

30000W Sheet Cutting Parameter

Material	Thickness	Assisted Gas	Speed(m/min)
Carbon Steel	1.0	Oxygen	8.0-12.0
	2.0		6.0-7.5
	3.0		3.7-4.6
	4.0		3.2-3.9
	5.0		3.0-3.5
	6.0		2.4-3.4
	8.0		2.4-3.2
	10.0		2.2-2.6
	12.0		2.0-2.4
	14.0		1.6-1.8
	16.0		1.5-1.8
	18.0		1.3-1.6
	20.0		1.2-1.5
	25.0		1.2-1.4
	30.0		0.8-1.3
	40.0		0.5-1.0
	50.0		0.25-0.8
	60.0		0.2-0.6
	70.0		0.15-0.3
	80.0		0.1-0.25
Carbon Steel	12.0	Oxygen	3.0-4.2
	14.0		2.9-3.7
	16.0		2.9-3.4
	18.0		2.7-3.2
	20.0		2.6-3.1
	25.0		2.5-3.0
	30.0		2.3-2.8
	35.0		1.4-1.8
Carbon Steel	1.0	Nitrogen	48.0-60.0
	2.0		40.0-50.0
	3.0		32.0-40.0
	4.0		28.0-36.0
	5.0		22.0-28.0
	6.0		18.0-24.0
	8.0		14.0-18.0
	10.0		11.0-14.0
	12.0		9.0-11.0
	14.0		7.5-10.0
	16.0		7.0-8.5
	18.0		5.0-6.5
	20.0		4.0-5.5
25.0	2.3-3.2		



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	1.0 2.0 3.0 4.0 5.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0 20.0 25.0	Air	60.0-70.0 50.0-60.0 45.0-48.0 30.0-32.0 25.0-33.0 22.0-28.0 18.0-22.0 13.0-17.0 10.0-13.0 8.0-11.0 7.0-8.5 5.5-7.0 3.5-5.0 2.5-3.5
Stainless steel	1.0 2.0 3.0 4.0 5.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0 20.0 25.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0	Nitrogen	50.0-60.0 40.0-48.0 40.0-50.0 35.0-42.0 26.0-30.0 22.0-25.0 17.0-24.0 13.0-17.0 10.0-13.0 8.0-11.0 7.0-9.0 6.0-7.0 3.5-5.0 2.4-3.5 1.5-2.2 0.6-1.0 0.2-0.5 0.15-0.4 0.1-0.3 0.08-0.2 0.05-0.06 0.04-0.05
Stainless steel	1.0 2.0 3.0 4.0 5.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0	Air	50.0-60.0 40.0-48.0 32.0-45.0 28.0-42.0 26.0-40.0 22.0-38.0 15.0-26.0 13.5-18.0 10.0-14.0 8.0-12.0 6.0-10.0 3.5-6.0



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	20.0 25.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0		3.0-5.0 1.5-3.5 0.8-2.0 0.6-1.2 0.15-0.5 0.1-0.2 0.1-0.15 0.07-0.1 0.045-0.06 0.025-0.04
Aluminum	1.0 2.0 3.0 4.0 5.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0 20.0 25.0 30.0 40.0 50.0 60.0 70.0 80.0	Nitrogen	50.0-60.0 36.0-50.0 32.0-50.0 25.0-48.0 20.0-35.0 18.0-26.0 15.0-20.0 12.0-16.0 10.0-15.0 8.0-11.0 5.0-7.0 3.0-4.5 2.0-4.0 1.2-1.8 0.5-0.9 0.4-0.7 0.3-0.6 0.2-0.3 0.07-0.1 0.05-0.08
Brass	1.0 2.0 3.0 4.0 5.0 6.0 8.0 10.0 12.0 14.0 16.0 18.0 20.0	Nitrogen	45.0-50.0 32.0-40.0 25.0-30.0 18.0-23.0 16.0-20.0 14.0-17.0 10.0-15.0 8.0-10.0 5.0-8.0 3.0-5.5 1.3-1.9 1.0-1.5 0.6-1.0
Copper	1.0 2.0 3.0 4.0	Oxygen	28.0-35.0 24.0-30.0 20.0-24.0 16.0-20.0



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	5.0		15.0-18
	6.0		9.0-13.0
	8.0		5.0-9.0
	10.0		2.0-3.2
	12.0		1.6-2.4
	14.0		1.2-2.0

(Above parameter is for reference only. The quality of materials, pressure during cutting, and profile designing, etc. will affect cutting speed.)

Cost Analysis

Items	Cutting of stainless steel (10mm)	Cutting of carbon steel (20mm)
Electricity expenses	146 RMB/h	101 RMB/h
Expenses of cutting auxiliary gas	45 RMB/h (N2)	12 RMB/h(O2)
Expenses of protective lens and nozzle	8 RMB/h	8 RMB/h
Total expenses	199 RMB/h	121 RMB/h

If the assisted cutting gas is the dried compressed air, expenses are the actual operation expenses of the air compressor plus expenses of electricity consumed by the machine tool and consumables like protective mirror and nozzle).

Notes:

1. The electricity expense and gas expense in the table above are based on the price in Foshan, China and prices in different areas will be various;
2. When the machine is cutting other thickness or different metal sheet, consumption of the assisted gas may be different.



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