

→ **Book of Parameters**
Speedy 400, 40 watt

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1 General information

JobControl[®] features new 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
- Air assist
- Engraving over the whole working area with multiple rectangular engraving jobs
- "Speed" jobs are printed to JobControl[®] with 333 DPI; "Quality" jobs are printed to JobControl[®] with 600 DPI

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.

2 TroLase

| → Quality | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|--------------------|
| Engrave | 80% | 50% | 600 | 1 | On | +1 mm (0.04 ") |
| Cut 0,8mm (1/32 ") | 45% | 1,2% | 1000 | 1 | On | 0 |
| Cut 1,6mm (1/16 ") | 100% | 1% | 1000 | 1 | On | 0 |
| Cut 3,2mm (1/8 ") | 100% | 0,5% | 1000 | 1 | On | -1,6mm (0.06 ") |

Print DPI: 600

| → Speed | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|-------------------|
| Engrave | 100% | 50% | 500 | 1 | On | +1 mm (0.04 ") |
| Cut 0,8mm (1/32 ") | 100% | 2,5% | 1000 | 1 | On | 0 |
| Cut 1,6mm (1/16 ") | 100% | 1,2% | 1000 | 1 | On | 0 |
| Cut 3,2mm (1/8 ") | 100% | 0,5% | 1000 | 1 | On | 0 |

Print DPI: 333

3 TroLase Metallic Plus

| → Quality | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|--------------------|
| Engrave | 80% | 80% | 600 | 1 | On | +1 mm (0.04 ") |
| Cut 0,8mm (1/32 ") | 40% | 1,2% | 1000 | 1 | On | 0 |
| Cut 1,6mm (1/16 ") | 100% | 1,2% | 1000 | 1 | On | 0 |
| Cut 3,2mm (1/8 ") | 100% | 0,4% | 1000 | 1 | On | -1,6mm (0.06 ") |

Print DPI: 600

| → Speed | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|-------------------|
| Engrave | 100% | 80% | 500 | 1 | On | +1 mm (0.04 ") |
| Cut 0,8mm (1/32 ") | 95% | 3% | 1000 | 1 | On | 0 |
| Cut 1,6mm (1/16 ") | 100% | 1,4% | 1000 | 1 | On | 0 |
| Cut 3,2mm (1/8 ") | 100% | 0,5% | 1000 | 1 | On | 0 |

Print DPI: 333

4 TroLase Metallic

| → Quality | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|--------------------|
| Engrave | 80% | 70% | 600 | 1 | On | +1 mm (0.04 ") |
| Cut 0,8mm (1/32 ") | 40% | 1,2% | 1000 | 1 | On | 0 |
| Cut 1,6mm (1/16 ") | 100% | 1,2% | 1000 | 1 | On | 0 |
| Cut 3,2mm (1/8 ") | 100% | 0,4% | 1000 | 1 | On | -1,6mm (0.06 ") |

Print DPI: 600

| → Speed | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|-------------------|
| Engrave | 100% | 70% | 500 | 1 | On | +1 mm (0.04 ") |
| Cut 0,8mm (1/32 ") | 95% | 3% | 1000 | 1 | On | 0 |
| Cut 1,6mm (1/16 ") | 100% | 1,4% | 1000 | 1 | On | 0 |
| Cut 3,2mm (1/8 ") | 100% | 0,5% | 1000 | 1 | On | 0 |

Print DPI: 333

5 TroLase Reverse

| → Quality | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|-------------------|
| Engrave | 100% | 30% | 600 | 1 | On | +2,5mm (0.1 ") |
| Cut 1,6mm (1/16 ") | 65% | 0,8% | 1000 | 1 | On | 0 |

Print DPI: 600

| → Speed | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|-------------------|
| Engrave | 100% | 20% | 500 | 1 | On | +2,5mm (0.1 ") |
| Cut 1,6mm (1/16 ") | 100% | 1,2% | 1000 | 1 | On | 0 |

Print DPI: 333



6 TroLase Thins

| → Quality | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|-------------------|
| Engrave | 80% | 50% | 600 | 1 | On | +1 mm (0.04 ") |
| Cut 0,5mm (0.02 ") | 30% | 1,5% | 1000 | 1 | On | 0 |

Print DPI: 600

| → Speed | Power | Speed | PPI / HZ | Passes | Air Assist | Z-Offset |
|--------------------|-------|-------|----------|--------|------------|-------------------|
| Engrave | 100% | 50% | 500 | 1 | On | +1 mm (0.04 ") |
| Cut 0,5mm (0.02 ") | 80% | 4% | 1000 | 1 | On | 0 |

Print DPI: 333