

→ **Book of Parameters**
Speedy 400, 120 watt

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1 General information

JobControl[®] features parameters for Trotec laser materials. The book of parameters is offering supplementary advice as to how these new parameters can be used.

Engraving and cutting results always depend on the equipment used, specific applications, as well as the requirements regarding quality and productivity. By providing two different parameter sets "Quality" and "Speed" we are covering a wide range of conditions. Feedback and suggestions will help us to further develop these parameters and are highly appreciated.

1.1 "Quality" vs. "Speed" optimized parameters

"Quality" parameter sets are recommended for applications where fine detail and strong contrast is required.

"Speed" parameters are for time-efficiency orientated applications, where a reduced degree of detail in engraving is acceptable.

1.2 Machinery and job setup used for parameter finding

- Speedy 400
- Atmos Duo exhaust system
- Black aluminium cutting grid table
- 2" lens unless stated otherwise
- Air assist on, lower pressure and wide nozzle recommended for improved results. Check lens regularly for cleanness.
- Engraving over the whole working area with multiple rectangular engraving jobs
- "Speed" jobs are printed to JobControl[®] with 333 DPI unless stated otherwise; "Quality" jobs are printed to JobControl[®] with 600 DPI unless stated otherwise.

1.3 General recommendations

- Engraving is recommended to be carried out from the bottom to the top, preventing residue from being pulled over freshly engraved parts on route to the exhaust, resulting in a cleaner engraving.
- Air assist is enabled ("On").
Laser Correction (LC-value) is set to 10
- Accurate focus is prerequisite for good engraving and cutting results (controlled de-focus through Z-offset). Please make sure the material stays flat over the whole working area.

1.4 Individual parameter fine tuning

Depending on a specific application, minor adjustments of standard settings may allow for improved quality or reduced engraving time. For this, step-by-step adjustments in the range of +/- 10 % are recommended on power, speed and DPI.

→ **Tips:**

- Increasing the Z-Offset (controlled de-focus) can allow for an increased contrast and a darker engraving image. However, this may also result in a decrease of detail engraving.
- Increasing the laser pulse rate (Hz) when cutting can allow for a cleaned, flame polished edge, especially for transparent materials.
- Turning off the air assist in Job Control can improve results for engravings where high quality is a priority. In this case check lens more often for cleanness.

2 TroLase

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	40%	100%	600	1	On	+1 mm (0.040")
Cut 0.8mm (1/32")	20%	1.8%	1000	1	On	0
Cut 1.6mm (1/16")	35%	1.2%	1000	1	On	0
Cut 3.2mm (1/8")	85%	1.2%	1000	1	On	-1.6mm (1/16")

Print DPI: 600

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	60%	100%	500	1	On	+1 mm (0.040")
Cut 0.8mm (1/32")	40%	4%	1000	1	On	0
Cut 1.6mm (1/16")	50%	2%	1000	1	On	0
Cut 3.2mm (1/8")	100%	1.5%	1000	1	On	0

Print DPI: 333

3 TroLase Metallic

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	40%	100%	600	1	On	+1 mm (0.040")
Cut 0.8mm (1/32")	20%	1.8%	1000	1	On	0
Cut 1.6mm (1/16")	30%	1.2%	1000	1	On	0
Cut 3.2mm (1/8")	80%	1.2%	1000	1	On	-1.6mm (1/16")

Print DPI: 600

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	50%	100%	500	1	On	+1 mm (0.040")
Cut 0.8mm (1/32")	40%	4%	1000	1	On	0
Cut 1.6mm (1/16")	65%	2.5%	1000	1	On	0
Cut 3.2mm (1/8")	100%	1.4%	1000	1	On	0

Print DPI: 333

4 TroLase Metallic Plus

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	30%	100%	600	1	On	+1 mm (0.040")
Cut 0.8mm (1/32")	20%	1.8%	1000	1	On	0
Cut 1.6mm (1/16")	30%	1.2%	1000	1	On	0
Cut 3.2mm (1/8")	80%	1.2%	1000	1	On	-1.6mm (1/16")

Print DPI: 600

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	40%	100%	500	1	On	+1 mm (0.040")
Cut 0.8mm (1/32")	40%	4%	1000	1	On	0
Cut 1.6mm (1/16")	65%	2.5%	1000	1	On	0
Cut 3.2mm (1/8")	100%	1.4%	1000	1	On	0

Print DPI: 333

5 TroLase Reverse

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	80%	100%	600	1	On	+2,5mm (0.1")
Cut 1.6mm (1/16")	30%	1%	1000	1	On	0

Print DPI: 600

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	100%	90%	500	1	On	+2,5mm (0.1")
Cut 1.6mm (1/16")	60%	2%	1000	1	On	0

Print DPI: 333

6 TroLase Thins

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	50%	100%	600	1	On	+1 mm (0.040")
Cut 0.5mm (0.02")	15%	2%	1000	1	On	0

Print DPI: 600

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	60%	100%	500	1	On	+1 mm (0.040")
Cut 0.5mm (0.02")	25%	4%	1000	1	On	0

Print DPI: 333

7 TroLase ADA Signage

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Cut 0.8mm (1/32")	15%	0.8%	1000	1	On	0
Cut 1.0mm (0.040")	15%	0.8%	1000	1	On	0
Cut 1.6mm (1/16")	25%	0.8%	1000	1	On	0
Cut 3.2mm (1/8")	35%	0.4%	1000	1	On	0

Print DPI: 1000

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Cut 0.8mm (1/32")	30%	2.5%	1000	1	On	0
Cut 1.0mm (0.040")	40%	2.5%	1000	1	On	0
Cut 1.6mm (1/16")	65%	2%	1000	1	On	0
Cut 3.2mm (1/8")	65%	0.8%	1000	1	On	0

Print DPI: 1000

8 TroLase Textures

→ Quality	Lens	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	2.5"	50%	30%	600	1	On	+4mm (0.167")
Cut 1.6mm (1/16")	2.5"	30%	0.8%	1000	1	On	0
Cut 3.2mm (1/8")	2.5"	60%	0.8%	1000	1	On	0

Print DPI: 600

→ Speed	Lens	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	2.5"	60%	30%	333	1	On	+4mm (0.167")
Cut 1.6mm (1/16")	2.5"	60%	2%	1000	1	On	0
Cut 3.2mm (1/8")	2.5"	60%	0.8%	1000	1	On	0

Print DPI: 333

9 TroGlass

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	8%	20%	500	1	On	0
Cut 3mm (0.118")	30%	0.2%	5000	1	On	0

Print DPI: 500

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	10%	20%	500	1	On	0
Cut 3mm (0.118")	95%	1.2%	1000	1	On	0

Print DPI: 333

10 TroGlass Clear

→ Quality	Lens	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	2.0"	8%	20%	500	1	On	0
Cut 3mm (0.118")	2.0"	30%	0.2%	20.000	1	On	0
Cut 4mm (0.167")	2.0"	60%	0.2%	20.000	1	On	-1.0mm (0.040")
Cut 5mm (0.208")	2.0"	80%	0.2%	20.000	1	On	-1.5mm (1/16")
Cut 6mm (0.24")	2.5"	90%	0.2%	20.000	1	On	-2.0mm (0.08")
Cut 8mm (5/16")	2.5"	95%	0.15%	20.000	1	On	-2.5mm (0.1")
Cut 10mm (3/8")	2.5"	90%	0.10%	20.000	1	On	-3.0mm (0.12")

Print DPI: 333

→ Speed	Lens	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	2.0"	10%	20%	500	1	On	0
Cut 3mm (0.118")	2.0"	95%	1.2%	20.000	1	On	0
Cut 4mm (0.167")	2.0"	95%	0.7%	20.000	1	On	-1.0mm (0.040")
Cut 5mm (0.208")	2.0"	95%	0.6%	20.000	1	On	-1.5mm (1/16")
Cut 6mm (0.24")	2.5"	95%	0.5%	20.000	1	On	-2.0mm (0.08")
Cut 8mm (5/16")	2.5"	95%	0.3%	20.000	1	On	-2.5mm (0.1")
Cut 10mm (3/8")	2.5"	95%	0.25%	20.000	1	On	-3.0mm (0.12")

Print DPI: 333

11 MarkSolid

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	20%	20%	500	1	On	0

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	50%	50%	500	1	On	0

Print DPI: 500

12 AlumaMark

→ Bronze	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	26%	50%	1000	1	On	+2.0mm (0.08")

→ Gold/Brass	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	30%	50%	1000	1	On	+2.0mm (0.08")

→ Silver	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	32%	100%	1000	1	On	+2.0mm (0.08")

Print DPI: 1000

13 DuraBlack

→ Quality	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	35%	50%	600	1	On	+1 mm (0.040")

Print DPI: 600

→ Speed	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Engrave	40%	50%	500	1	On	+1 mm (0.040")

Print DPI: 500

14 Anodized Aluminium / Aluminium eloxiert

→ GLOSS	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Quality engraving	30%	50%	600	1	On	0
Speed engraving	40%	50%	500	1	On	+1 mm (0.040")

Print DPI: 600

Print DPI: 333

→ MATT	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Quality engraving	30%	50%	600	1	On	0
Speed engraving	50%	50%	500	1	On	+1 mm (0.040")

Print DPI: 600

Print DPI: 333

15 LaserFlex

→ All Colors	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Standard engraving	30%	50%	600	1	On	0
Large engraving	32%	50%	500	1	On	0
Cutting	6%	1%	1000	1	On	0

Print DPI: 500/600

16 MDF

→ Panel 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	25%	50%	500	1	On	0
Dark engraving	42%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	90%	1.8%	1000	1	On	0

Print DPI: 500

→ Panel 6mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	25%	50%	500	1	On	0
Dark engraving	42%	50%	500	1	On	+6mm (0.24")
Cut 6mm (0.24")	100%	0.6%	1000	1	On	0

Print DPI: 500

17 Plywood / Speerholz

→ Panel 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	35%	100%	500	1	On	0
Dark engraving	50%	100%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	95%	2.0%	1000	1	On	0

Print DPI: 500

→ Panel 6mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	35%	100%	500	1	On	0
Dark engraving	50%	100%	500	1	On	+6mm (0.24")
Cut 6mm (0.24")	95%	1.0%	1000	1	On	0

Print DPI: 500

18 Solid Wood / Vollholz

→ Alder / Erle 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	30%	50%	500	1	On	0
Black engraving	35%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	50%	1.0%	1000	1	On	0

→ Alder / Erle 5mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	30%	50%	500	1	On	0
Black engraving	35%	50%	500	1	On	+6mm (0.24")
Cut 5mm (0.2")	95%	1.6%	1000	1	On	0

→ Cherry / Kirsch 5mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	25%	50%	500	1	On	0
Black engraving	35%	50%	500	1	On	+6mm (0.24")
Cut 5mm (0.2")	95%	1.4%	1000	1	On	0

→ Maple / Ahorn 5mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	30%	50%	500	1	On	0
Black engraving	35%	50%	500	1	On	+6mm (0.24")
Cut 5mm (0.2")	50%	0.8%	1000	1	On	0

→ Oak / Eiche 5mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	35%	50%	500	1	On	0
Black engraving	40%	50%	500	1	On	+6mm (0.24")
Cut 5mm (0.2")	95%	0.6%	1000	1	On	0

→ Walnut / Walnuss 5mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	35%	50%	500	1	On	0
Black engraving	45%	50%	500	1	On	+6mm (0.24")
Cut 5mm (0.2")	95%	1.0%	1000	1	On	0

Print DPI: 500



19 Veneered Wood / Furniertes Holz

→ Maple/Ahorn 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	45%	50%	500	1	On	0
Black engraving	55%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	100%	1.2%	1000	1	On	0

→ Bamboo/Bambus 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	35%	50%	500	1	On	0
Black engraving	55%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	100%	1.4%	1000	1	On	0

→ Birch/Birke 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	40%	50%	500	1	On	0
Black engraving	55%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	100%	1.2%	1000	1	On	0

→ Cherry/Kirsche 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	40%	50%	500	1	On	0
Black engraving	55%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	100%	1.8%	1000	1	On	0

→ Walnut/Walnuss 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	40%	50%	500	1	On	0
Black engraving	55%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	100%	1.5%	1000	1	On	0

→ Cedar/Zeder 3mm	Power	Speed	PPI / HZ	Passes	Air Assist	Z-Offset
Detail engraving	30%	50%	500	1	On	0
Black engraving	40%	50%	500	1	On	+6mm (0.24")
Cut 3mm (0.118")	100%	1.2%	1000	1	On	0

Print DPI: 500

