Keystone DENTAL

I-HEXMRT™

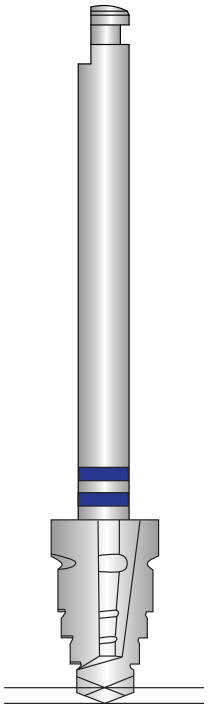
Surgical Manual

I-HEXMRT™ IMPLANT SURGICAL MANUAL

Product specifications are subject to change without notice.
Items illustrated are not to scale.

Design Features

The I-HEXMRT™ Implant features an internal hex connection and a body with a larger-than-conventional diameter to fill a molar site, ultimately achieving primary stability by engaging the perimeter of the bony wall. The I-HEXMRT™ Implant has a tapered body, an enhanced surface and is designed to fit the natural shape of a molar socket. The I-HEXMRT™ Implant provides an optimal fit in the multi-rooted immediate extraction site, minimizing bone loss and reducing treatment time. The wider implant body requires larger-than-conventional drills which generate higher torque values than regular size implants.

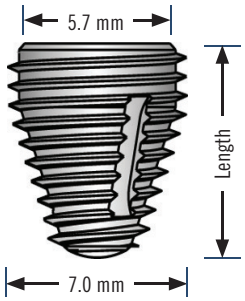


Over Drill Depth

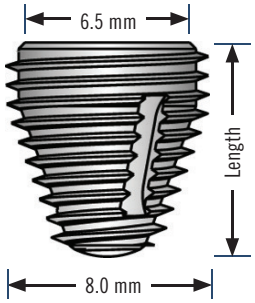
Implant Size	Implant Length	Over Drill Depth
Ø7.0 mm Ø8.0 mm Ø9.0 mm	7 mm	2.4 mm
	9 mm 11 mm	1.1 mm

Dimensions

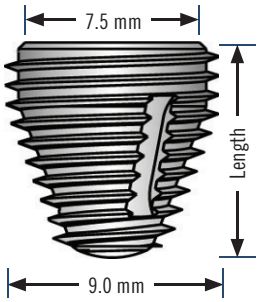
The I-HEXMRT™ Ø7.0 mm is available in 7, 9 & 11 mm lengths and features a Ø5.7 mm platform with a 3.0 mm internal hexagon. Abutments are available in a flare of 6.0 & 7.0 mm.



The I-HEXMRT™ Ø8.0 mm is available in 7, 9 & 11 mm lengths and features a Ø6.5 mm platform with a 3.0 mm internal hexagon. Abutments are available in a flare of 8.0 & 9.0 mm.



The I-HEXMRT™ Ø9.0 mm is available in 7, 9 & 11 mm lengths and features a Ø7.5 mm platform with a 3.0 mm internal hexagon. Abutments are available in a flare of 8.0 & 9.0 mm.



Considerations

INDICATIONS

I-HEXMRT™ Implants are intended to be implanted into the maxillary and mandibular molar region where adequate bone is available. The I-HEXMRT™ Implants provide support for fixed or removable dental prostheses in a single tooth, partially edentulous prosthesis, or full arch prosthesis. The I-HEXMRT™ Implants further add the option for immediate temporization on single and splinted multiple unit restorations when excellent primary stability is achieved and with appropriate occlusal loading, to restore masticatory function.

CONTRAINDICATIONS

Implant placement is contraindicated in patients with inadequate quality and/or quantity of bone, as well as patients with medical disorders unfit for general oral surgery procedures, e.g., blood dyscrasias, and bone dyscrasias. Additional contraindications include, but are not limited to, individuals with localized or systemic factors that could interfere with the healing process, e.g., infections, steroid therapy, smoking, and bruxism.

NOTE: Improper treatment planning and/or implant placement might result in implant failure and potential loss of the surrounding bone.

HEALING PERIOD

Any inadvertent loading of the implant should be avoided, especially during the first 6 weeks of healing to achieve optimal osseointegration.

IMMEDIATE RESTORATION

I-HEXMRT™ Implants may be immediately temporized on single and splinted multiple unit restorations when excellent primary stability is achieved and with appropriate occlusal loading. Whenever possible, these restorations should be out of occlusion in both centric and eccentric positions. The patient should adhere to a soft diet and place minimal forces on these restorations for 6 to 8 weeks.

DELAYED RESTORATION

The healing period is generally 3-4 months in the mandible and 4-6 months in the maxilla, however, healing periods for each patient vary.

After the appropriate healing period the Cover Screw is removed, the Healing Abutment is placed and the gingiva is slightly sutured around. In some cases sutures might not be necessary. The Healing Abutment remains in place for approximately 2 weeks. Impressions can then be taken and the prosthetic protocol may proceed.

Implant Selection and Placement

Implant selection should be made with the final restorative result as the primary consideration. The final implant position is at the discretion of the surgeon. Each case should be evaluated on the basis of placement, protocol and type of implant prior to osteotomy preparation.

Instrument Care

Instruments and Surgical Trays must be cleaned and sterilized prior to first and after each use based on established procedures. Proper instrument care is an important part of successful implant dentistry.

PRE-CLEANING

- Used instruments should be soaked immediately in instrument cleaning solution to avoid the drying of blood, saliva and tissue residue.
- Used surgical trays including grommets must be cleaned with a suitable disinfectant.
- Multiple-part instruments must be disassembled prior to cleaning and sterilization.
- Internal debris/residue of instruments must be removed with a soft brush.
- Instruments should be inspected, cleaned separately and discarded if damaged.

PRINCIPLE CLEANING

- Best results are achieved if surgical instruments are cleaned by material type.
- Instruments and trays can be cleaned and disinfected in a dedicated dishwasher or alternatively by hand, followed by an ultrasonic bath with a detergent appropriate for surgical instruments.
- Instruments and trays must be rinsed and dried thoroughly.

PACKAGING

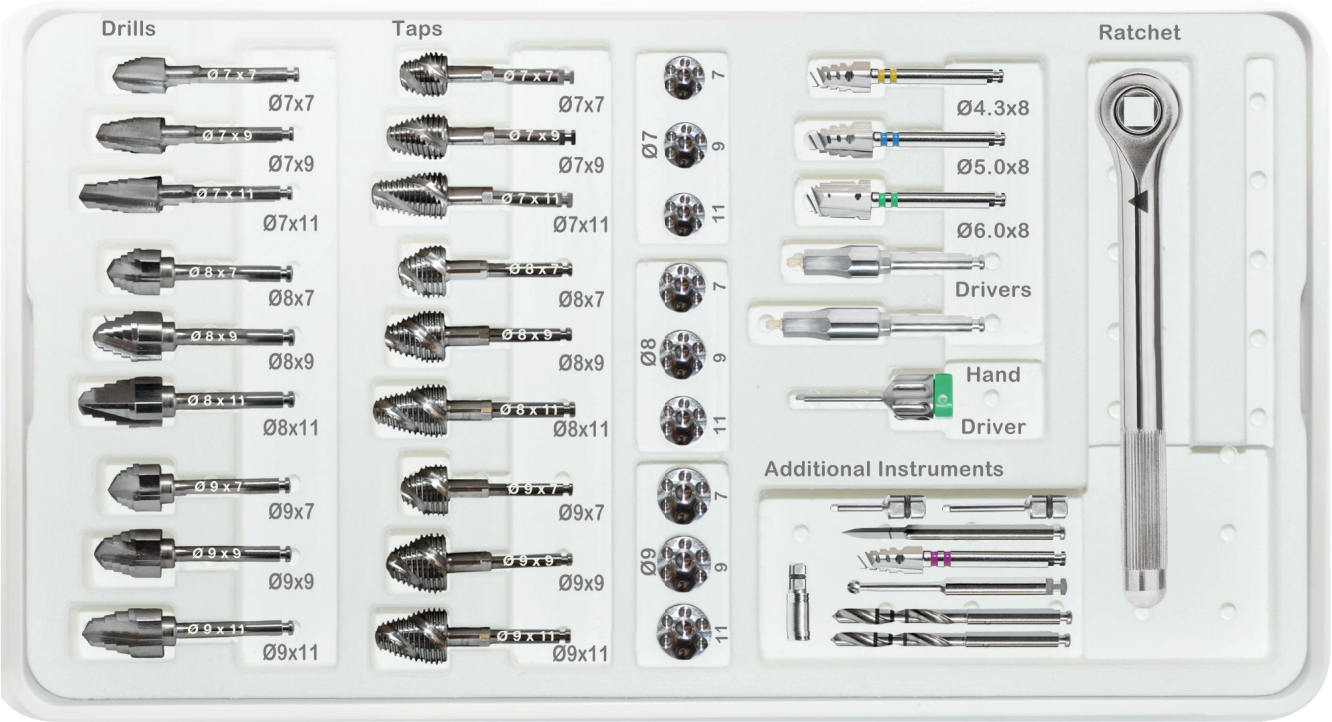
- Instruments are placed in the tray and then wrapped in sterilization paper or a sterilization pack featuring indicating tape and sterilization date.

STERILIZATION

Instruments and tray should be autoclaved at 134˚C (~273°F) with a sufficient drying cycle to avoid instrument corrosion. Instruments should be placed in the tray and wrapped in sterilization paper or sterilization packs featuring indicating tape and date of sterilization.

SURGICAL MOTOR AND HANDPIECE

Cleaning and maintenance instructions for W&H handpieces and motors can be found on www.wh.com.

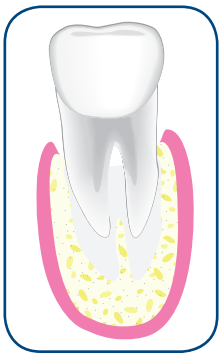


Surgical Sequence - I-HEXMRT™ Ø8.0 mm x 11 mm (For demonstration purposes)

All surgical drills included in this system require external irrigation. It is recommended to use a steady sterile irrigation during preparation of the osteotomy and seating of the implant.

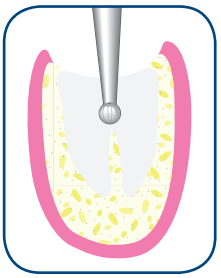
Step 1

The tooth is removed atraumatically ensuring the structural integrity of the extraction socket. The buccal plate and the sinus (maxilla) must be intact and no major grafting should be required. It is recommended that the I-HEXMRT™ implant be seated 2.0 mm sub-crestal, relative to the lowest part of the buccal crest.



Step 2 (Optional)

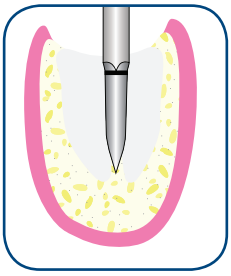
Utilizing a Round Bur (15828K), the osteotomy is initiated by drilling in the center of the remaining intra-radicular bone.



Step 3

Utilizing the Ø2.0 mm Spade Drill (G21243), the osteotomy is initiated by drilling though the remaining intra-radicular bone.

NOTE: In bone types I/II it is recommended to progressively widen the osteotomy with an intermediate Ø2.0 mm drill (15829K).

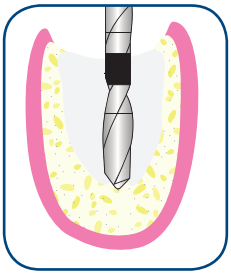


Step 4

The osteotomy is widened with a Ø3.0 mm Twist Drill (15830K) to the required depth at 1000-2000 rpm.

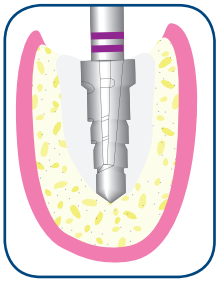
Surgical Pointers for bone type I/II:

- Properly align the latch-type instrument within the drill extension and/or handpiece
- Only use drill extension when absolutely necessary
- Rotate the latch-type instrument when engaging into W&H handpiece to ensure proper seating



Step 5

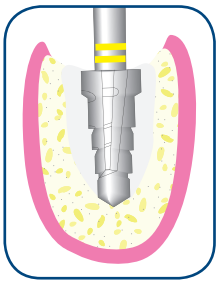
The osteotomy site is further widened utilizing a Ø3.5 mm x 8 mm Tapered Drill (15840K) to the full depth of the drill at approximately 500-800 rpm.



Step 6

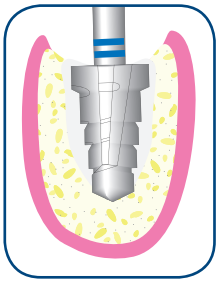
The osteotomy site is further widened utilizing a Ø4.3 mm x 8 mm Tapered Drill (15841K) to the full depth of the drill at approximately 500-800 rpm.

*NOTE: **Care must be taken to maintain the integrity of the buccal plate while widening the osteotomy.** It is important to maintain a 2 mm clearance between the I-HEXMRT™ implant and the buccal plate.*



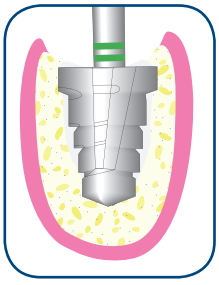
Step 7

The osteotomy site is further widened utilizing a Ø5.0 mm x 8 mm Tapered Drill (15842K) to the full depth of the drill at approximately 500-800 rpm.



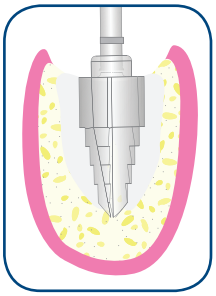
Step 8

The osteotomy site is further widened utilizing a Ø6.0 mm x 8 mm Tapered Drill (15843K) at approximately 500-800 rpm.



Step 9

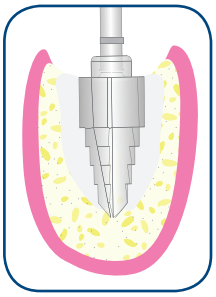
The osteotomy site is further widened utilizing a Ø7.0 mm x 11 mm Tapered Drill (15833K) at approximately 300-500 rpm.



Step 10

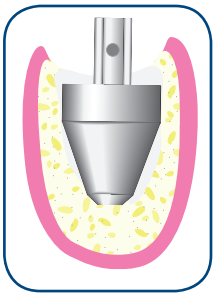
The final Ø8.0 mm x 11 mm Tapered Drill (15836K), which is slightly smaller than the implant selected, is then inserted to the required depth at approximately 300-500 rpm to provide the final osteotomy shape.

NOTE: It is recommended that the I-HEXMRT ™ implant be seated 2 mm sub-crestal, relative to the lowest part of the crest.



Step 11

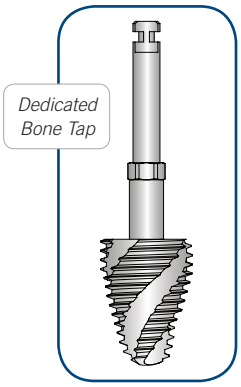
It is recommended to use a Profile Gauge (15858K) to determine the proper site preparation prior to implant placement.



Step 12

A dedicated Bone Tap (15849K) can be used in addition to the Tapered Drill, or as a replacement to finalize the osteotomy (depending on bone quality). The Bone Tap is inserted at 15-20 rpm.

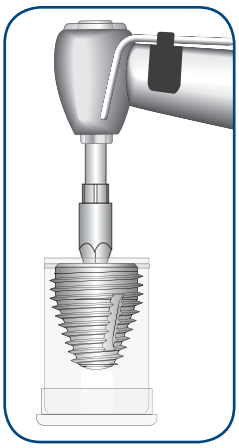
NOTE: The Bone Tap can be utilized with the Surgical Ratchet (L1702-01K) to tap the bone by using the Converter to Wrench (15883K).



Step 13

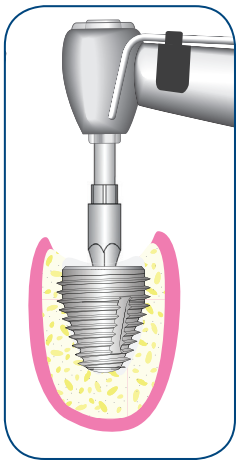
The I-HEXMRT™ Implant is carefully removed from its sterile vial utilizing the Insertion Tool (15875K or 15876K) pre-attached to the handpiece and is carried to the osteotomy site.

NOTE: Each indentation on the direct-to-implant Insertion Tool aligns with a flat side of the internal hex of the implant. It is recommended to place a flat side of the hex buccally to ensure ease of restoration.



Step 14

Insert the implant into the osteotomy at 15-20 rpm and approximately 45 Ncm (depending on bone quality). The Insertion Tool (15875K or 15876K) is disengaged from the handpiece and **remains joined** to the implant.

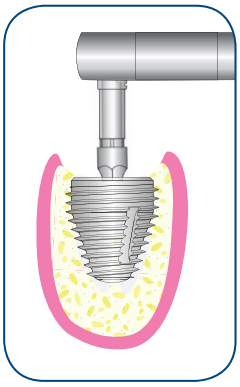


Step 15

Once the implant is placed, the Surgical Ratchet (L1702-01K) is used to fully seat the implant. The Converter to Ratchet Adapter (15883K) is inserted into the Surgical Ratchet to engage the Insertion Tool.

Once the implant is fully seated, the Surgical Ratchet to Ratchet Adapter assembly is removed from the implant.

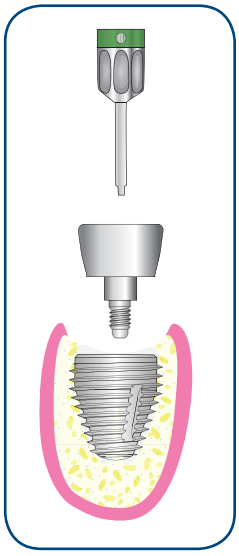
NOTE: Care must be taken that one flat side of the hex faces buccally to ensure proper restoration.



Step 16

The Cover Screw or Healing Abutment is placed with the .050" Hex Driver (45363K or 45364K).

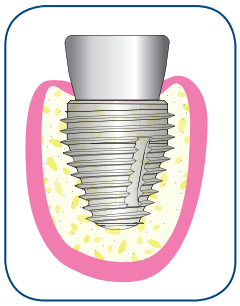
NOTE: Cover Screws and Healing Abutments are packaged separately.



Step 17

The flap margins are positioned around the Healing Abutment and sutured in a tension-free manner. In some cases sutures might not be necessary.

NOTE: It is recommended to take an x-ray to ensure correct seating of the Healing Abutment.



Prosthetic Reminder

I-HEXMRT™ Ø7.0 mm Implants feature a Ø5.7 mm platform with a 3.0 mm internal hexagon. Abutments are available in a flare of 6.0 & 7.0 mm.

I-HEXMRT™ Ø8.0 mm Implants feature a Ø6.5 mm platform with a 3.0 mm internal hexagon. Abutments are available in a flare of 8.0 & 9.0 mm.

I-HEXMRT™ Ø9.0 mm Implants feature a Ø7.5 mm platform with a 3.0 mm internal hexagon. Abutments are available in a flare of 8.0 & 9.0 mm.

Driling Sequence

Implant Length	Ø7.0 Drilling Sequence										
7 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 7 mm Tapered Drill →	7.0 x 7 mm Profile Gauge →	7.0 x 7 mm Bone Tap
9 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 9 mm Tapered Drill →	7.0 x 9 mm Profile Gauge →	7.0 x 9 mm Bone Tap
11 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 11 mm Tapered Drill →	7.0 x 11 mm Profile Gauge →	7.0 x 11 mm Bone Tap

Implant Length	Ø8.0 Drilling Sequence										
7 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 7 mm Tapered Drill →	7.0 x 7 mm Profile Gauge →	7.0 x 7 mm Bone Tap →
9 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 9 mm Tapered Drill →	7.0 x 9 mm Profile Gauge →	7.0 x 9 mm Bone Tap →
11 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 11 mm Tapered Drill →	7.0 x 11 mm Profile Gauge →	7.0 x 11 mm Bone Tap →

8.0 x 7 mm Tapered Drill →	8.0 x 7 mm Profile Gauge →	8.0 x 7 mm Bone Tap
8.0 x 9 mm Tapered Drill →	8.0 x 9 mm Profile Gauge →	8.0 x 9 mm Bone Tap
8.0 x 11 mm Tapered Drill →	8.0 x 11 mm Profile Gauge →	8.0 x 11 mm Bone Tap

Implant Length	Ø9.0 Drilling Sequence										
7 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 7 mm Tapered Drill →	7.0 x 7 mm Profile Gauge →	7.0 x 7 mm Bone Tap →
9 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 9 mm Tapered Drill →	7.0 x 9 mm Profile Gauge →	7.0 x 9 mm Bone Tap →
11 mm	Round Bur (Optional) →	Spade Drill →	2.0 mm Twist Drill →	3.0 mm Twist Drill →	3.5 x 8 mm Tapered Drill →	4.3 x 8 mm Tapered Drill →	5.0 x 8 mm Tapered Drill →	6.0 x 8 mm Tapered Drill →	7.0 x 11 mm Tapered Drill →	7.0 x 11 mm Profile Gauge →	7.0 x 11 mm Bone Tap →

8.0 x 7 mm Tapered Drill →	8.0 x 7 mm Profile Gauge →	8.0 x 7 mm Bone Tap →	9.0 x 7 mm Tapered Drill →	9.0 x 7 mm Profile Gauge →	9.0 x 7 mm Bone Tap
8.0 x 9 mm Tapered Drill →	8.0 x 9 mm Profile Gauge →	8.0 x 9 mm Bone Tap →	9.0 x 9 mm Tapered Drill →	9.0 x 9 mm Profile Gauge →	9.0 x 9 mm Bone Tap
8.0 x 11 mm Tapered Drill →	8.0 x 11 mm Profile Gauge →	8.0 x 11 mm Bone Tap →	9.0 x 11 mm Tapered Drill →	9.0 x 11 mm Profile Gauge →	9.0 x 11 mm Bone Tap

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CE 0086 ℞ ⚠ Caution, consult accompanying documents

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