

### Spin Welding Process Troubleshooting Guide

Problem	Symptom	Possible Cause	Recommended Solution
Overwelding	Excessive weld flash	Weld Time or Distance are too large	Reduce Weld Time or Distance
	Welded assembly dimensions are too small	Incorrect Flash trap design	Evaluate and correct flash trap design
Underwelding	Low strength weld	Weld Time or Distance are too small	Increase Weld Time or Distance
	Welded assembly dimensions are too large	Material difficult to weld due to low friction coefficient	Degrease joint interface to remove mold release agent Consider changing material (i.e. avoid PTFE)
Nonuniform or inconsistent weld joints	Excessive weld flash	Warped parts	Check part dimensions
	Low weld strength	Uneven weld interface	Check molding process conditions
	Failure when leak tested	Fixture and part are not parallel	Level fixture where necessary Check that tooling is true to table
	Part failure in service	Poor alignment of parts in tool and/or fixture	Change part or tool dimensions Improve part tolerance due to cavity
		Insufficient fixture support	Check for parts shifting during welding Provide features in parts for rotational driving (i.e. drive ribs or cavities)
		Part walls flexing during weld	Redesign parts with reinforcing ribs and/or tongue-and-groove joints
		Excessive filler or uneven distribution	Reduce amount of filler Improve processing conditions to ensure even distribution of filler
		Moisture in parts	Prevent moisture absorption after molding prior to welding Dry parts before welding
Final part orientation different from programmed orientation	Parts not aligned properly	Deceleration too low	Increase spin deceleration as high as possible (if set too high, welder will fault with tracking errors)
		Vertical speed too high	Reduce speed to decrease spin torque required
		Poor tuning	Determine and enter tool inertia correctly into Setup Contact DUKANE for special tuning requirements
		Parts not held properly by tool or fixture	Ensure tooling does not allow excessive play