WELDING ISSUES & POSSIBLE SOLUTIONS

A Guide to Troubleshooting Common GMAW Gun and Consumable Problems

Making a high-quality MIG weld is no easy task. But making a high-quality MIG weld when your gun and consumables aren't functioning properly is just about impossible. Porosity, excessive spatter, undercut and burn back are just a few of the problems that can occur when something's not right with these components. Troubleshooting weld defects can be a difficult task, since any single problem can be caused by a variety of factors. It is often easier to avoid weld defects from occurring by conducting a thorough check of your MIG gun and consumables prior to welding than it is to troubleshoot an existing issue. Problems will inevitably occur, however, and being able to quickly and accurately identify their source will save you both money and frustration. The following is a guide to solving many of the most common consumables and gun-related problems associated with MIG welding.

Extreme spatter

Extreme spatter — From a gun and consumables perspective, improper tip installation and improper weld puddle protection are two common causes of excessive spatter. First check to make sure the tip is installed properly and that it is at the correct recess for the application. Next, verify that the correct shielding gas is being used and that the weld is receiving adequate shielding gas coverage. Too little or too much shielding gas can both cause poor weld puddle protection and lead to excessive spatter. Clogged nozzle and diffuser orifices could cause too little shielding gas flow, so check and clean or replace the nozzle and diffuser as necessary. Additional non-equipment-related causes of excessive spatter can be incorrect electrical parameters or a contaminated work piece. Verify that the voltage and wire feed speed are at the recommended levels for the application and that the work piece is free of rust, mill scale and other contaminants. Some welding factors, such as the short circuit process, using pure CO_2 gas and galvanized metal have inherently higher spatter rates, which can be mitigated through using an Argon rich gas blend or a different filler metal transfer process.

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