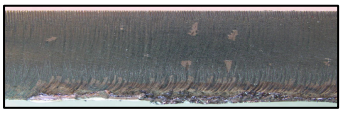
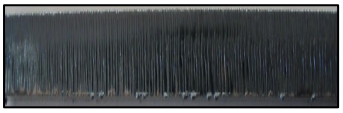
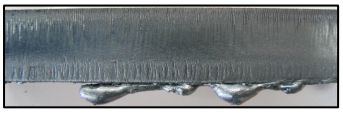
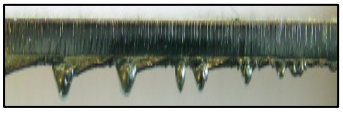
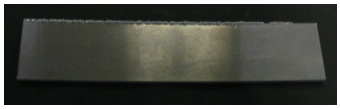
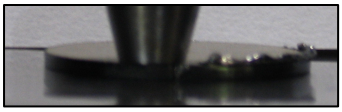
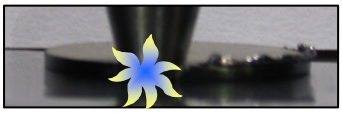
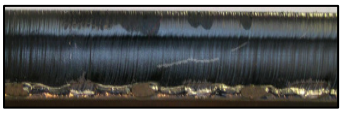
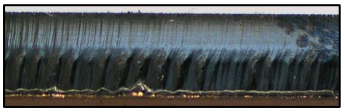
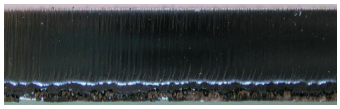
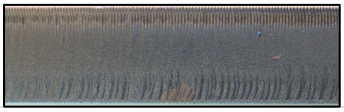
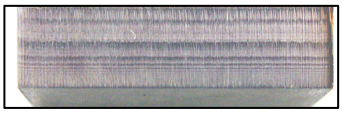
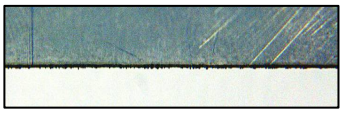
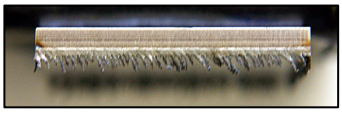
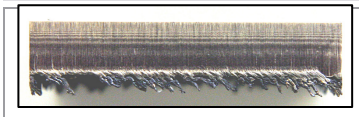
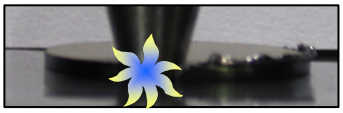
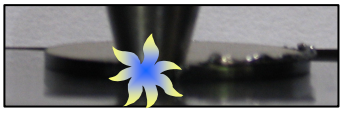
Mild Steel with Oxygen as an Assist Gas

* Note : Before adjusting cut conditions, the operator should ensure that the machine setup is correct. The nozzle should be checked for damage and to ensure that the correct nozzle is on the machine. The machine must also be properly centered, the lens should be clean, and the machine must be properly focused. *

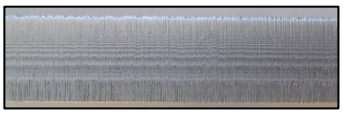
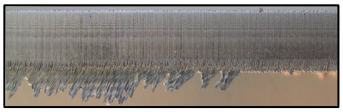
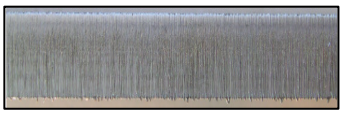
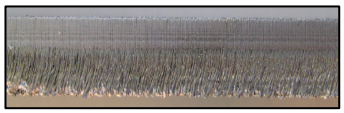
Photo	*Problem*	*Possible Causes*	*Solutions*
	No burrs Uniform drag lines in cut	Correct power Correct speed	No solutions necessary
	Considerable drag lines towards bottom of part When cut, hole is broader at the bottom than the top	Speed too high Power too low Gas pressure too high Focus position too high	Reduce feed rate Increase power Decrease gas pressure Lower focus
	Small, light burrs on bottom of cut that are easy to remove Coarse lines appear in cut	Speed too low Gas pressure too low Focal position too low	Increase feed rate Increase gas pressure Raise focus
	Large burrs on bottom of cut that are joined together and can be removed as one single piece	Focal position too high	Lower focus
	Burrs on bottom of cut that are difficult to remove	Speed too high Gas pressure too low Impurities in the gas Focal position too high	Reduce feed rate Increase gas pressure Check gas purity Lower focus

	Burrs on one side only	Nozzle not centered Nozzle orifice not round	Center nozzle Replace nozzle
	Melted material forming on top of sheet	Power too low Speed too high	Increase power Decrease feed rate
	Blue plasma on top of sheet when cutting Material not cut through	Wrong assist gas indicated (nitrogen)	Select appropriate assist gas (oxygen)
	Considerable drag lines towards bottom of part slanting backwards When cut, hole is narrower at the bottom than the top	Speed too high	Reduce feed rate
	Deep gauges/dents in cut	Gas pressure too high Power too high Speed too low	Decrease gas pressure Lower power Increase feed rate
	Bead of dross towards bottom of cut	Gas pressure too low Power too low	Increase gas pressure Increase power
	Coarse lines in cut towards top and bottom	Focus too high	Lower focus

Stainless Steel with nitrogen as an Assist Gas

	Problem	*Possible Causes*	*Solutions*
	No burrs or dross Uniform drag lines in cut	Correct focus Correct speed Correct gas pressure	No solutions necessary
	Small bead-like dross on the bottom edge of cut	Focus too low Speed too high	Raise focus Reduce feed rate
	Long, hard burrs starting before bottom edge of cut	Speed too high Focus too high Gas pressure too low	Decrease feed rate Lower focus Increase gas pressure
	Hard, black burrs on bottom edge of cut	Speed too low	Increase feed rate
	Blue plasma flame appears on top of material while cutting	Speed too high Power too low Gas pressure too high	Decrease feed rate Increase power Lower gas pressure
	Beam does not cut through during lead-in	Approach speed too high Focus too low Molten material cannot be expelled during cutting	Reduce feed rate during lead-in using Accel move Raise focus Make pilot hole before cutting

Aluminum with nitrogen as an Assist Gas

	Problem	*Possible Causes*	*Solutions*
	Light dross Uniform drag lines in cut	Correct speed Correct focus Correct gas pressure	No solutions required
	Long, hard burrs on bottom edge of cut	Speed too low Gas pressure too low	Increase feed rate Increase gas pressure
	Small, bead-like burrs on bottom edge of cut	Speed too high Power too low	Decrease feed rate Increase power
	Coarse drag lines towards bottom edge of cut	Focus too high Power too low	Lower focus Increase power