

Reusable instruments IFU

These Instructions for Use (IFU) cover the following OsteoCare reusable instruments (the "OC Reusable Instruments") which form part of the Universal Surgical Kit or which may be supplied individually:

- Drivers, Handpiece Drivers, and Torque Wrench Connectors
- Osteotomy Probe
- Trial Abutments
- Socket Formers
- Ridge Expanders
- Centre Finder

The following reusable instruments also form part of the Universal Surgical Kit, but are not manufactured by OsteoCare ("Other RIs"). Instructions for use (where relevant) for the Other RIs are included in paper form inside the Universal Surgical Kit.

- Ratchet
- Torque Wrench
- Titanium Tweezers
- Surgical Mallet

Other OsteoCare components and instruments are covered by different instructions for use which are supplied with those components/instruments. If you have a component or instrument for which you are unable to locate the relevant instructions for use, please go to https://osteocare.uk.com/eifu/ or contact OsteoCare using the contact details provided herein. Please also refer to the Clinical Manual, which is also available at https://osteocare.uk.com/eifu/ or can requested from OsteoCare directly.

The OC Reusable Instruments are for use only with OsteoCare dental implants and/or other OsteoCare components for which they are designed, unless otherwise stated.

(1) MD	Please refer to the packaging and label of your device to identify the details (range and size) of the medical device to be used.
(2) LOT	Also to be found on the packaging and label, are provided (each beside the relevant standard symbol reproduced here for convenience):
	(1) confirmation that the item is a medical device;
\sim	(2) lot number;
	(3) date of manufacture; and
(3)	(4) catalogue reference of the device, each beside the standard symbols reproduced here for convenience.
(4) REF	(5) caution (in relation to the sharp point of Site Markers and Pilot Socket Formers).
(5)	
NON STERILE	OC Reusable Instruments and Other RIs are provided non-sterile.

Please always verify IN ADVANCE OF SURGERY that you:

perform adequate planning steps;



- have all of the correct instruments and components available;
- confirm instruments and components are in suitable condition for use;
- perform cleaning and sterilisation of OsteoCare prosthetic components, OC Reusable Instruments, and Other RIs for the maintenance of hygiene standards during surgery, in accordance with the procedure described in section 4 (Cleaning and sterilisation) below.

1. Basic UDI-DI

The Basic UDI-DI (and product code) for the above-listed components is as follows:

Basic UDI-DI	Component name	Product code
500004005Daire and a man of 7M	Drivers	IN-[Y]HD-[XXX] IN-OHD[Y]-[XXX] IN-RCD[Y]-[XXX] IN-RCBD-150
506091295DriverConnect7M	Handpiece Drivers	IN-BP[Y]-[XXX]
	Torque Wrench Connectors	IN-TRC-01[Y]
506091295TrialTQ	Trial Abutments	IN-TA3-0[XX]
506091295CentreXW	Centre Finder	IN-CTF-001
	Osteotomy Probe	IN-OSP-001
506091295Reuse1rPC	Socket Former	IN-ISF[Y]-[XXX]
	Ridge Expanders	IN-RDE-00[X]
	Ratchet	IN-RAT-220
Not applicable	Torque Wrench	IN-TRW-001
(these are not medical devices for which OsteoCare is the manufacturer)	Titanium Tweezers	IN-TTW-001
	Surgical mallet	IN-SMA-001

2. Product packaging

OC Reusable Instruments and Other RIs are supplied either: (1) as non-sterile in the form of a kit (Universal Surgical Kit or Surgical Kit); (2) in a tamper-proof blister pack for smaller components purchased individually; (3) as part of a kit (for Socket Formers and Ridge Expanders); or (4) individually and safely wrapped for larger reusable instruments purchased individually. If the clinician receives a reusable instrument which appears damaged, please return the same to OsteoCare for replacement.

3. Description and intended use

Materials

The OC Reusable Instruments are made of titanium alloy 6AI-4V ELI (Socket Formers, Trial Abutments, Osteotomy Probe, Long-Handled Drivers, Ratchet-Connected Drivers), or stainless steel (Handpiece Drivers, Torque Wrench Connectors, Ratchet-Connected Over-Hex Drivers, Ratchet-Connected Ball Driver, Centre Finder, Ridge Expanders, tips of Site Marker and Pilot Socket Former).



Intended use and clinical benefits

Drivers and Torque Wrench Connectors

Drivers and Torque Wrench Connectors have a square interface allowing a precision connection to the Ratchet or Torque Wrench, as desired. Other than the long-handled drivers, the square interface includes a rubber O-ring (which may be easily replaced) to ensure that the driver remains in position. Handpiece Drivers have an interface for connecting to a Type 1 dental handpiece







Long-handled 1.5mm Hex Driver is 160mm long, with a 1.5mm (across flats) external hexagon for engaging with the internal hexagon of Cover Screws, Abutments Fastening Screws, Healing Collars and Impression Transfers in situations where enhanced manual control is desired:

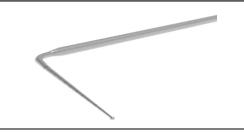
Long-handled 2.2mm Hex Driver is 160mm long, with a 2.2mm (across flats) external hexagon for engaging with the internal hexagon of all OsteoCare two-piece implants, with enhanced control during placement of implants in particular in the upper anterior region.



1.5mm Torque Wrench Connector (Long or Short) comprises a 1.5mm (across flats) external hexagon specifically for use with the Torque Wrench to allow precise affixing to a torque of 30Ncm of OsteoCare abutments to OsteoCare implants using Abutment Fastening Screws.

Other OC Reusable Instruments

The use of Socket Formers and Ridge Expanders involves advanced techniques which should not be attempted by inexperienced clinicians without first attending appropriate training courses.



Osteotomy Probe – the probe (with a 1.25mm diameter ball tip) is used to verify the depth of a prepared osteotomy or extraction socket, with graduations at 2.0mm intervals.

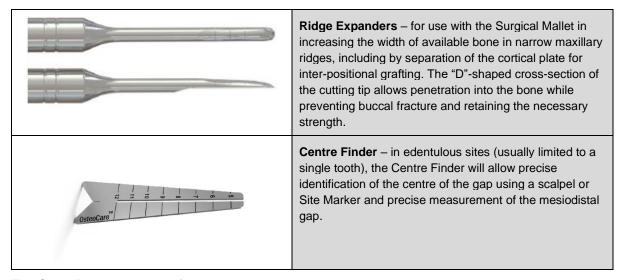


Trial Abutments – angulated from 0 to 45 degrees, in 5 - degree increments, and with a 2.2mm external hex which engages all two-piece implants. This ensures that the clinician can accurately assess the emergence angle of the implant (ie, the angle between the implant axis and the normal to the occlusal plane) to ensure the ideal emergence profile.



Socket Formers – (Site Marker, Pilot Socket Former, and 3.0, 3.75, 4.5 and 5.5mm (pointed or flat-end Socket Formers)) are for osteotomy preparation in low-density bone, and may also be used to condense peri-implant bone for enhanced primary stability of the implant. Flat-End Socket Formers may also be used for internal sinus lifting and for expansion of narrow alveolar ridges, each using the Surgical Mallet.





The Other RIs comprise the following:

Ratchet – for connection to any Drivers for placement of OsteoCare implants and associated components such as a Screw-Retained Abutment.
Surgical Mallet – for use with Socket Formers and Ridge Expanders as indicated above.
Titanium Tweezers – for careful handling of equipment while maintaining appropriate cleanliness and sterility during delicate procedures, as well as for manipulation of OsteoCare dental implants without damaging their surfaces.
Torque Wrench – for connection with Hex or Over-Hex Drivers to verify primary stability of placed OsteoCare implants; or for affixing OsteoCare abutments to implants using Abutment Fastening Screws tightened to the requisite 30Ncm torque.

Please refer to the individual instructions for use supplied with or available for (eg, electronically) the Other RIs for detailed explanations relating to those instruments.

4. Cleaning and sterilisation

OC Reusable Instruments and Other RIs, whether provided as part of the Surgical Kit, or a Socket Former or Ridge Expander Kit, or individually, are delivered decontaminated but **non-sterile**. All surgical instruments must be cleaned, disinfected, and sterilised before surgery to minimise the risk of bacterial and/or viral infection from contaminated instruments.

BEFORE EACH USE (each step or all steps to be repeated as necessary):





Cleaning

OsteoCare recommends that the steps set out below are performed while wearing suitable clean protective clothing and equipment.

These steps specifically apply to OC Reusable Instruments, but may also be applied to Other RIs provided that there are no dedicated cleaning and sterilisation instructions provided with or available for the Other RIs.

- reusable instruments should be removed from any direct packaging or container, then cleaned (according to the detergent manufacturer's instructions) using CE-marked detergent and/or disinfectant (pH 5 to 9) specific to the cleaning of medical devices;
- the use of a soft brush is recommended for removing surgical debris;
- the use of an ultrasonic bath is recommended, with immersion in detergent according to the detergent manufacturer's instructions;
- following cleaning and prior to sterilisation, reusable instruments should be rinsed using distilled/deionised/purified/sterile water to remove the detergent/disinfectant;
- following cleaning and rinsing, reusable instruments must be subjected to visual inspection to check for residual soiling.

Sterilisation

Reusable instruments should be sterilised using steam in an autoclave: (1) removed from any packaging and placed in a suitably-sized, sealable, porous paper autoclave pouch; or (2) in position in the Surgical Kit/Universal Surgical Kit/Socket Former Kit/Ridge Expander Kit. We recommend a minimum temperature of 134°C for at least three minutes using a Class B autoclave. The use of a passive, gravity displacement autoclave (one without vacuum assisted air removal) is not recommended for wrapped (pouched) items. The reusable instruments should be allowed to cool to room temperature.

5. Indications for use

OC Reusable Instruments are for use in the preparation and placement only of OsteoCare dental implants and prosthetic components.

Drivers and connectors

Drivers and connectors are indicated only for use with OsteoCare implants and associated prosthetic and restorative components. In particular, they are indicated for insertion or removal of OsteoCare implants, abutment fastening screws, cover screws, and healing collars. The clinician may provide the torque for insertion/removal using (1) fingers; (2) the Ratchet; or (3) the Torque Wrench – which provides a means for more accurate control of the insertion torque.

Handpiece Drivers are also indicated only for use with OsteoCare implants and associated prosthetic and restorative components and carry out similar functions as other OsteoCare drivers, albeit that their use is more limited, in particular to ensure adequate control during implant placement. For this purpose, the osteotomy should first be prepared by sequential drilling (it is not recommended for single-drill scenarios). The clinician then inserts the implant with his/her/their fingers turning the PEEK carrier cap until further insertion is difficult.

The relevant Handpiece Driver is then inserted into the dental handpiece, the clinician first performing a visual inspection of the driver's shank and the handpiece chuck to ensure that there is no damage or debris that would affect the connection or the driver's operation. The dental handpiece should only be used at low speed settings (eg, 50rpm) and with appropriate torque control applied – which is to say, at least 30Ncm for implants, 30Ncm for affixing final abutments and PEEK Temporary Abutments using Abutment Fastening Screws (AFSs); and 5 to 10Ncm for Healing Collars and Cover Screws. If the handpiece does not have torque control, it should not be used to fully insert a component; rather, the final insertion should be performed using the relevant driver and Ratchet and/or Torque Wrench.

Socket Formers

Socket Formers are indicated for:

• the preparation of an osteotomy for implant placement in low density bone;





- the expansion of atrophic ridges;
- for condensing poor quality bone to increase bone density.

Flat-end Socket Formers are also indicated for use with a surgical mallet for internal sinus floor augmentation to increase available bone volume below the maxillary sinus.

Ridge Expanders

Ridge Expanders are indicated for use with a surgical mallet for expansion of atrophic ridges, in particular the maxillary ridge. The "D"-shaped cross-section of the ridge expander allows expansion of the bone buccally.

The use of Socket Formers and Ridge Expanders are advanced surgical techniques which should not be performed by a clinician without adequate training in those techniques.

Osteotomy Probe

The Osteotomy Probe is indicated for determining osteotomy depth and integrity

Trial Abutments

Trial abutments are indicated for use during the restoration phase of an implant to determine the emergence angle of the implant and during surgical placement of an implant to check the implant's position and orientation.

Centre Finder

The Centre Finder is indicated for finding the central osteotomy preparation site in bounded areas (ie, areas in which there is a single- or double-gap). It has a measurement function which allows the width of the gap to be determined, and a central slit which allows the clinician to mark the central line between teeth using a scalpel or tissue marker.

6. Surgical procedures

For a detailed explanation of procedures for the use OC Reusable Instruments and Other RIs, please refer to the Clinical Manual.

Planning

To ensure the long term survival and success of implant surgery and subsequent restoration and to satisfy aesthetic and hygienic requirements, detailed planning is strongly recommended.

A number of factors must be taken into consideration during the planning process, including: the patient's needs and physical characteristics, the biomechanics of the proposed restoration (for example, the presence of cantilevers), the neighbouring and opposing teeth, the occlusal and articulation conditions, phonetic aspects, aesthetics (dental, gingival and facial) and, in addition, the type, size and location of the implants in the mandible and maxilla. Effective planning requires interdisciplinary cooperation, ie, the cooperation of the dental surgeon, prosthodontist, and dental technician.

The clinician must also be aware of the position of sensitive anatomical structures in the patient's mouth to minimise the risk of damage to the same from drilling and/or other surgical procedures such as implant insertion, ridge expansion, and sinus lifts.

Surgery

Surgery should only be performed in a clean, controlled environment suitable for surgery and with all of the equipment necessary or which it is reasonably foreseeable will be required during surgery. Such equipment should be in good condition and sterilised as necessary.

Some OC Reusable Instruments are small and present a risk of swallowing or aspiration. The clinician should take appropriate steps during treatment to protect patients as a means of preventing swallowing or aspiration, including by proper positioning of the patient and the use of protective barriers.

The clinician must avoid applying excessive force to the dental implant – including in the use of Drivers and Torque Wrench Connectors during insertion.



7. Restorative procedures

Post-surgery

The healing period varies depending on the quality of the bone at the implantation site, the tissue response to the implanted device and the surgeon's evaluation of the patient's general health as well as the bone density at the time of the surgical procedure. Excessive force applied to the dental implant should also be avoided during the healing period. Proper occlusion should be evaluated on the prosthetic restoration to avoid excessive force.

Placing prosthetic components

For affixing prosthetic components for temporary or final restorations, the relevant OsteoCare abutment should be affixed to the implant in the planned orientation, ensuring that the abutment is seated with the hexagonal interfaces of the abutment and implant fully engaged. The clinician can then screw in the AFS initially to finger-tightness using a 1.5mm Hex Driver and Ratchet, and then with the Torque Wrench and Torque Wrench Connector to confirm tightening to 30Ncm torque; or alternatively using a 1.5mm Handpiece Driver attached to a dental handpiece, provided always that the clinician is able to control the applied torque to 30Ncm (ie, that the dental handpiece has adjustable torque control). Where torque control is not available using a dental handpiece, the clinician must only use the Ratchet and Torque Wrench to perform insertion. Do not exceed 30Ncm torque.

OsteoCare abutments which can be directly screwed into the implant (eg, the One-Piece Ball Attachment) can be tightened directly using the relevant Driver and Ratchet (One-Piece Ball Attachments – 2.4mm Over-Hex Driver) to 30Ncm checked using the Torque Wrench.

In all cases, the relevant component should be re-tightened and re-checked after 10 minutes to account for any settling. Please refer to the AFS Tightening Procedure in the Clinical Manual.

Cover Screws and Healing Collars

In two-stage surgical protocols, implant cover screws are inserted using a 1.5mm Hex Driver tightened using finger pressure (or, where adequate torque control is available such as is with some electrical dental handpieces, to between 5 and 10Ncm). Do not use the Ratchet or Torque Wrench – this can result in the insertion torque exceeding 10Ncm and damage to the bone-to-implant interface when removing the Cover Screw at second-stage surgery.

Equally, one-stage delayed-loading protocols may employ Healing Collars for soft-tissue healing, which are inserted using a 1.5mm Hex Driver tightened using finger pressure (or to 5 to 10Ncm, provided that torque can be controlled appropriately if using a dental handpiece).

Again, do not use the Ratchet or Torque Wrench to affix a Cover Screw or Healing Collar into position to reduce the risk of exceeding 10Ncm insertion torque.

8. Follow-up care

Patients should be instructed in appropriate oral hygiene and care of the implants and restorations. Periodic follow-up appointments should be made to confirm and maintain adequate function of the restoration and health of the surrounding tissue.

9. Documentation

OsteoCare products are identifiable by their catalogue and lot numbers.

OsteoCare strongly recommends keeping complete clinical, radiographic, and photographic documentation of all procedures performed on each patient.

10. Contraindications

Clinicians should be aware of any patient allergies that may lead to difficulties and discomfort for the patient related to the use of OC Reusable Instruments, for example titanium or vanadium allergy or hypersensitivity for the Socket Formers, and nickel or chromium allergy or hypersensitivity where Ridge Expanders, a Site Marker, or the Pilot Socket Former are used.

The clinician must include questions on patient allergies as part of the pre-treatment protocol. In the event that a patient has a history of hypersensitivity to the above materials or indeed to other materials which are likely to contact the patient during treatment (eg, latex), the clinician must



consider what steps may be taken to reduce the risk of allergic reaction or to mitigate the effects of such reaction, including whether or not treatment should proceed. In addressing this risk, the clinician should consider factors such as (but not limited to): (1) the severity of previous patient reactions; (2) the symptoms likely to be presented; (3) the period during which symptoms have previously persisted; (4) the ease with which the allergy or its symptoms can be treated; (5) whether testing is appropriate; and (6) whether any special precautions are necessary. The clinician should also consider that the release of allergens will be limited by the transient nature of procedures to be performed using OC Reusable Instruments, which in any event may not result in the release of materials sufficient to cause a reaction.

The clinician should continue to monitor for the possibility of allergic responses after treatment.

Please refer to the Clinical Manual for other contraindications related to assessment of the health characteristics of the patient.

11. Warnings



The clinician must take appropriate steps during treatment to protect patients from the risk of swallowing or aspiration of small items such as Drivers, Handpiece Drivers, Torque Wrench Connectors, or Trial Abutments.

General

OC Reusable Instruments and Other RIs should only be used by a qualified dental or maxillofacial surgeon with appropriate experience and/or training in the placement and use of dental implants. Surgery must only be performed in a suitable surgical environment.

A failure correctly to assess and plan surgical intervention, including for bone volume augmentation procedures using Ridge Expanders or Socket Formers, may lead to permanent damage to patient tissues including sensitive structures such as nerves and the maxillary sinus. It is the clinician's responsibility to ensure that all surgical procedures are planned and performed according to generally accepted best practice and in accordance with the training provided in advanced surgical courses. The clinician must not perform such procedures without appropriate experience and/or recent training in the advanced surgical techniques required.

Users of OsteoCare products must decide whether the application of the product is or is not suitable for the specific conditions. In case of doubt, the user should contact OsteoCare using the contact details provided in section 15 (*Manufacturer and EU authorised representative*) below.

All OsteoCare products should be used in accordance with the relevant instructions for use and the Clinical Manual. The use of OsteoCare products with tools or components manufactured by third parties for which they were not designed may invalidate the guarantees and other expressed or implied obligations of OsteoCare. OsteoCare cannot accept liability for any direct, indirect or other damage caused in connection with errors in professional decisions or procedures or by the improper handling or use of components.

Use requirements

All OC Reusable Instruments and Other RIs must be cleaned, disinfected, and sterilised **before each use** in accordance with the procedure set out in section 4 (*Cleaning and sterilisation*) above. A failure adequately to perform this procedure represents a significant risk to patients upon whom surgical procedures involving such reusable instruments are to be performed.

Drivers and connectors

Drivers and Handpiece Drivers should be checked on a regular basis to ensure the hexagon is not rounded, as this can cause the driver to not fully engage in the implant or prosthetic component and may cause a delay in the procedure.

When affixing Final Abutments or PEEK Temporary Abutments to an implant, exceeding the maximum torque of 30Ncm to an Abutment Fastening Screw could result in the thread of the AFS and/or the implant being damaged.

When inserting a Cover Screw or Healing Abutment, exceeding the maximum torque for these



components of 5 to 10Ncm could result in their cold-welding to the relevant implant. When the clinician comes to remove a Cover Screw or Healing Collar which has cold-welded to the implant, attempting to remove the Cover Screw/Healing Collar could result in implant failure arising from damage to the connection between the implant and the peri-implant tissues.

Osteotomes

The Site Marker and Pilot Socket Former each have a sharp point. They therefore present a hazard to the clinician, to the patient, and to support staff in relation to puncture wounds (ie, sharps injuries), as well as transmission of blood borne infection via such wounds.

The clinician and staff must ensure that the Site Marker and Pilot Socket Former are: (1) used with the requisite level of care according to best clinical practice; and (2) cleaned with adequate attention paid to their sharp points.

Training

The information provided in these Instructions for Use and/or in the Clinical Manual is by itself not sufficient for a dental professional to use or place OsteoCare products if he or she has not undergone the necessary specialised training. Clinicians must undergo specialised training in the placement of dental implants and associated surgical, planning, and restorative techniques. The use of Socket Formers and Ridge Expanders, in particular, involves advanced surgical techniques that a clinician should not undertake without some experience of hands-on training on a suitably accredited course. OsteoCare provides training and technical advice in the use of its system, including advanced courses providing training in advanced surgical techniques. Requests for such training/advice can be made using the contact details provided in Section 15 (Manufacturer and EU authorised representative) hereto.

All staff should receive appropriate information, training and supervision in the safe handling, use, and disposal of sharps

12. Undesirable side-effects

Surgical procedures have an inherent level of risk of undesirable side-effects such as swelling, haematoma, and damage to sensitive anatomical structures. Patients may also experience inflammation of peri-implant tissues. Appropriate planning, patient assessment, the use of appropriate instruments, and adherence to best practice, will minimise the risk associated with undesirable side-effects. It is the clinician's responsibility to ensure that the patient is aware of such possible undesirable side-effects.

13. Serious incident reporting

Patients and/or clinicians: in the event of a serious incident occurring which is caused by the device or a result of its use, please report the incident to OsteoCare at info@osteocare.uk.com or by telephone at +44 (0)1753 770006, providing details of the incident. The same information must be provided to the national competent authority of the patient/clinician.

14. Disposal

Reusable instruments should be disposed of in accordance with local laws and regulations for the disposal of surgical equipment. This must include disposal into sharps boxes (where relevant) and segregation of such waste until final removal.



15. Manufacturer and EU authorised representative

Manufacturer:

OsteoCare Implant System Limited

5-7 Colndale Road

Poyle Industrial Estate

Colnbrook

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EC REP

EU authorised representative:

OsteoCare Implant System Ireland Limited

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