



## M-1 ALUMINUM MOLD PLATE WELDING TIPS SHEET

EXHIBIT 3

- A. Preheating M-1 Aluminum Mold Plate is not required in all welding situations. However, preheating blocks or area to be welded to 180-200 degrees F. will allow for better weld starts and in obtaining more consistent welds in general.
- B. We recommend two types of filler wire for welding on M-1.
  - 1. 2319 alloy filler wire is the preferred choice and is required in welded areas where it is necessary to maintain the best possible hardness and finishing characteristics. (Note: welding with 2319 wire requires some practice and experimentation to perfect)
  - 2. 4043 alloy filler wire can also be used in welded areas where maintaining hardness and finishing characteristics is not as important. (1/8" dia. wire is most common)
- C. We recommend the use of Helium Gas. The regulator should be set at approx. 15 psi. (Preweld of shielding gas is important in reducing starting porosity)
- D. Set machine at DC (Straight Polarity) and H.F. or Start.
- E. Use 1/8" dia. 2% Tungsten Electrode Tip.
- F. Cleaning of the area to be welded and the filler wire is essential. This should be done immediately before welding is to begin. Clean filler wire with approved aluminum cleaner and make sure to handle only with clean lint free cloths or gloves to eliminate any contaminants on the surface of the filler wire. With approved aluminum cleaner, first degrease the area of the block to be welded and then use a stainless steel wire brush and approved aluminum cleaner to remove all surface oxides.
- G. Make sure the welding area is free from any winds or drafts that could affect the proper flow of shielding gas.

### Notes:

These tips and recommendations are for your assistance in obtaining high quality welds on M-1 Aluminum Mold Plate. It is important to note that because of differences in welding equipment, welding techniques, filler wire producers and climate differences, adjustments and experimentation may be required to perfect your individual welding method and results. Other (experience oriented) methods of welding standard aluminum mold plate products may also provide acceptable results.

Welding wire storage and protection is very important. Temperature and humidity changes can create condensation on the filler wire which can form hydrogen gas during the welding process. This will cause welds to look black and/or pitted. We recommend that filler wire be stored in a low humidity environment at all times.

For additional assistance, Please contact Alpase, Inc. at 1-800-800-8675