Raycus Cutting Parameters

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

FIGTEK

1.1.RFL-C1000 Cutting Parameter

Fiber Core:25 μ m **Focus:125mm**

RFL-C1000 Continuous Laser (25μm).								
Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
Carbon Steel	0.8	18	1000	N_2/ Air	10	1.5S	0	1
	1	10			10	1.5S	0	1
	2	4	1000	O_2	2	1.2D	+3	0.8
	3	3			0.6	1.2D	+3	0.8
	4	2.3			0.6	1.2D	+3	0.8
	5	1.8			0.6	1.2D	+3	0.8
	6	1.5			0.6	1.5D	+3	0.8
	8	1.1			0.6	1.5D	+3	0.8
	10	0.8			0.6	2.5D	+3	0.8
Stainless Steel	0.8	20	1000	N_2	12	1.5S	0	0.8
	1	13			12	1.5S	0	0.5
	2	6			12	2.0S	-1	0.5
	3	3			12	3.0S	-1.5	0.5
	4	1			14	3.0S	-2	0.5
	5	0.6			16	3.5S	-2.5	0.5
Aluminium	0.8	18	1000	N_2	12	1.5S	0	0.8
	1	10			12	1.5S	0	0.5
	2	5			14	2.0S	-1	0.5
	3	1.5			16	3.0S	-1.5	0.5
Brass	1	9	1000	N_2	12	2.0S	0	0.5
	2	2			14	2.0S	-1	0.5
	3	0.8			16	3.0S	-1.5	0.5

Note: The parameters marked in red in the table are proofing parameters, which are greatly influenced by various factors in actual processing. They are only suitable for small-scale production, mass production and processing are not recommended. It is recommended to use higher power lasers.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

1.2 25μm perforation reference for single module RFL-C1000 core.

RFL-C1000. Parameters of 10mm carbon steel oxygen perforation (for reference only)

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High	1000	100	100	12	1	0	100	
								50
Middle	1000	45	100	8	0.6	-4	600	
								50
Low	1000	40	100	4	0.6	-5	2500	

1.3.Parameters of nitrogen perforation for 5mm stainless steel (for reference only)

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching time ms	Stop Light Blowing ms
High	1000	100	1000	12	10	0	100	
								0
Middle	1000	50	1000	10	10	-5	500	
								0
Low	1000	45	1000	4	10	-6	1000	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

2.1 RFL-C1500S Cutting Parameter

Fiber Core:50μm Focus:125mm

RFL-C1500S continuous laser (50μm).								
Material	Thickness （mm）	Speed （m/min）	Power （W）	Gas	Pressure （Bar）	Nozzle (mm)	Focus Position （mm）	Cutting Height (mm)
Carbon steel	1	20	1500	N_2/Air	10	1.5S	0	1
	2	5	1500	O_2	2	1.2D	+3	0.8
	3	3.6			0.6	1.2D	+3	0.8
	4	2.5			0.6	1.2D	+3	0.8
	5	1.8			0.6	1.2D	+3	0.8
	6	1.4			0.6	1.5D	+3	0.8
	8	1.2			0.6	1.5D	+3	0.8
	10	1			0.6	2.0D	+2.5	0.8
	12	0.8			0.6	2.5D	+2.5	0.8
	14	0.65			0.6	3.0D	+2.5	0.8
	16	0.5			0.6	3.0D	+2.5	0.8
Stainless steel	1	20	1500	N_2	10	1.5S	0	0.8
	2	7			12	2.0S	-1	0.5
	3	4.5			12	2.5S	-1.5	0.5
	5	1.5			14	3.0S	-2.5	0.5
	6	0.8			16	3.0S	-3	0.5
Aluminium (Al)	1	18	1500	N_2	12	1.5S	0	0.5
	2	6			14	2.0S	-1	0.5
	3	2.5			14	2.5S	-1.5	0.5
	4	0.8			16	3.0S	-2	0.5
Brass	1	15	1500	N_2	12	1.5S	0	0.5
	2	5			14	2.0S	-1	0.5
	3	1.8			14	2.5S	-1.5	0.5

Note: The parameters marked in red in the table are proofing parameters, which are greatly influenced by various factors in actual processing. They are only suitable for small-scale production, mass production and processing are not recommended. It is recommended to use higher power lasers.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

2.2.The reference of single RFL-C1500S core 50 μ m perforation.

RFL-C1500S.Parameters of 16mm carbon steel oxygen perforation (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching time ms	Stop Light Blowing ms
High	1000	100	100	12	1	0	100	
								50
Middle	1000	45	100	8	0.6	-4	600	
								50
Low	1000	40	100	4	0.6	-5	2500	

2.3.RFL-C1500S.Parameters of 6mm stainless steel nitrogen perforation (Reference only)

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure Bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High	1000	100	1000	12	10	0	100	
								0
Middle	1000	50	1000	8	10	-4	500	
								0
Low	1000	45	1000	4	10	-6	1000	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

3.1.RFL-C2000S Cutting Parameter

Fiber Core:50 μ m   Focus:125mm

RFL-C2000S continuous laser (50μm).

Material	Thickness (mm)	Speed (m/min)	Power W	Gas	Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
Carbon Steel	1	25	2000	N2/ Air	10	1.5S	0	1
	2	9			10	2.0S	-1	0.5
	2	5.2	2000	O2	1.6	1.0D	+3	0.8
	3	4.2			0.6	1.0D	+3	0.8
	4	3			0.6	1.0D	+3	0.8
	5	2.2			0.6	1.2D	+3	0.8
	6	1.8			0.6	1.2D	+3	0.8
	8	1.3			0.5	2.0D	+2.5	0.8
	10	1.1			0.5	2.0D	+2.5	0.8
	12	0.9			0.5	2.5D	+2.5	0.8
	14	0.8			0.5	3.0D	+2.5	0.8
	16	0.7			0.6	3.5D	+2.5	0.8
	18	0.5			0.6	4.0D	+3	0.8
	20	0.4			0.6	4.0D	+3	0.8
Stainless Steel	1	28	2000	N2	10	1.5S	0	0.8
	2	10			12	2.0S	-1	0.5
	3	5			12	2.0S	-1.5	0.5
	4	3			14	2.5S	-2	0.5
	5	2			14	3.0S	-2.5	0.5
	6	1.5			14	3.0S	-3	0.5
	8	0.6			16	3.0S	-4	0.5
Aluminium (Al)	1	20	2000	N2	12	1.5S	0	0.8
	2	10			12	2.0S	-1	0.5
	3	4			14	2.0S	-1.5	0.5
	4	1.5			14	2.5S	-2	0.5
	5	0.9			16	3.0S	-2.5	0.5
	6	0.6			16	3.0S	-3	0.5
	1	18			12	1.5S	0	0.8

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

Brass	2	8	2000	N2	12	2.0S	-1	0.5
	3	3			14	2.5S	-1.5	0.5
	4	1.3			16	3.0S	-2	0.5
	5	0.8			16	3.0S	-2.5	0.5

Note: It is recommended to use air or nitrogen to cut carbon steel 1 and 2 mm. The cutting speed is faster than that of oxygen, and there will be slight slagging.

Note: The parameters marked in red in the table are proofing parameters, which are greatly influenced by various factors in actual processing. They are only suitable for small-scale production, and mass production and processing are not recommended. It is recommended to use higher power lasers.

3.2.The recommendation of 50 μ m perforation of single RFL-C2000S core.

RFL-C2000S Parameters of oxygen perforation of 20mm carbon steel (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High	2000	100	200	12	1	0	200	
								200
Middle	2000	45	150	8	0.7	-4	400	
								200
Low	2000	55	150	4	0.6	-6	3000	

3.3.Parameters of nitrogen perforation for 8mm stainless steel (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High	2000	100	1000	12	10	0	100	
								0
Middle	2000	50	1000	8	10	-5	500	
								0
low	2000	40	1000	4	10	-6	1000	

The perforation parameters take the limit thickness of carbon steel/stainless steel that can be penetrated at current power as an example. Punches are sorted step by step in sequence, with the high order being the first-level punch, and so on.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

FIGTEK

4.1.RFL-C3000S Cutting Parameter

Fiber Core: 50 μ m Focus:150mm

RFL-C3000S continuous laser (50μm).								
Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (bar)	Nozzle (mm)	Focus Position (mm)	Cutting Height (mm)
Carbon Steel	1	35	3000	N_2/ Air	10	1.5S	0	1
	2	20			10	2.0S	0	0.5
	2	5.5	1200	O_2	1.6	1.0D	+3	0.8
	3	4	2000		0.6	1.0D	+4	0.8
	4	3.5	2400		0.6	1.0D	+4	0.8
	5	3.2	2400		0.6	1.2D	+4	0.8
	6	2.7	3000		0.6	1.2D	+4	0.8
	8	2.2	3000		0.6	1.2D	+4	0.8
	10	1.5	3000		0.6	1.2D	+4	0.8
	12	1	2400		0.6	3.0D	+4	0.8
	14	0.9	2400		0.6	3.0D	+4	0.8
	16	0.75	2400		0.6	3.5D	+4	0.8
	18	0.65	2400		0.6	4.0D	+4	0.8
	20	0.6	2400		0.6	4.0D	+4	0.8
	22	0.55	2400		0.6	4.0D	+4	0.8
Stainless Steel	1	45	3000	N_2	10	1.5S	0	0.8
	2	24			12	2.0S	0	0.5
	3	10			12	2.5S	-0.5	0.5
	4	6.5			14	2.5S	-1.5	0.5
	5	3.6			14	3.0S	-2.5	0.5
	6	2.7			14	3.0S	-3	0.5
	8	1.2			16	3.5S	-4.5	0.5
	10	0.8			16	4.0S	-6	0.5
Aluminium (Al)	1	30	3000	N_2	12	1.5S	0	0.8
	2	18			12	2.0S	0	0.5

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

Aluminium	3	8			14	2.0S	-1	0.5
	4	6			14	2.5S	-2	0.5
	5	3.2			16	3.0S	-3	0.5
	6	2			16	3.0S	-3.5	0.5
	8	0.9			16	3.5S	-4	0.5
	1	28			12	1.5S	0	0.8
	2	15			12	2.0S	0	0.5
	3	6			14	2.5S	-1	0.5
Brass	4	3	3000	N_2	14	3.0S	-2	0.5
	5	2.2			14	3.0S	-2.5	0.5
	6	1.3			16	3.0S	-3	0.5

Note: It is recommended to use air or nitrogen to cut carbon steel 1 and 2mm, the cutting speed is faster than that of oxygen, and there will be slight slag hanging.

Note 2: According to the difference of gas purity and plate quality on site, the power used for debugging and the speed of debugging will be different.

Note: The parameters marked in red in the table are proofing parameters, which are greatly influenced by various factors in actual processing. They are only suitable for small-scale production, and mass production and processing are not recommended. It is recommended to use higher power lasers.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

FIGTEK

4.2 The recommendation of 50μm perforation of single RFL-C3000S core.

RFL-C3000S.Oxygen piercing parameters of 22mm carbon steel (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High	3000	100	200	12	1	0	200	
								200
Middle	3000	45	150	8	0.7	-4	2500	
								200
Low	3000	55	150	4	0.6	-6	3000	

4.3.RFL-C3000S.Parameters of nitrogen perforation for 10mm stainless steel (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High	3000	100	1000	12	10	0	100	
								0
Middle	3000	35	1000	8	10	-5	500	
								0
Low	3000	35	1000	4	10	-6	1000	

The perforation parameters take the limit thickness of carbon steel/stainless steel that can be penetrated at current power as an example. Punches are sorted step by step in sequence, with the high order being the first-level punch, and so on.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

FIGTEK

5.1. RFL-C3300 Cutting Parameter:

Fiber Core:100 μ m   Focus:150mm

RFL-C3300 continuous laser (100μm).									
Material	**Thickness mm**	**Speed m/min**	**Power W**	**Gas**	**Pressure (bar**	**Nozzle (mm)**	**Focus Position （mm）**	**Cutting Height （mm）**	**Remark**
Carbon Steel	1	30	3300	N_2/ Air	10	1.5S	0	1	1
	2	12	3300		10	2.0S	-1	0.5	
	2	5.2	1800	O_2	1.6	1.2D	+3	0.8	2
	3	4.5	1800		0.6	1.2D	+3	0.8	
	4	3.6	2400		0.6	1.2D	+3	0.8	
	5	3.2	2400		0.6	1.2D	+3	0.8	
	6	2.6	3300		0.6	1.2D	+3	0.8	
	8	2.2	3300		0.6	1.2D	+3	0.8	
	10	1.1-1.3	1800-2200		0.5	3.0D	+2.5	0.8	
	12	0.9-1.1	1800-2200		0.5	3.5D	+2.5	0.8	
	14	0.8-0.9	2200-3300		0.5	3.5D	+2.5	0.8	
	16	0.7-0.8	2200-3300		0.5	4.0D	+2.5	0.8	
	18	0.65-0.7	2200-3300		0.5	4.0D	+2.5	0.8	
	20	0.55-0.65	2200-3300		0.6	4.0D	+3	0.8	
	22	0.5-0.55	2200-3300		0.6	4.0D	+3	0.8	
Stainless Steel	1	35	3300	N_2	10	1.5S	0	0.8	
	2	13			12	2.0S	-1	0.5	
	3	7			12	2.5S	-1.5	0.5	
	4	5.5			14	2.5S	-2	0.5	
	5	4			14	2.5S	-2.5	0.5	
	6	3			14	3.0S	-3	0.5	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

	8	1.2			16	3.5S	-4	0.5	
	10	0.8			16	4.0S	-5	0.5	
	1	25	3300	N_2	12	1.5S	0	0.8	
	2	12			12	2.0S	-1	0.5	
	3	8			14	2.0S	-1.5	0.5	
	4	5			14	2.0S	-2	0.5	
	5	3			16	3.0S	-2.5	0.5	
	6	2			16	3.0S	-3	0.5	
	8	0.8			16	3.5S	-4	0.5	
Brass	1	22	3300	N_2	12	1.5S	0	0.5	
	2	12			12	2.0S	-1	0.5	
	3	5			14	2.5S	-1.5	0.5	
	4	3			14	3.0S	-2	0.5	
	5	2			14	3.0S	-2.5	0.5	
	6	1.3			16	3.0S	-3	0.5	

Note: It is recommended to use air or nitrogen to cut carbon steel 1 and 2mm, the cutting speed is faster than that of oxygen, and there will be slight slag hanging.

Note 2: According to the difference of gas purity and plate quality on site, the power used for debugging and the speed of debugging will be different.

Note: The parameters marked in red in the table are proofing parameters, which are greatly influenced by various factors in actual processing. They are only suitable for small-scale production, and mass production and processing are not recommended. It is recommended to use higher power lasers.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

5.2.100 μm perforation reference for multi-module RFL-C3300 core.

RFL-C3300. Oxygen piercing parameters of 22mm carbon steel (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High Position	3300	100	200	12	1	0	100	
								200
Mid-position	3300	45	150	8	0.6	-5	200	
								200
Low Position	3300	50	150	4	0.6	-6	2500	

5.3.RFL-C3300. Parameters of nitrogen perforation for 10mm stainless steel (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High Position	3300	100	1000	12	10	0	200	
								0
Mid-Position	3300	50	1000	8	10	-5	500	
								0
Low-Position	3300	40	1000	4	10	-7	1000	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

6.1.RFL-C4000 Cutting Parameter

Fiber Core:100 μ m   Focus:150mm

RFL-C4000 continuous laser (100μm).									
Material	Thickness (mm)	Speed (m/min)	Power （W）	Gas	Pressure (bar)	Nozzle mm	Focus Position mm	Cutting Height (mm)	Remark
Carbon Steel	1	35	4000	N_2/ Air	10	1.5S	0	1	1
	2	15	4000		10	2.0S	-1	0.5	
	3	10	4000		10	2.0S	-1.5	0.5	
	3	4.5	1800	O_2	0.6	1.2D	+3	0.8	2
	4	3.5	2400		0.6	1.2D	+3	0.8	
	5	3.2	2400		0.6	1.2D	+3	0.8	
	6	2.8	3000		0.6	1.2D	+3	0.8	
	8	2.3	3600		0.6	1.2D	+3	0.8	
	10	2	4000		0.6	1.2D	+3	0.8	
	12	1.2	1800-2200		0.5	3.0D	+2.5	0.8	
	14	1	1800-2200		0.5	3.5D	+2.5	0.8	
	16	0.8	2200-2600		0.5	3.5D	+2.5	0.8	
	18	0.7	2200-2600		0.5	4.0D	+2.5	0.8	
	20	0.65	2200-2600		0.5	4.0D	+3	0.8	
	22	0.6	2200-2800		0.5	4.5D	+3	0.8	
	25	0.5	2400-3000		0.5	5.0D	+3	0.8	
	1	40			10	1.5S	0	0.8	
	2	20			12	2.0S	-1	0.5	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

Stainless Steel	3	12	4000	N_2	12	2.0S	-1.5	0.5	
	4	7			12	2.5S	-2	0.5	
	5	4.5			14	2.5S	-2.5	0.5	
	6	3.5			14	3.0S	-3	0.5	
	8	1.8			14	3.0S	-4	0.5	
	10	1.2			16	4.0S	-5	0.5	
	12	0.8			16	4.0S	-6	0.5	
Aluminium (Al)	1	30	4000	N_2	12	1.5S	0	0.6	
	2	20			12	2.0S	-1	0.5	
	3	13			14	2.0S	-1.5	0.5	
	4	7			14	2.5S	-2	0.5	
	5	5			14	2.5S	-2.5	0.5	
	6	3			16	3.0S	-3	0.5	
	8	1.3			16	3.0S	-4	0.5	
	10	0.8			16	3.5S	-5	0.5	
Brass	1	28	4000	N_2	12	1.5S	0	0.6	
	2	15			12	1.5S	-1	0.6	
	3	8			14	2.0S	-1	0.6	
	4	5			14	2.5S	-2	0.5	
	5	3			14	3.0S	-2	0.5	
	6	2.5			16	3.0S	-2.5	0.5	
	8	1			16	3.0S	-4	0.5	

Note 1: It is recommended to cut carbon steel 1-3mm with air or nitrogen, and the cutting speed is faster than that with oxygen, with slight slag hanging.

Note 2: According to the difference of gas purity and plate quality on site, the power used for debugging and the speed of debugging will be different.

Note: The parameters marked in red in the table are proofing parameters, which are greatly influenced by various factors in actual processing. They are only suitable for small-scale production, and mass production and processing are not recommended. It is recommended to use higher power lasers.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

6.2.100 μ m perforation reference for multi-module RFL-C4000 core.

RFL-C4000. 25mm carbon steel perforation parameters (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High Position	4000	100	200	12	1	0	100	
								300
Mid--Position	4000	45	200	8	0.6	-5	200	
								300
Low Position	4000	50	200	4	0.6	-6	3000	

6.3.FL-C4000. Parameters of nitrogen perforation for 12mm stainless steel (for reference only).

	Power W	Duty Cycle %	Frequency Hz	Nozzle height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High position	4000	100	1000	12	10	0	100	
								0
Mid-position	4000	50	1000	8	10	-6	500	
								0
Low post	4000	45	1000	4	10	-8	1500	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

7.1. RFL-C6000 Cutting Parameter

Fiber Core:100 μ m　　　Focus:100mm

RFL-C6000 continuous laser (100μm).									
Material	Thickness mm	Speed m/min	Power W	Gas	Pressure bar	Nozzle mm	Focus Position mm	Cutting Height mm	Remark
Carbon Steel	1	45	6000	N2/ Air	12	1.5S	0	1	1
	2	25			12	2.0S	-1	0.5	
	3	14			14	2.0S	-1.5	0.5	
	4	8			14	2.0S	-2	0.5	
	5	6.4			16	3.0S	-2.5	0.5	
	6	5			16	3.5S	-3	0.5	
	3	3.6-4.2	2400	O_2	0.6	1.2E	+3	0.8	2
	4	3.3-3.8	2400		0.6	1.2E	+3	0.8	
	5	3-3.6	3000		0.6	1.2E	+3	0.8	
	6	2.7-3.2	3300		0.6	1.2E	+3	0.8	
	8	2.2-2.5	4200		0.6	1.2E	+3	0.8	
	10	2.0-2.3	5500		0.6	1.2E	+4	0.8	
	12	0.9-1	2200		0.6	3.0D	+2.5	0.8	
	12	1.9-2.1	6000		0.6	1.2E	+5	0.8	
	14	0.8-9	2200		0.6	3.5D	+2.5	0.8	
	14	1.4-1.7	6000		0.6	1.E	+5	1	
	16	0.8-0.9	2200		0.6	4.0D	+2.5	0.8	
	16	1.2-1.4	6000		0.6	1.4E	+6	1	
	18	0.65-0.75	2200		0.6	4.0D	+2.5	0.8	
	20	0.6-0.7	2400		0.6	4.0D	+3	0.8	
	22	0.55-0.65	2400		0.6	4.0D	+3	0.8	
	25	0.5	2400		0.5	5.0D	+3	1	
Stainless Steel	1	60	6000	N_2	10	1.5S	0	0.8	
	2	30			12	2.0S	-1	0.5	
	3	18			12	2.5S	-1.5	0.5	
	4	12			14	2.5S	-2	0.5	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

	5	8			14	3.0S	-2.5	0.5	
	6	5			15	3.0S	-3	0.5	
	8	3.8			15	3.0S	-4	0.5	
	10	2			15	3.5S	-6	0.5	
	12	1.2			16	3.5S	-7.5	0.5	
	14	1			16	4.0S	-9	0.5	
	16	0.6			18	4.0S	-10.5	0.5	
	18	0.5			20	5.0S	-11	0.3	
	20	0.3			20	5.0S	-12	0.3	
Aluminium	1	50	6000	N_2	12	1.5S	0	1	
	2	25			12	2.0S	-1	0.5	
	3	16			14	2.5S	-1.5	0.5	
	4	10			14	2.5S	-2	0.5	
	5	6			14	3.0S	-3	0.5	
	6	4			16	3.0S	-3	0.5	
	8	2			16	3.0S	-4	0.5	
	10	1.2			18	3.5S	-4.5	0.5	
	12	0.7			18	4.0S	-5	0.5	
	14	0.5			18	4.0S	-5	0.3	
	16	0.4			20	5.0S	-8	0.3	
Brass	1	40	6000	N_2	12	1.5S	0	1	
	2	20			12	2.0S	-1	0.5	
	3	14			14	2.5S	-1	0.5	
	4	9			14	3.0S	-1.5	0.5	
	5	5.5			14	3.0S	-2	0.5	
	6	3.8			16	3.0S	-2.5	0.5	
	8	1.8			16	3.5S	-3	0.5	
	10	1			16	3.5S	-3	0.5	
	12	O.7			18	4.0S	-4	0.3	

Note: It is recommended to cut carbon steel 1-6mm with air or nitrogen. The cutting speed is faster than that with oxygen, and there will be slight slag.

Note 2: According to the difference of gas purity and plate quality on site, the power used for debugging and the speed of debugging will be different.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

Note: The parameters marked in red in the table are proofing parameters, which are greatly influenced by various factors in actual processing. They are only suitable for small-scale production, and mass production and processing are not recommended. It is recommended to use higher power lasers.

7.2. 100μm perforation reference for multi-module RFL-C6000 core.

RFL-C6000. 25mm carbon steel perforation parameters (for reference only)

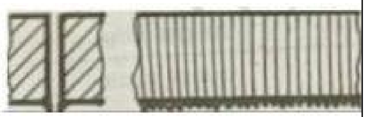
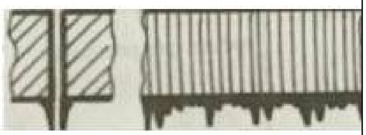
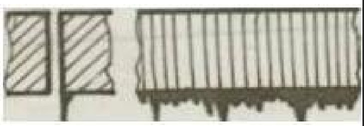
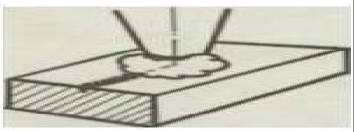
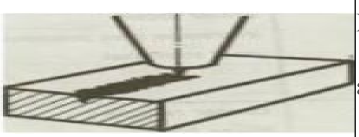
	Power W	Duty Cycle %	Frequency Hz	Nozzle height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High position	6000	50	300	18	1	0	100	
								300
Mid-position	6000	45	300	12	0.8	-5	500	
								300
Low Position	6000	45	300	8	0.7	-6	1000	

7.3.RFL-C6000. Parameters of nitrogen perforation for 20mm stainless steel (for reference only).

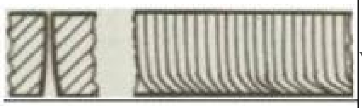
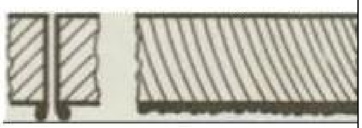
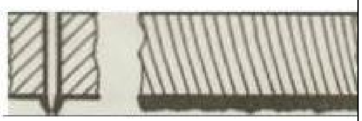
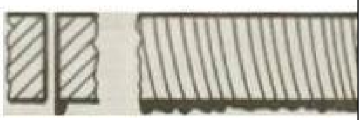
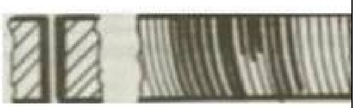
	Power W	Duty Cycle %	Frequency Hz	Nozzle Height mm	Pressure bar	Focus mm	Punching Time ms	Stop Light Blowing ms
High Position	6000	100	800	12	10	0	100	
								0
Mid-Position	6000	60	600	8	10	-6	500	
								0
Low-Position	6000	45	600	4	10	-8	1500	

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

8. Poor Cutting & Solutions.

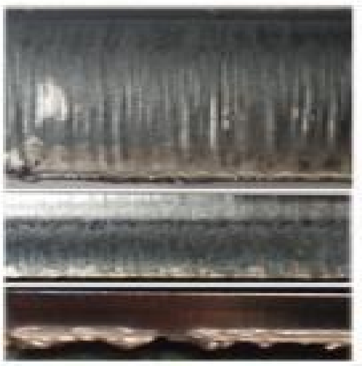
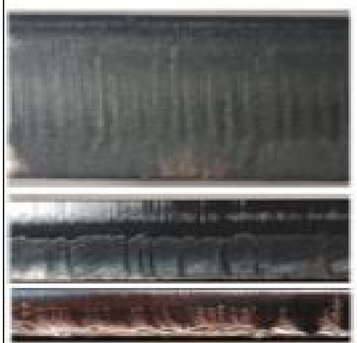
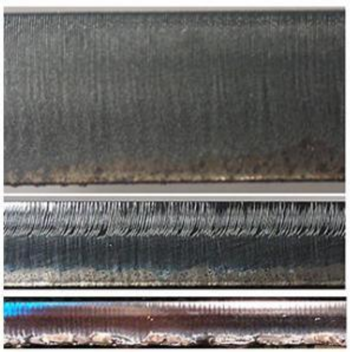
End face schematic	problem description	Possible reasons	solution
	Produce drops. Small regular burrs.	Focus is too low; The feed rate is too high.	Raise the focus; Reduce the feed rate.
	Irregular filiform burrs growing on both sides, large plate. Surface discoloration	Focus is too high; The feed rate is too low; Air pressure is too low.	Lower the focus; Increase the feed rate; Increase air pressure.
	Long irregularities are generated only on the cutting side.The burr.	Nozzle is not aligned; Focus is too high; The air pressure is too low; Speed is too low.	Center the nozzle; Reduce the focal point; Increase air pressure; Increase speed
	Generating plasma gas on a straight section.	The feed rate is too high; Power is too low; Focus is too low.	Press the pause button immediately to prevent slag splashing on the focusing mirror; Reduce the feed rate; Increase power; raise focus
	Material is discharged from above.	Power is too low; The feed rate is too large; Air pressure too high.	Press the pause button immediately to prevent slag splashing on the focusing mirror; Increase power; Reduce the feed rate; decrease atmospheric pressure

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

	The index line at the bottom is very. The large offset,	The feed rate is too high; The laser power is too low; The air pressure is too low; focus	Reduce the feed rate; Increase laser power; Increase gas. Pressure; Lower focus.
	Cut at the bottom. Wider mouth.	Too high	
	The burr on the bottom surface is similar to slag, which is in the form of drops and contained.Easy to remove	The feed rate is too high; The air pressure is too low; Focus too high.	Reduce the feed rate; Increase air pressure; Lower focus.
	On the bottom. Metal burrs are difficult to remove.	The feed rate is too high; The air pressure is too low; Impurity of gas; Focus too high.	Reduce the feed rate; increase Air pressure; Use a purer gas; Lower focus.
	Just on one side. There are burrs on it.	Nozzle is not aligned; spurt The mouth is defective.	Center the nozzle; Replace nozzle.
	Material is discharged from above.	Power is too low; The feed rate is too high.	Press the pause button immediately to prevent slag splashing on the focusing mirror; Increase power;Reduce the feed rate.
	Rough cutting surface.	Focus is too high; Atmospheric pressure is too high; feed rate Too low; Material too hot.	Lower the focus; Reduce the gas pressure; Increase the feed rate; coolant

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

	Generate craters	Atmospheric pressure is too high; The feed rate is too low; Focus is too high; Rust on the plate surface; Workpiece passing Heat; Material is impure.	Reduce air pressure; Increase the feed rate; Lower the focus; Use better quality materials.

Cutting gap is too narrow:	**Cutting section**	**Possible reasons**
The upper layer is streaked, and slag scraping appears due to insufficient oxygen on the lower surface of the slit.		**Focus is too low.**
		**The feeding speed is too fast.**
		**Air pressure is too low.**

		**Nozzle too small.**
		**Nozzle height is too low.**

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)

9.Nozzle Selection of Cutting Process

Nozzle name	Name symbol	Nozzle profile	Shape characteristics	use
Single Layer	S(Single)		The inner wall is conical, and the slag blowing gas flow rate of high-pressure gas is large.	Melting cutting of stainless steel, aluminum plate and other materials.
Double-Layer	D(Double)		Double-layer compounding adds inner core on the basis of single layer.	Double layer size above 2.0 is used for cutting carbon steel sand surface.
High Speed Double-Layer	E		The nozzle is pointed in shape, and the inner core edge has three holes compared with the common one. Large layer	Mainly used for high-power and high-speed smooth cutting of carbon steel.
High Speed Single-Layer	SP		The nozzle is pointed in shape and the inner wall is conical or stepped round. cone	Mainly used for high-power and high-speed glossy cutting of thick carbon steel.
Storm Nozzle	B(Boost)		On the basis of single-layer nozzle, there is one layer at the nozzle mouth. steps	Can be used for cutting stainless steel with high power nitrogen and low pressure.

Website: figtekindustry.com.au
Email: info@figtek.com.au
Phone: 1300 FIGTEK (344 835)