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OsteoCare™

OsteoCare™ Implant System Ltd. is a British company founded in 1999 with its head office based in Colnbrook, Berkshire. Since this date OsteoCare™ has grown in stature as a company to become one of the world leaders in Dental Implantology and Biotechnology. Its partner company, AMB Engineering Ltd, is responsible for all manufacturing processes and has been established for over 30 years with experience in many engineering sectors such as medical, aerospace, radiology and the oil industry.

OsteoCare™ offers a versatile dental implant system with an extensive product range to address all clinical situations. This encompasses one-piece, single-stage and two-stage implants, with a variety of restorative options for optimal aesthetic results.

OsteoCare™ endeavours to be at the cutting edge of implantology and is therefore committed to improving the development of its products which benefit both the clinician and patient in terms of being user friendly and cost effective.

Superior Quality...

OsteoCare™ products are designed, manufactured and inspected under a quality management system that conforms to ISO and EN requirements and the company has achieved CE mark certification. The Company is committed to improve the effectiveness of its Quality Management System and to comply with the relevant requirements of ISO 9001:2008 and ISO 13485:2003. All implantable devices conform to stringent EU Medical Device Directives, an example of which is the use of implantable-grade raw materials. These materials are supplied from approved sources with each individual batch of raw material subject to rigorous testing and certification to validate compliance with all of the prevailing international standards.

Training Courses to Improve and Support Your Practice...

OsteoCare™ Educational and Technical Services Department offers comprehensive educational dental implantology courses and seminars. It also provides clinical and technical support, answering questions ranging from treatment planning to the delivery of the final prosthetics.

© 2013 OsteoCare™ Implant System.
Our Goal

Our goal is to change the perceptions regarding the complexity and costs associated with implantology allowing implant placement to become a common part of general dental practice. From simple single tooth placement to more intricate cases, every aspect of implant placement has been rethought and simplified. Patients can now be treated expertly, predictably and cost-effectively in general dentistry.

OsteoCare™ is committed to helping implantologists develop their skills and practice by providing support, training and a product that is simple to understand. Through innovation, total commitment to quality and working with our customers, we have developed an all-encompassing system ideal for the novice implantologist as well as the more experienced surgeon.

Wide Range of Products...

OsteoCare™ offers a wide variety of dental implant designs that cover all clinical situations. These implants are designed to simplify the surgical protocols of placement, limiting the requirements of sophisticated bone-grafting and regenerative techniques.

All the dental implants can be placed by using the Universal Surgical Kit therefore keeping set-up costs to a minimum. All two-piece dental implants have the same internal hexagon that allows the use of standard instruments and versatile prosthetic parts. Osteocare™ aim is to ensure smooth and efficient implant surgical procedures, which in turn aid the growth of your dental practice and its profitability.

OsteoCare™ Implant system

Materials used:

Titanium and the Implant Industry

Titanium, with its high strength to weight ratio and its outstanding corrosion resistance, has led to a diverse range of successful applications which demand high levels of reliable performance in surgery as well as other major industries. More than 1000 tonnes (2.2 million pounds) of various titanium devices are implanted in patients worldwide every year. Light, strong and totally biocompatible, titanium is one of the few materials that naturally match the requirements for implantation in the human body.

The range of available titanium alloys has enabled our specialist designers to select materials and forms closely tailored to the needs of the application. To further improve and enhance the properties of the titanium material used, OsteoCare™ applies its GBA (Grit-Blasted & Acid-Etched) surface process to all Implants.

Titanium and its Applications

Implantation represents a potential assault on the chemical, physiological and mechanical structure of the human body and for this reason materials must be selected that provide an appropriate host response within the biological system. Titanium is judged to be completely inert, immune to corrosion by all body fluids and tissue, so is wholly biocompatible, an essential factor in relieving suffering and pain.

Osseointegration is a property virtually unique to titanium and has enhanced the science of medical bone and joint replacement techniques. It is the process of direct structural and functional connection between living bone and the surface of an artificial implant. The human anatomy naturally limits the shape and allowable volume of implants. The lower modulus of titanium alloys compared to steel is a positive factor in reducing bone resorption.

Two further parameters define the usefulness of the implantable alloy, the notch sensitivity - the ratio of tensile strength in the notched vs un-notched condition and the resistance to crack propagation, or fracture toughness. Titanium scores well in both cases.

OsteoCare™ has selected the titanium alloys of 6AL-4V ELI (Extra Low Interstitial) and Grade II as having the desired properties for its implant range. These alloys have been extensively researched and used in the implant industry and have a proven medical background. Both alloys are produced to ASTM standards to ensure conformity to industry-recognised standards.

Peek Polymers Applications

OsteoCare™ uses ‘Peek Polymer’, a polyaryletherketone resin, for Transfer Abutments and Implant Carriers. Peek Polymer is a very hard, pure, autoclavable surgical plastic that can be manufactured to very fine tolerances. It was selected after extensive research due to its unique blend of attributes combining superior strength, stiffness and impact. Peek keeps its characteristics even in the harshest high-heat environments maintaining its mechanical and chemical properties at temperatures up to 575°F (300°C). It can also resist over 3,000 hours in high-pressure steam and has outstanding stability upon exposure to radiation, withstand ing virtually every chemical with the exception of extremely strong oxidizing acids. It has been previously used for medical devices requiring aggressive sterilization methods and used in hospitals and laboratories around the world.
**OsteoCare™ Packaging:**

All OsteoCare™ dental implants are subject to cobalt-60 gamma irradiation sterilisation processes and double packed, for contact free handling. The use of gamma irradiation allows packaging to remain intact during processing ensuring long-term sterilisation is not compromised during storage & transporting. The sterilisation process is constantly validated using radiation dosimetry and bioburden enumeration to ensure the correct sterility-assurance level (SAL) is maintained.

**OsteoCare™ Implant Carrier System**

The carrier cap within the plastic vial attaches to the implant head. The cover screw is located in the top of the carrier cap and remains there until the implant is placed. The OsteoCare™ carrier system enables storage without contact between the implant and the vial, transporting the implant to the osteotomy whilst avoiding contact with possible contaminants. This is known as the “No Touch” technique. The carrier is designed to have a minimum number of parts and short enough to allow access to confined spaces, whilst still long enough to allow a positive grip during initial loading.

**OsteoCare™ (GBA) Implant Surface**

OsteoCare™ uses technologically advanced methods of surface treatment to enhance osseointegration of dental implants. OsteoCare™ automated grit-blasted and acid-etched (GBA) implant surface has been in clinical use throughout the world since 1999 and has achieved a high level of clinical acceptance and success.

(GBA) technology produces special implant surface morphology by the subtraction method. The micro-retentive GBA surface of the implant is produced in the four stages of grit-blasting, acid-etching, neutralization and cleaning. Grit-blasting produces a defined macro-roughness and etching with mineral acids further increasing the implant surface micro-roughness.

Numerous studies have been conducted to identify an enhanced surface geometry for the purposes of increasing mechanical stability and improving bone-to-implant contact. This scientific evidence conclusively demonstrates that a roughened titanium surface provides significantly improved bone anchoring, in comparison to a traditional machined titanium surface. Implant surface micro-roughness accelerates osteoblastic cell response by macro-morphology and micro-morphology. Based on this research, OsteoCare™ (GBA) implant surface was specifically developed to provide a uniform roughness and enhanced surface for osseointegration.

OsteoCare™ (GBA) surface offers approximately 240% greater surface area than a traditional machined surface, enabling a substantial increase in mechanical fixation to bone. Higher bone-to-implant contact (osseointegration percentage) with OsteoCare™ (GBA) implants was observed when compared with a non-treated traditional machined surface.

OsteoCare™ (GBA) macro and micro-retentive implant surface stimulates initial adhesion, cell activity and proliferation of osteoblasts. Implant primary stability is also increased resulting in reliable osseointegration and ensures long-term success through maximum biocompatibility and analysed distribution of force.

**Histological Evaluation Of OsteoCare™ Mini Implants with GBA Surface in an Animal Model**

An animal study was conducted to assess the effects of OsteoCare™ GBA surface on the rate and quality of osseointegration when compared with conventional machined surface implants. OsteoCare™ Mini and Midi dental implants were histologically evaluated and the osseointegration process was found to be complete in only twelve weeks. The improved osseointegration rates showed that the GBA macro and micro-retentive surfaces provide better initial adhesion, stimulate cell activity and increase the proliferation of osteoblasts. The use of OsteoCare™ GBA surface allowed final restorations of implants to be completed in three months.
Treatment Planning

For the examination and evaluation of the patient, the same clinical measures are applicable as for any implant-based treatment planning. Planning should be made on the following basis in order to produce consistent and accurate results:

I) Patients’ Assessment

The suitability of patients for minor oral surgery must be established prior to implant treatment.

II) Prosthetic Parameters

The form and position of the planned prosthesis must be established to fall within the aesthetic parameters.

III) Optimal Implant Placement, Surgical Protocol

Implants are placed anatomically ensuring that the implant site can be restored as planned. Bone grafts may be required to create the ideal implant site.

IV) Restorative Phase

Accurate and passively fitting restorations should be used to create the required aesthetics and occlusal form based on prosthetic parameters.

In order to achieve consistent results, it is necessary for the treatments to be carried out to a well-defined treatment protocol leading to a high degree of predictability and consistency. Thus it is possible to achieve predictable osseointegration and the desired aesthetic outcome.

Radiographic Examination

This can be obtained by conventional means, such as periapical radiographs, panoramic radiographs and lateral cephalographs.

Implant templates (overlays) that are 100% actual size or magnified 130%, are supplied for Osteocare™ implants and used in conjunction with radiographic imaging as a guide to select the proper implant size to be used.

Osteocare™ Radiographic Stents (overlays)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-MMI-02</td>
<td>Mini &amp; Midi Implants radiographic stent</td>
</tr>
<tr>
<td>RS-MZI-02</td>
<td>Maxi Z one-piece &amp; Maxi Z two-piece Implants radiographic stent</td>
</tr>
<tr>
<td>RS-MZF-01</td>
<td>Maxi Z (two-piece) &amp; Maxi Z Flat-End Implants radiographic stent</td>
</tr>
<tr>
<td>RS-CAI</td>
<td>Classic Advanced Implant radiographic stent</td>
</tr>
<tr>
<td>RS-AI</td>
<td>Advanced Implant radiographic stent</td>
</tr>
</tbody>
</table>

Radiographic overlays are to be used as guides only.

Osteocare™ Implant Sizing Overlays

- Transparent overlays used with radiographs for pre-surgical assessment and implant selection.
- Includes: 100% (1:1) for use with periapical radiographs.
- Includes: 130% (1:1.3) for panoramic radiographs.
Titanium Drill Guiding Tubes
Titanium Guide Tubes are used for the construction of surgical stents. They simplify the step of osteotomy preparation by precise guidance of the drills during the surgical procedure.

Radiographic Balls
The 5mm diameter Radiographic Balls are used for quick and simple evaluation of the radiographic magnification to assess the remaining alveolar bone height before implant placement.

Centre Finder
The Osteocare Centre Finder instrument is a simple unique tool that helps dentists to mark the position for osteotomy preparation in bounded areas by using a tissue marker or scalpel.

This time saving instrument can also help in measuring the gap of a missing tooth in order to choose the right diameter.

Measuring the gap for single implant placement
1- Insert the Centre Finder in the gap until it stops
2- The centre of the gap is located
3- Using a Tissue Marker or Scalpel mark the centre gap
4- Remove the Centre Finder and proceed with operation

Measuring the gap for multiple implant placement
1- Once the distance calculation is obtained between the implant and tooth, use the Centre Finder to find and mark the insertion point.
2- Repeat step 1 for each additional implant
3- This will ensure even implant placement
The Concept of Expansion and Compression
Meeting the Challenge of Bone Atrophy

One of the biggest challenges an implantologist will face is the limited availability of suitable quantity and quality of bone following disuse atrophy: (the resorption of bone following tooth loss).

Scientific research shows that after a tooth extraction the surrounding jawbone resorbs by loss of function, eventually losing 40% to 60% of its original height and width within two years. The amount of bone loss occurring in the first year after tooth loss is almost 10 times greater than the following years. The posterior mandible resorbs at a rate approximately 4 times faster than the anterior mandible. The changes in the anterior maxillary ridge dimension can be dramatic in height and width (up to 70%), especially when multiple extractions are performed. As a result, it is not uncommon to find residual ridges with widths of less than 3mm. Evidence shows this can create difficulties for a clinician who plans to place an implant of 3mm or more and requires 1.5mm of bone around the implant. Having less than 6mm width of bone means the process of standard drilling the bony site will become restrictive, and the available option will be some form of ridge augmentation or bone manipulation.

Different augmentation procedures, such as hard tissue grafting, guided bone regeneration technique (GBR), distraction osteogenesis etc., require considerable skill and can add considerable time, complexity, trauma and cost to the procedure with a significant resistance to them from the patients themselves. Ridge expansion is another option, introducing a range of instruments (osteotomes) into the bone by use of a mallet, thereby displacing the bone outwards to increase its width. Whilst very effective in the correct hands, it is a technique, which patients can find very unpleasant unless sedated. It is also challenging for the relative novice without appropriate experience.

An alternative technique to the use of osteotomes is the simultaneous and automatic expansion and compression of the bone using a tapered self-tapping implant such as OsteoCare™ Mini/Midi, and Maxi Z Implants. This process of controlled compression and expansion is referred to as ‘Comp-Ex’. The main advantages of the ‘Comp-Ex’ technique are that it is relatively easy to learn, smooth and progressive in its application and does not require the use of a mallet. It has been found to be effective in the maxilla, but more significantly in the mandible, an area considered extremely challenging and avoided by most.

The process simply involves creating a small opening through the cortex to allow insertion of the implant, with the critical issue being the selection of the appropriate sized implant. The implant is gradually inserted into the ridge and with each turn will smoothly displace the bone, thereby improving the quality and overall width.
**Universal Surgical Kit**

The OsteoCare™ Universal Surgical Kit was devised to accommodate all tools required to place Mini, Midi & the Maxi Z range, as well as conventional Classic Advanced and Advanced implants. Its concept is to benefit the clinician from an economic and organisational aspect, thus keeping the cost low.

The cover and base of the OsteoCare™ surgical tray are manufactured from materials that accept sterilization and autoclaving. The instruments are clearly arranged and well-organized in an ergonomic sequence of use to ensure simple surgical procedures.

**Components of the OsteoCare™ Universal Surgical Kit**

<table>
<thead>
<tr>
<th>Available Instruments</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra Pilot Drill 1.30mm long</td>
<td>Osteotomy preparation for Mini, Midi, Maxi Z Implants</td>
</tr>
<tr>
<td>Ultra Pilot Drill 1.30mm short</td>
<td>Osteotomy preparation for Mini, Midi, Maxi Z Implants</td>
</tr>
<tr>
<td>Osteotomy Bur 2.20mm</td>
<td>Pilot osteotomy preparation</td>
</tr>
<tr>
<td>Osteotomy Bur 2.50mm</td>
<td>Sequential drilling</td>
</tr>
<tr>
<td>Osteotomy Bur 2.75mm</td>
<td>Sequential drilling</td>
</tr>
<tr>
<td>Osteotomy Bur 3.25mm</td>
<td>For placing Ø 3.75mm implants</td>
</tr>
<tr>
<td>Osteotomy Bur 4.00mm</td>
<td>For placing Ø 4.50mm implants</td>
</tr>
<tr>
<td>*Osteotomy Bur 4.40mm</td>
<td>For placing Ø 5.50mm implants</td>
</tr>
<tr>
<td>*Osteotomy Bur 4.80mm</td>
<td>For placing Ø 5.50mm implants in hard bone</td>
</tr>
<tr>
<td>Bur Extender</td>
<td>Lengthens Drills and Ratchet Connected Drivers</td>
</tr>
<tr>
<td>Bur Cleaner</td>
<td>Cleans the internal irrigation hole</td>
</tr>
<tr>
<td>Trial Abutments</td>
<td>Determines abutment angulations</td>
</tr>
<tr>
<td>Long Handle Driver 1.5mm Hex</td>
<td>Tighten Screw Retained Components and Healing Collars</td>
</tr>
<tr>
<td>Long Handle Driver 2.2mm Hex</td>
<td>Placement of all OsteoCare™ two-piece implants</td>
</tr>
<tr>
<td>Ratchet</td>
<td>Compatible with all OsteoCare™ implant drivers</td>
</tr>
<tr>
<td>Torque Wrench 30N/cm</td>
<td>Checking implant initial stability and torquing Abutment Screws</td>
</tr>
<tr>
<td>Osteotomy Probe</td>
<td>Measurement of the osteotomy socket</td>
</tr>
<tr>
<td>Tweezers</td>
<td>Handling of the implant</td>
</tr>
<tr>
<td>Over Hex Driver 1.9mm short</td>
<td>Placement of Mini Implants Ø2.35 - 2.80mm</td>
</tr>
<tr>
<td>Over Hex Driver 1.9mm long</td>
<td>Placement of Mini Implants Ø2.35 - 2.80mm</td>
</tr>
<tr>
<td>Over Hex Driver 2.4mm short</td>
<td>Placement of Midi Implants Ø3.30 - 4.30mm and all Maxi Z One-Piece Implants</td>
</tr>
<tr>
<td>Over Hex Driver 2.4mm long</td>
<td>Placement of Midi Implants Ø3.30 - 4.30mm and all Maxi Z One-Piece Implants</td>
</tr>
</tbody>
</table>

The OsteoCare™ Universal Surgical Kit is supplied with all instrumentation required by clinicians for the majority of clinical scenarios. Its layout is simple to understand for the novice clinician yet contains all tooling required by the more experienced implantologists to conduct a broad range of treatment options.

*Available on request*
Osteotomy Universal Burs

Rotary Preparation of the Implant Osteotomy Site:
OsteoCare™ has produced a unique system of sequential osteotomy universal burs (drills) with high cutting efficiency. These osteotomy burs, (designed by Dr. Barry Edwards), are internally irrigated and triple fluted, allowing for balanced and cool drilling. The burs are made from titanium alloy (6ALV4) and allow smooth precise bone drilling of the implant site with high cutting efficiency.

All burs are colour coded to facilitate easy identification of the diameter. These come in seven diameters 2.20mm (White), 2.50mm (Red), 2.75mm (Yellow), 3.25mm (Blue), 4.00mm (Green), 4.40mm (Grey) & 4.80mm (Purple). Drilling speed is 800 rpm to 2000 rpm and intermittent pressure should be applied where bone is dense. Preparation of the site starts with the white 2.20mm pilot osteotomy bur and continues sequentially through the colour coded burs until the bur corresponding to the planned implant is reached.

Implant placement surgery involves usually only minor preparation of the bone (osteotomy) and seating of the implant within this osteotomy. The density of bone will dictate the degree of preparation. Bone quality (Density) has been classified into four categories:

D1 - Mainly made of cortical bone
D2 - Moderately wide cortical plate surrounding fairly dense cancellous bone
D3 - Thin cortical plate surrounding fairly dense cancellous bone
D4 - Thin cortical plate surrounding very porous cancellous bone

Trial Abutments

The Trial Abutments are made from Titanium Alloy and are used to determine the correct abutment angulation in the two-piece implants. Use of trial abutments ensures that a restorative option is available that fits within the intended prosthetic boundary at first-stage surgery. Available from 0º-45º in 5º increments.

OsteoCare™ Surgical Kit

The Surgical Kit is a compact unit comprising of all instruments required to place Mini, Midi & Maxi Z implants. The Surgical Kit contains instruments and components as listed:

<table>
<thead>
<tr>
<th>Components</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra Pilot Drill 1.30mm</td>
<td>Osteotomy preparation</td>
</tr>
<tr>
<td>Osteotomy Bur 2.20mm</td>
<td>Osteotomy preparation</td>
</tr>
<tr>
<td>Osteotomy Bur 2.75mm</td>
<td>Osteotomy preparation</td>
</tr>
<tr>
<td>Trial Abutments</td>
<td>Determination of abutment angulations</td>
</tr>
<tr>
<td>Bur Cleaner</td>
<td>Cleaning burs</td>
</tr>
<tr>
<td>Ratchet</td>
<td>Compatible with all OsteoCare™ implant drivers</td>
</tr>
<tr>
<td>Torque Wrench 30N/cm</td>
<td>Checking of initial stability</td>
</tr>
<tr>
<td>Osteotomy Probe</td>
<td>Measurement of the osteotomy or socket</td>
</tr>
<tr>
<td>Over Hex Driver 1.9mm short</td>
<td>Placement of Mini (Ball) implants Ø2.35-2.80mm</td>
</tr>
<tr>
<td>Over Hex Driver 1.9mm long</td>
<td>Placement of Mini(Post) implants Ø2.35-2.80mm</td>
</tr>
<tr>
<td>Over Hex Driver 2.4mm short</td>
<td>Placement of Mini (Ball) implants Ø3.30-4.30mm</td>
</tr>
<tr>
<td>Over Hex Driver 2.4mm long</td>
<td>Placement of Midi (Ball) implants Ø3.30-4.30mm</td>
</tr>
<tr>
<td>1.5mm</td>
<td>For implant Cover screws, Abutment screws, Healing Collars</td>
</tr>
<tr>
<td>Hex Driver 2.2mm long</td>
<td>Placement of Maxi Z implants</td>
</tr>
<tr>
<td>Hex Driver 2.2mm short</td>
<td>Placement of Maxi Z implants</td>
</tr>
<tr>
<td>Hex Driver 2.2mm extra long</td>
<td>Placement of Maxi Z implants</td>
</tr>
<tr>
<td>1.50mm Long Torque Wrench Connector</td>
<td>Tighten screws of abutments at 30N/cm.</td>
</tr>
</tbody>
</table>
Mini and Midi are one-piece dental implants, which have a number of unique points that set them apart from their conventional counterparts. They are affordable for the patient as well as the surgeon and allow minimally invasive flapless transmucosal placement. They are ideal for immediate loading in most types of bone qualities and available bone quantities including thin atrophic ridges.

OsteoCare™ has produced a range of Ball and Post-type Mini and Midi one-piece implants. Both types have grit-blasted & acid-etched GBA surface treatment and a high load “Buttress” thread. This thread form has the advantage of allowing for the compression and expansion of the site, achieving high stability even in poor quality bone.

The amount of the bone expansion can be finely controlled with varying tapers produced using incremental implant diameters. OsteoCare™ uses a “Hexagon drive system”, which allows for the use of axial forces to drive the implant positively to its planned position.

The OsteoCare™ Mini/Midi implant system is primarily a one-stage system that requires implant placement followed by immediate loading, should appropriate conditions prevail. OsteoCare™ has also addressed one of the fundamental problems with existing Mini and Midi implants by having a wide range of implant lengths and diameters that cater for most anatomical situations. Availability of various diameters and lengths make optimum use of the horizontal and vertical bone volume. The wide range of sizes makes it easy to find the right implant to fit the available bone without requiring additional procedures.

Advantages of the OsteoCare™ Mini and Midi Implants:

• Quick and simple implant placement due to conical shape
• Maximum primary stability in all types of bone due to the buttress threads design
• Atraumatic implant placement, even in cortical bone
• Bone expansion and compression by rotation making it less traumatic for the patient

Implant Micro-Design:

A subtractive surface process (GBA) is applied to the endosseous section of Mini and Midi implants and creates a unique surface morphology. This micro-retentive roughened surface is achieved through grit-blasting, acid-etching, neutralizing and cleaning. The GBA process produces a defined optimum micro-roughened surface that offers a large contact area with a specific roughness for maximum cell deposition to the implant. The integrating surface consists of micro, (grit-blasted and acid-etched) and macro (thread form) irregularities providing the ideal topography for increasing the number of adhering osteoblasts to enhance the process of osseointegration.
Mini and Midi (Post and Ball Types) Implant Diameters and Lengths

The Mini implants are available in the diameter of 2.35 and 2.80mm, while the Midi implants are available in larger diameters: 3.30, 3.80 & 4.30mm. Hence, any implant with a diameter less than 3mm is considered Mini, while implants with diameters over 3mm are considered Midi. The available implant lengths and diameters are designed to suit a variety of clinical situations.

<table>
<thead>
<tr>
<th>Implant</th>
<th>Diameter</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini</td>
<td>2.35mm</td>
<td>10mm</td>
</tr>
<tr>
<td>Mini</td>
<td>2.80mm</td>
<td>10mm</td>
</tr>
<tr>
<td>Midi</td>
<td>3.30mm</td>
<td>10mm</td>
</tr>
<tr>
<td>Midi</td>
<td>3.80mm</td>
<td>10mm</td>
</tr>
<tr>
<td>Midi</td>
<td>4.30mm</td>
<td>10mm</td>
</tr>
</tbody>
</table>

Mini & Midi (Post Type) Dental Implants

Mini & Midi one-piece (post type) dental implants are made for the long-term restoration of missing teeth. Their titanium alloy (6AL- 4V ELI) construction provides maximum strength that allows placement in areas with deficient bone quantity and quality, as well as limited tooth-to-tooth spacing.

Their titanium alloy (6AL- 4V ELI) construction provides maximum strength that allows placement in areas with deficient bone quantity and quality, as well as limited tooth-to-tooth spacing.

The special design of the buttress thread form and the grit-blasted and acid-etched surface, have been shown to maximize bone-to-implant contact. This has the advantage of allowing for compression and expansion of the site, thus achieving high stability even in poor quality bone, which results in successful osseointegration.

With the simple one-piece design of the Mini and Midi implants, there are no additional components to be purchased. Preparation of the abutment section is achieved by using the regular carbide burs.

Mini and Midi implants are indicated for both single and multiple tooth restorations, where immediate loading is possible in healed bony sites or for the immediate post-extraction approaches.

Mini and Midi (post type) implants are used in cases where immediate loading is specified. Patient selection includes satisfactory oral hygiene, favourable occlusal relationship and adequate bone volume that can accommodate the placement of the implant length and diameter. Initial stability of the implants must be checked with the torque wrench and must be over 30 N/cm before loading. Implants without adequate initial stability should not be loaded. Provisional crowns can be placed immediately after the implant insertion with light centric occlusion, while lateral occlusal contacts or discrepancies should be eliminated. As with any procedure, it is the responsibility of the clinician to determine the benefits and risks of immediate function compared with delayed loading for a given patient and implant site.

Mini and Midi (post type) implants should not be used in cases requiring more than 15º angulation to avoid over-reduction of the abutment section.

Mini & Midi One-Piece (Post Type) Dental Implants

Surgical Protocol (Flapless Transmucosal Technique)

Osteocare™ Mini & Midi Implants are placed in a single-stage transgingival procedure. Implant placement surgery usually involves only minor preparation of the bone (osteotomy) and seating of the implant within this osteotomy.

Site Preparation:

With flapless transmucosal surgery, no flap is raised and only one perforation drill is required for site preparation before implant placement. When making the perforation it is important that saline is used to reduce overheating at the drilling site. The drill will pass through the mucosa, then cortical bone and finally reach cancellous bone.

Confirmation of reaching cancellous bone is achieved via the physical feel, drilling is harder through the tough cortical plate and becomes far easier when engaging the softer cancellous bone. The surgeon should palpate the drill site to assess the shape and required angulations prior to drilling.

The implant Ultra Pilot Drill (1.3mm diameter) gives a high level of accuracy for position, angle and depth. The surgeon determines the osteotomy depth according to bone density evaluated during drilling, with the drilled depth indicated by laser marks on the pilot drill. Preparation of the osteotomy should not exceed the implant length as the Mini and Midi implants have a strong self-tapping property.

The implant Ultra Pilot Drill (1.3mm diameter) gives a high level of accuracy for position, angle and depth. The surgeon determines the osteotomy depth according to bone density evaluated during drilling, with the drilled depth indicated by laser marks on the pilot drill. Preparation of the osteotomy should not exceed the implant length as the Mini and Midi implants have a strong self-tapping property.

Implant Placement:

Implants are supplied within sterile packaging and should be “dropped” from this onto a surgical tray by peeling the outer envelope to expose the inner vial. The implant is removed from its protective pouch and offered to the site via the plastic carrier, with care being taken not to contaminate the implant surface by touch. The implant is rotated clockwise for several revolutions or until the plastic carrier can no longer rotate the implant. If placement of a 2.35mm or 2.80mm Mini implant is being undertaken then the 1.9mm overhex driver should be used. If the surgeon is placing a 3.30mm, 3.80mm or a 4.30mm Midi implant is being placed then the 2.4mm over hex driver with the indented ring should be used.

<table>
<thead>
<tr>
<th>D1</th>
<th>D2</th>
<th>D3</th>
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<tbody>
<tr>
<td>D1</td>
<td>Mainly made of cortical bone</td>
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<td>D2</td>
<td>Moderately wide cortical plate surrounding fairly dense cancellous bone</td>
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| 1.3mm Ultra Pilot Drill |

D1 - Mainly made of cortical bone
D2 - Moderately wide cortical plate surrounding fairly dense cancellous bone
D3 - Thin cortical plate surrounding fairly dense cancellous bone
D4 - Thin cortical plate surrounding very porous cancellous bone
If access to the osteotomy site with the carrier proves difficult, for example between teeth or in the posterior quadrants, the carrier may be disengaged from the implant and transferred to an alternative instrument for insertion. This must be done in a manner that prevents contamination of the implant by disengaging it into a ceramic or titanium vessel and then using the titanium tweezers to mount the implant onto the instrument of choice. The choice of instrument will depend upon the position of the implant site and access to it.

The implant is placed until the first thread is flush with the crestal bone level as indicated by the radiographs. Once this has been achieved the 30N/cm torque wrench is attached to the driver allowing the surgeon to assess that initial stability has been accomplished, after which an immediate restoration can be performed.

**Abutment Preparation:**
Diamond or carbide high-speed burs are used to adjust the angulation and height of the abutment section, if necessary. The abutment preparation should always be performed with copious irrigation to prevent overheating.

**Impression-Taking:**
The prepared abutment(s) should be treated as a normal crown and bridge case. A full arch rubber base impression is made using a closed-tray technique and then the provisional crown is fabricated on the stone model.

**Provisional Restoration:**
Once the abutment preparation and impression-taking are completed, the temporary crown can be placed on the Mini or Midi implant. Provisional restorations are fabricated either in the laboratory or by the dentist chair-side.

There are different options for fabrication of provisional crowns. As for crown and bridge, temporisation may be performed in many different ways, from use of standard acrylic teeth adjusted at chair-side, to laboratory fabricated teeth. It is important to have a smooth contour of the provisional tooth to avoid irritation of the soft tissue. A provisional restoration can also be made by using a thermoform tray, which can be made from the diagnostic model.

**Finished Crown:**
The final crown (ceramo-metal or zirconium) is delivered after a healing period of between 3 to 5 months, depending on the bone quality and functional occlusion.
### Mini & Midi One-Piece (Ball Type) Dental Implants

Mini & Midi one-piece (ball type) dental implants are a unique design specifically devised for denture stabilization and tailored for long-term indications rather than transitional. They are simple, reliable and cost-effective, bringing the benefit of secure dentures within the reach of many patients, for whom both medically or financially, would not be possible using conventional implant methods.

Their titanium alloy (6AL-4V ELI) construction provides maximum strength that allows placement in areas with deficient bone quantity and quality. The special design of the buttress thread form and the grit-blasted and acid-etched surface, have been shown to maximize bone-to-implant contact, as well as bone expansion and compression which in turn results in successful osseointegration.

### Surgical Protocol (Flapless Transmucosal Technique)

**Marking of the drilling sites:**
Drilling positions are planned using the diagnostic panoramic radiograph and then transferred to the patient’s gum/arch using the following suggested methods. The first method uses a skin marker to mark by hand the drilling positions directly onto the patient’s dried gum/arch. The second method uses pencil marks made on the radiograph as a guide for marking the dried denture with indelible pencil. The patient’s gum/arch is then dried and the denture placed into the mouth thereby transferring the pencil marks and assisting implant placement.

**Site Preparation:**
With flapless transmucosal surgery, only one perforation drill is required for site preparation and implant placement. When making the perforation it is important that saline is used to reduce heat build up at the drilling site. The drill will pass through the mucosa, then the cortical bone and finally reach cancellous bone. Confirmation of reaching the cancellous bone is achieved via the physical feel, as drilling is harder through the tough cortical plate and becomes far easier when engaging the softer cancellous bone. The surgeon should palpate the drill site to assess the shape and required angulations prior to drilling.

The implant Ultra Pilot Drill (1.3mm diameter) gives a high level of accuracy for position, angle and depth of drilling. The surgeon determines the osteotomy depth according to bone density evaluation during drilling and the drilled depth reached is indicated by laser marks on the pilot drill. Preparation of the osteotomy should not exceed the implant length as the Mini and Midi implants have a strong self-tapping property.

**Implant Placement:**
Implants are supplied within sterile packaging and should be “dropped” from this onto a surgical tray by peeling the outer envelope to expose the inner vial. The implant is removed from its protective pouch and offered to the site via the plastic carrier, with care being taken not to contaminate the implant surface by touch. At the site the implant is rotated clockwise for approximately three revolutions or until the plastic carrier can no longer rotate the implant. If placement of a 2.35mm or 2.80mm is being undertaken then the 1.9mm over hex driver should be used. If the surgeon is placing a 3.30mm, 3.80mm or a 4.30mm implant then the 2.4mm over hex driver should be used.

The first thread of the implant should be flush with the crestal bone, which can be checked by using radiographs.

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<tr>
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1.3mm Ultra Pilot Drill
**Polycarbonate Housing with Rubber ‘O’ Ring**

The new Polycarbonate Housings have two features that make them unique in design and application. The first is that being made of Polycarbonate they integrate well with the denture, so the grain boundary within the denture remains intact. The second advantage is that being opaque, they block out the colour of the black ‘O’ ring but will not show through into the denture, a problem that is common when using metal housings.

**Immediate Loading (Same Day Implant Placement)**

When placing OsteoCare™ Mini & Midi one-piece (ball type) implants, it is crucially important that initial stability is evaluated above 30N/cm before loading. If initial stability (fixation) is less than 30N/cm, use of the polycarbonate plastic housing with the rubber ‘O’ ring is not recommended for initial loading. Relief of the denture to avoid contact with the implants (with or without a soft liner material) is advised during the initial healing phase.

Immediate Loading (Same Day Implant Placement) can be performed as follows:

It is advocated that the ‘O’ ring Housings be presented into the denture two months post-operatively allowing for osseointegration of the implants. The least amount of initial loading is accomplished by creating a trough in the denture that allows complete soft tissue support with no contact between the denture and the implants. Place a transferable mark on top of each ball and seat the denture in the patient’s mouth to determine where the denture needs to be relieved.

**Relief of Denture to Accommodate the Polycarbonate housings**

Make holes in the denture at the pre-marked locations by using a laboratory bur. Place the plastic housings on the implants making sure that they are securely seated and try in the denture for full seating.

**Pick-up of the Housing (Chair-Side Pick-Up Procedures)**

Once the holes have been drilled and the denture checked to see that it is seated correctly, fill the relieved areas of the denture base with acrylic and place the denture over the housings. As a precaution the exposed implant head should be covered with a small shim to stop excess acrylic engaging any undercuts. The patient should bite gently on the denture to confirm correct seating whilst the acrylic is setting. Remove the denture and assess the security of the housing inside, if loose add some self-cured acrylic, any excess should be removed and the denture trimmed and polished.

**Indirect Method:**

**Model Fabrication for Laboratory Processing**

Place the polycarbonate plastic housing with the rubber ‘O’ ring on each ball of the implant inside the patient’s mouth and block out any undercuts with a material of your choice. Use a medium or heavy-bodied impression material to make a closed-tray full-arch impression that picks up the housings.

**Insertion of the Ball Type Implant Replicas**

After removing the impression, verify that an accurate pick-up of the housings has been made. Insert the ball type implant replicas into the housings contained in the impression. Be certain that the implant replicas are fully seated before pouring the stone. After pouring the stone model, the plastic housings are retrieved from the impression and processed within the denture.

**Pick-Up of the Polycarbonate Housings**

Pick up the Polycarbonate Housings in the existing denture, following the same steps used in the chair-side pick-up procedures.

The Polycarbonate Housings can be incorporated into a base plate to create a wax occlusal rim to construct the new denture. Standard denture laboratory and clinical procedures should be followed.
Maxi Z Dental Implant

With the success of our Mini and Midi Implants, it became apparent that there was a need to develop an implant with the same advantages i.e. ease of placement and high stability gained by the unique buttress thread application, coupled with the wide variety of angled abutments from the OsteoCare™ conventional system. The Maxi Z implant is considered an exciting hybrid between conventional and Mini implants.

After long term clinical experimentation of several prototypes of tapered two-piece implants, Prof. Amr Zahran, the Scientific Consultant of OsteoCare™ in collaboration with Mr. John Gauld, OsteoCare™ Consultant Engineer, have produced the innovative Maxi Z implant.

Maxi Z implants have been designed to improve the technique of immediate loading as well as to modify the quality of bone thus enhancing the process of osseointegration. Maxi Z implants are placed with a minimally invasive flapless procedure and allow for the provision of same day restorations following the concept of “a tooth in a day”. As with the Mini and Midi implants they have buttress form threads with the unique OsteoCare™ GBA (grit-blasted and acid-etched) surface that broaden the indications of their use to include most types of bone qualities and quantities.

Advantages:

• Increases the available bone width with Auto-Expansion & Auto-Compression (Comp-Ex)
• Designed to speed up the procedure
• Wide range of prosthetic flexibility with a variety of angulated abutments
• The smaller platform of Maxi Z is less traumatic to the soft tissue
• Its platform design permits positioning of the implant according to the submerged surgical protocol
• The platform design gives a better aesthetic emergence profile, especially in the anterior aesthetic zone and in cases with atrophic ridges
• Its crestal module design results in minimal marginal bone resorption due to the protective platform design that decreases the overloading of the crestal bone
• More convenient and familiar for Classic Advanced implant users, as it has the same platform
• Maximises profits with low set-up costs

Indications:

• One-Stage Immediate Functional Loading
• One-Stage Delayed Function
• Two-Stage Delayed Function
• Immediate Post-Extraction and Late Implantation
• Suitable for the Lower Posterior Molar Area
The Main Advantages of the Maxi Z Implant over Conventional Implants are:

• Minimal site preparation: less chance of overheating the bone, saving time and potential costs
• Improved primary (rigid) fixation: due to the self-tapping created by the unique buttress thread design and the auto-expansion and compression
• Can be used in thinner bone: as they are tapered and automatically expand the bone and there is less need for grafting materials, therefore savings for patients in terms of time, money and trauma
• Design is tailored for immediate loading

The OsteoCare™ Maxi Z implant is a two-piece system with a wide range of implant lengths and sizes that cater for most anatomical situations. The available diameters are: 3.75mm, 4.50mm & 5.50mm. The available lengths are: 11mm, 13mm, 15mm & 17mm.

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<tr>
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<td>17mm</td>
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For example, if the implantologist is going to place a Maxi Z implant of 15mm length, the steps will be as follows:

- The drilling depth of the profile pilot drill 17mm = (The 15mm of implant + 2mm of the mucosal soft tissue thickness) followed by the white and yellow drills.
  - All drilling must be to the full length of the implant.
  - 2 mm must be added to the working length in case of flapless transmucosal drilling.

**Implant Placement**

Maxi Z implants are supplied within sterile packaging and should be “dropped” from this onto a surgical tray by peeling the outer envelope to expose the inner vial. The implant is removed from its protective pouch and offered to the site via the peek carrier, with care being taken not to contaminate the implant surface by touch. The implant is rotated clockwise for several revolutions or until the peek carrier can no longer rotate the implant. Then the peek carrier is removed and the 2.2mm hex driver is used with the ratchet for seating of the implant. The 2.2mm hex driver is available with different lengths to allow for easy implant placement in different clinical situations and according to the accessibility to the implant site.

The Maxi Z implant should be placed until the platform is flush with the crestal bone level. Once this has been achieved the 30N/cm torque wrench is attached to the implant driver. This will give the surgeon an assessment of the initial stability that has been accomplished by the placement of the implant.

According to the intended surgical and prosthetic treatment plan the clinician decides to go for one-stage immediate functional loading, one-stage delayed function, or two-stage delayed function.

**One-Stage Immediate Functional Loading**

If the implant achieved good initial stability of over 30N/cm as checked by the torque wrench and if all the clinical factors prevail for immediate loading, the surgeon will choose the appropriate angle of the Screw Retained Abutment (SRA) by using the trial abutments. The chosen abutment is fixed to the implant by using the 1.5mm driver. Abutment preparation can be performed intra-orally using a sharp carbide bur with copious water irrigation, alternatively it may be carried out chair-side by using the abutment preparation handle.

Once the abutment preparation and impression-taking are completed, the temporary crown is placed on the abutment of the Maxi Z implant. Provisional restorations are fabricated either in the laboratory or by the dentist chair-side.
One-Stage Delayed Function
In this case the clinician will fix the healing collar directly to the Maxi Z implant to avoid the second stage surgery. This procedure could be used in non-aesthetic zone such as pre-molars and molars.

Two-Stage Delayed Function
This procedure includes direct fixation of the cover screw after implant placement, to allow for undisturbed healing. This will be followed by second-stage surgery using a soft tissue punch to uncover the implant after a healing period of three to four months.

Note: the cover screw is attached to the back of the peek carrier.

Immediate Post-Extraction Placement of the Maxi Z Implant

First Technique
Using only one drill, the 3.25mm Ultra Profile Drill for 2-5 mm beyond the apex of the extraction socket followed by implant placement. This applies to all diameters of the Maxi Z implants in D2-D4 bone type.

Second Technique
Sequential drilling using 1.3mm Ultra Pilot Drill and then 2.20mm (White Bur), 2.75mm (Yellow Bur) for 2-5 mm beyond the apex of the extraction socket followed by implant placement. This can be used for D2-D4 bone type.

In hard bone and with implants over 3.75mm then the following burs are used, 2.75mm (Yellow Bur) the 3.25mm (Blue Bur) and 4.00mm (Green Bur).
Maxi Z One-Piece Dental Implant

OsteoCare™ aims to be at the cutting edge of developments within Implantology and has a continuous programme of research and development of its products. Following the huge success of the Maxi Z two-piece implant, OsteoCare™ introduced the new Maxi Z One-Piece implant.

The Maxi Z One-Piece implant is machined from a piece of titanium alloy that incorporates both the implant body and an integral fixed abutment in a single component. With the simple one-piece design, there are no additional components to be purchased. The abutment has an anatomical design with double flat facets to minimize the time needed for preparation and to improve the retention of the provisional as well as the final restoration. Preparation of the abutment section is performed using regular carbide burs.

As with the Maxi Z two-piece implant, the new Maxi Z One-Piece implant has the same buttress form threads and GBA (grit-blasted and acid-etched) surface. The Maxi Z One-Piece implant is designed to allow for immediate loading in healed bony sites as well as in immediate post-extraction cases (fresh extraction socket).

The Universal Surgical Kit caters for placing the whole OsteoCare™ range of implants keeping set-up costs to a minimum.

The OsteoCare™ Maxi Z One-Piece implant has a wide range of diameters and lengths that cater for most anatomical situations. The available diameters are: 3.30mm, 3.75mm, 4.50mm & 5.50mm.

<table>
<thead>
<tr>
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<td>IM-MAZP550-011/013/015</td>
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<td>11mm 13mm 15mm</td>
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The OsteoCare™ Maxi Z Flat-End Implant has been carefully designed to maximise clinical success. This success rate relates to both osseointegration of placed implants and restorative procedures. Integral to this success is the application of treatment philosophy and concepts.

The OsteoCare™ Maxi Z Flat-End implant is an optional one or two-stage system that requires implant placement followed by either immediate or delayed loading, should appropriate conditions prevail. A wide range of implant lengths and sizes cater for most anatomical situations.

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<td>8mm, 10mm, 12mm, 14mm</td>
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**Implant Macro-design**

- **Advantages of the Maxi Z Flat-End:**
  1. Flat end and tapered design allows for the procedure of sinus lifting without perforating the Schneiderian membrane.
  2. Flat end of the implant corresponds with the existing OsteoCare™ flat-ended Osteotomes.
  3. Maxi Z Flat-End implant is available in shorter lengths (8 & 10mm) than the original Maxi Z and can be placed in atrophic jaws with vertical bone resorption.
  4. Drilling protocol (osteotomy preparation) is similar when placing the OsteoCare™ Classic Advanced Implant. Users of the conventional system can place the Maxi Z Flat-End without need for further training.
Steps for internal sinus lifting:

1 – In order to perform sinus lifting, a bone height of 6-8mm under the sinus floor is required. This can be determined with an OPG or CBVT.

2 – A manual or rotary soft tissue puncher is used for initial tissue punching.

3 – The osteotomy depth should be 1mm from the sinus floor.

4 – Begin sequential drilling.

5 – OsteoCare has three flat-end osteotomes that correspond with the three diameters of the Maxi Z Flat-End implants and are used in conjunction with the mallet.

6 – When placing a 4.50mm implant, the osteotomes with the blue or green colour code will be used with the mallet and tapped until the fractured bone of the sinus floor is felt. Check that the Schneiderian membrane is intact by using the osteotomy probe and ensuring at all times that extreme caution is taken when doing so.

7 – Bone grafting may or may not be performed, according to the amount of sinus floor lifting. If more than 3mm, it is advisable to use a bone grafting material.

8 – Pack the graft, using a graft condenser or a very wide condenser, then use the same osteotome to push the graft beyond the level of the floor. This step should be repeated to add more grafting material.

9 – Place the Maxi Z Flat-End implant and keep the platform flush with the crestal bone.

<table>
<thead>
<tr>
<th>Bone Type</th>
<th>Implant Sizes</th>
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<tbody>
<tr>
<td>D1</td>
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OsteoCare™ Classic Advanced Implant

Our hugely successful Classic Advanced Implant has been on the market for many years. Two of the pioneers of Implantology, Dr. Hilt Tatum (USA) and Dr. Barry Edwards (Australia), had many ingenious and innovative ideas that provided the basis of the OsteoCare™ Classic Advanced Implant.

The OsteoCare™ Classic Advanced Implant is a straight two-piece implant with an internal hex connection, which is considered the most scientifically documented of its type within the industry. The design of the Classic Advanced Implant has evolved over the years and now incorporates a twin-start thread that provides faster implant insertion and higher initial stability. The Classic Advanced is one of the original conventional type implants offered by OsteoCare™ using well-documented surgical techniques with a proven reputation enhanced by its long history of successful cases.

Classic Advanced Implants are available in a range of lengths and diameters made from either Grade II Titanium (ASTB 384) or Titanium alloy 6AL-4V ELI (Extra Low Interstitial). The different titanium types reflecting the different mechanical stresses associated with the various sizes of implant.

The Classic Advanced Implant internal hex design features an inward bevel in the coronal aspect of the implant, which further enhances abutment stability.

With the Osteocare™ Classic Advanced System, Three Broad Categories of Restorations are Possible:

• Cement-retained restoration: the Screw Retained Abutment (SRA) is screwed into the implant and the restoration is cemented to the abutment

• Screw retained restoration: the restoration is retained by screws, directly to an abutment or directly to an implant

• Overdenture restorations: the restoration is retained with a Screw Retained Ball Attachment Abutment (SRBA). Additionally, there is a wide range of overdenture solutions to aid the treatment of the fully edentulous patient

Implant Size & Length Options

Classic Advanced Implants are available in a wide diversity of lengths which is the most extensive on the market and that cater for all professional preferences and to each single clinical case. The available diameters are 3.00mm, 3.75mm and 4.50mm with lengths from 8mm - 16mm in increments of 2mm.

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<tr>
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<tr>
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Implant Macro & Micro-Design :

All Macro and Micro-design features have been shown to provide greater bone surface contact and higher rigid fixation, which results in easier and more predictable implant treatments.

The OsteoCare™ Classic Advanced Implant design geometry was created to allow simple and quick placement, whilst providing maximum initial stability and atraumatic insertion in all types of bone. These implants have been designed to allow submerged healing, however if all the biomechanical requirements are met, they can be immediately loaded after placement. Versatile treatment options have been made available due to the straight parallel-walled implant design, as well as the standard Branemark type threads.

As with all OsteoCare™ implant products, the Classic Advanced Implant has a GBA surface, which enhances surface geometry for the purpose of increasing mechanical stability and improving bone-to-implant contact for faster and stronger osseointegration.
Step by Step Surgical Protocol of Classic Advanced Implant

Soft Tissue Punching

Site Preparation (Drilling) & Implant Placement

Implant Placement

Fixation of Cover Screw
Classic Advanced Implant Drilling Sequence

3.00mm Ø Implant

2.20mm Drill 2.50mm Drill 2.75mm Drill 3.00mm Implant

3.75mm Ø Implant

2.20mm Drill 2.50mm Drill 2.75mm Drill 3.25mm Drill 3.75mm Implant

4.50mm Ø Implant

2.20mm Drill 2.50mm Drill 2.75mm Drill 3.25mm Drill 4.00mm Drill 4.50mm Implant

5.50mm Ø Implant

2.20mm Drill 2.50mm Drill 2.75mm Drill 3.25mm Drill 4.00mm Drill 4.50mm Drill 5.50mm Implant
Advanced Implant

With the expertise provided by Dr. John Murray and Mr. John Gauld, OsteoCare™ Consultant Engineer, the Advanced Implant was designed and proved to be an immediate success. OsteoCare™ ‘Advanced’ Implant incorporates many of the current clinical developments seen in implantology today. The fundamental design improves the surgical approach of immediate post-extraction implantation, simplifies implant placement into extraction sites and facilitates the achievement of immediate retention within the socket.

The Advanced Implant is a conventional design implant with the added features of a twin-start thread, micro-grooved flared (tapered) head, internal hex and OsteoCare™ unique GBA surface. Material used in its manufacture is Grade II titanium to ASTB 384, which is surgical grade titanium referred to in ASTM designation F1341.

The advantage of the twin-start thread is that it can be placed in poor quality bone, which radically enhances primary stability, and for type II or type III bone the opportunity to immediately or early load is maximised. Twin-start threads allow insertion at double the speed in comparison to single threaded designs, thus facilitating easier implant placement.

The micro-grooving and acid-etching of the flared (tapered) head gives a micro-roughened surface that allows for the prevention of marginal bone loss via shear forces, but is smooth enough to minimise bacterial loading in the event of soft tissue breakdown. Studies have shown that the micro grooves promote the collection of osteoblasts enhancing bone growth.

The familiar internal hexagon facilitates easy abutment attachment with the current range of angled abutments. Research indicates that certain modifications can improve results in situations where poor quality bone is assessed and where early loading is anticipated, which in the long term can prove beneficial. Introduction of the Advanced Implant means that the surgeon can now confidently tackle a wider range of surgical scenarios and its usage over an extended period of time has shown a high success rate.

The Advanced Implant utilises standard OsteoCare™ instrumentation (Universal Surgical Kit), therefore no investment in new instrumentation is required, in keeping with the OsteoCare™ philosophy Affordable Implantology.

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Advantages of Flared (Tapered) Head:

- Increased implant-to-bone contact enhances primary stability when used as an ‘Immediate post-extraction Implant’ (at the time of extraction)
- Reduces the need for using bone grafts to fill the gap between the crestal part of the extraction socket and the implant
- Flaring of the implant towards the abutment allows optimal emergence profile and enhanced aesthetics
- Having micro-threads at the tapered neck reduces the possibility of crestal bone resorption and improves the possibility of osseointegration at the tapered crestal part of the implant. Micro-threads and grooves enhance and attract more osteoblasts to form bone
- The wide neck improves contact with cortical bone reducing the risk of inadvertent displacement into the maxillary sinus

Implant Diameters & Lengths

Advanced implants are available in 3.75mm and 4.50 mm diameters with length increments of 2 mm.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Lengths</th>
</tr>
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<tbody>
<tr>
<td>3.75mm</td>
<td>8,10,12,14,16mm</td>
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<tr>
<td>4.50mm</td>
<td>8,10,12,14,16mm</td>
</tr>
</tbody>
</table>

Implant Macro & Micro-Design:

As with all OsteoCare™ implant products, the Advanced Implant has a GBA surface treatment. Our special GBA (grit-blasted and acid-etched) roughened surface morphology creates a larger surface area for stronger and earlier osseointegration.
Step by step surgical protocol of Advanced Implant

Extraction & Site Preparation (Drilling)

Implant Placement

Implant Placement & Fixation of The Cover Screw
Advanced Implant Drilling Sequence
& Immediate Post-Extraction Placement

2.20mm Drill
2.50mm Drill
2.75mm Drill

3.25mm Drill
Hand-Placement
Ratchet Wrench
3.75mm Implant

PROSTHETIC COMPONENTS
OsteoCare™ Prosthetic Components

OsteoCare™ Prosthetic Components are designed to be compatible with all its two-piece implants and provide clinicians with the widest range of restorative options. The external diameters of the components match those of the implants and cover every kind of restoration (single, multiple and overdenture) and all techniques (single or two-stage). An identical prosthetic design of all OsteoCare™ two-piece implants allows prosthetic procedures to be similar, enhancing system simplicity.

OsteoCare™ Implant-Abutment Internal Hex Connection System

Surgical versatility with unlimited prosthetic flexibility is provided through the universal internal hexagon connection of all OsteoCare™ two-piece implants. With a diverse range of abutment options, OsteoCare™ offers one of the widest possibilities of prosthetic choice in dental implantology.

The OsteoCare™ implant-abutment internal hex connection system was created by an alliance of implantologists, technicians and engineers. This inventive internal hex connection allows better fixation of prosthetic components and more even distribution of masticatory forces with micro-movements reduced to a minimum level. The OsteoCare™ deep internal hex distributes forces deeper within the implant, shielding the retention screw from excessive loading.

Advantages of Internal Hex Connection:

• Anti-rotational element and high mechanical stability of the connection
• Improves ability to seat the abutment easily and correctly
• Simple abutment positioning in 6 rotational directions
• Improves connection between implant and abutment, providing stability and strength to the implant, avoiding high stress on the tightened screw
• Deep internal hex with parallel-walls, which is more favourable for immediate functional loading due to its superior biomechanical characteristics
• Reduces possibility of screw loosening, which means less time spent on adjustments and remakes
• No fluid or bacteria penetration, which maintains the peri-implant health condition
• Decreased crestal bone resorption over time

OsteoCare™ pays particular importance to the precise matching between implant and abutment, with minimal profiles or gaps therefore avoiding fluid infiltration or stagnation of bacterial plaque, which ultimately contributes to maintaining a healthy peri-implant sulcular condition. This highly precise fit is achieved using the latest manufacturing techniques and uncompromising quality control at its production facilities.
**Procedure with Submerged Healing**

**Second Surgical Stage (Re-entry Procedure)**

**Healing Collar**

OsteoCare™ Healing Collars are perfectly designed for contouring the soft tissue following second stage re-entry of osseointegrated implants. The collars are used to block the internal hex and thread of the implant during healing preventing soft tissue or bone from growing into this area. They ensure a symmetrical moulding of the peri-implant mucosa due to a favourable attachment of the soft tissue to the machine-polished surface.

They are made of pure titanium with a machine-polished surface and are available in short and long lengths in diameters of 3.75mm, 4.50mm and 5.00mm. The collars match implant diameters and flare to meet the prosthetic diameters of the crown abutments. The 1.5 mm internal hexagon in the centre of the top surface accommodates the 1.5 Hex Driver.

**Fixation of Healing Collar**

**OsteoCare™ Impression Transfer**

(Open & Closed Tray Method)

OsteoCare™ Impression Transfer is a two-piece component comprising of a retaining screw and impression sleeve and is designed for an implant-level impression using the open or closed tray indirect impression technique.

The indirect impression technique has vast benefits for both the operator and the lab technician, by saving time for the operator and giving the technician all the options to produce the most precise prosthetic results.

The Impression Transfer is used to accurately replicate the internal hex of the implant fixture level in the mouth, which is then placed on the master model.

- Manufactured from Titanium Alloy
- Used for Single or multiple dental restorations
- Suitable for most positions in the mouth
- Open and closed tray methods are used interchangeably according to the preference of the operator and the case’s complexity

<table>
<thead>
<tr>
<th>Available Sizes</th>
<th>Short</th>
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<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>4.50mm</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>5.00mm</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
The OsteoCare™ Implant Replica  
(For Laboratory Use)

OsteoCare™ Implant Replicas are used to replicate the corresponding internal hexagon of the implant positioned in the mouth, enabling the implant fixture level to be accurately transferred by the technician to the master model.

**Available Sizes** | **Product Code**
--- | ---
3.00mm | CO-IRP-300
3.75mm | CO-IRP-375
4.50mm | CO-IRP-450
5.50mm | CO-IRP-550

OsteoCare™ also offer Ball Attachment Replicas to replicate the Ball Type Mini & Midi Implants. These are available in two sizes, 1.90mm & 2.40mm hex, both with a 1.80mm ball.

**Available Sizes** | **Product Code**
--- | ---
1.90mm | CO-MIRP-190
2.40mm | CO-MIRP-240

-Replicas are manufactured from stainless steel and aluminium
-Machine milled to precise tolerances
-Knurled retentive grooves to prevent rotation and provide positive retention in the master model

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OsteoCare™ Peek Prosthetic Products

**Temporary Abutment (peek)**

OsteoCare™ Temporary Abutment (peek) is designed for an implant-level impression using the closed tray impression method. The abutment is used to replicate the internal hexagon of the implant fixture level in the mouth and accurately transfer it to the master model.

The Temporary Abutment (peek) can also be used as a provisional abutment to support a provisional single or multiple unit restoration. (Should be used in the mouth for no longer than 30 days.) After implantation the provisional abutment is secured in the implant and the form of the surrounding mucosa is marked on the abutment. The abutment is then modified accordingly in the laboratory. After re-insertion in the mouth the screw is covered with wax and a prefabricated crown is relined to fit. Alternatively a temporary crown is made chair-side and secured with temporary cement.

-Manufactured from peek autoclavable surgical plastic that can be manufactured to very fine tolerances
-Screw Retained
-Used for single, partial or full mouth restorations
-Suitable for all positions in the mouth
-Allows precise and easy impression procedure
-Cost-effective (re-usable for up to six cases)

**Diameters** | **Product Code**
--- | ---
4.50mm 0° - 45° | CO-TAP4-000 – CO-TAP4-045
5.00mm 0° - 30° | CO-TAP5-000 – CO-TAP5-030
OsteoCare™ Abutments
Screw Retained Abutments (SRA)

The OsteoCare™ SRA abutments are used to connect single or multi-unit restorations to the implant, such as fixed crowns or bridges.

In addition to their function as a base for the restoration, they also transfer occlusal forces to the implant via the restoration. The OsteoCare™ abutment is made of titanium alloy (Ti/6Al/4V) and can be prepared if necessary. The diameters of the abutments are 3.75mm, 4.50mm and 5.10mm with a 2.2mm wide external hexagon for anti-rotational telescopic fixation to the implant internal hexagon. The abutments are available from 0°- 45° in increments of 5° angles that give the clinician a choice of ten different angulations.

Should preparation of the SRA abutments be required, diamond or carbide burs together with the Abutment Preparation Handle may be used. This is followed by either a direct impression being taken using conventional crown and bridge techniques, alternatively, an impression transfer for an indirect impression-taking of the implant, allowing the laboratory to prepare the abutment and fabricate the restoration.

At the stage of restoration delivery, the SRA abutment is seated and fixed to the implant internal hexagon by a retaining screw. The screw has a 1.5mm hexagon and it is compatible with the versatile range of 1.5mm hexagon drivers. The screw is tightened intra-orally to 30N/cm and checked by using the torque wrench.

Abutment Preparation Handle

This handle is used for the laboratory and chair-side preparation of the abutments. The implantologist can use it for extra-oral fine adjustment of the abutments. The design of the handle allows for balanced grip and easier control of the Abutment.

Direct Cast Abutment (DCA)
(For Laboratory Use)

Direct Cast Abutments (DCA) are used for the fabrication of custom made abutments and screw retained restorations, using a wax-up and cast-on technique, to facilitate the fabrication of screw retained prosthesis. The DCA is also available with gold interface for precise implant abutment connection. The DCA is made of Delrin, this is a plastic that will burn out whilst leaving no residue within the matrix.

It can be cut to the exact length and wax added to the required dimension, whether it is for a Crown, Bridge or Overdenture.

Advantages:
• Used for Single, Partial or Full mouth restorations
• Suitable for all positions in the mouth
• Can be customised to soft tissue contours to ensure the ideal emergence profile
• Able to compensate for angulation and misalignment of implants
• Porcelain modifications can be made around the margin to satisfy patient expectations in the aesthetic zone
One-Piece and Screw Retained Ball Attachment Abutments (SRBA)

The Ball Attachment is designed to retain an overdenture to implants placed at angles from 0° to 45°. The one-piece component is used to accommodate implant angulations from 0° to 15° with the two-piece (SRBA) already angulated from 15° to 45°.

The SRBA is manufactured from Titanium alloy (Ti/6Al/4V) and has the same common hexagon interface as the Screw Retained Abutment (SRA). The coronal end of the SRBA is available with the OsteoCare™ Standard 2.00mm ball that allows connection to OsteoCare™ components or an alternative 2.30mm ball to use with a Dalbo retentive anchor.

The one-piece SRBA is seated and fixed to the implant directly, while the two-piece SRBA abutment is seated and fixed to the implant internal hexagon by the retaining screw, they are then processed into the denture base either chair-side or at the dental laboratory.

The impression is taken by the indirect impression technique using the impression transfers. The one-piece or two-piece SRBA with the implant replica is used in the laboratory to assist in processing the desired retentive anchor into the denture. The laboratory processes the ‘O’ ring housing or the Dalbo retentive anchorage into the denture. At the stage of overdenture delivery, the one-piece SRBA abutment is seated and fixed to the implant internal hexagon directly or by retaining screws if the two-piece component is used.

The screw is tightened intra-orally to 30N/cm and checked by the torque wrench. The ball anchors of the Dalbo female parts, which have a diameter of 2.30mm, have been optimally adapted to meet the biomechanical and volumetric requirements of an implant-retained removable full denture. This type of anchor has numerous advantages such as minimum space requirement, biocompatibility, easy activation and de-activation, quick replacement, easy maintenance and adequate retention.
OsteoCare™ Surgical Instruments

Osteotomes

Socket Formers are intended for osteotomy preparation, expansion of atrophic ridges and internal sinus lifting.

The Site Marker is used to mark the entry point of the drills.

The Pilot Socket Former is used for osteotomy preparation in soft bone (D3 & D4), which is usually found in the upper posterior area of the maxilla. This allows for placement of the Midi, Maxi Z One and Two-Piece implants.

Osteotomes (Flat-End)
The set of flat-end osteotomes are used for internal sinus lifting (osteotomes mediated sinus floor augmentation) and to place Maxi Z Flat-End implants. The flat-end design allows for the procedure of sinus lifting without perforating the Schneiderian membrane.

<table>
<thead>
<tr>
<th>Code</th>
<th>Size</th>
<th>Implant Type</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-ISF-SM1</td>
<td>Site Marker</td>
<td>Used for all implants</td>
<td>Black</td>
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<tr>
<td>IN-ISF-PSF</td>
<td>Pilot Former</td>
<td>Used for all implants</td>
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</tr>
<tr>
<td>IN-ISFE-300</td>
<td>3.00mm</td>
<td>Maxi Z Flat-end 3.75 mm</td>
<td>Yellow</td>
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<tr>
<td>IN-ISFE-375</td>
<td>3.75mm</td>
<td>Maxi Z Flat-end 4.50 mm</td>
<td>Blue</td>
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<tr>
<td>IN-ISFE-450</td>
<td>4.50mm</td>
<td>Maxi Z Flat-end 5.50 mm</td>
<td>Green</td>
</tr>
<tr>
<td>IN-ISFE-550</td>
<td>5.50mm</td>
<td>Maxi Z Flat-end 5.50 mm</td>
<td>Purple</td>
</tr>
</tbody>
</table>

Osteotomes (Pointed)

Used in sequence of increasing diameter, commencing with the pilot socket former. Specific application is in preparation of an implant osteotomy in low-density bone or where expansion of a narrow alveolar ridge is required in conjunction with ridge expansion. Osteotomes are introduced into bone by malleting.

<table>
<thead>
<tr>
<th>Code</th>
<th>Size</th>
<th>Implant Type</th>
<th>Colour</th>
</tr>
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<tbody>
<tr>
<td>IN-ISF-SM1</td>
<td>Site Marker</td>
<td>Used for all implants</td>
<td>Black</td>
</tr>
<tr>
<td>IN-ISF-PSF</td>
<td>Pilot Former</td>
<td>Used for all implants</td>
<td>White</td>
</tr>
<tr>
<td>IN-ISF-275</td>
<td>2.75mm</td>
<td>Midi or Maxi Z</td>
<td>Red</td>
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<tr>
<td>IN-ISF-300</td>
<td>3.00mm</td>
<td>Maxi Z &amp; Conventional implants</td>
<td>Yellow</td>
</tr>
<tr>
<td>IN-ISF-375</td>
<td>3.75mm</td>
<td>Maxi Z &amp; Conventional implants</td>
<td>Blue</td>
</tr>
<tr>
<td>IN-ISF-450</td>
<td>4.50mm</td>
<td>Maxi Z &amp; Conventional implants</td>
<td>Green</td>
</tr>
</tbody>
</table>

Ridge Expanders

Ridge expanders may be used in conjunction with socket formers and osteotomy burs if simultaneous placement of implants is undertaken, they can also be used for separation of the cortical plates for inter-positional grafting.

The four Ridge Expanders are manufactured from hardened stainless steel and sharpened for precise application. They are ‘D’ shaped or parabolic in cross section, available in four widths and calibrated from the working tips at 10mm, 15mm and 20mm.

The instrument size can be identified by circumferential grooves on the handle. Intended use is expansion of the maxillary ridge, to create adequate width for implant placement and to recontour the labial plate. The ‘D’ shape prevents buccal fracture by extending the expansion over a great distance and should be used with the flat side toward the palate and the convex side to the labial.

<table>
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<tr>
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<th>Description</th>
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<td>IN-RES-SET</td>
<td>Ridge Expander Set</td>
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<tr>
<td>IN-RDE-001</td>
<td>Ridge Expander Size 1</td>
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<td>IN-RDE-002</td>
<td>Ridge Expander Size 2</td>
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<td>IN-RDE-003</td>
<td>Ridge Expander Size 3</td>
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<tr>
<td>IN-RDE-004</td>
<td>Ridge Expander Size 4</td>
</tr>
<tr>
<td>IN-SMA-001</td>
<td>Surgical Mallet</td>
</tr>
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# OsteoCare™ Implant System
## Product Index

### Mini/Midi Implants - Ball Type

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Length</th>
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<tr>
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**'O' Ring Housing Polycarbonate – (Ball Type)**

<table>
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<tbody>
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<td>CO-HMI-180</td>
<td>For use with Ball Type implants and Ball attachments.</td>
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### Mini/Midi Implants – Post Type

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### Maxi Z Implants

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### Maxi Z One-Piece Implants

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</tr>
<tr>
<td>IM-MAZP450-011</td>
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<td>11mm</td>
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<td>IM-MAZP450-013</td>
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<td>IM-MAZP450-015</td>
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<td>15mm</td>
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<td>IM-MAZP550-011</td>
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<tr>
<td>IM-MAZP550-013</td>
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<td>IM-MAZP550-015</td>
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### Maxi Z Flat-End Implants

<table>
<thead>
<tr>
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<th>Diameter</th>
<th>Lengths</th>
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<tbody>
<tr>
<td>IM-MZFE375-080</td>
<td>3.75mm</td>
<td>8mm</td>
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<td>IM-MZFE375-100</td>
<td>3.75mm</td>
<td>10mm</td>
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<td>IM-MZFE375-120</td>
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<td>12mm</td>
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<td>IM-MZFE375-140</td>
<td>3.75mm</td>
<td>14mm</td>
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<tr>
<td>IM-MZFE450-080</td>
<td>4.50mm</td>
<td>8mm</td>
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<tr>
<td>IM-MZFE450-100</td>
<td>4.50mm</td>
<td>10mm</td>
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<tr>
<td>IM-MZFE450-120</td>
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<td>12mm</td>
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<td>IM-MZFE450-140</td>
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<td>14mm</td>
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### Classic Advanced Implants

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<thead>
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<tbody>
<tr>
<td>IM-CA300-010-016</td>
<td>3.00mm</td>
<td>10-16mm</td>
</tr>
<tr>
<td>IM-CA375-008-016</td>
<td>3.75mm</td>
<td>08-16mm</td>
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<td>IM-CA450-008-016</td>
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### Advanced Implants

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<tr>
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<th>Length</th>
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<tbody>
<tr>
<td>IM-A375-008-016</td>
<td>3.75mm</td>
<td>08-16mm</td>
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<tr>
<td>IM-A450-008-016</td>
<td>4.50mm</td>
<td>08-16mm</td>
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### Abutments, Angled, Screw Retained (Titanium)

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-SRA3-000-045</td>
<td>3.75mm</td>
<td>0º- 45º</td>
</tr>
<tr>
<td>CO-SRA4-000-045</td>
<td>4.50mm</td>
<td>0º- 45º</td>
</tr>
<tr>
<td>CO-SRA5-000-030</td>
<td>5.10mm</td>
<td>0º- 30º</td>
</tr>
</tbody>
</table>

### Abutment Fastening Screws (Titanium)

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-AFS-01L</td>
<td>1.5mm Hex</td>
<td>Long</td>
</tr>
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</table>

### Ball Attachments (One-Piece) 2.0mm ball

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-BA3OP-00S</td>
<td>3.75mm</td>
<td>2.00mm Ball Attachment 0º Short</td>
</tr>
<tr>
<td>CO-BA3OP-00L</td>
<td>3.75mm</td>
<td>2.00mm Ball Attachment 0º Long</td>
</tr>
<tr>
<td>CO-BA4OP-00S</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 0º Short</td>
</tr>
<tr>
<td>CO-BA4OP-00L</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 0º Long</td>
</tr>
<tr>
<td>CO-BA5OP-00S</td>
<td>5.00mm</td>
<td>2.00mm Ball Attachment 0º Short</td>
</tr>
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<td>CO-BA5OP-00L</td>
<td>5.00mm</td>
<td>2.00mm Ball Attachment 0º Long</td>
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### Ball Attachments (One-Piece) 2.3mm ball (Dalbo)

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-BA3DP-00L</td>
<td>3.75mm</td>
<td>2.30mm Ball Attachment 0º Long</td>
</tr>
<tr>
<td>CO-BA3DP-00S</td>
<td>3.75mm</td>
<td>2.30mm Ball Attachment 0º Short</td>
</tr>
<tr>
<td>CO-BA4DP-00L</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 0º Long</td>
</tr>
<tr>
<td>CO-BA4DP-00S</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 0º Short</td>
</tr>
<tr>
<td>CO-BA5DP-00L</td>
<td>5.00mm</td>
<td>2.30mm Ball Attachment 0º Long</td>
</tr>
<tr>
<td>CO-BA5DP-00S</td>
<td>5.00mm</td>
<td>2.30mm Ball Attachment 0º Short</td>
</tr>
</tbody>
</table>

### Ball Attachments, Screw Retained (Two-Piece) 2.0mm ball

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-BA4O-15</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 15º</td>
</tr>
<tr>
<td>CO-BA4O-20</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 20º</td>
</tr>
<tr>
<td>CO-BA4O-25</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 25º</td>
</tr>
<tr>
<td>CO-BA4O-30</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 30º</td>
</tr>
<tr>
<td>CO-BA4O-35</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 35º</td>
</tr>
<tr>
<td>CO-BA4O-40</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 40º</td>
</tr>
<tr>
<td>CO-BA4O-45</td>
<td>4.50mm</td>
<td>2.00mm Ball Attachment 45º</td>
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### Ball Attachments, Screw Retained (Two-Piece) 2.3mm ball (Dalbo)

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-BA4D-15</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 15º</td>
</tr>
<tr>
<td>CO-BA4D-20</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 20º</td>
</tr>
<tr>
<td>CO-BA4D-25</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 25º</td>
</tr>
<tr>
<td>CO-BA4D-30</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 30º</td>
</tr>
<tr>
<td>CO-BA4D-35</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 35º</td>
</tr>
<tr>
<td>CO-BA4D-40</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 40º</td>
</tr>
<tr>
<td>CO-BA4D-45</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 45º</td>
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### Ball Attachments, Accessories

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>CO-RO4-200</td>
<td>Rubber ‘O’ Ring and Pack of 4</td>
</tr>
<tr>
<td>CO-DPD-001</td>
<td>Dalbo Plus S-Driver/ Activator</td>
</tr>
<tr>
<td>CO-DRA-001</td>
<td>Dalbo Retentive Anchor</td>
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### Direct Cast Abutments

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>CO-BCG-450</td>
<td>DCA Gold Interface (Bridge) Round</td>
</tr>
<tr>
<td>CO-DCA-450</td>
<td>Direct Cast Abutment (with Hex)</td>
</tr>
<tr>
<td>CO-DCG-450</td>
<td>DCA Gold Interface (with Hex)</td>
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### Healing Collars, Titanium

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Length</th>
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</thead>
<tbody>
<tr>
<td>CO-HCS-375</td>
<td>3.75mm</td>
<td>Short</td>
</tr>
<tr>
<td>CO-HCL-375</td>
<td>3.75mm</td>
<td>Long</td>
</tr>
<tr>
<td>CO-HCS-450</td>
<td>4.50mm</td>
<td>Short</td>
</tr>
<tr>
<td>CO-HCL-450</td>
<td>4.50mm</td>
<td>Long</td>
</tr>
<tr>
<td>CO-HCS-500</td>
<td>5.00mm</td>
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<tr>
<td>CO-HCL-500</td>
<td>5.00mm</td>
<td>Long</td>
</tr>
<tr>
<td>CO-HCX-500</td>
<td>5.00mm</td>
<td>Extra Long</td>
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### Ball Attachments, Screw Retained (Two-Piece) 2.3mm ball (Dalbo)

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-BA4D-15</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 15º</td>
</tr>
<tr>
<td>CO-BA4D-20</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 20º</td>
</tr>
<tr>
<td>CO-BA4D-25</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 25º</td>
</tr>
<tr>
<td>CO-BA4D-30</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 30º</td>
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<tr>
<td>CO-BA4D-35</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 35º</td>
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<tr>
<td>CO-BA4D-40</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 40º</td>
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<tr>
<td>CO-BA4D-45</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 45º</td>
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### Ball Attachments, Screw Retained (Two-Piece) 2.3mm ball (Dalbo)

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO-BA4D-15</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 15º</td>
</tr>
<tr>
<td>CO-BA4D-20</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 20º</td>
</tr>
<tr>
<td>CO-BA4D-25</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 25º</td>
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<tr>
<td>CO-BA4D-30</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 30º</td>
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<tr>
<td>CO-BA4D-35</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 35º</td>
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<tr>
<td>CO-BA4D-40</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 40º</td>
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<tr>
<td>CO-BA4D-45</td>
<td>4.50mm</td>
<td>2.30mm Ball Attachment 45º</td>
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### Peek Transfer Abutments

<table>
<thead>
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<th>Code</th>
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<th>Angle</th>
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<tbody>
<tr>
<td>CO-TAP4-000-045</td>
<td>4.50mm</td>
<td>0°- 45°</td>
</tr>
<tr>
<td>CO-TAP5-000-030</td>
<td>5.00mm</td>
<td>0°- 30°</td>
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### Impression Transfer

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>CO-ITC-3L</td>
<td>Impression Transfer 3.75mm Long Closed Tray</td>
</tr>
<tr>
<td>CO-ITC-3S</td>
<td>Impression Transfer 3.75mm Short Closed Tray</td>
</tr>
<tr>
<td>CO-ITO-3L</td>
<td>Impression Transfer 3.75mm Long Open Tray</td>
</tr>
<tr>
<td>CO-ITO-3S</td>
<td>Impression Transfer 3.75mm Short Open Tray</td>
</tr>
<tr>
<td>CO-ITC-4L</td>
<td>Impression Transfer 4.50mm Long Closed Tray</td>
</tr>
<tr>
<td>CO-ITC-4S</td>
<td>Impression Transfer 4.50mm Short Closed Tray</td>
</tr>
<tr>
<td>CO-ITO-4L</td>
<td>Impression Transfer 4.50mm Long Open Tray</td>
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<tr>
<td>CO-ITO-4S</td>
<td>Impression Transfer 4.50mm Short Open Tray</td>
</tr>
<tr>
<td>CO-ITC-5L</td>
<td>Impression Transfer 5.00mm Long Closed Tray</td>
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<tr>
<td>CO-ITC-5S</td>
<td>Impression Transfer 5.00mm Short Closed Tray</td>
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<tr>
<td>CO-ITO-5L</td>
<td>Impression Transfer 5.00mm Long Open Tray</td>
</tr>
<tr>
<td>CO-ITO-5S</td>
<td>Impression Transfer 5.00mm Short Open Tray</td>
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### Miscellaneous Components

<table>
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<tr>
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<tbody>
<tr>
<td>CO-OAR-001</td>
<td>Overdenture Abutment Replica</td>
</tr>
<tr>
<td>CO-OAS-001</td>
<td>Overdenture Screw Ret Abutment 0</td>
</tr>
<tr>
<td>CO-OGC-001</td>
<td>Overdenture Gold Coping</td>
</tr>
<tr>
<td>CO-TGT-001</td>
<td>Titanium Drill Guiding Tubes</td>
</tr>
<tr>
<td>IN-APH-001</td>
<td>Abutment Preparation Handle</td>
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</table>

### Implant Replicas

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
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<tbody>
<tr>
<td>CO-IRP-300</td>
<td>3.00mm</td>
</tr>
<tr>
<td>CO-IRP-375</td>
<td>3.75mm</td>
</tr>
<tr>
<td>CO-IRP-450</td>
<td>4.50mm</td>
</tr>
<tr>
<td>CO-IRP-550</td>
<td>5.00mm</td>
</tr>
<tr>
<td>CO-MIRP-190</td>
<td>Replicates the 1.8mm ball with a 1.9mm hex</td>
</tr>
<tr>
<td>CO-MIRP-240</td>
<td>Replicates the 1.8mm ball with a 2.4mm hex</td>
</tr>
</tbody>
</table>

### Surgical Kits

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-MSK-002</td>
<td>Surgical kit</td>
</tr>
<tr>
<td>IN-USK-001</td>
<td>Universal Surgical kit</td>
</tr>
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</table>

### Ultra Drills

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-PBR-130S</td>
<td>Ultra Pilot 1.3mm Short</td>
</tr>
<tr>
<td>IN-PBR-130L</td>
<td>Ultra Pilot 1.3mm Long</td>
</tr>
<tr>
<td>IN-PBR-325</td>
<td>Ultra Profile 3.25mm</td>
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### Osteotomy Universal Bur

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Length</th>
</tr>
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<tbody>
<tr>
<td>IN-UBR-220</td>
<td>2.20mm</td>
<td>18mm</td>
</tr>
<tr>
<td>IN-UBR-250</td>
<td>2.50mm</td>
<td>18mm</td>
</tr>
<tr>
<td>IN-UBR-275</td>
<td>2.75mm</td>
<td>18mm</td>
</tr>
<tr>
<td>IN-UBR-325</td>
<td>3.25mm</td>
<td>18mm</td>
</tr>
<tr>
<td>IN-UBR-400</td>
<td>4.00mm</td>
<td>18mm</td>
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<tr>
<td>IN-UBR-440</td>
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<tr>
<td>IN-UBR-480</td>
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### Bur Cleaner & Bur Extender

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>IN-BRC-001</td>
<td>Bur Cleaner</td>
</tr>
<tr>
<td>IN-BRE-001</td>
<td>Bur Extender</td>
</tr>
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</table>

### Trial Abutment Set (Complete)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-TAS-SET</td>
<td>Complete Trial Abutment Set 0-45°. Determines abutment angulation.</td>
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</table>

### Handle Drivers, Long

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-LHD-150</td>
<td>Long Handle Driver 1.5mm Hex</td>
</tr>
<tr>
<td>IN-LHD-220</td>
<td>Long Handle Driver 2.2mm Hex</td>
</tr>
</tbody>
</table>

### Ratchet and Ratchet Extender

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-RAT-220</td>
<td>Ratchet 2.2mm Hex</td>
</tr>
<tr>
<td>IN-RTE-001</td>
<td>Ratchet Extender</td>
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</tbody>
</table>
### Drivers & Ratchet Connected Drivers

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-OHDS-190</td>
<td>Over Hex Driver 1.9mm Hex Short</td>
</tr>
<tr>
<td>IN-OHDS-240</td>
<td>Over Hex Driver 2.4mm Hex Short</td>
</tr>
<tr>
<td>IN-OHD-190</td>
<td>Over Hex Driver 1.9mm Hex Long</td>
</tr>
<tr>
<td>IN-OHD-240</td>
<td>Over Hex Driver 2.4mm Hex Long</td>
</tr>
<tr>
<td>IN-RCD-150</td>
<td>Ratchet Connected Hand Driver 1.5mm</td>
</tr>
<tr>
<td>IN-RCD-220 Short</td>
<td>Short Ratchet Connected Hand Driver 2.2mm</td>
</tr>
<tr>
<td>IN-RCD-220 Long</td>
<td>Long Ratchet Connected Hand Driver 2.2mm</td>
</tr>
<tr>
<td>IN-RCD-220 Extra Long</td>
<td>Extra Long Ratchet Connected Hand Driver 2.2mm</td>
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### Torque Wrench & Connectors

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN-TRW-001</td>
<td>Torque Wrench 30Ncm</td>
</tr>
<tr>
<td>IN-TRC-01S</td>
<td>Torque Wrench Connector Short</td>
</tr>
<tr>
<td>IN-TRC-01L</td>
<td>Torque Wrench Connector Long</td>
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</tbody>
</table>

### Radiographic Stents (overlays) & Radiographic Balls

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>IN-RS-MMI-02</td>
<td>Mini &amp; Midi implants radiographic stent</td>
</tr>
<tr>
<td>IN-RS-MZI-02</td>
<td>Maxi Z one-piece &amp; Maxi Z two-piece implants radiographic stent</td>
</tr>
<tr>
<td>IN-RS-MZF-01</td>
<td>Maxi Z (two-piece) &amp; Maxi Z Flat-End implants radiographic stent</td>
</tr>
<tr>
<td>IN-RS-ACA-01</td>
<td>Classic Advanced &amp; Advanced implants radiographic stent</td>
</tr>
<tr>
<td>IN-RGB-050</td>
<td>Radiographic 5mm Ball (pack of 5)</td>
</tr>
</tbody>
</table>

### Osteotomes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>IN-ISF-SM1</td>
<td>Site Marker</td>
</tr>
<tr>
<td>IN-ISF-PSF</td>
<td>Pilot Socket Former</td>
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</tbody>
</table>

### Pointed Osteotomes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>IN-ISF-275</td>
<td>Socket Former 2.75mm</td>
</tr>
<tr>
<td>IN-ISF-300</td>
<td>Socket Former 3.00mm</td>
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<tr>
<td>IN-ISF-375</td>
<td>Socket Former 3.75mm</td>
</tr>
<tr>
<td>IN-ISF-450</td>
<td>Socket Former 4.50mm</td>
</tr>
</tbody>
</table>

### Flat-End Osteotomes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>IN-ISFE-300</td>
<td>Socket Former 3.00mm Flat-End</td>
</tr>
<tr>
<td>IN-ISFE-375</td>
<td>Socket Former 3.75mm Flat-End</td>
</tr>
<tr>
<td>IN-ISFE-450</td>
<td>Socket Former 4.50mm Flat-End</td>
</tr>
<tr>
<td>IN-ISFE-550</td>
<td>Socket Former 5.50mm Flat-End</td>
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</table>

### Ridge Expanders

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>IN-RES-SET</td>
<td>Ridge Expander Set</td>
</tr>
<tr>
<td>IN-RDE-001</td>
<td>Ridge Expander Size 1</td>
</tr>
<tr>
<td>IN-RDE-002</td>
<td>Ridge Expander Size 2</td>
</tr>
<tr>
<td>IN-RDE-003</td>
<td>Ridge Expander Size 3</td>
</tr>
<tr>
<td>IN-RDE-004</td>
<td>Ridge Expander Size 4</td>
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<tr>
<td>IN-SMA-001</td>
<td>Surgical Mallet</td>
</tr>
</tbody>
</table>

### Instruments, Miscellaneous

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>IN-OSP-001</td>
<td>Osteotomy Probe</td>
</tr>
<tr>
<td>IN-TTW-001</td>
<td>Titanium Tweezers</td>
</tr>
</tbody>
</table>

*OsteoCare™ endeavours to be at the cutting edge of developments for its products; and therefore, reserves all rights to change, modify and improve specifications of, or discontinue products at any time.

** OsteoCare™ strongly recommends that all users of its system should acquire specialist training before undertaking any of the clinical procedures. OsteoCare™ provides training appropriate for various levels of knowledge. For more information please contact OsteoCare™

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