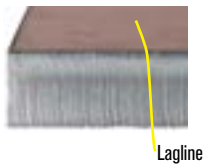


Troubleshooting for Powermax® cutting

Cut quality

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

Optimum cut



Operator Manual specifications

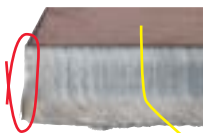
1/2" (12 mm) mild steel sample cut at 100 A.

What to look for

1. Well defined lag lines with an angle of 10–15 degrees
2. Minimal dross
3. Square edges
4. No top splatter
5. No discoloration

Potential issues

Excess bevel angle



Result of high speed

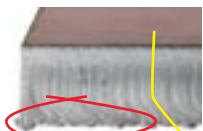
Possible cause(s)

1. Torch not square
2. Torch-to-work distance too high
3. Amperage too low
4. Speed too fast
5. Incorrect torch travel direction
6. Worn nozzle

Solution(s)

1. Square torch to workpiece
2. Lower torch-to-work distance
3. Increase amperage
4. Decrease speed
5. Change direction
6. Replace nozzle

Hardened dross

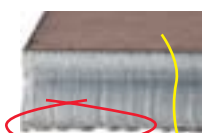


Result of torch-to-work distance too high

1. Speed too fast
2. Amperage too low
3. Torch-to-work distance too high

1. Decrease speed
2. Increase amperage
3. Lower torch-to-work distance

Easily removed dross



Result of slow speed

1. Speed too slow
2. Amperage too high
3. Torch-to-work distance too low

1. Increase speed
2. Decrease amperage
3. Raise torch-to-work distance

Top splatter



Result of slow speed and torch-to-work distance too high

1. Speed too slow
2. Torch-to-work distance too high
3. Worn nozzle

1. Increase speed
2. Lower torch-to-work distance
3. 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.

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

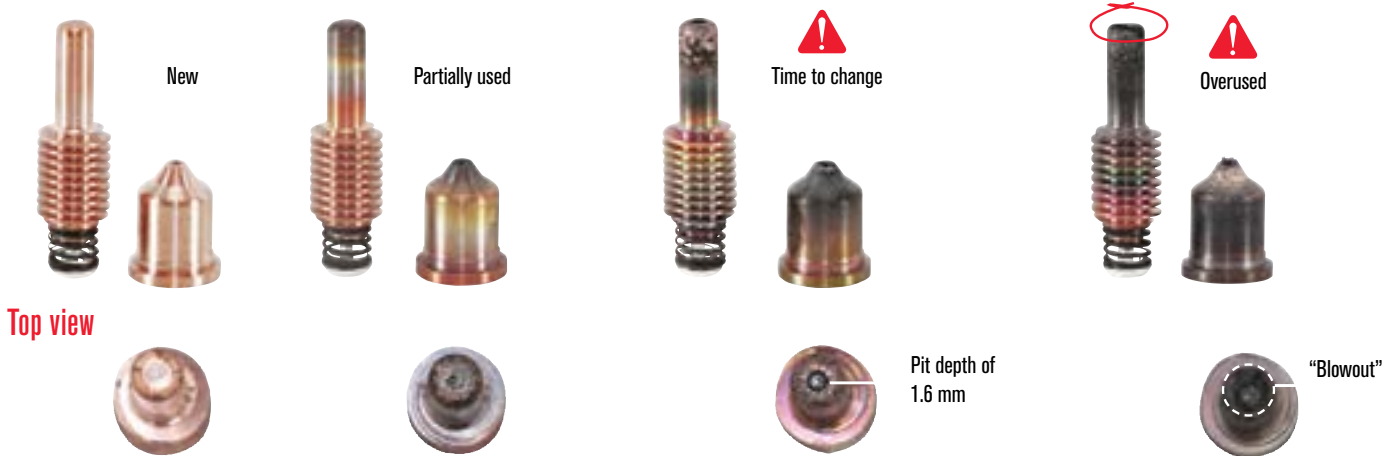
Adjust the torch-to-work distance of the torch tip to the workpiece according to torch-to-work distance guidelines in the Operator Manual.




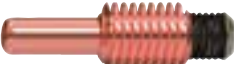
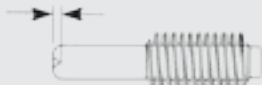


Adjust the cutting speed

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.

Troubleshooting for Powermax[®] cutting

Consumable wear



| Part | Condition | Action |
|---|--|---|
| Nozzle Check center hole  | Good  | No action required. |
| | Worn  | If out of round, replace |
| Electrode Examine center surface  | Maximum 1.6 mm  | Replace |
| Swirl ring Examine external surfaces  | Damage or debris | Replace |
| Examine gas holes | Blocked holes | Replace |
| Torch o-ring  | Damage or wear | Replace |
| Examine external surfaces | Dry surface | Apply thin film of silicone grease (027055) |

Hypertherm and Powermax are trademarks of Hypertherm Inc. and may be registered in the United States and/or other countries.

Environmental stewardship is one of Hypertherm's core values, and it is critical to our success and our customers' success. We are striving to reduce the environmental impact of everything we do. For more information: www.hypertherm.com/environment.

© 1/2018 Hypertherm Inc. Revision 2
894390