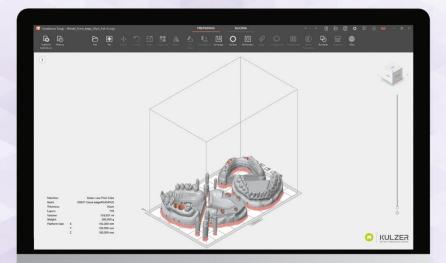
# CARA PRINT COCKPIT

USER GUIDE



Version: 01 Date: 01.11.2024





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carao

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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:

- launch 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	anguage	×
	Please select the language of the insta	aller
	English	~
	OK Cance	el

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	~
If you accept the terms of the agreement, select the first option below. You must ac agreement to install cara Print Cockpit 1.0.03-beta09. Click Next to continue.	cept the
<ul> <li>I accept the terms of the License Agreement</li> <li>I do not accept the terms of the License Agreement</li> </ul>	
RAYSHAPE	
<back next=""></back>	Cancel

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

Contraction Construct 1 0 02 has	ha 00 Cathura	
💿 cara Print Cockpit 1.0.03-be	tau9 Setup	- ×
Choose Install Location		
Choose the folder in which to in	nstall cara Print Cockpit 1.0.03-beta	09. 🔽
	pit 1.0.03-beta09 in the following f nd select another folder. Click Instal	
Destination Folder		Browse
Space required: 317.6 MB Space available: 391.6 GB		
RAYSHAPE		
	< Back	Install Cancel
😋 cara Print Cockpit 1.0.03-be	ta09 Setup	- 🗆 🗙
	Completing cara Prin 1.0.03-beta09 Setup cara Print Cockpit 1.0.03-beta09 computer. Click Finish to close Setup.	<b>)</b> has been installed on your
	< Back	Finish Cancel

4. After the installation of cara Print Cockpit, continue to install the slicer following the automatic pop-up window.

🔾 cara Print Cockpit						– a ×
	Print jobs 🖓				Details	
😵 Slicer	Preview Fi	e Name Printer	Layer Thickness	Print parameter		
Print Jobs						
😵 Printers						
rameters		Continue	via 1.852 hotory to entit Tasgo a normaly diving maker or Dispetition. C 2 pour part of the time initial C 2 pour part of the time initial C 2 pour part of the time initial	_	File Name: Created Printer: Print parameter Material Used. Layer Thickness: Create print job	
8				v		
			Installer L	anguage		×
cara Print Cockpit 1.0.0	03-beta09 Setup	×				
Continue to ins	tall Tango?			Please select	the language of the i	nstaller
Tango is a nece	ssary slicing module for S vou are not sure ifTango f	hapeRanel. Please has been installed	-	English		~
	ОК	Abbrechen			ОК Са	ancel

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

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

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_	<b>Voxeldance</b> Tango		
	Enter your l	icense and information	on
	License*		
	Click Red Activate to Activate	with printer device code.	
	First Name*	Last Name*	
	E-mail*	Industry*	
		Aerospace	•
	Company*	Country*	
	If this computer is offline, plea	se run local license tools.	

#### 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".

Caution: If a license is activated offline by the "local license tools" it is not possible to deactivate the license at a later stage to switch the PC.

	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 <b>Read</b> vox_key.vxcd.	

7. Platform Definitions:

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

Idance Tango		PREPARIN	G SLICING		<ul> <li></li></ul>	¢ 🖲 🛞 📼 – s
		ale Duplicate Mirror Data Orientation				
•	🚺 Voxeldance Tango				×	
	Standard	Printer		Resin		- in -
		New Script		- Add	Setting Delete	V Lan Incar
		Price	Print		Advanced	140
		Layer Height : 0.050 mm 🗘	Bottom Layer Count :	8 C Transition laye	C	
		Bottom layer settings		ommon layer settings		
		Bottom Exposure Time :	50.00 s 🗘 Exp	posure Time :	3.00 s 🗧	
		Bottom wait before rure :	0.00 s 🗍 Wa	ait before cure :	0.00 s 🗍	
		Bottom wait after cure :	0.00 s 🗘 🛛 Wa	ait after cure :	0.00 s (	
		Bottom wait after lift :	0.00 s 🗘 Wa	ait after lift :	0.00 s 🗘	
		DI	D2	D1	D2	
		Bottom Lift Distance : 5.000 mm	1 0.000 mm 1 Uft	ting Distance : 5.000 r	nm () 0.000 mm ()	
		Bottom Retract Distance : 4.950 mm		ntrart Distance : 4.950 r		
		51	2 	S1	<u>22</u>	
		Bottom Lift Speed : 65.000 mm/min		Ling Speed : 65.000 mm/i		
		Bottom Retract Speed : 150,000 mm/min	0.000 mm/min 0 Re	tract Speed : 150.000 mm/i	nin 📜 0.000 mm/min 📜	
Machine: standard		Burnets and a first such				
Resin: New Script Thickness: 50um		Parameter mode Static mode	×			
Layers: 0						6
Volume: 0.000 ml Weight: 0.000 g	🕀 🕀 💼		Apply			â
Platform Size: X 144.000 mm			X ROM		1	
Y 81.000 mm Z 150.000 mm			Ster			

🖬 Voxeldance	Tango				×	<
Standard	Tungo		Printer	Resin		
		Machine Name :	Standard	Nearr		
		Machine Type :	Default			
		Mirror :	X:			
			Y:			
	<b>—</b> 0	Resolution :	<b>y</b> .		1.920 py	
	🗾 S	elect a machine to add			×	
	Sear	ch 🍸	Kulzer cara Print Cube			
	- Ku	lizer [1]				
		Kulzer cara Print Cube		Kulzer		
				No.201		
			2 MM 2 MM			
				X: 192,000 mm Y: 120,000 mm Z: 190,000 mm	1	
				Resolution: 5760 x 3600		
⊕ -∃	Ð					
	<u> </u>					
				Ad	dd Machine Cancel	
🗾 Voxeldance T	ango					
<b>1 Voxeldance T</b> Standard	ango		Printer	Resi	in	×
		Called dour#0.14914	Printer	Resi		
Standard		Splint clear#0.1#V1	Printer	Resi • Add	in Setting Delete	
Standard		Splint clear#0.1#V1				
Standard				• Add		
Standard		Resin Type :	P	• Add	Setting Delete	•
Standard		Resin Type : Resin Density :	p dima Print	• Add	Setting Delete	•
Standard		Resin Type :	P dima Print	• Add	Setting Delete	•
Standard		Resin Type : Resin Density :	p dima Print	• Add	Setting Delete	•
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Standard		Resin Type : Resin Density : Resin Cost :	P dima Print 0,000 \$ CNY	• Add	Setting Delete	•
Standard		Resin Type : Resin Density : Resin Cost :	P dima Print 0,000 \$ CNY	• Add	Setting Delete	•
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Standard		Resin Type : Resin Density : Resin Cost :	P dima Print 0,000 \$ CNY	• Add	Setting Delete	•
Standard		Resin Type : Resin Density : Resin Cost :	P dima Print 0,000 \$ CNY	• Add	Setting Delete	•
Standard		Resin Type : Resin Density : Resin Cost :	P dima Print 0,000 \$ CNY	• Add	Setting Delete	•
Standard		Resin Type : Resin Density : Resin Cost :	P dima Print 0,000 \$ CNY	• Add	Setting Delete	•
Standard Kulzer cara Print Cub		Resin Type : Resin Density : Resin Cost :	P dima Print 0,000 CNY V1	• Add	Setting Delete	•

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	B	Apply
Ð	Ð	₽	Apply
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# Configuration

#### Print parameters manager

1. Open the Print parameters manager

Cara Print Coclupit		Print parameters		- o
	icer	Print parameter update Version: V10.1-2824/1021	Last Check Time: 2024-19-29715:53:46	Check Update
Pri	rint jobs	You have the latest version installed.		Update
👚 Pri	rinters	More Options		
990 Pri	rint parameters	S Add print parameters		Import
		S Print parameter Manager		Open

2. On the left side the available "Kulzer Print parameters" are displayed. The right side "Print parameters available in Slicer" includes all parameters after installation.

Printer-Type:					cara Print Cube	~
Please choose and add print	parameters to the	e list "Print para	meters avai	lable in slicer".		
Kulzer Pr	int parameters			Print paran	neters available in slicer	
Туре	Version		Тур	e	Version	
✓ dima Print			~	dima Print		
> Splint clear	V1			> Splint clear	V1	
> Denture Base	V1			> Denture Base	V1	
> Denture Try-in	V2			> Denture Try-in	V2	
> C&B temp	V11			> C&B temp	V11	
> Denture Teeth	V11			> Denture Teeth	V11	
			*			
		Cancel		ave		

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.

Print parameter Manager			
rinter-Type:			cara Print Cube
lease choose and add prin	t parameters to the list "Prin	t parameters available in slicer".	
Kulzer P	rint parameters	Print pa	arameters available in slicer
уре	Version	Type	Version
<ul> <li>dima Print</li> </ul>		✓ dima Print	
> Splint clear	V1	> Splint clear	V1
> Denture Base	V1		
> Denture Try-in	V2		
> C&B temp	V11		
> Denture Teeth	V11		
		>	
		<	
		ncel Save	

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

🔾 cara Print Cockpit			-	a ×
	Print parameters			
Slicer	Print parameter update Version: V1.0.1-2824/1021	Last Check Time: 2024-16-30707-23-49	Check Update	
Print jobs	You have the latest version installed.		Update	
😤 Printers	More Options			
(7) Print paramete	Add print parameters		Import	
	S Print parameter Manager		Open	
•				

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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

Silcer Print parameter update   Print plas Vor hore the latest version installed.   Vor hore the latest version installed. Update   Print parameters More Options	Cara Print Cockpit	Print parameters		-
Print jobs      Printers More Options      Print parameters		Print parameter update	Last Check Time: 2024-10-30107:23:49	Check Update
Print parameters	👔 Print jobs	You have the latest version installed.		Update
	😤 Printers	More Options		
	(7) Print paramete			Import
S Print parameter Manager		Print parameter Manager		Open
		_		
		_		
	•			

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.

	Printers 🗘				Add	- o ×
🐼 Slicer	Preview	Name	Туре	Status	IP	
Prints		cara Print Cube	cara Print Cube	Idie	192.168.110.167	Delete
Printers						
🔞 Materials						
÷						-

## XY-Compensation for print parameters

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

6 9

15

XY Compensation	×
Printer:	cara Print Cube
Resin:	DRAFT Stone beige
Layer Thickness:	50 um
XY Compensation	0.02 mm 🔿
Cancel	Save

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

#### To change the settings:

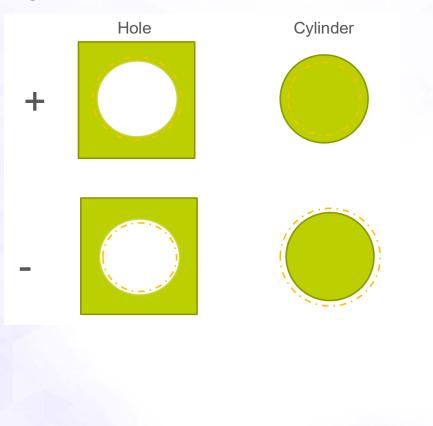
- 1. Open the Print parameter menu
- 2. Open the Print parameter Manager
- 3. Choose the Print parameter and layer thickness in the "Print parameters available in slicer" → Right-click to open the editing window
- 4. Input the XY-Compensation value (on the right side of the panel)
- 5. Click "Save"
-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

	Print parameter update Version: V1.0.1-2024/10/22	parameter Manager - <b>Type</b> :	cara Print Cube ~	 Check Update
Slicer	Please	e choose and add print parameters to the list "Print para Kulzer Print parameters	ameters available in slicer". Print parameters available in slicer	
Print jobs	You have the latest version installed. > dir	Version ma Print	Type Version v dima Print DDAET Stress tool V1	Update
Printers	More Options	XY Compensation Printer: Resin:	cara Print Cube DRAFT Stone beige	
Print parameters	Add print parameters	Layer Thickness: XY Compensation Cancel	50 um v/1 n 0.022 mm C V1 V11	Import
	S Print parameter Manager			2
		Cancel	Save	
	Print parameter Manager		Save v v2	2

#### 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

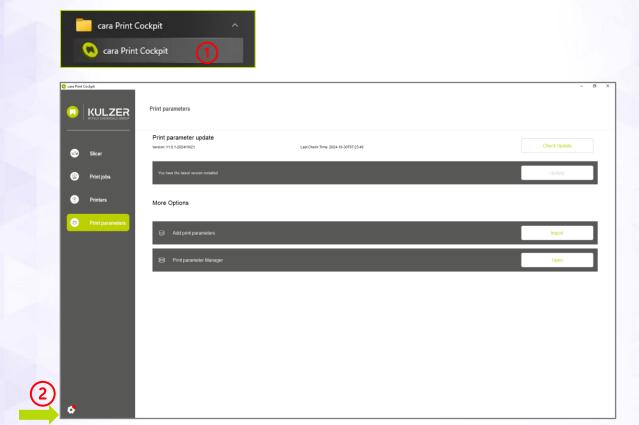
- + "looser"
- "tighter"



## Updates

#### 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



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	Print parameters			- 0
🧭 Silcer	Print parameter update Weslow V1.01-2024/10/21	Last Check Time: 2024-10-30T07-23-49		Check Update
Print jobs	You have the latest version installed.			Update
Printers	More Options			
Print parameters	Add print parameters			Import
	S Print parameter Manager			Open
<b>⊈</b> ፼ Language				
Check for software upd	jate			
O Check for software update	×			
Current Version: Update available	V1.0.03-beta09			
	Itelligence Technology Co			
Copyright © Suzhou Laisai In Ltd. All rights reserved.				
	Update			

## 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			
Slicer	Print parameter update weiser v1.8.5-2024-1021	Last Check Time: 2004 11-01712-37-08	1	Check Update
Print jobs	New print parameters available V1.1 1.cetoensez			Update
<ul> <li>Printers</li> <li>Print parameters</li> </ul>	More Options			
	Add print parameters     Print parameter Manager			Import
	<ul> <li>Implements an obs</li> </ul>			
<b>6</b>				
- Now p	int parameters available			
New pr     V1.0.1-20			Check Update	
	Print parameters			-
	Print parameters Print parameter update www.rtil sizevizit	Lad Owen Time 2016 11 411 (23) M		- Ø X
KULZER	Print parameter update	Last Own Time 2004 14 4112 37 H	(2)	
KULZER	Print parameter update weski v1.5 s2041621	Las Own Tree 2004 11 ef 17 237 30	2	
KULZER      Krist	Print parameter update water 113 Add 1001 Wey print parameters available ve 14 Laterway	Las Clean Tine 2014 11 41712 3739	2	
KULZER MITHU CHIMICAL CATOR     Sicer     Print pole     Print pole	Print parameter update Wesen 113 - 2019-101 Merging parameter available Virt Samonia	Lat Owa Tina 305 H 4 H 23 H	2	Crecitipale
KULZER METHOD GENERALS GROUP     Sicer     Piedupte     Piedupte     Piedupte	Print parameter update water 113-200450 We have a seatch We have a seatch We parameter a seatch We parameter a seatch More Options Add pert parameters	Lad Osah Tine 2024 ti 4110 237 M	2	Check Update
<ul> <li>Store</li> <li>Policybas</li> <li>Policybas</li> <li>Policybas</li> </ul>	Print parameter update water 113-200450 We have a seatch We have a seatch We parameter a seatch We parameter a seatch More Options Add pert parameters	Lat Oan Tou 2004 14 411 (2.02)	2	Check Update
KULZER METHOD GENERALS GROUP     Sicer     Piedupte     Piedupte     Piedupte	Print parameter update water 113-200450 We have a seatch We have a seatch We parameter a seatch We parameter a seatch More Options Add pert parameters	Lat Crea Tina 2011 11172 2731	2	Check Update
	Print parameter update water 113-200450 We have a seatch We have a seatch We parameter a seatch We parameter a seatch More Options Add pert parameters	Lat Deal Ting 2014141123734	2	Check Update
KULZER METHOD GENERALS GROUP     Sicer     Piedupte     Piedupte     Piedupte	Print parameter update water 113-2004501 We have a search a search We have a search a search We have a search a search Where Options Add pert parameters	Lat Ose fina 2004 14 417 (2.2.24	2	Check Update
KULZER MITHU CHIMICAL CATOR     Sicer     Print pole     Print pole	Print parameter update water 113-2004501 We have a search a search We have a search a search We have a search a search Where Options Add pert parameters	Lat Open Tine 2004 11 4170 2398	2	Creck Update
Sice Prisipes Prisipes	Print parameter update water 113-2004501 We have a search a search We have a search a search We have a search a search Where Options Add pert parameters	Lat Osas Tine 2004 14 417 (2.37.38	2	Creck Update

	Print parameters Print parameter update Wester 118-3224902 Vise bard to total water wester andref More Options	Last Okes Troy. 2014 11 of 11/237 08		- G x
	Add print parameters     Print parameters Manager	3 Performance A Performance A		inport Cont
6				
Infor	mation X Import succeeded.			
	ОК			

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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 Support Hub.

Cara Pri		Print parameters			- a x
6	Slicer	Print parameter update Version: V1.0.1-2024/10/21	Last Check Time: 2024-10-30107 23:49	Check Update	
8	Print jobs	You have the latest version installed.		Update	
*	Printers	More Options			
	Print parameters	Add print parameters		Import	
		S Print parameter Manager		Open	
•					

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# **Voxeldance Tango**

# **Slicing and Printing**

1. Open the Slicer

Slicer	Print parameter update Version: V1.0.1-2024/10/22	Last Check Time: 2024-11-01712:37.06	Check Update
Print jobs	You have the latest version installed.		Update
🛞 Printers	More Options		
(7) 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 SUCING	
1	1 11		

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)

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Automatically nest parts on platform

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	
Pattern History The The Move Record State	State Mirror On Orientation Arrange Hollow Perforence Label Compensate Honogenerity	Mech Bookern Support Sice
🗾 Voxeldance Tango		×
Standard	Printer Resin	
Kulter cars Print Cube	Splint clear#0.075#V1 - Add	Setting Delete
		Second Control of the second s
	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		
Thickness: 75um Layers: 0		
Volume: 0,000 ml Weight: 0,000 g 🕀 🔁 📴	Apply	â
Platform Size: X 192,000 mm Y 120,000 mm		
Z 190,000 mm		

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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 Lay an
		Standard Print Cube	Printer Splint clear#0.1#V1 New Script		Resin Delete	
			Resin Densky :			
			Resin Cost : V1	0,000 CNH(China Yuan)	· / L ·	
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	Splint clear#0.1#V1 100um 0	~		COSTAL COSTAL		

 $0.1 = Layer thickness 100 \mu m$ 

V1 = Print parameter version

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

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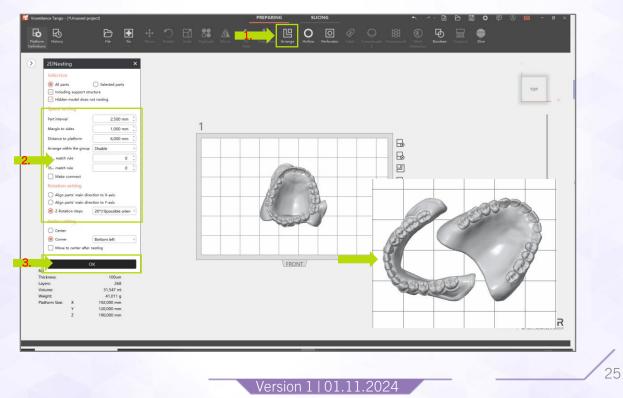
#### 4. Import STL Files

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

Voxeldance Tango - (*Unsaved protect)	PREPARING SLICING 🔨 🖒 🖄 🗘	🗢 💿 😑 – o 🗙
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Machine: Kuber care Print Cube Reain: Denture Try-In40, HV2 Trickinsos: 100um Layers: 0,000 p Volume: 0,000 nl Weight: X 192,000 nm Y 120,000 nm Z 190,000 nm	File name All Known File("vap; "de' vac; "de'	

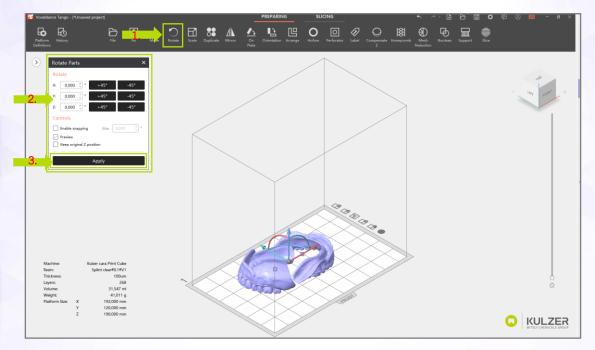
#### 5. Arrange

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.



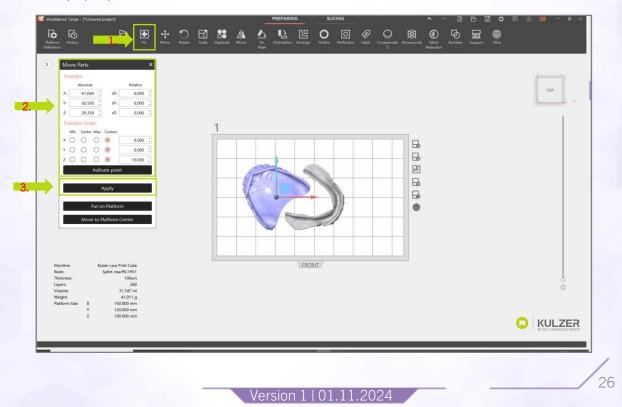
#### 6. Rotation

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.

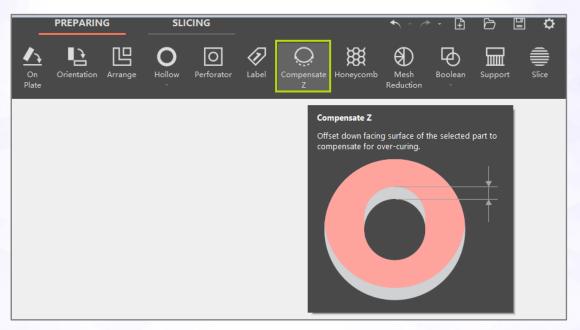
Please visit the cara Print Support Hub for the most recent version: www.kulzer.com/mycube-support

	PRINT PARAI	METER M	ATRIX				
PICTURE	MATERIAL	INDICATION	ORIENTATION	REINFORCE- MENT	Z-COMPEN- SATION	Z LIFT HEIGHT	REMARKS
	dima Print Stone beige	Model/Die-Model	0*	horseshoe model	no	3 mm	<ul> <li>just fill the vat to 500 ml line</li> </ul>
*	dima Print Stone beige	Die-Model	dies 90° model 0°	по	no	3 mm	• just fill the vat to 500 ml line
3540	dima Print Splint clear	Splints	35°-40°	one reinforcement recommend	0.4 mm	7 mm	<ul> <li>just fill the vat fill 250 ml for transparent materials – postcure with supports</li> </ul>
	dima Print Cast ruby	Partial Frameworks     Gridges up to     Sunits     Crowns     Copings     Inlays     Onlays     Veneers	0-10°	Optional for frameworks	no	5 mm	<ul> <li>Use 'no support area' could be necessary depending on geometry of framework</li> <li>postcure with supports</li> </ul>
-	dima Print Try-in	Try-In	0°	no	no	5 mm	Postcure without supports
pplication Information / c	ara Print Cube		TRIX		2		Cara
					Z-COMPEN-	ZUFT	Сага
	PRINT PARAM	INDICATION		HEINFORCE- MENT	Z-COMPEN- SATION 0.5-0.6 mm	zuirt Height 7 mm	EEMARKO • Use Z-Compensation before auto supports • Use no support areas option on fitting areas • Postcure without supports
DIMA F PICTURE	PRINT PARAN MATERIAL	INDICATION 9 Denture Base	ORIENTATION				EXMANCE     Use 2-Compensation before audo supports     Use no support areas option on fitting areas     Pacture without supports     Coulsal side to build platform     material level > 280 mil recommended
DIMA F	PRINT PARAM	INDICATION 9 Denture Base	ORIENTATION	no.	0.5-0.6 mm	7 mm	LISE 2-Compensation before auto supports of the auto supports of the auto supports of the automatic supports supports outomata side to build outomata level > 250 ml
	PRINT PARAM	INDICATION     Denture Base     Denture Teeth     Temporary Crowns	0RIENTATION 80-90° 0-10*	no	0.5-0.6 mm	7 mm 5 mm	EEMARKE      Use 2-Compensation before auto supports     Use on support areas option on fitting a

#### 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.

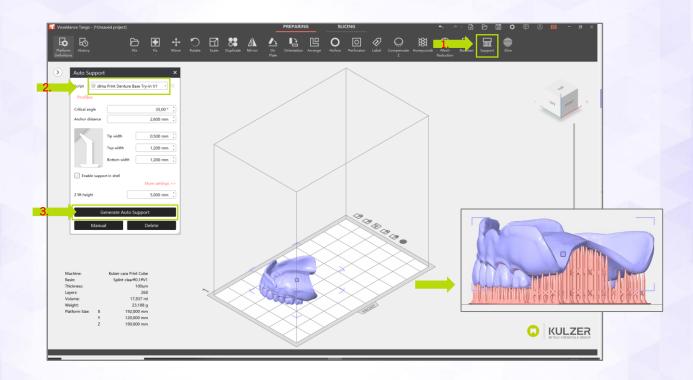


#### 9. Auto Support

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

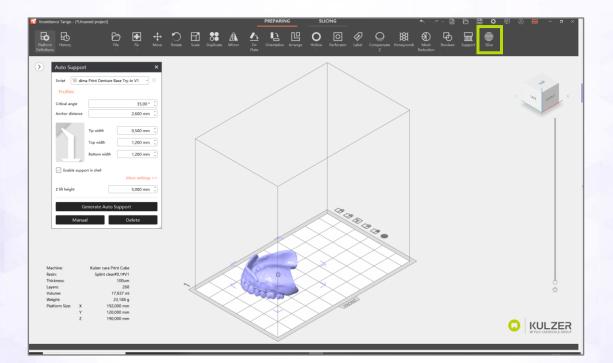
"Z-height" depends on the indication and needs to be set based on the dima Print parameter matrix.

Kulzer recommends putting each device on supports.



10. Slicing

After all parts are prepared, click "Slice"



11. Export slicing file to cara Print Cockpit

	PREPARING SLICING	
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	Export Slice Files × Export Format Export Format RAYSHAPE Slice Files(RSLC) • Export Settings File Name dima Print Try-in 2 OK 3 PREPARING SLICING	
educer Tango - PUrsued project	Slices Slices	0 @ - 0
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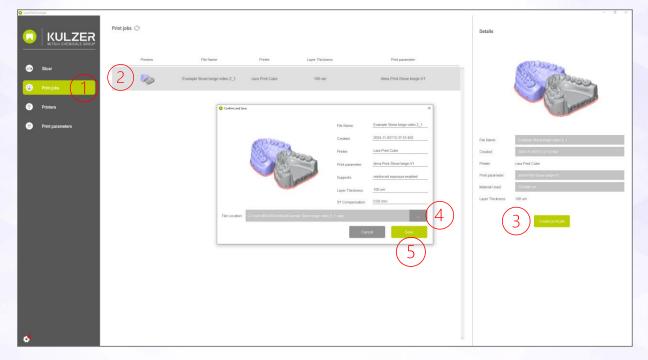
30

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

- Cipen Create New Save Save Rie Part Project Project Project A Save Proje Machine: Resin: Thickness Layers: Volume: Weight: Platform PREPARING 🔟 Voxeldance Tango - [\*Unsaved project] Hove Rotate Scale Duplicate Mirror Platform History Definitions File File Fix ПС New Save Save Project Project Project A Open File □\_\_\_\_ O\_\_\_ Create Part 3 Save Project As Save Project (Ctrl+S) Save the current project.
- 12. Save project

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



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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".

0	Printer List			×
	.capc file has been sa	aved. Send it to a pr	inter?	Refresh
		Name	Туре	Status
		41 1	cara Print Cube	Idle
		cara Print Cube	cara Print Cube	Offline
		33	cara Print Cube	Printing ~
	Send by IP		Cancel	Send 2

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.

		Printers 🔿				•	Add Save
		Preview	Name	Туре	Status	IP	
© (3)	Slicer Printjobe		40	cara Print Cube	Offline	192.168.3.238	Delete
	Printers Print paramétèrs						
	Print parameters						

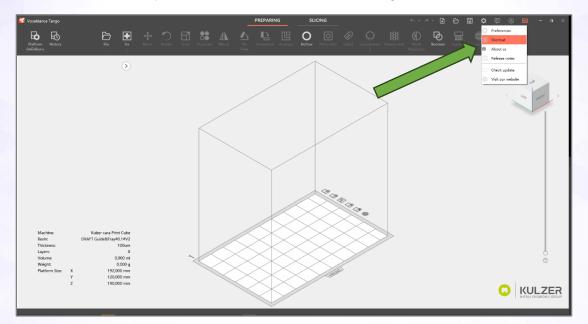
3. Copy the slicing file with a USB drive

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

# **Special functions & Tricks in Tango**

#### Shortcuts

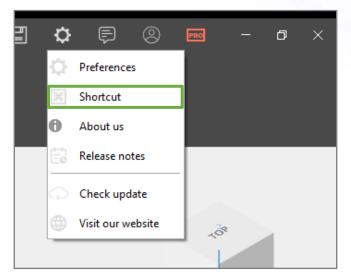
Shortcuts can be helpful to maximize workflow efficiency.



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.

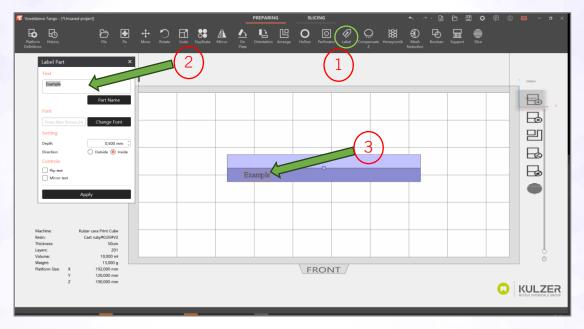


	Shortcut Editor				×	
	Prepare	Slice	Basic	Views	Edit	
-	Le Arrange			Shift+A	•	
	▲ On Plate			Shift+B	•	
	🛞 Delete			Del	•	
	Complicate			Ctrl+D	•	
	Exit			Alt+F4	•	
	Hide Selected Parts			Ctrl+H	<u> </u>	
	Show/Hide Support(Ed	it Support)		Alt+G	• I	
	Mirror			Μ	<u> </u>	
	+ Move			Т	<u> </u>	
	Greate Part			Shift+N	<u>。</u>	
	Transparent Parts			Ν	<u> </u>	
	O Perforator			Shift+P	<u> </u>	
	Pick && Place Part			F9	•	
	Platform Definitions			Ctrl+P	<u>。</u>	
	C Rotate			R	<u> </u>	
				Restore to Defa	ult Save	
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## Labeling of parts

Sometimes it is helpful to engrave parts for better identification.



1. Click on "Label" button

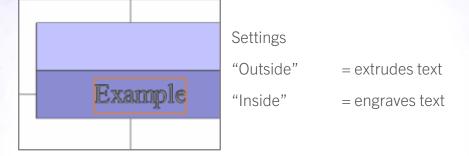


2. Insert text or click "Part Name" to use part name

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)



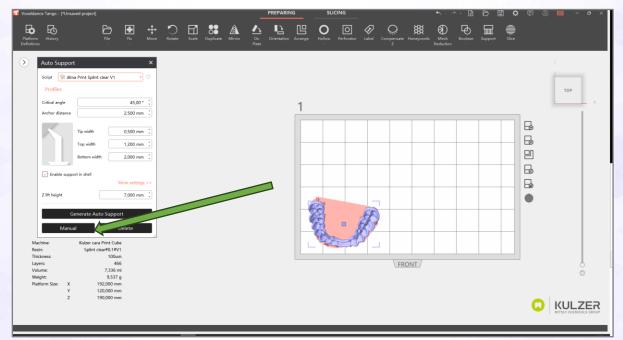
### Add or delete supports manually

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.

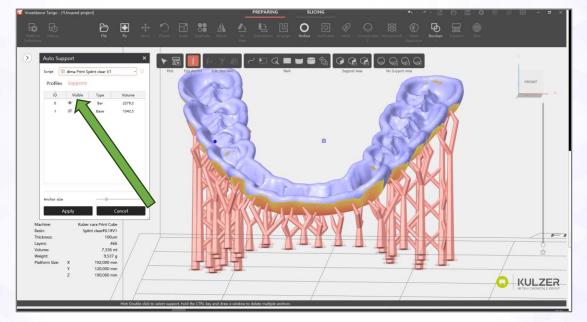
To adjust, add or delete supports:



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

Auto Support X						
Script 🕅 dim	Script 💡 dima Print Splint clear 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 🇘				
Generate Auto Support						
Manua	al	Delete				

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



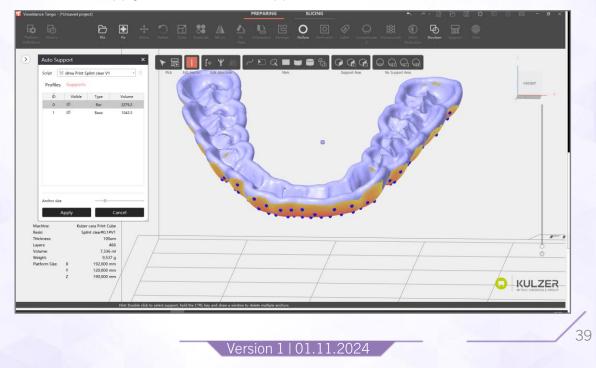
3. Click on the area next to the hide eye symbol to show the connection points (see arrow) or right click "Add/Remove Support Anchors"

Auto Sup	port		×		Auto Sup	port		×
Script 😭	dima Print De	enture Base	V1 •		Script 🗊	dima Print S	Splint clear V1	- 0
Profiles	Supports				Profiles	Supports		
IĎ	Visible	Туре	Volume		IĎ	Visible	Туре	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	Add Tree	Support Nodes Branches t Support Structure					
Anchor size	pply		Cancel	7	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.

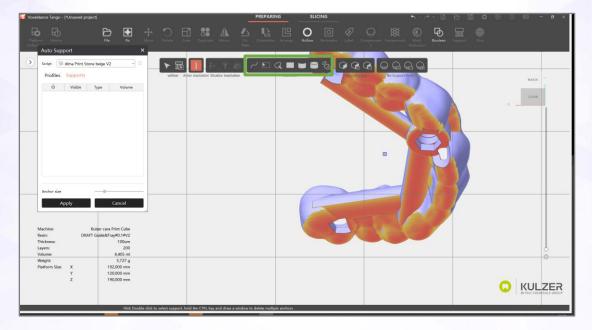
For details, please find corresponding video tutorials on Kulzer's support hub. In the following section the workflow is explained briefly.

- 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

Voxe	idance Tango - [*Un	saved project]							PREPARI	NG	SLIC	ING			<b>•</b> •••	≁ • ⊡	8 8	9 <b>Q</b>		- a ×
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	Auto Support	ŧ.		×						1						4				14 S
•	Script 😭 dima	Print Stone beige	V2									-								
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	Critical angle		40,00								-	~	-						6	ACK.
	Anchor distance		2,300 m												1					108
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		Tip width	0,300 m	m I																
		Top width	1,000 m	n C											15					
		Bottom width	1,000 m	m :											E					
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	Z lift height	[	3,000 m	m .												N	5)			
	Machine: Resin: Thickness: Layers:		Delete ara Print Cube &Tray#0.1#V2 100um 200								C	E	0			>				
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Fools			
▶ 屁 🔲 🖗 Ү 🗄	~ 🗉 Q 🔳 🖬 😭		
Pick Edit Anchor Edit Structure	Mark	Support Area	No Support Area

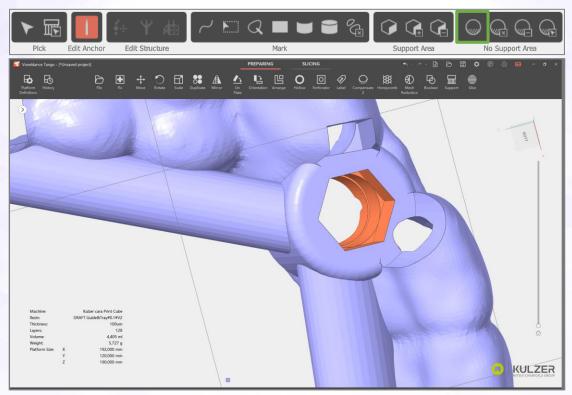
Tools to mark



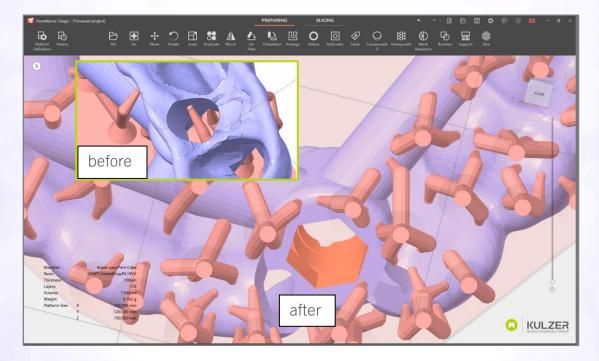
Marked area is yellow.

Voxeldance Tango - [*Unsaved project]	PREPARING	<ul> <li></li></ul>
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Anchor size		
Apply Cancel		
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Volume:         4,405 ml           Weight:         5,727 g           Platform Size:         X         192,000 mm           Y         120,000 mm		۵
Z 190,000 mm		

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



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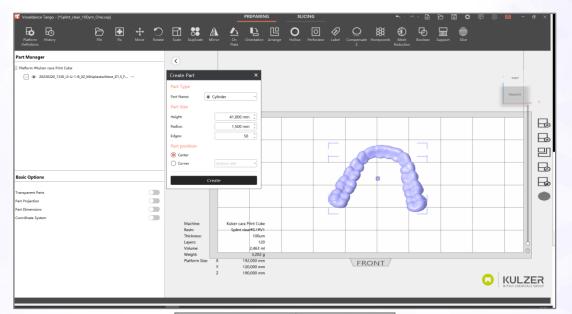
#### **Reinforcement bars**

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

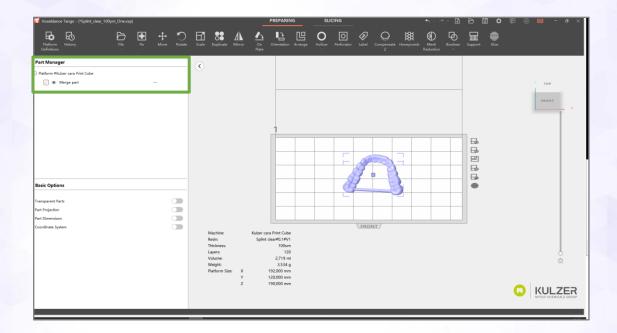


Create Part		×
Part Type		
Part Name:	Cylinder	•
Part Size		
Height:	41,000 mm	-
Radius:	1,500 mm	÷
Edges:	50	•
Part position		
Center		
Corner	Bottom left	•
		_
	Create	

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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.

Brasil	Kulzer South America Ltda. Rua Cenno Sbrighi, 27 - Sala 42 - Água Branca 05036-010 São Paulo SP Brasil <u>support.br@kulzer-dental.com</u>
Germany	Kulzer GmbH Leipziger Straße 2 63450 Hanau Germany <u>cara@kulzer-dental.com</u>
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>
Italy	Kulzer S.r.I. Via Console Flaminio 5/7 20134 Milano Italy <u>support.it@kulzer-dental.com</u>
Republic of Korea	Kulzer Korea Co., Ltd. Room 501, Namsung Plaza Bldg. 345-30 Gasan-dong, Geumcheon-gu, Seoul 153-782 Republic of Korea support.kr@kulzer-dental.com
USA & Canada	Kulzer, LLC 4315 S. Lafayette Blvd. South Bend, IN 46614 USA <u>cara-service-na@kulzer-dental.com</u>
Australia & New Zealand	Kulzer Australia Pty Ltd New Unit 20 / 53 Lorraine St, PEAKHURST, NSW, 2210 Australia <u>support.anz@kulzer-dental.com</u>

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