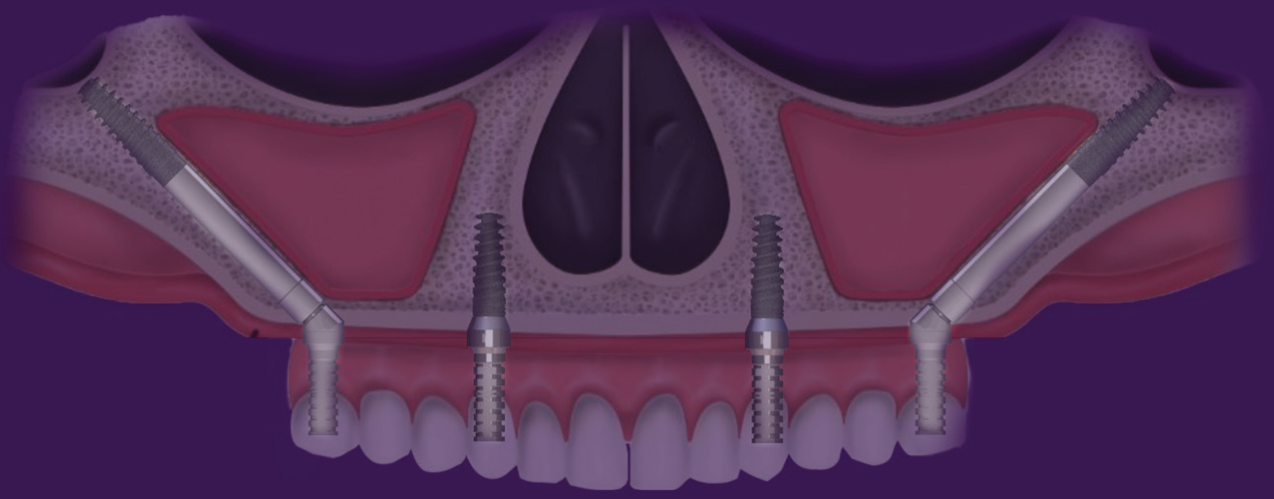
User Manual

Zygomatic Touareg™ OS Dental Implant System

adin



General

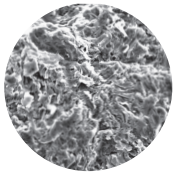
Adin Touareg™ OS Zygomatic Dental Implants designed for surgical placement for patients with severe atrophic maxillary arch. Zygomatic implants are threaded, root-form titanium dental implants intended to extend through the intra- and extra-maxillary sinus into the zygomaticus bone to support prosthetic devices, such as artificial teeth, in order to restore chewing function.

Intended Use

Adin Touareg™ OS Zygomatic Dental Implant system intended to be surgically placed in the bone of the upper jaw arches to provide support for prosthetic devices such as artificial teeth in order to restore the patient's chewing function in edentulous or partially edentulous patients.
Dental Implants may be loaded immediately when good primary stability is achieved and with appropriate occlusal loading.

Materials

Implants, Abutments, Screws: Titanium grade 23 (Ti 6Al 4V ELI)
Drills: stainless steel
Depth probe: Titanium grade 23 (Ti 6Al 4V ELI)



Surface Type

OsseoFix™ surface uses calcium phosphate, a biocompatible blasting media, to achieve the desired roughness levels needed for optimal osseointegration and the highest implant surface purity levels.

Implant Packaging

Note: The pictures shown are for illustration purpose only

Product Sterility

Adin implants are provided sterile (by gamma radiation) and are intended for single use only.
Never reuse a dental implant and never use implants after their expiration date (indicated on the outer package label) or if package is damaged or contaminated. Such use may result in implant failure and damage to surrounding tissues .
Adin tools and abutments are supplied non-sterile and must be cleaned and sterilized prior to use.

Warnings

- Dental zygomatic implants and prosthetics may only be used by dentists or physicians who have had appropriate education and training.
- The label "Rx Only" refers to the following caution text: "Federal (USA) law restricts the sale of this device to, or on the order of, a licensed physician or dentist."

MRI Safety Information

MR Conditional
FOR USA ONLY

Warning: The RF safety of the device has not been tested. The patient may only be imaged by landmarking at least 30 cm from the implant, or ensuring the implant is located outside of the RF coil.
Note: Instruct the patient to carry the patient label / card, especially when undergoing MRI procedure.
Devices which are composed of material that have a known and acceptable MR induced displacement force and torque profile, may be safely imaged by positioning the patient, such that the device is at least 30 cm from the isocenter of the MRI magnet. This is also referred to as landmarking the patient at least 30 cm below the device. This landmarking will ensure that the device will be outside the high RF exposure zone to mitigate RF heating risk.
Published literature was used to determine that the Titanium material used for Adin's implants and abutments is safe from an MR-induced displacement force perspective for a given spatial field gradient and also from an MR-induced torque perspective. Scientific rationale based on published literature may be used to determine if the material used is safe from an MR-induced displacement force perspective for a given spatial gradient and also from an MR-induced torque perspective (e.g., Woods, Terry O., Jana G. Delfino, and Sunder Rajan. "Assessment of Magnetically Induced Displacement Force and Torque on Metal Alloys Used in Medical Devices." Journal of Testing and Evaluation 49.2 (2019): (783-79)).

A patient with this device can be scanned safely in an MR system under the following conditions:

A patient with this device can be scanned safely in an MR system under the following conditions:	
Device Name	ADIN Zygomatic Touareg™ OS Dental Implant family
Static Magnetic Field Strength (B0)	≤ 3.0 T
Maximum Spatial Field Gradient	30 T/m (3,000 gauss/cm)
RF Excitation	Circularly Polarized (CP)
RF Transmit Coil Type	For body transmit coil, landmarking at least 30 cm from the implant, or ensuring the implant is located outside of the coil. Extremity T/R coils permitted. Excludes Head T/R coil.
Operating Mode	Normal Operating Mode in the allowed imaging zone
Maximum Whole-Body SAR	2 W/kg (Normal Operating Mode)
Maximum Head SAR	Not evaluated for head landmark
Scan Duration	No specific constraints due to implant heating

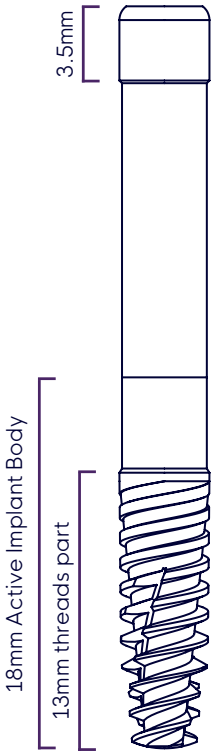
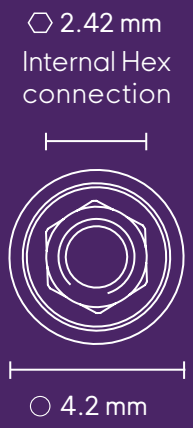
Hazards

Incorrect treatment planning, use of wrong implant sizes, insufficient number of implants and/or improper implant positioning may lead to mechanical failures of implants, components or restorations .
The use of improper techniques during implant placement or during the restorative phase can result in implant failure and a substantial loss of surrounding bone .
Dental implants, cover screws, healing abutments, temporary abutments and abutments should not be reused due to potential cross contamination. Reuse of these components may also result in product failure, as functionality cannot be guaranteed.
To prevent aspiration or swallowing, attach a long string of dental floss to small instruments and pay special care while using them in patients' mouths .
All The pictures shown in this document are for illustration purpose only

Training and Education

Adin strongly recommends that dental professionals, both beginners and experienced implantologists, always keep up-to-date and current with published data and knowledge related to surgical and prosthetic treatments using dental implants and abutments .
Adin offers a wide range of courses at various levels and provides support through a global network of experienced experts .
Please contact your local Adin representative for more information regarding certified training centers.

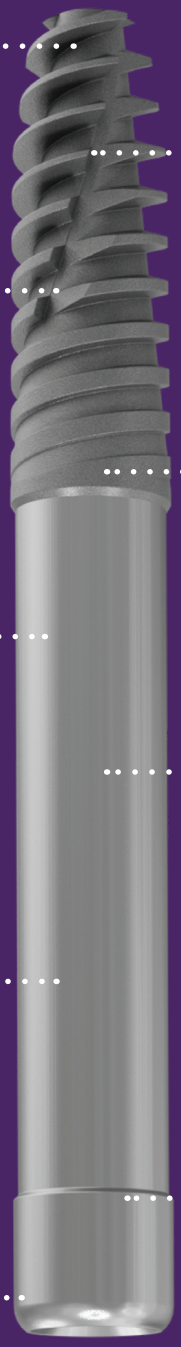
Adin's Zygomatic Implants Types

Diameter (Ø) 4.2 mm	Zygoma connection	Lengths	Catalog No.
		35.0mm	ISZT3542
		37.5mm	ISZT3742
		40.0mm	ISZT4042
		42.5mm	ISZT4242
		45.0mm	ISZT4542
		47.5mm	ISZT4742
		50.0mm	ISZT5042
		52.5mm	ISZT5242
		55.0mm	ISZT5542

Product Features

1. Active threads
2. Narrow apex
3. OsseoFix™ surface
4. Machined shaft
5. Internal hex connection

Design Inputs



Round shaped Apex 3mm

Self-tapping

Double lead threads (2x1.2mm)

OsseoFix™ surface

Smooth machined body

Unified Connection that enables you to keep minimal stock

Titanium grade 23 (Ti 6Al 4V ELI)

4mm neck

Single prosthetic platform for easy restoration

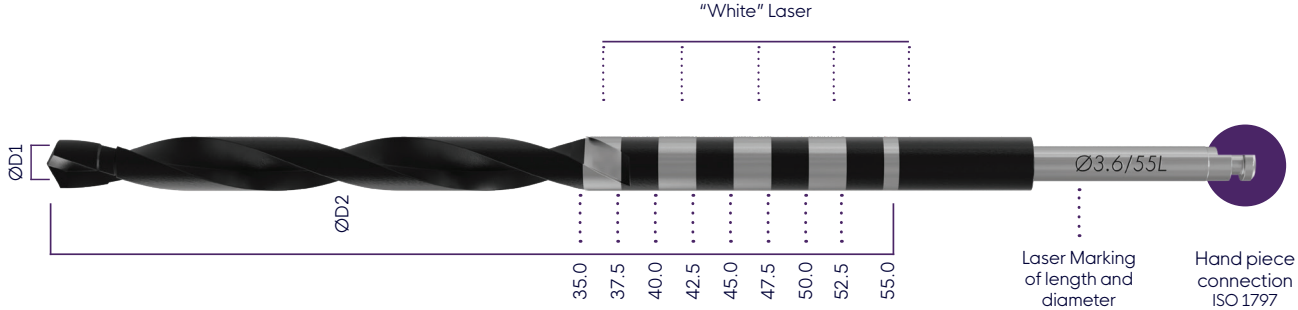
Drilling Protocol

Drills Intended Use

Adin Touareg™ OS Zygomatic dental drills are bone cutting instruments intended for use in reconstructive oral surgery to drill or cut into the upper jaw and zygomatic bone to prepare the osteotomy for a Zygomatic implant placement.

Drills Description and Characteristics

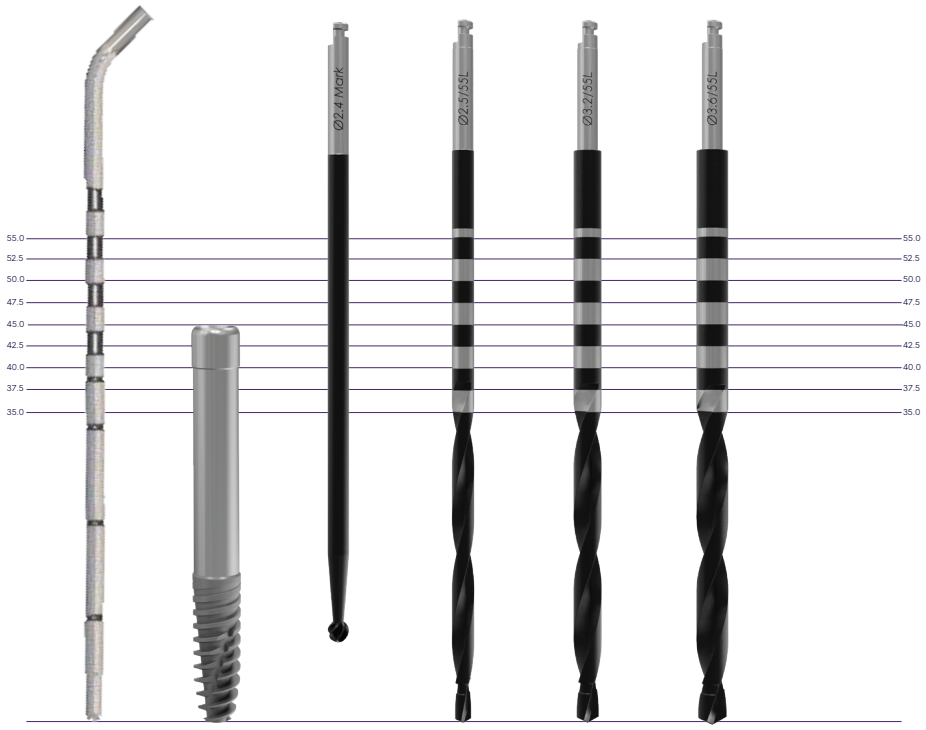
- Adin's drills are made of surgical stainless steel and should be used with external irrigation.
- Adin's drills are DLC coated to ensure performance
- Drills are available in diameters of Ø2.5, Ø 3.2 and Ø 3.6 mm
- Drills have depth marks in lengths from 35mm to 55mm.
- Step drill is centered on previous hole.
- Laser marking for drill length and diameter
- Ø2.4 spherical marking drill



Zygomatic Twist & Pilot Step Drill	Catalog No.
Zygomatic Mark Drill 2.4mmD	DL5524
Zygomatic pilot Drill 1.8/2.5mmD x 35-55mmL	DL5525
Zygomatic twist Step Drill 2.5/3.2mmD x 35-55mmL	DL5532
Zygomatic twist Step Drill 3.2/3.6mmD x 35-55mmL	DL5536

Depth Marking

- Each Adin drill is marked with a unique line sequence pattern to provide an in-depth indication of the desired drill depth.
- Dental practitioners must review and become thoroughly familiar with Adin's zygomatic depth probe tool to avoid damage to adjacent anatomical structures .
- The marks indicate actual millimeter lengths and correspond to the top of the implant.



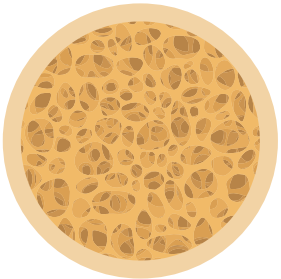
Note: Drill Tip is up to 1mm longer than implant length. Image for illustration only.

Precaution Procedure

- Stable in-and-out vertical movement of the drill is critical to allow irrigation and flushing away of debris while penetrating the bone.
- Drill to bone contact should not exceed a few seconds, while pushing the drill further into the bone up to the pre-determined length.
- Replace drills and proceed drilling as indicated for the desired implant diameter, paying attention to adjustments that may be required due to bone quality at the specific site .
- Drilling should be performed at low speeds (600 rpm-800 rpm) .
- Avoid applying lateral force on the drills .
- Use of the marking drill is recommended prior to Pilot drills .
- Implant placement procedures should be accomplished at very low speed (25-30rpm) or manually.

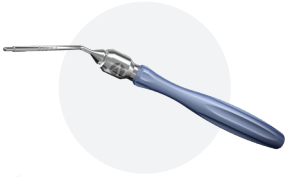
Drill Sequence

Drilling sequence from left to right:

Maximum Speed (RPM)	800 RPM	600 RPM	600 RPM	600 RPM
				
	Marking Drill	Pilot Drill Ø2.5mm	Twist Drill Ø 3.2mm	Twist Drill Ø 3.6mm

Tools & Drills

Marking Drill Ø2.4mmD LD5524



Zygomatic Depth Probe ZGDP01

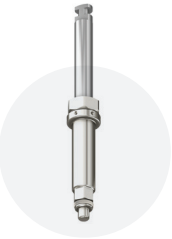
Pilot Drill Ø1.8/Ø2.5mmD x 35-55mmL LD5525

Surgical Torque Ratchet 35-100 Ncm RS6112

Twist Step Drill Ø2.8/Ø3.2mmD x 35-55mmL DL5532

Wrench Ratchet Surgical Instruments Handle RA0050

Twist Step Drill Ø3.2/Ø3.6mmD x 35-55mmL DL5536

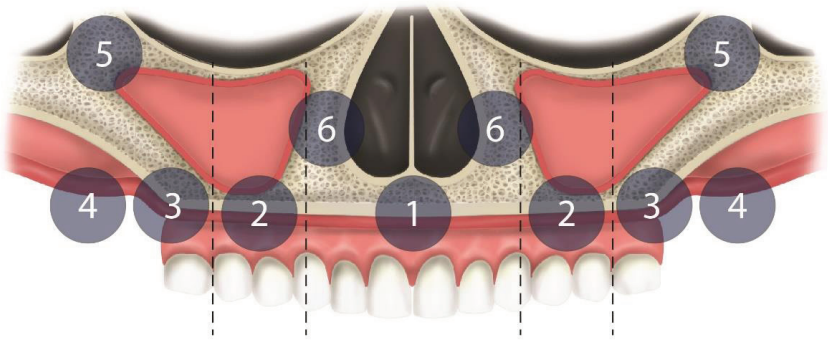


RS Hex Handpiece adapter-Long RS9029

Note: items are not in scale

Surgical Driver RS7001

Indications



- Anchoring the implants in the zygomatic bone eliminates the need for bone grafting.
- Edentulous maxilla with bone in the premaxilla region (1). Lack of bone in the premolar and molar regions (2 &3).
- Partially edentulous maxilla with uni- or bilateral loss of alveolar bone in molar region (3).
- In such cases, a minimum of two Touareg™ OS Zygomatic Dental Implants, combined with at least two additional standard implants, provide adequate support for a fixed restoration.

Guidelines for Graftless Implant Placement

Presence of Bone	Presence of Bone Surgical Approach
Zone 1, 2, 3	Traditional implants – 6-8 implants, evenly distributed
Zone 1, 2	All on 4
	Inclined implants, posterior implants – 6 implants, anterior axial, posterior titled.
	Traditional anterior implants
Zone 1	Zygoma implants or sinus inlay grafting followed by implants.
	Traditional anterior implants
	Sinus augmentation, GBR, 6-8 implants.
Insufficient bone in any zone	4 zygomatic implants or Brånemark – Sinus augmentation, GBR, 6-8 implants

Note: items are not in scale

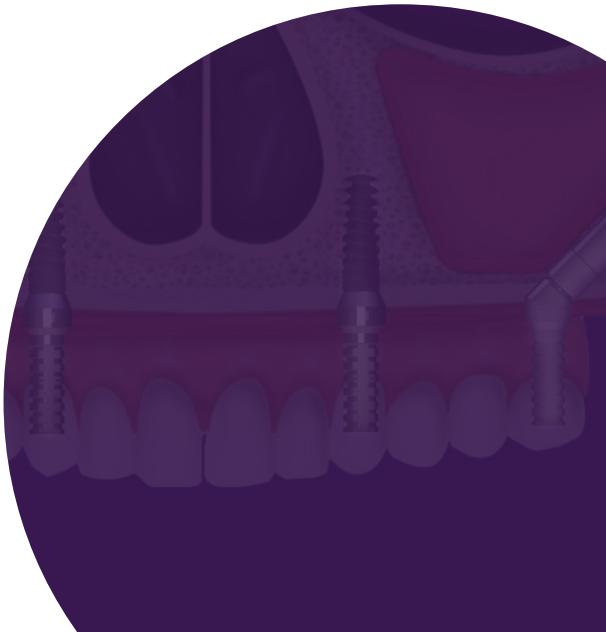
Contraindications

- Dental implants should not be placed in patients who are considered medically unfit for general or oral surgical procedures.
- Special attention, and a thorough evaluation of potential risks and benefits should be given to patients who exhibit underlying medical factors that might affect bone or soft tissue healing processes (e.g., bone or connective tissue disorders, steroid treatments, radiation therapy, cigarette smoking).
- The placement of dental implants is not recommended in children and under-age patients, until growth has stopped and epiphyseal closure is completed.
- Local infections or pathologies, inadequate bone volume and/or quality as well as general diseases and treatments affecting bone and soft tissue healing may result in osseointegration failure, both immediately after surgery or at a later stage.
- Contraindication for the use of the zygoma implant cases:

    - Acute sinus infection
    - Maxillary or zygoma pathology
    - Mandibular hypomobility disorders
    - Underlying uncontrolled or malignant systematic disease precluding implant surgery.

- For more information please consult Adin's Instruction for use (IFU002) leaflet for Cleaning & Sterilization of Surgical, Prosthetic Instruments, Abutments and Reusable Drills Instructions

- Note: Current best practices, clinical manuals, textbooks and publications should always be consulted for up-to-date information related to medical evaluation, treatment and planning the surgical procedures of patients undergoing implant placement procedures.



Lesley AD, Aparicio C. Indications and contraindications for the use of the zygoma implant. In: Aparicio C (ed). Zygomatic Implants: The Anatomy-Guided Approach. Berlin: Quintessence Publishing Co Ltd, 2012;79-88.

Preoperative Considerations and Precautions

- Prior to any surgical procedure, patients must be carefully examined and evaluated to determine their medical, psychological and physical status. Attention should be given to factors that may put the patient at risk or factors that may affect bone or soft tissue healing.

- Panoramic radiographs, as well as CT scans and other individual radiographs must be obtained to enable a complete evaluation of the dental and periodontal status, as well as for the evaluation of available bone for future implant placement.

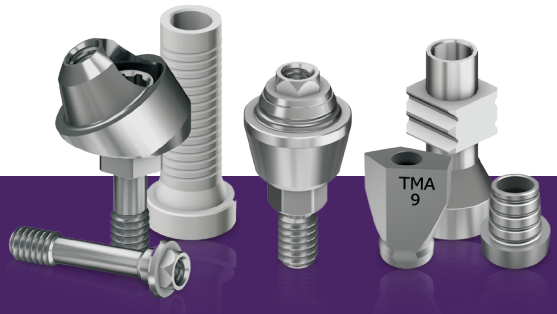
- A comprehensive dental treatment plan, including the locations, number and sizes of planned implants should be formulated based on a comprehensive clinical and radiographic evaluation.

- Constant communication and collaboration between the dental surgeon, the restorative dentist and the dental laboratory technician are critical to ensure optimal outcomes.

- Whenever applicable, a wax-up and a surgical guide should be used to ensure correct positioning of dental implants.

- Sufficient residual bone volume is necessary in order to achieve high primary and long-term success of dental implants. In cases of inadequate bone volume, bone augmentation procedures should be considered.

- The number of implants and their diameters, lengths and positions in a specific case must take into account the planned prosthetic type and each individual's specific conditions and habits, such as bruxism or unfavorable jaw relations. Incorrect planning and implant placement may result in compromised aesthetic results, undesirable restorative outcome, and increase risk of implant overload or mechanical failure.



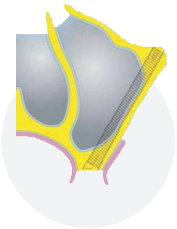
Anatomy Guided Approach (ZAGA):

A Cross-sectional Survey

Five typical anatomical and implant pathway situations have been identified. Adin Touareg™ OS Zygomatic implants are supported by zygomatic solution 0-3.

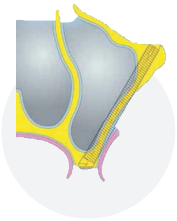
Type 0:

Anterior maxillary wall is very flat; implant head is located on the alveolar crest and implant body has an intra-sinus path.



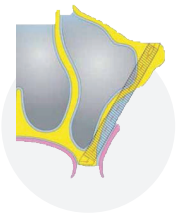
Type 1:

Anterior maxillary wall is slightly concave; implant head is located on the alveolar crest; drill has performed the osteotomy slightly through the wall and most of the implant body has an intra-sinus path.



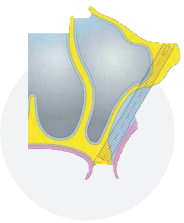
Type 2:

Anterior maxillary wall is concave; implant head is located on the alveolar crest; drill has performed the osteotomy through the wall and most of the implant body has an extra-sinus path.



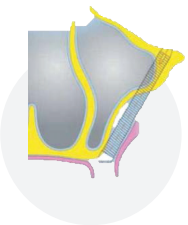
Type 3:

Anterior maxillary wall is very concave; implant head is located on the alveolar crest; drill has performed the osteotomy following a trajectory that goes from the palatal to the buccal alveolar bone, then the implant body leaves the concave part of the anterior sinus wall to penetrate into the zygomatic bone so that the middle part of the implant body is not touching the most concave part of the wall.



Type 4:

Maxilla and the alveolar bone show extreme vertical and horizontal atrophy; implant head is located buccally of the alveolar crest (there is no or minimal osteotomy at this level); drill has arrived at the apical zygomatic entrance following a path outside the sinus wall and most of the implant body has an extra-sinus/ extra-maxillary path.

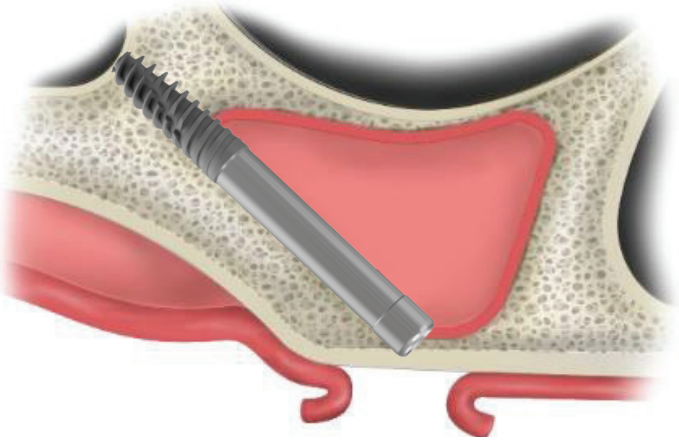


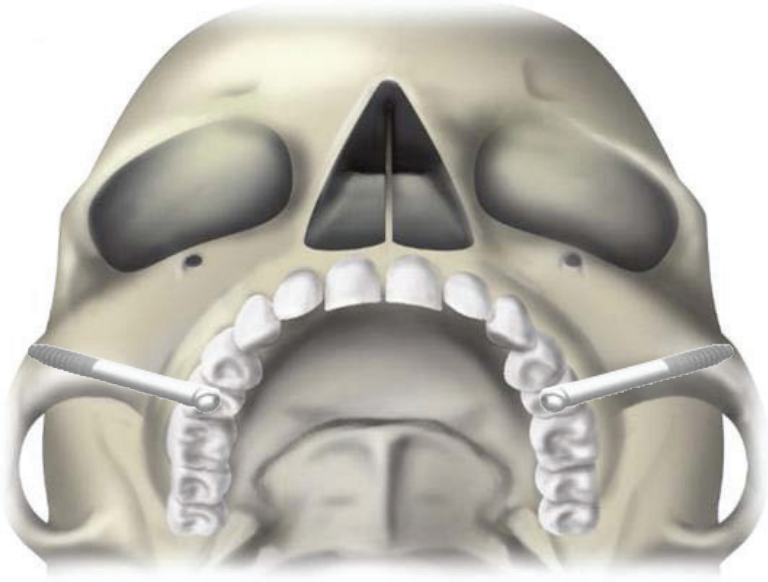
Adin Touareg™ OS Zygomatic implants are NOT Intended for type 4 cases, where implant do not pass thru the maxillary alveolar bone

* Aparicio C. A proposed classification for zygomatic implant patient based on the zygoma anatomy guided approach (ZAGA). a cross-sectional survey. Eur J Oral Implantol 2011;4:269-275.

Implant Position

The position of Touareg™ OS Zygomatic implant body with relation to sinus membrane and lateral maxillary bone depends on the zygoma bone anatomy which helps the dentist decide which of these commonly used approaches for the placement of zygomatic fixtures should be used.
Adin's Touareg™ OS Zygomatic implant is generally placed in 2nd premolar and passes: 1) Into the sinus cavity and membrane, 2) Laterally to the membrane in extra sinus technique 3) Lies laterally to the maxillary wall in the extra maxillary technique.
The implant tip enters the base of the body of the zygoma (the superior-lateral corner of the maxillary sinus), travels through the zygoma and pierces through its lateral cortex. The implant trajectory is usually parallel to the zygomatic buttress.

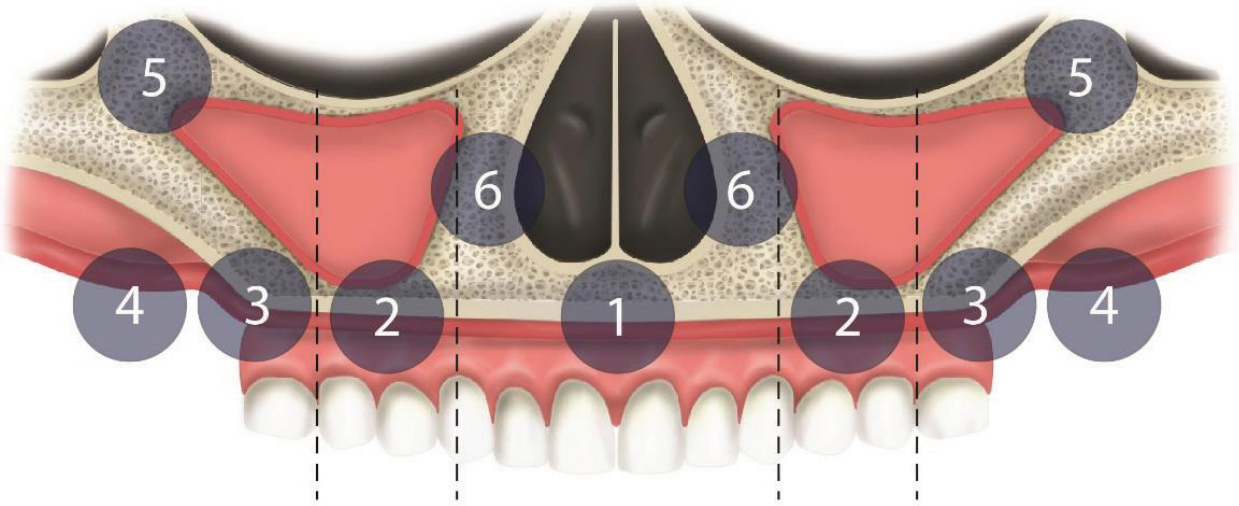




Surgical Considerations

Two-stage versus immediate loading surgical protocols
The cross-arch stabilization of the Adin Touareg™ OS Zygomatic implants is paramount once the implant platforms are exposed intraorally .
In cases where immediate loading is considered, either the patient's existing or a newly fabricated full upper denture is converted into a fixed provisional bridge, facilitating the cross-arch splinting of the implants.
For two-stage delayed loading, it is recommended that the patient's existing denture is converted into a fixed provisional bridge by cross-arch splinting the exposed implants at second -stage surgery .
For both approaches, the same procedure is used for converting the existing denture into a fixed provisional bridge.

Zones of the maxilla



Radiographic Examination

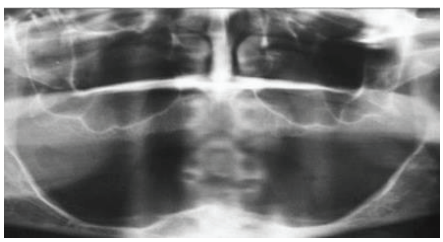
The panoramic image (OPG) allows the visualization of the zones of the maxilla. If bone is lacking in zones 2 and 3, the zygoma concept may be considered by placing one Touareg™ OS Zygomatic implant on each side to establish posterior support. In zone 1, two to four regular implants may be placed for anterior support.

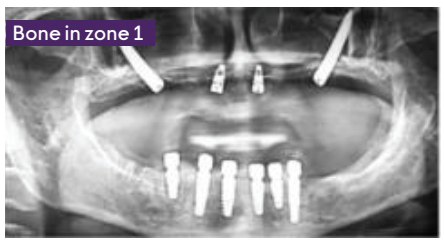
Panoramic image (OPG)

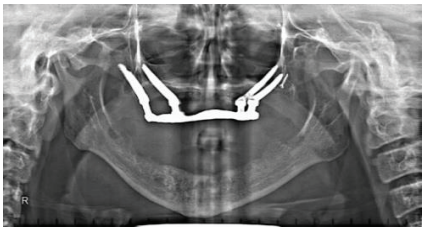
Initial radiograph of choice; a scout film visualizes the three zones of the maxilla.

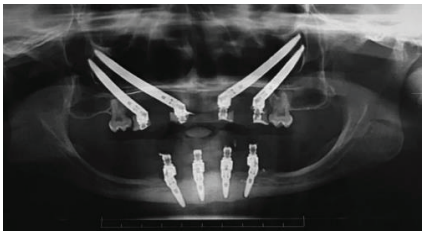
3D studies

It is essential that the (CB) CT scans include maxilla and zygomatic bones in their entirety. They provide detailed information on the maxillary sinus topography, such as the width and height of the zygomatic body and the width of the residual alveolar bone .
Reformatted images allow for evaluation of the maxillary sinuses and the zygomatic body in 3D. The location of the ostiomeatal complex as well as the existence or lack of sinus pathology can also be identified.









* Panoramic images by Dr. Nitin Ahuja

Immediate function concept

Immediate loading means that patients leave the clinic with a functional fixed restoration in place directly after implant insertion .
Immediate function with its potential loading is an alternative to later loading protocols for the experienced implant user .
As with any surgical or restorative implant procedure, the treatment outcome may be affected by many different factors. It is prudent to consider the following six interdependent variables:

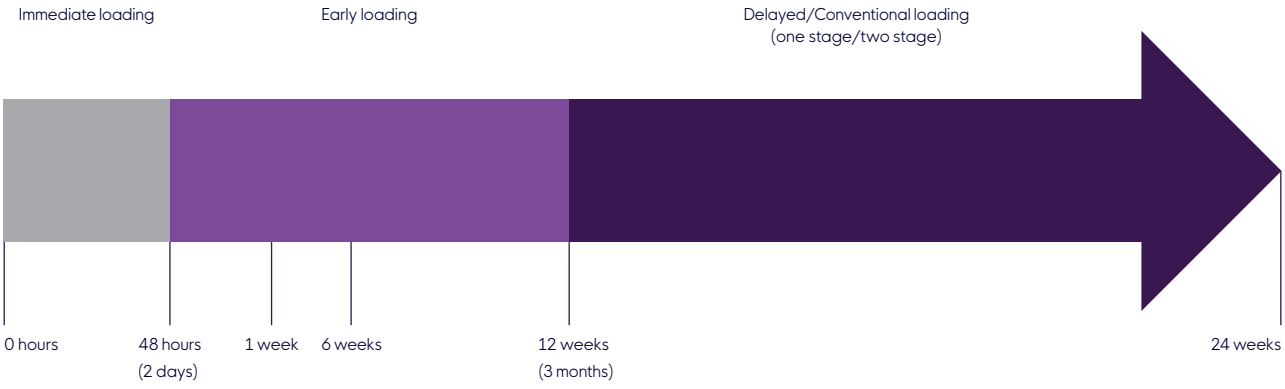
1. Biocompatibility of materials
2. Implant design
3. Implant surface
4. Surgical technique
5. Prosthetic loading conditions
6. Individual patient local site conditions

Zygomatic implants may be loaded immediately when good primary stability is achieved and with appropriate occlusal loading.

Clinical relevance

- Immediate function refers to patients leaving the clinic with a fixed implant-supported provisional bridge .
- Immediate function is an alternative to delayed loading (2-stage protocol) for experienced implant users .
- Careful patient selection and follow-up is necessary for this group of patients.

Loading protocols – definitions



Surgical guidelines

- Adapt implant site preparation technique to bone quality/ quantity or use a tapered implant body for high initial implant stability .
- Individual implants should be able to withstand a final tightening torque of minimum 35ncm torque without further rotation to confirm stability at time of implant placement.
- If resonance frequency measurement is performed at time of placement - ISO values > 60 is recommended.

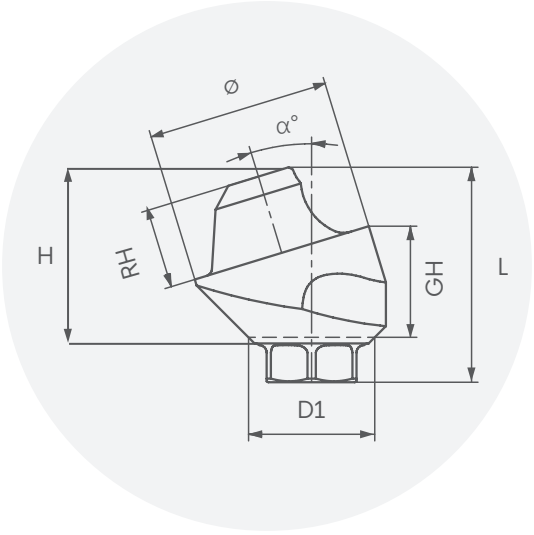
Restorative guidelines

- A restorative strategy should be developed to ensure minimal handling and tightening of prosthetic components and transfer of chewing forces to the implants during the first few weeks after placement .
- Special care is recommended when it comes to evaluating load distribution and the elimination of cantilevers and lateral forces. If possible, the occlusal contact should be reduced during the first two to three months after implant placement .
- To obtain optimal esthetics, when practical, the placement of the final abutment at time of implant placement can minimize further disruption of the soft tissue interface .
- A well-designed provisional restoration during soft tissue maturation improves the aesthetic end results .
- Cantilevers of all types should be avoided in when using the Immediate Function protocol.

Trans Mucosal Abutment System

(Multi-Unit Abutment)

Our TMA™ (Trans Mucosal Abutment) system is indicated for multiple-unit, screw-retained restorations and may be used in combination with an implant level framework design.



The TMA™ system is used to elevate the restorative seating platform when restoration at implant level is not indicated or practical due to the depth or angle of the implant.

The TMA™ System is designed to allow better prosthetics access when using implants with divergent angles accommodate full and partial edentulous arches, especially when using angled implants and all-on-x technique for full arch restoration.

The TMA™ abutment system is available in straight or angled (17°,30°,45°,52°,60°), engaging the Internal Hex for indexing, with a selection of collar heights. Abutments are delivered with handles for easy insertion and to assist with seating.

TMA		L	Ø	D1	H	GH	RH	Catalog No.
	RS Straight Trans Mucosal Abutment	3.7	4.9	3.4	3.1	1	2.1	RS3731
	RS Straight Trans Mucosal Abutment	4.7	4.9	3.4	4.1	2	2.1	RS3732
	RS Straight Trans Mucosal Abutment	5.7	4.9	3.4	5.1	3	2.1	RS3733
	RS Straight Trans Mucosal Abutment	6.7	4.9	3.4	6.1	4	2.1	RS3729
	RS Straight Trans Mucosal Abutment	7.7	4.9	3.4	7.1	5	2.1	RS3730
	RS Angled Trans Mucosal Abutment 17°	5.17	4.9	3.4	-	2	2.1	RS3734
	RS Angled Trans Mucosal Abutment 17°	6.05	4.9	3.4	-	3	2.1	RS3737
	RS Angled Trans Mucosal Abutment 30°	5.7	4.9	3.4	-	3	2.1	RS3735
	RS Angled Trans Mucosal Abutment 30°	6.5	4.9	3.4	-	4	2.1	RS3738
	RS Angled Trans Mucosal Abutment 45°	5.94	4.9	3.4	-	4	2.1	RS3736
	RS Angled Trans Mucosal Abutment 52°	5.0	4.9	3.4	-	5	2.1	RS3739
	RS Angled Trans Mucosal Abutment 60°	7.5	4.9	3.4	-	5	2.1	RS3740

Transfers		L	Ø	D1	D2	H	GH	RH	Catalog No.
	TMA Impression Transfer Open Tray	11	4.9	-	3.1	-	-	-	RS5006
	TMA Impression Transfer Closed Tray	8	4.9	-	4	-	-	-	RS5011

Scan Body		L	Ø	D1	D2	H	GH	RH	Catalog No.
	TMA Scan Body	6	4.9	4.9	3.8	4.9	-	-	TM0006
		9	4.9	4.9	3.8	4.9	-	-	TM0009

TMA Abutment		L	Ø	D1	D2	H	GH	RH	Catalog No.
	TMA Titanium Temporary Cylinder	12	4.9	-	3.5	-	1.5	10.5	RS4900
	TMA Plastic Casting Sleeve w/Prosthetic Screw	12	4.9	-	3.3	-	1.5	10.5	RS5001
	TMA Cementing Cone	4.9	4.9	-	2.9	-	1.5	3.4	TM0010

TMA Replica		L	Ø	D1	D2	H	GH	RH	Catalog No.
	TMA Abutment Replica	16.75	4.9	-	3.6	-	-	-	RS5004
	TMA Digital Model Replica Recommended torque 15(Ncm)	12	4.9	-	3.8	-	-	-	RS1001

Healing Cap		L	Ø	D1	D2	H	GH	RH	Catalog No.
	TMA Healing Cap	5.5	4.9	-	3.5	-	-	-	RS5005
		7.0	4.9	-	3.5	-	-	-	RS5003

Screws		L	Ø	D1	D2	H	GH	RH	Catalog No.
	RS Retaining Screw For Angled TMA	6.1	2.4	-	-	-	-	-	RS3403
	TMA Prosthetic Screw 15(Ncm)	4.1	2.1	-	-	-	-	-	RS3404
	RS Retaining Screw for TMA 1mm	7.8	3.1	-	-	-	-	-	RS3406
	RS Retaining Screw for TMA 2mm	8.8	3.1	-	-	-	-	-	RS3407
	RS Retaining Screw for TMA 3mm	9.8	3.1	-	-	-	-	-	RS3408
	RS Retaining Screw for TMA 4mm	10.8	3.1	-	-	-	-	-	RS3409
	RS Retaining Screw for TMA 5mm	11.8	3.1	-	-	-	-	-	RS3412
	TMA Screw For Open Tray Transfer	14	2.1	-	-	-	-	-	RS5008
	TMA Screw for Closed Tray Transfer	6.8	2.5	-	-	-	-	-	RS5009

TMA connection drivers

TMA/FC Hex Torque Driver - Long RS6196

*For straight TMA/Flat connection

TMA/FC Hex Torque Driver - Short RS6197

*For straight TMA/Flat connection

Star Torque Driver-Long RP0005

*For Angeld TMA/TMA prostethic screw

Star Torque Driver-Short RP0065

*For Angeld TMA/TMA prostethic screw

TMA/FC Female Hand Hex Driver-Long RS6191

*For straight TMA/Flat connection

TMA/FC Female Hand Hex Driver-Short RS6193

*For straight TMA/Flat connection

Star Hand Driver-Long RP0004

*For Angeld TMA/TMA prostethic screw

Star Hand Driver-Short RP0064

*For Angeld TMA/TMA prostethic screw

TMA/FC Hex Handpiece Adapter-Long RP0004

*For straight TMA/Flat connection

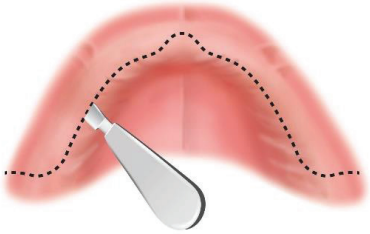
TMA/FC Hex Handpiece Adapter-Short RP0064

*For straight TMA/Flat connection

Surgical Step by Step for external sinus approach

Step 1: Make incision

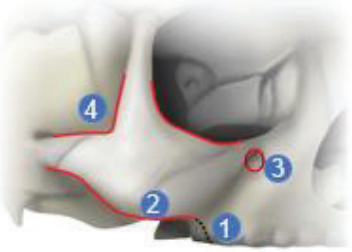
- Make an incision on the palatal crest of the edentulous maxilla with a distal vertical releasing incision .
- Retract a full thickness mucoperiosteal flap exposing the lateral maxillary wall.



Step 2: Exposure of anatomical landmarks

Good access to a surgical site makes surgery safe, predictable and with lesser chances of any complications, so exposing these landmark areas provides the dentist with good visibility

1. Nasal floor and anterior nasal spine
2. Zygomatic-maxillary buttress
3. Infraorbital foramen
4. Frontozygomatic notch



Step 3: Dissect to the level of the infraorbital foramen

- Expose the alveolar crest, including its palatal side.
- Carefully dissect to the level of the infraorbital foramen. Identification of the infraorbital foramen may assist with anatomic orientation.

Step 4: Expose zygomatic body

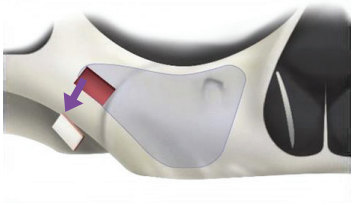
Retract laterally at the level of the infraorbital nerve and expose the body of the zygomatic bone.
Caution: It is essential to identify and protect the infraorbital nerve.

Step 5: Place retractor to visual the apical point of implant

Place a retractor in the frontozygomatic notch to facilitate a visual of the intended apical point of the implant (with special emphasis on avoiding penetration of the orbital floor). When the dissection is complete, the landmarks 1-4 will be visible.

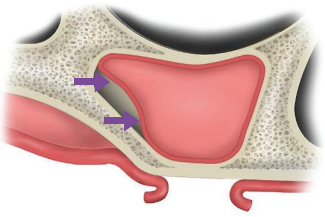
Step 6: Make window

Make a window (approximately 10 mm x 5 mm) on the lateral wall of the sinus, close to the infrazygomatic crest.



Step 7: Lift sinus mucosa

Carefully lift the sinus mucosa away from the area where the implant will pass through the sinus, from the floor of the sinus to the roof, being careful not to penetrate the membrane.
Caution: Try to keep the sinus membrane intact during this process. However, penetration of the sinus membrane will not result in an adverse outcome.

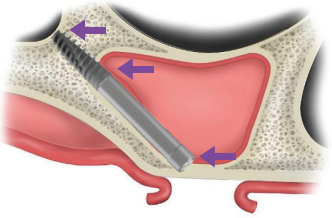


Step 8: Identify implant trajectory and starting point for drilling

- Identify the trajectory of the implant by placing the marking drill over the lateral wall of the maxilla:
  -The tip of the marking drill at the frontozygomatic notch
  - The body of the marking drill over the posterior lateral corner of the maxillary sinus
  - The base of the marking drill at the crest of the ridge in the 2nd bicuspid / 1st molar position
- Determine the exact point on the alveolar crest at which to start the drilling sequence and thedirection of the long axis of the implant, based on the known anatomy of the maxilla, the sinus, and the zygomatic bone.
- Aim for the middle of the retractor during the drilling sequence.

Step 9: Plan implant placement

Plan to place the implant head as close to the alveolar crest as possible (typically in the 2nd premolar region.) The implant must simultaneously pass through the floor of the sinus and the maxillary sinus, enter the base of the zygoma bone (the posterior-lateral portion of the maxillary sinus roof) and travel through it, exiting through the lateral cortex of the zygoma below the frontozygomatic notch.



Note: Adjustment to this implant placement may be considered due to anatomical variations.

Osteotomy Preparation

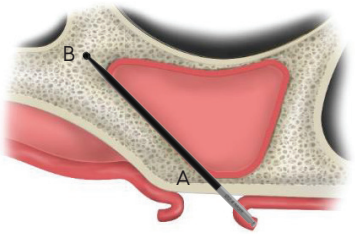
Drill technique

- Use an in-and-out motion and drill into the bone for a few seconds.
- Move the drill up without stopping handpiece motor. This also allows the irrigation to flush away debris.
- Proceed until desired depth is reached.
- Do not exceed recommended speed for each drill when drilling.
- Copious irrigation is recommended throughout the drilling sequence.

Step 1: Make entrance mark

- Make the palatal/crestal mark for the implant entrance.
- Retract the mucosa and do a marking with a surgical pencil or marking drill for the position of zygomatic implant marking two points A and B. Point A at 2nd premolar area, and point B at the root of zygoma around 5mm super medially to the zygoma buttress.

Recommended speed: 800 rpm



Step 2: Drill with 2.5mm Zygoma Drill

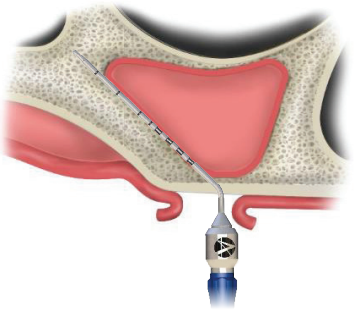
Orient the 2.5mm drill according to the points A and B and drill until it penetrates the outer cortical layer of the zygomatic bone at the incisura.

Recommended speed: 800 rpm

Note: It is imperative to protect the soft tissue at the zygomatic bone penetration site by using the drill guards and to have full control of the area where the drill penetrates at the level of the zygoma.

Step 3: Determine implant length

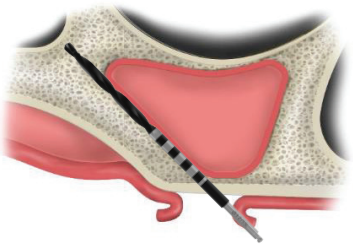
Use the depth probe to determine the required implant length.



Step 4: Widen osteotomy with 3.2 mm drill

Use the 3.2 mm drill to find the penetration of the sinus roof previously made by the 2.5 mm drill. It makes a partial 3.2 mm osteotomy through the zygoma body.

Maximum speed: 600 rpm



Step 5: Finalize osteotomy with 3.5 mm drill

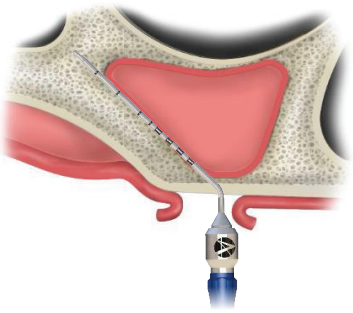
Complete the osteotomy with the 3.5 mm drill.

Maximum speed: 600 rpm

Step 6: Verify depth

Verify the depth of the prepared bone site with the angled depth indicator to ensure that the selected implant length will fully seat without apical bone interference.

Maximum speed: 600 rpm



Step 7: Irrigate sinus (apply in intro sinus procedure)

When the osteotomy is completed, irrigate the sinus before inserting the implant.

Implant Insertion

Step 1: Unpack implant

Note: Each implant is delivered with the implant mount pre-mounted.

Stage 1	Stage 2	Stage 3
Open the package	Remove the Tyvek® of the blister. make sure not to touch the implant inner pack parts	Take the Zygoma implant out of the blister

Stage 4	Stage 5
Connect the Zygoma implant to the rachet or surgical driver	Remove the plastic-tube and the holder

Note: The pictures shown are for illustration purpose only.

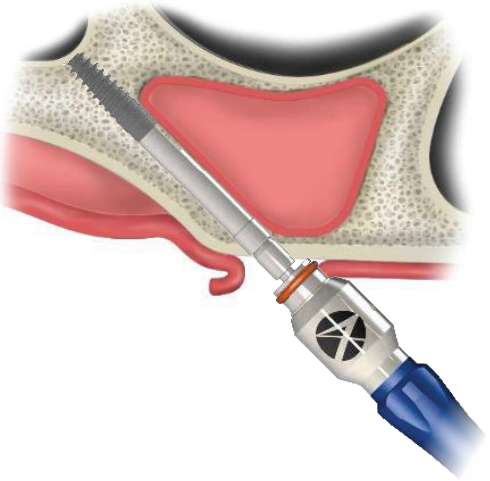
Step 2: Pick up implants

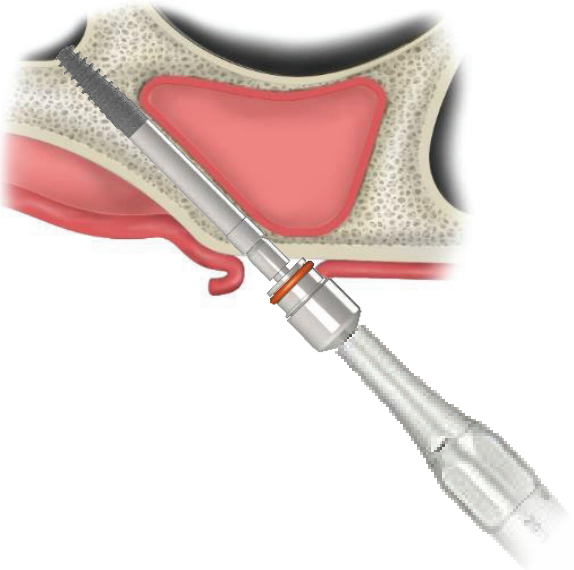
Engage the implant mount and pick up the implant. The implant can be inserted in a number of ways:

- Engage the implant mount with a rachet.
- Engage the implant mount with a surgical driver.
- Connect hex headpiece adapter to the headpiece and engage the implant mount.

Step 3: Insert implant

- The maximum recommended implant torque 50 N·cm.
- Please note: Exceeding this value may result in mechanical failure, use of torque-controlled device is highly recommended
- The speed setting for inserting implants with a physio dispenser is 30 rpm.
- The surgical driver may be used to tighten the implant manually to the proper insertion depth.
- Confirm the correct insertion angle of the implant while continuing through the sinus until the implant apex engages in the zygomatic bone.

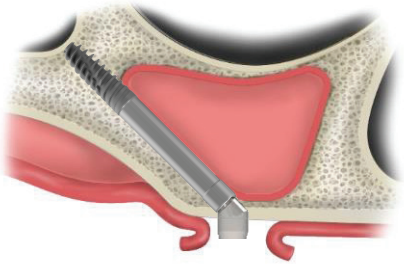
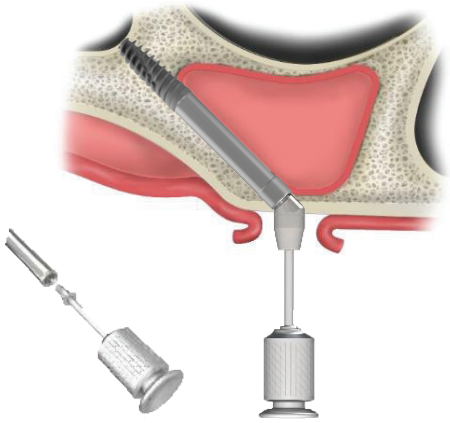




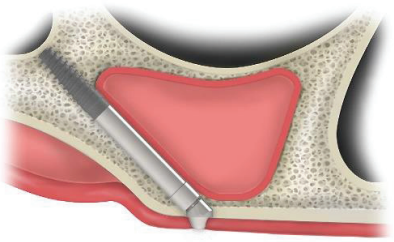
Step 4: Verify correct position of implant platform

The position of the platform regarding the residual ridge should be determined by the surgeon according to prosthetic needs. With this technique, posterior implants usually emerge at the level of the second premolar, while the anterior implants lie on the level of the lateral incisor.
The panoramic image (OPG) recommended to verify correct position of implant platform.

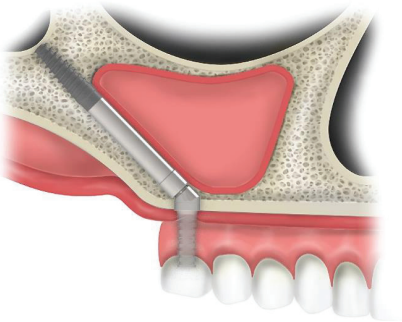
There are two surgical approach:

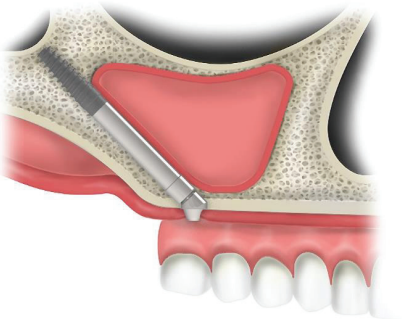
For one-stage surgical approach (Immediate Function)	For two-stage surgical approach (Delayed Function)
Step 5: **Remove implant mount and place TMA**	**Step 5,6:** **Place implant cover screw or TMA healing cup**
• Remove implant mount. • If necessary, wiggle the implant mount gently from side to side to ensure that it is not binding on the implant head . • Place TMA using driver. • Final tightening to a maximum recommended torque of 35 N·cm.	• Place a cover screw or TMA with a healing cap using the screw driver. • Make sure that the cover screw or TMA is fully seated to prevent bone in-growth between screw and implant platform. • Final tightening torque for cover screw and TMA healing cap is 15 N·cm.
	
Step 7: **Place remaining implants**	**Step 7:** **Place remaining implants**
The anterior maxillary implants are placed according to their surgical protocol.	The anterior maxillary implants are placed according to their surgical protocol

Step 8: Close flap and reline denture	Step 8: Close flap and reline denture
Close and suture tissue flap around the implant using desired technique.	• (for two-stage surgical approach) • Close and suture tissue flap around the implant using desired technique. • Adjust and reline, with soft material, the patient's full upper denture.



Step 9: One-stage Immediate Function	Step 9: Two-stage Delayed Function
Use implants for immediate function on abutment level by fabricating a provisional bridge from denture, using multi-unit abutments in combination with TMA temporary cylinders.	Allow approximately six months for the implants to osseointegrate prior to completion of second stage surgery (implants restoration). Note: Be sure to relieve denture intaglio (tissue) surface to avoid contact between implants and denture.





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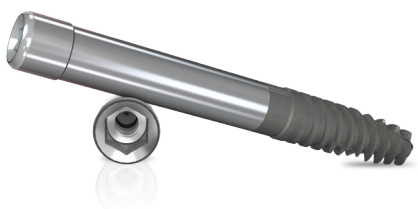

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About Adin

Every business starts with a vision.
Ours is simple: We want to create the best possible dental implant solutions that offer uncompromising quality at an affordable price. It's our people that help our business thrive and grow. That's why we place so much importance on building strong personal relationships that enable us to meet our doctors and distributors' needs. Understanding that their success is our success, we're focused on providing professional, high quality and affordable solutions and exceptional service that help them grow.

adin | Personal touch
Professional approach

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