Cnc Plasma vs Oxy Fuel Cutting on Mild Steel Plate: When to choose.

Switching from plasma cutting to oxyfuel cutting depends on the thickness of the mild steel and the requirements of the cutting project. Here are the general guidelines for when to switch:

Plasma Cutting

Recommended Thickness: Plasma cutting is efficient for mild steel up to approximately 1.5–2 inches (38–50 mm), depending on the plasma cutter's power rating.

Advantages:

Cleaner and faster cuts on thin to medium-thick materials.

Minimal heat-affected zone (HAZ) compared to oxyfuel.

Suitable for intricate shapes and precise cuts.

Oxyfuel Cutting

Recommended Thickness: Oxyfuel cutting becomes more practical for mild steel plates thicker than 2 inches (50 mm).

Advantages:

Superior performance on very thick steel plates (up to 12 inches or more).

Lower cost for cutting thick materials compared to high-powered plasma.

The slower cutting speed is less of a concern for heavy-duty applications where precision and cleanliness are secondary.

Why Switch?

1. Efficiency on Thick Steel: Plasma cutting struggles with thicker plates due to limitations in power and heat transfer. Oxyfuel's chemical reaction can handle thicker plates more effectively.

2. Cut Quality: Oxyfuel provides clean, square cuts on thick materials, while plasma may leave a rougher edge.

3. Cost: Oxyfuel is typically more economical for thicker steel, especially if cutting large volumes.

Key Considerations

If your primary need is precision or automation for thinner materials, plasma cutting is the better choice.

If you often work with very thick steel plates (above 2 inches), it's time to switch to oxyfuel on CNC equipment.

In summary, the 2-inch (50 mm) threshold is a practical guideline. For steel plates thicker than this, oxyfuel cutting is generally more effective and economical.