trotec

Ruby® 2.11

Software Manual

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SETTING NEW STANDARDS

(AT)

Trotec Laser GmbH

+43 7242 239-7070

service-at@troteclaser.com

(AU)

Trotec Laser Pty Ltd

+61 26413-5904

service@troteclaser.com.au

(BE)

Trotec Laser België
Trotec Laser Belgique

+31 850 70 51 55

support@troteclaser.nl

(CA)

Trotec Laser Canada

+1 800 663 1149-902

techsupport@troteclaser.ca

(CH)

Trotec Laser AG

+41 32387-1611

service-ch@troteclaser.com
suisse@troteclaser.com

(CN)

Trotec Laser GmbH

+86 189 500 735 62

china@troteclaser.com

(DE)

Trotec Laser Deutschland GmbH

+49 89 322 99 65-13

service-de@troteclaser.com

(ES)

Trotec Laser España

+34 93 102 50 50

soporte@troteclaser.com

(FR)

Trotec Laser France SAS

+33 1 72 62 20 94

techsupport.fr@troteclaser.com

(GB)

Trotec Laser UK

+44 0191 4188 110

service-uk@troteclaser.com

(JA)

Trotec Laser Japan Corporation

Tokyo: 03 5826 8032

Osaka: 06 6796 9666

service-jp@troteclaser.com

(NL)

Trotec Laser B.V.

+31 850 70 51 55

support@troteclaser.nl

(PL)

Trodat Polska Sp. z o.o.

+48 22 339 35 39

serwis_pl@trodat.net

(US)

Trotec Laser Inc.

+1 866 226 8505, Option 2

support@troteclaser.com

(CN)

Trotec Laser (XIAMEN) CO., LTD.

#5 GuAn Road South, MaXiang Town
XiangAn District, XiaMen, China

Trotec Laser GmbH

Freilingerstrasse 99

4614 Marchtrenk, Austria

General contact details for technical support:

Tel.: +43 7242 239-7000

Email: techsupport@troteclaser.com

www.troteclaser.com

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CONTENT

1 INTRODUCTION

About this manual

Welcome to the user manual for Ruby®, Trotec's innovative laser software that revolutionizes the way you work with your laser by providing a seamless, digital workflow from idea to finished product.

Ruby® comes pre-installed on your Trotec Laser machine. There is no need to install any software on your PC, you can access Ruby® simply via your PC's browser.

This software combines graphic editing and laser control in a single, intuitive platform.

With Ruby®, you can:

- Import, manage, and search designs and jobs.
- Create, edit, and optimize designs.
- Prepare and control laser jobs.
- Work collaboratively and location-independently.
- Benefit from a user-friendly, web-based interface.

Ruby® is more than just laser software – it's a powerful tool that enhances your productivity and simplifies team collaboration. Whether you're an engraver, manufacturer, or working in education, Ruby® adapts to your needs and grows with your requirements.

In this manual, we'll guide you through the features and capabilities of Ruby®. From operating the graphic tools to optimizing cutting jobs and managing multiple lasers – you'll find all the information you need for efficient use of the software.

Let's discover together how Ruby® makes your daily work with the laser easier, faster, and more exciting.

How to use this manual

The manual is separated into multiple parts. In the graphical user interface overview, you can look up specific control elements, menus, and their explanation.

- "Header & Menu "
- "Manage Screen"
- "Design Screen"
- "Prepare Screen"
- "Produce Screen"

2 GETTING STARTED

How to set Ruby® up.

Download Certificate

Please download and install the certificate to avoid security messages from your web browser.

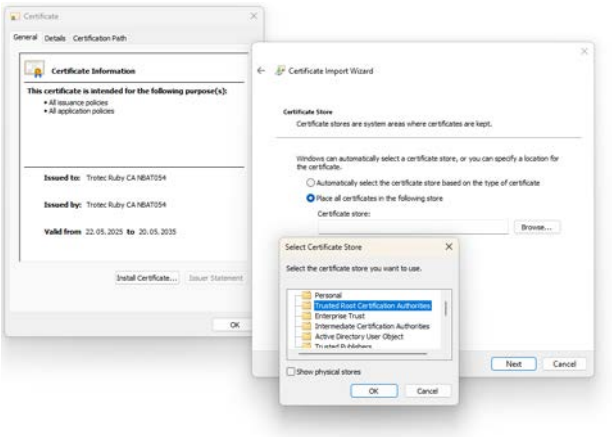
NOTICE

You can find the download link:

- in the “Welcome to Trotec Ruby®!” e-mail
- on your Laser Device under “Ruby® Remote”, if you press the Wi-Fi button

Installation on Windows

1. Open the downloaded file.
2. Click on [Install Certificate].
3. The Certificate Import Wizard opens.
4. When asked for the certificate store, place the certificates in [Trusted Root Certification Authorities].

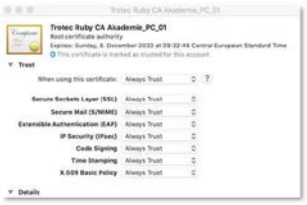


5. Confirm and finish the Certificate Import Wizard.

✔ The certificate is now installed.

Installation on macOS

1. Open the downloaded file.
2. Open [Trust] menu.
3. Select [Always Trust] for all entries.



✔ The certificate is now installed.

Log into Ruby®

1. Access Ruby® using your Browser..

NOTICE

Ruby® works best on Chromium-based browsers, like:

- Chrome
- Edge
- Opera

NOTICE

You can find the link to Ruby®:

- in the “Welcome to Trotec Ruby®!” e-mail
- on your Laser Device under “Ruby® Remote”, if you press the Wi-Fi button

2. Log in using the credentials in the “Welcome to Trotec Ruby®!” email.

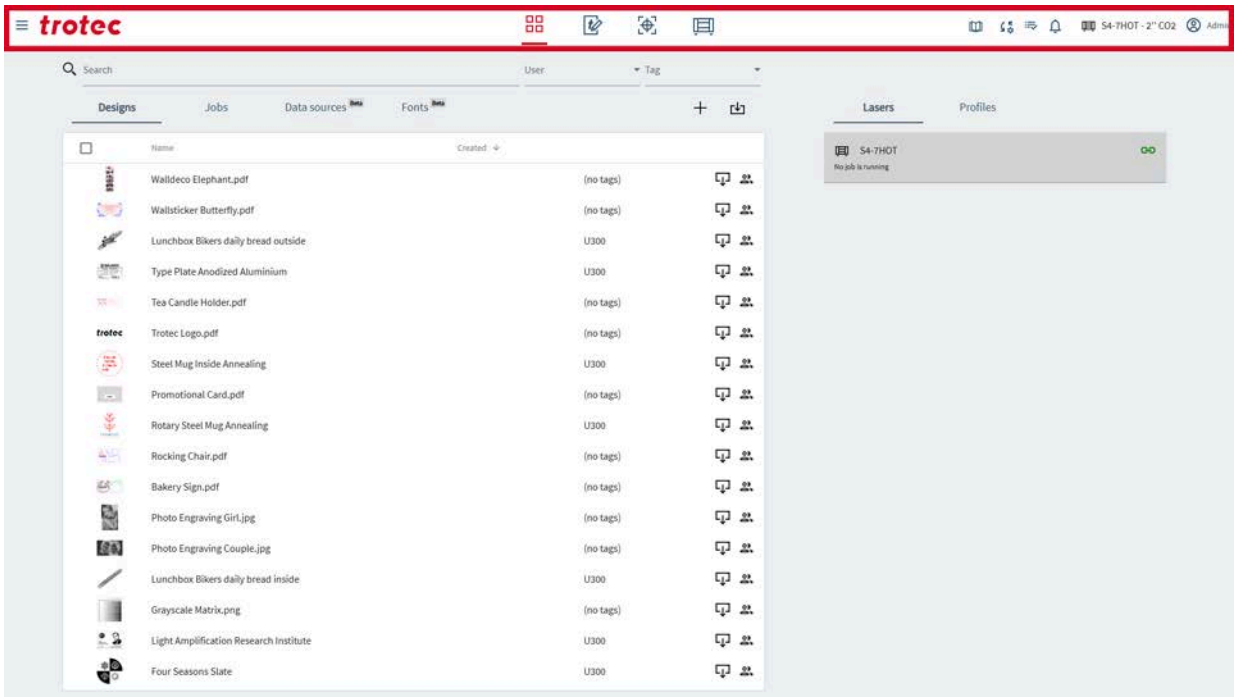
✔ Ruby® is now ready to use!

First login

NOTICE

At the first login, users will be prompted to accept the EULA and set a new password.

3 HEADER & MENU



Header icons

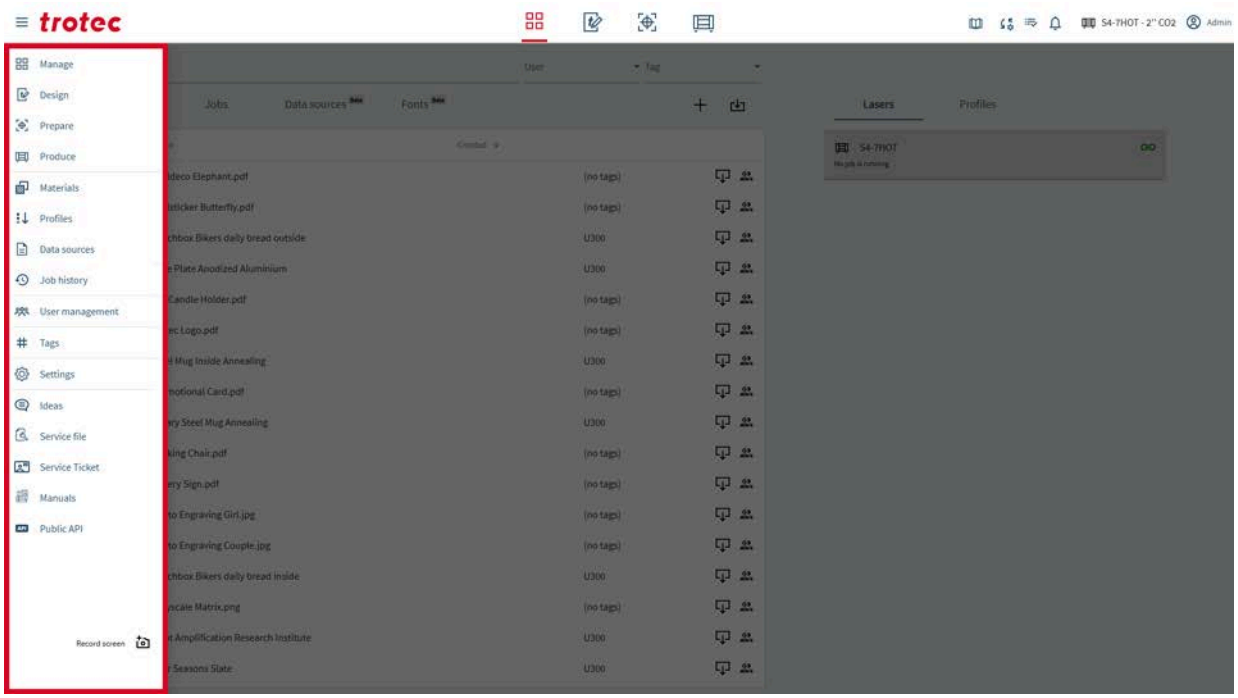
	"Header & Menu "
	"Manage Screen"
	"Design Screen"
	"Prepare Screen"
	"Produce Screen"
	Ruby® Help
	Background Tasks
	Keyboard Shortcuts Show the keyboard shortcuts for the current screen.
	List
	Notifications
	Lasers Show available lasers.

	User Show user settings.
	Status Shows the connnetion of Ruby® to the machine.

Menu overview

The menu lets users access every screen of Ruby®, the settings, and the material database.

Admins can access user management, profiles, and additional menus.



Submenus

	"Manage Screen"
	"Design Screen"
	"Prepare Screen"
	"Produce Screen"
	"Materials"
	"Profiles" (Admin)

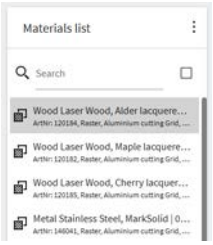
	"Data sources" (Admin)
	"Job history" (Admin)
	"User management" (Admin)
	"Tags" (Admin)
	"Settings"
	"Record screen"

3.1 Materials

Description

On the materials screen, you can edit the individual parameters for each material. You can add different effects to each material to perform different operations during the same job on the same material.

Materials list



In the materials list on the left, you can edit or delete existing materials and create new ones.

Click on a Material to open it on the main screen.

Use the search field to search for a material using the name, material type or any of the assigned tags.

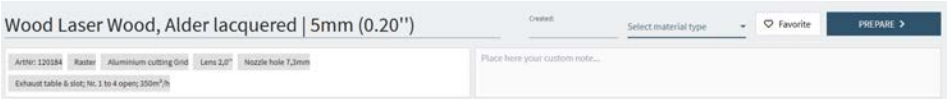
Use the checkbox right to the materials to select one or multiple materials.

Use the checkbox right to the search bar to select all materials.

Click on [⋮] to see further file options:

- Add new material, to open an empty material.
- Add new material type.
- Import materials from the cloud.
- Import materials from a file (.tlm or .xml file format).
- Export selected materials.
- Delete selected materials.

File management of the material



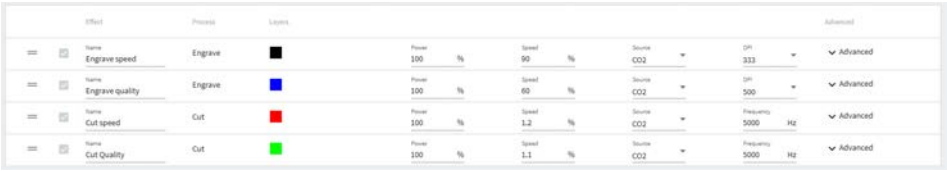
In the upper part of the header, users can perform the following actions on the currently open material:

- Edit the name.
- Select or assign the material type (wood, aluminum, etc.).
- Save as new or save.
- Add to your favorites.

Jump to the "Prepare Screen" by clicking on [Prepare].

In the lower part of the header, users can add or delete tags, and add notes to the material.

Effects



In the main area of the materials, you can see the assigned effects of the material.

You can assign individual parameters to each of the effects.

To rename an effect, click on its name.

From left to right, you can see the name of the effect, the process, and the assigned layer color. This layer color will be automatically matched with the effect in the "Prepare Screen".

Use the button on the bottom left to assign a new effect to the material. You can choose between a predefined one or add an individual by entering a name and selecting the process.

3.1.1 Flatbed lasers

Basic parameters

Value	Process	Explanation
Process	Engrave, Cut	Shows if a layer is set for engraving or cutting.
Layers	Engrave, Cut	Specifies the color assigned to this layer's effect. A single layer can have multiple colors. Click on [+] to assign a new color. Click on the color to re-assign or unassign.
Power	Engrave, Cut	Percentage of the maximum power available.

Value	Process	Explanation
Speed	Engrave, Cut	Percentage of the maximum speed available.
Source	Engrave, Cut	Indicates which laser source to use. Choose between CO_2 or Fiber Laser.
DPI	Engrave	Defines the detail for the engraving process (Unit: dots per inch).
Frequency	Cut	Specifies the laser's frequency for the cutting process (Unit: Hertz).

Click on [⋮] to copy parameters from another effect or delete effect.

Advanced parameters

If you expand parameters by clicking on [⌄] the additional parameters are shown.

Value	Process	Explanation
Passes	Engrave, Cut	Defines how many times the laser will repeat the engraving or cutting process.
Power correction	Engrave, Cut	Adjusts the ramp-up function for the parts of the movememnt, where the laser accelerates and decelerates.
Direction	Engrave	Choose whether the engraving starts from the top or bottom. Starting from the bottom can reduce cleanup afterward. A single layer can have multiple colors.
Engrave mode	Engrave	Standard: Engraves left-to-right and right-to-left alternately. Unidirectional: Engraves only left-to-right, which takes more time.
High quality	Engrave	Off: Laser moves only the shortest required distance per line. On: Laser always moves across the largest area of the entire layout. This can improve engraving quality at high speed.
Relief	Engrave	Relief mode on/off Adjusts laser power based on graphic shades: • White = No power • Light areas = Low power • Dark areas = High power • Black = Maximum power This is ideal for creating 3D effects using a 64-bit grayscale graphic.
Extended overshoot	Engrave	Improves accuracy by adding the entered length im mm as overshoot. This way, the laser only engraves when at full speed.

Value	Process	Explanation
Z-offset	Engrave, Cut	Adjust the laser focus for each layer: • 0: Keeps the table in place • Negative: Moves the table up, focusing deeper into the material • Positive: Moves the table down, focusing above the material
Process gas	Engrave, Cut	Turn on or off air assist or external gas during engraving or cutting. This can improve the results.
Dithering	Engrave	Choose a halftone pattern for grayscale engraving based on the design and desired effect.
Engrave covered layers	Engrave	Typically, the laser engraves visible colors only. If you want to engrave an entire layer before moving to the next, activate this option.
Processplitting	Engrave	None: Process all designs together. By Design: Process designs one at a time in the order they are arranged.
Links	Cut	Alternates links and cuts (like a dashed line). An example use for this is, when the cut-out elements should remain in the material to be broken out later. • Link length: set the distance for which the cut gets interrupted. • Gap length: set the distance the laser cuts. • Power correction: set, how much laser power gets used on the link sections.
Path planning	Cut	Standard: Default mode Accuracy: Focuses on precision; cutting takes longer Throughput: Prioritize speed over precision

3.1.2 Galvo lasers

Basic parameters

Value	Process	Explanation
Process	Engrave, Mark	Shows if a layer is set for engraving or marking.
Layers	Engrave, Mark	Specifies the color assigned to this layer's effect. A single layer can have multiple colors. Click on [+] to assign a new color. Click on the color to re-assign or unassign.
Power	Engrave, Mark	Percentage of the maximum power available.
Speed	Engrave, Mark	Indicated in mm per second or inch per second.

Value	Process	Explanation
Frequency	Engrave, Mark	Specifies the laser's frequency (Unit: Hertz).

Click on [⋮] to copy parameters from another effect or delete effect.

Advanced parameters

If you expand parameters by clicking on [⌄] the additional parameters are shown.

Value	Process	Explanation
Source	Engrave, Mark	Default value: Fiber
DPI	Engrave	Shows the resolution used for engraving. This value is defined by DPI or dots per inch.
Bitmap line per pixel	Engrave	Sets how many lines are engraved per inch. Higher values give more detail but take longer.
Dithering	Engrave	Choose a halftone pattern for grayscale engraving based on the design and desired effect.
Engrave covered layers	Engrave	Typically, the laser engraves visible colors only. If you want to engrave an entire layer before moving to the next, activate this option.
Process splitting	Engrave	None: Process all designs together. By Design: Process designs one at a time in the order they are arranged.
Passes	Engrave, Mark	Defines how many times the laser will repeat the engraving or marking process.
Line distance	Mark	Sets the spacing between marking lines. Shorter distances increase marking time.
Z-offset	Engrave, Mark	Adjusts the laser focus for each layer: • 0: Keeps the table in place • Negative: Focuses deeper into the material • Positive: Focuses above the material
Use Contour	Mark	Adds a contour (outline) around the completed marking.
High quality	Engrave	Off: Laser moves only the shortest required distance per line. On: Laser always moves across the largest area of the entire layout. This can improve engraving quality at high speed.
Bitmap auto speed	Engrave	The engraving speed is automatically determined based on the settings for power, frequency, and DPI. The speed value is fixed (greyed out) and cannot be manually adjusted. Instead, it is calculated in the background to ensure optimal performance based on the chosen parameters.

Value	Process	Explanation
Processing angle	Engrave, Mark	By default, engraving starts from the top and moves down. The processing angle lets you rotate the engraving direction.
Processing mode	Engrave	Bidirectional: Engraves left-to-right and right-to-left alternately. Unidirectional: Engraves only left-to-right, which takes more time.
Cross fill	Mark	Fills the contours with a 90° rotation after each pass.

Relief/Deep engraving parameters accessible when the checkbox is ticked:

Value	Process	Explanation
Relief Process Mode	Engrave	Creates a relief from a depth map – different relief modes can be selected.
Relief min. power	Engrave	In power relief mode Grey values are matched to different power levels e.g. 0% to 100%. Each pixel gray value is processed with a different laser power – min power sets the lower end of the power distribution e.g if set to 5% the greyscale values will be distributed between 5% and 100%.
Rotation per pass	Engrave	Sets how much the design rotates after each engraving pass.
Z-offset increment	Engrave	Specifies the refocus setting for the laser.
Focus every n passes	Engrave	Defines after how many passes the re-focus shall be executed.

Only applies if wobbling is needed for contour marking:

Value	Process	Explanation
Wobbling width	Mark	Gives the width that is used to „wobble“ around the path of the line.
Wobbling intensity	Mark	Gives the offset at the touching point of two „wobbles“ along a straight line.

Laser delays are only accessible when “Overwrite laser defaults is ticked.

Value	Process	Explanation
Laser on delay	Engrave	The laser on delay specifies how long the laser must wait before being switched on, although the scanner head has already started the marking process. Used to prevent burning effect by bringing the mirror up to speed or to “heat up” material – since some take time to react to laser.

Value	Process	Explanation
Laser off delay	Engrave	Laser off delay is the time the laser stays on after the scanner stops moving. It ensures that the ends of lines or shapes are clean and complete by compensating for any slight delay in the scanner's movement.
Jump delay	Engrave	Jump delay is the time added when the scanner moves the laser beam quickly (jumps) between two points without marking. It allows the Galvo mirrors to stabilize after moving to the new position, preventing overshoot or misalignment when marking resumes. This ensures the next mark starts at the correct position.
Mark delay	Engrave	Mark delay is the brief pause before marking starts or continues at a new segment of a design. To ensure that the mirrors have arrived at their target position before the marking process begins, a suitable value may be selected for the marking delay.

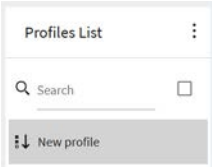
3.2 Profiles (Admin)

Description

With profiles, you can predefine profiles for specific lasers and materials. With this, you can streamline your workflow and minimize time spent adjusting.

Profiles let users pre-set most of the settings that are selected in the process, eliminating the need to set them and allowing greater automation.

Profiles list



In the profiles list on the left, you can edit or delete existing profiles and create new ones.

Click on a profile to open it on the main screen.

Use the search field to search for a profile using the name or any of the assigned tags.

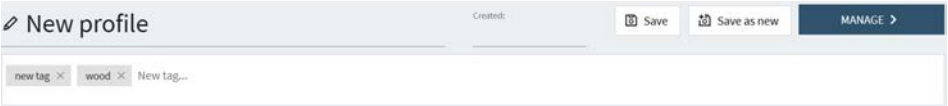
Use the checkbox right to the profiles to select one or multiple profiles.

Use the checkbox right to the search bar to select all profiles.

Click on [⋮] to see further file options:

- Add new profile, to open an empty profile.
- Import materials from a file (.tlp file format).
- Export selected profiles.
- Delete selected profiles.

File management of the profile



In the upper part of the header, you can perform the following actions on the currently open profile:

- Edit the name.
- Save as new or save.
- Add to your favorites.

Jump to the "Manage Screen" by clicking on [Manage].

In the lower part of the header, you can add or delete tags to the profile.

Profile settings

Value	Explanation
Laser	Define the laser the profile applies to.
Material	Define the material the profile applies to.

Scale and transformation options

Value	Explanation
Rotary	Set the rotary option to enabled or disabled.
Diameter	Set the diameter for the rotary process.
Rotation	Define the rotation of the design.
Scale	Define the scaling of the design. Set the same values to not skew the proportions.

Position options

Value	Explanation
Position type	Select to either position the import at the start position or in a grid of boundary boxes.
Start position	Set the starting position of the laser head.

NOTICE

Negative values are possible, but may lead to design cut off.

Processing steps

Value	Explanation
Save as design	Define to save a profile workflow as a design.
Save as job	Define to save a profile workflow as a job.
Send to queue	Define to send the file to the queue in the workflow.

Anchor settings

Value	Explanation
Anchor point	Define the anchor point of the laser.

Preprocessing options

Value	Explanation
Inner geometry first	Decide to cut inner geometry first, to prevent misalignment (see "Job").
Overlapping cutlines detection type	Decide what overlapping cutlines are detected (see "Job"). • Off • Lines only • Full
Action on multiple designs import	Decide what parts of a multipage file to import. • Ask eauch time • Import into seperate jobs • Import into single job
Vision compensation kind	Set the vision compensation of the Print&Cut camera (see "Print&Cut"). • Position and rotation • Full linear • Non-linear

Absolute Z position

Value	Explanation
Absolute Z position	Adjust the absolute head position the laser moves to at the start of the job.

NOTICE

Ensure that there is enough space to avoid crashing the table or material into the laser head.

Design grid settings

Set the Profiles settings for the "Grid tool".

Value	Explanation
Design grid	Define the number of rows and columns the grid feature creates.
Horizontal spacing	Horizontal space between each design in the grid. Negative values are possible.
Vertical spacing	Vertical space between each design in the grid. Negative values are possible.
Even row offset	Every second row gets offset by this value. This allows for tighter grinding of some shapes (circles for example).
Fixed grid	Creates a fixed grid the designs get placed on. Select the horizontal and vertical cell size and choose the alignment of the design in the cell.

NOTICE

If the design exceeds the cell size of a fixed grid, overlap will occur.

Stamp settings

Set the Profiles settings for the "Stamp mode".

Value	Explanation
Stamp settings	Enable/disable stamp mode.
Automatic cut-line type	Creates the outline that cuts the stamp. All other parts of the stamp are engraved. Options: None: no cutline to the outside added Rectangular Circular Optimized: creates an optimized outline, with respect to the minimum distances to the stamp.
Minimum distance from the cutline	Defines the minimum distance between the stamp body and the cutline.
Mirror	Set if the stamp needs to be mirrored. On: Stamp is mirrored, prints will not be mirrored. Off: Stamp is not mirrored, prints will be mirrored.
Shoulder	Set the stamp shoulder angle. • Flat • Medium • Steep
Links	Enable/disable links between letters of stamps.

Seal settings

Set the Profiles settings for the "Seal mode".

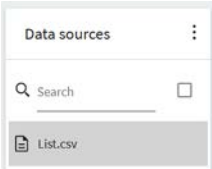
Value	Explanation
Seal shape	Select an available template, or create a custom template as outer cutline of the seal. Options: • Circular seal: 1 5/8 inch • Circular seal: 41 mm • Circular seal: 51 mm • Rectangular seal: 51 mm x mm • User-defined size
Notch position	Defines where the alignment notch for the inlay will be placed.
Thickness	Enter the thickness of the used paper.
Pixels per mm	Set the resolution the imported picture gets resized to.
Padding	Padding that gets added around the seal.

3.3 Data sources (Admin)

Description

Here you can add and edit files, that contain the data to be used for dynamic data in the laser process.

Data sources list



In the data sources list on the left, you can open or delete existing sources.

Click on a source to open it on the main screen.

Use the search field to search for a data source using the name.

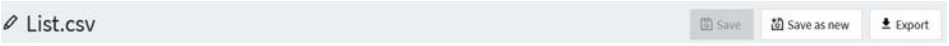
Use the checkbox right to the materials to select one or multiple data sources.

Use the checkbox right to the search bar to select all data sources.

Click on [⋮] to see further file options:

- Import data sources from a file (.csv file format).
- Export selected data source.
- Delete selected data source.

Management of the data source



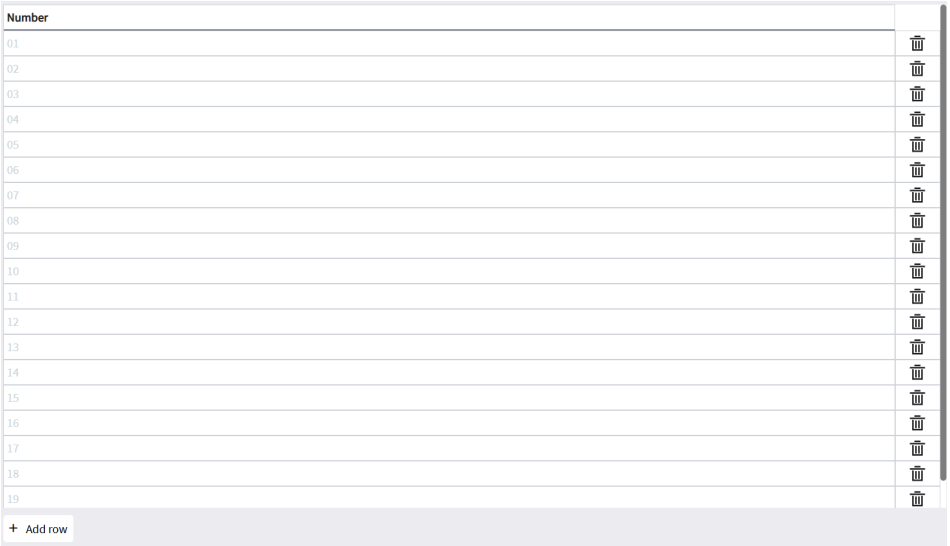
In the header, you can perform the following actions on the currently open data source:

- Edit the name.
- Save as new or save.
- Replace the data source.
- Export the data source.

Replacing the data source allows users, to change the values without the need to edit all bindings and mappings in already existing designs or jobs.

Jump to the "Prepare Screen" by clicking on [Prepare].

Data source



In the main area of the materials, you can see the individual rows of the file.

Click in a row to edit the value.

Click on [🗑] to delete the row.

Click on [+ Add row] to add a row to the bottom of the file.

3.4 Job history (Admin)

Description

In the job history admins can see past jobs, no matter if successful or failed.

The job history displays for each job:

- Job name
- Material
- Date
- Status
- Job type
- Execution time
- Queued by

Click on the calendar icon to select the start and end date on a calendar.

Click on [Clear date range] to clear the applied date range.

Click on [Export] to export the selected date range in .csv format

3.5 User management (Admin)

Description

User management is only available to admins. In the user management menu, users can be created, deleted, privileges assigned, and users set to inactive.

Click on [Remote access] to show the link to download the certificate and the link to Ruby®.

Search bar

Type in the search bar to search in the currently open tab.

To the right of the search bar are optional filters to show only the selected role.

- User
- Admin
- Superadmin
- Materiale

Managing users

The toggle switch on the right lets you choose whether users can see other users' jobs and designs. If switched off, the user sees only their own designs; if switched on, the users have access to all designs processed on the machine.

Click on a column header to sort the users by that header.

Click again to change the order. An upwards-pointing arrow indicates increasing order and a downwards-pointing arrow indicates decreasing order.

Select the checkbox in the header to select all users.

Select the checkbox next to the user to add this user to the selection.

Click on [Add user] to create a new User. You are primed to enter an email and a Username. The new user will get an email with their login credentials. At login, the new user will have to set a new password.

In the user's list, the Materials column specifies if the user has the right to change the materials in the database. Users with no access can only view the settings. The active column defines if the user currently has access to Ruby®. If the user is set to inactive, no login is possible.

Click on [🗑], to delete the user.

Click on [⋮], to see further options:

- Reset a user's password
- Request a private access token
- Revoke all private access tokens
- Assign or revoke administrator privileges

NOTICE

If a user's password is reset, they will receive an email with their reset login credentials. At login, the user will have to set a new password.

Importing and exporting users

Click on [Export] to export the list of users in .csv format.

Click on [Import] to import a list of Users in .csv format. Users are not duplicated; only new users are added.

NOTICE

The .csv list should have the format:

email;name;active;admin;materials

The last three values are True/False.

NOTICE

Please note that any changes to a user's permissions outside of Ruby® will not be changed in Ruby®.

Grouping users

User groups help manage users efficiently by organizing them into groups (for example classes, branches, organizations, or departments)

Click on the [Groups] tab.

Click on [+] and enter text to create a new group.

Click on the group to select the users to add to that group. Click [Save and close] to save any changes, [Cancel] to discard.

3.6 Tags (Admin)

Description

Tag management of Ruby.

Tags can be searched, deleted or added. Next to a tag the number of uses is shown.

3.7 Settings

Description

Users have a wide range of settings to optimize and control the laser cutting or engraving process. Users can fine-tune vector and raster processing, define preferences and import settings.

Users can change the device settings, reduce to a custom working area, choose the lens, and adjust other device parameters.

Admins can change the available features, calibrate the machine, and perform service activities.

3.7.1 User preferences

General

Value	Explanation
Units	Choose to use either imperial units or metric units.

Value	Explanation
Language	Available languages: • English • German • Polish • Spanish • French • Italian • Japanese • Dutch • Portugese • Russian • Turkish • Czech • Chinese (Mandarin) • Chinese (Traditional)

Import

Value	Explanation
PDF layers import	Choose how Ruby® processes PDF layers on import. The user can import all, preview, use the export or print layers, and skip hidden layers.
PDF import mode	PDFs can be imported as a single design, as multiple designs, or the first page. You can set a limit for the number of pages you can import. Set the limit to 0 to import the whole file.
Use new DXF import	May solve issues with import of DXF to polylines instead of bezier curves.
Flatten splines in DXF files	Import DXF to polylines instead of bezier curves.
Geometry Optimization on Import	Enable/Disable to optimize the geometry on import.
Action on multiple designs import	Decide what parts of a multipage file to import. • Ask eauch time • Import into seperate jobs • Import into single job

Vision

Value	Explanation
Vision compensation kind	Select the vision compensation for "Print&Cut": • Position and rotation • Full linear • Non-linear
Print&Cut calibration	Laser Power and Speed Percentages for the Print&Cut calibration.

Stamps

Value	Explanation
Stamp's shoulder	Set the default angle of the shoulder when engraving stamps in stamp mode. Flat, medium, and steep are available. This setting will be applied automatically when entering stamp mode.
Stamp links	Enable/Disable the default to link the elements, when in stamp mode. This setting will be applied automatically when entering stamp mode.

Processing

Value	Explanation
Overlapping cut lines detection type	Set to not detect overlapping cut lines, detect straight lines only, or detect fully.
Inner geometry first	Enable/disable to first process the inner geometry.
Geometry Optimization on Preprocessing	Enable/Disable to optimize the geometry on preprocessing.
Vector Ordering	Select, if vectors get automatically ordered by the least empty moves to optimize cut ordering and minimize cutting time.

Canvas default behaviours

Value	Explanation
Design default size	Set the default size for the canvas, when creating a new design.
Auto scroll active	Enable/Disable the auto scroll of the canvas.
Table camera active	Enable/Disable the table camera by default.

3.7.2 Device

Overview

Change the settings of the active laser device.

Before exiting, save any changes.

User device settings

Value	Explanation
Zero point shift	Adjust the coordinate origin by either entering x and y offsets or by taking the current laser head position.
Custom working area	Define a custom working area, that is smaller than the actual working area of the device. This will change the working area in the "Prepare Screen".
Home position	Set the position, the laser head returns to after a job.
Exhaust pre-run time	Set the time, the laser waits with starting to cut/engrave to ensure the exhaust has reached peak flow.
Exhaust post-run time	Set the time, the exhaust runs after the finished job, to clear any remaining gases or dust.
Check exhaust during process	Select, if the exhaust gets checked during the laser process. If the exhaust sends an error, Ruby® will pause the job to check on the exhaust. Default exhaust flow: Set the default exhaust airflow of the AtmosPure exhaust. Wait for target air flow: Select, if the target air flow must be reached before starting a job. Allow target airflow deviation: deviation allowed between the target and the actual airflow from the exhaust.
Air assist	Select, if the air assist is active during an empty move. Set the empty move threshold. This option is useful, not to move the material with the air before starting the laser job.
Lens	Select the inserted lens.
Test pulse	Set the power for the test pulse.
Optimizations	Select, to enable advanced curve optimization. This may improve cut quality, btu needs readjustment of the power correction.

Value	Explanation
Vision Print&Cut	Enable the Print&Cut camera.
Brightness correction	Correct the brightness of the camera by adjusting this value. This may improve the ability for the camera to detect the regmarks.
Dark regmarks only	The Print&Cut camera can read light reference points on a dark background and dark reference points on a light background. This option sets the camera to use only dark marks.
Search box type	Select in what search box the Print&Cut camera looks for the regmarks. • Not used • Rectangle • Square • Ellipse • Circle

Value	Explanation
Search box size	Adjust the search box size.
Offset	Set offset values for x, y and z to ensure proper alignment of the Print&Cut camera.

Factory calibration

Displays the values of the factory calibration. This part is not editable.

3.7.3 Features (Admin)

Overview

Enable or disable additional or experimental settings.

Feature settings

Value	Explanation
Calculate estimated work time on element queue	If this option gets enabled, the estimated work time for a job gets automatically calculated, as soon as the job is added to the queue.
Allow update from touch panel	If this option gets enabled, Ruby® can be updated via the touch panel on the machine.
Nesting	Adds the "Nest shapes" tool to the tool bar in the "Design Screen".
Custom fonts	Adds the "Fonts "tab in the "Manage Screen".
Data sources	Adds the "Data sources" tab in the "Manage Screen". Adds the "Dynamic data" tool in the "Design Screen".

3.7.4 Calibration (Admin)

Description

Calibrate the Vision Design & Position Camera by following the steps below or in the wizard.

Vision Design & Position wizard

Preparation steps:

- The lens for calibration has to be set in settings.
- Turn on the exhaust if not already running.
- Insert calibration mat, align with x and y-Axis rulers, 0-Marker in the upper left corner.
- The calibration mat must lie completely flat.

Set the lens that will be calibrated.

Calibration steps:

- Focus on the calibration mat.
- Move the laser head to position 0/0, all dots must be visible to the camera.

- Close/open the top lid.
- Press [Calibration], and wait until the working area is shown.

Repeat the calibration process for the opened lid.

You can download a calibration mat using the links at the bottom.

3.7.5 Firmware (Admin)

Overview Update the Firmware by following the steps in the screen update wizard.

3.7.6 Service (Admin)

Overview The device screen lets admins manage settings regarding the remote access, the service mode, and provides a link to the device status screen. Most of these settings are only useful for Trotec Technicians.

Unlink device Unlinks the current device from Ruby®.

Start service mode For the service done by Trotec Technicians.

Start remote service For the service done by Trotec Technicians.

Stop remote service For the service done by Trotec Technicians.

Smart dashboard The Smart dashboard is a visual display of the device status of the currently connected machine.

There are three screens:

Status	Displays: • State of the interlock sensors – green, closed lock: closed interlock circuit – red, open lock: opened interlock circuit Hover over the interlock symbol to display the sensor. • Laser head position • FPU temperature • Current flow rate of the exhaust • Percentage of working hours of the filter

Tracing	Plot different data provided by the machine. First select a sampling rate, then add one or multiple inputs from the drop-down menu. Click on [Start] to start plotting. The plotted data can be exported to .csv via the button.
Messages	Display messages from the machine. The severity can be selected via drop-down menu on the right.

Back up all data

Backs up all data on the device to transfer the whole system or maintain regular backups.

Restore all data

Restores all data from a device by importing a backup file.

Clean database

Deletes the database: designs, jobs, materials, users and any other data.

To confirm, enter the diplayed code after clicking [Clean database].

NOTICE

Cleaning the database can not be undone!

Power option

Click [Open], then [Restart] or [Shut down] to restart or shut down the FPU of the laser device.

3.7.7 Network (Admin)

Description

Show and edit network settings for the laser device.

3.7.8 Info

Description

See the information on current processes, versions, branches, and states. This screen is very helpful in dealing with troubleshooting.

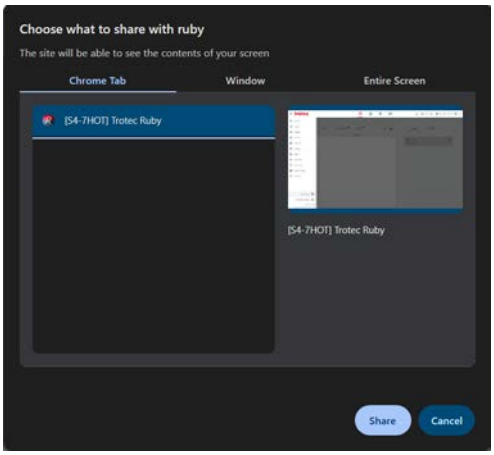
3.8 Record screen

In Ruby®, you can easily record the screen from within the application.

1. Click on [Record screen] the to start screen record.

   Record screen

2. Choose to share the current screen with Ruby®.



3. Click on [Stop recording] to stop the recording.

   Stop recording

4. As soon as the recording is stopped, the download button will appear. Click on [Download recording] to download the screen recording in .webm file format.

   Download recording

4 MANAGE SCREEN

Overview

The manage screen is Ruby®'s file manager. This screen lets users import or export different designs, jobs, and different data imports. The data is searchable and can be tagged.

File types

Ruby® can handle multiple file formats. The two main formats to be used in the design process are vector and raster graphic formats:

Vector formats Vector graphics are digital images composed of mathematical formulas that define points, lines, curves, and shapes. These graphics are resolution-independent, allowing for infinite scalability without loss of quality. They are characterized by small file sizes, easy manipulation of individual elements, and the ability to produce sharp, clean images at any scale. Vector graphics are ideal for logos, illustrations, and designs that require frequent resizing, as they maintain crisp edges and smooth lines regardless of their dimensions.

Raster graphic formats Raster graphics, on the other hand, are made up of a grid of pixels, each containing color information. These images are resolution-dependent, meaning they have a fixed number of pixels and can become pixelated or blurry when enlarged beyond their original size. Raster graphics excel at displaying complex, detailed images with a wide range of colors and subtle gradients, making them perfect for photographs and realistic digital paintings. While raster graphics offer high levels of detail and realism, they are less flexible than vector graphics when it comes to scaling and editing individual elements.

Supported file formats

Vector Formats

- .svg
- .ai
- .cdr
- .dxf

Raster Formats

- .png
- .jpg
- .jpeg
- .bmp

Trotec Formats

- .tsf
- .tld
- .tlj

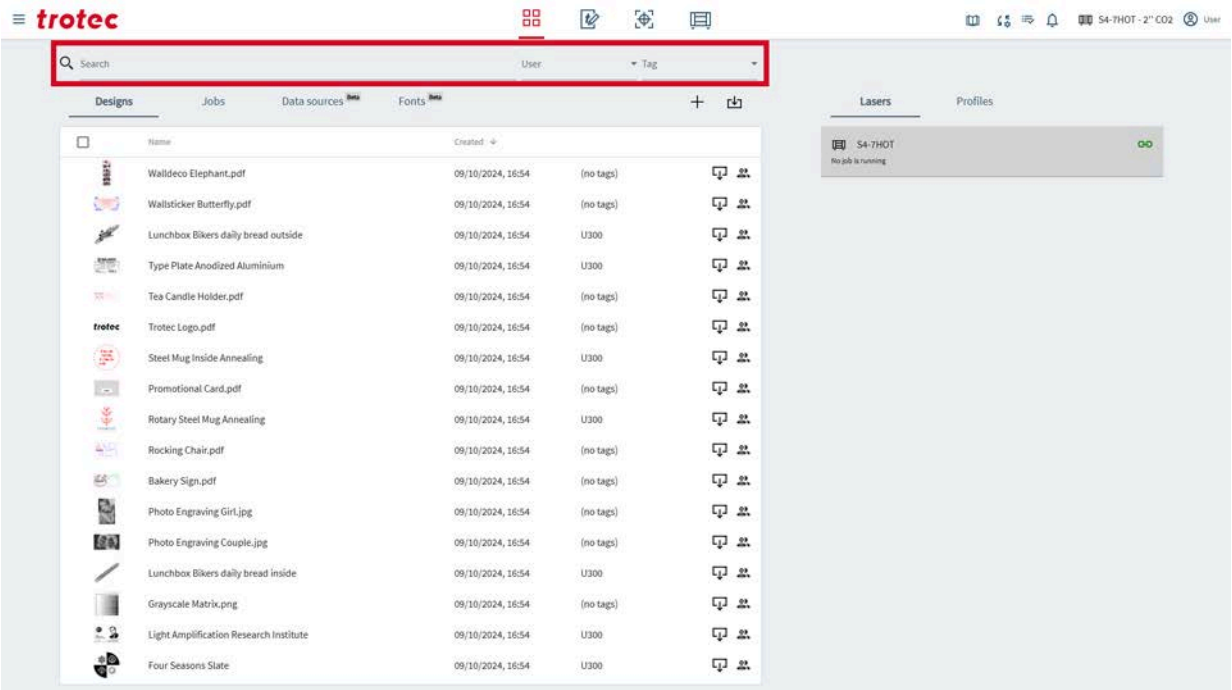
Other Formats

- .zip
- .pdf
- .otf
- .ttf
- .csv

Keyboard shortcuts

Keys	Operation
<?>	Show/hide help
<g> + <?>	Show/hide advanced help

4.1 Search bar



Search bar

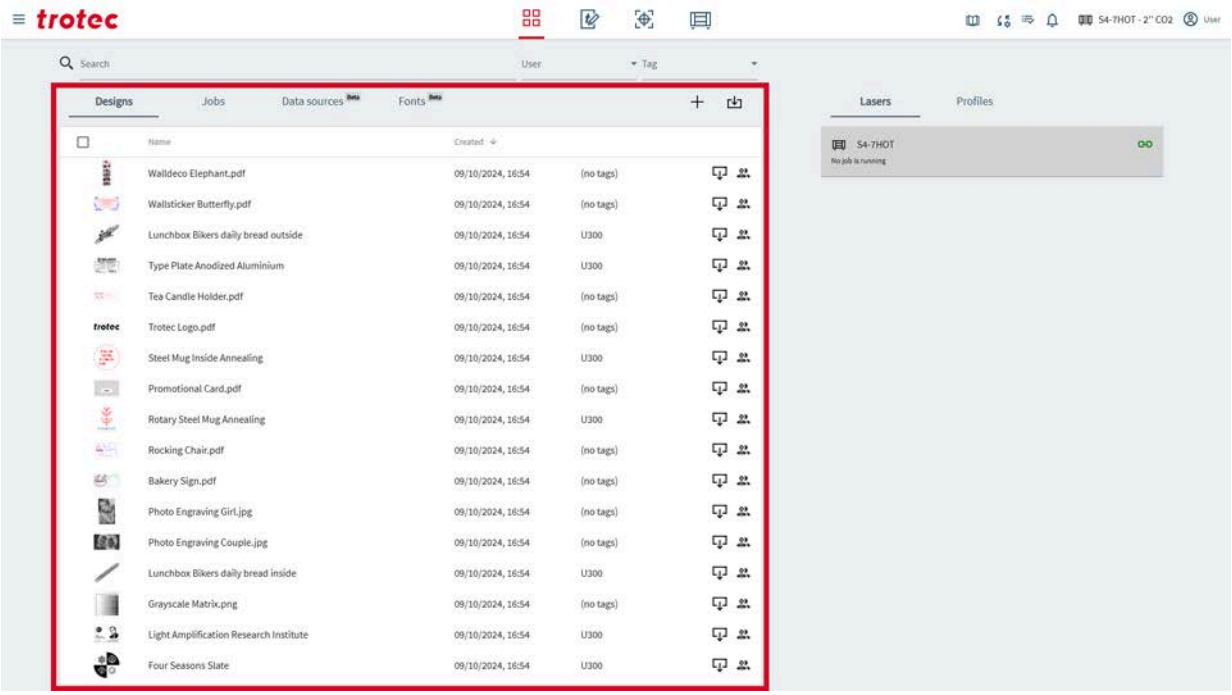
Above the tabs containing the files sits the search bar. Type in it to search in the currently open tab.

To the right of the search bar are optional filters:

User This lets you filter for the creator of the file, if the option to share files among users is enabled (See "User management" (Admin)). Select a user from the drop-down menu.

Tag Type here to filter for tags. Tags can be added in the design screen to the currently open design and in the prepare screen to the currently open job.

4.2 File browser



Tabs

In the center, there are two tabs for the different file types that are used in the process:

- Designs
- Jobs

There are also two additional tabs, if they have been activated in the "Features (Admin)":

- Data sources
- Fonts

Designs

A design can be everything from a vector file, or an image to text, or a data field containing variable data. A design usually consists of different layers, but at least one layer.

Jobs

A Job is a single or multiple designs placed on the working area and specific laser functions added to each layer.

Data sources

Here files can be imported to be used as dynamic data in later steps. This is a very useful feature for the implementation of variations of text, QR codes, EAN-13, GS1-128, and DataMatrix codes on the product.

Fonts

Import fonts that can be used in the design screen.

Sorting and selecting

Click on a column header to sort the files by that header.

Click again to change the order. An upwards-pointing arrow indicates increasing order and a downwards-pointing arrow indicates decreasing order.

Select the checkbox in the header, to select all designs.

Select the checkbox next to the file to add this file to the selection.

Users are only able to delete files they own.

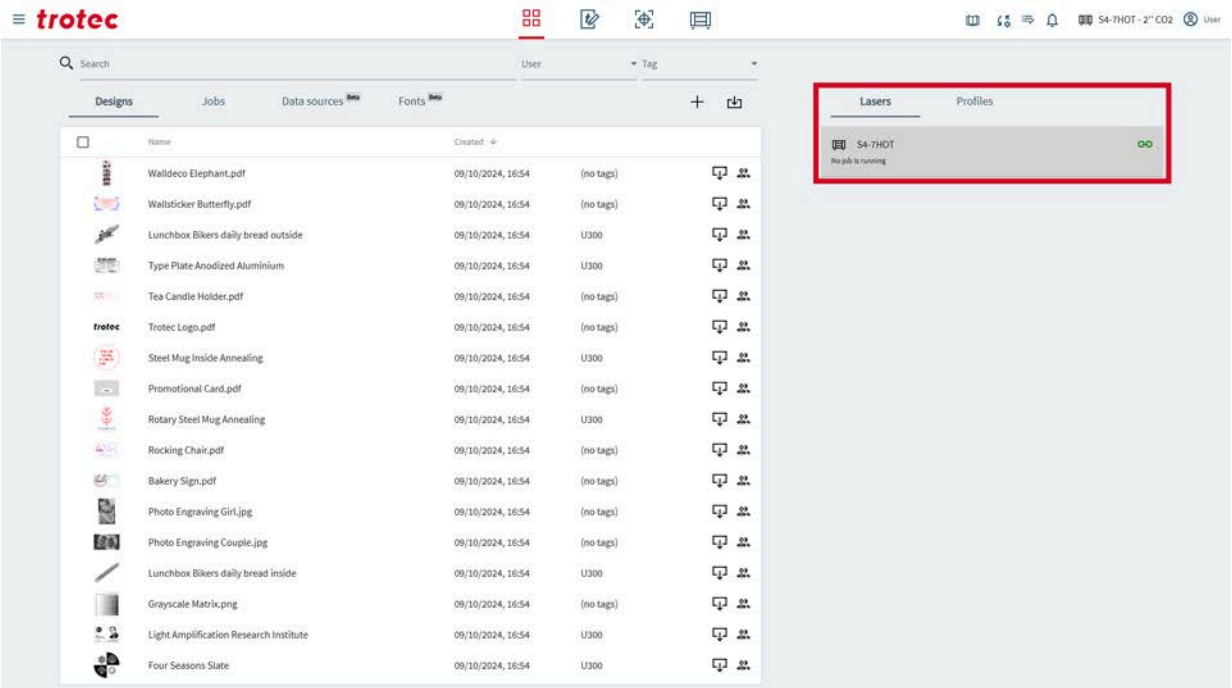
Admins can delete files from all users.

File management

The following actions are available for selected files:

	Create new design
	Import file
	Export file
	Delete file
	Owning user

4.3 Information



Lasers

Displays the laser and its job and connection status. Click on the laser device, to jump to the "Produce Screen".

	Status: connected
	Status: waiting
	Status: unknown

Profile

Displays the profiles. Click on the profile, to jump to "Profiles" (Admin).

A profile can be mapped to a directory, so it automatically processes all files in the directory with the profile settings.

Click on [], to delete the profile.

5 DESIGN SCREEN

Overview

The design screen is the creative hub of Ruby®. Use it to transform your ideas into an executable laser job.

The design can be done in multiple layers. Each of the layers gets assigned a set of laser parameters. It is crucial, to layers that need to be cut and engraved separated, as it is not possible to assign both to one layer.

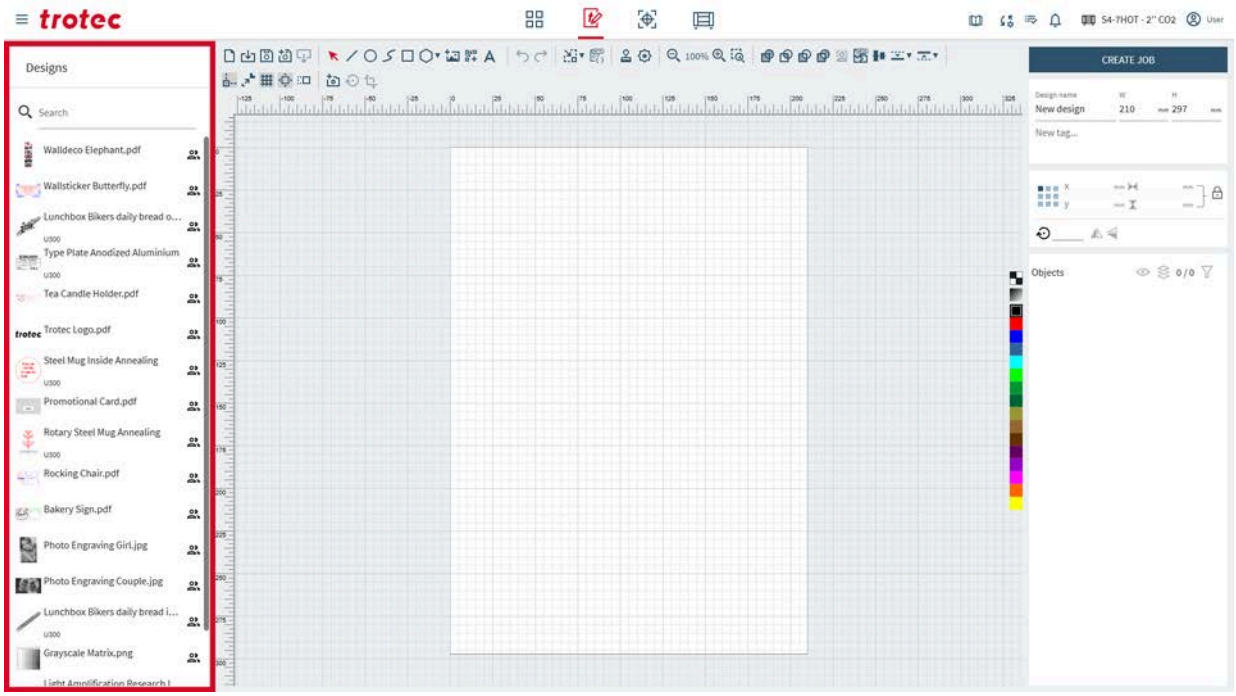
When the design is finished, click on [Create a Job] to continue.

Keyboard shortcuts

Keys	Operation
<?>	Show/hide help
<g> + <?>	Show/hide advanced help
<Ctrl> + <s>	Save
<Ctrl> + <o>	Import
<Alt> + <z>	Snapping
<Ctrl> + <c>	Copy design
<Ctrl> + <v>	Paste design
<Ctrl> + <z>	Undo
<Ctrl> + <y>	Redo
<Ctrl> + <a>	Select all
<Ctrl> + <g>	Group selected
<Ctrl> + <Shift> + <g>	Ungroup selected
<z> + <s>	Zoom selection
<z> + <r>	Zoom reset
<f>	Zoom to object
<del>	Delete object
<esc>	Deselect object
<←>	Move left
<→>	Move right
<↓>	Move down
<↑>	Move up
<Shift> + <←>	Rotate left
<Shift> + <→>	Rotate right
<Shift> + <↓>	Scale down

Keys	Operation
<Shift> + <↑>	Scale up
<e>	Edit
<c>	Clip
<Home>	Raise layer to top
<End>	Lower layer to bottom
<Page down>	Move layer down
<Page up>	Move layer up

5.1 Design list



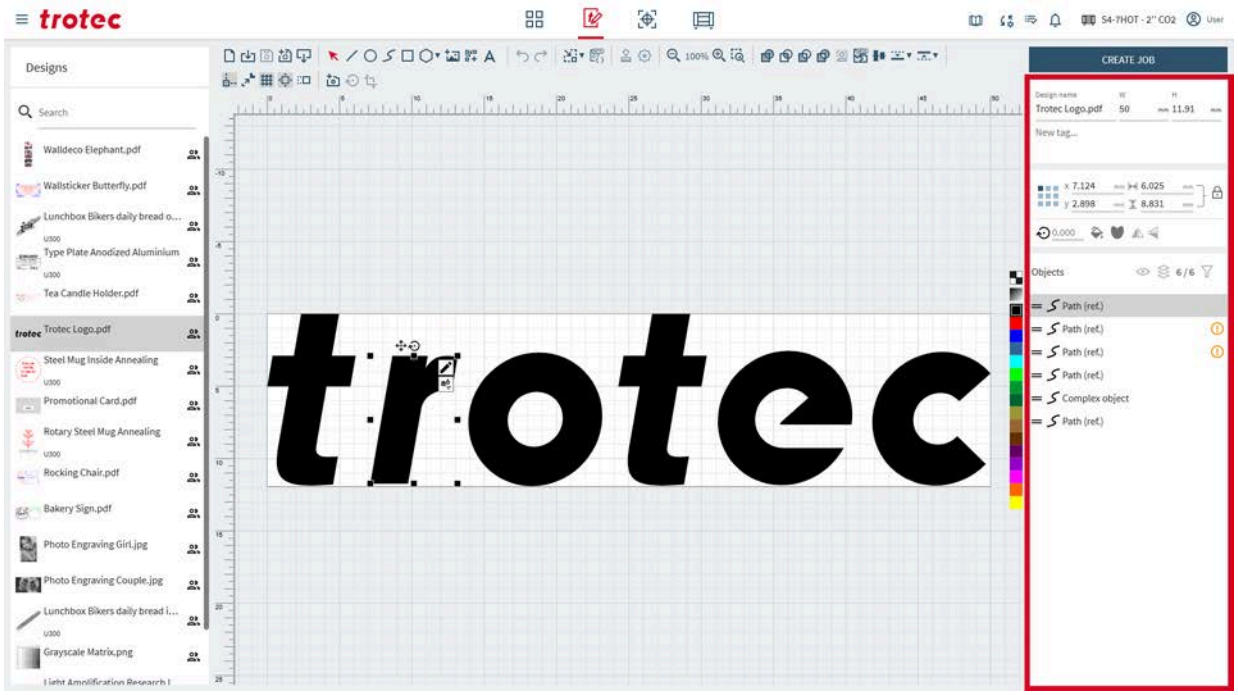
Design list

On the left is a list of all designs.

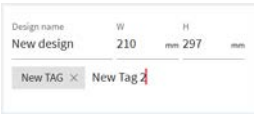
Use the search bar to look for names or tags.

Click on a design to open it.

5.2 Design properties



File information



Edit the information of the currently open design.

To change the name of the design, type in the text field.

To set the dimensions of the working area, set the values for width (W) and height (H) of the design.

Add tags by clicking in the field:

- Select an existing tag from the menu.
- Type in the field and press enter to confirm, to create a new tag.
- Tags are automatically added for seals or stamps.

Object properties

Edit the parameters of the currently selected object.

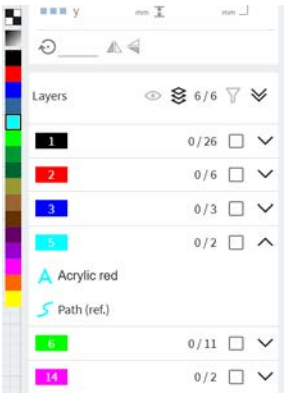
Fill:

No fill:

Set anchor point
The anchor point is the reference point for the position of the object.

x	x Position of anchor point Move by entering a value.
y	y Position of anchor point Move by entering a value.
	Width Adjust by entering a value.
	Height Adjust by entering a value.
	Lock proportions: on Width and height scale according to current proportions.
	Lock proportions: off Width and height scale independent from each other, skewing the object.
	Object manipulation:
	Rotate object around the anchor point. Rotate by entering a value.
	Flip object horizontally
	Flip object vertically
	For vector objects:
	Line width
	Fill
	Fill rule: even-odd Determines to fill an area by counting the number of path crossings, filling areas with an odd count.
	Fill rule: non-zero Calculates a winding number based on path direction, filling areas with a non-zero count.
	For raster objects:
	Invert colors

Layers



Layers allow non-destructive editing and complex image composition. They function like transparent sheets stacked on top of each other, each containing different elements. Users can manipulate individual layers without affecting others. The type of object is listed in the layer.

In total, there are 16 layers available. Each layer can later be assigned to a specific material parameter (e.g. engraving, cutting).

To create a new layer, select an unused color from the color bar next to the layers.

To change the layer of an object, first select the object, then select the color of the layer, the object should be moved to.

To select multiple objects in the layer, hold down <Shift>.

	On: List only visible objects Off: List all objects
	On: Group objects by layer Off: Show object order
	Filter layers, show hide layers Reset filter Reset filter
	Collapse all layers
	Expand all layers
	Collapse layer
	Expand layer
	Delete object Delete multiple objects by selecting them and pressing <Delete>on the key-board.
	Click and drag to re-arrange object order in layer.

Groups

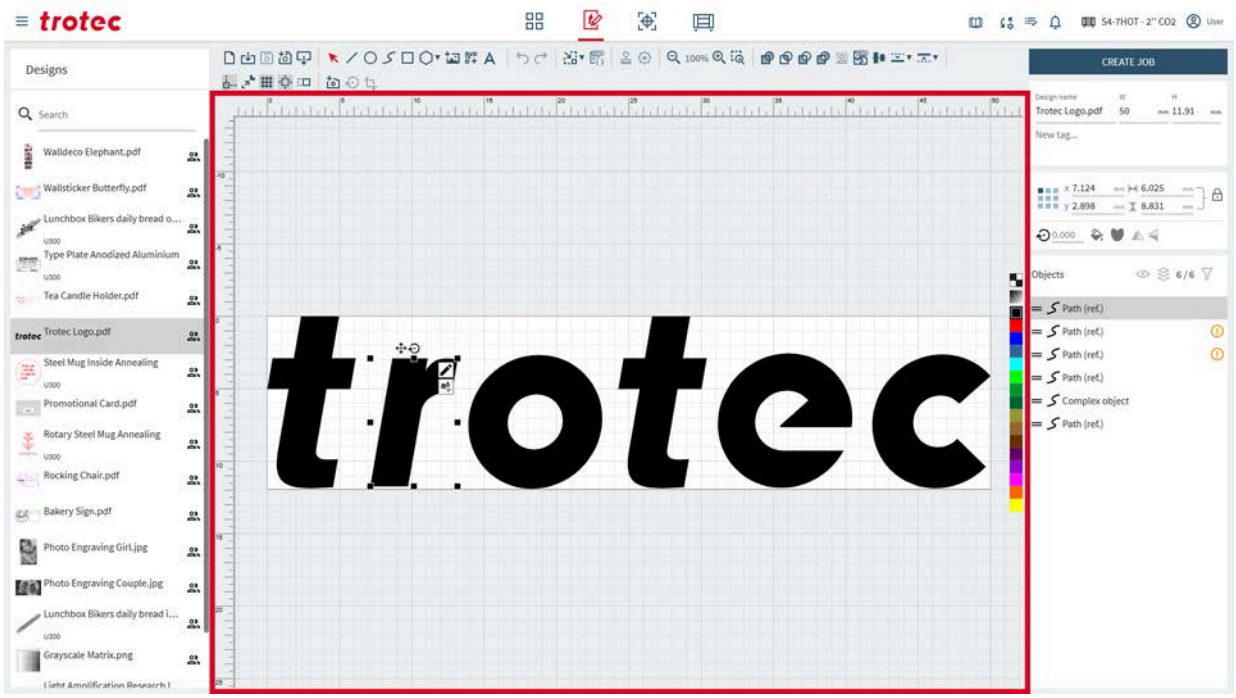
Groups allow efficient management of objects.

Layers and objects can be grouped using the shortcut <Ctrl> + <g> or right-clicking on multiple selected objects.

Groups can be nested into eachother.

Move objects from group to group using drag-and-drop.

5.3 Canvas



Overview

On the canvas, the design with all its objects is displayed.

Moving the canvas

To move the canvas, right-click and drag on an empty space.

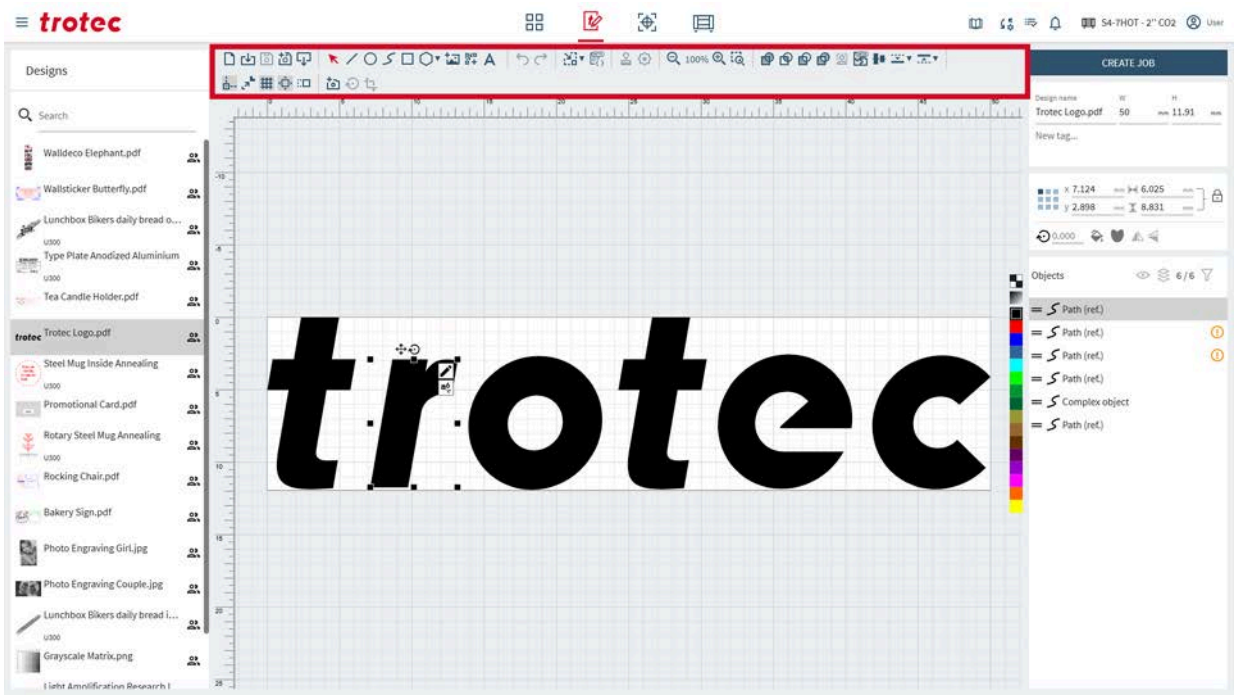
Zoom in and out using the <mouse scroll wheel>. The "Zoom" tools also allow for zooming.

Adjusting the canvas

To adjust the size of the canvas, enter values for the width and height of the design in the "File information".

The canvas can be adjusted to the size of the design by using the "Fit canvas to design" tool from the toolbar.

5.4 Toolbar



5.4.1 File operations

File operations

	Open new design
	Import a design from a file (for file types, see "Supported file formats").
	Save design May not be available, if the user changes a shared design. Save as new, then save.
	Save design as new
	Export design as .svg file

5.4.2 Selection tool

Selection tool

	Selection tool

With the selection tool, you can scale, skew, and move objects on the canvas.

Either select the object itself or use the symbols, that appear next to the shape, when an object is selected.

The selected object can be nudged by using the <arrow keys> on the keyboard. To rotate an object, hold <Shift> while pressing the <arrow keys> left/right. To resize an object, hold <Shift> while pressing the <arrow keys> up/down. The nudging steps can be adjusted in the "Canvas settings".

To "group" multiple objects, either press <Ctrl> + <g> or right-click on the object.

	Move object	Click and drag either the object itself or the object next to it. Hold down <Shift>, to lock the movement to one direction.
	Move point or edge	Click and drag the center of the edge to skew the object in that direction. Click and drag the corner to scale the object in that direction. Click and drag the point to move it. Hold down <Shift>, to scale from the center. Hold down <Control>, to disable proportional scaling, when dragging a corner.
	Rotate object	Click and drag the point to move it. Hold down <Shift>, to rotate in increments of 15°.
	For vector objects:	
	Node edit	Open the note editing dialog (when not grouped).
	Add text	Add text along the currently selected shape.
	Group paths	Links selected paths to a complex object, so they move together as one.
	Ungroup paths	Unlink selected grouped paths to reveal their paths.
	For raster objects:	
	Adjust tone curve	Open tone curve dialog

	For raster objects:	
	Crop	Open crop dialog
	Trace image	Open image tracing dialog

	For dynamic data objects:
	Transform data into barcode (when dynamic data is selected)

Edit

Use the node editing tool to move, add, or delete nodes for precise adjustments. The node editing widget opens automatically after drawing or when selecting a vector object.

To use snapping, first set it to on in the toolbar.

To select a node, left-click on it.

To delete a note, right-click on it.

Use [Previous] and [Next] to scroll through the nodes of the vector object.

	Snapping
Show angle	Previous: • Show the distance to the previous node. • Show the angle at the previous node. Current • Show the angle at the currently selected node. Next • Show the distance to the next node. • Show the angle at the next node. For curves, the distances and angles shown are between the nodes, not tangential.

	Snapping
Snap angle to and Snap values	This feature lets users create a precise path by editing each segment. 1. Select, to snap the segment with respect to the previous or next segment. 2. Select, how to define the angle the segment snaps to: – x-Axis: shows an auxiliary x-Axis at the previous/next node. The angle is measured between the x-Axis and the current segment. – y-Axis: shows an auxiliary y-Axis at the previous/next node. The angle is measured between the y-Axis and the current segment. – The angle is measured between the previous/next segment and the current segment. 3. Set the angle and/or length of the desired segment. 4. Drag the currently selected node near the chosen values. ✔ The node snaps to the selected values or its multiples.

	Options
Closed path	Connects the start and end nodes with a straight line.
Lock adjacent control points	Links control points of curves so the curves are tangential in the nodes.
Toggle Visibility	Hide or show curve control points or start/end nodes.
Show start and end	Show start and end points in different colors for better visibility.

	Edit
x y	Set the values for the x and y coordinates of the selected node.
Convert to curve Convert to node	Converts the selected node into a path. Converts the selected path into a node.
Break path	Cuts the path in two at the currently selected node.
Add node	Adds a node at the center of the segment before the currently selected node.
Delete node	Deletes the currently selected node.
Round	Round the selected corner to the set radius. Set the radius by entering a value or increase or decrease it by clicking [-] or [+]. Rounding works only, if there are straight lines before and after the node.
Round all	Round all corners of the selected shape to the set radius.
X	Remove the rounding of all corners.

Text along shape

Type text into the pop-up window or select a data source for "Dynamic data", then apply.

Edit parameters if needed.

The font, size and other parameters can be canged as with "regular text".

Click on [Remove path], to transform the text object into a regular (linear) text object.

Click on [Edit path], to edit the underlying path.

B	Bold
I	Italic
AV	Kerning (space between characters)
fi	Ligature (combines characters where fitting)
	Flip text along shape.
	Advanced Typography • Character spacing • Line spacing • Word spacing • Width • Weight
	Font
	Font size

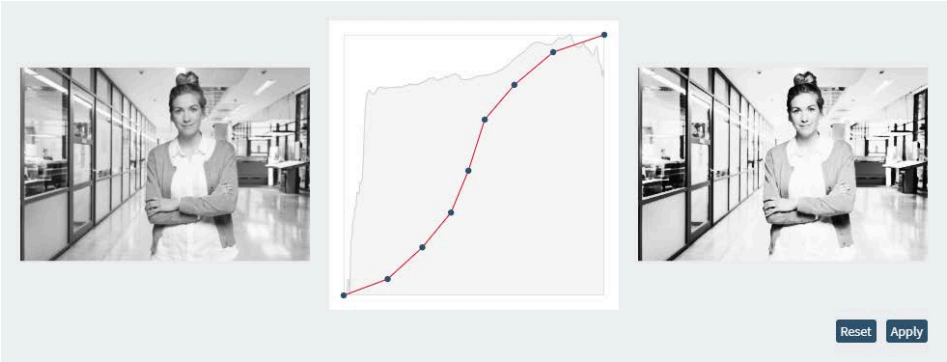
Adjust tone curve

The tone curve represents the tonal range of the image. Manipulate it by dragging in certain areas to change the brightness and contrast of your image in that particular tonal area. With the tone curve, the user can selectively boost shadows, mid-tones, and highlights.

You can add as many points to the tone curve as you want. Click on an empty spot on the curve to add a point, and drag it to move the tone curve. Click on a point, to remove it.

On the left is the before, and on the right is the after.

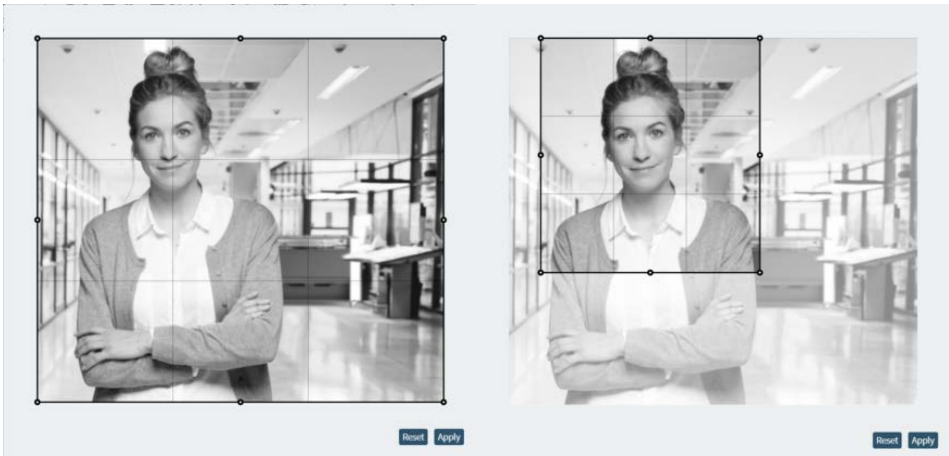
Draw an S-shaped curve to increase contrast. Increase contrast by drawing a S-shaped curve. If the contrast gets too high, details are lost.



Draw a reverse S-shaped curve to decrease contrast. If the contrast gets too low, the image or scene becomes flat, and it is difficult to distinguish between elements or details.

Apply adjustments, when finished.

Crop



To crop an image, click and drag the edges or corners of the cropping frame to the desired size.

Then apply the cropping.

↻	Reset cropping (only visible after applying a crop).

Trace image

This transforms the contours of a raster image into a vector image. It is best suited for images with high contrast and clear separation between adjacent objects.

Select the image by clicking on it, then click the icon.

Set the following parameters and click on [Trace], to preview the outline.

Click [Apply], to create the vector image.

	Definition	Example	
Outer contour only			
Ignored cluster size	Use to reduce noise caused by small elements.	low 	high 
Black & white threshold	Adjust what the function reads as white and black.	low 	high 
Smoothen level	Adjust what the function reads as corner and curve.	low 	high 

Fill rule	Explanation
None	No filling, the shape is transparent.
Even-odd	A point is filled if a ray crosses an odd number of edges to reach it. Alternates fills, like a chessboard.
Non-zero	A point is filled if the total edge crossings (counting direction is either clockwise or counter-clockwise) isn't zero. Counts winding direction, therefore more flexible for complex shapes.

5.4.3 Objects

Shapes

To draw a shape, select the desired shape. Then click and drag to size the shape.

	Draw line

	Draw ellipse
	Draw path
	Draw rectangle
	Draw polygon Click on [▾] to edit the parameters of the polygon. • Vertices count: Select the number of sides/corners of the polygon. • Inset scale: Select, how much the center of each side is drawn into the center. Set 0 for no inset and 1 for a full inset to the center of the polygon. This can be used to transform any polygon into a star shape.

Objects

	Add image to design Click the symbol and select the image in the window.
	Add barcode
	Add text

Barcodes

Click and drag to size the barcode.

Enter the text/number and select the code type. There are many different Barcodes in 2D and 3D available.

Barcodes can also be used with "Dynamic data".

Drawing a path

Click the icon, then set the snapping values, if desired (for more information on vector path snapping, see "Edit").

Straight line

1. Left-click to set the starting point.
2. Left-click again to add additional points and create line segments.
3. Right-click to finish the path.

Curves

1. Left-click to set the starting point.
2. Left-click and drag to bend the curve, then release.
3. Move to the next point or end the curve with a right-click.

NOTICE

Curved segments are always tangential to each other.

Color	Function
Black	Regular path node
Or-ange	Curve control points
Green	Start of path
Red	End of path

NOTICE

The orange curve control points control the weight of the tangent. The further apart the points are, the more close-fitting the curves at that node.

Adding text

Select the parameters. Then click on the canvas, where the text should be.

Type text into the pop-up window, then apply. The text can be a single or multiple lines.

Edit parameters if needed.

B	Bold
I	Italic
AV	Kerning (space between characters)
fi	Ligature (combines characters where fitting)
	Align text left
	Align text center
	Align text right
	Align text justified

	Advanced Typography • Character spacing • Line spacing • Word spacing • Width • Weight
	Font
	Font size

5.4.4 Undo & redo

Actions

	Reverse last action
	Restore last action

5.4.5 Fit canvas to design

Adjusting the canvas size to design

	Fit canvas to design Click on [▾] to adjust the margin, that is kept around the design, when resizing the canvas.

5.4.6 Dynamic data

Adding dynamic data

BETA	Add dynamic data

To add dynamic data, select the data source (.csv file) and the column of the file.

Then edit text (see "Adding text").

Optionally, the dynamic data can be transformed into a barcode (see "Objects") by clicking the "icon"and selecting the code type.

5.4.7 Stamp mode

Generate a stamp

Generate a stamp from the design.

This function lets the user create a stamp from the design, thus inverting all vector elements of the canvas as a whole.

Ruby® creates a new design, that is specifically a marked as stamp. The stamp design is displayed, as the stamp would look on paper, but mirrored and inverted in the further process.

The following options are available:

Value	Explanation
Automatic cut-line type	Creates the outline that cuts the stamp. All other parts of the stamp are engraved. Options: • None: no cutline to the outside added • Rectangular • Circular • Optimized: creates an optimized outline, with respect to the minimum distances to the stamp.
Minimum distance from the cutline	Defines the minimum distance between the stamp body and the cut-line.
Mirror	Set if the stamp needs to be mirrored. On: Stamp is mirrored, prints will not be mirrored. Off: Stamp is not mirrored, prints will be mirrored.

5.4.8 Seal mode

Generate a seal

Generate a seal from the design.

This function lets the user create inlays for seal presses from the design. It generates the upper and lower inlay and in- or outsets the lines enough, so the seal can be pressed into the defined paper without tearing it.

Ruby® creates a new design, that is specifically a marked as a seal. The disign contains the upper and lower inlay for the seal press.

The following options are available:

Value	Explanation
Seal shape	Select an available template, or create a custom template as outer cutline of the seal. Options: • Circular seal: 1 5/8 inch • Circular seal: 41 mm • Circular seal: 51 mm • Rectangular seal: 51 mm x mm • User-defined size
Notch position	Defines where the alignment notch for the inlay will be placed.
Thickness	Enter the thickness of the used paper.
Pixels per mm	Set the resolution the imported picture gets resized to.
Padding	Padding that gets added around the seal.

5.4.9 Zoom

Canvas zoom

	Zoom out
	Zoom in
	Zoom to selection Select an area to zoom in.

5.4.10 Tools

Combining, modifying, and intersecting objects

Union
Combine two or more objects into one using the Union tool, regardless of whether the objects overlap.
If the objects overlap, the intersecting lines will disappear, and filled objects will turn into outlines. If the objects do not overlap, a group is created that behaves like a single object.
To use this tool, draw two designs, select them, and click the [Union] icon to create a continuous outline.

Intersect
Use the Intersect tool to create shapes from overlapping areas.
Select the source object and press <C>. The outline will change to a dashed line. Then, select the object you want to intersect with. Clicking the [Intersect] icon will create a new object based on the overlapping areas.
You can remove the source object if needed.

Difference
The Difference tool removes the areas overlapped by the source object, cutting away those sections to form a new shape.
To apply, select the source object, press <C> to clip it with the object you want to cut, then click [Difference].
You can remove the target object if necessary.

Exclusion
The Exclusion tool works similarly to the Union tool but retains the intersecting lines. It removes the overlapping areas but keeps the lines where the objects intersect.
Select the first object, press <C>, then select the second object. Clicking the [Exclusion] icon creates a single object without removing the intersecting line.

Remove background

This removes the background of a raster image. It works best when the foreground and the background are in high contrast to each other. Optionally, the "tone curve can be adjusted" for a better result.

Select the image by clicking on it, then click the icon.

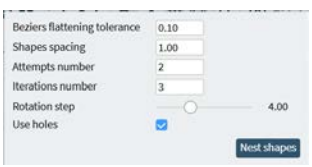
Remove background

Nest shapes

This automatically nest the vector shapes in a space-efficient manner.

Select the image by clicking on it, then click the icon.

Nest shapes



Value	Explanation
Beziers flattening tolerance	Define, how complicated curves are allowed to be flattened. Set a value between 0.01 and 0.99.
Shapes spacing	Define how much space is between the shapes when nested.
Attempts number	Defines, how many times Ruby® tries to nest the shapes. May prolong calculation time.
Iterations number	Defines, how many iterations Ruby® does. May prolong calculation time.
Rotation step	Define how much the shapes are allowed to rotate when nested.
Use holes	Define, If parts of the design are allowed to be placed in the holes of other shapes.

Inset/Outset

This moves a path the set distance to the outside or inside.

Click on [▾], to define the step distance.

	Outset
	Inset

5.4.11 Alignment & distribution

Alignment tools

Alignment	Explanation
Left	Objects are aligned to share the same left edge, creating a straight vertical line on the left side.
Horizontal center	Objects are aligned along their horizontal center points, creating a balanced vertical line through their centers.
Right	Objects are aligned to share the same right edge, forming a straight vertical line on the right side.
Top	Objects are aligned to share the same top edge, creating a straight horizontal line along the top.
Vertical center	Objects are aligned along their vertical center points, creating a balanced horizontal line through their centers.
Bottom	Objects are aligned to share the same bottom edge, forming a straight horizontal line along the bottom.

Distribution tools

Distribution	Explanation
Left	Evenly spaces objects based on their left edges.
Horizontal center	Evenly spaces objects based on their horizontal center points.
Right	Evenly spaces objects based on their right edges.
Horizontal distance from the center	Evenly spaces objects from edge to edge horizontally, ensuring uniform gaps between objects.
Top	Evenly spaces objects based on their top edges.
Vertical center	Evenly spaces objects based on their vertical center points.
Bottom	Evenly spaces objects based on their bottom edges.
Vertical distance from the center	Evenly spaces objects from edge to edge vertically, ensuring uniform gaps between objects.

5.4.12 Canvas settings

Snapping: on/off
Automatically align objects to:

- Vertices or corners of objects
- Edges of shapes
- Centers of objects
- Grid lines

Outline scaling on/off
Automatically scale the width of the outline in proportion to the object's size change.

Table grid on/off
If using the Vision Design & Position Camera, it is recommended to switch this off.

Canvas scroll on/off
Automatically scroll the canvas when dragging and moving objects.

Nudge settings
Set the step sizes, when moving objects with the <arrow keys> or scaling:

- Scale factor (%)
- Rotation step (°)
- Step size (mm)

5.4.13 Vision Design & Position

Vision Design&Position

Create or edit your layout live in Ruby and position it directly on your workpiece.

Camera settings

	Vision Design & Position table camera on/off
	Update Vision Design & Position table camera Manually update the camera Camera updates automatically • Lid closed: with every table movement • Lid open: every 2 seconds
	Move camera image Lets you drag the design to the material

6 PREPARE SCREEN

Overview

The Prepare Screen transforms a design into a laserable job. Decide on the material, and what effect you want to be implemented by what layer. It also lets users replicate the design and fill the material most efficiently.

When the job is finished, click on

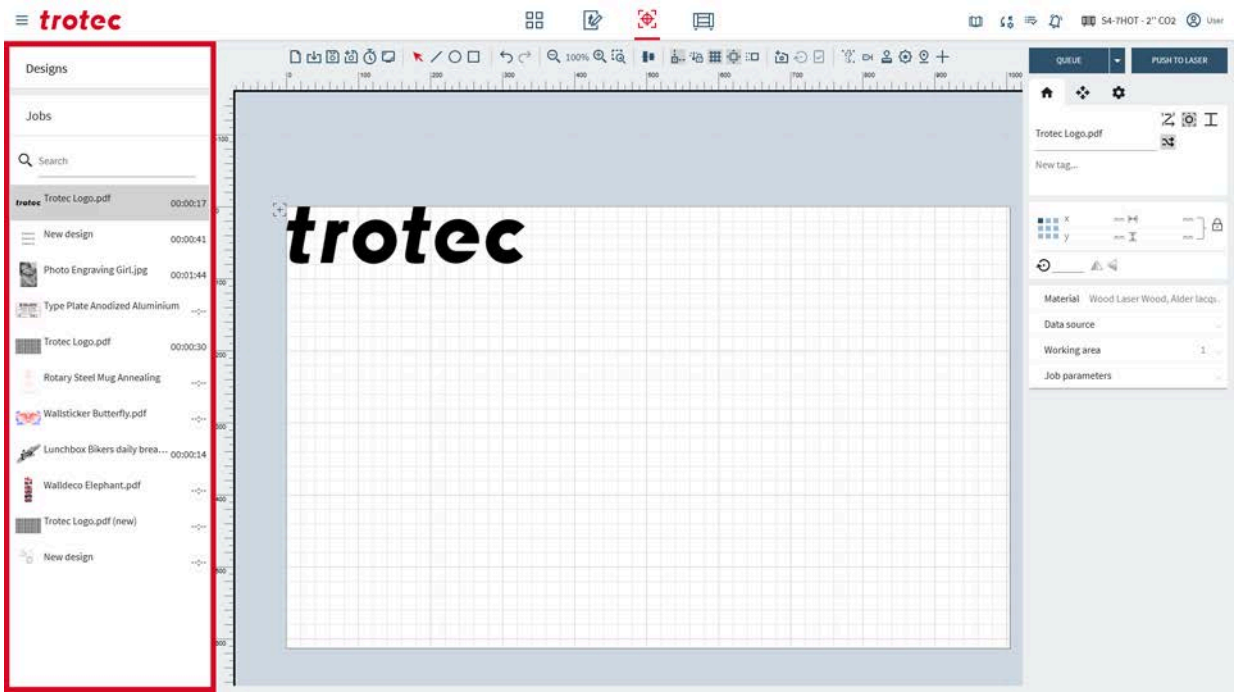
- [Push to laser] to start the job immediately.
- [Queue] to add the job to the back of the queue.

Keyboard shortcuts

Keys	Operation
<?>	Show/hide help
<g> + <?>	Show/hide advanced help
<Ctrl> + <s>	Save
<Ctrl> + <o>	Import
<Alt> + <z>	Snapping
<Ctrl> + <c>	Copy design
<Ctrl> + <v>	Paste design
<Ctrl> + <z>	Undo
<Ctrl> + <y>	Redo
<Ctrl> + <a>	Select all
<Ctrl> + <Alt> + <s>	Select all snap markers
<z> + <s>	Zoom selection
<z> + <r>	Zoom reset
<f>	Zoom to object
<del>	Delete object
<esc>	Deselect object
<←>	Move left
<→>	Move right
<↓>	Move down
<↑>	Move up
<Shift> + <←>	Rotate left
<Shift> + <→>	Rotate right
<Shift> + <↓>	Scale down

Keys	Operation
<Shift> + <↑>	Scale up
<e>	Edit
<g> + <g>	Edit grid
<c>	Clip
<Home>	Raise layer to top
<End>	Lower layer to bottom
<Page down>	Move layer down
<Page up>	Move layer up
<F8>	Add snap marker
<Shift> + <F8>	Clear snap markers

6.1 Job list



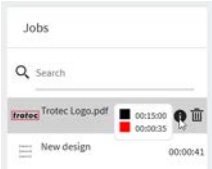
Design list

Click on [Designs], to expand the design list.

Use the search bar to look for names or tags.

Drag a design to place it on the on the working area.

Job list



On the left is a list of all Jobs.

Use the search bar to look for names or tags.

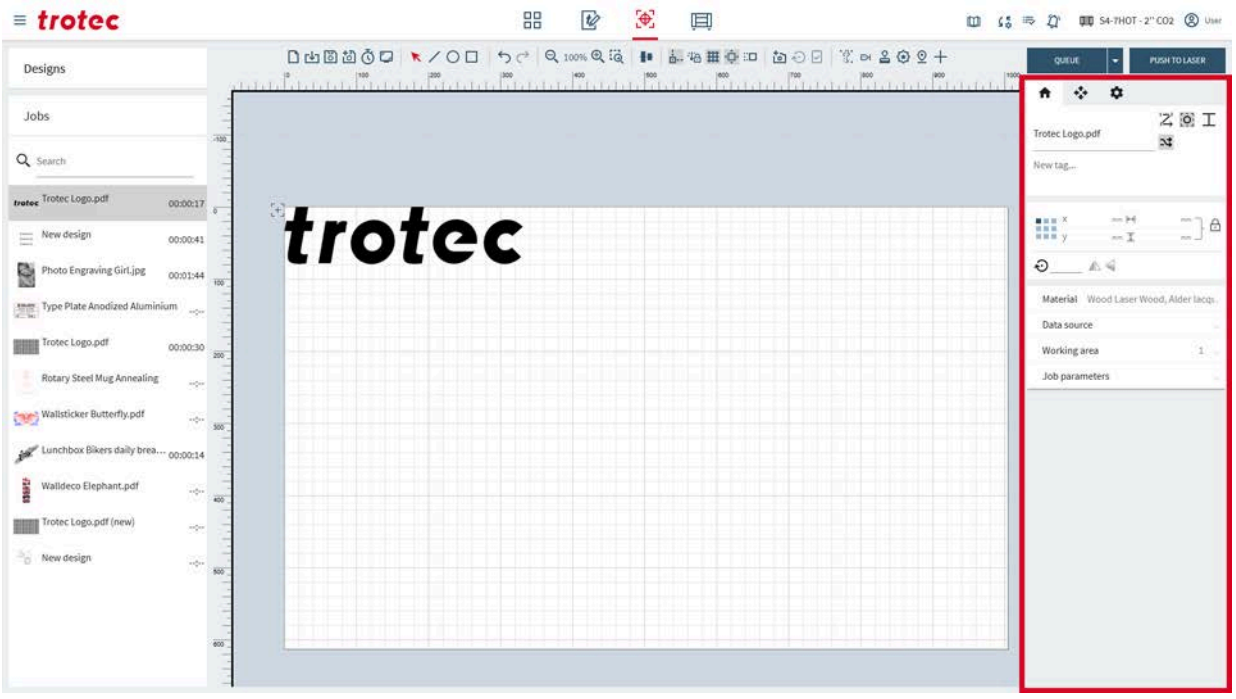
Click on a job to open it.

If the job has been queued or the job time has been calculated previously, it gets shown next to the job.

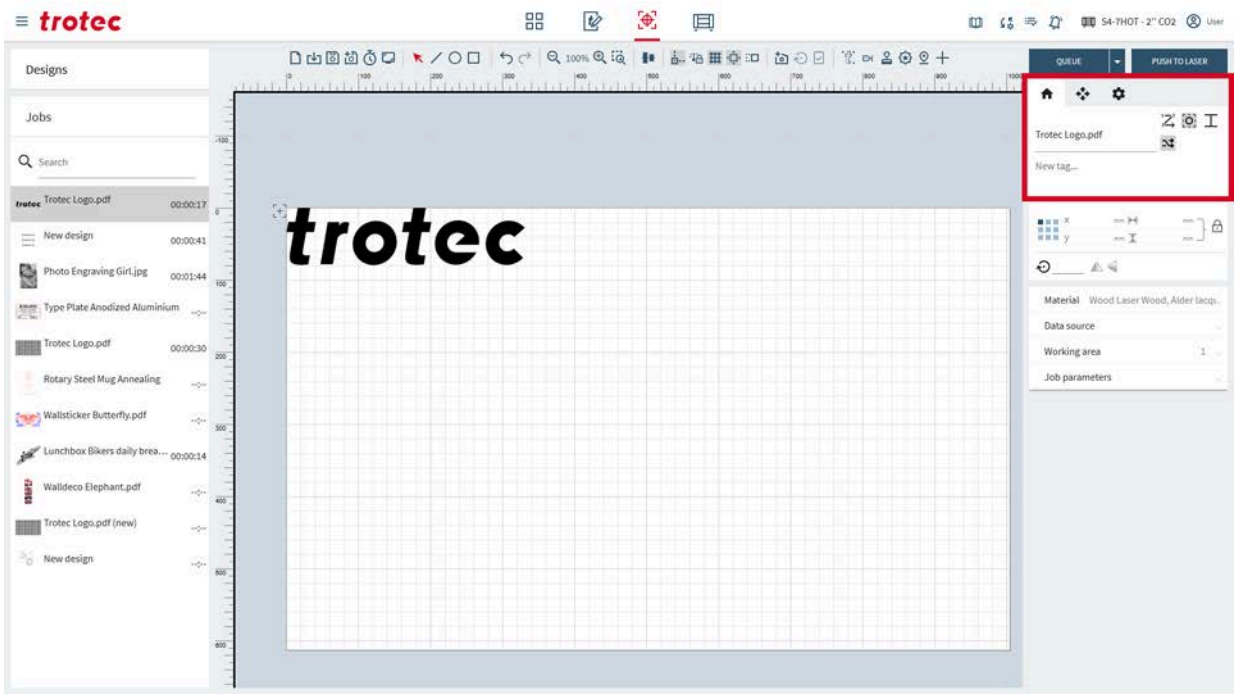
Hover over the job and click [🗑] to delete a job.

Hover over a job, then over [ⓘ] to display the estimated time for each layer.

6.2 Job properties



6.2.1 Job, axis control and primary device settings



Job

Edit the information of the currently open job.

To change the name of the job, type in the text field.

Add tags by clicking in the field:

- Select an existing tag from the menu.
- Type in the field and press enter to confirm, to create a new tag.
- Tags are automatically added for seals or stamps.

	Order vectors This function orders the vectors to minimize cutting time.
	Set anchor point The anchor point is the reference point for the position of the object.
	Skip overlapping cutlines: Off

	Skip overlapping cutlines: Straight lines only
	Skip overlapping cutlines: Full
	Geometry optimization on/off

Axis control

The current position of the laser head and the table gets diplayed here.

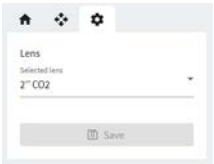
Select the option for movements to be absoulute or relative.

Enter the values for the the movements to the corresponding axis.

NOTICE

Ensure that there is enough space to avoid crashing the table or material into the laser head.

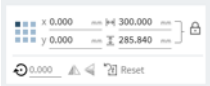
Primary device settings



Use this tab to quickly change critical device settings, without the need to remove all jobs from the queue and switching to the "Device settings".

6.2.2 Design properties

Design properties

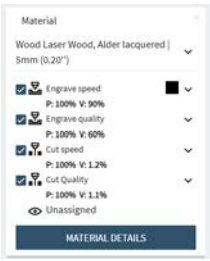


Edit the parameters of the currently selected design.

	Set anchor point The anchor point is the reference point for the position of the design.
x	x Position of anchor point Move by entering a value.
y	y Position of anchor point Move by entering a value.
	Width Adjust by entering a value.
	Height Adjust by entering a value.
	Lock proportions: on Width and height scale according to current proportions.
	Lock proportions: off Width and height scale independent from each other, skewing the object.
	Object manipulation:
	Rotate object around the anchor point. Rotate by entering a value.
	Flip object horizontally
	Flip object vertically
	Reset manipulation

6.2.3 Materials, data source, working area and job parameters

Material effects



Assign the material effects to the layers. This step defines, which parts of the design the laser engraves or cuts with which settings.

First, select the Material from the drop-down menu.

Then assign all unassigned layers to the effects of the material.

To un-assign or re-assign a layer to another effect, click on the colored square, then select the new effect.

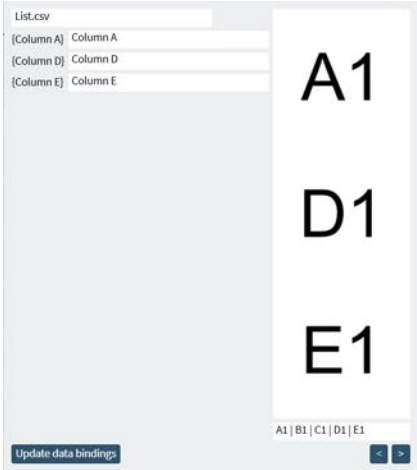
To open the Material Details in the "Material database", either click on the effect or [Material details].

	Cut layer
	Engrave layer
	Unassigned layers
	Mark layer
	Unassigned layers

Data source

This info box displays the bindings of the data source.

Click on [Edit bindings] to open the preview dialog.

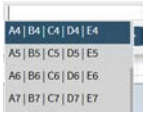


To select a new source, click on the file and select a new one from the drop-down menu.

To change the bindings, click on the column and select a new column of the file. Confirm by clicking [Update data bindings].

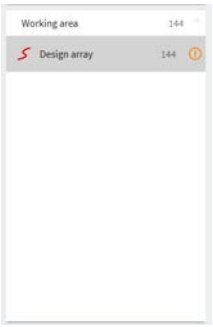
The text is previewed on the right.

To skip through the rows of the file, use the arrow buttons [<] [>].



Optionally, select a row to preview from the drop-down menu of rows. Type here, to jump to a data set.

Working area



Shows all designs that are placed on the working area.

To select multiple designs, hold down <Shift>.

	Delete object Delete multiple designs by selecting them and pressing the Deletekey on the keyboard.
	Edit This opens the selected design in the "Design Screen".

Design is outside of the working area.

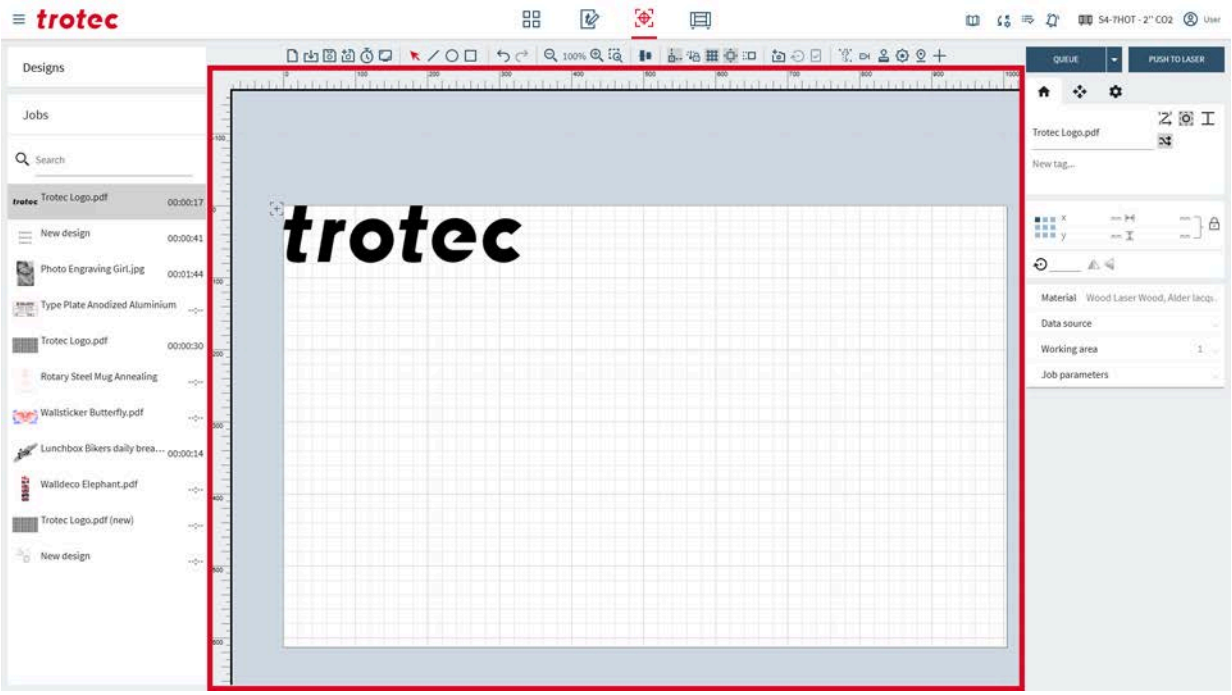
Job parameters

Parameter	Explanation
Job count	Set how many times the job gets repeated. If a data source is selected, the job count gets increased automatically, so that every line of the data source gets proceessed.
Pause after each process	Select this option, if materail needs to be changed after each process. Deselect this option, if multiple passes on the same material need to be done.
Use absolute Z	Adjust the absolute head position the laser moves to at the start of the job.
Rotary speed	Reduce the rotary speed for better accuracy on heavier objects.

NOTICE

Ensure that there is enough space to avoid crashing the table or material into the laser head.

6.3 Working area



Overview

On the working area, the laser job with its designs is displayed.

Moving the working area

To move the working area, right-click and drag on a space.

Zoom in and out using the <scroll wheel>. The "Zoom" tools also allow for zooming.

Moving the laser head

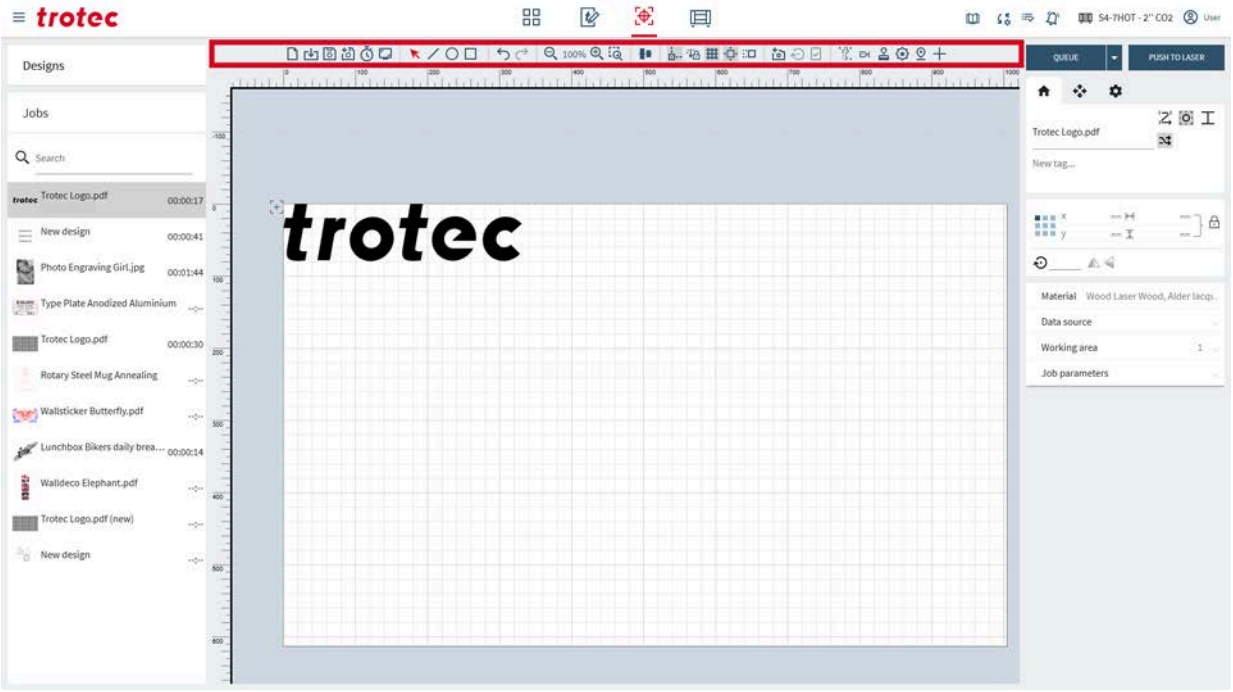
Laser head position

To allow for precise positioning of designs on materials, the laser head is displayed in the Prepare Screen.

The crosshair can be dragged to any point on the working area. This action needs to be confirmed on the laser machine or operator mode needs to be enabled.

The laser head can be moved to coordinates, by clicking [✎] and entering x, y, and z-Values at the bottom right and confirming. This action also needs to be confirmed on the laser machine or operator mode needs to be enabled.

6.4 Toolbar



6.4.1 File operations

File operations

	Open new job
	Import a job from a file (for file types, see "Supported file formats").
	Save job May not be available, if the user changes a shared design. Save as new, then save.
	Save job as new
	Calculate job time This calculates and previews the job time next to the opened job.
	Export a preview of the job as a png file.

6.4.2 Selection tool

Selection tool

	Selection tool

With the selection tool, you can scale, skew, and move designs on the working area.

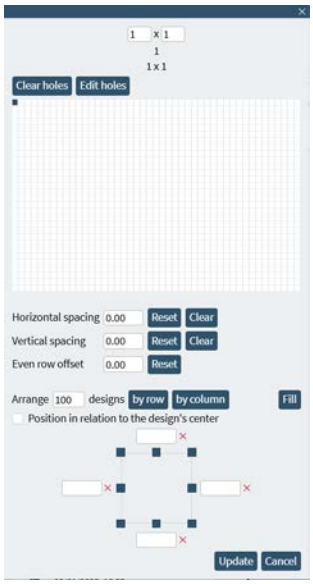
Either select the design itself or use the symbols, that appear next to the design, when a design is selected.

The selected design can be nudged by using the <arrow keys> on the keyboard. To rotate a design, hold <Shift> while pressing the <arrow keys> left/right. To resize an object, hold <Shift> while pressing the <arrow keys> up/down. The nudging steps can be adjusted in the "Working area settings"

	Move design	Click and drag either the design itself or the design next to it. Hold down <Shift>, to lock the movement to one direction.
	Move point or edge	Click and drag the center of the edge to skew the design in that direction. Click and drag the corner to scale the design in that direction. Click and drag the point to move it. Hold down <Shift>, to scale from the center. Hold down <Control>, to disable proportional scaling, when dragging a corner.
	Rotate design	Click and drag the point to move it. Hold down <Shift>, to rotate in increments of 15°.
	Edit	Opens design in the "Design Screen".
	Grid	Opens the grid dialog.

Only selected jobs can be queued by selecting [▾] next to [Queue], then selecting [Queue selected].

Grid tool



This tool lets users easily create a grid from a design.

If the design contains dynamic data, this tool enables Ruby to laser the different data sets for each single design.

The total number of designs is displayed at the top.

A grid can be either created by entering the repetitions for height and width or by dragging and selecting the appropriate size on the white grid in the dialog. Optionally a grid can be created automatically, using the [Arrange designs by] or [Fill] operations.

Confirm the grid by clicking on [Update].

Value	Explanation
Horizontal spacing	Horizontal space between each design in the grid. Negative values are possible.
Vertical spacing	Vertical space between each design in the grid. Negative values are possible.
Even row offset	Every second row gets offset by this value. This allows for tighter grinding of some shapes (circles for example).
Arrange designs by row	Arrange the set number of designs row by row.
Arrange designs by column	Arrange the set number of designs column by column.
Fill	Fills the whole working area with the grid.
Boundaries for fill and arrange designs	Set inset boundaries to keep some space at the edges, when applying the “Arrange designs by” and “Fill” operations. Click on the border or corner, to display max and min values. Enter the values in the boxes.
Position in relation to design's center	This takes the center of the design as a reference point when creating a grid, instead of the upper left corner.

6.4.3 Cutting shapes

Shapes

To draw a shape, select the desired shape. Then click and drag to size the shape.

The drawn shape is automatically assigned as a cutting effect. This is an easy way to add separation cuts between the designs or straighten the edges of the spare material.

The dimensions can also be adjusted in the "Design properties".

	Draw line
	Draw ellipse
	Draw rectangle

6.4.4 Undo & Redo

Actions

	Reverse last action
	Restore last action

6.4.5 Zoom

Working area zoom

	Zoom out
	Zoom in
	Zoom to selection Select an area to zoom in.

6.4.6 Alignment & distribution

Alignment tools

Alignment	Explanation
Left	Designs are aligned to share the same left edge, creating a straight vertical line on the left side.
Horizontal center	Designs are aligned along their horizontal center points, creating a balanced vertical line through their centers.
Right	Designs are aligned to share the same right edge, forming a straight vertical line on the right side.
Top	Designs are aligned to share the same top edge, creating a straight horizontal line along the top.
Vertical center	Designs are aligned to share the same bottom edge, forming a straight horizontal line along the bottom.
Bottom	Designs are aligned along their vertical center points, creating a balanced horizontal line through their centers.

Distribution tools

Distribution	Explanation
Left	Evenly spaces designs based on their left edges.
Horizontal center	Evenly spaces designs based on their horizontal center points.
Right	Evenly spaces designs based on their right edges.
Horizontal distance from the center	Evenly spaces designs from edge to edge horizontally, ensuring uniform gaps between designs.
Top	Evenly spaces designs based on their top edges.
Vertical center	Evenly spaces designs based on their vertical center points.
Bottom	Evenly spaces designs based on their bottom edges.
Vertical distance from the center	Evenly spaces designs from edge to edge vertically, ensuring uniform gaps between designs.

6.4.7 Working area settings

	Snapping: on/off Automatically align designs to: • Vertices or corners of designs • Centers of designs • Grid lines
	Lock laser head: on/off Locks or unlocks the position of the laser head. The crosshair is not draggable when locked.
	Table grid on/off If using the Vision Design & Position Camera, it is recommended to switch this off.
	Working area scroll on/off Automatically scroll the working area when dragging and moving designs.
	Nudge settings Set the step sizes, when moving designs with the <arrow keys> or scaling: • Scale factor (%) • Rotation step (°) • Step size (mm)

6.4.8 Vision Design & Position

Vision Design & Position

Position the design exactly on your workpiece with the camera. The Vision Design & Position shows a live feed of the table.

Camera settings

	Vision Design & Position table camera on/off
	Update Vision Design & Position table camera Manually update the camera Camera updates automatically • Lid closed: with every table movement • Lid open: every 2 seconds
	Copy camera image to the clipboard

6.4.9 Tools

Print&Cut

Enable Print&Cut

The Print&Cut feature compensates and adjusts inaccuracies and virtually rotates and positions the original file so it fits perfectly to the printed material. The registration marks are printed around an image, the Vision camera reads the marks prior to the cutting process and compares these marks with the marks on original design file. With this comparison any deviations are adjusted and compensated automatically.

Before using this feature import the Print&Cut design file. Then add this to the design.

Enable the feature by clicking the icon. A new effect will appear in "Material effects". Assign the registration marks to the Print&Cut effect.

Select the compensation mode in the "Job".

	Compensation	Explanation
	Position and rotation	The relationship between the registration marks is fixed. Ruby® will virtually adjust the position and rotation. Ideal, if the cut-out material must have an identical size. Requires at least two registration marks
	Full linear	The relationship between the registration marks is fixed. Ruby® will virtually adjust the position and rotation. Ruby® will compensate for position, rotation and scaling. The cut-out material may alter in size depending on the precision quality of the printed material produced on. Requires at least three registration marks.
	Non-linear	The relationship between the registration marks is not fixed. Ruby® will virtually adjust the position, rotation, scaling, skewness, and compound distortion. Requires at least three registration marks, sometimes more yield better results.

Start the job. The laser will first read the registration marks, then cut according to the selected compensation

Rotary

Enable Rotary

Enable/disable 3D preview

Lock design to the object
This allows for the exact positioning of multiple designs, by rotating the design with the rotation of the object in the laser device.

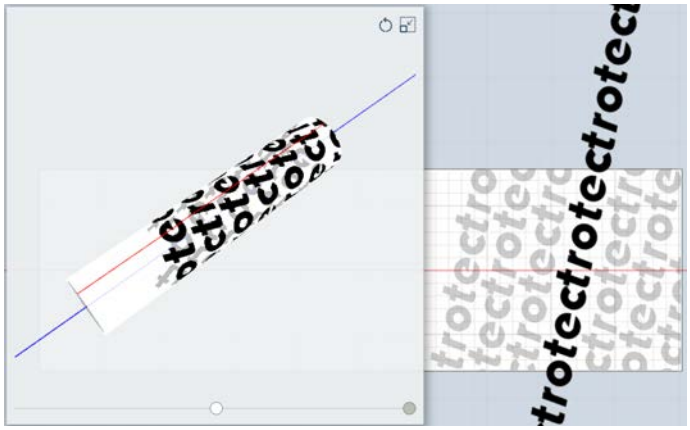
30°
45°
60°
90°


Add snap lines for the rotary tool at a preselected or custom rotation angle.

With the rotary tool, round, cylindrical, and conical objects can be engraved or cut.

1. Enable the feature by clicking the icon.
2. Enter the diameter of the object.

A window opens, presenting a preview of the object. Adjust the slider in the preview, to change the length. Rotate the preview by left-clicking and dragging. Reset the preview by clicking the icon in the upper right corner of the preview.



The working area will switch to rotary mode and show the red center line of the object.

The object can be rotated more than 360°, allowing for complex designs.

3. Move the laser head, where the design should be positioned.
4. Then move the design to the crosshair on the working area.
5. Start the job.

Stamp mode

	Enable Stamp mode

Enable the feature by clicking the icon. This works only on designs, that have been transformed into a stamp design (see "Stamp mode").

Select the shoulder angle and how to handle links in the "Job".

	Shoulder: Flat
	Shoulder: Medium
	Shoulder: Steep
	Links: off

	Links: on
Anchor position	Set anchor position Sets the anchor position, where the laser head moves to.
Snap marker	Create snap marker Use snap markers as guides for positioning the designs on the working area. Set the x and y-Values in the "Job" or drag it to the desired position.

7 PRODUCE SCREEN

Overview

The produce screen displays the currently executing job, the queue on the left, and a preview of the job.

Start a laser job by clicking [Play] and confirming on the laser machine.

Abort by clicking [Stop], pause by clicking [Pause].

Keyboard shortcuts

Keys	Operation
<?>	Show/hide help
<g> + <?>	Show/hide advanced help

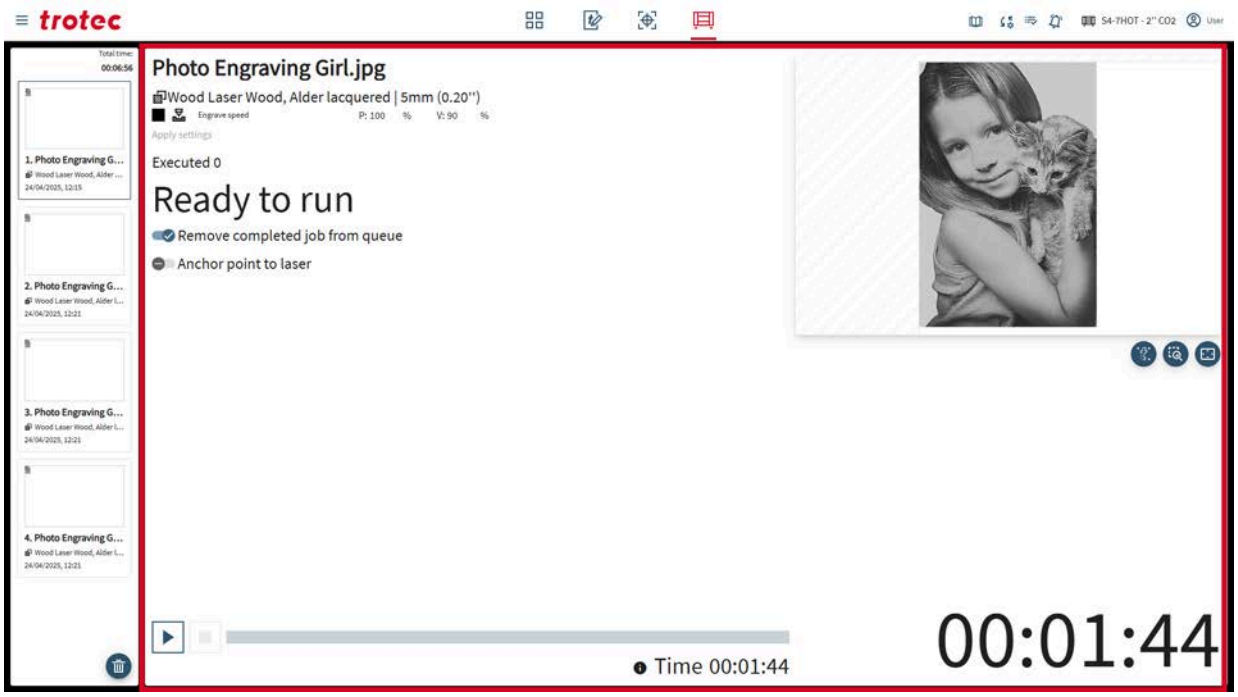
7.1 Queue

At the top of the queue, the remaining total time for all jobs in the queue gets displayed.

For each job, its date and time of queueing gets displayed.

 Clear queue

7.2 Job



Selected job

For the currently selected job, users can see:

- The selected material and its notes
- The selected effect and its parameters

For every queued job, the "basic material parameters" can be adjusted on the Produce Screen, without changing them in the material database.

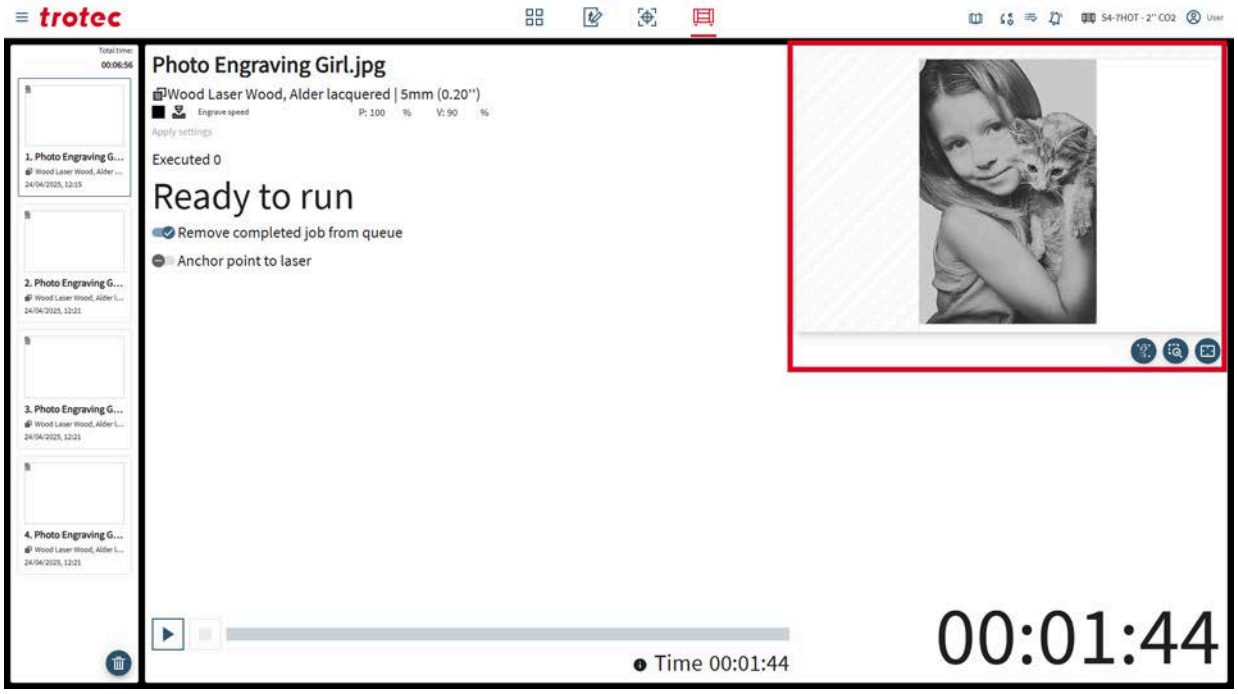
If multiple jobs are processed into one job, the job count gets diplayed (see "Job parameters").

Progress bar

At the bottom, the progress bar and the estimated remaining time of the currently running job gets displayed.

The job can be started, paused or stopped.

7.3 Preview



	Enable table camera
	Reset zoom of preview
	Fullscreen preview

8 CONTACT

Help Center

- To resolve any issues and find possible solutions, refer to Troubleshooting. **Link:** Trouble-Shooting
- See also the Help Center. **Link:** Help Center
- See also "Frequently Asked Questions" about Trotec Ruby®. **Link:** FAQs

Technical Support

If you have any questions, please contact our experienced technical support team in your area.

Global service contact details and further information can be found on the help pages of our website under "Service": **www.troteclaser.com**

When you call, stay close to the machine and have the following information to hand:

- During which work process did the problem occur?
- What you have done so far to correct the problem?
- Serial number (see "Data plate").
- Error code.

Locations / Sales

You can find the location search and detailed information about our locations on our website under "Contact", "Location search": **www.troteclaser.com**