ZYYX Pro II

User Manual - English - v2022.12A

ZYYX Labs

ZYYX article number: D2.0412

User's Manual

The ZYYX Pro II
The fume free desktop 3D Printer

ZYYX Labs

NOTICE

This document is copyrighted and contains proprietary information that is the property of ZYYX Labs AB. This document is subject to change without notice. ZYYX Labs AB reserves all rights to make changes in the ZYYX Pro II 3D printer and the information in this document without prior notice.
ZYYX Labs AB assumes no responsibility for any errors or consequential damages that may result from the use or misinterpretation of any information contained in this document.

Copyright © 2021-2022 by ZYYX Labs AB. All rights reserved.
Content of this document may not be reproduced for any other purpose than supporting the use of the ZYYX products without prior written consent of ZYYX Labs AB.

Microsoft and Windows are trademarks of Microsoft Corporation, registered in the United States and other countries.
Apple and OS/X are trademarks of Apple Inc., registered in the U.S. and other countries.
Linux is a registered trademark of Linus Torvalds.
Ubuntu is a registered trademark of Canonical Ltd.

Contact Information -
World Headquarters

ZYYX Labs AB
Britta Sahlgrens gata 1
SE-421 32 VÄSTRA FRÖLUNDA
Sweden

Phone: Int. +46 31 799 57 17

E-mail
sales@zyyxlabs.com
support@zyyxlabs.com

Shipping Address:
ZYYX Labs AB
Britta Sahlgrens gata 1
SE-421 32 VÄSTRA FRÖLUNDA
Sweden

Web site: **www.zyyxlabs.com**

This page is intentionally blank.

Table of Contents

1. Getting Started 2
1.1 Specifications 2
1.2 Unpacking Your Printer 3
1.3 What Is Included? 4
1.4 Before Starting the ZYYX Pro II for the First Time 6

2. Product Overview 7
2.1 User Interface 9
2.1.1 Keyboard Operation 9
2.2 The Extrusion Lever 9
2.3 Setting Up the ZYYX Pro II Printer 10
2.4 Setting Up the Simplify3D Slicer Software and ZYYX Pro II Profiles 12
2.5 Slicing a First Print File 13
2.6 Printing Preparations 15
2.7 Printing from SD Card 15
2.8 Printing from ZYYX Connect Web Interface 16
2.8.1 Set Printer to Communicate with ZYYX Connect 19
2.9 SwiftTool24s 19
2.10 Swapping SwiftTools 20
2.11 Filament Handling 21
2.12 Tips and Tricks 22
2.12.1 Maintenance 23
2.12.1.1 Build-Plates 23
2.12.1.2 Ultra Air Filter Cartridge 23
2.12.1.3 Monthly Cleaning Routine 23
2.12.1.4 Adjusting Z-Axis Offset 24

3. Troubleshooting 24

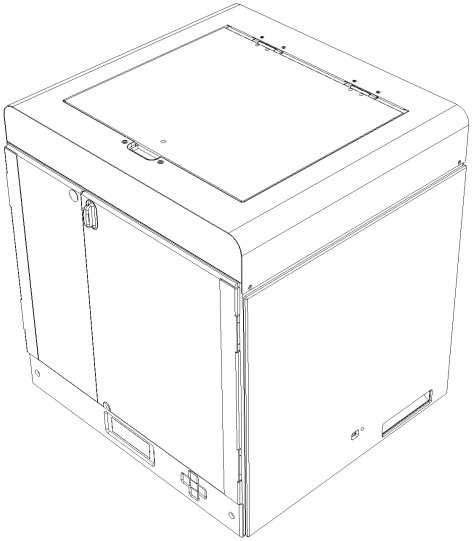
4. Warranty 24

5. Standards and Compliances 26
5.1 Manufacturer Declaration of Conformity 27
5.2 Filament Safety Data Sheet (SDS) 28

Index 29

1 Getting Started

1.1 Specifications

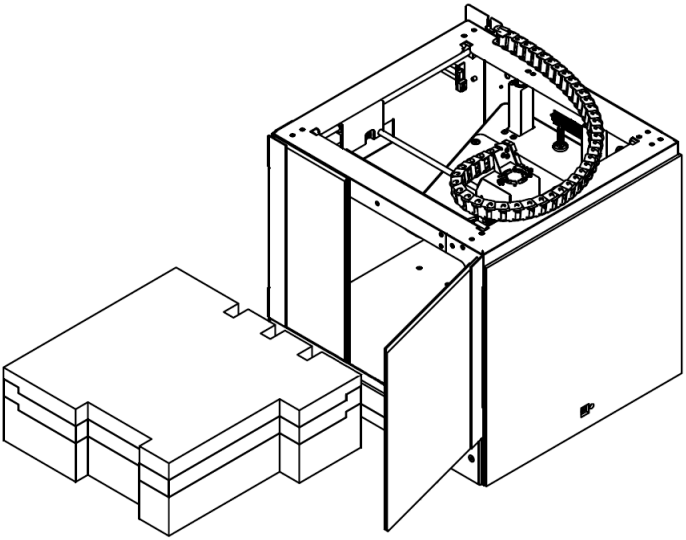


Print technology	Fused Filament Fabrication (FFF)
Build volume	285×235×210 mm
Filament diameter	1.75 mm
Nozzle diameter	Variable with exchangable SwiftTool
Max resolution	50 µm layer thickness, 11 µm XY positioning
Speed	up to 150 mm/s print speed, 200 mm/s travel speed
Printing temperature	100 - 275 °C
Chamber temperature	room - 75 °C
Filament types	proNylon, proCarbon, proGlass
Additional filament types	ZYYX-PLA, ZYYX-ASA, ZYYX ABS, ZYYX-FLEX, ZYYX-PETG, ZYYX-PETG-CF (available with optional with Multi-Material Extension Kit)
Interfaces	USB, SD Card, Ethernet
Stepper motor type	1.8° Step angle, 1/16 micro stepping
Build surface (plate)	MagFlex glass build-platform with spring-steel top layers.
Firmware	Custom Sailfish Open Source FW
Desktop software	Simplify3D or Cura
Computer requirements	Intel Pentium 4 or higher processor, 4 GB or more of RAM (8 GB recommended), Windows Vista or greater (32 or 64 bit), Apple OS X 10.7 or later, Ubuntu Linux 14.04 or later (32 or 64 bit). OpenGL 2.0 capable system
Supported file types	STL, X3G, 3MF
Product size (W×H×D)	44×46.6×45.7 cm (61 incl. filter)
Product weight	25.5 kg

1.2 Unpacking Your Printer

1. Place the box on the ground with text facing up and open it up, by removing the tape. Be careful with sharp tools.

2. Remove the top cardboard plate and then remove the foam parts securing the printer inside the box.
3. Find the handles in the printer sides near the bottom and lift out the printer out of the box.
4. Place the printer on a sturdy, flat surface and carefully remove all packaging materials, including the zip ties around the printhead belts, holding the printhead to the front frame of the printer.
5. Remove the foam blocks inside the printer. Start with the small foam part near the back pressing down the build triangle platform. Then lift the platform and find a block inside to the right behind the spool holder, as it locks the big part with the filter. It needs to be moved up above the metal spool holder frame. After that you can easily get out the remaining big block. Embedded in the top foam you will find the air filter box, power cable, and optional toolkit box. Below that you will find the MagFlex build-platform and the print layers.



Please keep all packaging materials, as they provide the required means of transporting your printer, should the need arise.

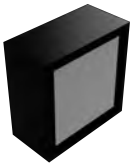
1.3 What Is Included?

The product comes with the following accessories. If anything is missing or damaged, please contact your sales representative from whom you purchased the printer.

SD card

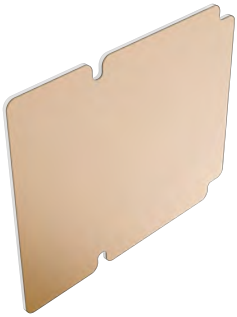
USB cable

Power cord



Ultra Air filter and filter box

Magnetic build-platform



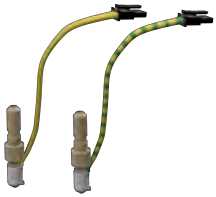
Standard build-layer Nylon/PA based filament

Multi-material build-layer

You will also find this manual. The Simplify3D license will be sent to you via email. The SwiftTool24 Carbon0.6 comes pre-installed.

Optional parts

Toolkit with tools



Multi-material SwiftTool24 set

Magnetic SwiftTool24 accessory holder

Perforated build-plate

ZYYX Connect web cam

1.4 Before Starting the ZYYX Pro II for the First Time

Before using the ZYYX Pro II for the first time, make sure to remove all transport seals. See *Unpacking Your Printer* 3 .

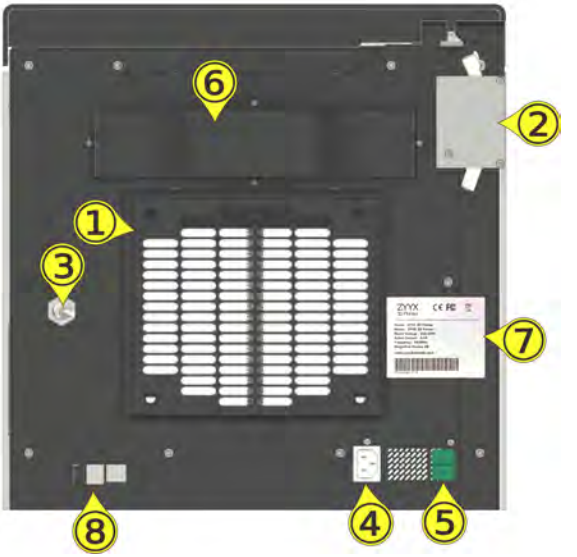
Note that during printing, the SwiftTool24 nozzle and SwiftTool24 nozzle heater are very hot (up to 270 °C) and will burn if touched. We highly recommend keeping the lid and doors closed during the whole printing process for all filaments requiring a heated chamber.
Please also allow time to cool down before making a SwiftTool24 exchange.
See section Swapping SwiftTools 20 .

Please also note that metal components within the printer body will become warm (up to 60-70 °C) when the heated chamber is used. Even after printing, these parts - such as the x/y-axes rods, interior metal frame, z-screw, etc. - will be warm until the interior has cooled. Therefore, we highly recommend that you allow the interior to cool before touching any metal components and, if you must touch a metal component before the printer is completely cool, that you do so with caution.

2 Product Overview

FRONT/SIDE VIEW

#	Name	Description Front Side
1	OLED display	ZYYX Pro II user interface display and control menu
2	Menu buttons	Used to control the user interface. See section Keyboard Operation 9
3	SD Card slot	Uses an SD Card with print files (located inside right door)
4	USB port	Interface to computer. Primarily used for firmware updates Next to the USB port there is a hardware reset button. This is used when doing firmware updates
5	Carrying handle	Handle for carrying the ZYYX Pro II
6	Doors	Can be opened to access the print volume, removing the build-plate after the print is finished and also for accessing the SD card slot
7	Top cover door	The door in the cover can be opened for easier access when changing SwiftTool or feeding filament

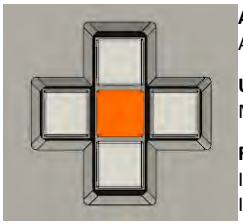


BACK VIEW

#	Name	Description Back Side
1	Air filter container	Contains a fan and a replaceable ultra-clean air filter. The fan makes sure that all air exiting the unit passes the filter and is clean. The filter cartridge can be accessed by disconnecting the cable and then unscrewing the four screws to the left and right (see Air Filter Cartridge Ultra 23).
2	Filament monitor	Monitors if there is a problem with the filament or if the filament runs out. If that happens the print is paused, so that the problem can be corrected before resuming the print
3	Filament feed funnel	Attaches to the filament tubing which guides the filament on its way from the spool to the printhead extruder via the filament monitor
4	Power input	Connects to power wall socket via power cable
5	Power button	Powers on/off the ZYYX Pro II. Next to the power switch there is a fuse compartment.
6	Heater cover	This part contains the heater for the heated enclosure. It will be warm when printing with heated enclosure, up to 75-80 °C
7	Product label	Displays detailed information about the product and model as well as certification labels.The serial number is found at the bottom below the QR code
8	ZYYX Connect Port	Connectors for ZYYX Connect network interface (unless opted out)

2.1 User Interface

2.1.1 Keyboard Operation



Activation middle button (orange)
Activates the selected menu item.

Up and Down buttons
Moves the marker (>) up and down

Right button
In Menu view: Nothing
In specific screens, as shown on screen

Left button
In Menu view: cancels or exits a function

2.2 The Extrusion Lever

On top of the print-head you will find a red lever - this is the Extrusion Tension Lever.
With this you adjust the tension the drive gears put on the filament. There are one open position and 5 active positions as described below.

Position 0

When facing the print-head push the lever all the way to the left.

Use it to load or unload filament without pressure from the drive gears.

Position 1

When facing the print-head push the lever all to the left and then 1 position to the right.

Use it to work with rigid materials.

Position 2

When facing the print-head push the lever all to the left and then 2 positions to the right.

Use it to work with semi-flexible materials
Shore hardness of ~95A

Position 3

When facing the print-head push the lever all to the left and then 3 positions to the right.

Use it to work with flexible materials Shore hardness between 85A and 95A.

Position 4

When facing the print-head push the lever all to the left and then 4 positions to the right.

Use it to work with soft materials Shore hardness between 75A and 85A.

Position 5

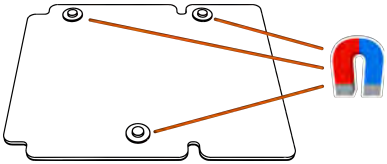
When facing the print-head push the lever all to the left and then 5 positions to the right.

Use it to work with very soft materials Shore hardness between 60A and 75A.

2.3 Setting Up the ZYYX Pro II Printer

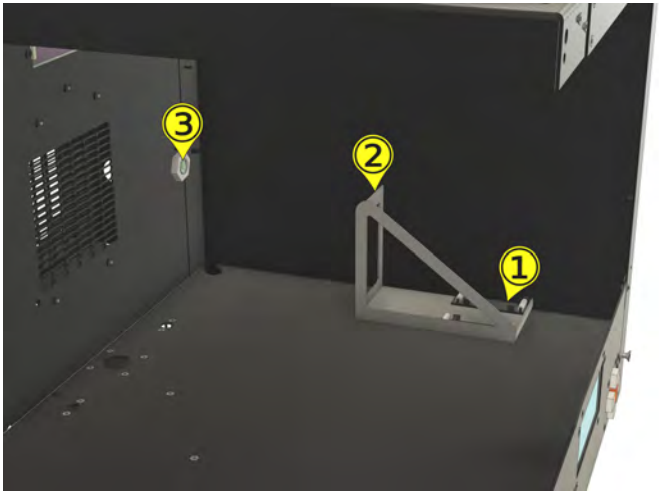
Insert Build-Platform

Place the build-platform with suitable MagFlex top plate in the printer. Make sure that all three magnets under the build-plate are positioned correctly in the circular recesses of the triangular build-plate holder.



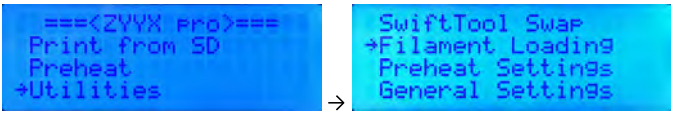
Installing Filament - STEP 1

Turn the power on. Open the doors. Place the filament spool inside the printer on the spool support (1). Make sure that the filament is fed from the top of the spool over the stand edge (2). If fed from the bottom, please run the filament underneath the stand edge (2). Cut off any molten plastic from the tip of the filament string. Push the filament tip into the white funnel (3) at the back wall of the printer and through the feed tube until the filament string appears close to the printhead. The filament tip will eventually stop against the feeder wheel.

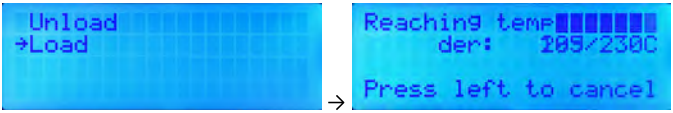


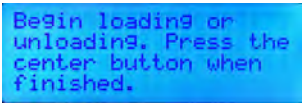
Loading Filament - STEP 2
By using the function buttons, perform the following steps to load the filament.

1. Choose Utilities → Filament loading



2. Choose Load → Wait for heating up. While the heating is in process make sure tension lever is set to the correct position.





3. When the message shown to the left appears on the LCD, push the filament some more. Stop pushing as soon as the feeder wheel is gripping the filament. Wait until the correct color plastic extrudes from below the SwiftTool24 nozzle and press the coloured center button to exit.

Now the printer is ready for printing.

Note! When unloading the filament, make sure to keep the filament wire tightly wound on the spool and fixate the loose end of the spool by using the holes/slots on the side of the spool. This to avoid tangling of the filament spool.
Also make sure to read up on and follow the filament handling instructions given in section Filament Handling 21 .

2.4 Setting Up the Simplify3D Slicer Software and ZYYX Pro II Profiles

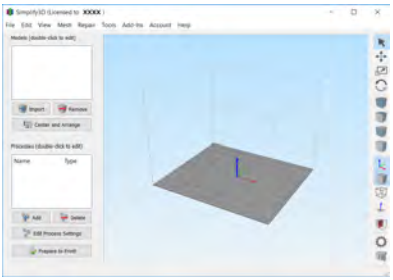
Below is a simple step-by-step overview of how to set-up the Simplify3D software.

1. Find e-mail with code for Simplify 3D
Find your Simplify licence email that you received from Simplify3D after purchasing a licence from ZYYX.

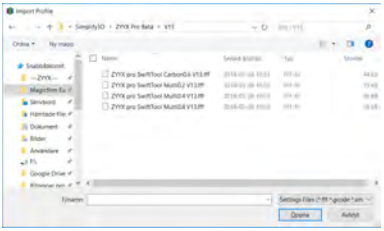
2. Downloading Simplify3D
Now go to simplify3d.com and login to your user account with the data you received in 1.
Follow the instructions given in the confirmation e-mail to download and install the software.
NOTE! Save your login name and password in a safe place, and make sure to share it with colleagues. You can always reset the password if you lose or forget it, **if** you still have access to the email used. If the reponsible person quit, and the email is deleted this may not be the case, so we recommend using a non-personal email address for the account. ZYYX has no access to your Simplify3D account, but we may have a record of the original e-mail used for registration.

3. Download ZYYX profiles
Go to www.zyyxlabs.com/profiles/ and download the correct Simplify3D print profiles for your printer.
Unpack the zip archive.

4. Start and initial setup of Simplify3D software
Start the Simplify3D software. A screen such as that shown to the right will appear. If installed correctly, your name is shown on top.
If requested for selecting printer click *Cancel*, and install profiles below.



5. Adding ZYYX profiles
Go to menu *File-Import FFF Files*, and select the files downloaded and unpacked in 3.
Select the files (one for each SwiftTool24 type that you will use).
Click open.



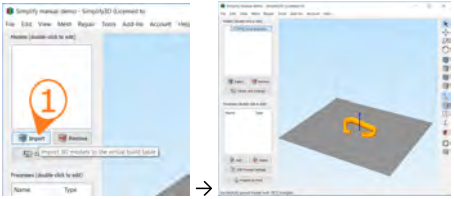
Simplify3D is now set up for use.

If you forgot your user name you can use this link to resend it:
https://cloud.simplify3d.com/account/username/forgot
If you forgot your password you can use this link to resend it:
https://cloud.simplify3d.com/account/password/forgot

2.5 Slicing a First Print File

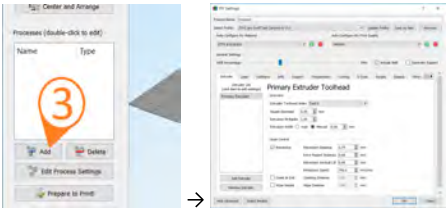
When the Simplify3D and the ZYYX profiles are installed you can "slice" your first print file.
"Slicing" is the process necessary to convert a 3D model into a file that can be understood by the 3D printer.

1. Adding a model
Click the Import button and select an STL or 3MF file that has been exported from your CAD software.
Click open.
In our example the ZYYX proCarabiner is used.
The model may be reviewed and manipulated using the Tool Bar options (listed vertically on the right side of the window).

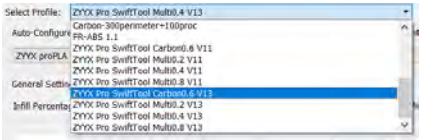


2. Placing the model on the print surface
Depending on how the STL/3MF file was exported, you may need to place it in a suitable position for printing.
Do this by marking a suitable surface on the model and pressing CTRL-L (=menu *Edit - Place Surface on Bed*). You may also use the *Center and Arrange* button.
Doing this wisely may save trouble and time when printing and reduce the need for support structures.

3. Adding a process and selecting profile
Click *Add* to see the FFF settings screen as shown to the right.



4. Selecting profile
Select the profile for the SwiftTool24 nozzle that you will use. In the example, the Carbon0.6 is chosen to print with proCarbon filament.
Please note that ZYYX Pro or Pro II profiles are not compatible with ZYYX+ or ZYYX Classic machines, and vice versa.



5. Selecting material / filament
Select the filament to use for your print. In the example proCarbon is chosen.
It may be useful to check the table in section Printing 15 to know what materials to use with which profile.

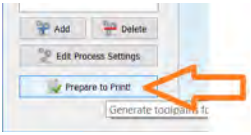
6. Other process settings
There are many different settings that can affect the print result. Most are automatically selected by the profile, but there are some important ones on top, as highlighted in the picture to the right.

Print Quality: Controls vertical resolution. The medium setting is usually sufficient. A fine quality print takes roughly twice the time to print compared to a medium.
Infill Percentage: Decides how much material will be used inside massive parts. A lower number gives faster prints, a higher usually gives stronger parts.
Include Raft: Adds a plate below the print. This is default for all ZYYX profiles and gives better adhesion and quality.

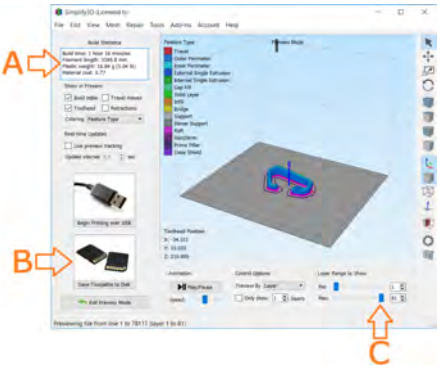
Generate Support: Add support if your model has flat overhangs or other complex structures that e.g. begins in free air, and has no natural attachment from the build-plate and all the way up.

Below these four settings, there are many more settings that may be useful for an expert user. Use of the ZYYX profiles optimizes all these automatically.
Click OK to close.

7. Creating the sliced model
Click the button *Prepare to Print!*.



8. Viewing the sliced model and saving print file
In this view, a preview is shown of what the print will look like. The sliced model can also be zoomed and rotated the result, just as in the previous 3D model view. There are also lots of other useful information as shown in the picture to the right.
A: Estimated print time, material use, and cost.
B: Saves the sliced model to the X3G format file for printing via the SD Card and to GCODE format for printing via the ZYYX Connect interface.
C: Allows a layer-by-layer preview of the print process.



Finish by clicking the B button and save the X3G and GCODE files to a known place. We suggest that the file name also includes information about material and SwiftTool24 size. The file name is limited to 32 characters, so a short code suffix like "-P4" for ZYYX-PLA with 0.4 SwiftTool or "-C6" for proCarbon with 0.6 SwiftTool allows more space for the description.

9A. Copying file to SD Card
Finish the process by copying the X3G file to the SD card. Go to the Printing 15 section to continue. There is also an option to use the optional ZYYX Connect interface.

9B. Copying file to the Network Interface
Alternatively you can finish the process by copying the print file to the web server page. In this case you do not copy the .X3G file but the .GCODE file to the web upload simply by dragging-and-dropping onto the web portal. Go to the Printing 15 section followed by the Printing from ZYYX Connect Web Interface 16 to continue.

More details on the Simplify3D software is found at www.simplify3d.com. A Simplify3D Quickstart Guide is found at www.simplify3d.com/support/quick-start-guide/.

Please note that damage occurring due to deviation from our provided profiles (including printing without a raft) will not be covered under ZYYX Labs's warranty policy.

Note! Due to limitations in the Simplify3D software it always ask you to save any profile settings that you have modified. Always click "No". If you by mistake click "Yes" we recommend that you to restore the ZYYX profiles by deleting and adding them again, as described in section Setting Up the Simplify3D Slicer Software and ZYYX Pro II Profiles 12.

2.6 Printing Preparations

The table below gives an overview of valid combinations that can be used for printing.

Filament type	Standard Build-plate (br/orange)	Multi-Material Build-plate (black)	Perforated Build-plate (white)	Heated Chamber	SwiftTool24s				Tension arm setting
					M-M 0.2	Carbon 0.4	Carbon 0.6	Carbon 1.2	
proCarbon	YES		OK	YES		YES	YES	YES	1
proGlass	YES		OK	YES		YES	YES	YES	1
proNylon	Small models		Recomm.	YES	YES	YES	YES	YES	1
ZYYX-PLA		YES			YES	YES	YES	YES	1
ZYYX-ABS		Small models	Recomm.	YES	YES	YES	YES	YES	1
ZYYX-ASA		Small models	Recomm.	YES	YES	YES	YES	YES	1
ZYYX-PETG		YES			YES	YES	YES	YES	1
Z-PETG-CF		YES				YES	YES	YES	1
ZYYX-Flex		YES			YES	YES	YES	YES	2
NinjaFlex		YES			YES	YES	YES	YES	3-4

Note! As a user it is important to keep track of:
1. the right build-plate and the right SwiftTool, as shown above.
2. Adjusting the tension arm when printing ZYYX-Flex or NinjaFlex.

The rest is taken care of by the ZYYX Simplify3D profiles.

Below, the recommended method of printing from the SD Card, is described. This is the most convenient solution, since it is more robust and frees your computer during the print. If you still want to print from computer via USB or control the printer that way, contact ZYYX at support@zyyxlabs.com, and we will send you drivers. For more convenience we recommend using the ZYYX Connect network interface. See section Printing from ZYYX Connect Web Interface 16 for details.

2.7 Printing from SD Card

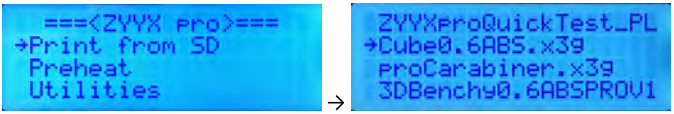
The ZYYX Pro II 3D printer uses the Simplify 3D Integrated Printing Software to generate the print file needed for printing. Please refer to Slicing Your First Print File 13 for details on how to create a print file.

To skip that process for now, the SD card comes ready and loaded with the proCarabiner model, so you simply need to load proCarbon filament (other filament types will not work with this file), place the PA MagFlex top layer (brown/orange) in the printer, and begin printing!

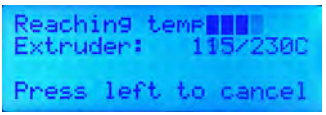
When a print file is stored on the supplied SD card, simply follow these instructions to print:

1. Starting the print

Choose *Print from SD* on the printer menu and then choose the print file with the Up/Down buttons. Press the coloured mid-button to start.

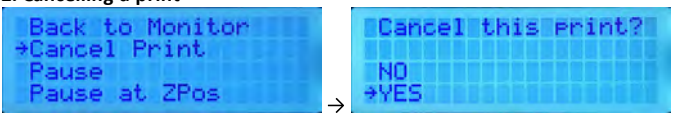


The printhead will heat up and then start printing your model.



Note! If displaying the temperatures, please note that the chamber temperature display does not go below 30 °C. This means that if it displays 30 °C the chamber temperature is 30 °C or lower.

2. Cancelling a print



To cancel the print, press the Left button to bring up a selection of actions and select *Cancel Print*.

3. Print finished

When the print is finished, open the doors and remove the build-plate. Bend the MagFlex top layer so the print releases from the top layer. You may also use the Spatula from the toolkit or a similar tool to remove the print from the build-plate. For the two thicker top layers, the toolkit spatula method is recommended.

Note! Be careful when using the sharp Spatula. Recommended practice if print is big or difficult to break away from the build-plate is to put the build-plate vertically with one of its edges onto the floor and push with spatula between the build-plate and the print from above. Note the direction of the angled edge of the spatula and put the flat side towards the build-plate and the angled edge towards the print.

2.8 Printing from ZYYX Connect Web Interface

Connect a network cable to the Ethernet port on the back of the printer chassis and power on the printer.

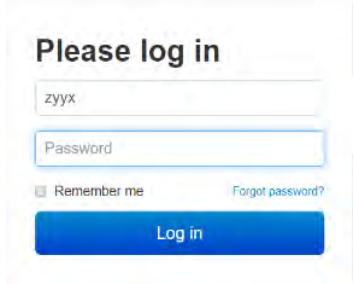
After a few seconds the IP number will be shown on the printer screen.

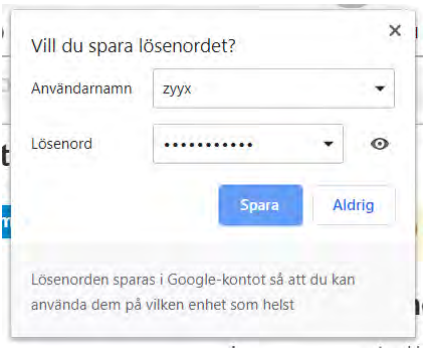
If the IP number is not being displayed, first set Serial I/O (see below).

You can alternatively use a network tool to find the IP number. Easiest is to use the freeware tool “Fing” on your phone (available for both iPhone and Android), see picture to the left.

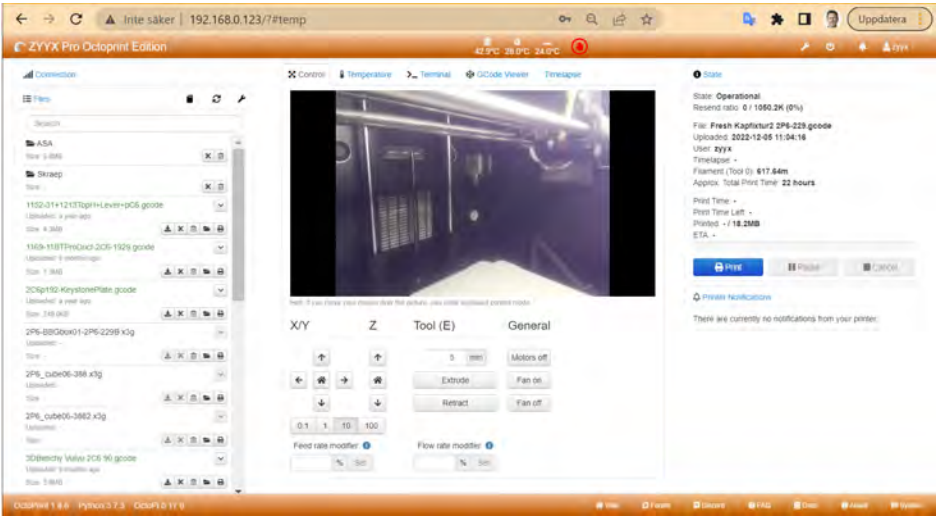
Alternatively you can use Bonjour Browser, ZeroConf, or similar software. Look for zyyx-pro2-XXXXX, where XXXX is the last four or five digits of the serial number.

Then start a web browser and go to the ip number you found in previous step, in this case 192.168.10.188. Login with the credentials you find on a label on the left side of your printer. In case your label is missing, the user name is “zyyx” and as password your printer’s serial number, found on the back of the printer.
It may also be worthwhile to save the password for next time.





Below you can see the main Octoprint user interface. If you have the optional camera, you will see the print-bed image in the middle section.

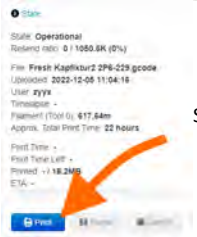


Next step is copying the print file to ZYYX Connect. In this case you take the .GCODE file to the web upload simply by dragging-and-dropping onto the web browser window. Do not use the .X3G file, as this is used only for the SD Card print process.

1. Starting the print

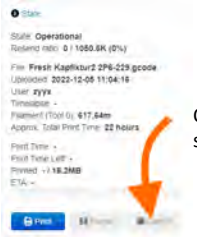
After this you mark the uploaded file in the list on the left side of the screen, and then you either:

Start the print by the printer icon in the file list, as shown left.



Start by clicking the blue Print button shown on the right side of the screen.

2. Cancelling a print



Cancel the ongoing print by clicking the blue Cancel button shown on the Status section.

2.8.1 Set Printer to Communicate with ZYYX Connect

For the printer to communicate with the ZYYX Connect, the following menu setting needs to be set.

Go into the printer menu under "Utilities" > "General Settings" > “Serial I/O” setting and adjust it to “UART1”, as shown below.

The printer will now talk with ZYYX Connect, but note that the USB port is not open for communication with the printer.

2.9 SwiftTool24s

The SwiftTool24 system is a unique feature of the ZYYX Pro II printer. It allows a quick-and-easy switch of nozzle size or replacement of a clogged nozzle.

There are four different SwiftTools, of which 1 or 2 comes standard with the ZYYX Pro II, depending on the model:

SwiftTool Carbon0.6 (yellow/green)
This is the standard size 0.6 mm hardened steel nozzle that can be used with any filament but that is optimized for the use of abrasive filaments, like proCarbon, proGlass, or PETG-CF. These are strong carbon fiber and glass fiber reinforced nylon filaments suitable for heavy duty applications. Note that these materials only should be used with this kind of nozzle.

SwiftTool Carbon0.4 (yellow)
This is the smaller size hardened steel nozzle that can be used with any filament but that is optimized for the use of abrasive filaments, like proCarbon, proGlass, or PETG-CF. This size is suitable for the softer filaments, like ZYYX-PLA, ZYYX-ASA, ZYYX-PETG, ZYYX-Flex, and proNylon.

These are optional SwifTools, that you can expand the ZYYX Pro II printer with.

SwiftTool Multi0.2 (red)
This is the high resolution nozzle. It is suitable for the softer filaments, like ZYYX-PLA, ZYYX-ASA, ZYYX-PETG, ZYYX-Flex, and proNylon, to make smaller size models with high detail level. Note that this nozzle never should be used with proCarbon, proGlass, or PETG-CF.
This SwiftTool is 4-8 times slower than Carbon0.4 when printing the same model.

SwiftTool Carbon1.2 (blue)
This is the low resolution hardened steel nozzle that can be used with any filament but that is optimized for the use of abrasive filaments, like proCarbon, proGlass, or PETG-CF. It is suitable to make larger size models with lower detail level.
This SwiftTool is 4-8 times quicker than Carbon0.6 when printing the same model and may be used for quick draft prints.

Tip! Memory rule: Traffic light, Red=slow, Yellow=middle, Green/Blue=fast.

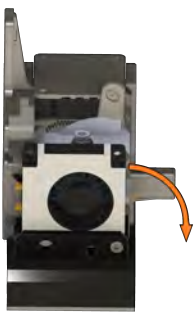
2.10 Swapping SwiftTools

To replace a SwiftTool it is recommended to use the built-in SwiftTool swap function. You will find it on the main menu of the ZYYX Pro II. It guides you with an on-screen step-by-step instruction and also helps by heating and cooling at the right times.

Note! Make sure to hold the SwiftTool24 by the body, do not pull the cable to remove it. The cable may break if too much force is used, or it is bent excessively.

If you still want to do it manually, a step-by-step manual guide is given below.

1. Start by unloading the filament using the ZYYX Pro II main menu. If this for some reason is not possible, you may need to cut the filament using a pair of snippers.
2. Allow the SwiftTool24 to cool down for a few minutes, since the next step requires you to hold the SwiftTool.
3. Locate the printhead and flip the front part to the right as shown below. Find the 2.5 mm Allen key (hex tool), in the magnetic SwiftTool24 holder inside the printer.



4. Insert the 2.5 mm Allen key (hex tool) into the rightmost hole in the plastic fan holder. Unscrew counter-clockwise until the screw hits the front wall of the fan holder or you feel that it does not move out any longer. About 15-16 turns. Then go back one turn to make sure the screw does not fall out.
5. Disconnect the SwiftTool connector by squeezing the lock tab on the SwiftTool electrical connector and then pulling straight out.
6. When 4 and 5 are complete, the SwiftTool can be grabbed from below and pulled straight down to come loose. It may be a little difficult first time to pull out, since the click mechanism may restrict. Never pull the wires!
7. Put the replacement SwiftTool in place by using the opposite procedure.

Note! Make sure to push the SwiftTool up until you feel the click before tightening the lock screw, or the SwiftTool may be mounted too low. If mounted too low, this will result in printing problems.

2.11 Filament Handling

Please be aware that ZYYX Pro II Engineering materials, like other nylon-based filaments, must be kept as dry as possible to produce the best printing results. If not, stringing and other printing defects will occur. To prevent moisture build-up we therefore suggest that, when not in use (in a heated machine), the filament spool is stored in the provided vacuum bag together with a dehumidifier bag, and that the pump is used to evacuate excess air.

In summary, the ZYYX Pro II Engineering materials can be stored safely in the following places:

- In the original vacuum sealed package.
- Inside the ZYYX Pro II as long as the heating is on (during print or when Preheat function is activated).
- In a re-sealed OfficeSafe™ bag with dehumidifier bag and vacuum by the use of the OfficeSafe pump, see below.

Verifying Status of a Filament Spool

Please note that the silica gel beads (aka desiccant) of the dehumidifier bag turn dark green when they no longer can absorb moisture. As long as they are brownish they still work fine. Please also note that the vacuum bags will not maintain their seal if there is the slightest gap in the top. Therefore, it is recommended that you check on the bag a day after sealing to ensure that no air has started to leak in.

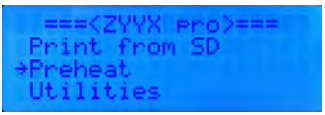
If a spool has been left out for a few hours, it may be restored by drying in a low temperature owen (at 50-70 °C) or in a dedicated filament dryer for a couple of days. It can also be dried inside the printer chamber using the preheat function of the printer.

If the dehumidifier bags changed colour to dark green, they can be restored by drying them. This can be done in an owen, dryer, or inside the heated printer chamber. The coulour will then return to brownish/yellow.

2.12 Tips and Tricks

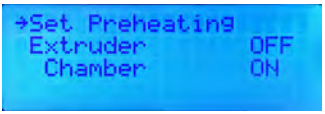
Using Preheat

It can take some time to heat up the chamber before starting the printing process.
To speed this up, the Preheat function on the main menu can be used to heat the chamber beforehand.
This is how:
1. Choose *Preheat* → *Set Preheating* screen is now shown



2. Select *Chamber* and press the Mid button → *Chamber* setting should now be ON

3. Select *Set Preheating* and press the Mid button → The heater fans will turn on



4. Exit the menu by pressing the Left button twice

There is also a setting for the preheat temperatures. You will find this under Utili■

Max file length and file type

The system supports a max file length of 32 characters of which 16 is visible simultaneously on the ZYYX Pro II display.
It is recommended is to keep the important info in the beginning of the file, so that the right file is easily found.
A good practice is to add info about material and SwiftTool size in the file name, since every material is unique and a sliced file works only for that material. The file name is limited to 32 characters, so a short code suffix or prefix like:
"-P4" for ZYYX-PLA with 0.4 SwiftTool
"-C6" for proCarbon with 0.6 SwiftTool
"-A2" for ZYYX-ABS with 0.2 SwiftTool
etc.
allows more space for the description.

2.12.1 Maintenance

2.12.1.1 Build-Plates

Please note that the build-platform do not require the addition of adhesives or calibration. The build surfaces are designed for filament adhesion without the addition of glue or tape, and the printer has been pre-calibrated for your build-plates. We do, however, recommend from time-to-time wiping the surface of the build-plates with some solvent before use, as this cleans the surface from grease, finger-prints and aids in adhesion. For the Nylon/PA, perforated, and white MM Classic build-surface we recommend Acetone, and for the black M-M build surface we recommend isopropyl alcohol. For general maintenance, we recommend this solvent procedure after every 4-8 prints.

Please keep in mind that the standard ZYYX Pro II build-plate is suited for nylon-based filaments, such as our ZYYX Pro II Engineering Materials. The Multi-Material build-plate should be used when printing with non-nylon based materials (such as ZYYX-PLA, ZYYX-PETG, ZYYX-PETG-CF, and ZYYX-Flex). For heavily-shrinking filament, like ASA, ABS, and proNylon, the perforated build-plate is recommended.

To install thebuild-platform in the printer, place all three magnets of the build-platform in the circular grooves of the triangular build-plate holder. The magnets must sit snug in these grooves for printing to begin, as every print starts with a surface auto-leveling procedure that will abort the print if the print level variation is too big.

2.12.1.2 Ultra Air Filter Cartridge

The printer is pre-installed with a HEPA H13+Active Carbon filter cartridge to minimize odor and fumes. It is recommended that this filter is replaced roughly every 12 months, based on printing 16-24 hours per day.

Write the installation date on the filter or put a reminder in your calendar so that you remember to replace the filter regularly.

Loosen fan cable and then the four thumb screws holding the filter box to the back of the printer. Then turn it upside-down so the filter slides out of the box.

Put the new filter in place, using the reverse procedure as described above.

Please observe that the wavy side of the filter cartridge should face inwards, for optimum performance. This is given by an arrow on the side of the filter showing the air flow direction. It is also good, to note the installation date of the filter on the label of the filter. This to know for how long it has been in use.

2.12.1.3 Monthly Cleaning Routine

We recommend to once each month clean the printer feeder gear area from debris. The gear can be accessed on the sides of the print head. Use the brushes from your Maintenance Kit to remove any excess filament build-up. To access also the left drive gear flip the front fan open by rotating around its bottom right corner. Then clean also the left gear. Please make sure to flip the fan back in place once you are finished!

Every three months we recommend to check the printhead bearings and Z screw movement. Please check that the printhead moves easily sideways and back/forth. Also check that the Z screw moves smooth without excessive noise. If so, add a small amount of grease to the movement rails, rods, or Z screw, type NSK LR3 or similar.

2.12.1.4 Adjusting Z-Axis Offset

The printer is calibrated prior to shipment. Over the life of a printer, it is often necessary to adjust the distance between its SwiftTool and build-plate to either increase or decrease filament adhesion to the plate. This can be due to a number of reasons, such as a change of build-plate, change of SwiftTool or printhead probe, normal build-plate wear and tear, or small changes within the printer itself. Keep in mind that adjustments of a tenth of a millimeter or less can mean the difference between adhesion and non-adhesion. Also bear in mind that if the printer is very cool, the distance will change while adapting to room temperature. Please allow the printer to stabilize in temperature before starting to print. For printing with a heated chamber, the pre-heat function is recommended, see Tips and Tricks 22 .

This you normally adjusted by performing a probe calibration. If you need to adjust this distance you normally do it using the printer menu.

It is however also possible to adjust this value using the Simplify3D profile setting. This can be done and saved in your Simplify3D profile for each unique SwiftTool and material combination.

Note! This is an advanced user setting!
If you do not know what you are doing we recommend that you do not alter these settings, as you may damage the printer.

To still make this change, please go to Simplify3D>Edit Process Settings>G-Code tab. Under the Global G-Code Offsets section, the Z-Axis Offset value can be adjusted. Setting a more negative value will move the nozzle closer to the build-plate, increasing adhesion. Conversely, making the Z-Axis Offset more positive moves the build-plate farther from the nozzle, decreasing filament adhesion.

When changing the Z-Axis Offset value, it is recommended to increase or decrease by 0.05 mm at a time. You may need to adjust the value more than once to find the setting that works best at any given time.

Note! This is an advanced user setting!
If you move the SwiftTool too close to the build-plate, you can cause it to impact the build-plate. This may damage the build-plate or the SwiftTool!

Important aspects:

- Take care when making the Z-Axis Offset more negative.
- Take small steps at once, typically 0.05 mm at a time.
- When the SwiftTool is quite close to the build-plate surface, adjust it by less than 0.05 at a time.

3 Troubleshooting

If experiencing problems with the ZYYX, please check the ZYYX website FAQ or Support videos for more suggestions before contacting your local ZYYX Labs distributor or the producer ZYYX Labs AB. These are found at: www.zyyxlabs.com/faq/.

4 Warranty

ZYYX Labs AB (hereafter ZYYX) warrants that ZYYX-branded products shall be free from defects in material and workmanship for a period of 12 months after the sale and delivery (“Warranty Period”) and that ZYYX-branded spare parts shall be free from defects in material and workmanship for 90 days from the date of delivery. Normal consumables or expendable parts, as listed below, are excluded from this warranty. ZYYX's obligation under this warranty is expressly limited to supplying replacement parts and/or service for, or replacing, at its option, any product, which in the sole discretion of ZYYX is found to be defective with respect to workmanship or materials. The warranty is subject to the conditions that the product is used for the purpose intended and that any claims are made in writing to support@zyyxlabs.com within 30 days of the date the damage occurred.

Any warranty claim must first be recognized as justified by ZYYX, by contacting the ZYYX reseller or ZYYX directly at support@zyyxlabs.com. If so, the Reseller or ZYYX is obliged to rectify the defects free of charge according to this warranty. If the defect cannot be repaired, the Reseller will, within the warranty period, replace the Product by an identical product, or, if the Product is no longer manufactured, by a similar replacement of the same value or offer an appropriate refund.

For a warranty claim to be valid:

1. notification must be made to the ZYYX reseller or ZYYX directly before the end of the warranty period,
2. conform to any additional stipulations of the warranty, as defined below,
3. the original serial number sticker must still be on the Product(s) if applicable, and
4. the Product must be returned in the original packaging, packed according to ZYYX's written guidelines. The packing guidelines will be received after the contact with support@zyyxlabs.com. Since customers will be entitled to make a warranty claim only on submission of the packaging, we advise that the original packaging are kept in a safe place. If the original packaging is not available anymore, the customer can purchase such for an additional amount of €25 + shipping and VAT.

The customer shall make any arrangements as may be reasonably necessary to safely deliver up to ZYYX the defective products which are being replaced/repaired and ZYYX shall be entitled to charge the customer if such defective products or parts are not returned on request.

If a part of the Product is repaired or replaced during the warranty period, the warranty period still remaining for the entire Product will apply to this part. However, repair and/or replacement will not extend the warranty period for the Product. For the replaced/repaired part itself, the 90 day warranty listed above is valid, even if the Product warranty period expires.

Consumers within the European Union have a Warranty Period of two years. If defects appear after six months, the consumer, according to EU regulations, needs to prove that the defect existed when the product was received.

Exclusions

- Consumables are not covered by the normal one year warranty. The following parts are considered consumables:
  a. Filament
  b. Filament bags and siccants (dry bags)
  c. Build-plates and build-surfaces
  d. SwiftTools
  e. Air filter cartridges
  f. Filament tubing
  g. Filament drive wheels
  h. Filament spool holder low-friction parts

  If not taken into use, the consumables are warranted to be free from defects in material and workmanship for 90 days from the date of delivery.
- Any defect or damage caused by inappropriate, incorrect or improper use, installation, maintenance, operation and cleaning or normal wear and tear. Also abuse, misuse, neglect or any unauthorized repairs, maintenance or alterations of the products, including altering of Profiles without directions by ZYYX and failing to use guidelines sent out in emails/guides. For correct use, reference is made to the manual of the Product and other distributed guides.
- Failure of the Product caused by an accident or any other event, act, default or omission outside ZYYX's control.
- Customers are welcome to use third party materials, accessories, etc.. That in itself, does not void the warranty. If, however, the use of third party elements, causes damage to the Product, the part(s) affected by this damage is excluded from warranty.

In any event, ZYYX's obligation under these warranties shall not include any liability for indirect or consequential damages, including but not limited to loss of use, loss of staff time, profit, or revenue. Furthermore, ZYYX's liability is limited to the purchase value of the Product.

Applicable law and competent court
This warranty is exclusively governed by Swedish law. Any dispute arising out of or in connection with this warranty will be exclusively submitted to a Swedish court.

5 Standards and Compliances

5.1 Manufacturer Declaration of Conformity

ZYYX Labs

Declaration of Conformity

We, ZYYX Labs AB, Britta Sahlgrens gata 1, SE-421 31 VÄSTRA FRÖLUNDA, Sweden,

declare under our sole responsibility that the product:

Product name: ZYYX Pro II

Type of equipment: Additive Manufacturing Equipment

is in conformity with the provisions of the following EC Directive(s):

- **2014/30/EU Electromagnetic Compatibility Directive** (EMC),
- **2014/35/EU Low Voltage Directive** (LVD),
- **2011/65/EU** and **(EU) 2017/2102 Restriction of Hazardous Substances in EEE Directive** (RoHS 2)

and that the following standards and/or technical specifications referenced below have been applied to the product and/or components there of:

EN 55022:2010, EN 55032;2012, EN 60950-1:2001+A11+A1+A12+A2, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 55024:2010+A1:2015
(EN 61000-4-2:2008, EN 61000-4-3:2006+A1:2007+A2:2010, EN 61000-4-4:2012, EN 61000-4-5:2014, EN 61000-4-6:2013, EN 61000-4-8:2009, EN 61000-4-11:2004)

CE

Gothenburg, 2021-06-13,

.....
Tomas Bengtsson, CEO

5.2 Filament Safety Data Sheet (SDS)

Technical data sheets and SDS documents for the various ZYYX Filaments can be downloaded from the ZYYX web site at www.zyyxlabs.com/data-sheets.

Index

Note!
Page references in this Index points to the first page of the section it is mentioned, not the exact page.

- A -

Accessories 4
Acetone 23
Add 13
Adding a model 13
Adjusting Z-Axis Offset 24
Air filter 4
Air Filter Cartridge 23
Air filter container 7
Auto-levelling 23

- B -

Build surface 2
Build volume 2
Build-plate 10, 15
  Adhesion 23
  Cleaning 23
Build-plate magnets 10
Build-plates 23
Button operation 9
Buttons 9

- C -

Cancel print 15, 16
Cancelling your print 15
Carbon0.4 SwiftTool24 19
Carbon0.6 SwiftTool24 19
Carbon1.2 SwiftTool24 19
CE Declaration 26
Chamber temperature 2
Cleaning 23
Colour of SwiftTool24 19
Computer requirements 2
Consumables 24
Cover 7

- D -

Declaration of Conformity 26
Dehumidifier bag 21
Desktop software 2
Diameter 2
Doors 7

- E -

EU regulations 24
European Union Warranty Period 24
Extrusion Lever 9

- F -

FFF 2
FFF Files 12
Filament adhesion 23
Filament diameter 2
Filament feed funnel 7
Filament handling 21
Filament loading 10
Filament monitor 7
Filament type 15
Filament types 2
File types 2
Filter Cartridge 23
Firmware 2
Fused Filament Fabrication 2

- G -

Generate support 13

- H -

Heated chamber 15
Heater cover 7

- I -

Infill 13
Installing filament 10
Interfaces 2

- K -

Keyboard 9

- L -

LCD Display 7
Lever, Extrusion 9
Lid 7
Loading filament 10

- M -

Material 13
Max resolution 2
Menu 9
Menu buttons 7
Moisture 21
Multi0.2 SwiftTool24 19
Multi-material build-plate 4

Multi-material SwiftTool set 4

- N -

Nozzle diameter 2

- O -

Octoprint 16
OfficeSafe 21
Overview SwiftTool 19

- P -

Power button 7
Power cord 4
Power input 7
Preheat 21
Prepare to Print! 13
Print from SD 15
Print technology 2
Print volume 2
Printer lid 4
Printing 15
Printing temperature 2
Process settings 13
Product label 7
Product Overview 7
Product size 2
Product weight 2
proFilament 15, 28
Profiles 12, 13

- Q -

Quality 13

- R -

Raft 13
Redemption card 12
Replace filter 23
Requirements, computer 2
Resolution 2
Restore password, Simplify3D 12
Restore user name, Simplify3D 12

- S -

Safety Data Sheet 28
Saving print file 13
SD card 4
SD Card Slot 7
SDS 28
Select filament 13
Selecting profile 13
Serial I/O Settings 19
Serial number 7
Setting
  ZYYX Connect 19
Setting up your ZYYX Pro Printer 10
Siccant 21
Silica gel 21
Simplify3D 12, 13
Simplify3D Quickstart Guide 13
Simplify3D, Restore password 12
Simplify3D, Restore user name 12
Size 2
Slicer Software 12
Slicing 13
Softspring 15
Software 2
Specifications 2
Speed 2
Standard build-plate 4
Standards and Compliances 26
Start print 15, 16
Stepper motor type 2
Support 13
Swapping SwiftTools 20
SwiftTool 15, 19
  Carbon0.4 19
  Carbon0.6 19
  Carbon1.2 19
  Colours 19
  Exchanging 20
  Multi0.2 19
  Overview 19
  Replace 20
  Swapping 20

- T -

tangling 10
Temperature 2
Toolkit with tools 4
Top cover 7
Transport protection 3
Troubleshooting 24

- U -

UART1 19
Unpacking 3
USB cable 4
USB Port 7

- V -

Vacuum bag 21
Vacuum pump 21
Vacuum sealed package 21
Valid filament 15
Volume 2

- W -

Warranty 24
Warranty Period 24
Web interface 16
Weight 2

- X -

X3G format 13

- Z -

Z-Axis Offset 24
ZYYX Connect 16
ZYYX Connect Settings 19
ZYYX Connect, Cancel print 16
ZYYX Connect, Start print 16
ZYYX profiles 12

ZYYX Labs