

KAT Implants™ System Surgical and Restorative Manual



Invented and made in USA. US Patents 8,398,400, 8,469,710 and 8,734, 155

Rev. 7.1

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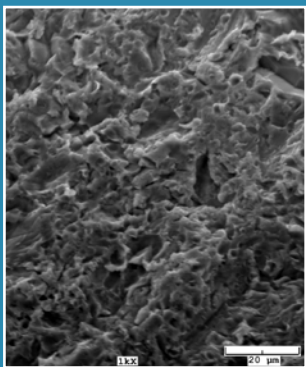
Implants Highlights

Two-piece implants

- KAT System implants are provided in 2.5, 3.1, 3.5, 4.3, 5.0 and 6.5 mm diameters.
- All implants have the same 3.1 mm diameter Post to receive abutments.
- A single platform of all KAT implants allows the use of all abutments on all implants.
- Implant Post and abutments have 1.5 degree taper.
- Watertight connection at 30 Ncm of torque.¹
- No retaining screw is needed to retain the abutments.
- Superior implant strength.²
- Place smaller diameter implants in thinner ridges.
- Aggressive thread increases implant surface area.
- Place shorter implants in limited height bone.
- Implant Post is designed to withstand 100 Ncm of torque.³
- One implant driver can be used to place all implants.
- Secure friction fit connection between the driver and implant.
- One step implant placement.
- Indexed abutments have zero rotational play.
- Predictable abutment placement with a torque wrench.
- Abutment can be used as impression coping for better prosthesis fit.

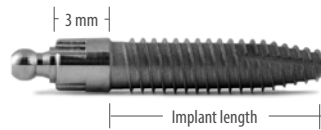
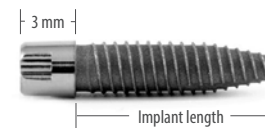
One-piece implants

- One-piece 2.5 mm implants are FDA cleared for long-term applications. One-piece 3.0 mm implants are cleared for upper lateral and lower incisors.
- One-piece implants are provided in 2.5 and 3.0 mm diameters.
- One-piece implants are provided in 10, 12 and 14 mm lengths.
- Use the same surgical instrumentation as with two-piece implants.
- Use the same Drivers as with two-piece implants.
- Use in areas where mesial-distal space is not sufficient for abutment placement (less than 5 mm).



1000x SEM image of the RBM blasted surface

1. Connection between implants and abutments is watertight at 30 Ncm of torque. Independent testing by University of Rochester Eastman Institute for Oral Health.
2. Two-piece 3.1 mm implant strength is 440 N per Implant Fatigue Test conducted according to ISO 14801: 2007. Test performed by MDT Laboratory, Minnetonka, MN, USA.
3. KAT Implants are able to withstand torques up to 100 Ncm. Implant Torque Test conducted by KAT Implants, LLC.



Standard Diameter Implants

- 3.5 and 4.3 mm diameters
- 3.5 mm diameter implants are available in 8, 10, 12 and 14 mm lengths
- 4.3 mm diameter implants are available in 6, 7, 8, 10, 12 and 14 mm lengths
- Indicated for all areas of the mouth
- 0.4 mm and 0.5 mm deep double lead threads
- Use with any abutment of KAT System

Wide Diameter Implants

- 5.0 and 6.0 mm diameters
- 5.0 mm diameter implants are available in 6, 7, 8, 10, and 12 mm lengths
- 6.0 mm diameter implants are available in 7 and 8 mm lengths
- Indicated for all areas of the mouth
- 0.5 mm deep double lead thread
- Use with any abutment of KAT System

Short Implants

- 4.3 and 5.0 mm diameters
- 6 mm length
- Indicated for all areas of the mouth
- 0.5 mm deep double lead thread
- Use with any abutment of KAT System

2.5 and 3.1 mm implants

- 2.5 and 3.1 mm diameters
- 10, 12 and 14 mm lengths
- Indicated for all areas of the mouth for long-term applications
- 0.25 mm deep double lead thread
- Use with any abutment (with the exception of the angled abutments on 2.5 mm implants)

Ball implants 2.5 and 3.1 mm

- 2.5 and 3.1 mm diameters
- 10, 12 and 14 mm lengths
- Indicated for all areas of the mouth for long term applications
- 0.25 mm deep double lead thread
- Use with O-ring Housing 4.2 and any abutment of KAT System (with the exception of the angled abutments on 2.5 mm implants)

One-piece Implants

- 2.5 and 3.0 mm diameters
- 10, 12 and 14 mm lengths
- 2.5 mm implants are indicated for long-term applications; 3.0 mm implants are indicated for upper lateral and lower incisors
- Implants require intra-oral preparation with copious irrigation and conventional impression technique

System Highlights

Single Platform

- KAT System two-piece implants are provided in 2.5, 3.1, 3.5, 4.3, 5.0 and 6.5 mm diameters.
- All implants have the same 3.1 mm diameter Post to receive abutments.
- A single platform of all KAT implants allows the use of all KAT System abutments on all implants.¹

Locking Taper Connection

- Implant Post and abutments have 1.5 degree taper.
- No micro-gap between implant and abutment.²
- No retaining screw is needed to retain the abutments.

Solid Implant Body

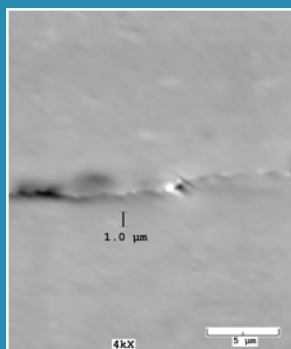
- Superior implant strength.³
- Place smaller diameter implants in thinner ridges.
- Aggressive threads increase implant surface area.
- Place shorter implants in limited height bone.
- 6 mm length implants are available in 4.3 and 5.0 mm diameters.

Secure Implant Placement

- Implant Post is designed to withstand 100 Ncm of torque.⁴
- One implant driver can be used to place all implants.
- Secure friction fit connection between the driver and implant.
- One step implant placement.

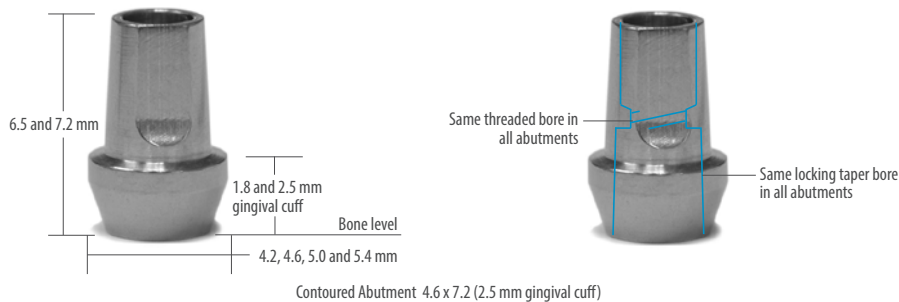
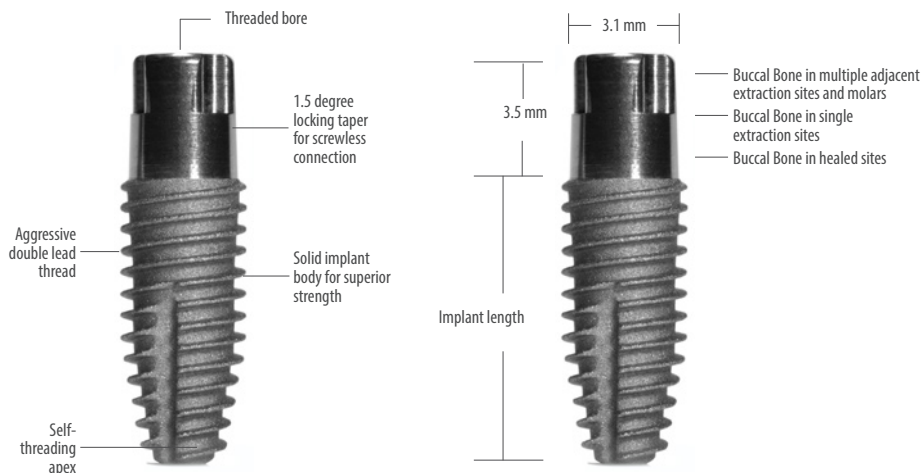
Predictable Prosthesis Fabrication

- Indexed abutments have zero rotational play.
- Predictable abutment placement with a torque wrench.
- Abutment can be used as impression coping for better prosthesis fit.



4000x SEM image of the implant/abutment junction

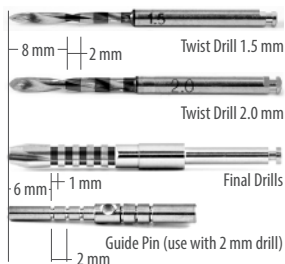
1. 2.5 mm implants should not be used with Angled Abutments.
2. Gap Analysis Test was performed by Sherry Laboratories, Broken Arrow, OK, USA. Conclusion: "The dental implant and abutment were in intimate contact (no gap was detected) in continuous areas along the interface length. Dark areas are discolorations from the polishing process."
3. 3.1 mm implant strength is 440 N per Implant Fatigue Test conducted according to ISO 14801: 2007. Test performed by MDT Laboratory, Minnetonka, MN, USA.
4. KAT Implants are able to withstand torques up to 100 Ncm. Implant Torque Test conducted by KAT Implants, LLC.



Drill Selection Guide

Implant Diameter	Soft Bone	Medium Bone	Hard Bone
2.5	1.5	1.5, 2.0 - 1/2 length	1.5, 2.0
3.1	2.0	2.0, 2.7 - 1/2 length	2.0, 2.7
3.5	2.0, 2.7	2.0, 2.7, 2.9	2.0, 2.7, 3.2
4.3	2.0, 2.7, 3.2	2.0, 2.7, 3.5	2.0, 2.7, 3.5, 3.9
5.0	2.0, 2.7, 3.5, 3.9	2.0, 2.7, 3.5, 4.2	2.0, 2.7, 3.5, 4.2, 4.7
6.0	2.0, 2.7, 3.5, 4.2, 4.7	2.0, 2.7, 3.5, 4.2, 4.7, 5.6	2.0, 2.7, 3.5, 4.2, 4.7, 5.6

Warning: Drill length is measured from the drill point. Allow 2 mm of safety margin between drill point and critical structures.



Drilling Instructions:

Use 1.5 and 2 mm Twist Drills at 1000 rpm with copious irrigation or at 100 rpm without irrigation. Replace Twist Drills every 12–20 drilling cycles.

Use Final Drills at 100 rpm without irrigation. Exercise great caution when drilling hard bone. Bone chips can be collected and placed over the implant shoulder after installation of the healing abutment. Replace Final Drills every 50 drilling cycles.

Warning: Failure to follow Drilling Instructions can result in heat trauma to the bone and implant loss.

Surgical, Restorative and Laboratory Kits

- Same diameter as final implants
- More narrow apical half
- Use sterile needle holder to handle
- Clean and sterilize as other instruments

Final Drills

Twist Drill 2.0 mm

Twist Drill 1.5 mm

Drill Extender

Implant Ø 2.5 3.1 3.5 4.3 5.0 6.0 Drill

USE DRILLS AT 100 RPM

Drill Ø 1.5 2.0 2.7 2.9 3.2 3.5 3.9 4.2 4.7 4.85 5.6 5.8 Extender

DRILL 1MM DEEPER THAN IMPLANT LENGTH

Trial Implants 10 12 14

2.5 3.1 3.5 4.3 5.0 6.0

8 6 7 8

Length

Reamers 100 RPM

4.2 4.7 5.1 5.5 L/B Spare

Two-stage if $\le 25\text{ Ncm}$ of torque
One-stage if $> 25\text{ Ncm}$ of torque
Abutment if $> 35\text{ Ncm}$ of torque

Ideal final torque in hard bone 25 Ncm
Ideal final torque in medium/soft bone 35-45 Ncm

Square Drivers S FG

Short Long FG

Guide Pins

Heated Site

Single Extraction Site

Multiple Adjacent Extr. Sites Buccal Bone Level

Drivers HP

Drivers M

Placement Inst.

Removal Inst.

Trial Implant Length

Diameter guides

Length guide

www.katimplants.com 877-528-7978

Surgical Kit

Screw #B Short and Long

Placement Instrument Short and Long

Removal Instrument Short and Long

Removal Screw Short and Long

Square Driver Short and Long

KIT LD0668

Long

Instr Screw Instr Screw Driver Short

877-528-7978 www.katimplants.com

Screw #B Long

Placement Instrument Long

Removal Instrument Long

Removal Screw Long

Square Driver Long

KIT LD0668

Long

Instr Screw Instr Screw Driver Short

877-528-7978 www.katimplants.com

Restorative Kit

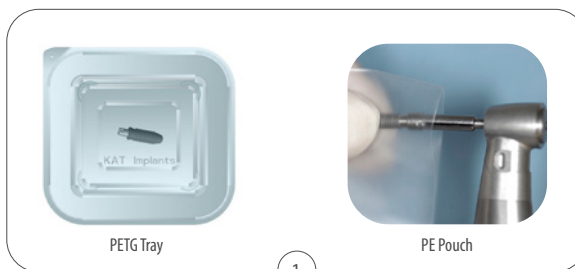
Laboratory Kit

Implant Placement Instructions

Implant Placement

Implant Handling - Diagram 1

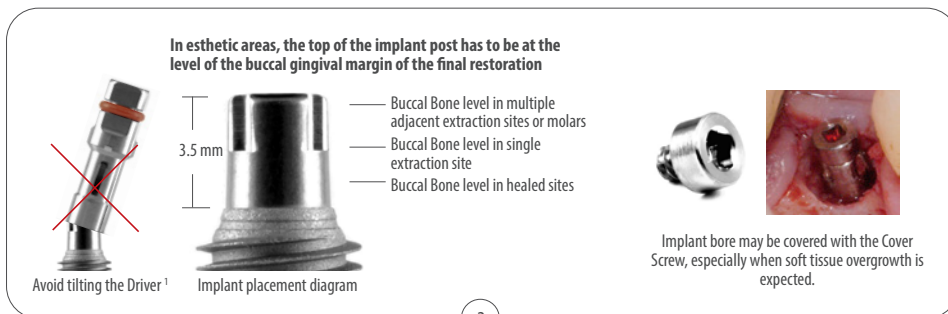
- Open PETG Tray over a sterile field. Remove PE Pouch containing implant; cut PE Pouch and insert the Implant Driver inside to engage the implant. Contamination of the implant must be avoided.
- Use Implant Driver M (used with Ratchet Wrench) or Implant Driver HP (used with Handpiece) to place implant in osteotomy.
- Adjustable Torque Wrench pictured in this manual is a precision instrument; it should only be used for implant torque verification and Implant/Healing Abutment installation.
- Use 25 rpm motor speed with Implant Driver HP. Set torque amount at 25 Ncm; higher torque may lead to Implant Driver HP fracture.
- Up to 70 Ncm of torque can be safely applied to the implants with Implant Driver M. Recommended final implant torque should be between 25 and 45 Ncm .



1

Implant Placement - Diagram 2

- Place Implant Post 1 mm subcrestally to the buccal bone in healed sites. Proximal bone may be much higher.
- Place Implant Post 2 mm subcrestally to the buccal bone in single extraction or healed molar sites.
- Place Implant Post 3 mm subcrestally to the buccal bone in multiple adjacent extraction sites and immediate molar replacement sites.
- Bone ridge reshaping is recommended when large bone level discrepancy is present.
- One of the laser marks located on the Implant Driver should face labially after the implant is fully inserted. This is necessary for proper buccal-lingual orientation of the impression coping and is more critical in sites with limited mesial-distal space, such as upper lateral incisors.
- Cover screw placement is not necessary, unless soft tissue overgrowth is expected. Debris trapped inside post's bore can result in a localized tissue infection.

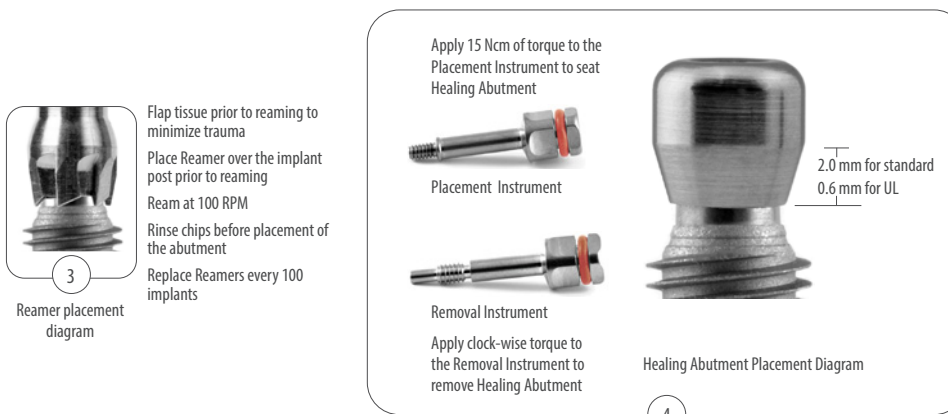


2

1. Driver tilting may lead to unexpected driver disengagement and distortion of the implant post. This distortion may affect the fit of the implant level screw-retained restorations only. The fit of all other abutments will not be compromised.

Bone Reaming - Diagram 3

- The use of a Reamer will allow uninhibited Healing Abutment insertion. Reamer should be the same size or larger than Healing Abutment.
- Do not use Reamer unless implant insertion torque is greater than 25 Ncm. If it is less than 25 Ncm, ream bone during the second stage surgery.
- Use Reamer at 100 rpm without irrigation.
- Replace Reamers every 100 implants.

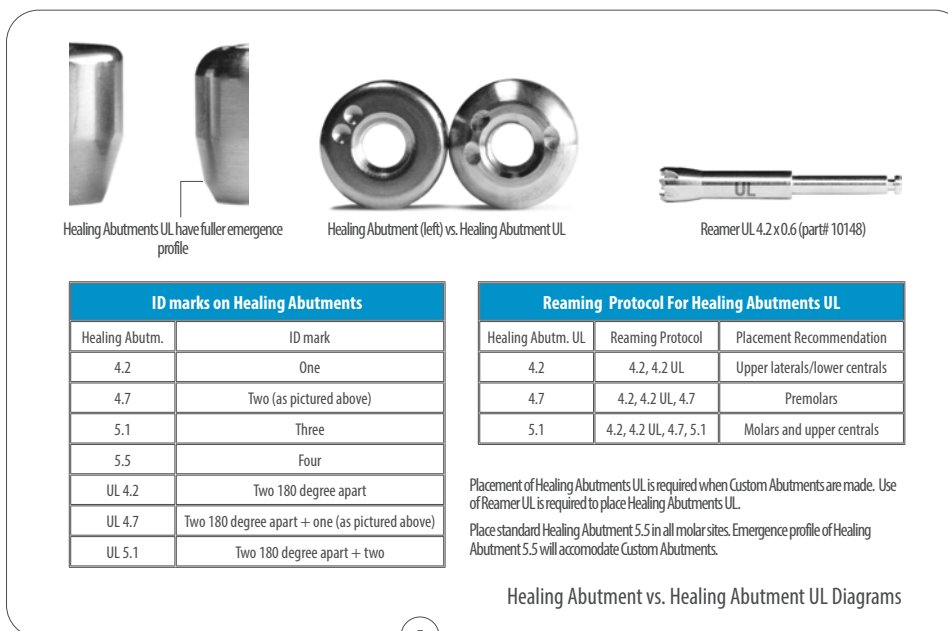


3

4

Healing Abutment Placement - Diagram 4

- Rinse bone chips thoroughly after bone reaming.
- Place Healing, Temporary or Final Abutment over the Implant Post; use the Placement Instrument to activate locking taper connection. Insert Placement Instrument into the implant and apply 15 Ncm of torque with a Torque Wrench. The Healing and Temporary Abutments are designed to slide 0.2 mm more over the implant post than the final abutments.
- Placement of any block-out material inside the Healing Abutment is not necessary. Any debris can be easily removed during Healing Abutment removal.



5

ID marks on Healing Abutments	
Healing Abutmn.	ID mark
4.2	One
4.7	Two (as pictured above)
5.1	Three
5.5	Four
UL 4.2	Two 180 degree apart
UL 4.7	Two 180 degree apart + one (as pictured above)
UL 5.1	Two 180 degree apart + two

Reaming Protocol For Healing Abutments UL		
Healing Abutmn. UL	Reaming Protocol	Placement Recommendation
4.2	4.2, 4.2 UL	Upper laterals/lower centrals
4.7	4.2, 4.2 UL, 4.7	Premolars
5.1	4.2, 4.2 UL, 4.7, 5.1	Molars and upper centrals

Placement of Healing Abutments UL is required when Custom Abutments are made. Use of Reamer UL is required to place Healing Abutments UL.

Place standard Healing Abutment 5.5 in all molar sites. Emergence profile of Healing Abutment 5.5 will accommodate Custom Abutments.

Healing Abutment vs. Healing Abutment UL Diagrams

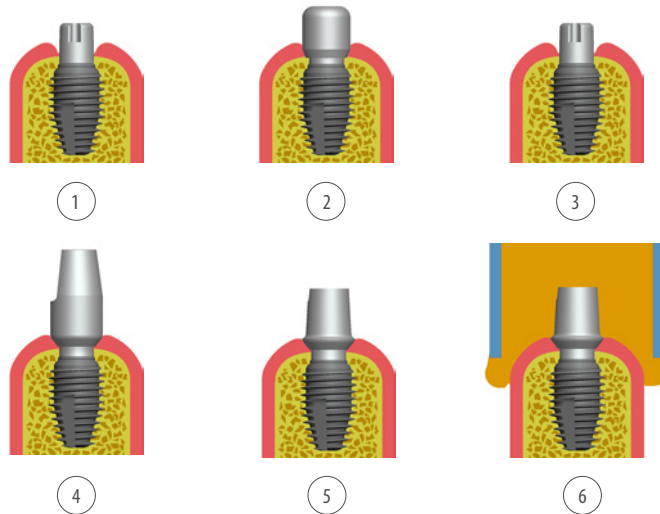


Non-Indexed Abutments and Custom Abutments

Clinical Steps - Diagrams 1–7

1. Wait 3 months in the mandible and 4 months in maxilla prior to removal of the Healing Abutment.
2. Screw Removal Instrument clock-wise inside the Healing Abutment; apply torque with a wrench to remove the Healing Abutment.
3. Healing Abutment is removed.
4. Attach the appropriate abutment to the implant with Placement Instrument and Torque Wrench set at 25 Ncm.
5. Place cotton pellet and block-out material inside the abutment. Abutment may be prepared intra-orally with a carbide bur under copious irrigation. Alternatively, the abutment can be removed using Removal Instrument and prepared on a Milling Analog extra-orally. Sonicate milled abutment in an alcohol bath for 3–5 minutes after each extra-oral milling operation. Accumulation of the milling dust inside the abutment will lead to improper fit between components.
6. Proceed with a conventional impression technique.

Non-Indexed Abutments



ALL NON-INDEXED ABUTMENTS ARE ATTACHED WITH 25 Ncm OF TORQUE

Required Instrumentation

Placement Instrument, Short [4001S]

Placement Instrument, Long [4001L]

Removal Instrument, Short [4002S]

Removal Instrument, Long [4002L]

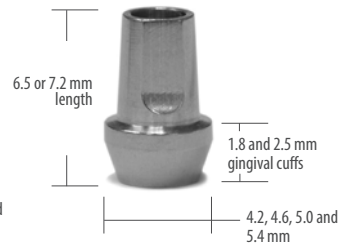
Milling Analog [5003]



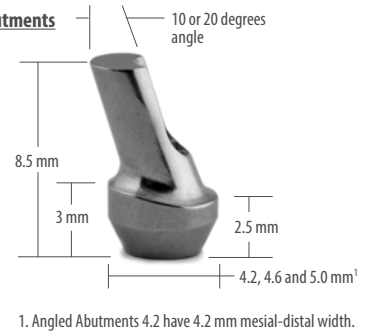
Prepable Abutment



Contoured Abutments



Angled Abutments



Custom Abutments



Custom Abutment can be fabricated with lab-processed composite such as Diamond Crown (DRM Research Laboratories, Inc) or Gradia® (GC America). Contact the manufacturer for specific instructions on metal primer use and composite application and polishing instructions. This technique has been successfully used by KAT Implants since 2009. No adverse soft/hard tissue response has been observed with either material.

All KAT abutments, indexed and non-indexed, can be customized with lab-processed composites.

Gradia® is a registered trademark of GC America.

Closed Tray Impression Technique (Clinical and Laboratory)

Closed Tray

Clinical Instructions - Diagrams 1-4

1. Impression Copings TT (Triple Tray) will fit any two-piece KAT implant.
2. Insert Impression Coping TT inside the implant threaded bore with the help of a Square Driver. Rotate the coping while applying seating force.
3. Apply light and heavy body impression materials around Impression Coping TT and insert the impression tray.
4. Remove the tray. Impression Coping TT will remain inside the impression material. Disinfect the impression and send it to the lab. Include the diameter of the healing abutment (or diameter of desired implant abutment if healing abutment has not been placed) on RX.

Laboratory Instructions - Diagrams 5-9

5. Attach Implant Analog to the Impression Coping TT. Use Impression Coping TT Adjustment Tool if retention is inadequate.
6. Fabricate hard and soft tissue models. Soft tissue material has to cover Implant Analog Groove.
7. Remove the impression tray. Trim the soft tissue material to expose Implant Analog Groove to allow correct abutment size placement. Abutment has to be the same diameter or smaller than the Healing Abutment.
8. Attach CI Abutment with Placement Instrument and 15 Ncm of torque. Mill abutment on the model or using Milling Analog. Follow Maximum Reduction Diagram during milling. Failure to follow maximum reduction guidelines may lead to separation of the Indexing Key from the abutment body.
9. Customize the abutment with indirect resin, such as Diamond Crown, if custom abutment fabrication is necessary. Alternatively, Straight or Angled Sleeve for CI Abutment can be cemented and milled if a longer abutment or a different margin placement is desired. Sonicate finished abutment and analog in alcohol for 3 minutes to remove chips; torque abutment with Placement Instrument and Torque Wrench set at 15 Ncm prior to sending the case back to the dentist.

Required Instrumentation

Placement Instrument, Short [4001S]

Placement Instrument, Long [4001L]

Removal Instrument, Short [4002S]

Removal Instrument, Long [4002L]

Implant Analog [5001]

Milling Analog [5003]



Clinical Instructions



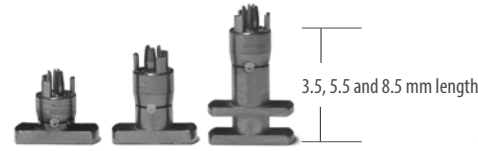
Impression Coping TT Adjustment Tool



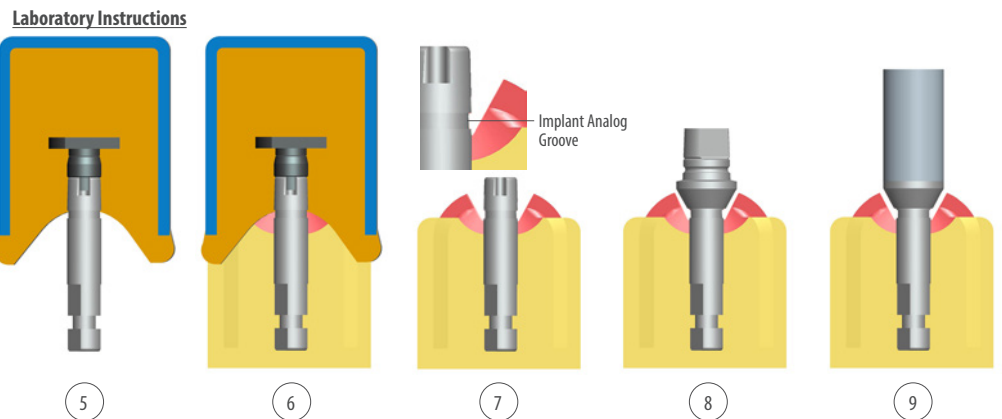
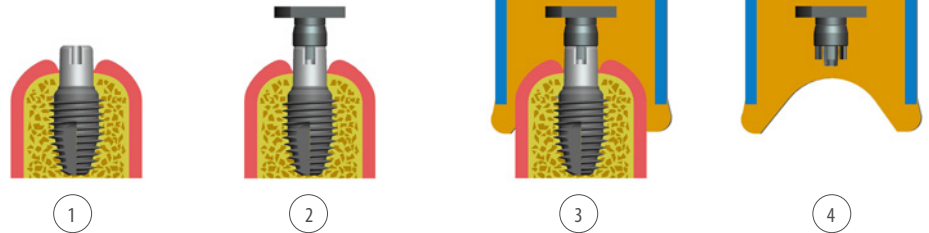
Inner prongs



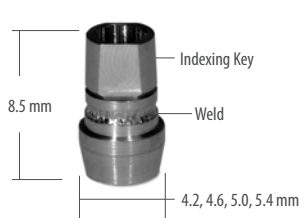
Press Impression Coping TT Adjustment Tool into inner prongs to regain retention



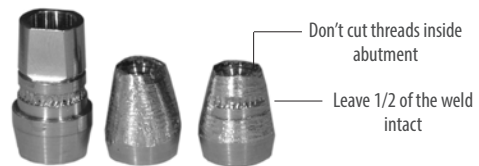
3.5, 5.5 and 8.5 mm length



Laboratory Instructions



Indexing Key
Weld
8.5 mm
4.2, 4.6, 5.0, 5.4 mm



Maximum Reduction Diagram

Don't cut threads inside abutment
Leave 1/2 of the weld intact

ALL INDEXED ABUTMENTS ARE ATTACHED WITH 15 Ncm OF TORQUE



Cement Sleeves over CI Abutments with dual-cure resin cement



Sleeve, Straight is provided in 4.2, 4.6, 5.0 and 5.4 diameters



Sleeve, Angled is provided in 4.2/4.6 and 5.0/5.4 configurations. It has 20 degrees angle



Closed Tray Impression Coping allows for a "traditional" closed tray implant level impression. Use Square Driver FG (Finger Grip) to attach Closed Tray Impression Coping to the implant with Screw #1 (sold separately).



Bite Screws 3 and 6 mm are used to aid in bite registration. Place Bite Screws inside implants with Square Driver FG. Record Bite Screw length on lab prescription.

Open Tray Impression Technique (Clinical and Laboratory)



Open Tray

Clinical Instructions - Diagrams 1–4

1. Open Tray Impression Coping will fit any two-piece KAT implant.
2. Attach coping to the implant with Placement Screw. Apply 15 Ncm of torque using Square Driver and Torque Wrench.
3. Apply light and heavy body impression materials around coping and insert the impression tray. Allow material to set and remove the tray. Coping will remain inside the impression material. Disinfect the impression and send it to the lab. Include the diameter of the healing abutment (or diameter of desired implant abutment if healing abutment has not been placed) on RX.

Laboratory Instructions - Diagrams 5–9

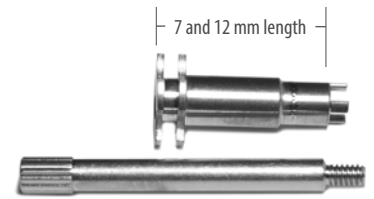
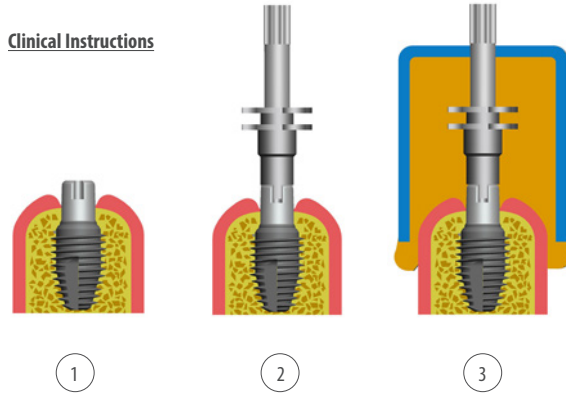
4. Attach implant analog to coping with Placement Screw. Apply 15 Ncm of torque using Square Driver and Torque Wrench. **Hold Analog with pliers to prevent rotation of coping.**
5. Fabricate hard and soft tissue models. Soft tissue material has to cover Implant Analog Groove.
6. Remove the impression tray. Trim the soft tissue material to expose Implant Analog Groove to allow correct abutment size placement. Abutment has to be the same diameter or smaller as the Healing Abutment.
7. Attach CI Abutment with Placement Instrument and 15 Ncm of torque. Mill abutment on the model or using Milling Analog. Follow Maximum Reduction Diagram during milling. Failure to follow maximum reduction guidelines may lead to separation of the Indexing Key from the abutment body.
8. Customize the abutment with indirect resin, such as Diamond Crown, if custom abutment fabrication is necessary. Alternatively, Straight or Angled Sleeve for CI Abutment can be cemented and milled if a longer abutment or a different margin placement is desired. Sonicate finished abutment and analog in alcohol for 3 minutes to remove chips; torque abutment with Placement Instrument and Torque Wrench set at 15 Ncm prior to sending the case back to the dentist.

Required Instrumentation

- Removal Screw, Short [4008S]
- Removal Screw, Long [4008L]
- Placement Instrument, Short [4001S]
- Placement Instrument, Long [4001L]
- Removal Instrument, Short [4002S]
- Removal Instrument, Long [4002L]
- Square Driver, Short [4010S]
- Square Driver FG [4011]
- Implant Analog [5001]
- Milling Analog [5003]

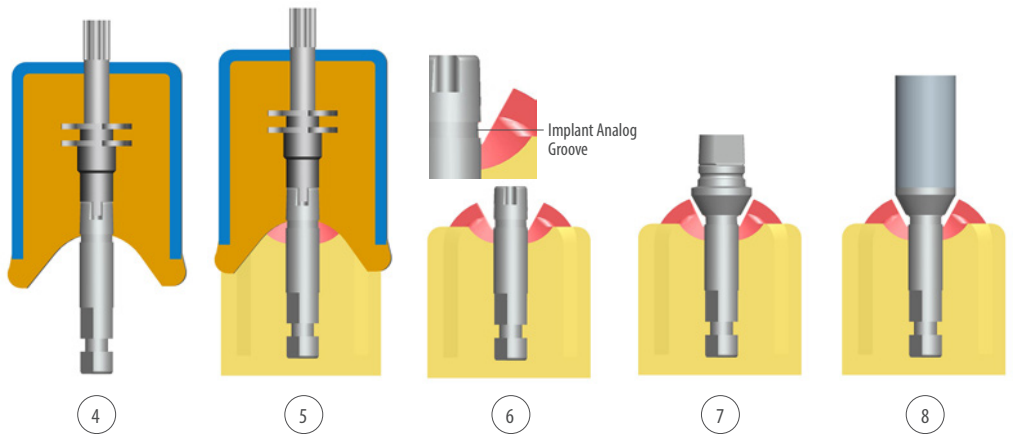


Clinical Instructions

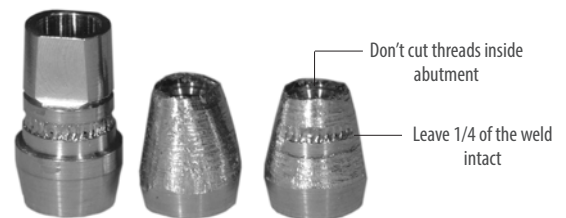


Open Tray Impression Coping 7 mm is supplied with Placement Screw, Short;

Laboratory Instructions



ALL INDEXED ABUTMENTS ARE ATTACHED WITH 15 Ncm OF TORQUE



Maximum Reduction Diagram



Cement Sleeves over CI Abutments with dual-cure resin cement



Sleeve, Straight is provided in 4.2, 4.6, 5.0 and 5.4 diameters



Sleeve, Angled is provided in 4.2/4.6 and 5.0/5.4 configurations. It has 20 degrees angle



Bite Screws 3 and 6 mm are used to aid in bite registration. Place Bite Screws inside implants with Square Driver FG. Record Bite Screw length on lab prescription.

Immediate Placement and Temporary Abutments

Immediate Placement

Immediate Anterior and Premolar Teeth Replacement

1. Consult Implant Placement Instructions.
2. Ream the bone with the Reamer at 100 RPM without irrigation.
3. Attach the Healing Abutment with 15 Ncm of torque.
4. Attach the implant abutment.

Immediate Molar Replacement

- Adequate attached gingiva width must be present.
- Buccal bone must be intact.
- Immediate molar replacement in elderly and smokers might not lead to good bone healing.

Temporization with Temporary Abutments, Crown

- A. Consult Implant Placement Instructions.
- B. Attach Temporary Abutment, Crown with 15 Ncm of torque.
- C. Screw the Removal Screw inside the abutment with finger pressure and try-in the stent. Place temporary crown material into the stent and try-in the stent. Place temporary crown material into the stent and insert the stent over the Removal Screw and abutment; allow material to set. Rotate the Removal Screw with Square Driver FG in a clock-wise direction to remove the abutment. Add resin to the abutment as needed.
- D. Attach restoration with 15 Ncm of torque.

Temporization with Temporary Abutments, Bridge

Temporary Abutments, Bridge are indexed abutments. Preparation can be done intra- or extra-orally using a Milling Analog. Sonicate in alcohol for 3-5 min. after extra-oral preparation. Attach with 15 Ncm of torque.

Warning:

Immediate temporization should not be done unless implant stability exceeds 35 Ncm of torque.

Required Instrumentation

Removal Screw, Short [4008S]



Removal Screw, Long [4008L]



Placement Instrument, Short [4001S]



Placement Instrument, Long [4001L]



Removal Instrument, Short [4002S]



Removal Instrument, Long [4002L]



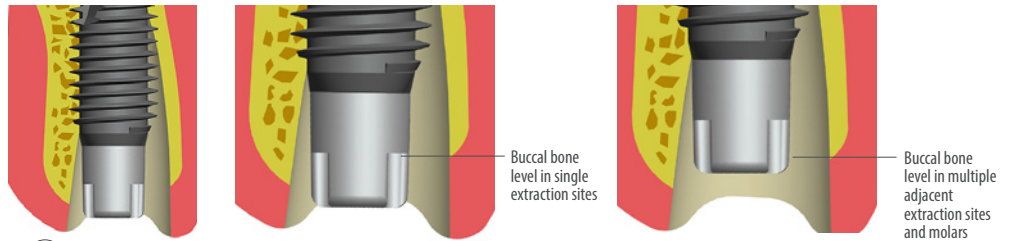
Square Driver, Short [4010S]



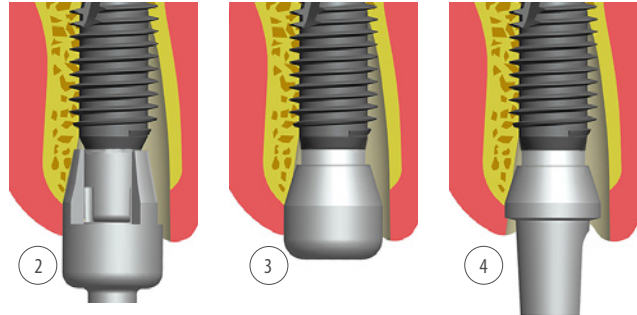
Square Driver FG [4011]



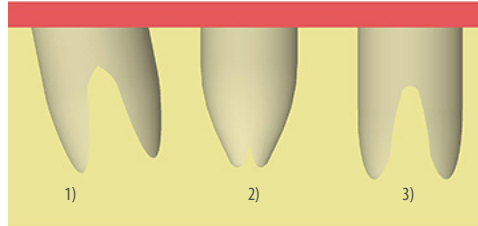
Immediate Anterior and Premolar Teeth Replacement



1 Anticipate 1 - 1.5 mm bone loss in a single extraction site and 2 mm in multiple adjacent extraction sites

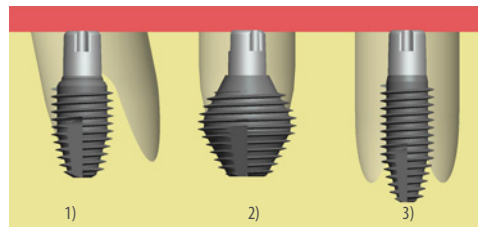


Immediate Molar Replacement



Three common molar root configurations

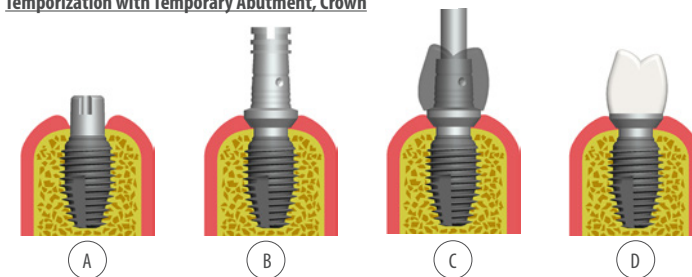
1. Mesially tilted.
2. Converging.
3. Diverging.



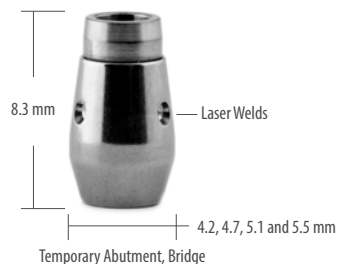
Recommended treatment:

1. 5 mm diameter implant placed in a mesial root.
2. 6.5 mm diameter implant placed to engage surrounding walls.
3. 3.5, 4.3 or 5 mm diameter implant placed to engage bone past the apical area (if sufficient bone height is present).

Temporization with Temporary Abutment, Crown



Temporization with Temporary Abutments, Bridge



Temporary Abutments, Bridge may be used to:

- Support the temporary bridge during permanent bridge fabrication.
- Support cemented temporary crowns during permanent crown fabrication.

Temporary Abutments, Bridge may be attached to the implants after implant placement if at least 35 Ncm of primary stability is present.

Do not remove any laser welds to preserve integrity of the Temporary Abutments, Crown and Bridge



Ball Implants, Ball and Locator Abutments

Ball Implants

Ball Implants are placed with the same Implant Drivers as other KAT implants. Consult Implant Placement Instructions prior to placement. Bone reaming should not be done unless it is desired to convert the case from a removable to a fixed bridge. If this conversion is to be done, the following steps must be taken:

1. Cut the ball portion with a new carbide bur, do not remove the radius that separates ball portion from locking taper portion. Clean and rinse the post, any remaining metal chips will negatively affect the locking taper connection;
2. Ream the bone with a desired size reamer, rinse the post from any bone chips. Any remaining bone chips will negatively affect the locking taper connection;
3. Place abutment over the implant post and tap it 3–5 times with a surgical mallet via a suitable instrument, such as mirror handle or a blunt osteotome.

Ball implants may also be prepared to receive a crown directly, same as One-Piece Implants. Use new a carbide bur to prepare the post prior to taking conventional crown and bridge impression.

Healing Abutment L/B Placement

Bone reaming must be done prior to the placement of Ball and Locator Abutments. Read Implant Placement Instructions page of this manual for reaming instruction. Use Reamer L/B to ream bone.

Ball/Locator Abutment Insertion

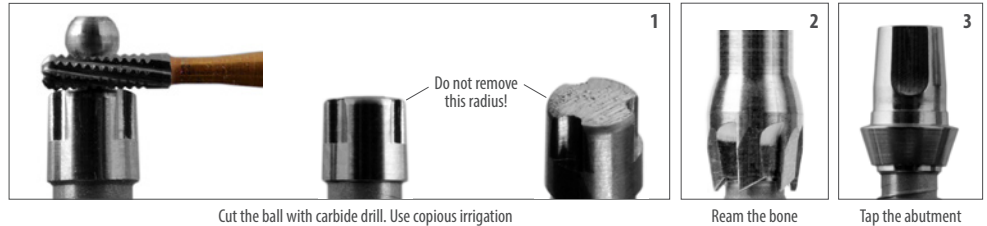
Place Ball or Locator Abutment over the implant. Place Tapping Instrument #1 over Ball Abutments or Tapping Instrument #2 inside Locator Abutments. Apply 3–5 moderate taps with surgical mallet to the tapping instrument to attach abutments.

Ball/Locator Abutment Removal

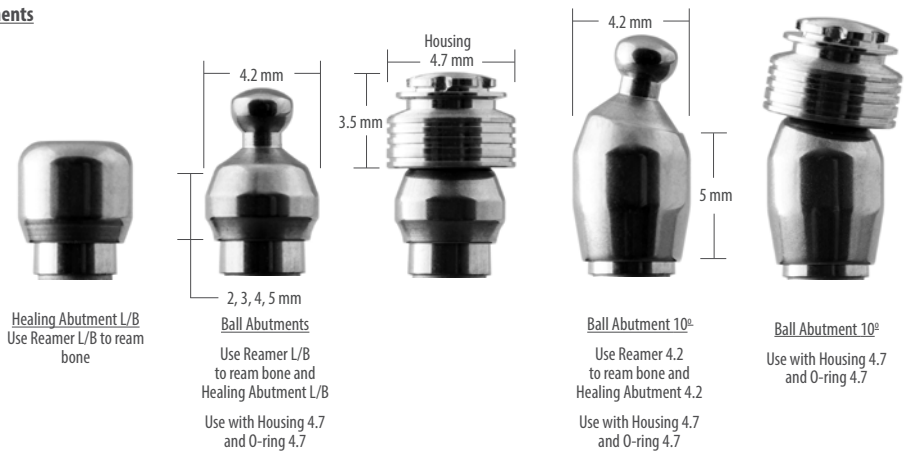
Removal of the Abutment is accomplished with the Abutment Remover. It is a crown remover type instrument that is fitted with either the Removal Tip #1 (for Ball Abutments) or the Removal Tip #2 (for Locator abutments).

Place Corresponding Removal Tip over the Abutment to engage the undercut. Place and hold the gauze over the abutment to prevent accidental loss of the abutment and hurting your fingers. Activate the lever of the Abutment Remover to remove the abutment. One activation is sufficient to remove the abutment.

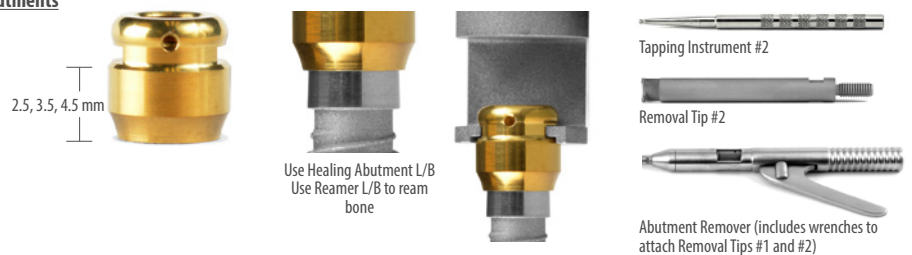
bob-KAT Implants



Ball Abutments



Locator Abutments





Immediate Denture Abutment (ID Abutment™)

Clinical Steps - Diagrams 1–10

Warning:

Implant loading with modified immediate denture should not be done unless implant stability exceeds 35 Ncm of torque.

1. Pre-operative image.
2. Consult Implant Placement Instructions for implant placement.
3. Place bone grafting material in extraction sockets and around the implants.
4. Attach ID Abutments with retaining screws and Square Driver FG; proceed with suturing.
5. Create the openings in the immediate denture to allow passive fit of the denture over the ID Abutments. Immediate denture flanges should not be trimmed at this stage to allow accurate and repeatable denture insertion. Verify proper fit with opposing dentition.
6. Place rubber dam over the ID Abutments.
7. Place cotton pellets inside ID Abutments. Apply Vaseline to the outside surfaces of the immediate denture. Fill the denture with self-curing acrylic and insert the denture over the ID Abutments. Ask patient to close and maintain light pressure during the curing stage.
8. Use coarse diamond drill to access the retaining screws of the ID Abutments. Use Square Driver to remove retaining screws and immediate denture. Trim the denture to allow unrestricted oral hygiene.
9. Polish the screw-retained denture.
10. Attach the screw-retained denture to the implants with Square Driver and a Torque Wrench set at 20 Ncm. Screw-retained denture may be relined and reinforced with wire at a later appointment.
11. Impression Coping IL (Implant Level non-indexed) should be used for denture fabrication on a model.

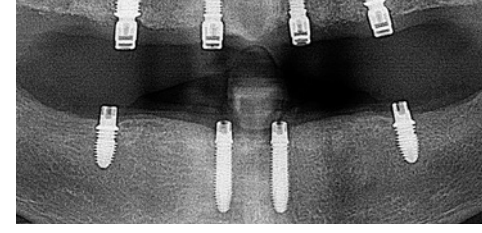
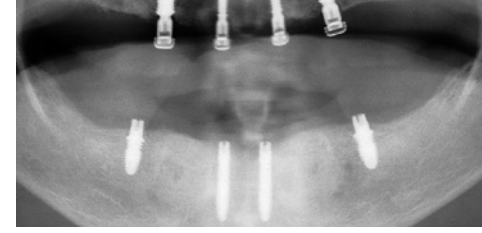
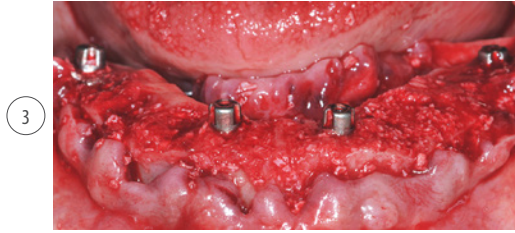
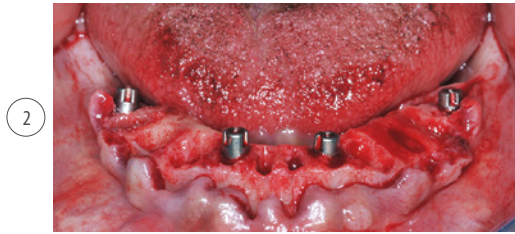
This treatment works well for the lower teeth immediate extractions where an affordable immediate fixed long-term solution is desired.

Required Instrumentation

Square Driver, Short
[004010S]

Square Driver, Long
[004010L]

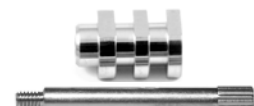
Square Driver FG
[004011]



3 years post-op x-ray



ID Abutment with Screw #1



Impression Coping IL with Screw #B

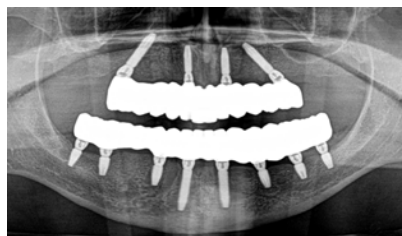
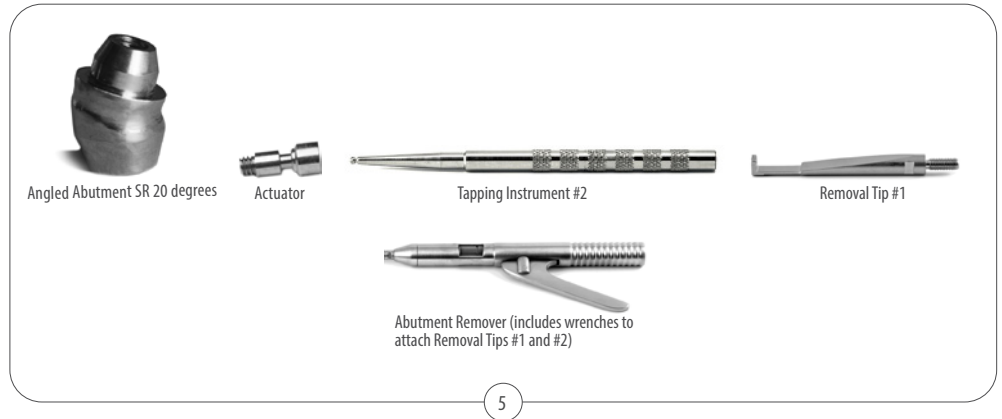
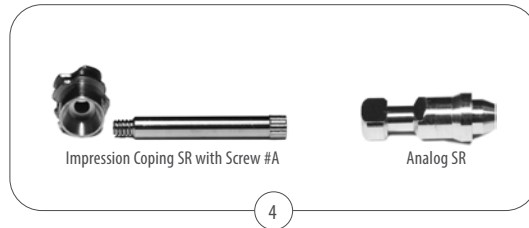
1 year post-op image



Screw-retained Components

Clinical and Laboratory Instructions - Diagrams 1–8

1. Abutments SR are provided in 2.7 and 3.5 mm gingival cuff length (see Diagram 1). Reamer 4.7 must be used prior to Abutment SR insertion.
2. Use Placement Instrument SR 2.7 to attach Abutment SR 2.7 and Placement Instrument SR 3.5 to attach Abutment SR 3.5 (see Diagram 2). Failure to use designated instrument will result in instrument fracture! Apply 20 Ncm of torque to Placement Instrument SR.
3. Use Temporary Insert SR with Screw #2 for fabrication of the temporary screw-retained bridges. Screw #A (sold separately) should be used to create access hole. Insert SR, used with Screw #2, should be cemented inside permanent bridges (see Diagram 3). Attach permanent and temporary bridges with Square Driver and 20 Ncm of torque. Cap SR, used with Screw #2, can be used to protect Abutment SR from gingival overgrowth. Tighten Screw #2 with finger pressure using Square Driver FG.
4. Impression Coping SR, used with Screw #A, allows for abutment level open tray impression to fabricate screw-retained bridge. Torque Screw #A with 20 Ncm of torque and Square Driver, Short. Diagram 4 also shows Analog SR that is compatible with Impression Coping SR. Attach the Analog SR to the Impression Coping SR with Square Driver and 20 Ncm of torque prior to soft and hard tissue model fabrication.
5. Diagram 5 shows Angled Abutment SR 20 degrees. Place Angled Abutment SR over implant in a desired orientation and Screw Actuator inside Angled Abutment with Square Driver and finger pressure. Use Tapping Instrument #2 and a mallet to apply 5 moderate taps. Remove Actuator. Removal of the Angled Abutment SR is accomplished by the following steps. 1) Screw the Actuator in. 2) Insert Removal Tip #1 into the Abutment Removal. 3) Place 2 x 2 gauze over the Actuator and apply one reversed tap to the Actuator.
6. Cement Inserts SR into the finished bridge with a dual-cured composite cement. Torque Screws #2 with the Square Driver and 20 Ncm of torque. Fill access holes with suitable material.



Upper and lower screw-retained bridges



Warranty and Return Policy

KAT Implants™ Warranty

Instrumentation

Instruments manufactured by KAT Implants will be replaced if found defective or damaged under normal-use conditions. Duration of the Instrumentation Warranty is one (1) year from the date of initial invoice.

Surgical Drills and Reamers

Surgical drills and reamers are covered under a ninety (90) day warranty from the date of initial invoice. Surgical drills used at 100 rpm speed should be replaced after 50 osteotomies. Pilot drills (twist drill 1.5 mm and twist drill 2.0 mm) should be replaced after 12 to 20 osteotomies. Reamers should be replaced after 100 drilling cycles.

Return Policy

Unopened items may be returned within thirty (30) days from the date of initial invoice; items must be accompanied by an original invoice and a *Return Authorization Form*. Returns must receive prior approval from KAT Implants and are subject to a 15% restocking fee. No refund will be issued after 30 days. Damaged items will not be accepted. All exchanges are subject to approval by Customer Care. Please call us at 1-877-528-7978 to request a Return Authorization Form or for other inquiries.

Disclaimer of Liability

KAT Implants products should only be used with components manufactured or sold by KAT Implants. The use of surgical or prosthetic components not manufactured or distributed by KAT Implants will void all expressed or implied warranties and obligations.

KAT Implants strongly recommends postgraduate education in implant dentistry prior to use of KAT Implants System. The clinician must be familiar with and adhere to the Instructions for Use (IFU) supplied with the KAT Implants products. KAT Implants' responsibilities and obligations arising from incidental or consequential damages resulting from use of KAT Implants products are limited to replacement or repair of the products under our warranties.

Distributed Products

Please consult the manufacturer of the distributed product for warranties and services associated with the distributed products. Contact information is located on the product packaging.

Product Images

Product images used in this publication may not fully represent the actual product. Please contact KAT Implants for detailed specifications of each product.

Product Availability

Products listed in this publication may not be available in all countries. KAT Implants is committed to a continual improvement of KAT Implants System and reserves the right to change or discontinue its products at any time without prior notice.

Indications for Use

KAT Implants System is intended to restore edentulous areas of the maxilla and mandible, to provide support for removable dentures or fixed bridges, or to be used as a single tooth replacement. Single or splinted implants can be immediately loaded if good primary stability and appropriate occlusal loading are achieved. The implant can be placed in extraction sites or healed alveolar ridges.

KAT 3.0 mm implant is indicated for use in maxillary lateral or mandibular lateral and central incisors in single or multiple units to support prosthesis, such as artificial teeth. The implant can be placed in extraction sites or healed alveolar ridges and can be immediately loaded when good primary stability is achieved and the functional load is appropriate.

tom-KAT 2.5 mm and 3.1 mm are self-tapping titanium alloy threaded screws indicated for transitional and long-term intra-bony applications such as providing support for transitional or long-term crowns, bridges, and dentures. tom-KAT 2.5 mm and 3.1 mm may also be used for inter-radicular transitional application.

Contraindications

KAT implants should not be used in patients who have diseases that can interfere with proper healing and osseointegration of the implants. Examples of such diseases are blood dyscrasias, uncontrolled diabetes, malignancies, hyperthyroidism, bruxism, oral infections and/or myocardial infarction within one year. KAT implants should not be placed into ridges with insufficient bone height and/or width.

Warning

Implant placement and restoration require additional training. Appropriate and adequate training in proper technique is recommended prior to implant placement. KAT implants must be used according to indications described above. Failure to do so can result in implant failure and loss of surrounding bone. Specific drills are provided for placement of KAT implants; the use of other drills may result in improper osteotomy and implant failure. KAT implants are supplied in sterile containers. Do not use sterile components if packaging is damaged. It is important that the clinician take into considerations local loading conditions when determining the number and spacing of short implants. Considering the reduced bone support provided by short implants, it is important for the purpose of early diagnosis and treatment that the clinician closely monitors soft tissue and supporting bone health status by means of the radiographic evaluation.

Precautions

Proper examination of the patient is mandatory prior to the implant placement. Panoramic x-rays are recommended for location of the mandibular canal, mental foramina, sinuses, adjacent teeth and the height of available bone. Computerized imaging may also be helpful in determining the availability of bone. KAT Implants System has not been evaluated for safety and compatibility in the MR environment. KAT Implants System has not been tested for heating or migration in the MR environment. Immediate loading may not be appropriate in Type IV bone due to difficulty in achieving primary stability. One-Piece implants are not to be used with abutments. 2.5 mm implants are not intended for angle correction. If 2.5 mm implants are used for transitional purposes while other implants are integrating, the removal of the implants should be done at a time when loading of the other implants is considered safe (3 months in the mandible and 4 months in maxilla, longer healing may be necessary in poor quality bone). Federal (U.S.A.) Law restricts the sale of this device to a purchase by or on the order of a licensed dentist.

Side Effects

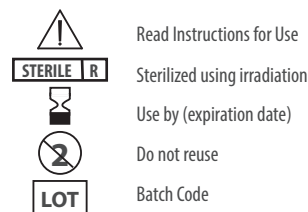
The following complications can occur: dehiscence, delayed healing, paresthesia, local and generalized allergic reaction, hematoma, edema, excessive bleeding, and infection.

Sterilization and Packaging

KAT implants are supplied in a sterile blister pack. Inside the sterile pack is a soft polyethylene package containing the implant. Implant Abutments, Healing Abutments and other components of the KAT Implants System are also provided in sterile packaging. Instrumentation and drills are provided in non-sterile packaging. Instrumentation and drills must be cleaned in an ultrasonic bath and sterilized using steam sterilization prior to use.

Open the sterile PETG tray over a sterile field. Wear sterile gloves when handling the polyethylene plastic package containing the implant. Open the polyethylene package by cutting on the abutment-receiving post side of the package. Insert the Implant Driver into the package and attach it to the implant with firm pressure. Remove the implant from the package and place it into the prepared site. A sterile environment must be maintained to ensure that the implant is not contaminated.

Symbols used on a package label





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