

Magnetic Arc Control—Problem Solver

AP Automation Magnetic Arc Control Systems solve the five main problem areas of automatic arc welding. The sound welds achieved by magnetic arc control are particularly essential when fabricating exotic alloys, and when the end product is subjected to elevated temperature, high pressure, and unusual stress or vibration.

Problem	Solution
 Arc blow or wander causes misplaced bead and lack of penetration.  Large gap causes excessive drop-through and root-side undercut.	  Uniform penetration achieved with magnetic arc control. Magnetic arc control directs and shapes the arc, controlling heat distribution and penetration between the segments being joined to yield consistent, uniform welds.
 Sharp crevices in butt weld.  Flat fillet with sharp crevices on both members.	  Minimized undercutting with magnetic arc control. Magnetic arc control sweeps the arc back and forth across the weld line, directing the required amount of heat to the weld edges, and both widening and flattening the head.
  Lack of fusion in V and U-grooves.	  Uniform sidewall fusion achieved with magnetic arc control. In multi-pass groove joints, magnetic arc control oscillates the arc in the groove, directing the heat to the desired position for uniform sidewall fusion.
 Typical porosity caused by gases generated in melted base metal.	 Sound welds achieved with magnetic arc control. Magnetic arc control stirs the arc, helping to eliminate bubbles and porosity in the weld.
 Insufficient heat on thick member prevents proper penetration and fusion to thin member.	 Uniform penetration on thick and thin members, no undercutting with magnetic arc control. With Magnetic arc control, you can specify the proportion of time the arc spends on either side of the weld seam. When joining members of different cross sections, magnetic arc control makes it easy to place the arc exactly where it is needed – penetrating the thick wall adequately while preventing undercutting on the thin wall.