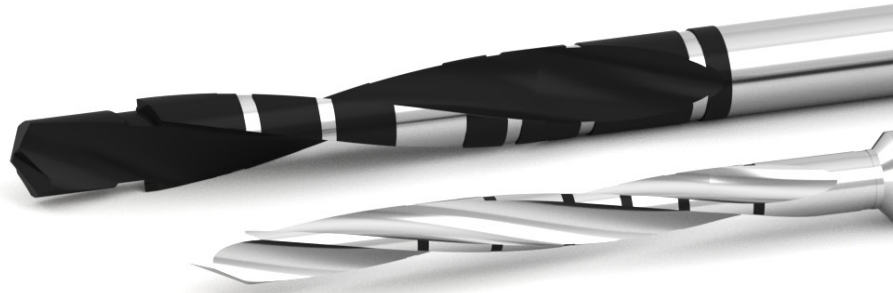
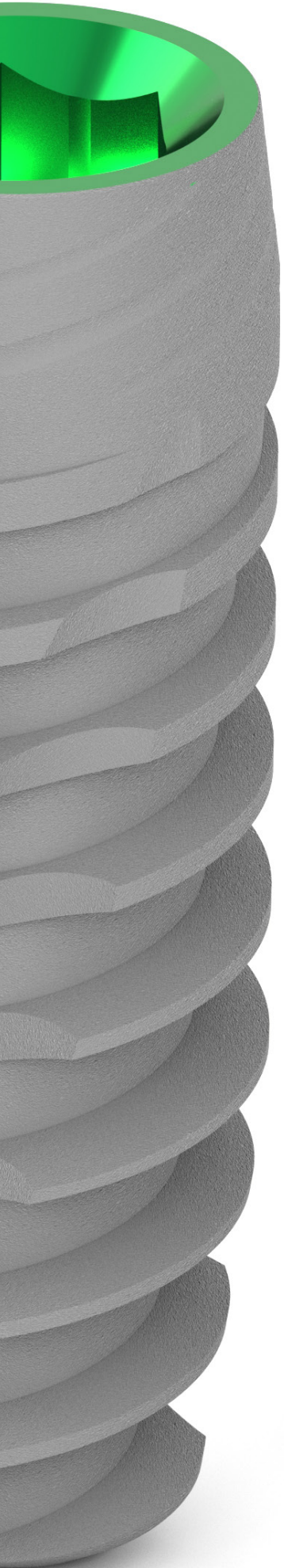




JDENTALCARE  
*just smile*

# SURGICAL AND PROSTHETIC MANUAL

*Dental Implants*



Made in Italy

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## GENERAL INFORMATION

Read this manual carefully before starting the treatment. This manual must be used as a reference guide by the doctor so as to optimize the use of the implants, surgical instruments, and the prosthetic components of the systems. Please refer to the Instructions for Use, including Indications for use, Contraindications, Warnings and Cautions before using the products. Instructions for Use are available at [ifu.jdentalcare.com](http://ifu.jdentalcare.com). The success of the treatment of patients is strictly connected to a proper planning of the surgery and to an appropriate choice of the type of dental implant to be used, based on the specific clinical case.

JDentalCare offers a series of solutions to a wide range of indications, to allow the clinicians to perform the oral surgeries in order to obtain efficient results in terms of clinical outcomes and patient satisfaction.

This manual contains the main stages of the surgical procedure and has been prepared with the aim to be used as a reference guide by dental implant specialists to optimize the use of JDentalCare implants, surgical instruments, and prosthetic components.

Anyway, it can't be used as a substitute for professional training and experience.

Before starting a new treatment, it is strongly recommended to the clinicians to inform and, if necessary, update themselves about the most suitable techniques and procedures to use. For this purpose, our company offers a consulting service by our experts, who are at your disposal, and a wide variety of training courses for dentists at all experience levels.

For further information please visit: [www.jdentalcare.com](http://www.jdentalcare.com)

Federal law restricts this device to sale by or on the order of a licensed dentist or physician.

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## INDICATIONS FOR USE

JDentalCare Dental Implant System, family names JDEvolution / JDEvolution Plus / JDIcon / JDIcon Plus, is intended to replace missing masticatory functional units (teeth) within the maxilla or mandible. JDentalCare Dental Implant System is comprised of dental implant fixtures and prosthetic devices. It provides a means for prosthetic attachment in single tooth restorations and partially or fully edentulous spans with multiple single teeth utilizing delayed or immediate loading, or as a terminal or intermediary abutment for fixed or removable bridgework or to retain overdentures. Prosthetic devices provide support and retention for screw-retained or cemented restorations in mandible and maxilla. JDentalCare Dental Implant System is intended for immediate function on single tooth and/or multiple tooth applications when good primary stability is achieved, with appropriate occlusal loading, in order to restore chewing function. When a one-stage surgical approach is applied, the implant may be immediately loaded when good primary stability is achieved and the functional load is appropriate. Implants 20 mm when placed in the maxilla are only indicated for multiple unit restorations in splinted applications that utilize at least two implants.

JDentalCare implant system JDIcon 2.75mm D Dental Implant shall only be used to replace maxillary lateral incisors and mandibular lateral and central incisors for single stage or two-stage procedures. It is for immediate implantation in extraction sites or implantation in partially healed or completely healed alveolar ridge situations.

### **Contraindications**

The use of JDentalCare dental implants and prosthetic components may be precluded in the following cases:

- Patients with conditions that constitute a contraindication for surgery.
- Patients who are allergic or hypersensitive to the materials of which implants, prosthetic components and instruments are made. For information about the material of surgical instruments, refer to the IFU related, available at [ifu.jdentalcare.com](http://ifu.jdentalcare.com).

- Patients with poor bone quality and/or an insufficient amount of bone, who cannot be subjected to bone grafting.
- Patients in whom, after an appropriate assessment of the case, is not possible to achieve a safe stability and the overall functionality with the devices of the implant lines considered in this surgical manual, even if are available the adequate sizes of implants and prosthetic components.

### **Warnings**

Incorrect planning of surgical protocol and/or a wrong choice of the size of the devices can result in: permanent nerve injuries, permanent damages to the gums, bones and blood vessels.

An incorrect execution of the treatment may lead to patient related issues, such as permanent numbness to the lower lip and chin or to a hemorrhage in the floor of the mouth. Besides the mandatory precautions for any surgery such as asepsis, during drilling in the jawbone, one must avoid damage to nerves and vessels by referring to anatomical knowledge and preoperative radiographs.

JDIcon Plus implants with 3.5 mm diameter are intended to be used only with straight abutments.

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## **PATIENT EVALUATION AND PREOPERATIVE PLANNING**

JDentalCare dental implants are intended for adult patients subject to dental implant treatment. An appropriate planning of every aspect of the oral surgery is essential for the long-term success of a prosthesis. The preoperative planning should be made based on the expected aesthetic and functional restorative results. The choice of unsuitable sizes of the devices and the malposition of the implant may lead to complications, undesirable effects and to the failure of treatment. To avoid this, a detailed examination through clinical and radiographic analysis of the patient general health condition and current medical status, and an evaluation of patient motivations and expectations are necessary. Moreover, factors such as cigarette smoking, masticatory function and alcohol consumption are to be considered. Dental casts can be used to define the position and angulation of implants. The dentist will develop the plan after gathering all the required data, because they provide important information and make possible a backward planning, with the aim to improve the safety and the results of the surgical procedure.

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## **QUALITY AND QUANTITY OF THE BONE**

The implant diameter, type and position are all factors that should be selected in each single case, based on the oral anatomy of the patient and taking into account of all the above-mentioned considerations about patient's psychological and physiological and condition. One of the main factors to consider for the definition of the protocol for the preparation of the implant site is the evaluation of the density, the volume and the thickness of the bone, which are features that differ from patient to patient and in a single individual from one area of the mouth to another. Usually, dense cortical bone provides higher primary stability, while soft bone requires "under-preparation" of the implant bed. The choice of the length of the implant to use is influenced by the height of the available vertical bone. The amount of bone is not the same in all the sites. The available bone may be situated in the most apical section of the implant, as it happens in a post-extraction site, or at the neck section of the implant, as in cases of maxillary sinus elevation procedure.

After placement of the implant the thickness of the residual bone needs to be at least 1.5 mm, in both lingual-palatal and vestibular direction, in order to avoid the risk of gingival margin recession. The special reduction in the coronal section of the implant makes it ideal for cases with thin alveolar ridges. The flapless technique can be used when there is an optimal quantity of bone and soft tissue. In some cases, the mass of the jaw is not suitable to insert a

dental implant and an intervention of bone augmentation may be necessary. Moreover, JDentalCare provides narrow diameter implants, that can be used as a minimally invasive alternative to bone augmentation and as an evaluable solution in patients with insufficient bone ridge thickness or restricted mesiodistal anatomy.

**Important:** examination and a radiological study are essential elements to determine anatomical conformation, occlusion, periodontal status and bone thickness. A "Cone Beam CT" radiological study is recommended to obtain a more precise evaluation of the dimension and quality of the available bone.

## DRILLING SEQUENCE

JDentalCare offers a set of drills that have been designed in order to perform the flapless and the conventional flapped dental implant surgery.

**Caution:** All instruments and tooling used during procedure must be maintained in good condition and care must be taken that instrumentation does not damage implants or other components.

Drilling in the bone should be performed at a maximum of 1200 rpm.

Before starting, verify that the drill is engaged/retained in the handpiece, in order to avoid an accidental detachment during the surgery.

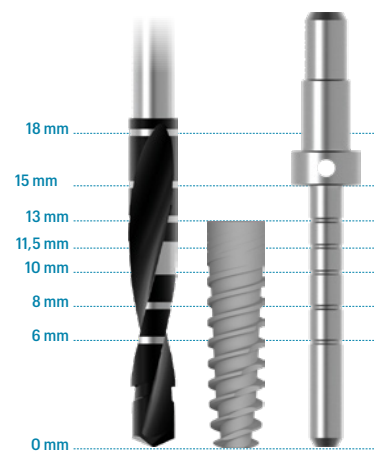
To prevent damages to hard and soft tissues and to prevent the overheating of the bone an intermittent drilling technique with pumping motion and a plentiful irrigation with sterile water or saline solution are required. It's recommended during the procedure to take out the drill completely from the site, to check that irrigation is taking place correctly. Stop drilling if there is no irrigation. When pulling out the drill, don't stop the motor, in order to allow the irrigation to remove debris.

On the drill there are laser marks that serve as a reference of the depth of the hole to be executed, hence stop drilling when the desired depth is reached. If there are adjacent natural teeth interfering with the head of the contra-angle, the drill extension shall be used. It is advisable to use surgical motors with adjustable speed and torque. They can be used for a maximum of 30 times, or should be substituted before if the cutting efficiency degrades significantly. It is recommended to adhere to the indication of the drilling sequence related to the quality of bone and implant diameters that have been specified in the following tables, in order to achieve a good primary stability of the implant. Pay attention to not over-prepare the osteotomy with a depth greater than that defined in the planning stage. All the dimensions in the tables below are expressed in millimeters.

### JDEvolution Ø 3.25 mm

| Site preparation in mandible or maxilla |                   |                         |                   |
|---|-------------------|-------------------------|-------------------|
| IMPLANT DIAMETER                        | SOFT BONE TYPE IV | MEDIUM BONE TYPE II-III | DENSE BONE TYPE I |
| Ø 3.25                                  | 1,5<br>(2)        | 2<br>2,4                | 2<br>2,4<br>(2,8) |

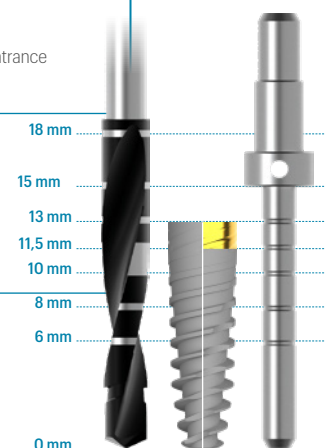
Note: all measurements in mm



# JDEvolution Plus

| IMPLANT DIAMETER                    | HEALED BONE   |   | POST EXTRACTIVE BONE   |  |
|-------------------------------------|---|---|--|--|
|                                     | SOFT BONE   | MEDIUM-DENSE BONE   | SOFT BONE  | MEDIUM-DENSE BONE  |
| <b>Site preparation in maxilla</b>  |   |   |  |  |
| <b>Ø 3,7</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8 up to the 1 <sup>st</sup> laser mark L6mm  | 2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L6mm   | 2,4<br>2,8 at the entrance   | 2,4<br>2,8 at the entrance   |
| <b>Ø 4,3</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8<br>3,2 at the entrance   | 2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L6-8mm<br>3,6 at the entrance  | 2,4<br>2,8<br>3,2 at the entrance  | 2,4<br>2,8<br>3,2 at the entrance  |
| <b>Ø 5,0</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm   | 2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm<br>4,0 at the entrance                                  | 2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm | 2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm |
| <b>Ø 6,0</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8<br>3,2<br>3,6  | 2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4 up to the 1 <sup>st</sup> laser mark L 6mm   | 2,4<br>2,8<br>3,2<br>3,6<br>4,0  | 2,4<br>2,8<br>3,2<br>3,6<br>4,0  |
| <b>Site preparation in mandible</b> |   |   |  |  |
| <b>Ø 3,7</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8<br>3,2 up to the 2 <sup>nd</sup> laser mark L 8mm<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm                      | 2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm   | 2,4<br>2,8<br>3,2 at the entrance  | 2,4<br>2,8<br>3,2 at the entrance  |
| <b>Ø 4,3</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8<br>3,2<br>3,6 up to the 2 <sup>nd</sup> laser mark L 8mm<br>4,0 up to the 2 <sup>nd</sup> laser mark L 8mm               | 2,4<br>2,8<br>3,2<br>3,6<br>4,0 up to the 2 <sup>nd</sup> laser mark L8mm<br>4,4 up to the 1 <sup>st</sup> laser mark L 6mm | 2,4<br>2,8<br>3,2<br>3,6 at the entrance   | 2,4<br>2,8<br>3,2<br>3,6 at the entrance   |
| <b>Ø 5,0</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4 up to the 2 <sup>nd</sup> laser mark L 8mm<br>4,8 at the entrance                            | 2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4<br>4,8 at the entrance   | 2,4<br>2,8<br>3,2<br>3,6<br>4,0 at the entrance  | 2,4<br>2,8<br>3,2<br>3,6<br>4,0 at the entrance  |
| <b>Ø 6,0</b>                        | 2,0   | 2,0   | 2,0  | 2,0  |
|                                     | 2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4 up to the 2 <sup>nd</sup> laser mark L 8mm<br>4,8 up to the 2 <sup>nd</sup> laser mark L 8mm | 2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4<br>4,8 up to the 2 <sup>nd</sup> laser mark L 8mm                                    | 2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4   | 2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4   |

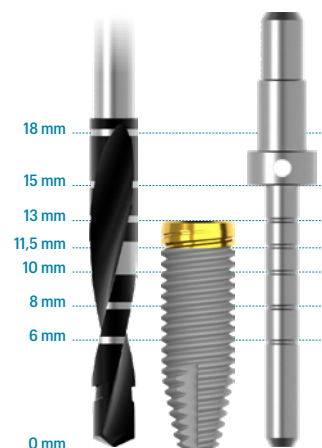
Note: all measurements in mm



## JDEvolution Plus Ø 4.0 mm (1.5 mm Anodized collar)

| IMPLANT DIAMETER                    | HEALED BONE                                    |   | POST EXTRACTIVE BONE                           |  |
|-------------------------------------|--|---|--|--|
|                                     | SOFT BONE                                      | MEDIUM-DENSE BONE                                     | SOFT BONE                                      | MEDIUM-DENSE BONE                              |
| <b>site preparation in maxilla</b>  |  |   |  |  |
| Ø 4,0                               | 2.0  | 2.0   | 2.0  | 2.0  |
|                                     | 2.4  | 2.4   | 2.4  | 2.4  |
|                                     | 2.8  | 2.8<br>3.2 up to the 2 <sup>nd</sup> laser mark L 8mm | 2.8 up to the 2 <sup>nd</sup> laser mark L 8mm | 2.8  |
| <b>site preparation in mandible</b> |  |   |  |  |
| Ø 4,0                               | 2.0  | 2.0   | 2.0  | 2.0  |
|                                     | 2.4  | 2.4   | 2.4  | 2.4  |
|                                     | 2.8  | 2.8   | 2.8  | 2.8  |
|                                     | 3.2 up to the 2 <sup>nd</sup> laser mark L 8mm | 3.2   | 3.2 up to the 2 <sup>nd</sup> laser mark L 8mm | 3.2  |
|                                     | 3.6 up to the 2 <sup>nd</sup> laser mark L 8mm | 3.6<br>4.0 up to the 1 <sup>st</sup> laser mark L 6mm | 3.6 up to the 2 <sup>nd</sup> laser mark L 8mm | 3.6 up to the 2 <sup>nd</sup> laser mark L 8mm |

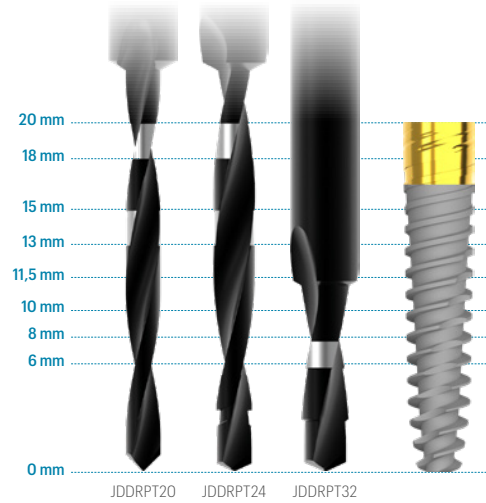
Note: all measurements in mm



## JDEvolution Plus Ø 4.0 mm (2.5 mm Anodized collar)

|   |   |
|---|---|
|   | HEALED OR<br>POST EXTRACTIVE BONE   |
| IMPLANT<br>DIAMETER                     | SOFT-MEDIUM-DENSE<br>BONE   |
| site preparation in maxilla or mandible |   |
| Ø 4,0                                   | 2.0 (JDDRPT20)<br>2.4 (JDDRPT24)<br>3.2 at the entrance for 6 mm (JDDRPT32) |

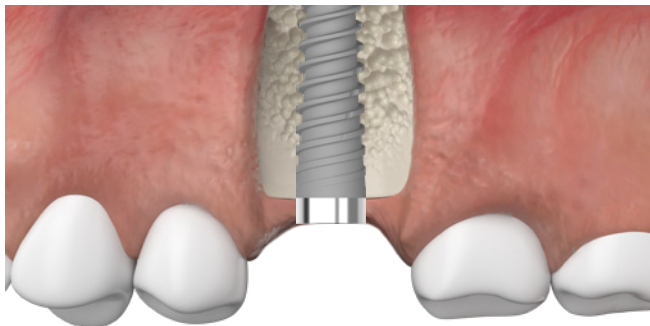
Note: all measurements in mm



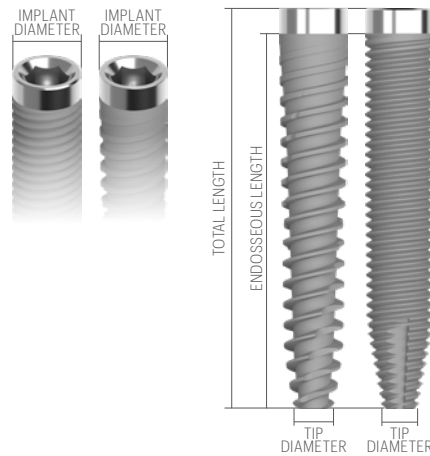
## JDEvolution Plus L / JDEvolution Plus LE

| IMPLANT<br>DIAMETER | TIP<br>DIAMETER | ABUTMENT<br>INTERFACE | PLATFORM<br>DIAMETER | ENDOSSEOUS<br>LENGTH |      |      |      |      | TOTAL<br>LENGTH |    |    |    |    |  |
|---------------------|-----------------|-----------------------|----------------------|----------------------|------|------|------|------|-----------------|----|----|----|----|--|
|                     |                 |                       |                      | 16.5                 | 18.5 | 20.5 | 22.5 | 24.5 | 18              | 20 | 22 | 24 | 26 |  |
| Ø 4,0               | 2,4             | 3,4                   | 4,1                  |                      |      |      |      |      |                 |    |    |    |    |  |

Note: all measurements in mm



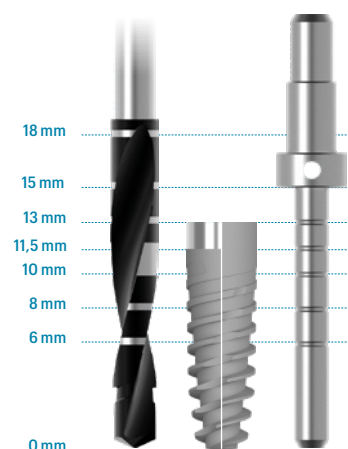
IMPLANTS WITH AN UNTHREATED MACHINED COLLAR  
MUST BE PLACED SO THAT THE UNTHREATED MACHINED  
COLLAR IS IN THE GINGIVAL AREA



# JDIcon

| IMPLANT DIAMETER                    | HEALED BONE  |  | POST EXTRACTIVE BONE  |   |
|-------------------------------------|--|--|---|---|
|                                     | SOFT BONE  | MEDIUM-DENSE BONE  | SOFT BONE   | MEDIUM-DENSE BONE   |
| <b>site preparation in maxilla</b>  |  |  |   |   |
| Ø 3,9                               | 2,0  | 2,0  | 2,0   | 2,0   |
|                                     | 2,4  | 2,4  | 2,4   | 2,4   |
|                                     | 2,8 up to the 1 <sup>st</sup> laser mark L6mm  | 2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L6mm   | 2,8 at the entrance   | 2,8 at the entrance   |
| Ø 4,3                               | 2,0  | 2,0  | 2,0   | 2,0   |
|                                     | 2,4  | 2,4  | 2,4   | 2,4   |
|                                     | 2,8<br>3,2 at the entrance   | 2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L6-8mm<br>3,6 at the entrance  | 2,8<br>3,2 at the entrance  | 2,8<br>3,2 at the entrance  |
| Ø 5,0                               | 2,0  | 2,0  | 2,0   | 2,0   |
|                                     | 2,4  | 2,4  | 2,4   | 2,4   |
|                                     | 2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm   | 2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm<br>4,0 at the entrance                                  | 2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm | 2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm |
| <b>site preparation in mandible</b> |  |  |   |   |
| Ø 3,9                               | 2,0  | 2,0  | 2,0   | 2,0   |
|                                     | 2,4  | 2,4  | 2,4   | 2,4   |
|                                     | 2,8<br>3,2 up to the 2 <sup>nd</sup> laser mark L 8mm<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm        | 2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm   | 2,8<br>3,2 at the entrance  | 2,8<br>3,2 at the entrance  |
| Ø 4,3                               | 2,0  | 2,0  | 2,0   | 2,0   |
|                                     | 2,4  | 2,4  | 2,4   | 2,4   |
|                                     | 2,8<br>3,2<br>3,6 up to the 2 <sup>nd</sup> laser mark L 8mm<br>4,0 up to the 2 <sup>nd</sup> laser mark L 8mm | 2,8<br>3,2<br>3,6<br>4,0 up to the 2 <sup>nd</sup> laser mark L8mm<br>4,4 up to the 1 <sup>st</sup> laser mark L 6mm | 2,8<br>3,2<br>3,6 at the entrance   | 2,8<br>3,2<br>3,6 at the entrance   |
| Ø 5,0                               | 2,0  | 2,0  | 2,0   | 2,0   |
|                                     | 2,4  | 2,4  | 2,4   | 2,4   |
|                                     | 2,8<br>3,2<br>3,6<br>4,0<br>4,4 up to the 2 <sup>nd</sup> laser mark L 8mm<br>4,8 at the entrance              | 2,8<br>3,2<br>3,6<br>4,0<br>4,4<br>4,8 at the entrance   | 2,8<br>3,2<br>3,6<br>4,0 at the entrance  | 2,8<br>3,2<br>3,6<br>4,0 at the entrance  |

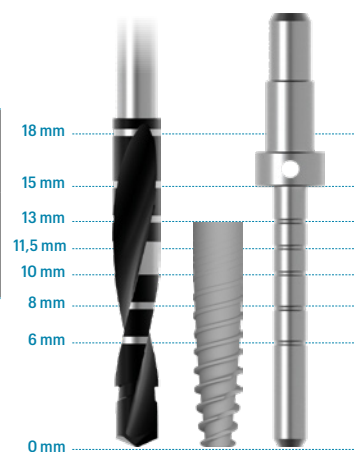
Note: all measurements in mm



## JDIcon D 2,75

| IMPLANT DIAMETER | SOFT BONE TYPE IV | MEDIUM BONE TYPE II-III | DENSE BONE TYPE I |
|------------------|-------------------|-------------------------|-------------------|
| Ø 2,75           | 1,5               | 2,0                     | 2,0               |
|                  | 2,0               | 2,4                     | 2,4<br>2,8*       |

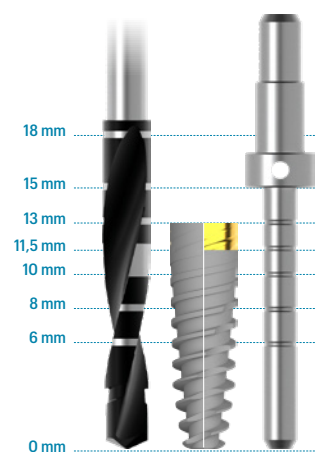
Note: all measurements in mm



# JDIcon Plus

| IMPLANT DIAMETER                   | HEALED BONE  |   | POST EXTRACTIVE BONE  |   |
|------------------------------------|--|---|---|---|
|                                    | SOFT BONE  | MEDIUM-DENSE BONE   | SOFT BONE   | MEDIUM-DENSE BONE   |
| <b>site preparation in maxilla</b> |  |   |   |   |
| <b>Ø 3,5</b>                       | 2,0<br>2,4<br>2,8 up to the 1 <sup>st</sup> laser mark L 6mm               | 2,0<br>2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L 6mm                               | 2,0<br>2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L 6mm                           | 2,0<br>2,4<br>2,8 at the entrance   |
| <b>Ø 3,7</b>                       | 2,0<br>2,4<br>2,8 up to the 1 <sup>st</sup> laser mark L 6mm               | 2,0<br>2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L 6mm                               | 2,0<br>2,4<br>2,8 at the entrance   | 2,0<br>2,4<br>2,8 at the entrance   |
| <b>Ø 4,0</b>                       | 2,0<br>2,4<br>2,8<br>3,2 at the entrance                                   | 2,0<br>2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L 6-8mm<br>3,6 at the entrance      | 2,0<br>2,4<br>2,8<br>3,2 at the entrance  | 2,0<br>2,4<br>2,8<br>3,2 at the entrance  |
| <b>Ø 4,3</b>                       | 2,0<br>2,4<br>2,8<br>3,2 at the entrance                                   | 2,0<br>2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L 6-8mm<br>3,6 at the entrance      | 2,0<br>2,4<br>2,8<br>3,2 at the entrance  | 2,0<br>2,4<br>2,8<br>3,2 at the entrance  |
| <b>Ø 4,5</b>                       | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm<br>4,0 at the entrance | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm |
| <b>Ø 5,0</b>                       | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm<br>4,0 at the entrance | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L 6mm |

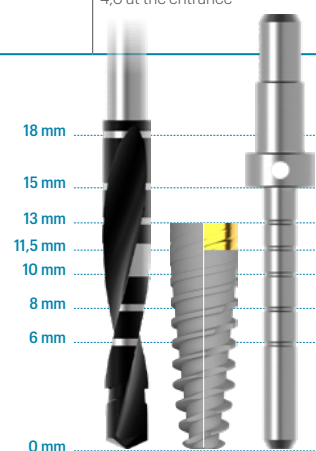
Note: all measurements in mm



# JDIcon Plus

| IMPLANT DIAMETER                    | HEALED BONE   |  | POST EXTRACTIVE BONE                                   |  |
|-------------------------------------|---|--|--|--|
|                                     | SOFT BONE   | MEDIUM-DENSE BONE  | SOFT BONE  | MEDIUM-DENSE BONE                                      |
| <b>site preparation in mandible</b> |   |  |  |  |
| <b>Ø 3,5</b>                        | 2,0<br>2,4<br>2,8<br>3,2 up to the 1 <sup>st</sup> laser mark L6mm  | 2,0<br>2,4<br>2,8<br>3,2 up to the 2 <sup>nd</sup> laser mark L8mm<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm               | 2,0<br>2,4<br>2,8                                      | 2,0<br>2,4<br>2,8<br>3,2 at the entrance               |
| <b>Ø 3,7</b>                        | 2,0<br>2,4<br>2,8<br>3,2 at the entrance<br>3,6 at the entrance<br>up to the 1 <sup>st</sup> laser mark L6mm        | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 up to the 1 <sup>st</sup> laser mark L 6mm   | 2,0<br>2,4<br>2,8<br>3,2 at the entrance               | 2,0<br>2,4<br>2,8<br>3,2 at the entrance               |
| <b>Ø 4,0</b>                        | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 up to the 2 <sup>nd</sup> laser mark L8mm   | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0 up to the 2 <sup>nd</sup> laser mark L8mm<br>4,4 up to the 1 <sup>st</sup> laser mark L 6mm | 2,0<br>2,4<br>2,8<br>3,2 at the entrance               | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance        |
| <b>Ø 4,3</b>                        | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>4,0 at the entrance<br>up to the 2 <sup>nd</sup> laser mark L8mm | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0 up to the 2 <sup>nd</sup> laser mark L8mm<br>4,4 up to the 1 <sup>st</sup> laser mark L 6mm | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance        | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance        |
| <b>Ø 4,5</b>                        | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance<br>4,0 at the entrance  | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4<br>4,8 at the entrance   | 2,0<br>2,4<br>2,8<br>3,2<br>3,6 at the entrance        | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0 at the entrance |
| <b>Ø 5,0</b>                        | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4 at the entrance<br>4,8 at the entrance                                | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0<br>4,4<br>4,8 at the entrance   | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0 at the entrance | 2,0<br>2,4<br>2,8<br>3,2<br>3,6<br>4,0 at the entrance |

Note: all measurements in mm



## CLINICAL PROCEDURE STEP BY STEP

Procedure with flap should be performed when it is necessary to observe the underlying alveolar bone and adjacent anatomical structures.

Flapless procedure should be performed when there is sufficient quantity and quality of alveolar bone and soft tissue and it is not necessary to raise a flap to safely direct drilling procedure in relation to the anatomy.

### **Initial drilling**

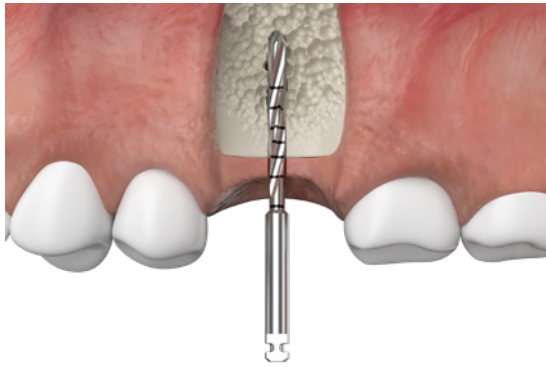
Once the gingiva has been opened, the implantation site shall be prepared. For this purpose, use the Ø 1.5 mm precision drill that has a cutting edge that allows its use even in dense bone.

Be careful not to drill for a depth greater than that of the selected implants.

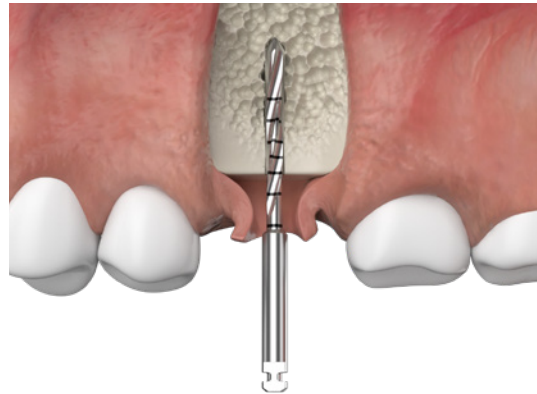
**The maximum speed for the precision drill must be 1200 rpm.**

**Note:** *When operating flapless, always measure the thickness of the soft tissue with a probe, for a correct preparation of the osteotomy to the desired depth.*

In case of flapless surgery, the tissue punch can be used to make initial entry into the soft tissue.



**FLAPLESS**



**WITH FLAP**

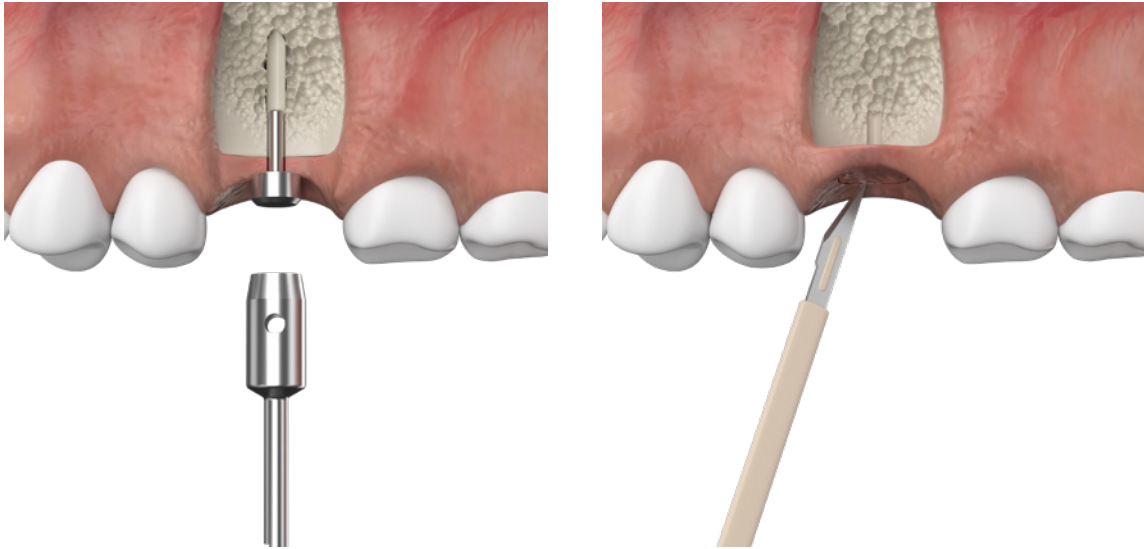
**Flapless surgery with tissue punch**

To perform flapless surgery, the tissue punch with a guide has been introduced to incise soft tissue until reaching the osseous crest.

Insert the direction guide for the tissue punch corresponding to the diameter of the selected implant in the Ø 1.5 hole. Connect the tissue punch to the contra-angle and position it on the guide. Incise into tissue until reaching the osseous crest.

The speed must not exceed 800 rpm.

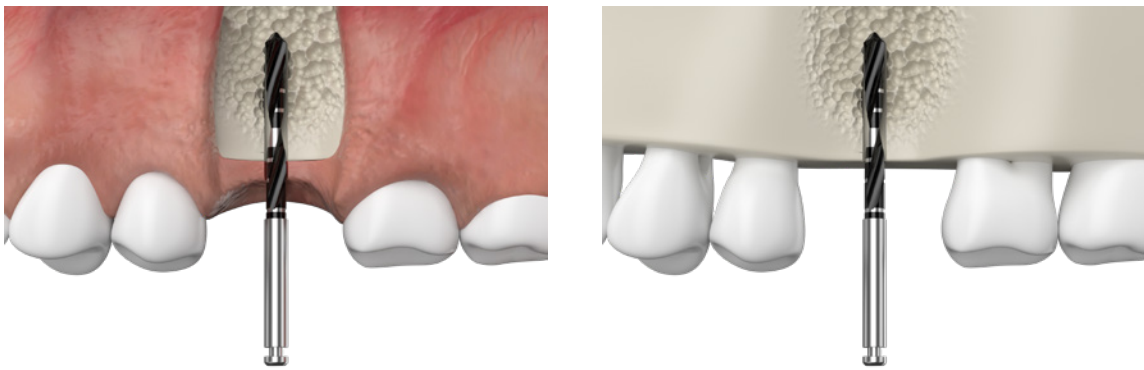
Use a normal or small scalpel to incise perpendicularly along the outline of the soft tissue so as to free it and remove it from the top of the crest.



**Drilling with Ø 2 drill**

Continue with the preparation of the osteotomy using the Ø 2.0 drill.

Maximum speed must be 1200 rpm.



**FLAPLESS**

**WITH FLAP**

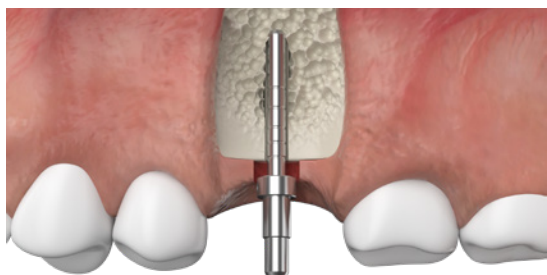
**Check of drilling direction**

You can control the direction of the drilling at any time, using the direction indicator. The direction indicators are provided of notches to measure the depth of the implant site.

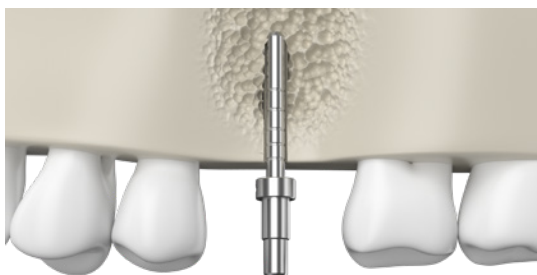
You may need a radiological examination to verify parallelism with other pieces or adjacent implants.

If necessary, correct the direction of the drilling.

When placing multiple implants, proceed with the same drill for all the osteotomies before moving to the next drill planned in the sequence.



**FLAPLESS**



**WITH FLAP**

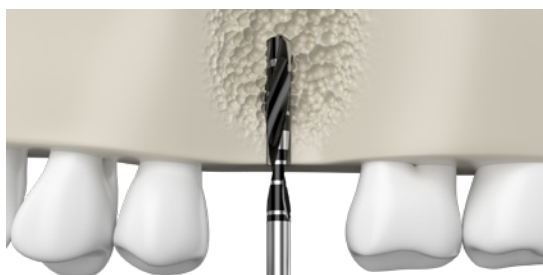
**Drilling with drills with diameter from 2.4/2.8 mm upwards**

To continue with the preparation, use drills with diameter from 2.4/2.8 mm upwards.

Maximum drilling speed must be 1200 rpm.



**FLAPLESS**

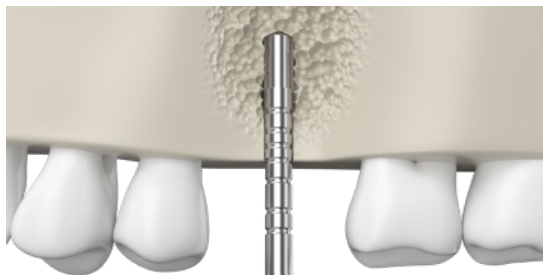


**WITH FLAP**

Measure the depth of the drilling and control the integrity of the cortical walls in the prepared cavity using a probe.



**FLAPLESS**



**WITH FLAP**

**Drill Stop**

The drill stop enables dentists to control the depth of the implant site, during the drilling procedure. For a safe and accurate drilling procedure, mount the Drill Stop on the drill.



**Possibility of “osseus infra-preparation” (infra-drilling) to obtain greater primary stability in soft bone.**

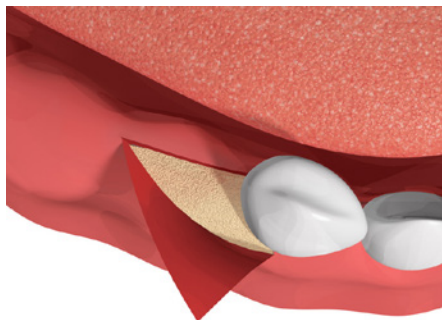
In soft bone, the self-cutting property of the JDentalCare implants makes it possible the insertion of them with a high degree of infra-preparation, given that bone condensing in the apical region considerably increases the primary stability of the implant. Drill the bone up to 2 to 4 mm less than the total length of the implant and insert the implant in the drilled cavity.

Once the drilling depth is reached, the implant will have osteotomous effect, considering the bone and increasing primary stability until reaching optimal stability at the desired depth.

It is advisable to use the infra-drilling in suboptimal bone quality.



If the flapless technique is used (minimally invasive) it is necessary to remove gum tissue with a circular scalpel.



## IMPLANT PLACEMENT

### Unpacking of the implant

The fixtures of JDentalCare dental implants are subjected to sterilization by gamma irradiation and are single-use devices. The fixtures are packaged in polystyrene vial, placed into a rigid thermoformed blister sealed with a Tyvek paper. An adhesive label is affixed to the blister of all JDentalCare implants and it reports the main information related to the device.

The intact sterile packaging protects the sterilized implant from outside influences and, if stored correctly, ensures the sterility of the device up to the expiration date.

Before the use, check the integrity of the sterile barrier, check that the seal and the welds are intact, that the Tyvek paper is not damaged and/or cut and that there are not detachment points from the blister.

On the blister of implants there is a red sticker, which is a gamma sterilization indicator. It confirms that the device has been subjected to sterilization by gamma radiation.

**Warning:** Do not re-use the devices (both implants and prosthetic components). If they are reused on another patient, there is a risk of cross-contamination and loss of the performance and functional characteristics of the device.

**Warning:** Do not use sterile devices after the expiration date.

**Warning:** Do not use the product if the gamma sterilization indicator is colored differently from red. Previously used or non-sterile implants must not be used under any circumstances.

**Warnings:** Implants must not be cleaned, disinfected and/or re-sterilized by the users prior to use, since otherwise the main material and design features may be compromised, leading to device failure.

**Warning:** Don't use the devices (both implants and prosthetic components) if the package has been damaged or previously opened.



- Step 1: Remove the blister with the vial from the box



- Step 2: Open the blister: Open by pulling the peel tab located on the lower left corner of the blister. The sterile blister must be opened only at the moment it has to be used during the surgery. The vial must be handled with sterile gloves.



- Step 3: Remove the vial cap.



### **Insertion of the implant**

The implant shall be inserted slowly into the previously prepared site.

**Warning:** During insertion, do not exceed the maximum torque values indicated below:

- Ø 2.75 mm implants (JDIcon): insertion torque between 25 Ncm and 60 Ncm
- All other implants: insertion torque between 25 Ncm and 80 Ncm

- Step 1: Pick up the implant

The final placement of the dental implant, depending on the clinical situation, can be carried out using one of the following tools:

1. The JDTorque dynamometric key
2. The handpiece
3. The surgical driver

**Caution:** Pick up the implant taking care to extract it upright, avoiding any contact of it with other components of the vial (i.e blows and rubbing), because this may compromise the integrity of the implant.

**Implant placement with JD Torque dynamometric key:**

Attach the surgical adapter to the JD Torque dynamometric key.

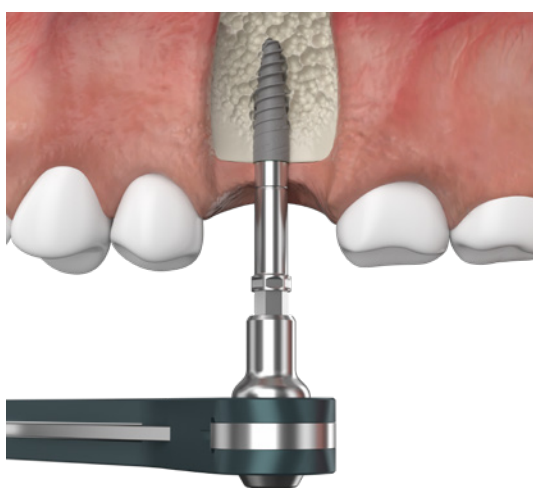
Connect the implant driver to the JD Torque dynamometric key with the mounted surgical adapter.



To connect the implant put light pressure on the driver.



Insert the implant in the previously made osteotomy. Move the implant into its final position turning it clockwise.



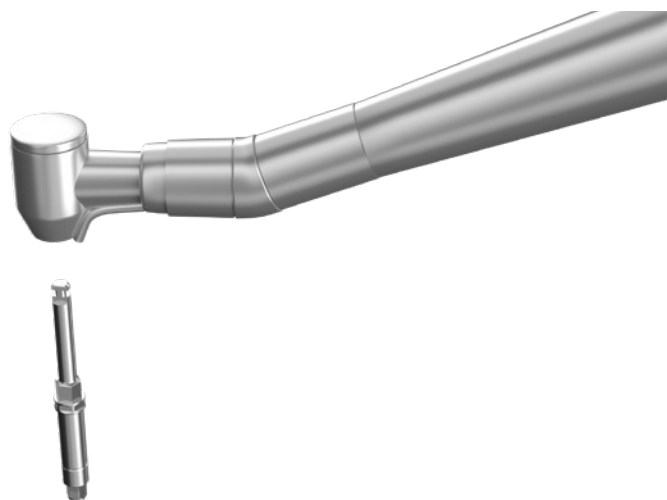
**FLAPLESS**



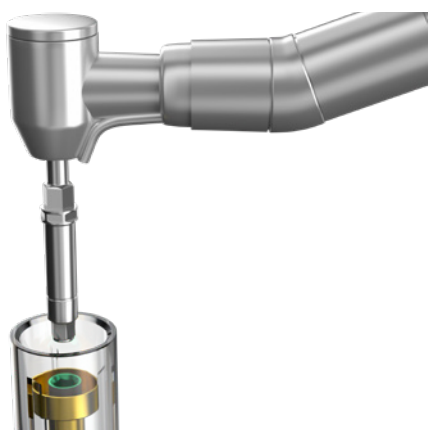
**WITH FLAP**

**Implant placement with Handpiece**

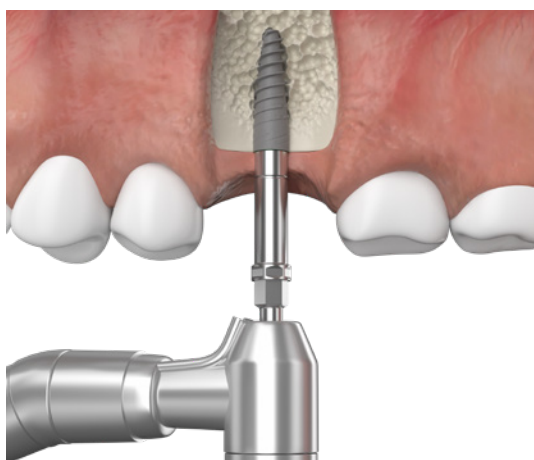
Connect the appropriate implant driver to the handpiece.



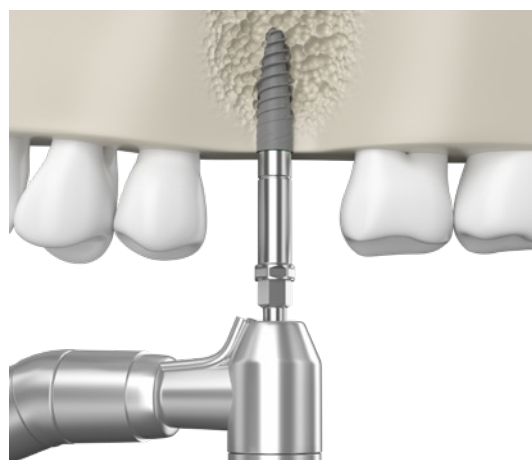
To connect the implant, apply light pressure on the driver.



Slowly insert the implant in the previously made osteotomy (25 rpm for standard implants, 15 rpm for narrow diameter implants).



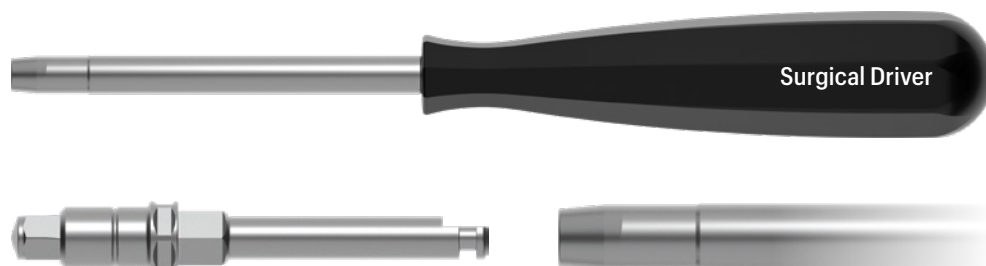
**FLAPLESS**



**WITH FLAP**

**Implant placement with the surgical driver**

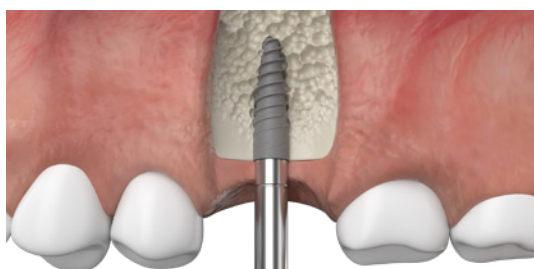
It is also possible to use the surgical driver to position the implant.  
Connect the implant driver to the surgical driver.



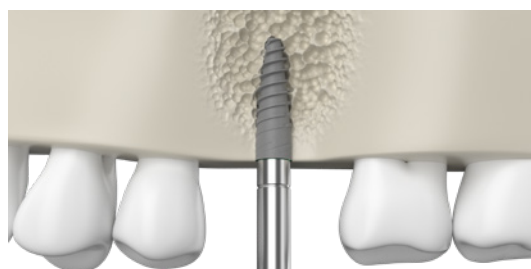
To connect the implant, apply light pressure on the driver.



Insert the implant in the osteotomy previously carried out.



**FLAPLESS**



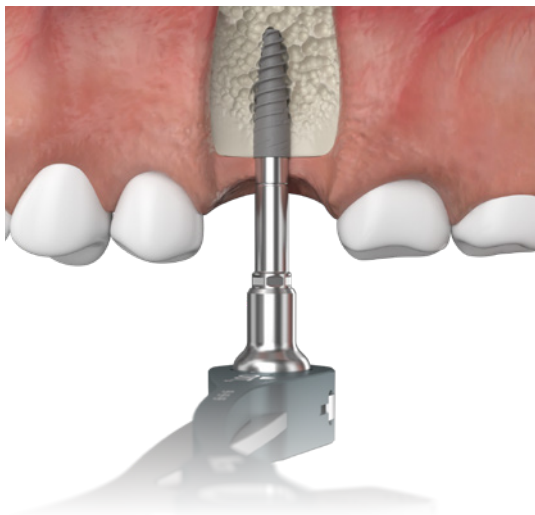
**WITH FLAP**

• Step 2: Final positioning.

Connect the JD Torque dynamometric key with the JD Torque surgical adapter mounted on the driver of the implant and seat the implant to its final depth.

**Note:** Available abutment margin height needs to be considered during the planning of implant placement to assure appropriate seating depth of the implant relative to the available soft tissue thickness and the planned emergence of the restoration.

To carry out immediate load protocols, the implant should be inserted with a final insertion torque of 35±45 Ncm but without exceeding in any case 80 Ncm. You can withdraw the driver by extracting it with vertical movement.

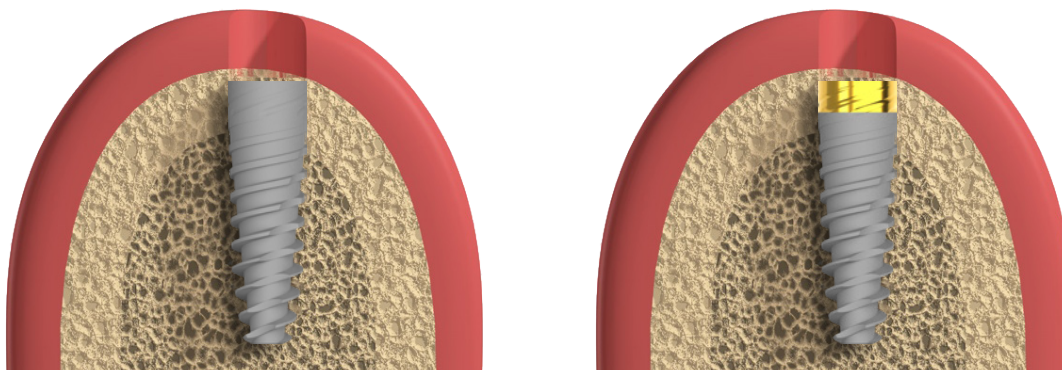


**Note:** Final vertical positioning depends on several clinical parameters, including esthetics, tissue thickness and available vertical space. Pay attention to the “Machined collar” implant version positioning: the implant body “machined collar version” must be placed so that the machined collar is in the gingival area.

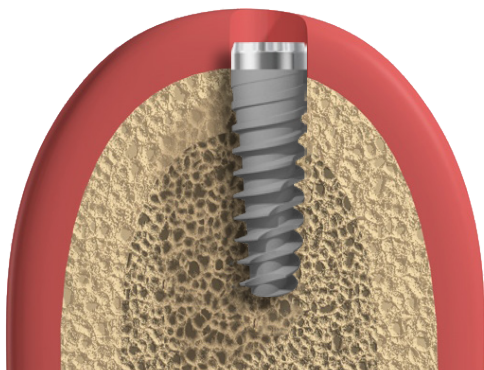
**Caution:** Avoid excessive force when inserting the implant with the dynamometric key given that inadequate pressure on the bone could cause necrosis and compromise integration with the bone. If you observe excessive torque (of approximately 80 Ncm) at any stage of the insertion, rotate the implant in the counter-clockwise direction two or three turns in order to take advantage of its self-tapping capacity and continue with the insertion. However, if you still encounter too much resistance, pull out the implant and carry out a more extensive osteotomy.

**Caution:** For JDIcon Ø 2.75 dental implants never exceed insertion tightening torque of 60 Ncm for the implant and 20 Ncm for the abutment.

For an optimal aesthetic result position the implant on the bone crest



Implants with unthreaded machined collar must be placed so that the unthreaded machined collar is in the gingival area.



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## IMPLANT ORIENTATION

At the time of the final placement of the implant, when the desired depth has been reached, it is necessary to align the reference points in the driver with the vestibular wall.

The profile of the internal connections of JDentalCare dental implants makes it possible to place and to orient the implant using implant drivers.



The implant driver has a 3 mm mark to facilitate the vertical positioning of the implant platform in accordance to soft tissue thickness (applicable in flapless surgery).



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## **CLEANING THE SURGICAL SITE**

After the placement of the implant, the site shall be irrigated with sterile water or saline solution in order to remove any residual of bone and tissue debris and/or blood.

This procedure is preparatory to the following insertion of the prosthetic components.

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## **POST-OPERATIVE CARE**

Patient should be informed and on the need for regular oral hygiene.

It is important that regular check-up is carried out in order to complete in the best way the planned implant-prosthetic treatment.

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# ***PROSTHETIC PROCEDURE***

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## FINALISATION OF THE IMPLANT SURGERY

After implantation, the implant is closed with the cover screw (provided together with each JDentalCare implant), the healing abutment or healing cap (in case of conical abutment) to protect the implant. Based on the case and his/her preferences, the clinician can choose between submerged or non-submerged healing and between immediate and delayed function.

JDentalCare implants are suitable both for immediate, early and delayed loading.

### **Immediate loading**

Immediate loading, involves the placement of a restoration within 48 hours of implant placement. Immediate loading is indicated when there are good primary stability and an appropriate occlusal load, and is made in case of non-submerged healing.

Immediate loading reduces treatment time, allows immediate restoration of function and esthetics with subsequent increasing of patient satisfaction.

It is possible to fix a provisional prosthesis using the JDentalCare provisional components or definitive abutments.

### **Early loading**

Early loading protocol foresees that the implants are loaded between 1 week and 2 months after insertion. Early loading can be performed using both submerged or non-submerged healing.

### **Delayed loading**

In the delayed loading protocol, after the placement of dental implants, is required a 3-6 months load-free healing period for healing and osseointegration. Delayed loading can be performed using both submerged or non-submerged healing.

### **Submerged healing by using Cover screw**

Cover screws are used in case of submerged healing.

#### **How to use:**

- Step 1: Remove the cover screw from the cap of the vial where it is provided with the implant.
- Step 2: Use the prosthetic screwdriver to thread the screw into the implant ensuring the proper thread engagement between the two components.
- Step 3: After placement of the Cover Screw, take a radiograph to check the position prior to close the soft tissue.
- Step 4: Replace the soft tissue flaps carefully over the cover screw and suture together.

### **Non-Submerged healing by using Healing abutment**

Healing abutments are used in case of non-submerged healing.

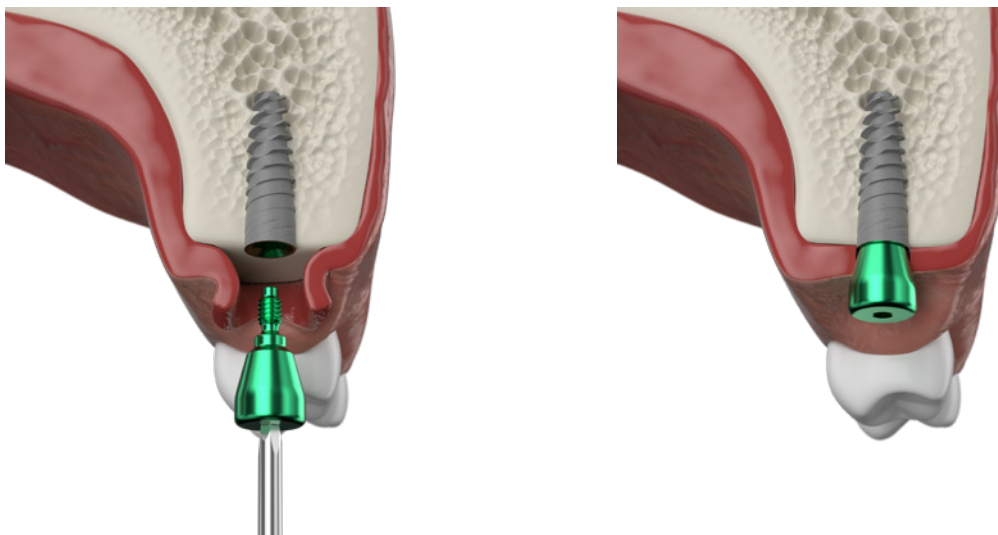
They promote soft and hard tissue healing around an implant. The design of JDentalCare healing abutment with integrated Platform Switching favors the soft tissue shaping, promoting a greater long term stability of these tissues, and a limited crestal bone resorption.

#### **How to use:**

- Step 1: Clean the internal connection of the implant with sterile water or saline solution.
- Step 2: Select the healing abutment of appropriate size. Place the healing abutment into the implant and tighten the prosthetic screw using the prosthetic screwdriver.
- Step 3: Adapt the soft tissue and suture it around the healing abutment.
- Step 4: It is advisable to take a radiograph after the insertion of the healing abutment.

**How to choose the appropriate healing abutment:**

- Step 1: Determine the size of implant platform.
- Step 2: Choose the emergency profile based on the clinical case considered and the crown that will be manufactured.
- Step 3: Select the diameter corresponding to that of the final abutment to be used.
- Step 4: Choose the length in order to have a slight protrusion of the device above the surrounding tissue.



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## **BONE MILLS**

Bone mill is used to remove bone surrounding the implant platform in case of interference with complete seating of any component (healing abutment, impression coping, abutment).

It is possible to remove this interference using Bone Mill manually or at low speed on the handle with the specific guide mounted on the implant. The speed must not exceed 800 rpm. Bone Mill serves especially when the implant is placed at subcrestal level.



**BONE MILL Ø 5.0**



**BONE MILL Ø 6.0**

**How to use:**

- Step 1: Remove the cover screw.
- Step 2: Insert the Bone Mill Guide in the implant and screw it by means of the Screwdriver.

- Step 3: Connect the Bone Mill to the contra-angle handpiece. Before starting the machine, put the Bone Mill on the Bone Mill Guide and start to run with low speed until the instrument is fully seated on the guide. A plentiful irrigation with sterile water or saline solution is recommended.
- Step 4: When the bone surrounding the implant platform has been sufficiently removed, it is possible to insert the abutment. Make sure that the implant platform is clean and free from bone debris.

---

## INSERTION OF PROSTHETIC COMPONENTS

***The prosthetic components can be picked, depending on the clinical situation, using one of the following tools:***

- Step 1: The JDTorque dynamometric key: connect the JDTorque dynamometric key to the prosthetic adapter and using the screw driver proceed to screw in the prosthetic components.
- Step 2: The handpiece.
- Step 3: The manual screw driver: Connect the JDTorque prosthetic adapter to the machine screw driver and manually screw in the prosthetic component.



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## IMPRESSION TECHNIQUE

Following the recommended healing phase after implant placement, it is necessary to take the impression of the patient's mouth for final restoration. Taking impressions is necessary to ensure that the prosthesis fits into patient's mouth. Impressions are used when creating crowns, dental implants and bridges. The technique that will be selected depends on several factors, such as the position and the type of restoration that will be chosen and the experience of the practitioner. The bite registration and the tooth color assessment should also be taken at this point.

The impression can be complete, when it captures all teeth and surrounding tissues of the dental arch, or partial, when it captures only a part of the arch.

Impression techniques used in the implant treatment are:

- Closed tray
- Open tray
- Abutment level impression
- Conventional impression
- Intraoral scanning for 3D dental impressions

In general, for single unit restorations the closed tray and open tray techniques can be used interchangeably.

### **Closed Tray impression technique**

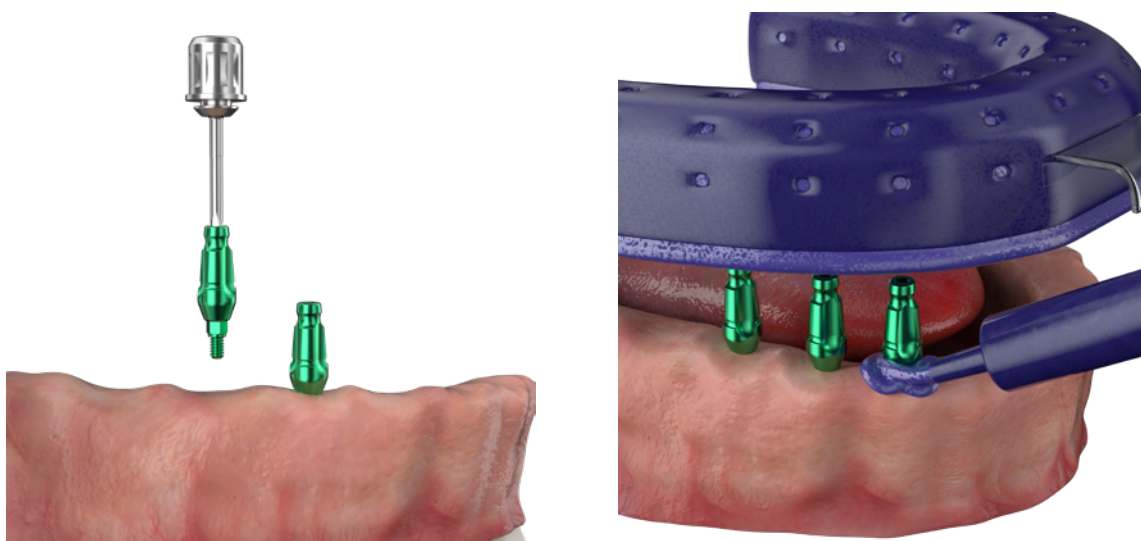
This technique is recommended for single unit restorations or multiple unit restorations where implants are placed sufficiently parallel to each other.

**The procedure to take a closed tray impression is the following:**

- Step 1: Unscrew the healing cap using the prosthetic screwdriver.
- Step 2: Place the impression coping closed tray into the implant and tighten the Impression Coping Closed Tray Screw using the prosthetic screwdriver.
- Step 3: Apply impression material around the impression coping to surround it completely.
- Step 4: Fill the tray with impression material and take the impression directly in the mouth.
- Step 5: Once the material is cured, carefully remove the tray.
- Step 6: Unscrew and remove the impression coping from the patient's mouth.
- Step 7: Mount the implant replica on the impression coping using the Prosthetic Screwdriver.
- Step 8: Insert the system impression replica-impresion coping into the impression previously taken.
- Step 9: Use the impression to create a model.

**In case there is the conical abutment inserted into the implant, the procedure to take a closed tray impression is the following:**

- Step 1: Place the impression coping closed tray on the conical abutment.
- Step 2: Apply impression material around the impression coping to surround it completely.
- Step 3: Fill the tray with impression material and take the impression directly in the mouth.
- Step 4: Once the material is cured, carefully remove the tray.
- Step 5: Take out the impression copings, mount the conical abutment replica into the impression previously taken.
- Step 6: Use the impression to create a model.

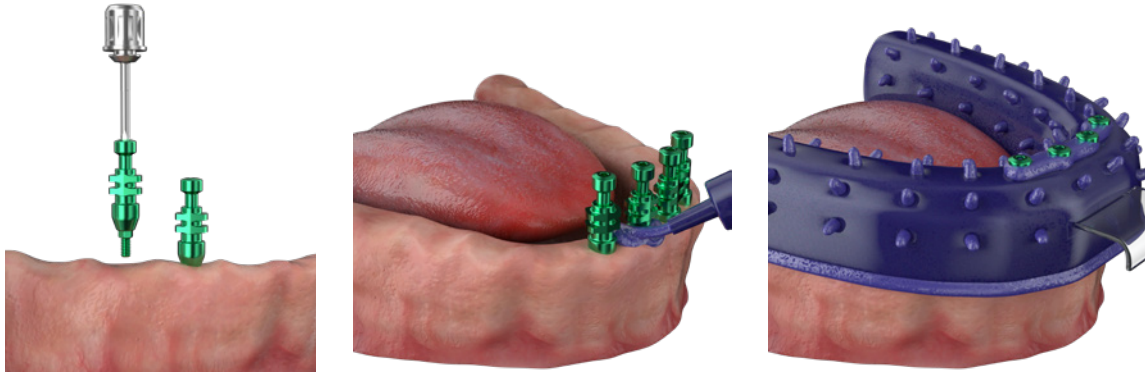


**Open tray impression techniques**

This technique is used for single unit restorations or multiple unit restorations where the implants are misaligned and the absence of parallelism would hinder the removal of a closed tray impression resulting in distortion of the impression.

- Step 1: Unscrew the healing cap using the prosthetic screwdriver.
- Step 2: Place the impression coping open tray into the implant and tighten the Impression Coping open Tray Screw using the prosthetic screwdriver.
- Step 3: Apply impression material around the impression coping to surround it completely.
- Step 4: Fill the tray with impression material and take the impression directly in the mouth. Ensure that you see all the tops of the impression copings emerging from the tray.
- Step 5: Remove Impression Coping Open Tray Screw using the prosthetic screwdriver.

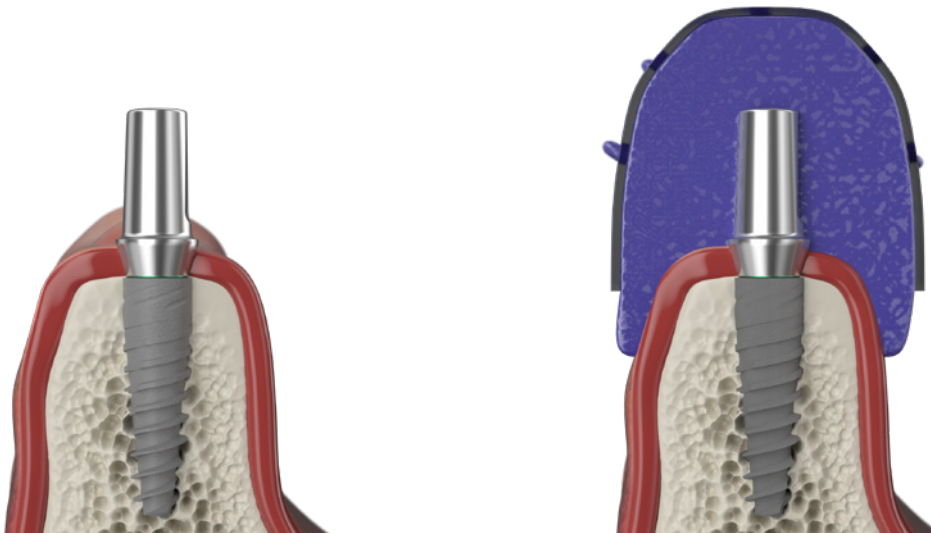
- Step 6: Once the material is cured, carefully remove the tray together with the impression coping open tray which remains inside the impression material.
- Step 7: Mount the implant replica on the impression coping using the Prosthetic Screwdriver.
- Step 8: Use the impression to create a model.



### **Conventional impression**

This technique is used when the dentist selects and modifies a definitive abutment to cement a single or multiple unit restorations (crown or bridge).

- Step 1: The abutment is placed to the implant, modified using conventional preparation methods directly in the mouth, using high speed handpiece with abundant irrigation.
- Step 2: Apply impression material around the abutment previously prepared to surround it completely.
- Step 3: Fill the tray with impression material and take the impression directly in the mouth (it is recommended to use the retraction cord).
- Step 4: Once the material is cured, carefully remove the tray.
- Step 5: Use the impression to create a model.



## TEMPORARY SOLUTIONS FOR DENTAL LABORATORIES

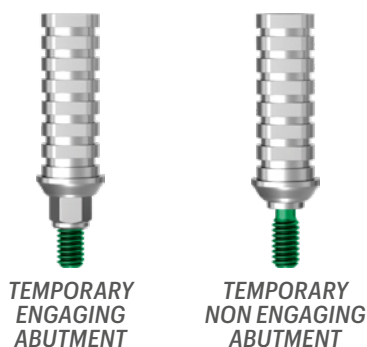
### Temporary Abutments

Temporary abutments are used to manufacture a cement-retained or screw-retained provisional restorations, in immediate function cases or to allow for the remodeling of soft tissue after a healing abutment has been used.

Temporary abutments engaging are indicated for screw-retained single-unit restorations and cemented-retained multiple-unit restorations.

Temporary abutments non-engaging are indicated for screw-retained multiple-unit restorations.

Temporary abutments are indicated for a duration of use of up to 180 days.



#### **How to use temporary abutments for cement-retained implant crowns and bridges.**

- Step 1: Make a master model with one or more implant replicas inserted inside.
- Step 2: Place and insert into the implant replica, the temporary engaging abutment.
- Step 3: Modify the temporary abutment in function of the current situation in the mouth of the patient, verifying the necessary occlusal space for the covering materials (do not reduce the abutment to less than 4 mm in height).
- Step 4: Realize the crown or bridge to be cemented using conventional methods.
- Step 5: Place the temporary abutment on the implant and tighten the prosthetic screw using the prosthetic screwdriver with a torque ranging from 15 to 30 Ncm. Cover the screw access channel of the abutment with cotton and sealing compound (i.e. gutta- to percha). This enables the dentist to remove later the abutment if a modification of the restoration is necessary.
- Step 6: Try the crown or bridge in the patient's mouth and, if necessary, modify it.
- Step 7: Fill the shell crown or bridge with temporary cement, and place it on the temporary abutment.
- Step 8: Remove any excess cement.

#### **How to use temporary abutments for screw-retained implant crowns and bridges.**

- Step 1: Make a master model with one or more implant replicas inserted inside.
- Step 2: Place and insert into the implant replica, the temporary engaging abutment.
- Step 3: Modify the temporary abutment in function of the current situation in the mouth of the patient, verifying the necessary occlusal space for the covering materials (do not reduce the abutment to less than 4 mm in height).
- Step 4: Temporarily seal the screw access channel of the abutment (e.g. with cotton).
- Step 5: Realize the crown or bridge using conventional methods, making an access hole to allow the insertion of the prosthetic screwdriver.
- Step 6: Fill the shell crown or bridge with temporary cement, and place it on the temporary abutment.
- Step 7: Remove any excess cement.

- Step 8: Place the abutment+ crown/bridge system on the implant and tighten the prosthetic screw using the prosthetic screwdriver with a torque ranging from 15 to 30 Ncm.
- Step 9: Where necessary, cover the access hole in the crown/bridge, with cotton and sealing compound (i.e. gutta-percha, composite). This enables the dentist to remove later the abutment if a modification of the restoration is necessary.

*Note: To verify the correct adaptation of the abutment to the implant it is necessary to perform an X-ray control*

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## CHAIRSIDE TEMPORARY RESTORATIONS

### GP Abutment

GP abutments are used to manufacture a cement-retained provisional single-unit or multiple-unit restorations, in Immediate function cases or to allow for the remodeling of soft tissue after a healing abutment has been used.



#### GP ABUTMENT

- Step 1: Make a master model with one or more implant replicas inserted inside.
  - Step 2: Place the GP abutment into the implant and tighten the prosthetic screw using the prosthetic screwdriver.
  - Step 3: Check the direction and the length of the GP abutment with respect to the adjacent teeth and/or implants, and check the necessary occlusal space for the covering materials.
  - Step 4: Remove the abutment unscrewing the prosthetic screw.
  - Step 5: Place the GP abutment on the implant replica in the master model and tighten the prosthetic screw using the prosthetic screwdriver.
  - Step 6: Modify the GP abutment in function of the current situation in the mouth of the patient, verifying the necessary occlusal space for the covering materials (do not reduce the abutment to less than 4 mm in height).
  - Step 7: Realize the crown or bridge to be cemented using conventional methods.
  - Step 8: Place the GP abutment on the implant and tighten the prosthetic screw using the prosthetic screwdriver with a torque of 30 Ncm. Cover the screw access channel of the abutment with cotton and sealing compound (i.e. gutta-percha). This enables the dentist to remove later the abutment if a modification of the restoration is necessary.
- Note: To verify the correct adaptation of the abutment to the implant it is necessary to perform an X-ray control*
- Step 9: Try the crown or bridge in the patient's mouth and, if necessary, modify it.
  - Step 10: Fill the shell crown or bridge with temporary cement, and place it on the temporary abutment.
  - Step 11: Remove any excess cement.

The GP abutment can be also used as a definitive abutment, following the same procedure described above, with definitive prosthesis (it is recommended to use the retraction cord).

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## FINAL ABUTMENT SELECTION

The selection of the final abutment is decisive for the result of the prosthesis to comply with the functional and esthetic requirements of the dentist and patient. The dentist can choose the abutment and subsequently send to the laboratory an impression taken at the abutment level, or can take a direct implant level impression and later communicate to the dental technician which abutment to use. For a proper selection of the final abutment, it is necessary to consider some aspects, such as:

- The type of restoration to be used: screw-retained or cement retained restorations
- The gingival height: to determine the correct height of the soft tissue, measure with a probe the depth of the latter around the implant. The selection of the abutment transgingival height will depend on the hygienic and the esthetic considerations of the dentist
- The interdental space
- The emergence profile
- The inclination of the implant: depending on the inclination of the system, it is chosen whether to use a straight or angled abutment

### **Type of provisional and definitive restorations**

JDentalCare implants are suitable for different treatment options:

- Implant-supported crown in case of single missing tooth
- Implant supported fixed bridge in case of several missing teeth
- Implant supported denture in case of all missing teeth
- Overdenture to be seated on ball attachments in case of all missing teeth

### **Implant restorations can be screw-retained or cement retained.**

#### ***Cement-retained prosthesis***

Cemented restorations are placed using the same conventional protocols that are used in the techniques of cemented crowns and bridges over natural teeth. The abutment is tightened into the implant and the prosthesis is cemented on it. The cement-retained restorations have the following advantages:

- Are preferred for esthetic applications, due to the absence of the screw access hole in the crown
- Are suitable for situations with angled implants
- Passive fit is easier to accomplish due to the cement layer between the abutment and reconstruction
- Ideal occlusal contact can be obtained and remains stable over a long period of time

The main disadvantage is the difficulty of removing excess cement, that was identified as a possible risk indicator for peri-implant diseases.

#### ***Screw-retained prosthesis***

A screwed-in prosthesis is affixed with screws through the occlusal part of the prosthesis. The screw goes through a hole made into the crown and goes into the abutment or into the implant. The prosthesis may be unscrewed at any time by the dentist. This hole is then covered with composite, to avoid seeing the screw in particular in aesthetic areas

The screw-retained restorations have the following advantages:

No need to use cement, with less risk of inflammation and infection

They simplify periodic cleaning of implants; simply remove the screw to remove the prosthesis and have access to the implant

The main disadvantage is that the hole in the crown may affect the aesthetics.

### Prosthesis types

#### Cement-retained single-unit or multiple-unit restorations



GP ABUTMENT



STRAIGHT OR ANGLED  
ANATOMICAL ABUTMENT



STRAIGHT ABUTMENT

#### Screw-retained restorations



CONICAL  
ABUTMENT



ANGLED CONICAL  
ABUTMENT

#### Bar-retained implant overdentures



CONICAL  
ABUTMENT



ANGLED CONICAL  
ABUTMENT



BALL  
ABUTMENT



EMI  
ABUTMENT

*Caution: Small diameter implants and angled abutment are not recommended for the insertion in the posterior regions of the mandible and the maxilla.*

## DEFINITIVE SOLUTIONS FOR CEMENT-RETAINED RESTORATIONS

### **Straight Abutment and Anatomic Abutment**

Straight abutments and Anatomic Abutments are used for cement-retained definitive single-unit or multiple-unit Restorations.



**STRAIGHT OR ANGLED  
ANATOMICAL ABUTMENT**

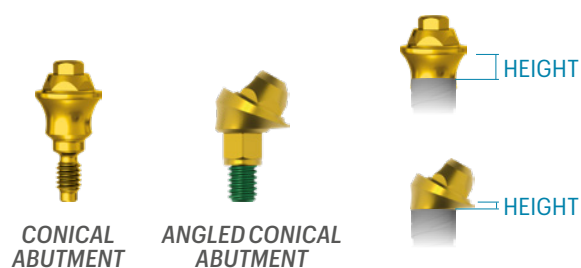
**STRAIGHT ABUTMENT**

- Step 1: Make a master model with one or more implant replicas inserted inside.
- Step 2: Place the straight/anatomical abutment into the implant and tighten the prosthetic screw using the prosthetic screwdriver.
- Step 3: Modify the straight/anatomical abutment in function of the current situation in the mouth of the patient, Verifying the necessary occlusal space for the covering materials. Do not reduce the abutment to less than 4 mm in height and do not modify wall thickness, diameter and angulation. Fabricate the prosthesis in the lab using all the steps conventionally required to fabricate a crown or a bridge on implant abutments with analog (lost-wax casting process) procedures.
- Step 4: Realize the crown or bridge to be cemented.
- Step 5: Place the straight/anatomic abutment on the implant and tighten the prosthetic screw using the prosthetic screwdriver. Cover the screw access channel of the abutment with cotton and sealing compound (i.e, gutta-percha). This enables the dentist to remove later the abutment if a modification of the restoration is necessary.
- Step 6: Try the crown or bridge in the patient's mouth and, if necessary, modify it.
- Step 7: Fill the shell crown or bridge with definitive cement, and place it on the abutment.
- Step 8: Remove any excess cement.

## DEFINITIVE SOLUTIONS FOR SCREW-RETAINED RESTORATIONS

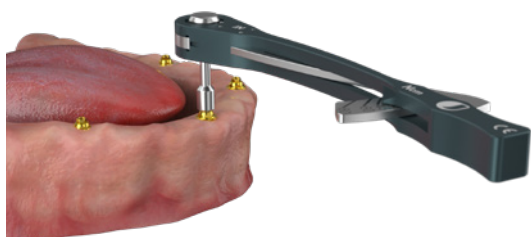
### Conical Abutment

The conical abutments are intended only for screw-retained definitive multi-units restorations, without the need to correct the inclination.



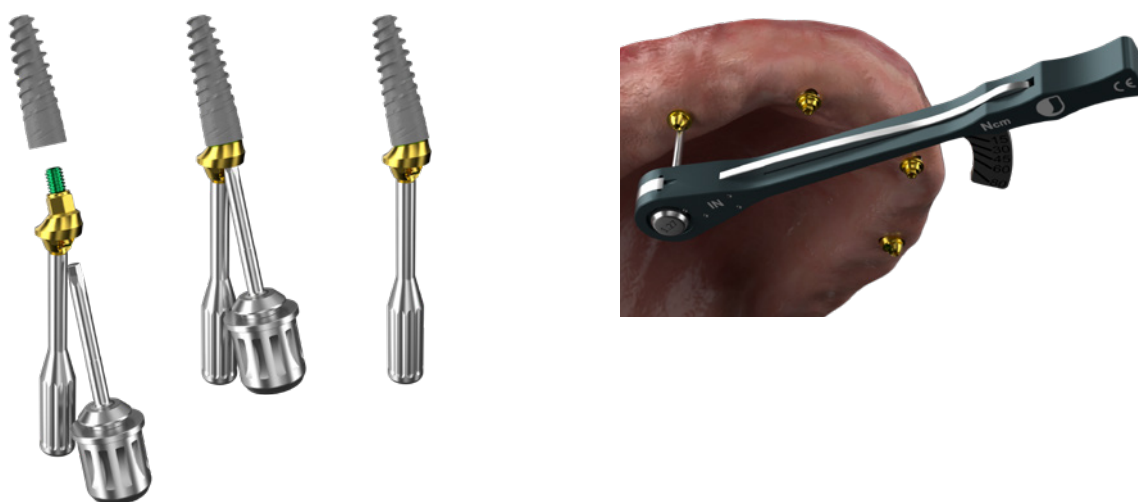
### How to use the straight conical abutment

- Step 1: Insert the conical abutment on the implant in the correct position using the plastic carrier that is supplied together. If the height of the transporter is too high, it can be cut.
- Step 1: Once in position the plastic carrier can be manually detached from the abutment.
- Step 1: Screw in the abutment using the conical abutment driver with a torque of 30 Ncm using the JD Torque dynamometric key or the screw driver connected to the handpiece.
- Step 1: Verify the correct seating of the abutment into the implant by using a radiographic imaging.



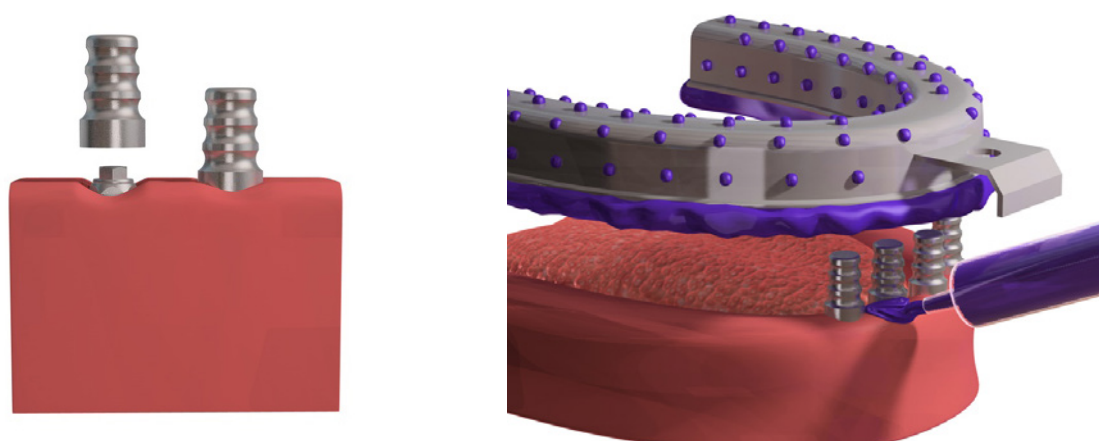
**How to use the angled conical abutment**

- Step 1: Insert the conical abutment on the implant in the correct position using the pre-assembled transporter that is supplied together. Take into account that various configurations for abutment positioning are possible.
- Step 2: Insert the screw supplied with the abutment and tighten by means of the prosthetic screwdriver, until an increase in resistance is noticed.
- Step 3: Screw in the abutment with a torque of 30 Ncm using the JD Torque dynamometric key or the screw driver connected to the handpiece.
- Step 4: Remove the transporter from the conical abutment.
- Step 5: Verify the correct seating of the abutment into the implant by using a radiographic imaging.



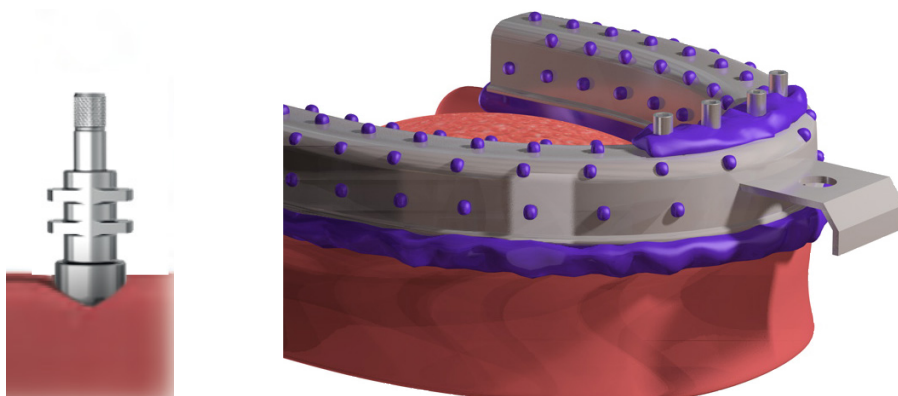
**Closed tray impression for conical abutment**

Place the impression copings on the conical abutments. Inject impression material and take the impression. Once the material is solid, remove the impression and take out the impression copings to attach the replicas and correctly reposition into the cast.



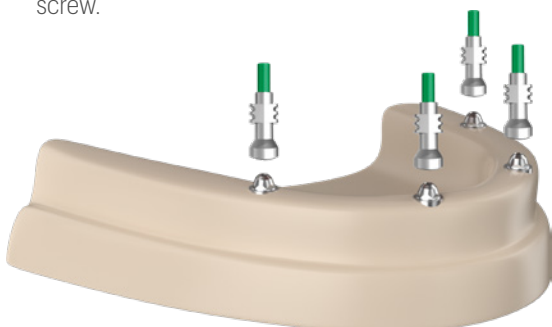
### **Open tray impression for conical abutment**

Place the impression copings on the conical abutments. Inject impression material around the impression copings and inside the impression tray. Position the tray in the mouth and ensure that you see all the guide screws of the impression copings emerge. Once the material is solid, unscrew the guide screw to withdraw the impression copings along with the impression.

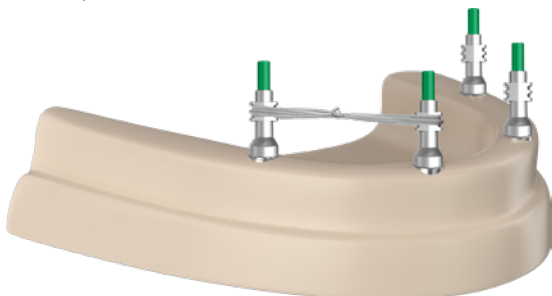


### **Laboratory procedure - fabrication of verification jig**

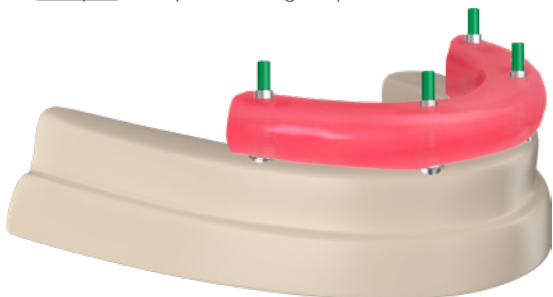
- Step 1: Place the impression copings open tray on the conical abutments replica and tighten with the prosthetic screw.



- Step 2: Use thin wire or dental floss to connect and secure impression copings each other.



- Step 3: Use quick-setting acrylic resin to secure the wire/floss between the impression copings.



- Step 4: After the resin had completely polymerized, remove the verification jig together with the impression copings.  
**Note:** All components must remain connected in the jig construction.



- Step 5: Send to the clinician the verification jig. The verification jig is then placed into the patient's mouth to verify the accuracy of the implants/abutments positions.
- Step 6: Once the jig verifies the accurate implant/abutments positions the lab can proceed by fabricating the final implant supported prosthesis with confidence.

### **Laboratory procedure - fabrication of final prosthesis**

- Step 1: Place the Temporary abutment Conical Abutment /GP Abutment for conical abutment on its replica, that was previously placed into the model.
- Step 2: Realize the bridge using conventional methods, making an access hole to allow the insertion of the prosthetic screwdriver.
- Step 3: Fill the bridge with definitive cement, and place it on the conical abutment (Temporary abutment Conical Abutment /GP Abutment for conical abutment).
- Step 4: Remove any excess cement.
- Step 5: Remove the abutment+bridge system from the conical abutment replica, place it on the implant and tighten the prosthetic screw.
- Step 6: Where necessary, cover the access hole in the crown/bridge, with cotton and sealing compound (i.e. gutta-percha, composite). This enables the dentist to remove later the abutment if a modification of the restoration is necessary.

The abutment shall be inserted with a torque of 15 Ncm using the prosthetic screwdriver+ JDTorque dynamometric key or with the screw driver connected to the handpiece.

**Note:** it is possible to make a provisional prosthesis on the conical abutments using the temporary cylinder for conical abutment.

### **Connection of the final prosthesis**

Connect the prosthesis to the conical abutments with the prosthetic screws. Starting from the central zone, adjust the other screws, alternating the left with the right side. Screw in the prosthetic screw at 15 Ncm using the JD Torque dynamometric key or the surgical engine connected to the screw driver. Cover the access channels of the screw with cotton and seal them with a temporary filling material (composite for example).



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## **DEFINITIVE SOLUTIONS FOR SCREW-RETAINED RESTORATIONS**

### **Octa Abutment**

The Octa abutments are intended only for screw-retained definitive multi-units restorations.



**OCTA  
ABUTMENT**

- Step 1: Insert the octa abutment on the implant in the correct position.
- Step 2: Insert the screw supplied with the abutment and tighten by means of the prosthetic screwdriver, until an increase in resistance is noticed.
- Step 3: Screw in the abutment with a torque ranging from 15 to 30 Ncm using using the dynamometric key JD Torque or the screw driver connected to the handpiece.
- Step 4: Verify the correct seating of the abutment into the implant by using a radiographic imaging.

In case of octa abutment, the procedures to take a closed and open tray impressions are described at page 37.

**Laboratory procedure for octa abutment**

- Step 1: Place the wax-up abutment for octa abutment on its replica, that was previously screwed into the impression.
- Step 2: Realize the temporary/ definitive bridge using conventional methods, making an access hole to allow the insertion of the prosthetic screwdriver.
- Step 3: Fill the bridge with temporary/definitive cement, and place it on the octa abutment.
- Step 4: Remove any excess cement.
- Step 5: Remove the abutment+ bridge system from the octa abutment replica, place it on the implant and tighten the prosthetic screw.
- Step 6: Where necessary, cover the access hole in the crown/bridge, with cotton and sealing compound (i.e. gutta-percha, composite). This enables the dentist to remove later the abutment if a modification of the restoration is necessary. The abutment shall be inserted with a torque ranging from 15 to 30 Ncm using the prosthetic screwdriver+ JDTorque dynamometric key or with the screw driver connected to the handpiece.

**Temporary Abutments for Octa Abutments**

Temporary Abutments for Octa Abutments are used for screw-retained provisional multiple-unit restorations. Temporary Abutments for Octa Abutments are indicated for a duration of use of up to 180 days.

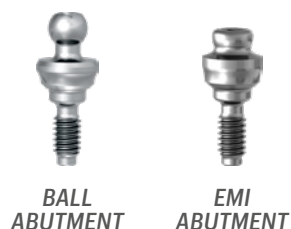
**How to use:**

- Step 1: After positioning the Octa Abutment, place the Temporary Abutment on it and tighten the Prosthetic Screw for Octa Abutment using the prosthetic screwdriver.
- Step 2: Check the direction and the length of the Temporary Abutment with respect to the adjacent teeth and/or implants, and check the necessary occlusal space for the covering materials.
- Step 3: Remove the Temporary Abutment unscrewing the prosthetic screws for octa abutment.
- Step 4: Place the Temporary Abutment on the Octa abutment replica in the master model and tighten the Prosthetic Screws for Octa Abutment using the prosthetic screwdriver.
- Step 5: If necessary, modify the Temporary Abutment in function of the current situation in the mouth of the patient, verifying the necessary occlusal space for the covering materials (do not reduce the abutments to less than 4 mm in height).
- Step 6: Realize the temporary/ definitive bridge using conventional methods.
- Step 7: Place the Temporary Abutment on the Octa abutment and tighten the prosthetic screws for Octa abutment using the prosthetic screwdriver. Cover the screw access channel of the abutments with cotton and sealing compound (i.e. gutta-percha). This enables the dentist to remove later the abutment if a modification of the restoration is necessary.
- Step 8: Try the temporary/definitive bridge in the patient's mouth and, if necessary, modify it, taking care to protect the abutment connection while making changes.
- Step 9: Fill the restoration with temporary/definitive cement, and place it on the Temporary Abutment for Octa abutment.
- Step 10: Remove any excess cement.

**Note:** *The Temporary abutment for Octa abutment shall be inserted with a torque of 15 Ncm using the prosthetic screwdriver+JDTorque dynamometric key or the screw driver connected to the handpiece.*

## DEFINITIVE SOLUTIONS FOR OVERDENTURE

### Ball Abutment and Emi Abutment



Ball Abutments and Emi abutments are used as anchoring system for overdentures.

- Step 1: Choose the ball abutment or the emi abutment with the appropriate height and connect it to the head of the implant using the prosthetic screwdriver.
- Step 2: After placement of the abutment, it is advisable to take a radiograph to check the position.
- Step 3: Take the impression with the conventional technique. When the material has hardened, it's possible to take out the impression and connect the ball abutment or the emi abutment replicas in the empty spaces left by the ball abutment or the emi abutment. Since the head is always the same for all implant platforms, there is only one replica for the emi and the ball abutment respectively.
- Step 4: Make a master model with the ball abutment or the emi abutment replicas inserted inside.
- Step 5: Block the abutment replicas and prepare an occlusal rim. Send to the dentist for interocclusal records.
- Step 6: Prepare the overdenture using the conventional technique.
- Step 7: Place the cap attachment, assembled on the elastic retentive cap, on the head of ball abutment or the emi abutment so that they are parallel to each other with respect to the horizontal and vertical planes.
- Step 8: Make the overdenture using the conventional technique, checking that the overall dimensions of the (ball or the emi) abutment and the cap attachment are completely included in the prosthesis.
- Step 9: Put the overdenture into place to test the retentive capacity of the caps and eventually to adjust the retentiveness.



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***INSTRUMENTS AND ACCESSORIES***

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## MANUAL CLEANING, DISINFECTION AND DRYING

The following instructions should be used for cleaning multiple-use medical devices supplied by JDentalCare including drills, surgical kits, temporary and final prosthetic components such as abutments and screws.

**1. Remove debris in lukewarm water and soak devices in cleaning solution.**

Remove residual tissue or bone debris by immersing the used instruments in lukewarm water (< 40°C / 104°F). Do not use fixation agents or hot water (> 40°C / 104°F) as this could influence subsequent cleaning results. Instruments should be kept in wet environment until next step is initiated. Soak the instruments in a cleaning solution prepared with lukewarm tap water. Soaking time not less than specified in the detergent manufacturer's instructions.

**2. Scrub devices with soft bristled nylon brush.**

Scrub the instruments with a soft bristled nylon brush until all visible soil and/or debris is removed. Pay particular attention to features that may be shielded from the brushing action.

**3. Soak in ultrasonic bath.**

Prepare an ultrasonic bath with cleaning solution at the concentration and temperature specified in the detergent manufacturer's instructions. Immerse the device completely and activate the bath for at least the time specified in the detergent manufacturer's instructions.

**4. Rinse with purified or sterile water.**

Rinse for at least 1 minute with freshly prepared purified water or sterile water until traces of cleaning solution are removed.

**5. Soak in disinfection solution.**

Prepare a bath with a disinfection solution at the concentration and temperature specified in the detergent manufacturer's instruction. Immerse the device completely for at least the time specified in the detergent manufacturer's instructions.

**6. Rinse with purified or sterile water.**

Rinse for at least 1 minute with freshly prepared purified water or sterile water until traces of cleaning solution are removed.

**7. Dry with compressed air or wipes.**

Dry the devices using medical compressed air and clean lint-free single-use wipes.



**JDENTALCARE**

*just smile*

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