

July 2015

FOLLOW-ME! Technology Systems GmbH, Munich, Germany

# Readme hyperDENT V7.3

English

Version history hyperDENT V7.0

4.4.1.376 (V7.3)

Information/functional enhancements

Changes/enhancements for jobs

**Bugfixing/improvements** 

4.3.1.339 (V7.2.1)

Bugfixing

4.3.1.338 (V7.2)

Information/functional enhancements

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Bugfixing/improvements

4.1.1.308(V7.1)

Information/functional enhancements

Changes/enhancements for jobs

**Bugfixing/improvements** 

4.1.1.288 Release (V7.0)

Manual supplement

Information/functional enhancements

Changes/enhancements for jobs

# hyperDENT version7

### 4.4.1.376 (V7.3)

### Information/functional enhancements

• Microsoft Visual C++:

For proper operation of *hyper*DENT must from now on the version vcredist VC ++ 2013 (X86) be installed. With the update to *hyper*DENT V7.3 these will be installed automatically.

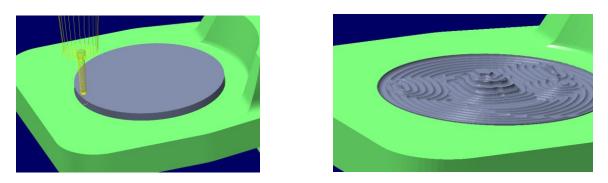
• Full Dentures: separate manual

### Changes/enhancements for jobs

- New cycle for profile finishing
- New selections for parameter "minimum depth" in "roughing" and "reduce stock".
  - Min. depth
    - Top of part
    - Mid of part
    - Bottom of part
    - Top of blank
    - Mid of blank
    - Bottom of blank
  - Offset min. depth ( < 0 deeper machining)

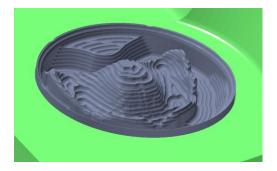
If a minimum machining depth for roughing is needed, for example, for the model or denture processing.

Excess material is milled away to the holder in order to provide more space for the following operations.



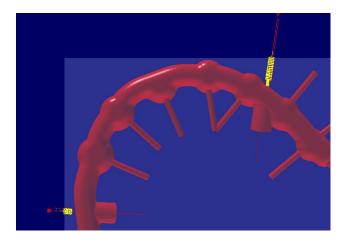
- Changed strategy of tool angulation for "Overall finishing occlusal side (abutments)" for improved machine dynamics.
- Fixture allowance for more safety. Rohteilhalter-Aufmaß für mehr Sicherheit bei der Bearbeitung. Editabel in general template settings. Useable for all kinds of fixtures. Acts as a global allowance on the fixture to guard against collision.

Margin line thickness	0
Bounding strategy	Fixture
Min. distance Part - Fixture	2
Outer machining ortho to blank	× No
Coolant	Off
Tool reference	Tip
Clearance above stock	4
Clearance distance	1
Check fixture against collisions in 3X Jobs	Ves
Check fixture against collisions in 5X Jobs	Ves
Fixture allowance	3
Reduce factor	0,9

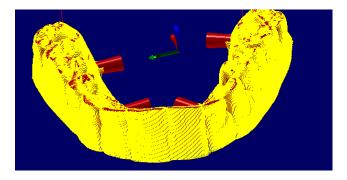


### Bugfixing/improvements

- Undercut properties in the context menu are now only available for coping preparation lines. Not anymore for all preparation lines.
- Bugfix in generating NC-file names. If there was a point in the model name the rest would be cutted. Now the model name is shown complete, but without the point.
- Bugfix of calculation errors in the rest machining.
- Improved stock tracking.
- Bugfix in "Close Caps" on roughing jobs.
- Improved calculation when drilling with high angles of attack.



- Bugfix in screw channel detection.
- Improved automatic preparation lines detection.
- Bugfixes in the user interface layout.
- Bugfix in automatic nesting.
- Improved tool path calculation on undercuts for "5X Profile finishing normal to centercurve" on "Overall finishing occlusal side (bridge)"



# 4.1.1.338 (V7.2)

# Information/functional enhancements

• Multiple selection of templates and copying is now possible

Profile Frasstrategie				
Auswahl nach: Material -	Name	[		
Objekttyp -	Daten			
Maschine -	Daten			
Maschine -	Frässtrategie		Parameter bearbeiten	
	5			
	Material	Cobalt Chrome		
[3+1A] CoCr _ anatomical Bridge _*	<u>*</u>			
[3+1A] CoCr _ anatomical Bridge _* (2)	Objekttyp			
[3+1A] CoCr _ anatomical Crown _*	objektiyp			
[3+1A] CoCr anatomical Crown _* (2)				
[3+1A] CoCr _ Bridge _*	E			
[3+1A] CoCr_Bridge_* (2)				
[3+1A] CoCr_Coping_*				
[3+1A] PMMA _ Bridge _*				
[3+1A] PMMA _ Coping _*				
[3+1A] Zi _ Bridge _*				
[3+1A] Zi _ Coping _*	Maschinen		*	
[3+2] CoCr _ Abutment Bridge / Bar direct _*	Muschinen			
[3+2] CoCr _ Abutment crown single direct _*				
[3+2] CoCr _ Abutment single direct _*				
[3+2] PUR _ Bitesplint _*				
[3+2] Ti _ Abutment single direct _*	Voreinstellung für			
3+2] Ti(5) _ Abutment Bridge / Bar direct _*	OL: UN		Maschinen	×
[3+2] Ti(5) _ Abutment crown single direct _*	Objekttyp		waschinen	
[3+2] Zi _ Inlay- / Onlay- / Maryland Bridge _*				
[3+2] Zi _ Inlay / Onlay _*				
[3+2] Zirkoniumdioxid _ Abutment single direct _*	- 🖪 🖀 😭	B 🔑 🖨		
I3X1 Ti NT-Prefah Δhutment *		5/ 6		

- Change type of preparation line in "user defined area" and "tooth pocket" in
  - o context menu in the graphics window

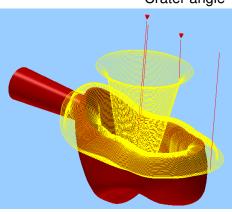
 $\circ$  Menu -> Edit -> Preparation line -> Change type of margin line possible.

• New cycle for 3D roughing integrated.

### Changes/enhancements for jobs

- In roughing jobs it is now possible to select the planar mode.
  - Planar mode
    - Inside out (milling from inside to outside)
    - Optimized in (milling from outside to inside)
- Job "Overall finishing occlusal side (bridge)" incl. milling strategy "5X Profile finishing normal to centercurve" is now also available for models.
- "Calculate if..." to use one template for one- and two-piece abutments.
  - Off
  - Screw fit area exists
  - Screw fit area does not exist
- 3D Equidistant finishing for "finishing user defined areas" unlocked.
- Working in the opposite insertion direction similar to "Finishing user defined areas" now also in "Restmachining user defined areas".
- Job: Predrill with 5X bossfinishing (for grinding)

- o New parameter
  - Hole diameter
  - Crater angle



- Synchronizing with the predrill job of the delivery point in the middle of the job "finishing over all cavity side (cap) 3D Equidistant Finishing flow"
  - Requirement:
    - Predrilling Job => Side => Bottom
    - General settings in Job => Outer machining ortho to blank => Yes
- "Offset prep safe mesh" now adjustable, before 0,05mm as default value.
  - Requirement: Protect margin line => Yes
  - Available for:
    - Job: Finishing outer areas cavity side (cap)
    - Job: Overall finishing cavity side (cap)
    - Job: Finishing outer areas cavity side (bridge)
    - Job: Overall finishing cavity side (bridge)
- Slope dependent machining in "3D and 5X automatic restmachining" in parallel strategies in restmachining jobs. Target is to get better toolpathes for grinding.
  - Slope dependent machining => Yes => Behavior as before
  - Slope dependent machining => No => Restmachining in parallel strategies
    - Job: Restmachining inside abutment bases
    - Job: Restmachining inside copings
    - Job: Restmachining outer areas cavity side
    - Job: Overall restmachining cavity side
    - Job: Restmachining userdefined areas
    - Job: Restmachining occlusal side
- Multi axis machining in restmachining inside copings. Machining in several axis positions (2 or 4), dependent on machine axis.
  - Requirement:
    - Undercut property of coping => Coping has undercuts
    - Multi axis machining => Yes

- Available for:
  - 3D Arbitrary stock roughing
  - 3D automatic restmachining
  - 5X automatic restmachining
- "Offset prep safe mesh" for job "finishing outer areas cavity side (bridge)" now for all milling strategies available.
- Job: Finishing any side => "Radial 5X Z-Level finishing" and "Radial 5X Profile finishing"
  - $\circ$   $\;$  New parameter: Center at connector position  $\;$
  - Effect: The pivot point for the tool paths is the center of the connector, not of the part. Results are smooth tool paths around the connector.

### **Bugfixing/improvements**

- Milling strategy in roughing jobs was adapted to settings in version 2012. Now again from inside to outside. Now also selectable. See changes/enhancements for jobs.
- Bugfix in depth limit in 3X Peeling jobs.
- Bugfix in Templateeditor.
- Various translations.
- Various minor bug fixes.
- Bugfix in polyline identification.
- Bugfix in deleting user defined areas in the editor.
- Bugfix on "exit hyperDENT on successful finish", now it also works with a minimized window.
- Bugfix in tool path calculation in 3X Peeling Mode ascending + descending.
- Bugfix in general settings, select language. Again visible after change language.
- Bugfix in editing mode, after quitting editing mode the previous data are available.
- Script-Error while load project fixed.
- Bugfix in calculating user defined areas.
- Revision of display and projection of user defined areas.

- Troubleshooting in roughing through implementation of new cycles.
- Display of machine and fixture after merging calculations in the calculation merge.
- Bugfix on sinter frames when using the support plate.
- Bugfix on sinter frames after deleting the margin lines.
- Project sketch is now even after changing the text size in Windows on a scale of 1:1.
- Incorrect display of the tool type in the project printing fixed.
- Troubleshooting the stock tracking.
- Missing calculating in roughing of screws channels in "calculate in NC coordinates" has been fixed.
- Space Mouse is supported again.

# 4.1.1.308 (V7.1)

### Information/functional enhancements

• New undercut control functionalities



Possibility to rotate the view to insertion direction an opposite insertion direction to calculate undercuts also in opposite insertion direction. Useful for user defined areas.

### Rotate



Opposite insertion direction (View of insertion direction) (Also in the

context menu available)



Insertion direction (View of insertion direction)

### **Calculate**



Include opposite direction (Both directions will be calculated)

Exclude opposite direction (Calculating only in insertion direction)

• Print project settings

When you change the part name in the part browser you can display the original part file name separately in the print preview.

- Display part information
  - Display part file name
- Nesting Position of 1<sup>st</sup> part

Use automatic nesting	Ves
Choose nesting direction	From inside to outside
Position of 1st part	Centre
Angle step [°]	10

• With this function the position of the first object can be selected depending on the nesting direction. Particularly interesting for rectangular blanks.

### Changes/enhancements for jobs

- "Finishing user defined areas" is now available in part type "Abutment crown bridge"
- "Cut / Reduce connectors" new function for working with automation. If you set a NC text e.g. for part collector. Normally the job will create a tool path for each connector, this means e.g. the part collector appears for each connector. For this problem the NC text sequence was developed.
  - The following options are available:
    - NC text before tool change (sequence)
    - NC text after tool change (sequence)
    - NC text before first position (sequence)
    - NC text after first position (sequence)
    - NC text after last position (sequence)

### **Bugfixing/improvements**

- Bugfix in the license center with the Russian language settings
- Use development view settings have been corrected. Use development view is now default. (Settings / General / Display)
- If you start hyperDENT before hyperVIEW installation now a hint will appear.
  - omHV.exe is not found
  - To open *hyper*DENT, *hyper*VIEW must be installed!
- Bug at the recognition of the insertion direction in the rest machining and user defined areas have been fixed.
- The milling direction in "Overall finishing occlusal side (cap)" for the milling strategy "3D Equidistant finishing flow" have been corrected.
- Error in calculating " Cut / Reduce connectors" in response to the "cut safety distance" have been fixed.
- Bugfix in undercut calculation
- If there is no postprocessor (PP) installed, DIN ISO is present automatically. If there is any other PP, DIN ISO it is no longer displayed.
- Bugfix in sinterframe support plate thickness.
- Bugfix in License Center.

# 4.1.1.288 (Release, V7.0)

# Manual supplement

### Supplement to 5.4.2

### Project print setting selection

Print project Page Setup

New: Display part template

Display part tool paths exist

Display part user information

Show hidden part user information

General print settings	
Default font size	8,25
Print part selection	Select all parts in blank
View direction used for sketch	Occlusal frame
Display project information	Ves
Display machine	Ves
Display fixture	Ves
Display blank	Ves Ves
Display scale factors	Ves Ves
Display blank type	Ves
Display blank material	✓ Yes
Display blank geometry	Ves
Display blank color	Ves Ves
Display part information	Ves Ves
Display part type	Ves Ves

Display used tools for part

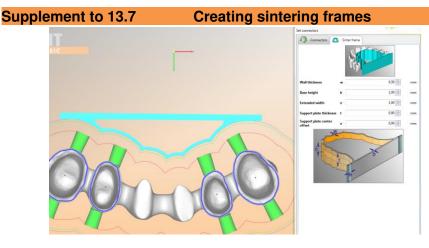
Display overall used tools

Use margin between part groups

# Supplement to 10.5.1

# Enter implant interface

Neur		Type of geometry determ	ination
New:	E	Explicit	External
	FM_AS_OS_L_3	3,5_4,0-2013-08-23-NoCollar	× 9, 🖙
	Global XY allow	wance	0,0000 💌 mm
	Position	99 9 8 8 8 8 8 8 8 8 8 8 8	<u>6</u>
	Offset increm	nent	0,020 👘 mm
	Angle increm	nent	1,000 📄 deg
<mark>ዮዮ</mark> ቆቆ	Fast translate up/dov	wn	
9°°	Fast rotation counter	clockwise/c	lockwise
<mark> æ</mark> [	Move part to reference	ce surface	
	Move part alc match.	ong the scre	w channe
5	Rotate part to selecte	ed point	
	Rotate part a	round the s	crew char
20	Rotate part to referer	nce surface	
	Rotate part a surfaces mate		crew char



#### New:

Extended width

Base length will be extended

Support plate thickness

A support plate will be created in the plate center

Support plate center offset

Offset to the support plate from the center

# Supplement to 17.1.3

### Fixture

#### New:

Screwchannel adding to part

Yes Add screwchannel, place parts

with screwchannel

No Placing without screwchannels

 Additional properties

 Data

 Calculation

 Calculation NC coordinates

 Xerry and the in NC coordinates

 Statuton axis preference

 Visuation axis preference

 Visuation axis preference

 Visuation axis preference

 Visuation axis preference

 Position of 1st part

 Position of 1st part

 Angle top [1]

 Angle top [1]

 Postion of stop part

 Operations adding to part

 Connectors atted into

 Connectors of thet (mm)

 10

Connectors offset [mm]

#### Supplement to 17.3

### **Building elements**

#### New:

Screw channel connectors

For more info's see 13.6.1

Supplement to 17.4.1

Connectors 🚯 Screw cha	nnel connectors 🛃 Sintering pins	
The fait is empty	Name Data Angle Will thickness Milling out Cat safety distance Material	4 510 m 251000 2510 2510 2510 2510 2510 2510 251
	Filtering	
	0 6 8 8 9	

### Entering tool data (optional)

#### New:

Tool type – "Lollipop"
3D preview (also available for "tool holder")
(Tools and toll holder will be shown in 3D, changes in real time)

Supplement to 17.8.5

**Consistency checks** 

**New:** Screwchannel outlet opening ends outside blank

Millboundary cuts other parts screwchannel outlet opening

< Miscellaneous	Part outside blank	Warning
Load wizard	Parts overlap	Warning
Project management	Part outside fixture boundary	Warning
Part tracking	Security distance to part	0,1
Consistency checks	Security distance to fixture	0,1
Calculation	Millboundary outside blank	Warning
Postprocessing	Millboundary outside fixture boundary	Warning
Navigation	Connector ends outside blank	Warning
Display	Millboundary cuts other parts connector	Warning
Connector behaviour	Connectors exist	Error
	Screwchannel outlet opening ends outside blank	Error
	Millboundary cuts other parts screwchannel outlet opening	Error

# Supplement to 17.8.7

Postprocessing

#### New:

Create screenshot before calculation

Image format

Print project automatically after calculation

<ul> <li>Miscellaneous</li> </ul>	Postprocessing strategy	Standard
Load wizard	Postprocessing mode	Start hyperVIEW only
Project management	Toolspecific output	× No
Part tracking	PP Output directory	hyperVIEW configuration
Consistency checks	Create subdirectory	× No
Calculation	PP Output file name	Fixed name
Postprocessing	NC file name	[STOCKNAME][TIMESTAMP]
Navigation	Create info file	× No
Display	Create screenshot before calculation	Ves Ves
Connector behaviour	Image view direction	Current view
	Show names of parts to be calculated	× No
	Image resolution width	800
	Image resolution height	800
	Image format	png
	Print project automatically after calculation	No No



Color user defined areas

Use development view (shows fixtures without specific view rotation)

Foreground text color

Foreground text size

Load wizard Project management Part tracking Consistency checks Calculation Postprocessing Navigation Display Connector behaviour	Holder color Holder transparency Part color Part color (new) Margin line color Color other margin lines Color abutment base lines Color emergence curve	128; 128; 128 0 254; 247; 231 255; 255; 255 0; 0; 255 0; 255; 0 255; 0; 255	
Part tracking Consistency checks Calculation Postprocessing Navigation Display	Part color Part color (new) Margin line color Color other margin lines Color abutment base lines	254; 247; 231 255; 255; 255 0; 0; 255 0; 255; 0	
Consistency checks Calculation Postprocessing Navigation Display	Part color (new) Margin line color Color other margin lines Color abutment base lines	255; 255; 255 0; 0; 255 0; 255; 0	
Calculation Postprocessing Navigation Display	Margin line color Color other margin lines Color abutment base lines	0; 0; 255	
Postprocessing Navigation Display	Color other margin lines Color abutment base lines	0; 255; 0	
Navigation Display	Color abutment base lines		
Display		255-0-255	
	Color emergence curve	233, 0, 233	
Connector behaviour		0; 255; 0	
	Color user defined areas	168; 0; 168	
	Outline color	255; 0; 0	
	Outline top color	0; 0; 255	
	Outline bottom color	0; 255; 0	
	Connector color	0; 255; 0	
	Sintering pin color	255; 0; 0	
	Sintering frame color	0; 255; 255	
-	Use development view	Ves Yes	
	Force display of insertion directions	Ves Yes	
	Background lower left	192; 192; 255	
	Background lower right	224; 224; 224	
	Background upper left	255; 192; 128	
	Background upper right	255; 224; 192	
	Foreground text color	0; 0; 0	
	Foreground text size	10	
	Selected objects color	255; 255; 0	
	Modify-enabled objects color	255; 128; 0	
	Use background image	Ves Yes	
	Background image transparency	0	
	Background image sizing	Keep background i	image size
	Background image alignment	Upper left	
	<b>Anti-aliasing</b> Samples used for Multisample anti-alia:	ing (MSAA) - Must b	be supported by video card and driver

# Supplement to 18.8.15

### New: Machining categories for user defined areas

It is possible to handle more than one user defined area with only one Job. Every user defined area you want to process must be written in the machining categories in the job. Separation of categories with " / ". For example: 1/2

Job template	Finishing userdefined areas
Jobname	Finishing userdefined areas
Calculate	Ves
Strategy	3D Complete finishing
Boundary check	Shank
Tool	Zi Ballmill d1,0x14
Spindlespeed	30000
Feedrate	1000
Reduced feedrate	500
Max. angle for red. feedrate	90
Coolant	From general settings
Machining categories	1/2
Machining direction	Insertion direction
Machining depth	Max. of bounding box
Denth offset	0



### New: Machining direction in user defined areas

With this option it is possible to manufacture from the opposite direction of the user defined area. Machining direction

Insertion direction

Opposite direction

Machining depth

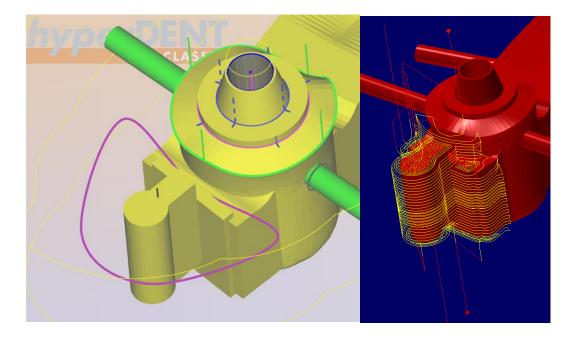
Max of bounding box

Min of bounding box

Mid of bounding box

Equator of part

Job template	Finishing userdefined areas		
Jobname	Schlichten benutzerdefinierte		
Calculate	Ves		
Strategy	3D Complete finishing		
Boundary check	Shank		
Tool	Co Chr Endmill d1,0x10		
Spindlespeed	30000		
Feedrate	1000		
Reduced feedrate	500		
Max. angle for red. feedrate	90		
Coolant	From general settings		
Machining categories	5		
Machining direction	Opposite direction		
Machining depth	Mid of bounding box		
Depth offset	0,5		
Offset	0		
Clip pathes on stock	× No		



Supplement to 19.4.10 Machining method for finishing implant interface geometry

New: Step strategy

Pocket (Every pocket will be milled one by one)

Plane (Mill strategies in planes)

#### hyperDENT Connect

### hyperDENT Connect

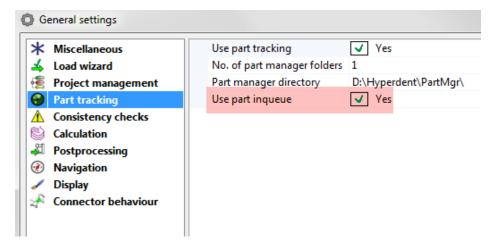
New:

Target of this functionality is to transfer dental restorations modeled and managed in 3Shape-DentalSystem direct to *hyper*DENT.

For this an application was developed which is callable, after configuration, direct from the user interface of the DentalManager and

- information's about parts to produce will be transferred to the *hyper*DENT Part-Management and
- optional hyperDENT will open with this parts

Attention: To see the parts in the inqueue it is necessary to activate this function in hyperDENT:



Effects in hyperDENT to the "Load Part"-Dialog:

#### 17

Name	Material	Height	Project	Last saved	Preview	
14139_20141019_1906_Tech_01_0	GK	0,000	24139_20141019_1906_Tech_01	21.10.2014		
14139_20141021_1205_Tech_01_0		0,000	24139_20141021_1205_Tech_01	21.10.2014		
					6	3
					Name	24139_20141019_1906_Tech_01_0 New file
					Nested in blanks	Show
					Measure	🖽 X 🔛 Y 👿 Z
					Size	8,172 mm
					In blank	
					Туре	Crown
					Material	GK
						Law .
					Filtering Material	
					Name	

Instead of the standard dialog the upper new list dialog appears.

To fill this list the following connection were developed.

Configuration in the dental system control panel ->3rd party applications:

O Dental System Control Panel - 3rd p	party applications			
Home Back Save	Help			
DentalManager > 3rd party ap 3rd party applications hyperDENT-Practicelab hyperDENT - DirectCon	3rd party applications	24139 ExternalApplication2	Change ID	
	Name Tooltip Application type Executable file name	hyperDENT - DirectConnect hyperDENT - DirectConnect Executable file • C:\Program Files (x86)\FOLLOW ME\hr		
	Executable parameter	Custom 🗸	-ManInfo:24* -30X:"%MANUF_FOLDER%\%ORDER_II	
Add Copy Copy Delete S Move up Cov Move down Recycle bin Cov Recycle bin S Restore all S Empty the Recycle Bin Details Total: 2 items	Icon file path		4 pixels size is strongly recommended) ME\hyperDENT V7.0\config\Images\app_icon_24px.png	

For "Executable file name" please choose the "3sconnect.exe" -file from the win-directory of the installation.

For "Executable parameter" choose "Custom" and specify: -3ox:"%MANUF\_FOLDER%\%ORDER\_ID%\%ORDER\_ID%.3ox"

Additional you can set a filter for the "ManufacturerID"

#### -ManInfo:<ManufacturerID>

The ManufacturerID you can see in the 3ox file:

 ditionalOrderInfo/>
delElements>
 ModelElement.displayName="Crown.46">
 <tvpeids></tvpeids>
<typeidsunn="30" (<="" anatomical="false" th="" typeid="Configuration 01 IDCrownWax08"></typeidsunn="30">
<pre></pre>
<pre><insertiondirlower x="0" y="0" z="1"></insertiondirlower></pre>
<pre><insertion insertion=""></insertion></pre>
0
<color displayname="Red Wax">IDColorWax01</color>
<pre><material displayname="Wax">Configuration 01 Material3</material></pre>
<noofunits>1</noofunits>
<pre><corderdate>2014-10-21T12:06:18.000</corderdate></pre>
<pre><shipmentdate>2014-10-21T00:00:00.000</shipmentdate></pre>
<pre><deliverydate>2014-10-21T00:00:00.000</deliverydate></pre>
<pre><receivedate>2014-10-21T00:00:00.000</receivedate></pre>
<scanmodule>ScanItRestoration</scanmodule>
<pre></pre> <pre></pre> <pre>/ DesignModule&gt; </pre>
<pre>&gt;</pre>
<scanfiles></scanfiles>
<pre><scanfile 01\24139<="" 1205="" 20141021="" c:\3shape\manufacturingdir\24139="" filetype="AntagonistModel" path="c:\3shape\24139 20141021 120&lt;/pre&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;/ScanFiles&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;CAMFiles&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;CAMFile path=" preparation"="" tech="" th="" unn="0"></scanfile></pre>
<camfile <="" datatype="string" elementid"="" path="c:\3Shape\ManufacturingDir\24139 20141021 1205 Tech 01\24139&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;/CAMFiles&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;ManufacturerID&gt;24139&lt;/ManufacturerID&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;pre&gt;&lt;ManufacturingProcessID&gt;24139 ManufacturingProcess6&lt;/ManufacturingProcessID&gt;&lt;/pre&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;IntermediateFiles/&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;pre&gt;&lt;ProcessStatusID&gt;Modelled&lt;/ProcessStatusID&gt;&lt;/pre&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;StatusCode&gt;30&lt;/StatusCode&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;ModelFileName&gt;c:\3shape\24139_20141021_1205_Tech_01\CAD\24139_20141021_1205_&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;AdditionalModelElementInfo&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;&lt;AdditionalInfoItem key=" shadermaterial"="" th="" value="Zirconium"></camfile>

Icon:

A 24x24-png (appConnect\_24px.png) you can find in: \FOLLOW ME\hyperDENT V7.0\config\Images

#### Application:

In the dental manager an additional button appears.

Orders TRIOS Inbox							
		$\mathbf{E}$					
og Orders	Number	Creation date	Delivery date	Customer	Items	Material	Status
a 🗔 By date	24139_2	21.10.2014 12:06:18	21.10.2014	311254930	Crown 46	Wax	Modelled
🗊 Today							
🗊 Last two days							
🚮 Last week							
Last two weeks							
▲ □ By status							
Created							
Transie (unprepared)							

When you click the button the following dialog will open, if there is minimum one part found.

lumber	Creation date	Delivery date	Customer	Items	Material	Status	Height	Expected delivery	Contact Person	Last modified
24139_2	19.10.2014 19:07:10	19.10.2014	311254930	Crown 46	"e.max CAD HT"	Modelled	8.17 mm	×		21.10.2014 11:55:55
24139_2	21.10.2014 12:06:18	21.10.2014	311254930	Crown 46	Wax	Modelled	8.19 mm	-		21.10.2014 13:06:33
					ection included to the hype DENT now, select indi		nagement. In order			
				24139_3	guration01_Material3 20141021_1205_Tech_ ) hyperDENT	Part name		About		

This dialog can be closed immediately, *hyper*DENT InQueue is already filled.

Alternative you can choose any part from the list and click "Load into *hyper*DENT", this part will be open in *hyper*DENT.

#### New:

#### **STL-Reducer**

This application was developed to reduce the calculation time. Big stl-files can be optimized and compressed.

Input file

Enter file path and confirm

File related information File name Size Patches

Parameters

Tolerance: The larger the tolerance, the greater the reduction. Angle: Triangle angles smaller than "Angle" will be optimized.

#### Output file

Enter file path and confirm Overwrite

Output related information Size Patches Data reduction

oose mesh file to reduce by using the text field, the file open dialog ess 'Start' button.	or dropping a file on this window. Customize parameter settings and output configuration afterware	rds and
nput	Input mesh	
ile Enter file path here and confirm with 'Enter' key		
ile related information		
ile name		
bize	- MB	
Patches	- pieces	
Parameters		
olerance	0,03000 🗘	
Angle	30 🚔 deg	
Dutput		
Dverwrite 🔲		
ile Enter file path here and confirm with 'Enter' key		
	Output mesh	
Ð		
art		
Dutput related information		
bize Patches	- MB	
Vatches Data reduction 0%	- pieces	
tatus		

# Information/functional enhancements

License Center: for more information's please see the installation manual

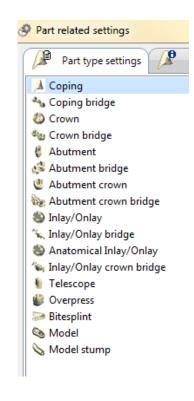
### New Part types:

Model



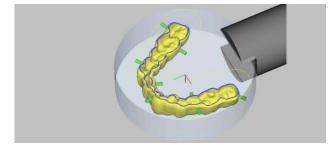
#### Modelstump





### Bitesplint

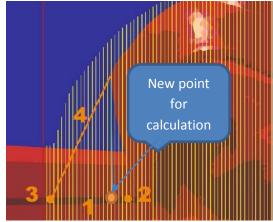
See more information's in V7.0 manual 18.8.13



### Work on convex hull

### The **definition of point 2 changed** from:

The distance (1) between the connector interface point on the part (2) and the end of the convex shell in the center of the connector (3) determines the path of the convex shell (4).



· ·	···
Work on convex hull	Ves
Add. connectorpoint distance	0,4

- 1. Distance to connector interface point
- 2. Connector interface point on part
- 3. End point of convex shell
- 4. Convex shell (Konvexe Hülle)

<u>The point 2 is not anymore at the connection point on the part, now it is on the outer line</u> <u>of the part.</u>

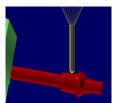
# Changes/enhancements for jobs

### **Overall finishing occlusal side (abutments)**

- New Job parameter for "5X Equidistant finishing":
  - o "Clearance mode"
    - Plane => for axial working
    - Radial => for radial working

		/ WALL 7/14
Use occlusal direction	X+Y rotation	
Max. groove depth	Unlimited	
Offset max. groove depth	0	
Limit up to emergence profile	✓ Yes	
Axial Emergence curve offset	0,5	
Clearance mode	Radial	
Allowance	0,1	
Stepover	0,1	
Desired tilt angle	90	
Max. tilt angle	90	
Contraction (Contraction)	T I J I I.I.J	90 degree tilt angle

Different tilt angles are possible







80 degree tilt angle

# Finishing emergence profile

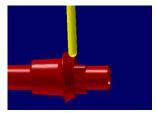
- New Job parameter for "5X Equidistant finishing":
  - o "Clearance mode"
    - Plane => for axial working

inieea moae	opirai
Protect geometry inside abutmentbase	× No
Clearance mode	Plane
Allowance	0
Stepover	0,1
Desired tilt angle	0
Tilt angle range	0
Max. tilt angle	0
Collision check	Tool and Holder

Radial => for radial working

Protect geometry inside abutmentbase	Ves Yes
Offset abutmentbase protection mesh	0
Clearance mode	Radial
Allowance	0
Stepover	0,1
Desired tilt angle	90
Tilt angle range	5
Max. tilt angle	90
Collision check	Tool and Holde





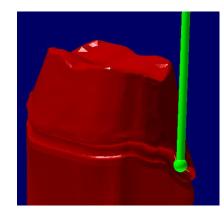
### Concave moulding

This option realize the possibility to mill concave mouldings on model stumps

• 3D Freepath milling

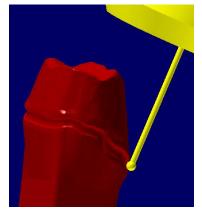
Job template	Concave moulding
Jobname	Concave moulding 3X
Calculate	✓ Yes
Calculate if	Off
Strategy	3D Freepath milling
Tool	Zi Lollipop d1x14
Spindlespeed	30000
Feedrate	1000
Coolant	From general settings
Use occlusal direction	No
Max. undercut depth	0,18
Collision check	Off

• Max. undercut depth



- 5X Freepath milling
  - Max. undercut depth
  - o Desired tilt angle
  - Tilt angle range
  - $\circ$  Max. tilt angle

Job template	Concave moulding
Jobname	Concave moulding 5X
Calculate	Ves
Calculate if	Off
Strategy	5X Freepath milling
Tool	Zi Lollipop d1x14
Spindlespeed	30000
Feedrate	1000
Coolant	From general settings
Use occlusal direction	X+Y rotation
Max. undercut depth	0,2
Desired tilt angle	15
Tilt angle range	5
Max. tilt angle	18
Collision check	Off



# Attention!!!

In this Jobs is no Collision Check available!!!

#### Contact

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