CARA PRINT COCKPIT

USER GUIDE



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Overview

🔉 cara Print Cockpit

cara Print Cockpit is a data preparation software for Additive Manufacturing with cara Print Cube printers. To prepare CAD files for printing, the software enables users to:

- Iaunch the slicer "Voxeldance Tango" and convert the Tango slices into printable cara Print Cube files (.capc)
- > send the print job to cara Print Cube printers via network or USB drive
- > perform software and print parameter updates via internet connection
- > manage the visible print parameters incl. xy-compensation of Voxeldance Tango

Voxeldance Tango

Voxeldance Tango is a slicing software which prepares CAD files for the printing process. The latest Voxeldance Tango version is always included in the cara Print Cockpit installer. Voxeldance Tango includes a wide range of functions. The following functions are useful in most cases:

- Load CAD files (.STL-file recommended)
- Choose print parameter and layer thickness
- Arrange all objects
- Adjust the orientation
- Adjustment by compensating z
- > Create supports depending on indication
- Labelling
- > Slice to 2D Layers /Check layers

Installation Requirements

Hardware

1. CPU

- ➢ Intel Core i5/i7/i9
- > AMD Phenom II X4/X6 at 3.0GHZ or higher with SSE2
- 2. Memory
 - > 16GB RAM or higher
- 3. Free Disk Space
 - > 2GB of free disk space
- 4. Display
 - > 1920 x 1080 is recommended
 - Video Card
 - > NVIDIA Geforce GTX 1060 or AMD Radeon RX 480 or better
 - > At least 1GB of memory
 - > At least a memory interface width of 192-bit (256-bit is recommended)
 - > Any Intel GPU chipsets are not recommended

Operation System

cara Print Cockpit (Voxeldance Tango) is only supported by:

- > Windows 10/11 (64-bit) (recommended)
- > Windows 8 / 8.1 (64 bit)
- Windows 7 (64 bit)

cara Print Cockpit is recommended for:

- > Windows Professional edition
- Windows Enterprise edition

cara Print Cockpit is not supported by the following systems:

- > Windows Server edition
- > Virtualization system such as VMWare

Installation

1. Double-click on the cara Print Cockpit setup file (start as admin)



2. Select a language

Installer La	Installer Language								
	Please select the language of the instal	er							
	English	\sim							
	OK Cancel								

3. Check and accept the License Agreement of cara Print Cockpit and follow the wizard to complete the installation of cara Print Cockpit

😋 cara Print Cockpit 1.0.03-beta09 Setup 🦳 🗌	×								
License Agreement Please review the license terms before installing cara Print Cockpit 1.0.03-beta09.	0								
Press Page Down to see the rest of the agreement.									
RAYSHAPE END USER LICENSE AGREEMENT READ CAREFULLY: Specially remind the user to seriously read, fully understand the "End User Times of the agreement, select the first option below. You must accept the agreement to install cara Print Cockpit 1.0.03-beta09. Click Next to continue.									
< Back Next > C	ancel								

Follow the wizard to complete the installation of cara Print Cockpit. It is recommended not to change the installation path.

🔕 cara Print Cockpit 1.0.03-be	ta09 Setup		_		\times				
Choose Install Location									
Choose the folder in which to i	nstall cara Print Cockpit 1	.0.03-beta09.			9				
Setup will install cara Print Cod different folder, dick Browse a	pit 1.0.03-beta09 in the	following folder	. To insta tart the i	all in a Installatio	n.				
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Destination Folder									
C:\cara Print Cockpit			Brov	vse					
Space required: 317.6 MB Space available: 391.6 GB									
RAYSHAPE									
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4. After the installation of cara Print Cockpit, continue to install the slicer following the automatic pop-up window.

😋 cara Print Cockpit						s x
	Print jobs 🗘				Details	
	Preview	File Name Printer	Layer Thickness	Print parameter		
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Print jobs						
😤 Printers						
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			Installer La	anguage		\times
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	OF	Abbrechen			OK Cancel	

- 5. Follow the wizard to complete the installation of the slicer software
- 6. Activate the slicer software with a license code.
 - a. Register your cara Print Cube printer, if not done before, here or by following the QR code (on the printer or below):

www.kulzer.com/mycube-registration

Until you have received your personal license code via email after successful printer registration, you may use the trial version of the software. However, this will not allow to create printable files.



b. Online license activationChoose "Activate Your License"

1	Voxeldance Tango	×
	Activate Your License If you have a local license , please activate your Voxeldance Tango.	
-	Sign In Log in to Voxeldance Tango with an account. (Subscription)	
	Free Trial Don't have a license? You can use the Ultimate version for 15 days.	

Input license and information, then click on "Next".

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Enter your li	icense and informatio	n
License*		
Click Red Activate to Activate v	with printer device code.	
First Name*	Last Name*	
E-mail*	Industry*	
	Aerospace	•
Company*	Country*	

<u>Caution:</u> In case the license was activated online, it can be deactivated and reactivated in total 3 (three) times during usage, e.g. to transfer it to other computers. The license must actively be deactivated by the user on the existing computer before being able to reactivate it again on another device. Kulzer does not recommend to switch computers with one license, unless it is really needed, e.g. if the computer must be exchanged due to technical reasons.

c. Offline license activation

Input license and information, then click on "local license tools".

Company*	Country*
XXX	XXX
If this computer is offline, please rur local	license tools.

A QR code will be shown. Use a smartphone to scan the QR code and receive the local key string in an email sent to the email address entered in the previous window.

Copy the local key string from the email to the box in step two (see picture below), then click on "Next".

Step one	: The following is the system id. Only when the local key matches the system id can it be registered.
	3B05993F-1162-5A9F-8661-24
Step two	: Please copy the generated local license string to the text box and click Next to register. You can Read vox_key.vxcd.

7. Platform Definitions:

Add cara Print Cube by clicking the "+" icon and selecting the correct printer \rightarrow cara Print Cube



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🚺 Voxeldance Tango		PREPARING	SLICING	<i>م ب</i>	• • • • • • • • • • • • • • • • • • •
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		Bottom Retract Speed : 150.000 mm/min 2	0.000 mm/min 🗘 Retract Spee	d : 150.000 mm/min 📜 0.0	100 mm/min 📫
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					Machine Type :			Default		
					Mirror :		X :			
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				к	ulzer cara Print Cube				Kulzer	
									X: 192,000 mm Y: 120,000 mm Z: 190,000 mm Resolution: 5760 x 3600	
	Ð	Ð	Ð							
									Add Machine Cancel	

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					Resin Type :	dima Print							
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					Notes -	V1							
					10031								
	~	_	_	_									
	\oplus	÷	B					ŀ	Apply				

If the "Apply"-button is gray, the selected print parameter is likely already selected.

The "Apply"-button switches to orange if the currently selected material is not applied already.

Ð	Ð	Ð	.	Apply
Ð	Ð	Đ	.	Apply

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Configuration

Print parameters manager

1. Open the Print parameters manager

	Print parameters		- 5
	Print parameter update Version: V1.0.1-2024/1021	Last Check Time: 2024-19-20118-53-46	Check Update
Print jobs	You have the latest version installed.		Update
Printers	More Options		
🔊 Print parame	Add print parameters		Import
	Print parameter Manager		Open

2. Here, you can choose the official validated "Kulzer Print parameters" for dima Print materials or you can create your own "User-defined Print parameters". On the left side the available validated "Kulzer Print parameters" are displayed. "Print parameters available in Slicer" (on the right) includes all available "Kulzer Print parameters" after initial software installation.

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inter-Type:	cara Print Cube		
Official Resin Profiles	User-Defined Resin Profiles		
ease choose and add print parameters to the list Kulzer Print parameters	"Print parameters available in slicer". Print parameters available in slicer		
dima Print	 > Customize > dima Print > Splint clear > Denture Base > Stone beige > Stone beige > Stone beige SM > Stone beige SM > Cast ruby > Denture Try-in > C&B temp > V11 > Guide&Tray > Gingiva Mask > V1 		

3. To manage the "Print parameters available in Slicer" mark the parameter or a specific layer thickness and click the "<" or ">" button to manage lists.

It can be helpful to fill the list "Print parameters available in Slicer" only with the print parameters you use in your daily business to reduce the size of the drop-down list in Voxeldance Tango.

4. Click on "Save" after editing the "Print parameters available in Slicer" list



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5. Open/Restart the Slicer

	Print parameters		
😵 Slicer	Print parameter update Version: V1.0.1-2024/1021	Last Check Time: 2024-19-30107-23.49	Check Update
Print jobs	You have the latest version installed.		Update
😤 Printers	More Options		
7 Print parameters	Add print parameters		Import
	S Print parameter Manager		Open
6			
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Printers

cara Print Cockpit can send print jobs to a cara Print Cube printer via network. To use this function, the PC and printer should be on the same network (connected to the same router). cara Print Cockpit can find the printer with the IP address or automatically, depending on the network settings.

- 1) Connect the printer to a network
- 2) Find the printer IP address via "Setting-Network-Wireless Config"
- 3) Open the Printer Management tab in cara Print Cockpit

	Last Check Time, 2024-19-30707-23-49	
You have the latest version installed.		Check Update
Print jobs		Update
Printers More Options		
C Print parameters		Import
😂 Print parameter Manager		Come

4) Click on "Edit" and "Add", insert the printer IP address in the pop-up window and click "Connect"

o caraPrintCockpit				×
	Please enter th	e IP address of the pri	nter.	
-		-	-	
		Cancel	Connect	

5) The printer is now connected to cara Print Cockpit. Click "Save" before exiting the cara Print Cockpit software.

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Care Print Cockpit	Printers 🗘				Add	- 0 > Save
Silicar	Preview	Name	Туре	Status	IP	
Prints		cara Print Cube	cara Print Cube	Idie	192.168.110.167	Delate
Printers						
(1) Materials						
•						

XY-Compensation for print parameters

The XY - Compensation is pre-defined for every layer thickness of the "Kulzer Print parameters". Kulzer recommends always using the pre-settings.

6 4

🔉 XY Compensation	×
Printer:	cara Print Cube
Resin:	C&B temp
Layer Thickness:	100 um
XY Compensatior	0.01 mm 🔿
Cancel	Save

To reset to the pre-setting, click on the arrow cycle icon.

To change the settings:

- 1. Open the Print parameter menu
- 2. Open the Print parameter Manager
- 3. Choose the Print parameter and layer thickness in the "Print parameters available in slicer" → Right-click to open the editing window
- 4. Input the XY-Compensation value (on the right side of the panel)
- 5. Click "Save"
- 6. Open/Restart the Slicer.

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Explanation of XY-Compensation:

If the green geometry below is the result at zero XY compensation, then a change in plus/minus direction tailors the geometry to the dashed line

- + "looser"
- "tighter"



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Updates

🔁 cara Print Cockpit 风 cara Print Cockpit

Software Update for cara Print Cockpit/CAM:

- 1. Start cara Print Cockpit
- 2. Bottom left corner \rightarrow Setting symbol
- 3. Check for updates
- 4. Click on Update \rightarrow Finish

cara Print		Print parameters		-
	Slicer	Print parameter update Version: V1.0.1-2024/10/21	Last Otect Time 2024-19-30707 23-49	Check Update
۲	Print jobs	You have the latest version installed.		Update
*	Printers	More Options		
8	Print parameters	G Add print parameters		Import
		S Print parameter Manager		Open

😵 Slicer	Print parameter update Version: V1.0.1-2024/10/21	Last Check Time: 2024-10-30T07:23:49	Check Upda
Print jobs	Yeu have the latest version installed.		Update
Printers	More Options		
Print parameters	G Add print parameters		Import
	8 Print parameter Manager		Open
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■ Language	update	×	
Language Check for software Check for software Current Ver	update oftware update rsion: V1.0.04 * *	X	156
Language Check for software Check for software Current Ver Update ava	update oftware update rsion: V1.0.04 ^{····} illable	×	
■ Language Check for software Check for software Current Ver Update ava Copyright © Technology	oftware update rsion: V1.0.04 · · · illable © Suzhou Laisai Intelligence (Co., Ltd. All rights reserved.	×	

Update Print Parameters

- 1. Click on "Check Update" button (If update available, this will be indicated with a yellow exclamation mark)
- 2. Click on Update to update print parameters.
- 3. Finish

	Print parameters			
MITSUI CHEMICALS GROUP	Print parameter update www.v1.8120041021	Last Check Time: 2824-11-01712:37:98		Check Update
 Sucer Print jobs 	New print parameters available V1.11 - 2020/022			Update
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•	0			
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V1.0.1-20	124/10/22			
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	Print parameters			
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	Print parameter update	Last Object Times 2014;11:07177-12706	
Slicer	veninter (/), veninger neue	Lass Creek Hine, 2024 HING 112-27-00	Update
Printputs	More Options		
Print parameters	Add print parameters		Inport
	Pint parameter Manager		Open
		3 Paget successful	
•			
📃 🖸 Infor	mation X		
	Import succeeded.		
	OK		
	OR		
-			

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Support

If you need support while working, you can click on the Kulzer button in the left upper corner of the cara Print Cockpit interface. This will directly lead you to Kulzer's cara Print Support Hub.

		Print parameters		_	5 X
8	Slicer	Print parameter update Version: V1.0.1-2024/10/21	Last Check Time: 2024-10-30107:23:49	Check Update	
۲	Print jobs	You have the latest version installed.		Update	
8	Printers	More Options			
-	Print parameters	S Add print parameters		Import]
		Print parameter Manager		Open	
•					

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Voxeldance Tango

Slicing and Printing

1. Open the Slicer

	Brint parameter undete		
😥 Slicer	Version: V1.0.1-2024/10/22	Last Check Time: 2024-11-01T12:37:06	Check Update
😰 Print jobs	You have the latest version installed.		Update
👚 Printers	More Options		
Print parameters	S Add print parameters		Import
	S Print parameter Manager		Open

The slicing software offers you a wide range of options. Those marked in green are the frequently used ones for dental work.

Voxeldance Tango		PREPARING SLICING	- 8 X
1	+ ++		and a set

Options frequently used for dental workflow.



- 1. Platform Definitions
- 2. File \rightarrow Open File
- 3. Rotate
- 4. Put on plate
- 5. Arrange ("nest")

- Choose print parameter and layer thickness
- Choose the stl files
- According to the *dima Print Parameter Matrix* → depending on indication
- Orientates area parallel to build table (if needed)
- Automatically nest parts on platform

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6.	Move	Move selected parts by inputting the desired values
7.	Compensate Z	According to the <i>dima Print Parameter Matrix</i> → depending on material
8.	Support	According to the <i>dima Print Parameter Matrix</i> → depending on material and indication
9.	Slice	Slice parts on current platform

2. The process of creating the print job starts with "Platform Definitions", here you select printer, material and layer thickness.

Voxeldance Tango - [*Unsaved project]	PREPARING SLICING	
Paterson Hinkey The The New Notes	1 88 AA CA LA CONSTRACTOR Arrays Notice Performance Labert Compensate Notice	
🗾 Voxeldance Tango		×
Standard Standard	Printer Resin	
Kulter cara Print Cube	Splint clear#0.075#V1 - Add	Setting Delete
		un me x
	Price	
	Resin Type : dima Print	
	Resin Density :	1,300 g/ml
	Resin Cost : 0,000 CNY(China Yuan)	· / L ·
	Notes : V1	
Machine: Kulzer cara Print Cube		
Resin: Splint clear#0.075#V1		
Layers: 0		
Volume: 0,000 ml Weight: 0,000 g 🕀 🕣 🔂	Anniy	â
Platform Size: X 192,000 mm		
Z 190,000 mm	Y Y Y	

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3. Select printer "Kulzer cara Print Cube", resin type and layer thickness to be used, confirm by "Apply" (4.) After confirming, close the window.

					Y Lar most
	2. Voxeldance la Standard	Printer Spint ClasH0.1#V1 New Soriet	Resin	ting Dulete	
		Recin Type 1 dina Périd Recin Type 1 dina Périd Recin Cont 0,000 Notes 1 V1	CNN(Crine Yaan)	1,300 g/ml 2	
	⊕ ∃ E	4.	Αρρίγ		
Machine: Kuber care Print Cable Read: Split care 1, Virth Datases: 0000 Layors: 0,0000 Weat: 0,0000	~				0 6
Platform Size: X 192,000 mm Y 120,000 mm Z 199,000 mm					

 $0.1 = Layer thickness 100 \mu m$

V1 = Print parameter version

🖬 Voxeldance Tango					
Standard	Printer				
Kulzer cara Print Cube	Splint clear#0.1#V1				

4. Import STL Files

Besides the standard process >File>Open File>Explorer the function "drag&drop" is also available.

Voxeldance Tango - (*Unsaved project)	PREPARING SLICING 🔸 🖓 🗄 🖨	× • - • •
Parlorm Hittery Definitions	Image: Sector	
Compared and the second and the	Norw State Norw State Open X Image: Comparison X	and and a
	Organic V New folder Image: Construction of the state	
) Machine: Kuber cara Print Cuba Reain: Dentura Try-in40.1492 Thickness: 100um Layers: 0 Volume: 0,000 p Volume: 0,000 p Patform Size: X 192,000 mm Y 190,000 mm Z 190,000 mm	Coper Cancel	

5. Arrange

After importing multiple objects, "Arrange" will arrange them automatically on the built platform. Click on the imported file to select it. The file will turn blue, indicating that it is ready to be moved.



6. Rotation

Selected objects can be rotated directly by left-clicking on the circles attached to the coordinates or through insertion of numeric angles in the pop-up window.



7. Move

Selected objects can be arranged by moving the mouse – holding left click – over the coordinate axes displayed in the corner of the built box or by inserting digits into the pop-up window



The dima Print parameter matrix supplied by Kulzer gives important recommendations on how to arrange different dental indications on the build platform and find correct settings. Please see the image below as an example.

Please visit the cara Print Support Hub for the most recent version: www.kulzer.com/mycube-support



8. Z-compensation

When the object is in the desired final position, AFTER rotating but BEFORE creating supports, the necessary object and material related z-compensation MUST be checked in the dima Print parameter matrix and set in the pop-up window to avoid overbleed.

Not using the function may affect surface quality and/or accuracy.



9. Auto Support

For each dima material you can choose a script with suitable supports.

"Z-height" depends on the indication and needs to be set based on the dima Print parameter matrix.

Kulzer recommends putting each device on supports.



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10. Slicing

After all parts are prepared, click "Slice"





11. Export slicing file to cara Print Cockpit

	PREPARING SLICING	
	Export Slice Files × Export Format * Export Format RAYSHAPE Slice Files(RSLC) * Export Settings * File Name dima Print Try-in 2 OK 3	
	PREPARING SLICING Export Send Slices Slices	
	Export Slice Files × Export Format Export Format Export Settings • File Name dima Print Try-in OK	
Voordierre Tango - PUrnaved project Export Slice Files × Export Slice Files × Export Format Export Format	PREPARING SLICING	• • - • ×
Marchene Kuder casa //der Cale Marchene Kuder casa //der Cale Rair: Syler clau#40/2591 Takione: Syler clau#40/2591 Takione: 7/25 rei Volame: 10/056 g Pattern Wart 10/056 g Pattern Wart 10/000 mm		

For more options how to use the Slicer software see Kulzer's online tutorials: <u>http://www.kulzer.com/mycube-support</u>

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12. Save project

It is highly recommended to always save the ".vxp" Tango project. This will allow you to always quickly get back to the project you worked with in case you need to at a later stage. Furthermore, this helps the Kulzer support team a lot when trouble shooting is required.

<u>Highest recommendation</u>: Activate the ".vxp auto save" function as shown below in "Export Options"

🚺 Options			×
Ceneral Renaming File I/O Display	General Options Choose Language Language English Theme Options White ○ Dark Unit Size Units< mm<) Inch > 40 Inch < 10 mm 	×
	Export Options Save project file in the slice folder when exporting sl Save your 3D Printing history	slices	
			OK Cancel

During Export Slice Files the project path can be set:

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Export Slice Files ×					
Export Format					
Export Format RAYSHAPE Slice Files(RSLC)					
Export Setting	gs				
File Name	custom				
Project Path	15730/Documents/VXP autosafe/				
	ОК				
Project Path 15730/Documents/VXP autosafe/					

For manually saving the ".vxp" file, please see below.



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- 13. Create print job in cara Print Cockpit (Based on Voxeldance Tango Export)
 - 1. Click Print
 - 2. Choose Print job
 - 3. Create Print job
 - 4. Chose Location
 - 5. Save

	Print jobs 🔿			Details
 Slicer Principles Printers 	Prester	File Name Pinter Li Example Stone beige wideo 2,.1 case, Pint Cube	Layer Thickness Pier parameter	
Print parameters		Fieldenier Constanting Constanting	Find Hame Example filtere being radio 2.1 Createring Createring Createring Createring Createring Createring Createring Createring	Fib Nami Course A fiber a fibe
8			×	

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- 14. Send the print job to a printer
 - 1. Send the print job via Network

Select the printer that should be used for printing in the pop-up window and click "Send".

 Name	Туре	Status	
41 1	cara Print Cube	Idle	^
cara Print Cube	cara Print Cube	Offline	ł
33	cara Print Cube	Printing	~

2. Send an existing slicing file to a printer

Select the printer that should be used for printing in Printers Tab and click "Send File", choose the slicing file to be sent in the pop-up window.

	KULZER	Printers 🖯				I	Add Save
		Preview	Name	Туре	Status	IP	
6	Print inhe		40	cara Print Cube	Offline	192.168.3.238	Delete
٢	Printers						
8	Print paraméters						
							35

3. Copy the slicing file with a USB drive

Copy the slicing file saved in Step 6) to the root directory of a USB drive, plug the USB drive, plug the USB drive into the printer to upload the slicing file.

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Special functions & Tricks in Tango

Shortcuts

Shortcuts can be helpful to maximize workflow efficiency.



You can check and change the shortcuts by:

- 1. Left click on gear symbol
- 2. Left click on "Shortcut"
- 3. Check or change shortcuts

See following screenshots as visualization.



Shortcut Editor	CI.) f	X	
Prepare	Slice	Basic	Views	Edit	
Arrange			Shift+A		
On Plate			Shift+B	^ ?	
⊗ Delete			Del	^ ?	
Duplicate			Ctrl+D	?	
Exit			Alt+F4	°	
Hide Selected Parts	;		Ctrl+H	°	
Show/Hide Suppor	t(Edit Support)		Alt+G	°	
/ Mirror			Μ	• •	
+ Move			Т	<u>ہ</u>	
Create Part			Shift+N	<u></u>	
Transparent Parts			Ν	o	
O Perforator			Shift+P	<u> </u>	
Pick && Place Part			F9	•	
Platform Definition	s		Ctrl+P	•	
🔿 Rotate			R	<u>•</u>	
			Destans to Defaul	La Caus	
			Restore to Defaul	it Save	
		Beit Veen Diffeit Diffeit Diffeit Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Aarda Corbi Co			- F
	Perforator Pick Bib Place Part	Shift+P F9 Cbit+P			

Labeling of parts

Sometimes it is helpful to engrave parts for better identification.



1. Click on "Label" button



2. Insert text or click "Part Name" to use part name

Label Part		×
Text		
Example		
	Part Name	

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3. Mark/select label location on part by holding right mouse button to create text box (text will be stamped in view direction)



Add or delete supports manually

The indication related "Auto Support"-scripts are tailored to provide an optimal balance between support density and post process effort.

In raw cases your design needs a little more or less supports to improve your workflow and post process. Kulzer recommends to carefully check the slices for islands if you remove supports manually.

For details, please find corresponding video tutorials on Kulzer's support hub. In the following section the workflow is just explained briefly.

To adjust, add or delete supports:



1. Click on "Manual" in the "Auto Support" menu.

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Auto Support	t	×	
Script 🗊 dim	a Print Splint c	lear V1 🔹	
Profiles			
Critical angle		45,00 ° 🗘	
Anchor distance		2,500 mm 🇘	
$\boldsymbol{\boldsymbol{\wedge}}$	Tip width	0,500 mm 💲	
	Top width	1,200 mm 🗘	
	Bottom width	2,000 mm +	
🗸 Enable suppo	ort in shell		
		More settings >>	
Z lift height		7,000 mm 🇘	
G	enerate Auto	Support	
Manual Delete			

2. Hide existing supports by click on the eye in column "visible".



3. Click on the area next to the hide eye symbol to show the connection points (see arrow) or right click "Add/Remove Support Anchors"

Auto Sup	port		×		Auto Sup	port		×
Script 😭	dima Print De	enture Base	V1 - 🗘		Script 😭	dima Print S	plint clear V1	-
Profiles	Supports				Profiles	Supports		
IĎ	Visible	Туре	Volume		IĎ	Visible	Type	Volume
0	ø	Bar	3534.8	Ц	0	ø	Bar	2279.2
1	ø	Add/Rem	ove Support Anchors		1	ø	Base	1042.5
	Ϋ́	Move Bar Add Tree Edit Smar Remove	Support Nodes Branches t Support Structure					
Anchor size	pply		Cancel		Anchor size	pply		Cancel

4. The blue balls indicate a support connection point.

Adjust support	= Drag and drop blue ball
Delete support	= click on blue ball
Add support	= click on surface to add blue ball

5. Click on "Apply" to activate new supports



No Support Area

Some indications have functional areas which should be support free if possible. One example would be a surgical guide as shown below. To skip functional areas in the support generation, the option "No Support Area" can be used. This option is an alternative to deleting supports after Auto Support. Kulzer recommends to carefully check the slices for islands if you use the No Support Area function. Islands are local minima which are not supported.

For details, please find corresponding video tutorials on Kulzer's support hub. In the following section the workflow is explained briefly.

- 1. Open the "Auto Support" menu
- 2. Click on "Manual"
- 3. Use "Mark" tools to mark surfaces
- 4. Activate marked area (changes from yellow to orange)
- 5. Auto support to generate supports

Platorm History File Fix Mo	Totale Sale Diglicate Mirror Re Part Real Region Robert Sale Congression March Booker Support Size
Auto Support × sorger @ dma Print Stone beige V2 • O Profiles Critical angle 40.00 *] Andrer distance 2,300 mm]	
Tip width 0,300 mm Top width 1,000 mm Bottom width 1,000 mm	
Enable support in shell More settings >> Z lift height 3.000 mm	•
Generate Auto Support Manual Delete	
Machine: Kulter cara Print Cube Reain: DRAFT Gade&Tray@1942 Thickness: 100um Layers: 200 Volume: 4.405 ml	
Weight 5,727 g Platform Size X 192,000 mm Y 120,000 mm Z 190,000 mm	

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Tools			
▶ छ 🚺 ी 🕂 🖞 📠	~ ⊵ Q ■ ■ ■ %		
Pick Edit Anchor Edit Structure	Mark	Support Area	No Support Area

Tools to mark



Marked area is yellow.

Voxeldance Tango - [*Unsaved project]	PREPARIN	G SLICING		- a ×
Patterner Polaury Riv Ex	there are a set of the	Arrange Holes Performer Laber Companyer	Hereit March Robert Gregarit Star	
Auto Support	▼届Ⅰ₩₩₩₩₽₽	0 2 2 9 8 8 8 8 8	ଜ ଜ ଜ	
Profiles Supports	vallen. Aller barbelte Steldar berteilen		a post deni	
Andror size Apply Cancel Marhow: Kaler case Point Calor Benic: DBATT Glated TryPoint Point Layres: 200 Volume: 4.405 ml				0
Weight 5.227 g Platform Size X 192,000 mm Y 120,000 mm Z 190,000 mm Z 190,000 mm				ZER

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When the surface is marked, click on "no support area" to activate marked area. It switches from yellow to orange.



Now apply and generate supports



Reinforcement bars

Some designs benefit from a reinforcement bar. Voxeldance Tango enables the user to create simple geometries which can be used as a reinforcement bar by merging them to the design. The Boolean tool enables even more options to combine and subtract parts.

For details, please find corresponding video tutorials on Kulzer's support hub. In the following section the workflow is explained briefly.

1. Create part for reinforcement > File > Create Part > Define Part size > Create Help: The standard grid size of the platform is 20mm

- 2. Move part to position for reinforcement
- 3. Merge parts by >Boolean> Merge Parts



Create Part		×
Part Type		
Part Name:	Cylinder	•
Part Size		
Height:	41,000 mm	÷
Radius:	1,500 mm	-
Edges:	50	-
Part position		
Center		
Corner	Bottom left	•
		_
	Create	

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Technical Support

If you need support during the use of cara Print Cockpit, please contact your local Kulzer representative. Please see a list of contacts below.

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France	Kulzer France S.A. Les Conquérants - Bât. Everest 1, avenue de l'Atlantique 91976 Les Ulis - ZA Courtabœuf Cedex France <u>support.fr@kulzer-dental.com</u>
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