

## 1 3DCG TABLE -Technique

App #	Dr.	Dr. time	Asst.	Asst. time	Lab	Task
1			X	15		<ul style="list-style-type: none"> <li>Take radiograph of site</li> <li>Take purposely overextended VPS impression</li> <li>Place topical anesthetic on soft tissue of site</li> </ul>
	X	5				<ul style="list-style-type: none"> <li>Measure tissue thickness, mark on control form</li> <li>Check impression</li> </ul>
					X	<ul style="list-style-type: none"> <li>Pour impression in Accutrac tray</li> <li>Wax up prosthetic tooth / place denture tooth</li> <li>Mark desired buccal gingival outline on cast</li> <li>Create local impression of wax up site</li> <li>Cut local impression bucco-lingually (BL), at axis of implant</li> <li>Create dual vacuform bondable shim 0.75 mm, over 1 mm softguard</li> <li>Cut out area in vacuform around implant site</li> <li>Cut cast at MD of proposed axis</li> <li>Transfer tissue depth measurements to cast</li> <li>Remove cast material from opposing part to create space for BLP</li> </ul>
	X	10				<ul style="list-style-type: none"> <li>Mark desired bucco-lingual (BL) implant axis</li> <li>Drill 2- 3 mm deep hole indicating implant platform at, below or above osseous crest, depending on prosthetics and implant type</li> <li>Place BLP in hole and line up with drawn BL axis</li> <li>Secure BLP with Cyano-Acrylate glue</li> <li>Remove 1 mm material of cast opposing BLP</li> <li>Place parts of cast back in accutrac tray and close</li> <li>Place vacuform on cast</li> <li>Position Buccal wing over top of BLP, adjust by clipping / bending wings and Radiographic Implant Replica's ( RIR's) for passive fit</li> <li>Attach lingual wing, adjust as needed</li> <li>Translate assembly MD to have correct relation with neighboring teeth. Assure that buccal and lingual wings are parallel to the ridge.</li> <li>Rotate assembly to estimated MD axis</li> <li>Secure correction slot with top of BLP with, hot glue, or hot glue BL RIR's to vacuform. This will allow reversible positioning</li> </ul>
					X	<ul style="list-style-type: none"> <li>Secure wings and RIR's with orthodontic acrylic to vacuform, this is now irreversible</li> <li>Cut cross bar off</li> <li>Remove guide from cast and polish as required</li> </ul>
2	x	15	x	30		<ul style="list-style-type: none"> <li>Place surgical guide in mouth</li> <li>Take confirming radiograph</li> <li>Decide on rotation block needed 0, 3 or 7 , place block</li> <li>Anesthetize patient</li> <li>Place implant</li> </ul>
<b>Total</b>		30		45		

## 3D-Click-Guide

## **2 3DCG TABLE - Materials, Instruments, & Machinery**

### **2.1 Materials - Dentist**

Product name	Brand/Manuf	Description/Remarks
Disposable impression tray	Coe	
Foil, food service	Saran Wrap	Cover putty from saliva contamination
VPS adhesive	GC	
VPS Putty	GC Exaflex	
VPS impression injection material	GC Exafast NDS	
Topical anesthetic	various	
Form, <i>3DCG Recording Form</i>	3DCG	Mark measurements in fixed spots
Cyano Acrylate glue	Zap-a-Gap	Glue BLP to cast, and Wing assembly to BLP top
Cyana Acrylate glue accelerator	Zap Kicker	

### **2.2 Instruments, Dentist**

Product name	Brand/Manuf	Description/Remarks
Needle, short anesthetic	Stabident intra osseous	27 G 0.4 x 8 mm
Endodontic stopper	Caulk Dentsply	Silicone endo Stopper
Millimeter Ruler	3DCG	

### **2.3 Machinery, Dentist**

Product name	Brand/Manuf	Description/Remarks
X-ray unit	Planmecca	
Digital x-ray sensor	Dexis	Conventional film alternatively

### **2.4 Materials, Laboratory**

Product name	Brand/Manuf	Description/Remarks
Indexing system	Accu-trac by Whaledent	
VPS model material	Mach 2 / blue mousse	
Stone Model material	Snap-Stone, Whipmix. Preweighed	#26514 80 - 140 g Package
Stone Model material	Tak Systems Earth Stone	Premeasured, 10 minute set, no vibrator needed.
Hand Saw	Coltène Whaledent Pindex	Ref ; 13005
Vacuform sheets, soft	Essix 1 mm Mouthgard/ mod dupl	Ref ; 1M045
Vacuform sheets, hard	Essix A+ 0.75 mm	Ref ; 10035
Lab putty	Coltene-Whaledent	
Lubricant, dry anti-adhesive	Release by Cetylite Industries	Separate VPS from impression
Denture teeth	Various	Wax up

### **2.5 Instruments, Laboratory**

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## 3D-Click-Guide

Product name	Brand/Manuf	Description/Remarks
Blade, lab	Bard Parker # 23	Cut VPS cast
Pencil, lead	Various	#2
Bur, HedgeHog	Parkell, Inc.	Adjust VPS cast
Polishing points	Acrylipro, Brassler USA	Polish VPS cast

### 2.6 Machinery, Laboratory

Product name	Brand/Manuf	Description/Remarks
Vacuformer	Ultradent	
Hot knife , electric	Am. D. Hygienics, various	Tray Magic, etc.

## **3 3DCG TABLE, Instructions**

### **3.1 Assistant**

#	Task	Remarks
1	Expose radiograph of edentulous / implant site	Take perpendicular to ridge so no deformation of image.
2	Make Vinyl Poly Siloxane Impression	<ul style="list-style-type: none"> <li>• Cover Putty with clear plastic food wrap foil</li> <li>• Push putty with finger(s) against soft tissue so it's tight against the bone.</li> <li>• Remove plastic foil, then reline the putty impression with additional putty material</li> <li>• Push putty with finger(s) against soft tissue so it's tight against the bone.</li> <li>• Remove plastic foil, then reline the putty impression with injection type VPS.</li> <li>• Objective is to capture maximum amount of bone with tissue tightly against bone</li> </ul>
3	Place topical anesthetic on edentulous site	Topical will give sufficient numbing for bone sounding with short anesthetic needle.

### **3.2 Dentist**

#	Task	Remarks
1	Measure soft tissue thickness. Record data on form	Deep buccal = 2 mm above deepest point captured by impression High buccal = 3-4 mm below crest Deep lingual = 2 mm above deepest point captured by impression High lingual = 3-4 mm below crest Crest , can also be taken from X-ray

### **3.3 Laboratory**

#	Task	Remarks
1	Pour impression using Accutrac tray or pindex	Stone or VPS material
2	Add tooth to cast - waxed-up or denture	
3	Mark cast - desired buccal gingival outline of prosthetic crown	Top of implant at 2-3 mm below this line
4	Local impression of cast for index	
5	Cut local impression at axis of implant - index	It will allow precise determination of desired BL implant axis
6	Create dual vacuform carrier	1mm softguard material + 0.75 mm

## 3D-Click-Guide

		bondable material, heat together
7	Cut out area in vacuform over implant site (fig. b, 10)	Leave buccal and lingual material
8	Cut cast at MD in proposed axis for implant	Based on estimation of neighboring roots and middle of to be replaced tooth. Use radiograph and anatomical information
9	Transfer Tissue depth recordings to cast	Connect marking parallel to soft tissue
10	Remove cast material from opposing cut surface	This will create 1mm space for BLP

### 3.4 Dentist

#	Task	Remarks
1	Mark desired BL implant axis on cast relative to bone volume and crown index	Use Impression of wax up
2	Determine desired top of implant, drill pin hole (1 mm) hole at center	Top is 2-3 mm below buccal desired gingival outline
3	Place BLP in hole and line up with drawn axis	
4	Secure with Cyano-acrylate glue	
5	Place parts of cast back into accu trac tray	Alternatively pindex model
6	Place vacuform on cast	
7	Position slot of Buccal wing (N, R, or W) on top BLP	Cut/bend wings/ Radio graphic Implant Replica's (RIR's) as needed for fit passive to vacuform carrier.
8	Attach Lingual wing (White)	Cut/bend wings/ Radio graphic Implant Replica's (RIR's) as needed for passive fit
9	Translate wing assembly into correct MD relation with adjacent teeth	
10	Rotate wing assembly to estimated MD axis	Based on estimation of neighboring roots and middle of to be replaced tooth
11	Hot glue top of BLP, or Lingual and Buccal RIR's	Quick fixation - 'reversible' - allows refinement prior to ortho acrylic

### 3.4 Laboratory

#	Task	Remarks
1	Secure wings and RIR's with ortho acrylic	Irreversible solid connection
2	Cut & discard crossbar	
3	Remove the guide from cast, polish as needed	

### 3.5 Dentist / Assistant

#	Task	Remarks
1	Anesthetize	
2	Place polished surgical guide in mouth	
3	Expose radiograph - evaluate M-D position of 3DCG only after establishing diagnostic quality of radiograph	RIR's will show 0 degree rotation, indicating need for rotation adjustment 3 or 7 degrees
4	(opt.) For additional M-D rotational reference, include 7° RIR - evaluate radiograph	
5	Install selected rotation block 0°, 3°, or 7°	Attn. to direction (arrows)
6	Place implant per manufacturers protocol	