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THE FORERUNNER
IN SPECIALTY METALS

TROUBLESHOOTING RESISTANCE WELDING

This chart is intended only as a checklist of the possible causes of some of the more common weld defects
The data shown should be used only as a guide and applies basically to two equal thicknesses of mild steel.

AREA OF CAUSE	POSSIBLE CAUSE OF WELD DEFECT		TYPE OF DEFECT: EXPULSION AT WELD INTERFACE	SURFACE EXPULSION ELECTRODE STICKING	ELECTRODE MUSHROOM	LOW WELD STRENGTH	EXCESSIVE WELD INDENTATION	INTERNAL CRACKS IN WELD NUGGET	CRACKS IN PARENT MATERIAL	DISPLACED WELD NUGGET
WELDER CONDITIONS	SQUEEZE TIME - Short		Ω	Ω						
	WELD TIME	Short				Ω				
		Long		Ω	Ω		Ω	Y		
	HOLD TIME - Short			Ω		Y		Ω	Y	
	WELD FORCE	Low	Ω	Ω	Ω	Ω	Y	Ω		
		High			Y	Y	Ω		Ω	
	WELD CURRENT	Low				Ω				
		High	Y	Ω	Ω		Ω			
WELDING ELECTRODES	ELECTRODE FACE AREA	Small			Ω	Ω	Y	Y	Y	
		Large				Y				
	ELECTRODES MISALIGNED			Y						Ω
	INSUFFICIENT COOLING				Ω		Y		Ω	
	POOR HEAT BALANCE			Y		Ω				Ω
	ELECTRODE MATERIAL CONDUCTIVITY	Low		Y	Y					Y
		High				Y				Y
PARTS WELDED	DIRTY-SCALEY MATERIAL		Ω	Ω		Y		Ω		
	POOR FIT UP		Ω			Y	Ω			Ω
	INSUFFICIENT EDGE DISTANCE		Ω	Y		Y	Y			
	WELDS TOO CLOSE TOGETHER					Ω				
	METALLURGY OF WELDED MATERIAL		Y	Y		Y	Y	Ω	Ω	
MISCELLANEOUS	POOR HEAD FOLLOW-UP		Y	Y			Y	Ω		
	WELDER HEAD IMPACTS WORK				Ω		Ω			
	POOR VOLTAGE REGULATION		Y	Y						
	POOR AIR PRESSURE REGULATION		Y	Y						

Note: Causes Considered Individually

Ω = MORE PREVALENT **Y = LESS PREVALENT**