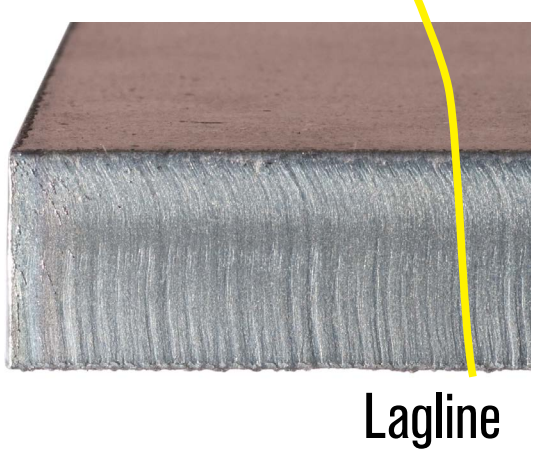


Troubleshooting for Powermax® cutting

Cut quality

Optimum cut

Operator manual specifications	12 mm (1/2") mild steel cut at 100 A				
What to look for	Well defined lag lines with an angle of 10–15 degrees	Minimal dross	Square edges	No top splatter	No discoloration



No secondary work was performed on the cut edges shown. Operator Manual specifications were used to create the optimum cut.

Potential issues

	Excess bevel angle	Hardened dross	Easily removed dross	Top spatter	
Possible cause	Excess bevel angle	Hardened dross	Easily removed dross	Top spatter	Solution
Torch not square	●				Square torch to workpiece
Torch-to-work distance too high	●	●		●	Lower torch-to-work distance
Torch-to-work distance too low			●		Raise torch-to-work distance
Amperage too high			●		Decrease amperage
Amperage too low	●	●			Increase amperage
Speed too fast	●	●	●		Decrease speed
Speed too slow				●	Increase speed
Incorrect torch travel direction	●				Change direction
Worn nozzle	●			●	Replace nozzle

Recommendations

Use high-quality genuine consumables

To insure you will achieve the best cut quality choose genuine Powermax consumables. Dimensions and tolerances of plasma consumables are critical to performance. Consumables must be precision manufactured from high quality materials. To optimize cut quality, always start with a new set of consumables.

Choose the right consumables for the job

Check your operator manual to ensure you have selected the correct consumables for your cutting application. Nozzle selection by amperage is important when optimizing cut quality and speed. The higher the amperage, the larger the nozzle orifice.

Assemble the torch correctly

Carefully assemble the torch, making sure the consumables align and fit together. This ensures good electrical contact and correct flow of air/gas through the torch. When changing consumables keep them on a clean towel to keep dirt and metal dust away. Use the proper amount of o-ring lube – just enough to put a shine on the o-ring.

Set the appropriate amperage

Align the amperage setting of the power supply to the amperage of the nozzle selected. An amperage setting that is too low for the nozzle causes a “soft arc” and a sloppy cut. An amperage setting that is too high for the nozzle will quickly wear out the nozzle.

Square the torch to the workpiece

A torch that is not perpendicular to the workpiece will cause a bevel angle in the cut. Ensure the torch is square from the front and side of the torch.

Troubleshooting/consumable wear

Stages of wear	New	Partially used	Time to change	Overused
Top view			 Pit depth of 1 mm*	 “Blowout”

Verify the cut direction

The good side of a cut is always the right side of the kerf of forward torch motion. Validate appropriate travel direction with a test cut.

Adjust the torch-to-work distance

Adjust the torch-to-work distance of the torch tip to the workpiece according to torch-to-work distance guidelines in the Operator Manual.

Adjust the cutting speed

Select an initial speed based on the cut charts in your Operator Manual. Make a test cut and observe the angle of the cutting arc through a welding lens as it exits the workpiece. Adjust the speed to create an arc angle of 10–15 degrees.

Part	Condition	Action
Nozzle	Check center hole Good Worn	No action required If out of round, replace
Electrode	Examine center surface If exceeds maximum	Replace
Swirl ring	Examine external surfaces Damage or debris Blocked holes	Replace Replace
Torch o-ring	Examine external surfaces Damage or wear Dry surface	Replace Apply thin film of silicone grease (027055)