

# Welding Issue and Cause Matrix

Relationships between issues and causes: S = Strong W = Weak	Issues														
	Missing Weld	Undersized Weld	Stuck Weld	Excessive Indentation	Expulsion/ Burn Thru	Cracks and Holes	Mislocated or Edge Welds	Sheet Metal Distortion	Extra Welds	Inconsistent Weld Quality	Brittle Weld	Non-Round Weld	Poor Class A Appearance	Sticking or Stuck Tips	Interfacial Separation
<b>Weld Current Low</b>	S	S	S									S			
<b>Weld Current High</b>				S	S	S							S	S	
<b>Weld Force Low</b>					W	S							W	S	
<b>Weld Force High</b>		S	S	S									S		
<b>Weld Time Short</b>	S	S	W									S			
<b>Weld Time Long</b>				S	W								W	W	
<b>Squeeze Time Short</b>					W	S							W		
<b>Hold Time Short</b>					W	S					W		S		S
<b>Hold Time Long</b>											S			S	W
<b>Wrong Tips</b>		S	S	W	W	W	S	W				S	W	S	
<b>Inc. Tip Alignment</b>		S			W	W	S	W				S	S		
<b>Electrode Wear</b>	W	S	S		W							S	W		
<b>Electrode Skidding</b>		S		W	W			W		S		S	W		
<b>Inc. Tip Dressing</b>	W	W	W	W	W	S				W	W	S	S	W	
<b>Wrong Shank</b>	W	W	W	W	W	W	W	W				W	W		
<b>Insufficient Cooling</b>		S	W			S				W				W	
<b>Poor Mech. Connect</b>		S	W		W	W				S			W		
<b>Inc. Air/Hydraulics</b>		S	W	W	W	S				W				W	
<b>Incorrect Cylinder</b>		S	W	W	W	W				W		W	S	W	
<b>Incorrect Hoses</b>					W	W		W					W	W	
<b>Poor Elec. Connect</b>	S	S	W							S		S			
<b>Wrong Transformer</b>	W	W	W	W	W	W				W		W	W	W	
<b>Wrong Cables/Shunts</b>	W	W	W				W	W		S		W	W	W	
<b>Poor Weld Access</b>		S	W				S	S					S		
<b>Shunting Guns/Parts</b>		S	W							S		S	S		
<b>Incorrect Material</b>		S	W		W	W				W		W	W	S	
<b>Dirty Material</b>		S	W		W	W				S		S	S		
<b>Excessive Sealer</b>	S	S	W	S	S	W				S		S		W	
<b>Poor Part Fit-Up</b>	W	S	W	S	S	W	S	S		S		S	S		
<b>Damaged Part</b>		S			W	W	W	S		W		W	S		
<b>Weld Flange Small</b>					S	W	S								
<b>Welds Mislocated</b>	S			W	W		S	S	S	S			S		
<b>Tips Not Parallel</b>		S		S	W			W				S	S	S	
<b>Inc. Gun Equalization</b>				W				S					S		
<b>Incorrect Tests</b>	W	S		W			W	W	W	W	S	S	W		S
<b>Incorrect Workpiece</b>	S	W	W	W	W	W	S	S	S	W	W	W	W	W	W
<b>Poor Tip Follow-Up</b>		W			S					S		W	S	W	