Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	28-35	3000	N2/Air	10
	2	16-20	3000		10
	2	3.8-4.2	2100		1.6
	3	3.2-3.6	2100		0.6
	4	3-3.2	2400		0.6
	5	2.7-3	3000		0.6
	6	2.2-2.5	3000		0.6
	8	1.8-2.2	3000		0.6
Mild Steel	10	1-1.3	3000	O2	0.6
	12	0.9-1	2400		0.6
	14	0.8-0.9	2400		0.6
	16	0.6-0.7	2400		0.6
	18	0.5-0.6	2400		0.6
	20	0.5-0.55	2400		0.6
	22	0.5	2400		0.6
	1	28-35			10
	2	18-24			12
	3	7-10			12
Stainless Steel	4	5-6.5	3000	N2	14
	5	3-3.6			14
	6	2-2.7			14
	8	1-1.2			16
	10	0.5-0.6			16
	1	25-30			12
	2	15-18			12
	3	7-8			14
Aluminium	4	5-6	3000	N2	14
	5	2.5-3			16
	6	1.5-2			16
	8	0.6-0.7			16
	1	20-28			12

Brass	2	10-15	3000	N2	12
	3	5-6			14
	4	2.5-3			14
	5	1.8-2.2			14
	6	0.8-1			16

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	0	0.5		
1.0D	+3	0.8		
1.0D	+4	0.8		
1.0D	+4	0.8		
1.2D	+4	0.8		
1.2D	+4	0.8		
1.2D	+4	0.8		
1.2D	+4	0.8		
3.0D	+4	0.8		
3.0D	+4	0.8		
3.5D	+4	0.8		
4.0D	+4	0.8		
4.0D	+4	0.8		
4.0D	+4	0.8		
1.5S	0	0.8		
2.0S	0	0.5		
2.5S	-0.5	0.5		
2.5S	-1.5	0.5		
3.0S	-2.5	0.5		
3.0S	-3	0.5		
3.5S	-4.5	0.5		
4.0S	-6	0.5		
1.5S	0	0.8		
2.0S	0	0.5		
2.0S	-1	0.5		
2.5S	-2	0.5		
3.0S	-3	0.5		
3.0S	-3.5	0.5		
3.5S	-4	0.5		
1.5S	0	0.8		

2.0S	0	0.5
2.5S	-1	0.5
3.0S	-2	0.5
3.0S	-2.5	0.5
3.0S	-3	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	25-30	3300	N2/Air	10
	2	10-12	3300		10
	2	4.5-5	1800		1.6
	3	4-4.5	1800		0.6
	4	3.2-3.6	2400		0.6
	5	3-3.2	2400		0.6
	6	2.2-2.5	3300		0.6
	8	1.8-2.2	3300		0.6
Mild Steel	10	1.1-1.3	1800-2200	O2	0.5
	12	0.9-1.1	1800-2200		0.5
	14	0.8-0.9	2200-3300		0.5
	16	0.7-0.8	2200-3300		0.5
	18	0.65-0.7	2200-3300		0.5
	20	0.55-0.65	2200-3300		0.6
	22	0.5-0.55	2200-3300		0.6
Stainless Steel	1	25-30	3300	N2	10
	2	10-13			12
	3	5-7			12
	4	4-5			14
	5	3-4			14
	6	2-3			14
	8	0.8-1.2			16
	10	0.6-0.8			16
Aluminium	1	20-25	3300	N2	12
	2	10-15			12
	3	6-8			14
	4	4-5			14
	5	2-3			16
	6	1.5-2			16
	8	0.6-0.8			16
	1	18-22			12

Brass	2	10-12	3300	N2	12
	3	4-5			14
	4	2-3			14
	5	1.5-2			14
	6	1-1.3			16

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	-1	0.5		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
3.0D	+2.5	0.8		
3.5D	+2.5	0.8		
3.5D	+2.5	0.8		
4.0D	+2.5	0.8		
4.0D	+2.5	0.8		
4.0D	+3	0.8		
4.0D	+3	0.8		
1.5S	0	0.8		
2.0S	-1	0.5		
2.5S	-1.5	0.5		
2.5S	-2	0.5		
2.5S	-2.5	0.5		
3.0S	-3	0.5		
3.5S	-4	0.5		
4.0S	-5	0.5		
1.5S	0	0.8		
2.0S	-1	0.5		
2.0S	-1.5	0.5		
2.0S	-2	0.5		
3.0S	-2.5	0.5		
3.0S	-3	0.5		
3.5S	-4	0.5		
1.5S	0	0.5		

2.0S	-1	0.5
2.5S	-1.5	0.5
3.0S	-2	0.5
3.0S	-2.5	0.5
3.0S	-3	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	28-35	4000	N2/Air	10
	2	12-15	4000		10
	3	8-12	4000		10
	3	4-4.5	1800		0.6
	4	3-3.5	2400		0.6
	5	2.5-3	2400		0.6
	6	2.5-2.8	3000		0.6
	8	2-2.3	3600		0.6
	10	1.8-2	4000		0.6
	12	1-1.2	1800-2200		0.5
	14	0.9-1	1800-2200		0.5
	16	0.7-0.9	2200-2600		0.5
	18	0.6-0.7	2200-2600		0.5
	20	0.55-0.65	2200-2600		0.5
	22	0.5-0.6	2200-2800		0.5
	25	0.5			0.5
	1	30-40			10
	2	15-20			12
	3	10-12	2400-3000		12
	4	6-7			12
	5	4-4.5			14
	6	3-3.5			14
	8	1.5-1.8			14
	10	1-1.2			16
	12	0.8			16
	1	25-30			12
	2	16-20			12
	3	10-13			14
	4	6-7			14
	5	4-5			14
	6	2.5-3			16

8	1-1.3	16
10	0.8	16
1	25-28	12
2	12-15	12
3	7-8	14
4	4-5	14
5	2.5-3	14
6	2-2.5	16
8	0.8-1	16

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	-1	0.5		
2.0S	-1.5	0.5		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
1.2D	+3	0.8		
3.0D	+2.5	0.8		
3.5D	+2.5	0.8		
3.5D	+2.5	0.8		
4.0D	+2.5	0.8		
4.0D	+3	0.8		
4.5D	+3	0.8		
5.0D	+3	0.8		
1.5S	0	0.8		
2.0S	-1	0.5		
2.0S	-1.5	0.5		
2.5S	-2	0.5		
2.5S	-2.5	0.5		
3.0S	-3	0.5		
3.0S	-4	0.5		
4.0S	-5	0.5		
4.0S	-6	0.5		
1.5S	0	0.6		
2.0S	-1	0.5		
2.0S	-1.5	0.5		
2.5S	-2	0.5		
2.5S	-2.5	0.5		
3.0S	-3	0.5		

3.0S	-4	0.5
3.5S	-5	0.5
1.5S	0	0.6
1.5S	-1	0.6
2.0S	-1	0.6
2.5S	-2	0.5
3.0S	-2	0.5
3.0S	-2.5	0.5
3.0S	-4	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	30-45	6000	N2/Air	12
	2	20-25			12
	3	12-14			14
	4	7-8			14
	5	5-6			16
	6	4.5-5			16
	3	3.5-4.2	2400		0.6
	4	3.3-3.8	2400		0.6
	5	3-3.6	3000		0.6
	6	2.7-3.2	3300		0.6
	8	2.2-2.5	4200		0.6
	10	2.0-2.3	5500		0.6
	12	0.9-1	2200		0.6
	12	1.9-2.1	6000		0.6
	14	0.8-0.9	2200		0.6
	14	1.4-1.7			0.6
	16	0.8-0.9			0.6
	16	1.2-1.4			0.6
	18	0.65-0.75	6000		0.6
	18	0.8			0.6
	20	0.5-0.6			0.6
	20	0.6-0.7			0.6
	22	0.45-0.5			0.6
	22	0.5-0.6			0.6
	25	0.5			0.5
	25	0.4-0.5			0.6
	1	30-45	6000		10
	2	25-30			12
	3	15-18			12
	4	10-12			14
	5	7-8			14

	6	4.5-5			15
	8	3.5-3.8			15
	10	1.5-2			15
	12	1-1.2			16
	14	0.8-1			16
	16	0.5-0.6			18
	18	0.4-0.5			20
	20	0.2-0.35			20
Aluminium Alloy	1	35-45	6000	N2	12
	2	20-25			12
	3	14-16			14
	4	8-10			14
	5	5-6			14
	6	3.5-4			16
	8	1.5-2			16
	10	1-1.2			18
	12	0.6-0.7			18
	14	0.4-0.6			18
	16	0.3-0.4			20
Brass	1	30-40	6000	N2	12
	2	18-20			12
	3	12-14			14
	4	8-9			14
	5	5-5.5			14
	6	3.2-3.8			16
	8	1.5-1.8			16
	10	0.8-1			16
	12	0.6-0.7			18
Copper	1	25-30	6000	O2	14
	2	15-18			14
	3	8-10			12
	4	5-6			12

5	3-4	10
6	1.5-2	10

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	-1	0.5		
2.0S	-1.5	0.5		
2.0S	-2	0.5		
3.0S	-2.5	0.5		
3.5S	-3	0.5		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+4	0.8		
3.0D	+2.5	0.8		
1.2E	+5	0.8		
3.5D	+2.5	0.8		
1.4E	+5	1		
4.0D	+2.5	0.8		
1.4E	+6	1		
4.0D	+2.5	0.8		
1.6S	+12	0.3		
4.0D	+3	0.8		
1.6S	+13	0.3		
4.0D	+3	0.8		
1.6S	+13	0.3		
5.0D	+3	1		
1.8S	+14	0.3		
1.5S	0	0.8		
2.0S	-1	0.5		
2.5S	-1.5	0.5		
2.5S	-2	0.5		
3.0S	-2.5	0.5		

3.0S	-3	0.5
3.0S	-4	0.5
3.5S	-6	0.5
3.5S	-7.5	0.5
4.0S	-9	0.5
4.0S	-10.5	0.5
5.0S	-11	0.3
5.0S	-12	0.3
1.5S	0	1
2.0S	-1	0.5
2.5S	-1.5	0.5
2.5S	-2	0.5
3.0S	-3	0.5
3.0S	-3	0.5
3.0S	-4	0.5
3.5S	-4.5	0.5
4.0S	-5	0.5
4.0S	-5	0.3
5.0S	-8	0.3
1.5S	0	1
2.0S	-1	0.5
2.5S	-1	0.5
3.0S	-1.5	0.5
3.0S	-2	0.5
3.0S	-2.5	0.5
3.5S	-3	0.5
3.5S	-3	0.5
4.0S	-4	0.3
2.0S	-0.5	1
2.0S	-1	0.5
2.0S	-2	0.5
2.0S	-2	0.5

2.5S	-3	0.5
2.5S	-3	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	30-45	6000	N2/Air	12
	2	25-30			12
	3	15-18			14
	4	8-10			14
	5	6-8			16
	6	4.5-5			16
	3	3.6-4.2	2400		0.6
	4	3.3-3.8	2400		0.6
	5	3-3.6	3500		0.6
	6	2.7-3.2	3300		0.6
	8	2.2-2.5	4200		0.6
	10	2.0-2.3	6600		0.6
	12	0.9-1	2400		0.6
	12	1.9-2.1	6000		0.6
	14	0.8-0.9	2400		0.6
	14	1.4-1.7			0.6
	16	0.8-0.9			0.6
	16	1.2-1.4			0.6
	18	0.65-0.75	6600		0.6
	18	0.8			0.6
	20	0.5-0.6			0.6
	20	0.6-0.7			0.6
	22	0.45-0.5			0.6
	22	0.5-0.6			0.6
	25	0.5			0.5
	25	0.4-0.5			0.6
	1	35-45	6600		10
	2	30-35			12
	3	18-24			12
	4	12-16			14

	5	8-9			14
	6	4.5-5.5			15
	8	3.5-4.2			15
	10	1.6-2			15
	12	1-1.2			16
	14	0.7-1			16
	16	0.5-0.7			18
	18	0.5			20
	20	0.3			20
Aluminium Alloy	1	30-40	6000	N2	12
	2	20-30			12
	3	16-18			14
	4	8-12			14
	5	5-7			14
	6	3.5-4.2			16
	8	1.5-2.2			16
	10	1-1.5			18
	12	0.6-0.8			18
	14	0.4-0.6			18
	16	0.3-0.4			20
Brass	1	30-40	6000	N2	12
	2	20-25			12
	3	14-18			14
	4	9-12			14
	5	5-6			14
	6	3.5-4.5			16
	8	1.5-2			16
	10	0.8-1.2			16
	12	0.5-0.8			18
Copper	1	25-30	6000	O2	5
	2	13-16			5

3	8-10	5
4	5-5.5	6
5	2.5-3.5	6
6	1.5-2.5	8

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	-1	0.5		
2.0S	-1.5	0.5		
2.0S	-2	0.5		
3.0S	-2.5	0.5		
3.5S	-3	0.5		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+3	0.8		
1.2E	+4	0.8		
3.0D	+2.5	0.8		
1.2E	+5	0.8		
3.5D	+2.5	0.8		
1.4E	+5	1		
4.0D	+2.5	0.8		
1.4E	+6	1		
4.0D	+2.5	0.8		
1.6S	+12	0.3		
4.0D	+3	0.8		
1.6S	+13	0.3		
4.0D	+3	0.8		
1.6S	+13	0.3		
5.0D	+3	1		
1.8S	+14	0.3		
1.5S	0	0.8		
2.0S	-1	0.5		
2.5S	-1.5	0.5		
2.5S	-2	0.5		

3.0S	-2.5	0.5
3.0S	-3	0.5
3.0S	-4	0.5
3.5S	-6	0.5
3.5S	-7.5	0.5
4.0S	-9	0.5
4.0S	-10.5	0.5
5.0S	-11	0.3
5.0S	-12	0.3
1.5S	0	1
2.0S	-1	0.5
2.5S	-1.5	0.5
2.5S	-2	0.5
3.0S	-3	0.5
3.0S	-3	0.5
3.0S	-4	0.5
3.5S	-4.5	0.5
4.0S	-5	0.5
4.0S	-5	0.3
5.0S	-8	0.3
1.5S	0	1
2.0S	-1	0.5
2.5S	-1	0.5
3.0S	-1.5	0.5
3.0S	-2	0.5
3.0S	-2.5	0.5
3.5S	-3	0.5
3.5S	-3	0.5
4.0S	-4	0.3
2.0S	-0.5	1
2.0S	-1	0.5

2.0S	-2	0.5
2.0S	-2	0.5
2.5S	-3	0.5
2.5S	-3	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	35-45	8000	N2 / Air	12
	2	30-35			12
	3	20-25			13
	4	15-18			13
	5	10-12			13
	6	8-9			13
	8	5-5.5			13
	8	2.3-2.5	4000		0.6
	10	2.3	6000		0.6
	12	1.8-2	7500		0.6
	14	1.6-1.8	8000		0.6
	16	1.4-1.6			0.6
	20	1-1.2			0.6
	22	0.6-0.65			0.7
	25	0.3-0.45			0.7
	30	0.2-0.25			1.3
	40	0.1-0.15			1.5
	1	40-50			10
	2	30-35			12
	3	20-24			13
	4	12-15			12
	5	9-10			15
	6	7-8			8
	8	4-5			7
	10	3-3.5			5
	12	2-2.5			6
	14	1.5-2			6
	16	1-1.5			6
	18	0.8-1			14
	20	0.6-0.8			6
	25	0.3-0.4			6

	30	0.15-0.2			10
	1	35-50			10
	2	30-35			10
	3	22-25			10
	4	14-16			10
	5	9-10			10
	6	7-8			10
	8	5-5.5			10
	10	3-3.5			10
	12	2-2.5			10
	14	1.5-2			10
	16	0.8-1			10
	18	0.7-0.8			10
	20	0.6-0.7			10
	25	0.4-0.5			10
	30	0.2-0.25			10
Aluminium Alloy	1	40-45	8000	N2	12
	2	25-30			12
	3	22-25			12
	4	12-15			12
	5	8-10			14
	6	6-7			14
	8	3.5-4			14
	10	2-2.5			14
	12	1.6-2			16
	14	1-1.2			16
	16	0.8-1			16
	18	0.7-0.8			16
	20	0.5-0.6			16
	25	0.4-0.5			16
	30	0.2			18
Brass	1	30-40	8000	N2	12

	2	25-27			12
	3	15-18			12
	4	10-11			12
	5	7-8			14
	6	6-6.5			14
	8	2.5-3			14
	10	1-1.5			14
	12	0.8-1			14
	14	0.7-0.8			16
	16	0.6			16
Copper	1	25-30	8000	O2	14
	2	16-20			14
	3	12-14			14
	4	7-8			12
	5	4-5			12
	6	2.5-3			12
	8	1-1.5			12
	10	0.5-0.7			12

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	0	0.5		
2.0S	-1	0.5		
2.5S	-1.5	0.5		
2.5S	-2	0.5		
2.5S	-2	0.5		
3.0S	-3	0.5		
1.2E	+4	0.8		
1.2E	+6	0.8		
1.2E	+7	0.8		
1.4E	+8	0.8		
1.4E	+9	0.8		
1.6E	+9	0.8		
1.8E	+9	0.8		
1.8E	+10	0.8		
1.8E	+11	1.2		
1.8E	+11.5	1.2		
2.0S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		
2.0S	-1	0.5		
2.5S	-1	0.5		
3.5B	-2	0.5		
5.0B	-2	0.5		
5.0B	-3	0.5		
6.0B	-4	0.5		
7.0B	-6	0.3		
7.0B	-8	0.3		
5.0B	-9	0.5		
7.0B	-11	0.3		
7.0B	-13	0.3		

7.0B	+8	0.3	300~800	60~80
2.0S	0	1		
2.5S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	-1	0.5		
5.0B	-4	0.5		
5.0B	-6	0.5		
5.0B	-8	0.5		
5.0B	-9	0.5		
5.0B	-11	0.3		
5.0B	-13	0.3		
5.0B	-15	0.3		
2.0S	0	0.8		
2.0S	-1	0.5		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.5S	-3	0.5		
2.5S	-3	0.5		
2.5S	-4	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-6	0.5		
5.0B	-7	0.5		
5.0B	-8	0.5		
7.0B	-9	0.3		
7.0B	-10	0.3		
7.0B	+7	0.3	300~800	60~80
2.0S	0	1		

2.0S	-1	0.5
2.0S	-1	0.5
2.0S	-2	0.5
2.5S	-3	0.5
2.5S	-3	0.5
2.5S	-4	0.5
5.0B	-5	0.5
5.0B	-5	0.5
5.0B	-8	0.5
5.0B	-11	0.3
2.0S	-0.5	1
2.0S	-1	0.5
2.0S	-2	0.5
2.0S	-2	0.5
2.5S	-3	0.5
2.5S	-3	0.5
3.0S	-4	0.5
4.0S	-5	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	40-45	10000	N2/Air	12
	2	35-40			12
	3	25-30			13
	4	18-20			13
	5	13-15			13
	6	10-12			13
	8	7-8			13
	10	3.5-4.5			13
	10	2-2.3	6000		0.6
	12	1.8-2	7500		0.6
	14	1.6-1.8	8500		0.6
	16	1.4-1.6	9500		0.6
	20	1.2-1.4	10000		0.6
	22	1.0-1.2			0.7
	25	0.5-0.65			0.7
	30	0.3-0.35			1.3
	40	0.2			1.5
	1	45-50			10
	2	35-40			12
	3	25-30			13
	4	18-20			12
	5	12-15			15
	6	8-9			8
	8	5-6			7
	10	3.5-4			5
	12	2.5-3			6
	14	2-2.5			6
	16	1.6-2			6
	18	1.2-1.5			14
	20	1-1.2			6
	25	0.5-0.6			6

	30	0.25			10
	40	0.15			15
	1	45-50			10
	2	30-35			10
	3	20-25			10
	4	18-20			10
	5	15-17			10
	6	8-10			10
	8	6-7			10
	10	5-6			10
	12	4-4.5			10
	14	2.5-3			10
	16	1.8-2			10
	18	1.2-1.5			10
	20	1-1.2			10
	25	0.5-0.6			10
	30	0.25-0.4			10
Aluminium Alloy	1	45-50	10000	N2	12
	2	25-30			12
	3	20-25			12
	4	18-20			12
	5	14-16			14
	6	8-9			14
	8	5-6			14
	10	4-4.5			14
	12	1.6-2			16
	14	1.2-1.5			16
	16	1-1.2			16
	18	0.8-1			16
	20	0.6-0.8			16
	25	0.5-0.6			16
	30	0.25-0.45			18

	40	0.15-0.2			18
Brass	1	35-40	10000	N2	12
	2	22-27			12
	3	15-20			12
	4	12-15			12
	5	10-11			14
	6	6-7			14
	8	4-5			14
	10	3.5-4			14
	12	1.6-2			14
	14	0.8-1			16
	16	0.5-0.7			16
Copper氧气	1	25-30	10000	O2	14
	2	16-20			14
	3	12-15			14
	4	8-10			12
	5	5-6			12
	6	3.5-4			12
	8	1.5-2			12
	10	0.5-0.7			12

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
3.0S	-1	0.5		
4.0S	-3	0.5		
1.2E	+6	0.8		
1.2E	+7	0.8		
1.4E	+7	0.8		
1.4E	+8	0.8		
1.6E	+8	0.8		
1.8E	+9	0.8		
1.8E	+10	0.8		
1.8E	+11	1.2		
1.8E	+11.5	1.2		
2.0S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		
2.0S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
5.0B	0	0.5		
5.0B	-1	0.5		
6.0B	-4	0.5		
7.0B	-6	0.3		
7.0B	-8	0.3		
5.0B	-9	0.5		
7.0B	-11	0.3		
7.0B	-13	0.3		

7.0B	+7	0.3	300~800	60~80
7.0B	+9	0.3	300~800	60~80
2.0S	0	1		
2.5S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	-1	0.5		
5.0B	-4	0.5		
5.0B	-6	0.5		
5.0B	-8	0.5		
5.0B	-9	0.5		
5.0B	-11	0.3		
5.0B	-13	0.3		
5.0B	-14	0.3		
2.0S	0	0.8		
2.0S	-1	0.5		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.5S	-3	0.5		
2.5S	-3	0.5		
2.5S	-4	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
7.0B	-5	0.3		
7.0B	-5	0.3		
7.0B	+7	0.3		

7.0B	+8	0.3
2.0S	0	1
2.0S	-1	0.5
2.0S	-1	0.5
2.0S	-2	0.5
2.5S	-3	0.5
2.5S	-3	0.5
2.5S	-4	0.5
5.0B	-5	0.5
5.0B	-5	0.5
5.0B	-8	0.5
5.0B	-11	0.3
2.0S	-0.5	1
2.0S	-1	0.5
2.0S	-2	0.5
2.0S	-3	0.5
2.5S	-4.5	0.5
2.5S	-5	0.5
3.0S	-6	0.5
4.0S	-8	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	50-60	12000	N2/Air	12
	2	40-45			12
	3	30-35			13
	4	20-26			13
	5	15-18			13
	6	10-13			13
	8	7-10			13
	10	5-6.5			13
	10	2-2.3	6000		0.6
	12	1.8-2	7500		0.6
	14	1.6-1.8	8500		0.6
	16	1.5-1.6	9500		0.6
	20	1.3-1.4	12000		0.6
	22	0.9-1			0.7
	22	1-1.2			0.7
	25	0.7-0.9			0.7
	25	0.8-1			0.7
	30	0.4-0.5			1.3
	30	0.7-0.8			0.8
	40	0.25-0.3			1.5
	12	3-3.5			1
	14	3-3.2			1
	16	2.8-3			1
	20	2-2.3			1.2
	25	1.1-1.3			1.3
	30	0.9-1			1.4
	1	50-60			10
	2	40-45			12
	3	30-35			13
	4	23-27			12
	5	15-18			15

	6	13-15			8
	8	8-10			7
	10	6.5-7.5			5
	12	5-5.5			6
	14	3-3.5			6
	16	2-2.3			6
	18	1.3-1.5			6
	20	1.2-1.4			6
	25	0.7-0.9			6
	30	0.25-0.3			10
	40	0.15-0.2			15
Stainless Steel	1	50-60	12000	Air	10
	2	40-45			10
	3	30-35			10
	4	25-30			10
	5	16-19			10
	6	14-17			10
	8	9-11			10
	10	7-8			10
	12	5.5-6			10
	14	3.5-4			10
	16	2.2-2.4			10
	18	1.3-1.6			10
	20	1.2-1.5			10
	25	0.7-1			10
	30	0.3-0.4			10
Aluminium Alloy	1	45-50	12000	N2	12
	2	30-35			12
	3	20-25			12
	4	18-20			12
	5	14-16			14
	6	10-12			14

	8	6-8			14
	10	4-6			14
	12	2-3			16
	14	1.5-2.5			16
	16	1.3-2			16
	18	1-1.6			16
	20	0.8-1.2			16
	25	0.5-0.7			16
	30	0.4-0.5			18
	40	0.25-0.3			18
Brass	1	35-45	12000	N2	12
	2	30-35			12
	3	18-22			12
	4	15-18			12
	5	12-15			14
	6	8-10			14
	8	5-7			14
	10	4-5			14
	12	1.8-2			14
	14	1.2-1.4			16
	16	0.8-1			16
Copper	1	25-30	12000	O2	5
	2	20-25			5
	3	16-18			6
	4	10-12			8
	5	6-8			8
	6	4-5			8
	8	2-2.5			10
	10	1-1.2			12

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
3.0S	-1.5	0.5		
4.0S	-3	0.5		
1.2E	+6	0.8		
1.2E	+7	0.8		
1.4E	+7	0.8		
1.4E	+8	0.8		
1.6E	+8	0.8		
1.8E	+9	0.8		
1.4SP	+11	0.5		
1.8E	+11	0.8		
1.5SP	+12	0.5		
1.8E	+11	1.2		
1.5SP	+12	0.5		
1.8E	+11.5	1.2		
1.6SP	-10	1.5		
1.6SP	-10	1.5		
1.6SP	-12	1.5		
1.6SP	-12	1.5		
1.8SP	-14	1.5		
1.8SP	-14	1.5		
2.0S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		
2.0S	0	0.5		
2.5S	0	0.5		

3.5B	0	0.5		
5.0B	0	0.5		
5.0B	-1	0.5		
6.0B	-4	0.5		
7.0B	-6	0.3		
7.0B	-8	0.3		
7.0B	-9	0.5		
7.0B	-11	0.3		
7.0B	-13	0.3		
7.0B	+7	0.3	200~800	60~75
7.0B	+8	0.3	200~800	60~75
2.0S	0	1		
2.5S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	-1	0.5		
5.0B	-4	0.5		
5.0B	-6	0.5		
5.0B	-8	0.5		
5.0B	-9	0.5		
5.0B	-11	0.3		
5.0B	-13	0.3		
5.0B	-14	0.3		
2.0S	0	0.8		
2.0S	-1	0.5		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.5S	-3	0.5		
2.5S	-3	0.5		

2.5S	-4	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
7.0B	-5	0.3		
7.0B	-5	0.3		
7.0B	+7	0.3	300~1000	60~80
7.0B	+8	0.3	300~1000	60~80
2.0S	0	1		
2.0S	-1	0.5		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.5S	-3	0.5		
2.5S	-3	0.5		
2.5S	-4	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-8	0.5		
5.0B	-11	0.3		
2.0S	-0.5	1		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.0S	-3	0.5		
2.5S	-4.5	0.5		
2.5S	-5	0.5		
3.0S	-6	0.5		
4.0S	-8	0.5		

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	1	50-60	15000	N2/Air	10
	2	45-48			10
	3	30-38			12
	4	26-29			12
	5	20-23			12
	6	17-19			12
	8	10-12			12
	10	7-8			13
	12	5-6			13
	14	4.5-5.5			13
	16	3-3.5			13
	10	2-2.3	6000		0.6
	12	1.8-2	7500		0.6
	14	1.6-1.8	8500		0.6
	16	1.5-1.6	9500		0.6
	20	1.3-1.4			0.6
	22	1-1.2			0.7
	22	1.2-1.3			0.7
	25	0.8-1	12000		0.7
	25	1.2-1.3			0.7
	30	0.6-0.7			0.8
	30	0.75-0.85			0.8
	40	0.3-0.35			1.5
	50	0.2-0.25			1.6
	60	0.18-0.2			1.8
	12	3.2-3.5			1
	14	3-3.2			1
	16	3-3.1			1
	20	2.5-2.8			1.2
	25	1.6-1.9			1.3
	30	1.2-1.3			1.4

	35	1-1.2			1.4
	1	50-60			10
	2	45-50			12
	3	35-38			13
	4	25-29			12
	5	18-22			15
	6	15-18			8
	8	10-12			7
	10	8-9			5
	12	6-7			6
	14	4-4.2			6
	16	2.6-2.8			6
	18	2-2.3			6
	20	1.8-2			6
	25	1-1.2			6
	30	0.6-0.7			10
	40	0.3-0.4			15
	50	0.2-0.25			15
Stainless Steel	1	50-60	15000	Air	10
	2	45-50			10
	3	35-38			10
	4	25-29			10
	5	18-22			10
	6	15-18			10
	8	10-12			10
	10	8-9			10
	12	6-7			10
	14	4-4.5			10
	16	2.9-3.1			10
	18	2.2-2.4			10
	20	1.9-2.1			10
	25	1.2-1.4			10

	30	0.8-1			10
	40	0.4-0.5			12
	50	0.2-0.4			12
Aluminium Alloy	1	48-52	15000	N2	12
	2	35-38			12
	3	25-27			12
	4	20-22			12
	5	15-17			14
	6	12-14			14
	8	8-9			14
	10	5-7			14
	12	2.5-3.5			16
	14	2-3			16
	16	1.5-2.5			16
	18	1.3-1.8			16
	20	0.8-1.2			18
	25	0.5-0.7			18
	30	0.4-0.5			20
	40	0.25-0.3			20
	50	0.2-0.25			20
Brass	1	38-40	15000	N2	12
	2	32-37			12
	3	20-24			12
	4	16-19			12
	5	13-16			14
	6	9-11			14
	8	6-8			14
	10	5-6			14
	12	2-2.2			14
	14	1.4-1.6			16
	16	1.2-1.3			18
	18	1-1.2			18
	20	0.6-0.7			18
Copper	1	25-30	15000	O2	5
	2	20-25			5
	3	18-20			6
	4	12-14			8
	5	8-9			8

6	6-7	8
8	2.5-3.5	10
10	1.5-2	12

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
1.5S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
3.0S	-1	0.5		
4.0S	-1	0.5		
4.0S	-2	0.5		
4.0S	-6	0.5		
5.0B	-8	0.5		
1.2E	+6	0.8		
1.2E	+7	0.8		
1.4E	+7	0.8		
1.4E	+8	0.8		
1.6E	+8	0.8		
1.8E	+9	0.8		
1.4SP	+11	0.5		
1.8E	+10	0.8		
1.5SP	+12	0.5		
1.8E	+11	1.2		
1.5SP	+12	0.5		
1.8E	+11.5	1.2		
1.8E	+11.5	1.8		
1.8E	+12	2		
1.6SP	-10	1.5		
1.6SP	-10	1.5		
1.6SP	-12	1.5		
1.6SP	-12	1.5		
1.8SP	-14	1.5		
1.8SP	-14	1.5		

2.0SP	-15	1.5		
2.0S	0	1		
2.0S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
5.0B	0	0.5		
5.0B	-1	0.5		
6.0B	-4	0.5		
7.0B	-6	0.3		
7.0B	-8	0.3		
7.0B	-9	0.5		
7.0B	-11	0.3		
7.0B	-13	0.3		
5.0B	-15	0.3		
7.0B	+8	0.3	200~800	60~75
8.0B	+9	0.3	200~800	60~75
2.0S	0	1		
2.5S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	-1	0.5		
5.0B	-4	0.5		
5.0B	-6	0.5		
5.0B	-8	0.5		
5.0B	-9	0.5		
5.0B	-11	0.3		
5.0B	-13	0.3		

5.0B	-15	0.3		
6.0B	-15	0.3		
8.0B	-16	0.3		
2.0S	0	0.8		
2.0S	-1	0.5		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.5S	-3	0.5		
2.5S	-3	0.5		
2.5S	-4	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
7.0B	-5	0.3		
7.0B	-5	0.3		
7.0B	-7	0.3	300~1000	60~80
7.0B	+8	0.3	300~1000	60~80
8.0B	+9	0.3	300~1000	60~80
2.0S	0	1		
2.0S	-1	0.5		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.5S	-3	0.5		
2.5S	-3	0.5		
2.5S	-4	0.5		
5.0B	-5	0.5		
5.0B	-5	0.5		
5.0B	-8	0.5		
5.0B	-11	0.5		
5.0B	-11	0.5		
6.0B	-12	0.3		
2.0S	-0.5	1		
2.0S	-1	0.5		
2.0S	-2	0.5		
2.0S	-3	0.5		
2.5S	-4.5	0.5		

2.5S	-5	0.5
3.0S	-6	0.5
4.0S	-8	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	5	23-28	20000	N2/Air	8
	6	18-20			8
	8	14-16			8
	10	9-12			8
	12	8-10			8
	14	6-8			8
	16	5-6			8
	18	3.2-4			10
	20	2.7-3.2			10
	10	2-2.3	6000		0.6
	12	1.8-2	7500		0.6
	14	1.6-1.8	8500		0.6
	16	1.5-1.6	9500		0.6
	20	1.3-1.4	12000		0.6
	22	1.2-1.3	20000		0.7
	22	1.4-1.5			0.7
	25	1.2-1.4			1.0
	30	1.2-1.3			1.2
	40	0.6-0.9			1.4
	40(非Q235)	0.3-0.6			1.6
	50	0.2-0.3			1.6
	60	0.2-0.25			1.6
	70	0.18-0.2			1.7
	80	0.12-0.15			1.8
	12	3.2-3.5			1
	14	3-3.2			1
	16	3-3.1			1
	20	2.8-3			1.2
	25	2.4-2.6			1.3
	30	1.7-1.9			1.4
	35	1.4-1.6			1.4

	40	1-1.2			1.5
	45	0.8-0.9			1.6
	1	50-60			8
	2	50-60			8
	3	40-45			8
	4	30-35			8
	5	22-24			8
	6	18-22			8
	8	13-16			8
	10	10-12			8
	12	8-10			8
	14	6-8			8
	16	5-6			8
	18	3.2-4			8
	20	3-3.2			12
	25	1.5-2			12
	30	1-1.2			12
	40	0.5-0.8			16
	50	0.2-0.3			16
	60	0.15-0.2			20
	70	0.1-0.13			20
	80	0.08-0.1			20
	90	0.05-0.06			20
	100	0.04-0.05			20
Stainless Steel	1	50-60	12000	Air	8
	2	50-60			8
	3	40-45	20000		8
	4	30-35			8
	5	22-24			8
	6	18-22			8
	8	13-16			10
	10	11-13			10

	12	9-11			10
	14	7-9			10
	16	6-7			10
	18	3.5-4.5			10
	20	3.5-4.5			10
	25	1.8-2.5			10
	30	1.4-1.6			10
	40	0.5-0.8			16
	50	0.2-0.3			16
	60	0.15-0.2			20
	70	0.1-0.13			20
Aluminium Alloy	1	55-60	12000	N2	8
	2	40-45			8
	3	30-35	20000		10
	4	25-30			12
	5	18-20			14
	6	16-18			14
	8	10-12			14
	10	9-10			14
	12	5-6			16
	14	4-5			16
	16	3-4			16
	18	2-3			16
	20	1.5-2			18
	25	1-1.2			18
	30	0.8-1			20
	40	0.5-0.8			20
	50	0.4-0.6			20
	60	0.2-0.3			20
Brass	1	40-45	20000	N2	12
	2	35-40			12
	3	28-30			12
	4	19-22			12
	5	18-19			14
	6	12-15			14
	8	8-10			14
	10	7-8			14
	12	2.5-3.5			14

	14	2-2.5			16
	16	1.5-2			18
	18	1.2-1.5			18
	20	0.8-1			18
Copper	1	25-30	20000	O2	5
	2	25-30			5
	3	20-25			6
	4	16-18			8
	5	10-12			8
	6	8-10			8
	8	4-6			10
	10	2-3.5			12
	12	2-2.5			12

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
3.0S	0	0.5		
3.0S	-0.5	0.5		
3.0S	-1	0.5		
3.5S	-1.5	0.5		
3.5S	-2	0.5		
4.0S	-3	0.5		
5.0S	-4	0.5		
6.0S	-6	0.5		
6.0S	-8	0.5		
1.2E	+8	0.8		
1.2E	+9	0.8		
1.4E	+10	0.8		
1.4E	+11	0.8		
1.6E	+12	0.8		
1.8E	+12.5	0.8		
1.4SP	+13	0.5		
1.5SP	+13	0.4		
1.5SP	+13.5	0.4		
1.6SP	+14	0.4		
1.8E	+13	2		
1.8E	+13	2		
1.8E	+13.5	2		
1.8E	+13.5	2		
1.8E	+14	2		
1.6SP	-10	1.5		
1.6SP	-10	1.5		
1.6SP	-12	1.5		
1.6SP	-12	1.5		
1.8SP	-14	1.5		
1.8SP	-14	1.5		
2.0SP	-15	1.5		

2.5S	-15	1.5		
2.5S	-17	1.5		
2.0S	0	1		
2.0S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
3.0S	0	0.5		
3.5B	0	0.5		
5.0B	-1	0.5		
5.0B	-1.5	0.3		
6.0B	-2	0.5		
6.0B	-4	0.3		
6.0B	-5	0.3		
6.0B	-6	0.3		
6.0B	-7.5	0.3		
7.0B	-12	0.3		
7.0B	-16	0.3		
7.0B	-16	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
2.0S	0	1		
2.5S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		
3.5B	-1.5	0.3		

5.0B	-4	0.3		
5.0B	-6	0.3		
5.0B	-7	0.3		
5.0B	-8	0.3		
5.0B	-9	0.3		
5.0B	-13	0.3		
5.0B	-17	0.3		
7.0B	-16	0.3		
8.0B	-18	0.3		
8.0B	-20	0.3		
8.0B	-25	0.3		
2.0S	0	0.8		
2.0S	-1	0.5		
2.5S	-1	0.5		
2.5S	-2	0.5		
3.0S	-3	0.5		
3.0S	-3	0.5		
3.5S	-4	0.5		
3.5S	-5	0.5		
5.0B	-6	0.3		
5.0B	-7	0.3		
5.0B	-7	0.3		
5.0B	-7	0.3		
6.0B	-7	0.3		
6.0B	-7.5	0.3		
7.0B	-7.5	0.3	300~1000	60~80
7.0B	-9	0.3	300~1000	60~80
8.0B	-9	0.3	300~1000	60~80
8.0B	-9	0.3	300~1000	60~80
2.0S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
3.0S	0	0.5		
3.0S	0	0.5		
5.0B	-1	0.3		
5.0B	-2	0.3		

5.0B	-3	0.3
5.0B	-3	0.3
5.0B	-4	0.3
6.0B	-5	0.3
2.0S	0	1
2.0S	0	0.5
2.0S	0	0.5
2.5S	-1	0.5
2.5S	-1	0.5
3.0S	-2	0.5
3.0S	-3	0.5
3.5S	-4	0.5
3.5S	-5	0.5

Material	Thickness (mm)	Speed (m/min)	Power (W)	Gas	Pressure (Bar)
Mild Steel	5	22-30	30000	N2/Air	8
	6	18-22			8
	8	14-16			8
	10	12-14			8
	12	10-12			8
	14	8-10			8
	16	8-8.5			8
	18	5.5-6.5			10
	20	4.5-5.5			10
	25	2.8-3.2			10
	10	2-2.3	6000		0.6
	12	1.8-2	7500		0.6
	14	1.6-1.8	8500		0.6
	16	1.6-1.8	9500		0.6
	20	1.5-1.6	12000		0.6
	22	1.4-1.5			0.7
	25	1.2-1.4			1.0
	30	1.2-1.3			1.2
	40	0.6-0.9	18000		1.4
	40(非Q235)	0.3-0.6			1.6
	50(非Q235)	0.3-0.5			1.6
	50	0.6-0.8			1.6
	60	0.2-0.25			1.6
	70	0.18-0.2			1.7
	80	0.12-0.15			1.8
	12	3.2-3.5			1
	14	3-3.2			1
	16	3-3.1			1
	20	2.8-3			1.2
	25	2.6-2.8			1.3

	30	2.2-2.6			1.4
	35	1.4-1.6			1.4
	40	1-1.4			1.5
	45	0.8-0.9			1.6
	1	50-60			8
	2	50-60			8
	3	40-50	30000		8
	4	35-40			8
	5	25-30			8
	6	22-25			8
	8	18-22			8
	10	13-16			8
	12	10-12			8
	14	8-10			8
	16	7-8			8
	18	6-7			8
	20	4-5			12
	25	2-2.5			12
	30	1.2-2			12
	40	0.6-0.8			16
	50	0.2-0.3			16
	60	0.15-0.2			20
	70	0.1-0.13			20
	80	0.08-0.1			20
	90	0.05-0.06			20
	100	0.04-0.05			20
Stainless Steel	1	50-60	12000	Air	8
	2	50-60			8
	3	40-50	30000		8
	4	35-40			8
	5	25-30			8

	6	22-25			8
	8	18-22			10
	10	14-18			10
	12	12-14			10
	14	10-12			10
	16	8-9			10
	18	6-7			10
	20	5-6			10
	25	2.5-3			10
	30	1.5-2			10
	40	0.8-1			16
	50	0.2-0.3			16
	60	0.15-0.2			20
	70	0.1-0.13			20
Aluminium Alloy	1	55-60	12000	N2	8
	2	40-45			8
	3	30-35	30000		10
	4	25-30			12
	5	18-25			14
	6	18-20			14
	8	15-18			14
	10	12-15			14
	12	10-12			16
	14	8-10			16
	16	6-8			16
	18	3-4			16
	20	2-3			18
	25	1.5-2			18
	30	0.8-1			20
	40	0.5-0.8			20
	50	0.4-0.6			20
	60	0.2-0.3			20
Brass	1	40-45	12000	N2	12
	2	35-40	30000		12
	3	28-30			12

	4	20-25			12
	5	18-20			14
	6	15-18			14
	8	10-15			14
	10	8-10			14
	12	5-8			14
	14	3-5			16
	16	1.5-2			18
	18	1.2-1.5			18
	20	0.8-1			18
Copper	1	25-30	30000	O2	5
	2	25-30			5
	3	20-25			6
	4	18-20			8
	5	15-18			8
	6	10-15			8
	8	6-10			10
	10	2-3.5			12
	12	2-2.5			12

Nozzle (mm)	Focus (mm)	Height (mm)	Frequency (Hz)	Duty Cycle (%)
3.0S	0	0.5		
3.0S	-0.5	0.5		
3.0S	-1	0.5		
3.5S	-1.5	0.5		
3.5S	-2	0.5		
4.0S	-3	0.5		
5.0S	-4	0.5		
6.0S	-6	0.5		
6.0S	-8	0.5		
6.0S	-12	0.5		
1.2E	+8	0.8		
1.2E	+9	0.8		
1.4E	+10	0.8		
1.4E	+11	0.8		
1.6E	+12	0.8		
1.4SP	+13	0.5		
1.5SP	+13	0.4		
1.5SP	+13.5	0.4		
1.6SP	+14	0.4		
1.8E	+13	2		
1.8E	+13	2		
1.8SP	+14	0.4		
1.8E	+13.5	2		
1.8E	+13.5	2		
1.8E	+14	2		
1.6SP	-10	1.5		
1.6SP	-10	1.5		
1.6SP	-12	1.5		
1.6SP	-12	1.5		
1.8SP	-14	1.5		

1.8SP	-14	1.5		
2.0SP	-15	1.5		
2.5S	-15	1.5		
2.5S	-17	1.5		
2.0S	0	1		
2.0S	0	0.5		
2.5S	0	0.5		
2.5S	0	0.5		
3.0S	0	0.5		
3.5B	0	0.5		
5.0B	-1	0.5		
5.0B	-1.5	0.3		
6.0B	-2	0.5		
6.0B	-4	0.3		
6.0B	-5	0.3		
6.0B	-6	0.3		
6.0B	-7.5	0.3		
7.0B	-12	0.3		
7.0B	-16	0.3		
7.0B	-16	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
8.0B	+11	0.3	200~800	60~75
2.0S	0	1		
2.5S	0	0.5		
2.5S	0	0.5		
3.5B	0	0.5		
3.5B	0	0.5		

3.5B	0	0.5		
3.5B	0	0.5		
3.5B	-1.5	0.3		
5.0B	-4	0.3		
5.0B	-6	0.3		
5.0B	-7	0.3		
5.0B	-8	0.3		
5.0B	-9	0.3		
5.0B	-13	0.3		
5.0B	-17	0.3		
7.0B	-16	0.3		
8.0B	-18	0.3		
8.0B	-20	0.3		
8.0B	-25	0.3		
2.0S	0	0.8		
2.0S	-1	0.5		
2.5S	-1	0.5		
2.5S	-2	0.5		
3.0S	-3	0.5		
3.0S	-3	0.5		
3.5S	-4	0.5		
3.5S	-5	0.5		
5.0B	-6	0.3		
5.0B	-7	0.3		
5.0B	-7	0.3		
5.0B	-7	0.3		
6.0B	-7	0.3		
6.0B	-7.5	0.3		
7.0B	-7.5	0.3	300~1000	60~80
7.0B	-9	0.3	300~1000	60~80
8.0B	-9	0.3	300~1000	60~80
8.0B	-9	0.3	300~1000	60~80
2.0S	0	1		
2.0S	0	0.5		
2.0S	0	0.5		

2.5S	0	0.5
2.5S	0	0.5
3.0S	0	0.5
3.0S	0	0.5
5.0B	-1	0.3
5.0B	-2	0.3
5.0B	-3	0.3
5.0B	-3	0.3
5.0B	-4	0.3
6.0B	-5	0.3
2.0S	0	1
2.0S	0	0.5
2.0S	0	0.5
2.5S	-1	0.5
2.5S	-1	0.5
3.0S	-2	0.5
3.0S	-3	0.5
3.5S	-4	0.5
3.5S	-5	0.5