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.

Erratic arc

Erratic arc — If not caused by erratic wire feeding, the most common cause of an erratic arc is usually inconsistent electrical conductivity. If the contact tip is either too big to begin with or worn out from use, it can fail to consistently conduct electricity to the wire and thereby cause an erratic arc. In either situation, the contact tip should be replaced with a new one that is the correct size. If the gun neck being used is too straight, it could produce an erratic arc through a lack of conductivity. The bend in the neck increases electrical conductivity by creating a continuous contact point as the wire is guided along the outside of the bend in the liner and through the tip. An erratic arc caused by an insufficient bend angle needs to be addressed through the installation of a neck with a 45- or 60-degree bend. Another possible cause of an erratic arc is a worn or kinked liner, or build-up inside the liner, which should be resolved by replacing the liner and checking the condition of the wire to ensure there are no inconsistencies that will cause the problem to recur. Also be sure to check the work lead/ground clamp and gun connections to ensure a good electrical circuit is established.

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