



Quick Start Guide

Sintratec Kit

Quick Start Guide

Version 1.0

This **Quick Start Guide** contains an overview about how to setup your Sintratec Kit step by step. The document itself does not contain all the manuals. It is merely an instruction on which steps have to be taken and where more detailed documents can be found.

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Support

If you run into any kind of problem during the setup, you will find answers and direct support in our Customer Portal.



Customer Portal

This document is only the Quick Start Guide, you will find more detailed documents in the Customer Portal. If you need support you can open a ticket, describe your problems and upload photos.

You received your login credentials by email. If you haven't received any, please check your spam folder or write an email to support@sintratec.com.

Customer portal:	portal.sintratec.com
Login name:	Your Email address
Password:	Sent to your Email address

Before Receiving Your Sintratec Kit

There are a few things you can do before receiving your Sintratec Kit:



Computer

You will need a computer with the following specs:

- One free USB Port
- 64bit Windows 7 or later
- Internet Connection



Tools

Make sure you have the following tools readily available before starting the assembly:

- Scissors
- Allen Wrench
- Power Screwdriver (recommended)



Powder

2 Liters of Sintratec Powder come included with your Kit. This will get you started but to make sure you don't run out of powder, you may buy more in our [Shop](#).



Health & Protection

To handle the Sintratec Kit and its powder safely you will need:

- Laser Safety Glasses (Included in Sintratec Kit)
- Latex Gloves
- Dust Filter Masks

We recommend to regularly check our Shop for new products like powders and accessories.

shop.sintratec.com

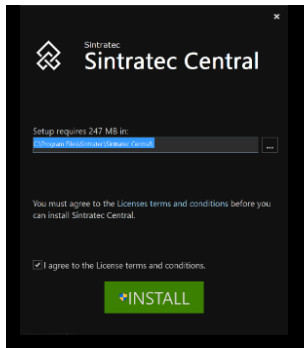
Getting the Software

You can download, install and get to learn the Sintratec Central even before receiving your Kit. This way you will be able to immediately start using the printer after assembling it.

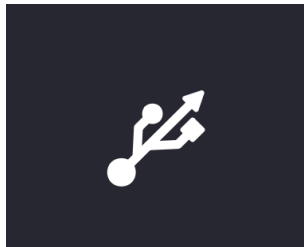


1. Download the latest **Sintratec Central** for your OS at

sintratec.com/about/downloads



2. Install the Software by running the downloaded file.
 - a. Choose the following installation path:
C:\Program Files\Sintratec\Sintratec Central
 - b. Agree to the License terms and conditions
 - c. Allow the Sintratec Central Installer to make changes to your system
 - d. Start your Sintratec Central by running the Central Launcher, found in your Start Menu or here:
C:\Program Files\Sintratec\Sintratec Central\Central_Launcher.exe



3. Install the USB Driver for your Kit:
 - a. Startup Sintratec Central
 - b. Find the USB Drivers in your Sintratec Central Main Menu:
Support > USB Driver for Windows
 - c. Extract and run the downloaded .exe file
 - d. Allow the installer to make changes to your system



Updates:

You don't need to worry about updates. As long as you have a working internet connection, Sintratec Central and your Kit will always be up to date.

If you are using a computer without constant internet connection, make sure to check Sintratecs download page for new versions on a different computer.

Always use the **Sintratec Central Launcher** to start the program! The Launcher automatically updates your Sintratec Central and can be found here:
C:\Program Files\Sintratec\Sintratec Central\Central_Launcher.exe

Don't pin the application to your taskbar once it is launched. If you do so, the Application will not update anymore.

Assembly

Please download the **Assembly Guide in the Customer Portal**. You will need it to assemble your Kit. There are also photos for every step. The assembly takes approximately 4 days for one person and should be done in the following order:

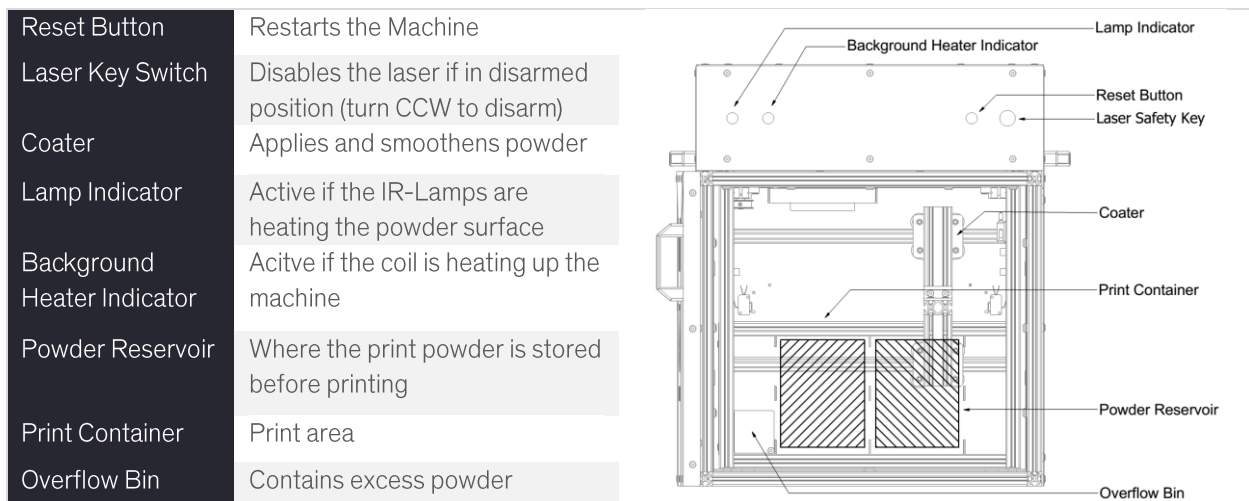


0. Best Practice
1. Door
2. Base
3. Core
4. Lamp
5. Hat
6. Electronics
7. Initial Commissioning

Please read the **Best Practice Document** before you start to assemble. In the folder Pictures you'll find helpful images for every step of the assembly.

We recommend you regularly check for updated versions of the assembly guide in the Customer Portal.

Machine Overview



Fill Your Kit with Powder for Your First Print

Before starting, make absolutely sure you have followed all the instructions off the **Initial Commissioning** guide.



Start your **Sintratec Central** application and connect your Kit via the provided USB cable. The printer is automatically detected and connected.

If you don't already have the application, follow the steps in the **Getting the Software** section of this document.

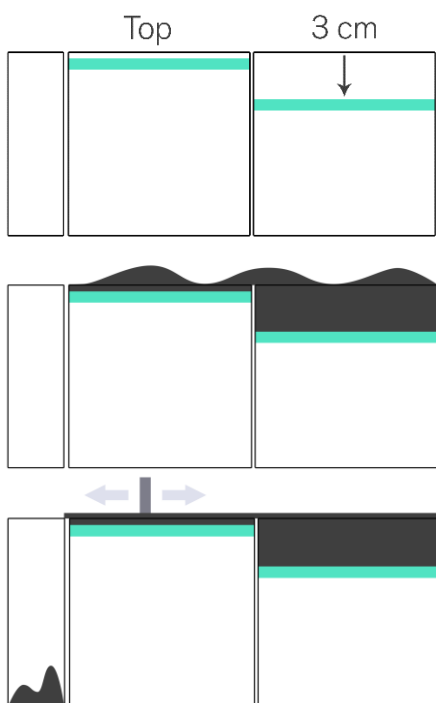
In Sintratec Central, navigate to **3. Powder**.



By clicking on the up and down arrows you can move the powder platforms of your printer in a desired position. Use the single arrow for small steps and the double arrow for bigger steps.

The right powder platform is the **Reservoir** and holds the fresh powder.

The left powder platform is the **Print** platform and will be printed on.



Positioning the Platforms:

For your first print you will need about 3 cm of powder. Move the print platform to the top, while the reservoir platform should be about 3 cm below the very top position.

Powder Refill:

Evenly pour the Sintratec Powder onto the **Reservoir** platform. When full, also pour some on the **Print** platform. Make sure the surface is as level as possible before moving on.

Smoothen Surface:

To make the surface perfectly flat and ready for printing, use the **Apply Powder** button. The powder coater will smooth the powder surface and drag excess powder into the overflow bin (left). Repeat the apply powder move until you have a perfect surface without holes. If you keep having large dents in your surface, pour some more powder.

Placing Your First Print

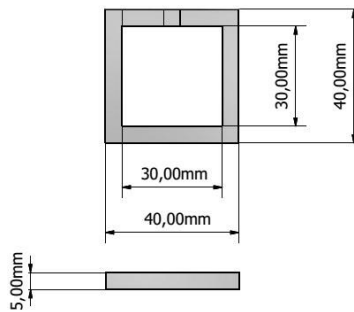
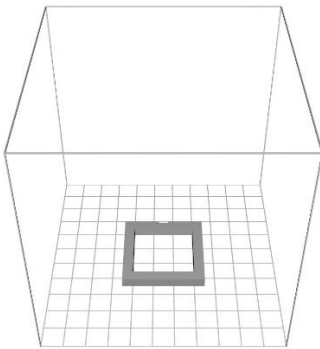
Before starting, make sure you have followed all the instructions in the **Initial Commissioning** guide and filled up your machine with **sufficient powder**.



Start your **Sintratec Central** Application and connect your Kit via the provided USB cable.

If you don't already have the Application, follow the steps in the **Getting the Software** section of this document.

Navigate to **4. Print** and locate the **Calibrate Button**. Once the calibration window opened, click **Load Calibration Print**.



Calibration 3D Model:

For your first print, the 3d model was automatically loaded into **1. Place**. The model is a calibration shape which will allow you to inspect the results of your first print closer.

For this print, we recommend you don't move or tilt the model.



Choosing the right Parameters:

Navigate to **2. Parameters**. Here you can select custom parameter sets, suited for your powder or define your own.

For this print, choose the default values for your powder and click **next**.

☒ **Show preview**

Checking this box will allow you to optionally inspect the predefined laser path for each layer in **Preview**



Preview (Optional):

Navigate to **Preview**. You will see one layer at a time of your print. By dragging the slider you can navigate through all the layers.

Each layer contains multiple laser path lines which will later be burned onto the powder surface.

We recommend you always check the **Preview!** If your file was faulty there might also be misplaced laser path lines. If you detect this before the print fails, you can save time and money.

Your First Print

Before starting to print, make sure you have followed all the instructions in the **Placing Your First Print** guide and filled up your machine with **sufficient powder**.



Navigate to **4. Print** and click the **Start Print** button and turn the **Laser Safety Key** into the armed position. Sintratec Central will start uploading the print file to your machine, this will take a few seconds.

Beyond this point the process is automatic and does not need any user interaction.
Do not forget to turn the **Laser Safety Key into the armed position!**



Warming up the Machine

First the Kit will need to reach printing temperature. This will take several minutes to hours. The Central displays the remaining warmup time.

If you are an experienced user and you know that the machine is sufficiently hot, you may skip this step.
If you skip without reaching the required temperature, the print quality will be negatively affected!



Warming up the Powder

The machine now lays down several hot powder layers. The hot powder layers will be the bed on which the print is built. A good and warm powder bed increases the print quality.

If you are an experienced user and you know that the powder is sufficiently hot, you may skip this step.
If you skip, the print quality may be negatively affected!



Sintering

In this process the laser selectively melts the powder layer by layer and thus creates your first printed 3D model.

The powder surrounding your model does not melt and can be mostly reused.



Cool Down

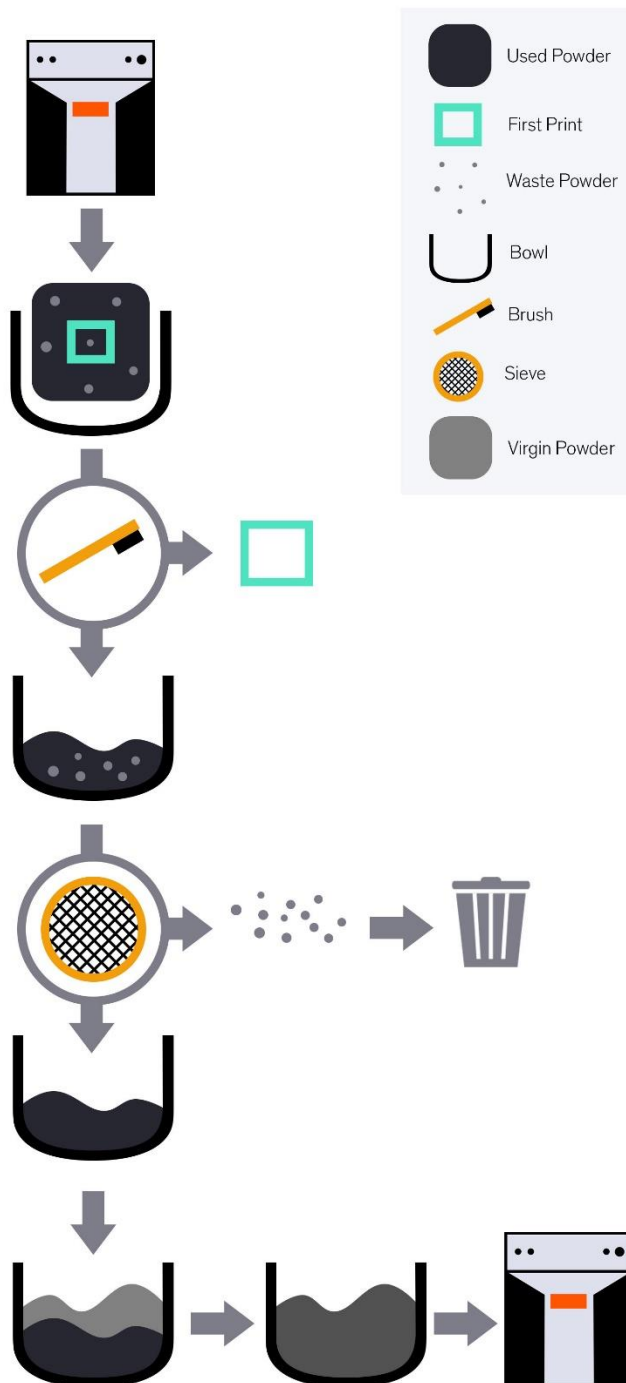
To complete the print process, the printed object is covered with powder to ensure even cooling of the part. Then the machine slowly lowers the temperature until it is safe to unload it. When the printer leaves the cool down mode and becomes idle, the print is done.

After the print, do not forget to turn the **Laser Safety Key into the disarmed position!**

Post Processing of Your First Print

Warning

Before unloading the Sintratec Kit, make sure the machine has left the cool down mode and is idle and the Laser Safety Key is in the disarmed position. Wear gloves and a dust filter mask. If the machine is still hot, be sure to let it cool down and not to touch any hot surfaces.



Health & Protection

When working with powder, always wear protective gloves and a dust filter mask!

Unload Sintratec Kit

To empty your machines print chamber, use a scoop to transfer the powder from the Kit to a clean bowl. Suitable powder vacuums improve the speed of the procedure and are recommended if you print frequently.

Clean the Print

Using a steel wire brush, separate the print from surrounding powder. The more powder you remove the more powder you can recycle and use for later prints.

Sieve the Used Powder

Used powder may contain small amounts of waste powder. Waste occurs when powder particles bake and stick together. These have to be removed by using a sieve. We recommend a mesh 100 sieve (150um).

Refreshing the Powder

Because of the high temperature stress during a print, used powder does not perform as well as virgin powder. It is important to refresh the powder by mixing it with virgin powder. For optimum results the favored ratios are:

Sintratec PA12 Black	30% Used Powder 70% Virgin Powder
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Refreshed Powder must be mixed thoroughly to achieve a homogenous powder distribution before refilling your Sintratec Kit.

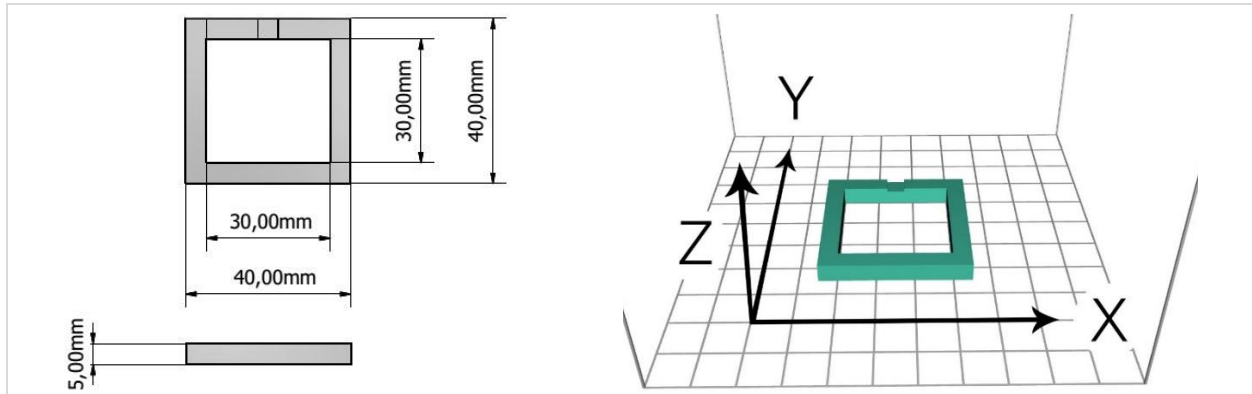
Analyze and Refine Your Scaling



To fine tune your printing results we have provided a digital scaling method.

First you will need to accurately measure the calibration print you have just printed and compare it to the target size.

Target Size and Orientation



Calibration of your Sintratec Kit

To calculate and store your new calibration values, navigate to **4. Print** and click on the **Calibrate** Button.

To get to the Scaling Calculator click on **Calculate**.

Calculate Digital Scaling

Calculate new scaling (accounts for currently set scaling):

x expected: 40 x measured: 40.4

y expected: 1 y measured: 1

z expected: 1 z measured: 1

z scaling should be kept to a minimum

Calculate new scaling factors

In the example above the measured part size in x-direction is 40.4mm when it should have been 40mm. If the other dimensions also vary, fill the values in, otherwise leave them at initial value 1. Confirm by clicking **Calculate new scaling factors**.

Digital Scaling

x -0.99 %

y +0.00 %

z +0.00 % keep zero

click send below, to upload scaling factors to your Kit

Send scaling to Kit Calculate Reset Sliders

The new values are automatically calculated by also taking the previous scaling values into account.

To accept click on the **Send scaling to Kit** button and the values will be stored on your machine.

Once you have found the perfect digital scaling for your Sintratec Kit, it is good practice to write it down as a **backup**. Even though the machine stores the values, in unforeseen cases they might get lost.