc) and oxides before welding. A successful method we have used is:

1. Hydrochloric acid pickle (less than 40% HCL) or
2. Glass bead with 100% coverage at low pressure to maintain micro finish.
3. Bevel cut the area to be filled 90 degrees.

II. Welding Procedure

1. Preheat the die to minimum of 950°F. Use wed rod identical to the base material, such as H-13, P-20, etc.
2. Use proper rod and gap angle (rod angle 10-15°, arc gap angle equal to diameter of weld rod.)
3. For MIG welding use appropriate wire material (see #1 above) and the heaviest inert gas possible. For multiple pass welding start at the root of the bevel and make multiple passes, from left to right then the middle until the bevel is slightly overfilled.

III. Machine welded area

1. Machine /bench welded area to desired finish. If porosity is present there is a high probability that the shielding gas was disrupted. Die penetrant, magnetic particle inspection or acid etching can be used to verify integrity of the weld.

IV. Stress Relieve

Stress relieve at a temperature of 50°F less than the original tempering temperature or at a minimum of 1000°F for DYNA-BLUE 5A and 1100°F for DYNA-BLUE 3A. Hold for 1 hour per inch of thickness.

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