Zygomatic Touareg™ OS
User Manual USA

adin

General

Adin Touareg™ OS Zygomatic Dental Implants are placed into the zygomatic bone of patients with severe maxillary atrophy, post-oncology, or failed sinus augmentations.
These implants (sometime with additional implants) enable immediate and long-term anchorage and support for a full-arch maxillary dental restoration.
Current literature supports the use of two or four Zygomatic implants (four Zygomatic implants are known as "Quad" technique).

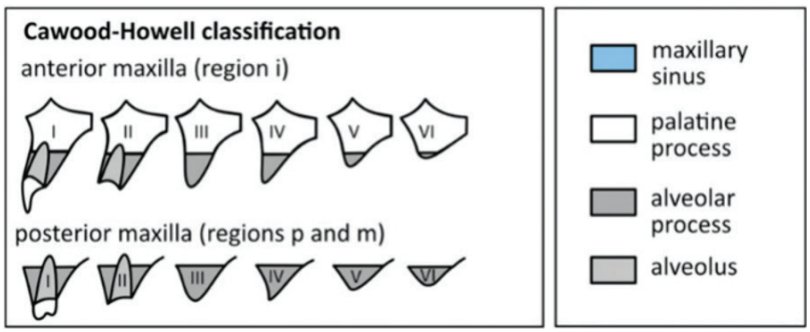
Intended Use

Adin Touareg™ OS Zygomatic Dental Implant system intended to be surgically placed in the zygomatic bone in patients with severe atrophic maxilla to provide support for prosthetic devices such as artificial teeth to restore missing teeth in the maxilla.

The implants are intended for multi-unit, full-arch, screw-retained prosthetic restorations and may be loaded immediately, when good primary stability is achieved and with appropriate occlusal load distribution.

Indications

- Severe atrophy (Cawood–Howell V–VI; posterior bone <4 mm).
- Failed sinus or bone grafts or implants.
- A desire to avoid staged augmentation procedures.
- Oncologic or traumatic maxillary defects.
- Congenital deficiencies (e.g., cleft palate).
- Need for immediate full-arch loading when stability is achievable.

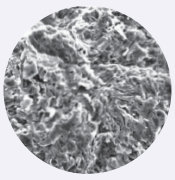


Contraindications

- **Absolute:** Patients who are considered medically unfit or those who cannot tolerate general anesthesia or oral surgical procedures, as well as those who suffer from severe trismus, mandibular hypomobility disorders, pathologies in the zygomas or sinuses, or patients who have underlying uncontrolled or malignant systematic disease precluding implant surgery received radiation therapy to the zygomas or sinuses or facial area.
- **Relative:** Acute infection of the maxillary sinuses. uncontrolled diabetes, bisphosphonate therapy, chronic sinusitis with obstruction, local infections or pathologies in the areas in which implants are planned to pass through, 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 and at a later stage.
- 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, cigarette smoking). Other factors that need to be considered are habits such as bruxism, smoking or chewing on hard substances, and individual parameters such as massive facial muscles or unfavorable jaw relations.
- The placement of dental implants is not recommended in children and adolescents, until growth has stopped and epiphyseal closure is completed.
- For more information please consult Adin's Instruction for use (IFU027) leaflet for Adin Touareg™ OS Zygomatic Dental Implants

Materials

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



Surface Type

OsseoFix™ surface uses calcium phosphate, a biocompatible blasting media, as part of the implant surface preparation process to achieve the desired roughness levels

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.

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 abutments are single use devices, supplied non-sterile and must be cleaned and sterilized prior to use.
Adin tools are supplied non-sterile and must be cleaned, disinfected and sterilized prior to every 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

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:

Device Name	Adin Zygomatic Touareg™ OS Dental Implant family
Static Magnetic Field Strength (B_0)	≤ 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

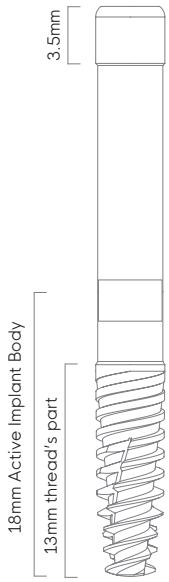
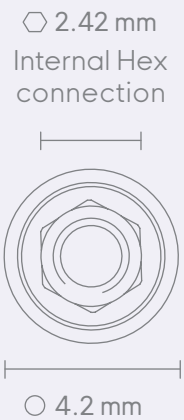
Hazards

Incorrect treatment planning, use of wrong implant sizes, insufficient number of implants and/or improper implant positioning may lead to biological and mechanical complications, such as implant failures of implants, bone loss, damage to blood vessels and nerves, soft tissue and more, as well as fractures and other complications of dental 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.

Training and Education

Dental professionals, both beginners and experienced implantologists, have the responsibility to keep up to date in current published data and knowledge related to surgical and prosthetic procedures and treatment in general, and in topics related to dental implants and their components in particular.
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

	Ø	L	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

For more information please consult Adin's Instruction for use (IFU027) leaflet for Adin Touareg™ OS Zygomatic Dental Implants

Single prosthetic platform for easy restoration

4mm neck

Titanium grade 23 (Ti 6Al 4V ELI)

Machined body

OsseoFix™ surface

Double lead threads (2x1.2mm)

Self-tapping

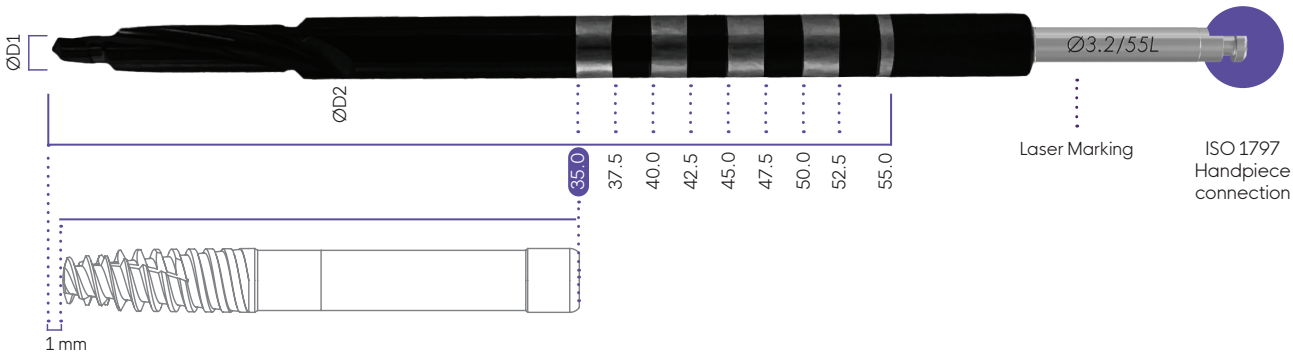
Round shaped Apex 3mm

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 (Diamond like Carbon) coated to ensure long lasting performance.
- Laser marking on the shank of each drill specifies its length and diameter.
- Drills have depth marks/indications from 35mm to 55mm, as shown in the following image:

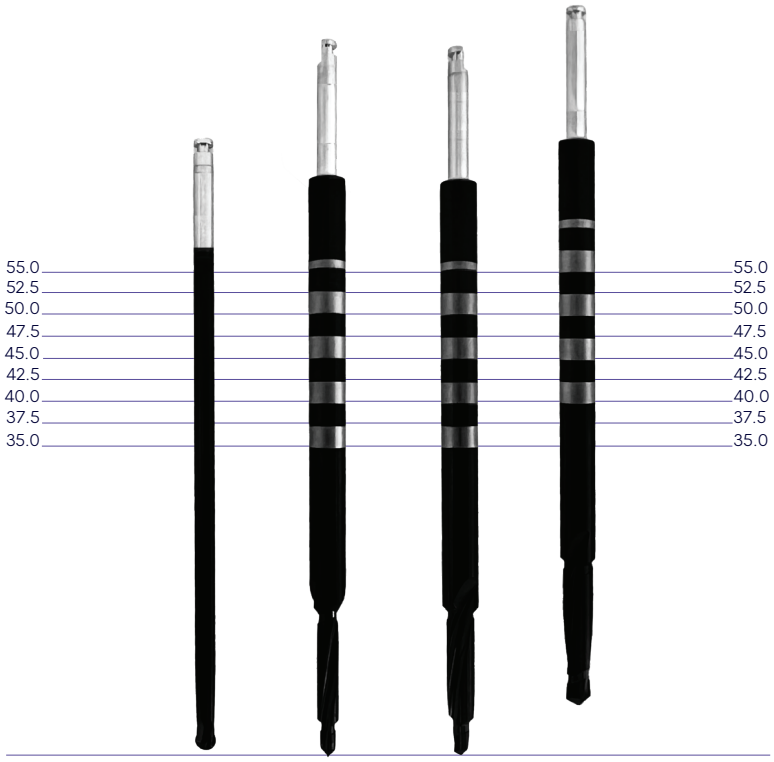


- The drilling set contains:
  - A Ø2.4 mm spherical marking drill, used for marking the required position of the implant.
  - Pilot and twist drills are available in the following diameters: Ø2.5, Ø 3.2 and Ø 3.6 mm.

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.

Drilling Precaution

- Drilling should be performed at low speeds (600 rpm-800 rpm).
- The use of irrigation is mandatory, to cool the bone while drilling and to flush away debris.
- Use of the marking drill is recommended prior to Pilot drill.
- Drill contact with the bone should not exceed a few seconds at a time, to prevent overheating.
- Stable in-and-out vertical movement of the drill is critical to prevent oversized osteotomy, which can compromise implants' primary stability.
- Lateral forces should never be applied to pilot or twist drills.
- Manual tools are available for implant placement. Hand-piece placement tools are also available. In such cases, speed should be very slow (25-30rpm).

Drill Sequence

To ensure immediate and long-term implant stability, drilling should be performed in a sequential order, starting with the marking drill to create an initial entry-point in the Zygomatic bone, and later, enlarging the osteotomy to the required depth and diameter, based on the planned implant size.
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

Diamond Burs

	Description	Catalog No.
	Zygomatic Diamond Burr 4.2mmDx35mmL, Medium	ZGDB3542M
	Zygomatic Diamond Burr 4.2mmDx35mmL, Coarse	ZGDB3542C

Note: Diamond burs manufactured by Strauss & Co. are supplied as separate devices. Their Instructions for Use are provided separately and are not included in this document

Note: items are not in scale

Tools

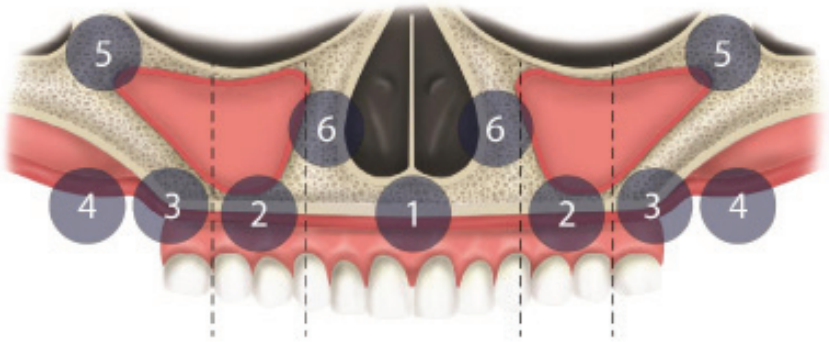
	Description	Catalog No.
	Surgical Driver	RS7001
	Wrench Ratchet Surgical Instruments Handle	RA0050
	RS Hex Handpiece adapter-Long	RS9029
	Zygomatic Depth Probe	ZGDP01
	Surgical Torque Ratchet 35-100 Ncm	RS6112

Note: items are not in scale

Benefits of Zygomatic implants

- Anchoring the implants in the zygomatic bone eliminates the need for bone grafting.
- The use of Touareg™ OS Zygomatic Dental Implants enables immediate loading.
  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 sufficient Bone in:	Treatment Approach:
Zone 1, 2, 3	6-8 regular dental implants evenly distributed in the arch
Zone 1, 2	All on 4 or All on 6
	6 regular dental implants: anterior axial, posterior titled.
	6-8 regular dental implants evenly distributed in the arch, following sinus graft procedures.
Zone 1 or Insufficient bone in all zones	Two Zygoma implants with additional anterior dental implants.
	Four Zygoma implants.
	6-8 regular dental implants evenly distributed in the arch, massive bone and sinus augmentations.

Pre-operative 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.
- Patients should be advised as for optional treatment plans, based on their risks and benefits, so that they can make a conscientious decision as for their preferred treatment plan.
- Patients must sign a Consent form prior to every surgical procedure.
- Based on the decided-upon treatment plan and the required restorative outcome, and based on the comprehensive clinical and radiographic evaluation, both the oral surgeon and the restorative dentist should formulate a detailed surgical and restorative plan as for the locations, number and sizes of planned implants.
- The number of implants and their diameters, lengths and positions must correlate to the planned prosthetic type as well as to specific individual conditions and habits (such as bruxism or unfavorable jaw relations). Whenever applicable, a wax-up and a surgical guide should be used to assure correct positioning of dental implants.
- Incorrect planning and implant placement may result in compromised aesthetic results, undesirable restorative outcome, increase risk of implant overload or mechanical failure, and damage to the restoration.
- Implants should achieve high primary to enable immediate loading and long-term success.

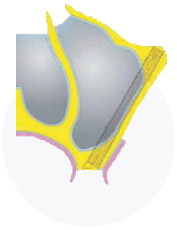
Anatomy Guided Approach (ZAGA):

A Cross-sectional Survey*

Adin Touareg™ OS Zygomatic implants are indicated for use in cases corresponding to ZAGA classification 4, where the implant trajectory follows an extra-maxillary, extra sinus pathway, along the lateral maxillary wall with anchorage in the zygomatic bone.

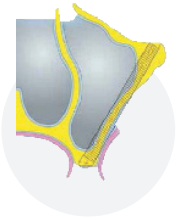
Type 0:

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



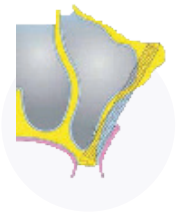
Type 1:

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.



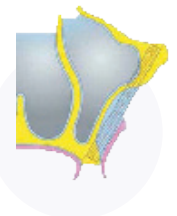
Type 2:

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.



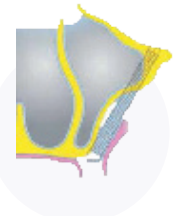
Type 3:

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.



* 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.

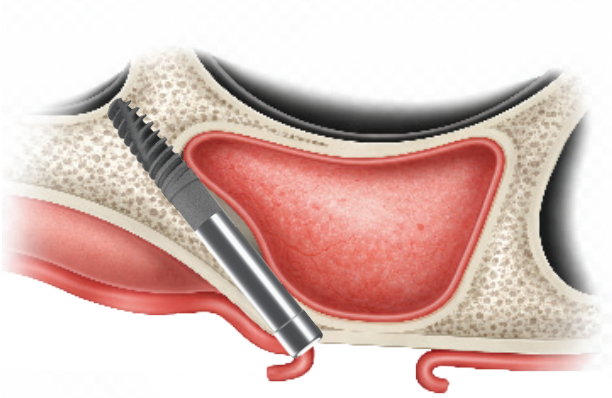
Implant Position and Surgical considerations

The position of Touareg™ OS Zygomatic implant and its anatomical relation to the sinus membrane bone depends on the specific anatomy of each patient.

Adin's Touareg™ OS Zygomatic implant is generally placed in 2nd premolar area and follows an extra-maxillary (ZAGA-4) implant pathway, positioned outside the maxillary sinus along the lateral wall of the maxilla.

The implant's threads enter the base of the body of the zygoma, passing through the zygoma and anchors at its lateral cortex. The implant trajectory is usually parallel to the zygomatic buttress.

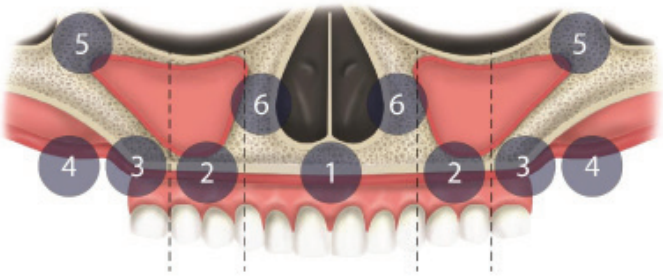
The specific implant site and placement technique should relate to the individual anatomical characteristics, to bone quality and quantity and to the specific size of the planned implant, to ensure optimal initial stability. at the time of implant placement, Individual implants should withstand a final tightening torque of at least 35Ncm.



Prosthetic Considerations

Either the existing maxillary denture (if is acceptable from the functional and esthetic perspectives), or a newly made maxillary denture should be used to precisely plan each implant's position.
Both the two-stage approach and the immediate loading approach are acceptable. In either case, the existing or newly made denture can be converted into a fixed provisional bridge, facilitating the cross-arch splinting of the implants.
Cross-arch stabilization of the Adin Touareg™ OS Zygomatic implants is paramount once the implant platforms are exposed intraorally.
When the two-stage approach is utilized, it is mandatory to ensure that the patient's existing denture does not put pressure on the gingival areas above the implants, until they are exposed

Immediate loading



Immediate loading implies a procedure in which a fixed restoration is attached to dental implants immediately after their placement, so patients leave the clinic with a functional fixed restoration.

The alternative is to utilize the two-step approach, in which the implants are not attached to a restoration until they are fully osseointegrated.

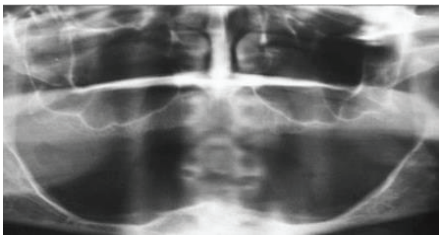
Zygomatic implants may be loaded immediately when good primary stability is achieved, the bridge is attached to all implants while achieving passive fit of all components and ensuring appropriate occlusal load distribution.
The following six parameters are of significance for short- and long-term success:

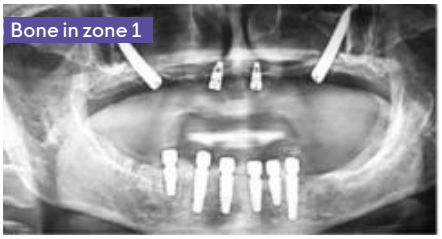
1. Biocompatibility of implants and their components.
2. Implant design and their biomechanical properties.
3. Implant surface technology.
4. The surgical technique and the achievement of high primary stability.
5. Passive fit and correct occlusal adjustment of the fixed bridge.
6. Patient's behavior and compliance to instructions after surgery and restoration delivery (such as ceasing smoking, not biting on hard foods, reporting on any adverse event to the doctor etc.)
7. Regular follow-up visits after surgery and after provisional and final bridge delivery

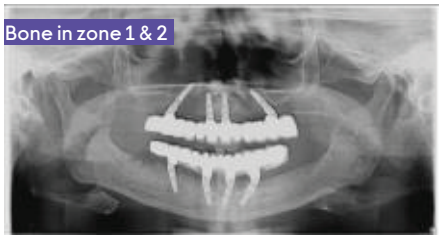
Radiographic Examination

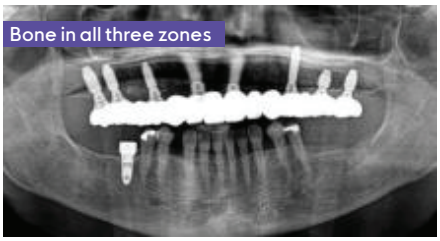
The panoramic image (OPG) allows a 2D visualization of the zones of the maxilla and are usually the first radiographs to be used to evaluate bone availability.

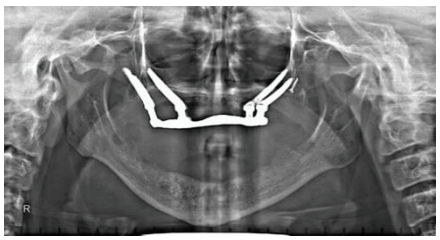
If bone is lacking in zones 2 and 3, the zygoma concept may be considered by placing one Touareg™ OS Zygomatic implant on each side to establish posterior support. In such cases, it is recommended to evaluate available bone in zone 1, to allow for the placement of additional two to four regular implants may be placed for anterior support.

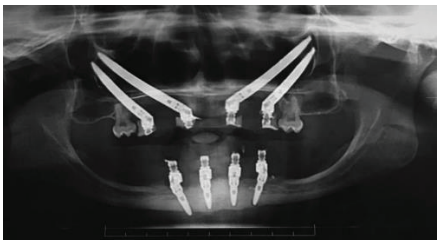












* Panoramic images by Dr. Nitin Ahuja

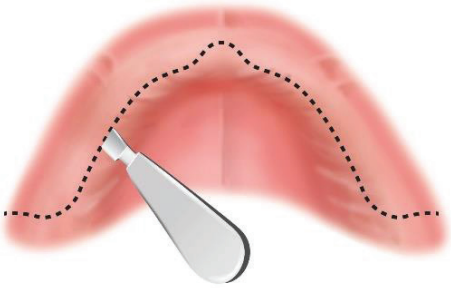
3D studies (CBCT scans)

It is essential to use (CBCT) scans that include the maxilla and zygomatic bones in their entirety.
These radiographs provide 3D detailed data that presents the topography of the maxilla, the sinuses, and zygomatic bone, to enable an evaluation of the width and height of available bone, as well as the location of the ostiomeatal complex and the existence of sinus pathology.

Surgical Step by Step Instructions

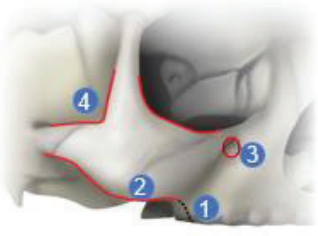
Note:
The illustrations generally represent common clinical scenarios. However, surgeons must follow up to date ZAGA instructions as for modifications that may be required based on the specific anatomical conditions of each patient.

Step 1: Initial incision



- Make an incision on the palatal crest of the edentulous maxilla with a distal vertical releasing incision. Note: In the vast majority of cases, this procedure is performed under general anesthesia or deep intravenous sedation, ensuring patient comfort and optimal surgical conditions.
- 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.

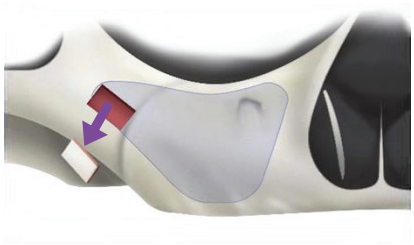
Step 4: Expose zygomatic body

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 the visualization of the intended apical edge of the implant (with special emphasis on avoiding penetration of the orbital floor). When the dissection is complete, the landmarks 1-4 (shown in step 2) are visible.

Step 6: Make a lateral slot

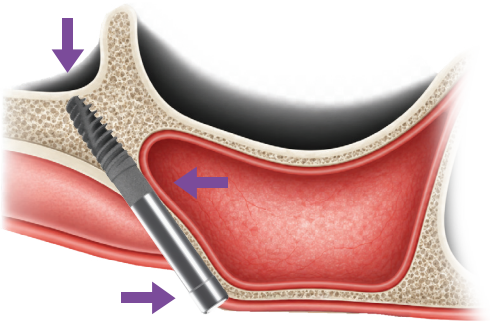


- Create a lateral slot along the lateral wall of the maxilla (infrazygomatic crest region) to guide the implant along the extra-sinus trajectory toward the zygomatic bone.
- The slot allows the implant body to follow the external contour of the maxilla and helps control the implant trajectory toward the zygomatic body

Step 7: Identify implant trajectory and starting point for drilling

- Identify the trajectory of the implant by placing the marking drill along the lateral wall of the maxilla, following the planned extra-sinus pathway toward the zygomatic bone:
  - The tip of the marking drill should be oriented toward the frontozygomatic notch
  - The body of the marking drill should align with the lateral maxillary wall following the external contour of the maxilla.The base of the marking drill should be positioned a 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. The direction of the long axis of the implant should be determined based on the patient-specific anatomy of the maxilla and the zygomatic bone, ensuring an extra-sinus trajectory along the lateral maxillary wall.
- Aim for the middle of the retractor during the drilling sequence.

Step 8: Plan implant placement



- Plan to place the implant head as close to the alveolar crest as possible (typically in the 2nd premolar region, depending on the patient's anatomy).
- The implant trajectory should follow an extra-sinus pathway along the lateral wall of the maxilla, allowing the implant to engage the base of the zygomatic bone and achieve anchorage within the zygomatic body.
- The implant should extend through the zygomatic bone and emerge at the lateral cortex of the zygoma below the frontozygomatic notch.

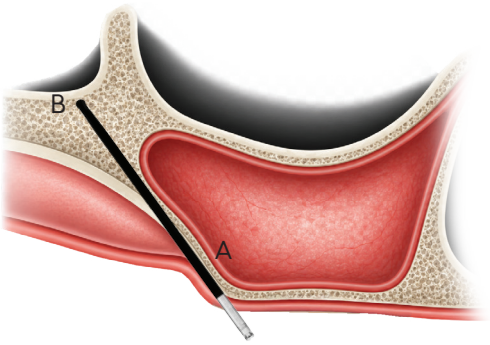
Note: Minor adjustment to this implant placement may be considered due to anatomical variations.

Osteotomy Preparation

General drilling comments

- 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 – Marking drill

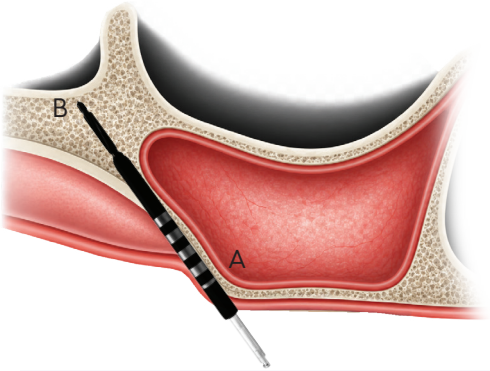


- Make a palatal/crestal mark for the implant entrance.
- Retract the mucosa and mark points A and B (using a surgical pencil or a marking drill) for the position of the desired zygomatic implant.

  Note: Point A is at the 2nd premolar area and point B at the root of zygoma, around 5mm superior-medial to the zygoma buttress.

  Recommended speed: 800 rpm

Step 2: Pilot Drill

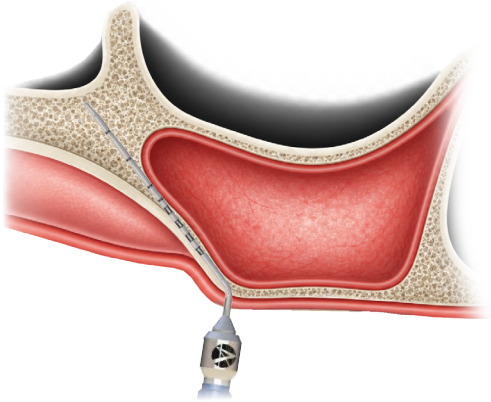


Orient the 2.5mm drill according to the points A and B along the lateral wall of the maxilla toward the zygomatic bone and drill until it penetrates the outer cortical layer of the zygomatic bone at the zygomatic incisura

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.

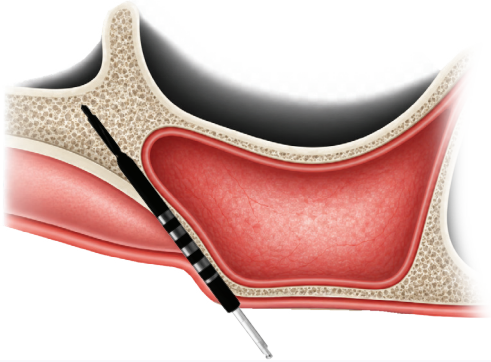
Note: The illustrations generally represent common clinical scenarios. However, surgeons must follow up to date ZAGA instructions as for modifications that may be required based on the specific anatomical conditions of each patient.

Step 3: Determine implant length



Use the depth probe to determine the required implant length.

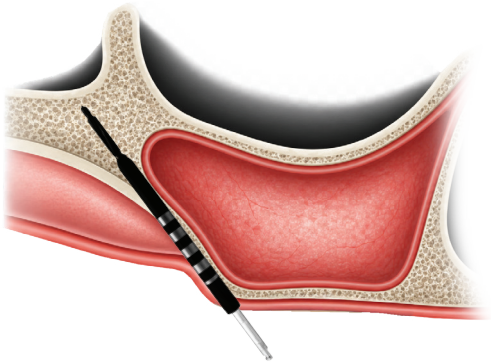
Step 4: Widen osteotomy – the 3.2 mm twist drill



Use the 3.2 mm twist drill to widen the osteotomy at the zygomatic bone entry point, previously prepared with the 2.5 mm drill, to make a partial 3.2 mm osteotomy through the zygoma body.

Maximum speed: 600 rpm

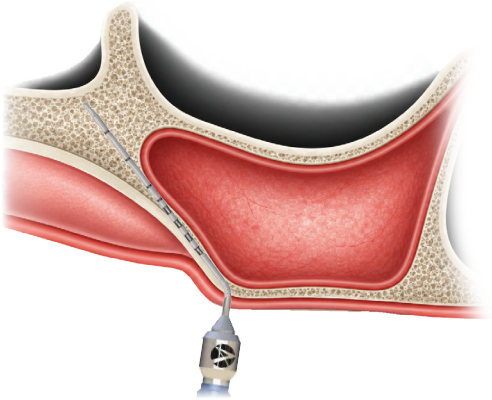
Step 5: Finalize osteotomy with a 3.5 mm twist drill



Complete osteotomy with the 3.5 mm twist drill to the desired depth.

Maximum speed: 600 rpm

Step 6: Verify depth



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

Step 7: Irrigate sinus

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

Note: When Lateral slots for Extra-sinus approach are needed, use diamond burs at 1000-1200rpm to create a slot through which the implant will be inserted to the Zygoma.

Implant Insertion

Step 1: Unpack the implant

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

Stage 1

Open the external package

Stage 2

Prior to implant placement, expose the sterile implant from the inner package.

Stage 3

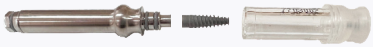
Take the Zygoma implant out of the inner package

Stage 4

Attach the Zygoma implant to a rachet or a surgical driver

Stage 5

Pull the implant out of the plastic and the holder



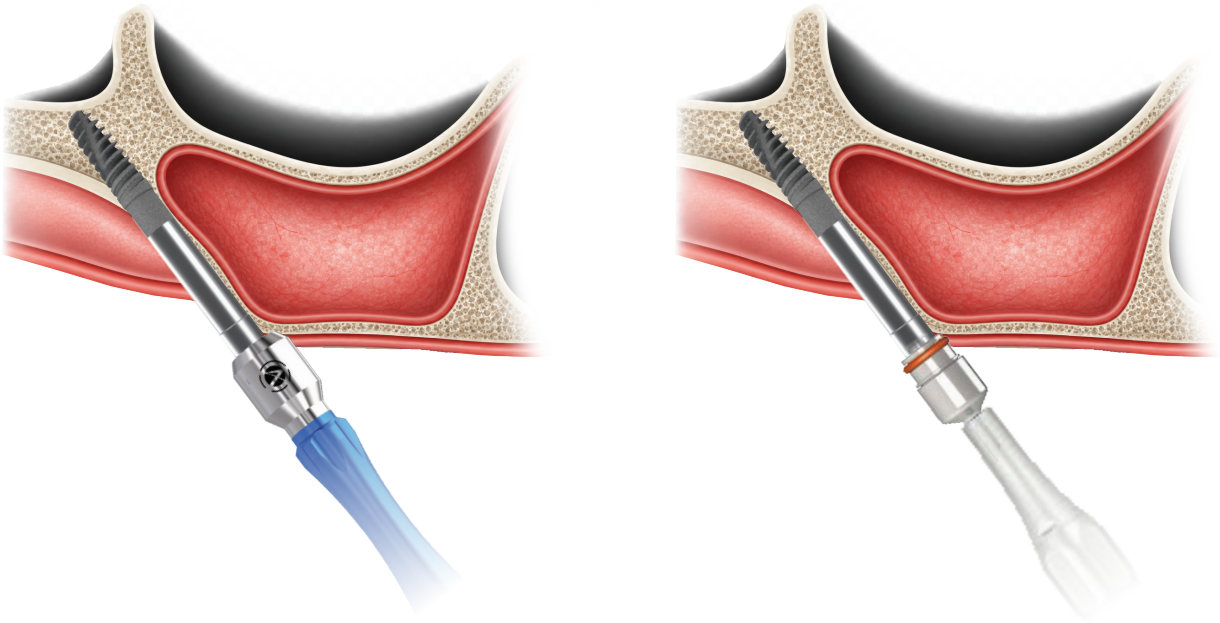
Step 2: Implant Delivery

Implant delivery to the desired site and preliminary insertion is done using its mount.
This can be done using either a ratchet or a surgical driver.

The pictures shown are for illustration purposes only.

Step 3: Final insertion

- A 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.
- The maximum recommended implant torque is 50 Ncm.
  Please note: Exceeding this value may result in mechanical failure, always use of torque-controlled device when placing Zygomatic implants.
- When using a physio dispenser for insertion, do not exceed 30 rpm.
- Remove implant mount by using gentle pulling or side pressure on it.



Step 4: Verify correct position of implant platform

Based on the pre-made provisional restoration, ensure that each implant's head is positioned at its desired position. Slight in-out modifications of the implant platform may be required.

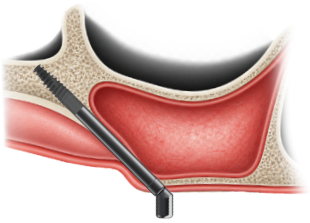
Step 5: Place remaining implants

Additional anterior maxillary implants are required and should be placed according to their surgical protocol and based on their future position relative to the restoration.

Two optional loading approaches:

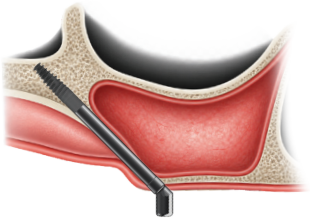
For Immediate loading

Step 6: Attach TMA abutments



Attach a TMA abutment, so that it corresponds to the required position in the provisional restoration.
Use a torque ratchet to ensure tightening of 35 Ncm of each TMA.

Step 7: Flap suturing



Suture flaps to ensure primary tissue closure.

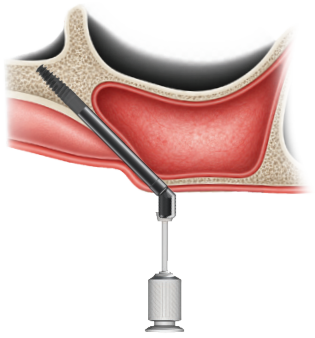
Step 8: Immediate Function

Chair side procedure:
Attach TMA temporary cylinders to each TMA abutment, and create holes in the provisional bridge above each cylinder, Shorten cylinders so that they do not interfere with the occlusion.
Attach the cylinders to the provisional bridge using acrylic resin (or similar material). Ensure that patient holds the bridge in full occlusion while material sets.
It is recommended to use a rubber dam to cover the sutures, to prevent accidental catch of acrylic resin in them while attaching the TMA cylinders.
Adjust occlusion and remove access material to finalize this stage.

Note: The pictures shown are for illustration purpose only

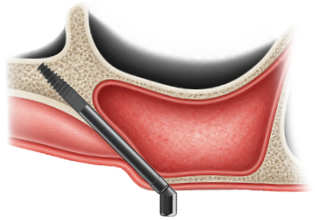
For Delayed loading:

Step 6: Place implant cover screw or TMA healing cap



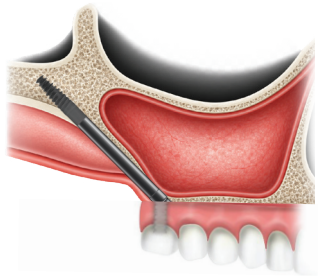
- If loading is not immediate, attach TMA healing caps to each TMA abutment, ensuring that each one is at least 2 mm exposed through the gingiva.
- Use a torque ratchet to ensure tightening of 15 Ncm.

Step 7: Flap suturing



Suture flaps to ensure primary tissue closure.

Step 8: Two-stage Loading Function



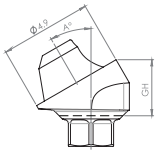
Allow approximately six months for the implants to osseointegrate prior to completion of second stage surgery (implants restoration).

Note: Be sure to relieve denture intaglio (tissue) surface to avoid contact between implants and denture.

Trans Mucosal Abutment System

(Multi-Unit Abutment)

TMAs (Trans Mucosal Abutments) are intended for multiple-unit, screw-retained restorations, and may be used in combination with an implant level framework design, available in 45° up to 60° angulation.
They can be used for full and partially edentulous arches, especially when using angled implants and all-on-x technique for full arch restoration.
The TMA™ abutments are available in angled (45°,52°,60°) units, and in multiple gingival heights.
The abutments engage their corresponding platform and are delivered with handles for easy insertion and to assist with seating.

		Description	GH	RH	Catalog No.
		RS Angled TMA 45° 4mm	4.0	2.1	RS3736
		RS Angled TMA 52° 5mm	4.9	2.1	RS3739
		RS Angled TMA 60° 5mm	5.8	2.1	RS3740

Transfers

	Description	L	D1	D2	Catalog No.
	TMA Impression Coping Open Tray	11.0	4.9	3.1	RS5006
	TMA Closed Tray Transfer	8.0	4.9	4.1	RS5011
	TMA Healing Cup	5.5	4.9	3.5	RS5005
		7.0	4.9	3.5	RS5003

Analogs

	Description	L	D1	D2	Catalog No.
	TMA Abutment Replica	16.8	3.35	-	RS5004
	TMA Digital Model Replica Recommended torque 15(Ncm)	12.0	4.9	3.8	RS1001

	Description	L	D1	Catalog No.
	TMA Scan Body	6.0	4.9	TM0006
		9.0	4.9	TM0009

Screws

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

TMA Prosthetics

	Description	L	D1	D2	H	Catalog No.		Description	L	D1	D2	Catalog No.
	TMA Titanium Temporary	12.0	4.9	3.5	10.5	RS4900		TMA Cementing Cone, low profile	4.9	5.5	3.2	TM0011
	TMA Plastic Casting Sleeve /Prosthetic Screw	12.0	4.9	3.3	10.5	RS5001		TMA Cementing Cone	4.9	4.9	2.9	TM0010

TMA Gauges

	Description	Catalog No.		Description	Catalog No.		Description	Catalog No.
	RS Angled Trans Mucosal Abutment Gauge 60°	RS3745		RS Angled Trans Mucosal Abutment Gauge 52°	RS3744		RS Angled Trans Mucosal Abutment Gauge 45°	RS3743
	RS Angled Trans Mucosal Abutment Gauge 30°	RS3742		RS Angled Trans Mucosal Abutment Gauge 17°	RS3741		RS Angled Trans Mucosal Abutment Gauge Kit	RS3747

Tool Drivers | For Angled TMA/TMA Prosthetic Screws

For Angled TMA/TMA prosthetic screw

	Description	L	Catalog No.		Description	L	Catalog No.
	Star Hand Driver Short	23.4	RP0064		Star Torque Driver-Short	20.4	RP0065
	Star Hand Driver Long	28.4	RP0004		Star Torque Driver-Long	25.4	RP0005

Zygomatic

Internal Hex Surgical Kit

ZGSK001

	Description	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 Probe, Zygomatic 35-55mm	ZGDP01
	Surgical Driver	RS7001
	Zygomatic Diamond Burr 4.2mmDx35mmL, Medium	ZGDB3542M
	Zygomatic Diamond Burr 4.2mmDx35mmL, Coarse	ZGDB3542C
	Star torque Driver - Long	RP0005
	RS 2.4 Hex Torque Driver - Short	RS6011
	RS 2.4 Hex Torque Driver - Long	RS6012
	RS Hex Handpiece Adapter - Long	RS9029
	1.27 Hex Torque Driver - Short	RS6080
	Wrench Ratchet	RS6100
	Wrench Surgical Instruments Handle	RA0050

Tools

	Description	Catalog No.
	Star Torque Driver - Long	RP0005
	RS 2.4mm Hex Torque Driver - Short	RS6011
	RS 2.4mm Hex Torque Driver - Long	RS6012
	RS Hex Handpiece Adapter - Long	RS9029
	1.27mm Hex Torque Driver - Short	RS6080
	Wrench Ratchet	RS6100
	Wrench Ratchet Surgical Instruments Handle	RA0050

Additional Restorative Considerations

- As a rule of thumb, it should be understood that a well-designed provisional restoration improves soft tissue and bone healing, and patient satisfaction.
- The provisional restoration should be made of materials that can ensure passive fit, prevent fractures and easy to adjust, so that it can ensure minimal need of handling and tightening at the healing and osseointegration phase after delivery.
- Cantilevers should be avoided when using the Immediate loading.
- Meticulous occlusal adjustment is of upmost importance, to prevent tilting of the provisional bridge during function. Patients should be instructed to use soft foods during the first two to three months after implant placement to reduce occlusal loads to the minimum.
- Patients should be aware of the fact that provisional restorations cannot achieve optimal esthetics.
- Optimal esthetics can be achieved only be achieved after full osseointegration and following the stages required when manufacturing the final restoration.
- It is highly recommended to the attach the final TMA abutments at the time of implant placement. This method ensures easy and full attachment of the abutments, and smooth transition from provisional to final restorations.

MB079-01 04.2026

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