

Dental Implant
JDNOW[®]





CE 0123

Security and exceptional product features: this is the goal of JDentalCare® when the time comes to satisfy both clinician and patient. To ensure that you receive the maximum standard of quality, JDentalCare®, in addition to strictly adhering to regulatory specifications, works on the basis of operative protocols elaborated in function of the type of product manufactured and its final use.

The basic characteristics common to all JDentalCare® products are the following:

- Use of certified raw materials.
- Production process with the highest quality numerical control machinery.
- Qualified personnel monitoring the complete productive process.
- Exhaustive quality control (100% of critical level) in a metrological room with instrumentation regularly approved by the SIT (Italian Calibration Service).
- Assembly in white room.

Using the most advanced technology, JDentalCare® exercises minute control over the surface cleaning of the dental implants. The "Checksurface" makes it possible to verify with great precision the morphological state of the surface, picking up possible alterations. Surface contamination control is carried out with a SEM system.

The Quality System of JDentalCare® is certified under the norm EN ISO 13485.
The dental implants and surgical material class II A are certified by TÜV Product Service CE0123.

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GENERAL INFORMATIONS

Read this manual carefully before starting treatment.

This manual must be used as a reference guide by the doctor so as to optimise the use of the implants, surgical instruments, and the prosthetic components of the system.

The exclusive design of JDentalCare® products allows the safe insertion of implants into the mandible or maxillary bone, fully or partially toothless, to affix a removable or permanent prosthesis. The exclusive JDentalCare® system uses proven surgical procedures for the affixing of implants in bone tissue, with optimal osseointegration. The prosthetic procedures described in this manual represent the latest advances in the field, ensuring the best esthetics and functionality.

The success of an implant system, however, depends on the correct use of its instruments and components. This manual is merely complementary to the training and experience of the professional.

Before starting with a new treatment method it is recommended to inform oneself thoroughly on the techniques and procedures to use. To this end, our company offers a consulting service by our experts, who are available at your disposition, as well as a large variety of training courses for all levels.

For further information please visit: **www.jdentalcare.com**.

JDNOW®

one-piece dental implant

Pg.3



JDNOW® CONCEPT

JDNow® concept

JDNow®, A NEW IMPLANT PHILOSOPHY IS BORN

JDentalCare® develops and manufactures innovative dental implant systems working with universities and research institutes.

JDentalCare® solutions are designed to facilitate:

- immediate loading
- optimal aesthetic
- patient comfort

JDentalCare® is able to offer a dental implant system developed:

- to provide a surgical and prosthetic protocol valid and easy to use
- to ensure that patients leave the treatment room satisfied, comfortable, with immediate aesthetic and function, and a renewed quality of life
- to help your practice run more smoothly, efficiently, and profitably



This manual is designed to provide important informations regarding treatments, procedures and options for the solution based on the JDNow® implant system.

For abstracts and study references, and more information, please visit our website:
www.jdentalcare.com

JDNOW®: EFFECTIVE, SIMPLE, ADAPTABLE

- Universal dental implant indicated for both single and multiple sites throughout the entire mouth.
- One-piece implant, machined from a single piece of titanium commercially pure, comprising a threaded implant body and a integral abutment in a single component.
- Tapered design mimics the tooth root leading to easy surgical procedure and greater respect of the anatomy of the alveolar bone.
- Optimized design of the thread to increase the bone-implant contact area and the primary stability.
- One stage transgingival placement.
- Specially designed to allow immediate loading.
- Possibility of having an abutment already prepared for optimal aesthetic, or straight to allow implant placement easier.



JDNOW®
Ø3x14 mm



JDNOW®
Ø4,2x14 mm



JDNOW® shoulder
Ø4,2x14 mm

One-piece implant JDNOW® allows:

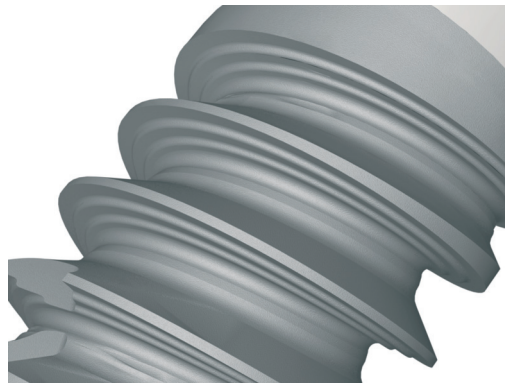
- Flapless surgery provides less discomfort for the patient, a lower trauma of the marginal bone, a reduction of working time for dentist.
- Less crestal bone resorption compared to two-piece implants because of the absence of inflammation that is localized at the interface of the fixture-abutment connection.
- The one-piece implant design eliminates the need for placing prosthetic components and makes it possible to avoid manipulation of the soft tissue portion after initial healing.
- The implant can be provided with a provisional restoration immediately after insertion, allowing for the mucosal epithelium and the connective tissue adhesion to form coronal to the alveolar crest to guide the aesthetics of soft tissue.
- Maximum strength and stability.

Dental implant design

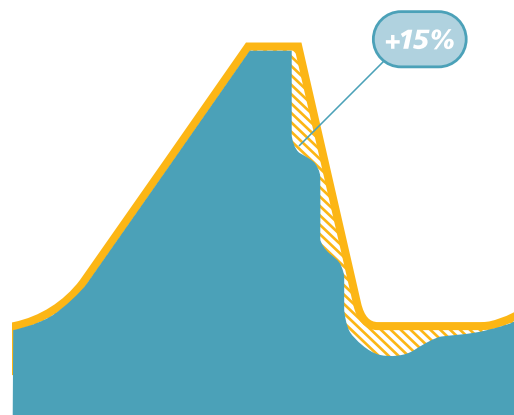
The JDNow® implant thread is more aggressive compared with the standard thread of two-piece implants: this choice has been guided by the necessity to obtain a great primary stability to allow immediate function.



- The increased coil depth allows the implant to anchor in a very effective way even in soft bone.
- The increased friction associated with the increased coil depth is well balanced by the increasing of pitch compared with traditional implants: for this reason the implant keeps a high insertion easiness.
- The coils inclination angle is 45°: this angle represents the best compromise between the coils robustness and the minimum insertion friction.
- The two principles thread guarantees a perfectly centred screwing down with respect to the implant site.

JDNow® presents the exclusive design JDShape®, characterized by the presence of little steps on the low side of the thread and incisions on the implant body in which blood gathers, promoting the precocious formation of bone tissue and a faster osseointegration. The presence of steps on the thread brings a 15% increase of the contact surface between implant and bone, with consequent high increase of implant stability.



*patent pending

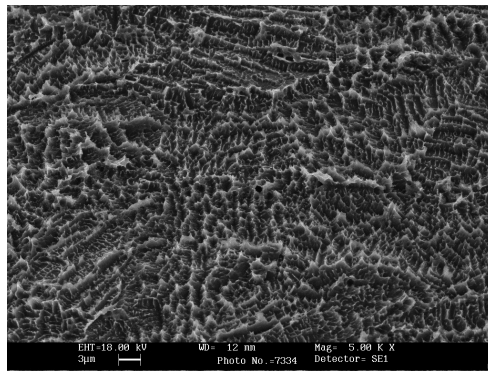
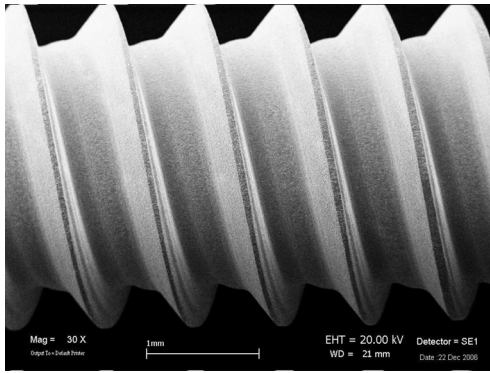


 Traditional implant thread design
 JDShape* design: 15% more bone contact surface

The Surface

The osseoconductive micro-roughness surface of the JDNow® implant is provided with a chemical treatment, obtained by a double acid attack. This technology provides an implant surface microtexture which allows fibrin retention and increases blood cells activity, particularly the activation of platelets and leucocytes, to speed up osteogenesis.

The acid-etching process was also optimized to create a hydrophilic surface which is known to accelerate the healing process by promoting the activity of osteoblasts, the bone-forming cells that play a key role in the integration of implants into bone.

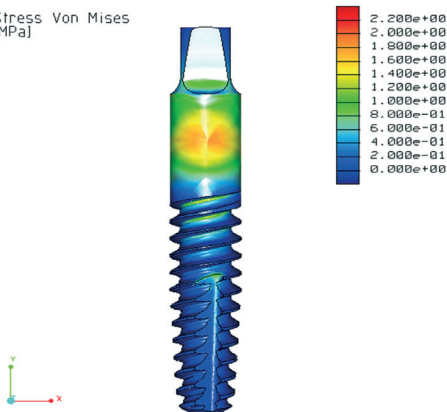


Research and development

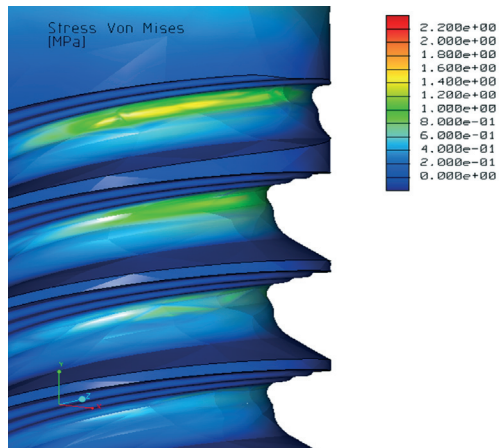
JDentalCare® has designed all the components of JDNow® implant system giving particular attention on its effectiveness and complete reliability. For this reason our R&D team is supplied with the most recent software CAD 3D and with the most advanced structural simulation codes. In the development phase our products are studied with the finite elements analysis FEM in order to optimize the design and to reduce risks.

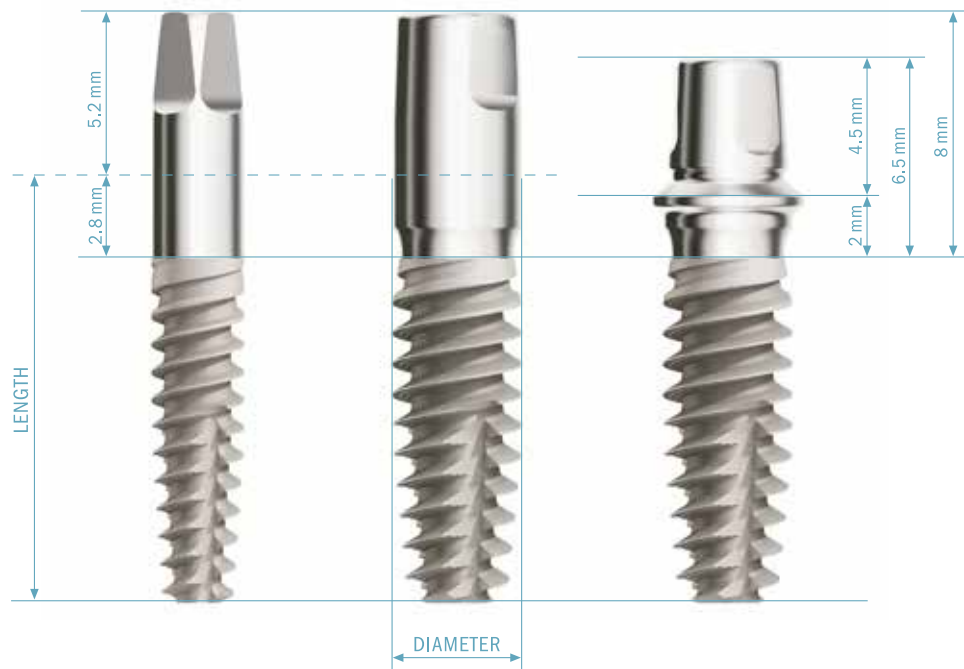
In particular the implant JDNow® was conceived to resist especially to lateral loads, the most critical for this type of medical devices. Its innovative design that make it different from the traditional two-piece implants, increases the resistant section along all the implant body allowing a global relax of its tensional state and a less risk of failure.

Stress Von Mises [MPa]



Stress Von Mises [MPa]





Diameters and lengths

To make easier the treatment planning, the dental implants JDNow® are divided in different diameters identified by a colour code.

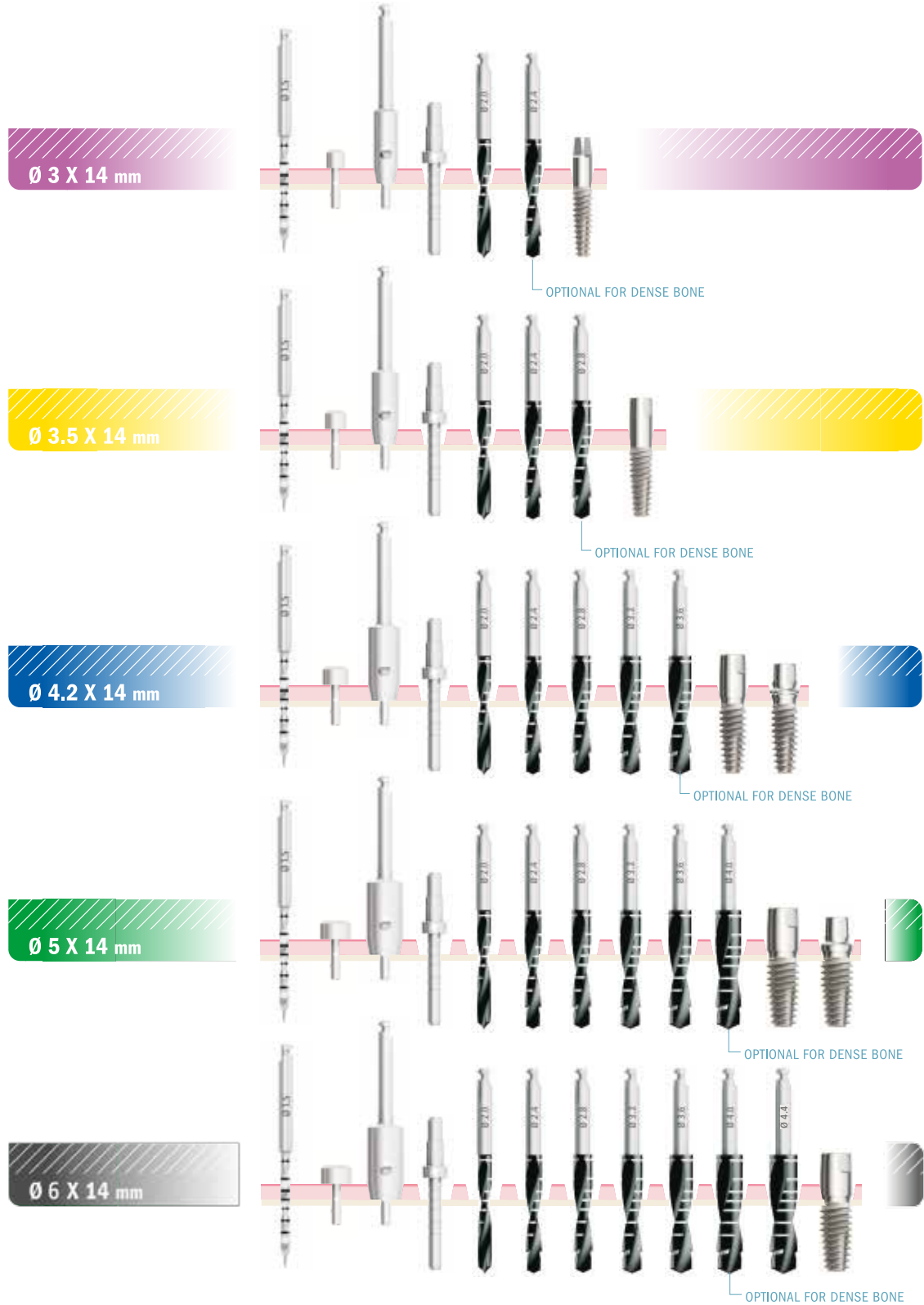
The available lengths for every diameter are shown in the following table:

| | | | | | |
|--|-------|-------|-------|-------|-------|
|  Ø 3.0 | 12 mm | 14 mm | 16 mm | 18 mm | |
|  Ø 3.5 | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm |
|  Ø 3.5 shoulder | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm |
|  Ø 4.2 | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm |
|  Ø 4.2 shoulder | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm |
|  Ø 5.0 | 10 mm | 12 mm | 14 mm | 16 mm | |
|  Ø 5.0 shoulder | 10 mm | 12 mm | 14 mm | 16 mm | |
|  Ø 6.0 | 10 mm | 12 mm | 14 mm | 16 mm | |
|  Ø 6.0 shoulder | 10 mm | 12 mm | 14 mm | 16 mm | |



SURGICAL PROCEDURE

JDNOW®, PRODUCTS REFERENCE LINE

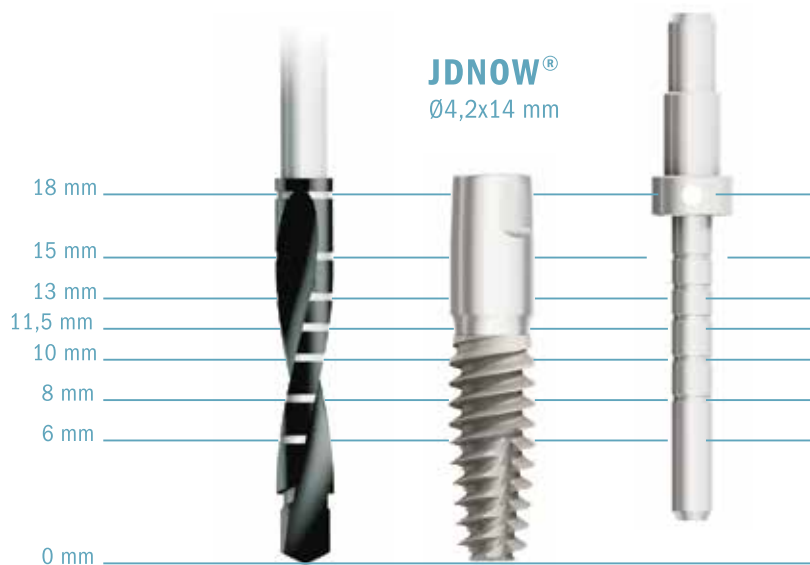


Drilling sequence

It is recommended to adhere to the indications of the following drilling sequence to ensure optimal primary stability of the implant.

| IMPLANT DIAMETER | SOFT BONE TYPE IV | MEDIUM BONE TYPE II-III | DENSE BONE TYPE I |
|------------------|---------------------------------|--|---|
| Ø 3,0 | 2.0 | 2.0 | 2.0 2.4 |
| Ø 3,5 | 2.0 2.4 | 2.0 2.4 (2.8) | 2.0 2.4 2.8 |
| Ø 4,2 | 2.0 2.4 2.8 | 2.0 2.4 2.8 3.2 | 2.0 2.4 2.8 3.2 (3.6) |
| Ø 5,0 | 2.0 2.4 2.8 3.2 | 2.0 2.4 2.8 3.2 3.6 | 2.0 2.4 2.8 3.2 3.6 4.0 |
| Ø 6,0 | 2.0 2.4 2.8 3.2 3.6 | 2.0 2.4 2.8 3.2 3.6 4.0 | 2.0 2.4 2.8 3.2 3.6 4.0 4.4 |

Note: All dimensions are in millimeters.



Surgical procedure

You can choose flapless surgical procedure when there is an adequate thickness of the soft tissue and alveolar bone.

Flap is reflected when it is necessary to observe the alveolar bone and the surrounding anatomic structures during drilling procedure and/or place connective/bone tissue grafts or membranes.

Important: Visual inspection as well as periapical radiographs are essential to determine anatomical landmarks, occlusal conditions, periodontal status and adequacy of bone. It is strongly suggested TAC dentascan to provide a real evaluation of dimensions and quality of bone.

Precision drill

Drill directly through the gingival tissue and into the alveolar crest with the Precision Drill Ø 1.5 mm.

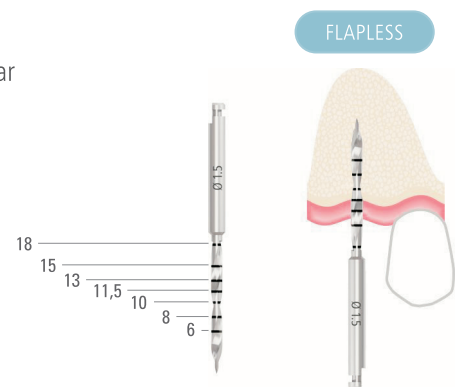
The drill has to be inserted until the notch correspondent to the length of the chosen implant.

The Precision Drill has an aggressive geometry of cut for being effective also in presence of dense cortical bone.

Pay attention to not over-prepare the osteotomy to one greater depth of that one wished.



Maximum Speed
1500 rpm.



Tissue punch

Insert the Tissue Punch Guide correspondent to the diameter of the chosen implant into the pilot hole Ø 1.5 mm.

Insert the Tissue Punch into the contra-angle head and place the punch over the Tissue Punch Guide. Cut through the soft tissue down to the crest of the ridge.

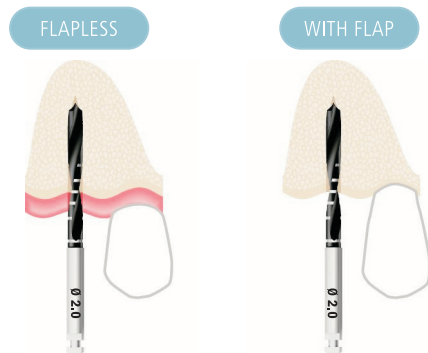


Maximum Speed
800 rpm.

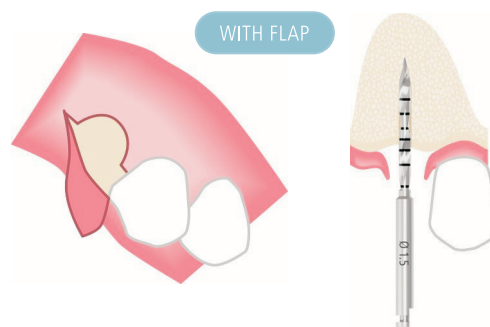


Drill ø 2

To continue preparing the surface use the ø2.0 drill.

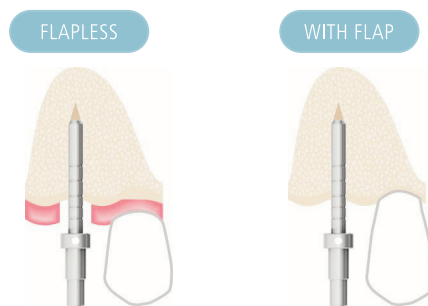


When you use a flap approach to check bone anatomy, you should make an incision in the center of the ridge and reflect the soft tissue to have access to the alveolar crest.



Direction indicator

Verify position and angulation with the direction indicator. A radiograph may be taken to evaluate the osteotomy's proximity to adjacent anatomic structures. If necessary, correct the preparation of the site. The tissue thickness can be measured using the 1mm notches on the body of the direction indicator.

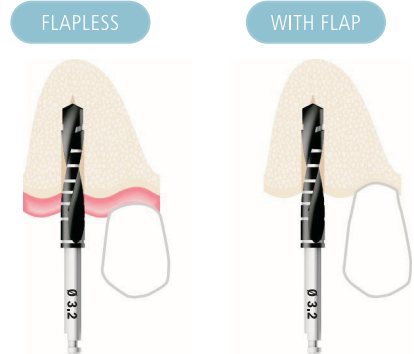


Drilling procedure

JDNow® Surgical Tray drills must be used with irrigation to not overheat bone. Do not continue drilling if irrigation is not flowing. When drilling with depth drills, use an in-and-out motion without overload. If a drill becomes plugged, remove the drill from the handpiece and clean it. Proceed with the drilling until the desired depth reference line is reached. In situations where the adjacent natural teeth would interfere with the head of the contrangle and prevent the drill from reaching the desired depth, a drill extension may be used

Important: The Precision Drill is a single-use drill and it must be used for a single surgical procedure. Other drills must be substituted after 20-30 uses or when cutting efficiency declines.

After determining the implant position and angulation with the Precision Drill, continue with the recommended drilling procedure to a suitable depth to enlarge the implant site. In dense bone the osteotomy should be completed with the drill correspondent to the immediately successive diameter regarding that one of the implant that is chosen to insert.



Precaution:

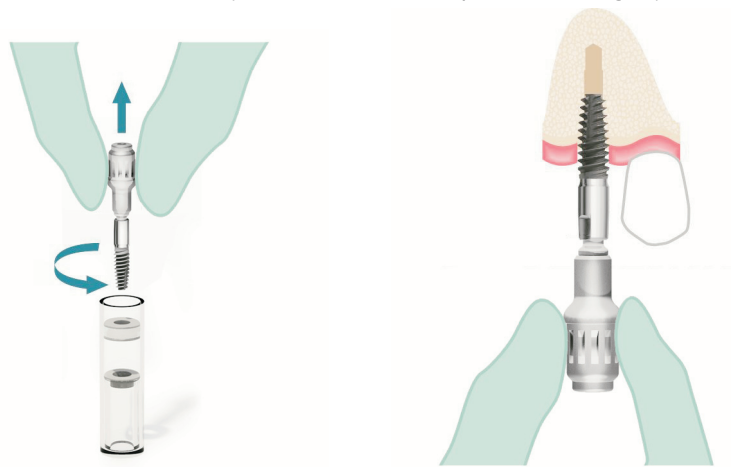
Bone anatomy may limit the opportunity to achieve the ideal alignment of the implant. Actual implant alignment should be within 10° of the ideal alignment to allow for proper preparation of the abutment.

Implant placement

On the package implant diameter, associated to a colour code, and length are indicated.



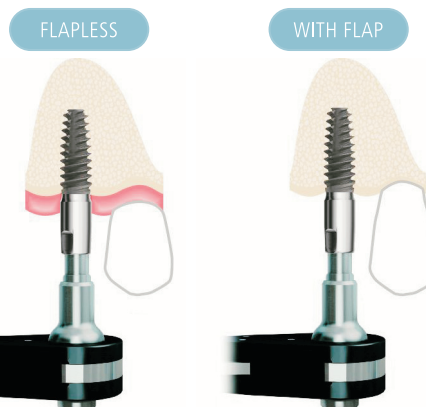
Remove the implant from the sterile package with the surgical adaptor mounted on the JDNow® implant driver and install the implant in the osteotomy until reaching a provisional position.



Connect the surgical adaptor mounted on the JDNOW® implant driver to the JDTorque® wrench.



Place the implant to its final depth with an adequate insertion torque.



Slowly insert the implant in the effectuated osteotomy. (25 rotations/minute)

 Maximum Velocity
25 rpm.



After installation, the implant should be sufficiently stable to withstand a final tightening torque of 45-50 Ncm in soft bone, 70-80 Ncm in dense bone without further rotation. If insufficient stability is attained for the immediate loading do not load the implant. The excessive serration of the implant can compress the surrounding bone, until determining bone necrosis. If the implant does not catch up the desired depth with a torque of 80 Ncm in dense bone, remove the implant (keep it in a sterile container) and complete the osteotomy with the drill correspondent to the immediately successive diameter regarding the last one used. Therefore re-insert the implant in the new site from the sterile container.

Closure (flap technique)
Use a conventional suture to secure the flap.



Implant placement immediately after extraction

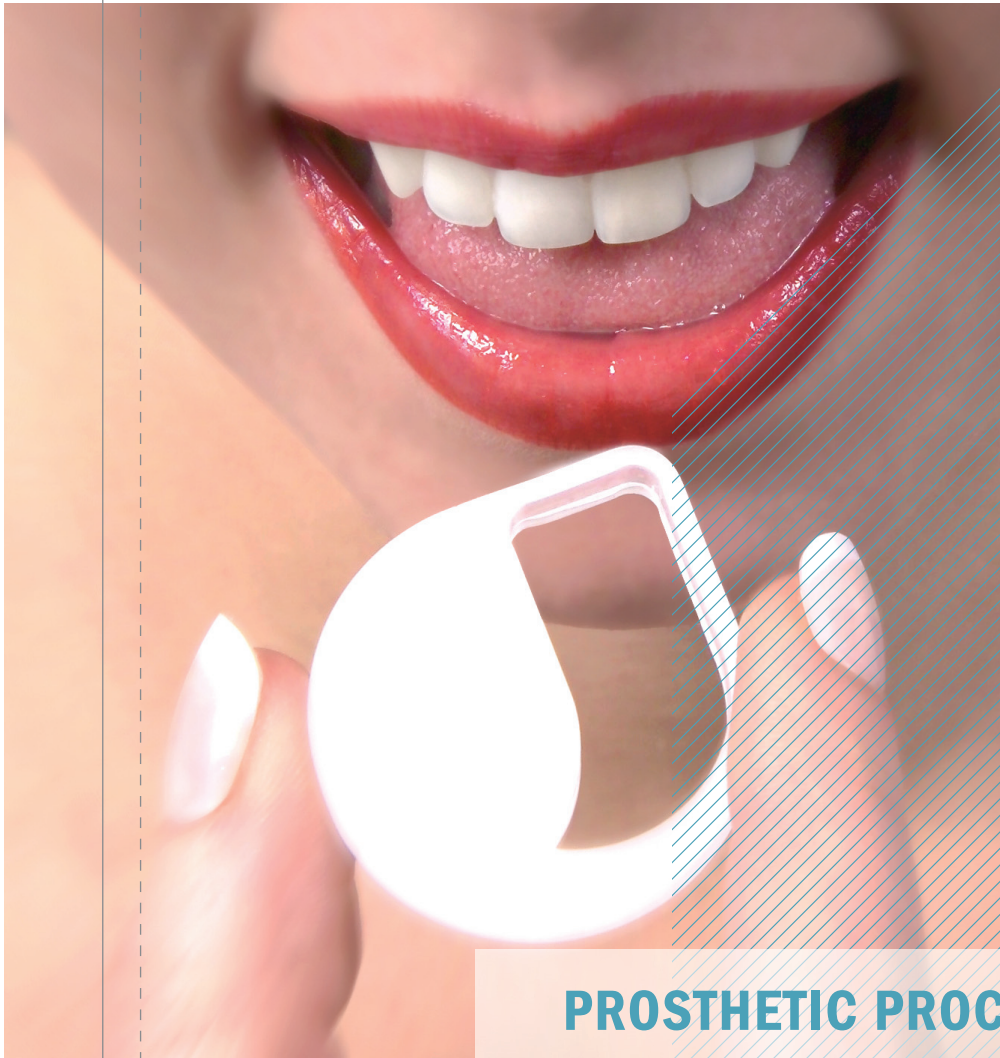
The insertion of implants in fresh extraction sockets is considered a safe and predictable procedure. The advantages of the immediate post-extraction implants are:

- allow for fewer surgical sessions
- reduce the length and the costs of treatment and improve overall patient acceptance
- shorten the edentulous time period
- possibly maintain alveolar bone dimension
- allow for a better aesthetic of the soft tissues

To correctly provide the immediate loading procedure with post extractive implants it is necessary to follow these criteria:

1. Gently extract, when possible keep the labial bone plate intact.
2. Correct preparation of the implant site
3. Use drills at lower speed to not overheat bone tissue
4. Under-preparation of surgical site for self tapping implant
5. Implant anchorage to exceed alveolar bone depth and create a new implant site
6. Use conical-cylindrical implant self-threading
7. Adequate insertion torque
8. Initial primary stability of implant
9. Occlusal loads controlled in the immediate provisional restoration

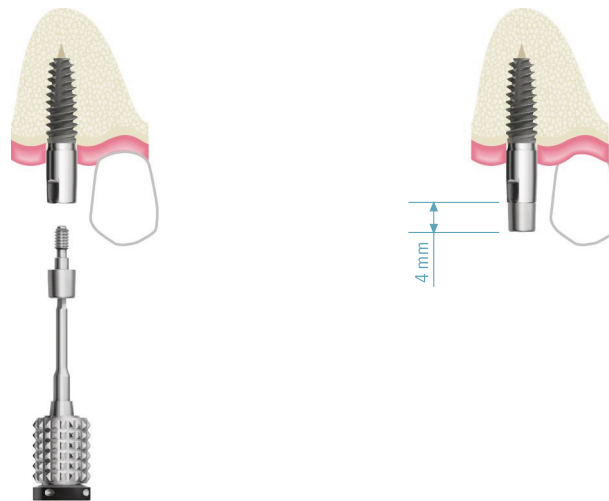




PROSTHETIC PROCEDURE

Extension abutment

After inserting the implant into position you can, if necessary, increase the retention of the abutment. Screw the Extension abutment to the implant.



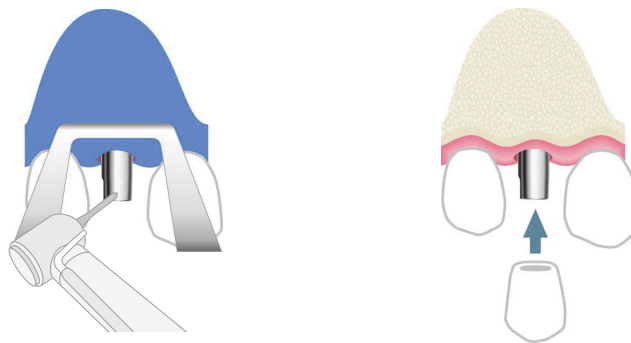
The temporary crown

Follow standard procedures for bridges and crowns.

If alteration of the abutment is required to place the temporary crown on the same day of the surgery, the soft tissue surgical site need to be protected. Place a rubber dam using a lower anterior-size rubber dam clasp. Block out the hole in the top of the implant using the block-out material of choice. When altering the abutment portion for a temporary crown use special carbide burs or diamond burs with high-speed and copious irrigation (do not reduce the abutment to less than 4mm in height).

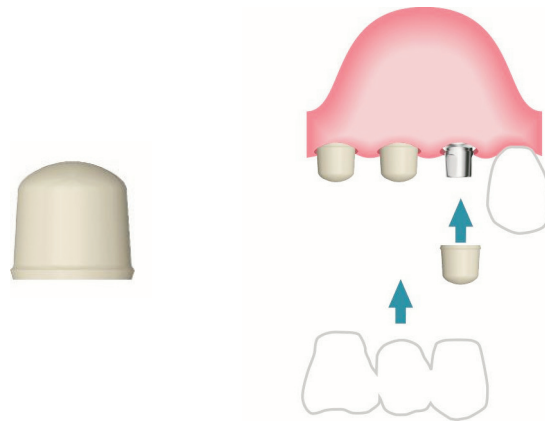
As for crown & bridge, temporization may be performed in many different ways, from the use of a standard acrylic tooth, adjusted at chairside, to a lab-made temporary tooth. It is important to have a smooth contour of the provisional tooth to avoid irritating the soft tissue.

Place a temporary acrylic restoration onto the implant(s). Care should be taken not to contaminate the wound with cement which could obstruct the healing of the soft tissues.



Only in case you choose JDNow® shoulder:

Use the plastic healing cap for a correct closure of the cervical margin of the temporary crown. Place the healing cap onto the implant(s). Use a standard acrylic tooth, adjusted at chairside, or a lab-made temporary tooth.



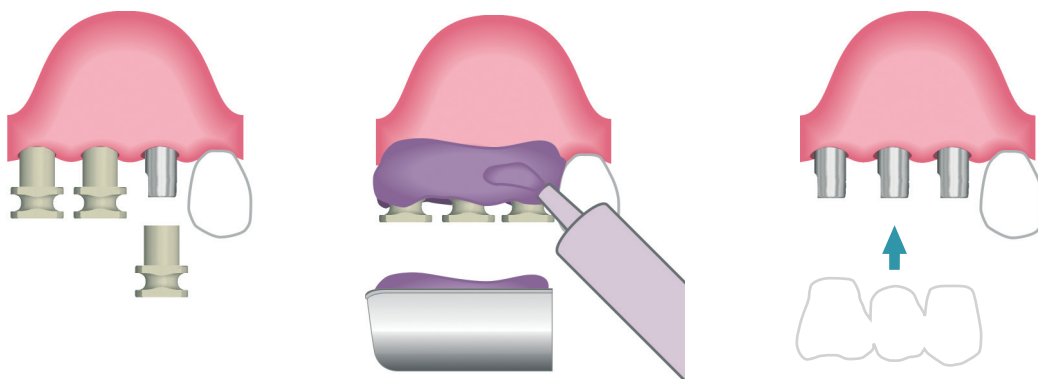
Final restoration

The final restoration can be made after sufficient osseous bone healing and soft tissue maturation.

Guidelines for the impression of JDNow® shoulder:

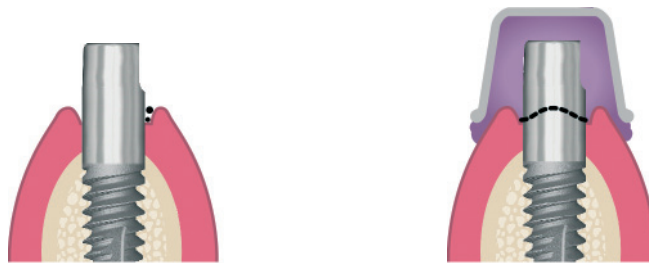
- Remove temporization
- Take off the block-out material from the hole at the top of the implant
- Apply light pressure on the impression coping to insert it into the implant
- Take the impression (use impression materials like polyetere or vinyl polysiloxane)

If the abutment was modified, do not use the impression coping and take a conventional crown and bridge impression.



Guidelines for the impression of JDNow® with straight abutment:

- Use the double retraction cord technique
- Place 0.5mm retraction cord 360° all around the implant
- Place 0.7-1mm retraction cord at the gingival margin 360° all around the implant
- Wait 5 minutes and remove the bigger retraction cord
- Take the impression (use impression materials like polyetere or vinyl polysiloxane)
- Remove the smaller retraction cord





INSTRUMENTS AND ACCESSORIES

JDENTALCARE Surgical Kit

The JDentalCare® surgical kit contains all the surgical components and accessories for the JDentalCare® system, and it is elaborated to optimise the use and access to the instruments as well as to guarantee an optimal sterilisation process.

Instruments, normally positioned horizontally and affixed in rotary cylinders, can be raised simply by rotating the aforementioned cylinders. To the side of the emplacement of each instrument, there is a description of the latter to ensure correct identification.

The surgical Kit is entirely made in anodised aluminium which makes it possible for it to endure multiple repetition cycles in the autoclave without losing any of its properties.



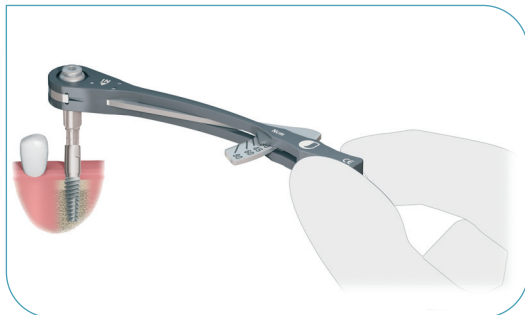
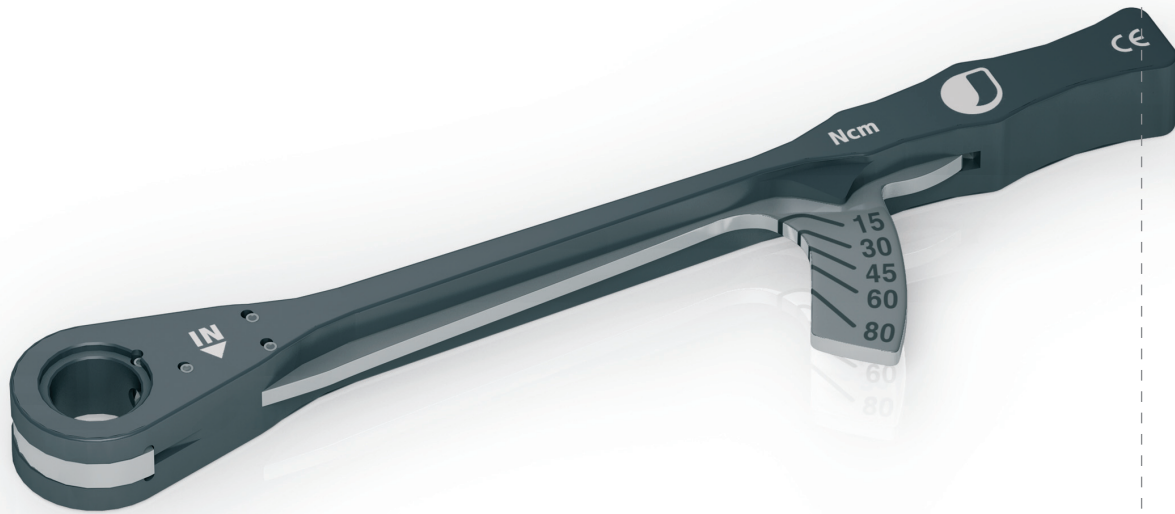
JD Torque®

The patented design dynamometric JD Torque® key has been planned and developed for surgical and prosthetic use. The instrument can be used as a dynamometric or fixed key.

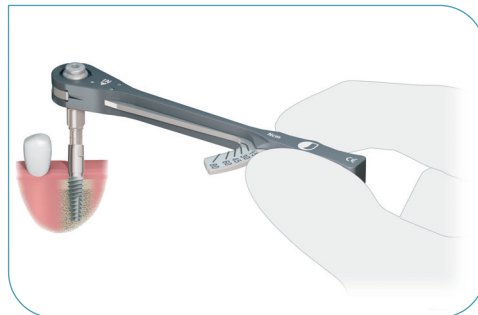
The great mechanical resistance together with the high elasticity of the PEEK™ polymer allows the JD Torque® dynamometric key to take measurements down to 80Ncm, an absolute innovation for this type of instrument.

On the other hand this material is extremely light compared to metals and can be subjected to sterilisation in autoclaves with temperatures up to 134°C without altering its mechanical characteristics.

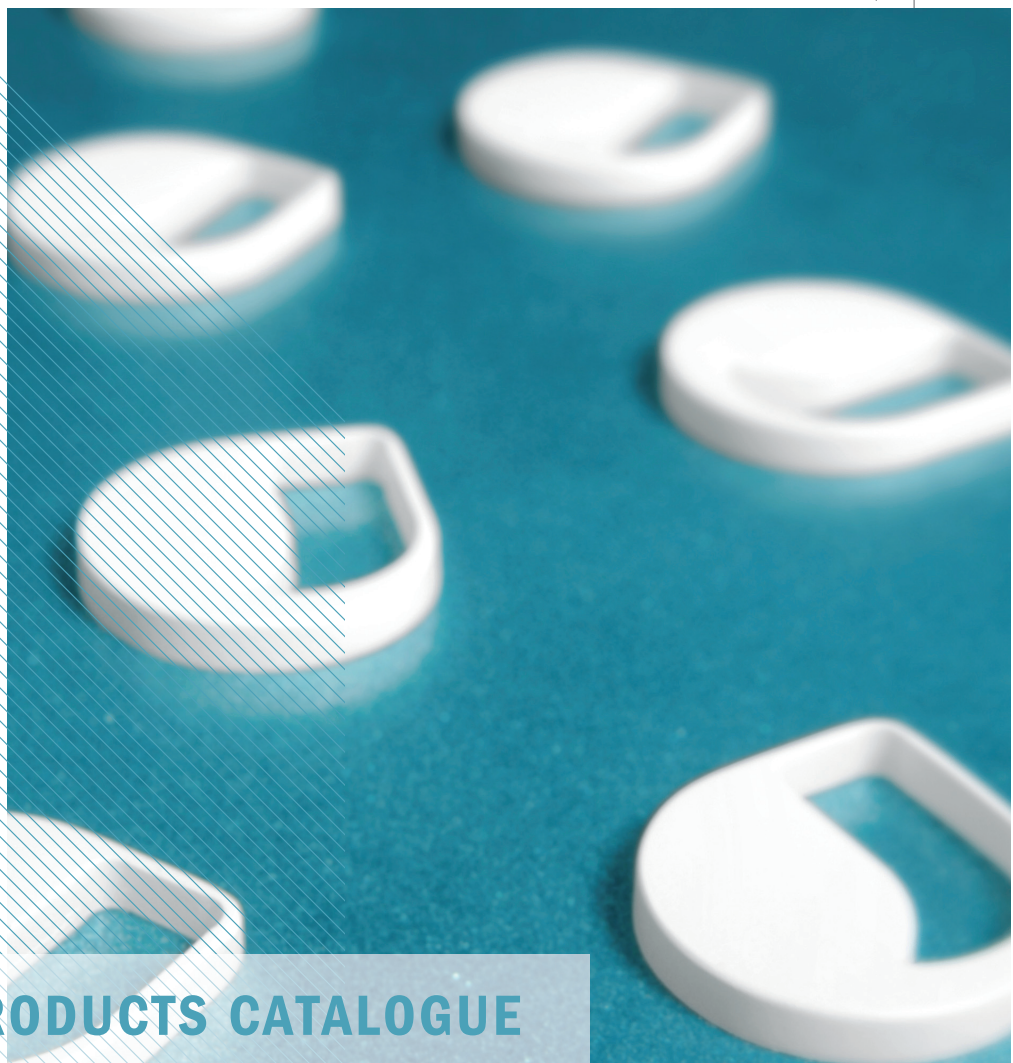
Design, functionality, practicality, and light weight make this instrument unique in its category.



Use of JD Torque® as dynamometric key



Use of JD Torque® as fixed key



PRODUCTS CATALOGUE

Implants:

| | |
|-----------|--------------------|
| JDN3012TI | JDNow® 3.0 x 12 mm |
| JDN3014TI | JDNow® 3.0 x 14 mm |
| JDN3016TI | JDNow® 3.0 x 16 mm |
| JDN3018TI | JDNow® 3.0 x 18 mm |
| JDN3510TI | JDNow® 3.5 x 10 mm |
| JDN3512TI | JDNow® 3.5 x 12 mm |
| JDN3514TI | JDNow® 3.5 x 14 mm |
| JDN3516TI | JDNow® 3.5 x 16 mm |
| JDN3518TI | JDNow® 3.5 x 18 mm |
| JDN4210TI | JDNow® 4.2 x 10 mm |
| JDN4212TI | JDNow® 4.2 x 12 mm |
| JDN4214TI | JDNow® 4.2 x 14 mm |
| JDN4216TI | JDNow® 4.2 x 16 mm |
| JDN4218TI | JDNow® 4.2 x 18 mm |
| JDN5010TI | JDNow® 5.0 x 10 mm |
| JDN5012TI | JDNow® 5.0 x 12 mm |
| JDN5014TI | JDNow® 5.0 x 14 mm |
| JDN5016TI | JDNow® 5.0 x 16 mm |
| JDN6010TI | JDNow® 6.0 x 10 mm |
| JDN6012TI | JDNow® 6.0 x 12 mm |
| JDN6014TI | JDNow® 6.0 x 14 mm |
| JDN6016TI | JDNow® 6.0 x 16 mm |



| | |
|------------|-----------------------------|
| JDN3510TIS | JDNow® shoulder 3.5 x 10 mm |
| JDN3512TIS | JDNow® shoulder 3.5 x 12 mm |
| JDN3514TIS | JDNow® shoulder 3.5 x 14 mm |
| JDN3516TIS | JDNow® shoulder 3.5 x 16 mm |
| JDN3518TIS | JDNow® shoulder 3.5 x 18 mm |
| JDN4210TIS | JDNow® shoulder 4.2 x 10 mm |
| JDN4212TIS | JDNow® shoulder 4.2 x 12 mm |
| JDN4214TIS | JDNow® shoulder 4.2 x 14 mm |
| JDN4216TIS | JDNow® shoulder 4.2 x 16 mm |
| JDN4218TIS | JDNow® shoulder 4.2 x 18 mm |
| JDN5010TIS | JDNow® shoulder 5.0 x 10 mm |
| JDN5012TIS | JDNow® shoulder 5.0 x 12 mm |
| JDN5014TIS | JDNow® shoulder 5.0 x 14 mm |
| JDN5016TIS | JDNow® shoulder 5.0 x 16 mm |
| JDN6010TIS | JDNow® shoulder 6.0 x 10 mm |
| JDN6012TIS | JDNow® shoulder 6.0 x 12 mm |
| JDN6014TIS | JDNow® shoulder 6.0 x 14 mm |
| JDN6016TIS | JDNow® shoulder 6.0 x 16 mm |



Drills:

| | |
|---------|----------------------------------|
| JDPD | Precision drill D |
| JDDR20 | Twist drill D 2.0 |
| JDDR24 | Twist drill D 2.4 ^{1.5} |
| JDDR28 | Twist drill D 2.8 |
| JDDR32 | Twist drill D 3.2 |
| JDDR36 | Twist drill D 3.6 |
| JDDR40 | Twist drill D 4.0 |
| JDDR44 | Twist drill D 4.4 |
| JDDREXT | Drill extension |



Direction indicator:

| | |
|------|---------------------|
| JDDI | Direction indicator |
|------|---------------------|

**Tissue Punch:**

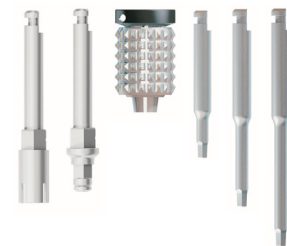
| | |
|--------|--------------------------------|
| JDTP35 | Tissue punch for implant Ø 3.5 |
| JDTP42 | Tissue punch for implant Ø 4.2 |
| JDTP50 | Tissue punch for implant Ø 5.0 |

**Tissue Punch Guide:**

| | |
|---------|--------------------------------------|
| JDTPG35 | Tissue punch guide for implant Ø 3.5 |
| JDTPG42 | Tissue punch guide for implant Ø 4.2 |
| JDTPG50 | Tissue punch guide for implant Ø 5.0 |

**Implant and prosthetic drivers:**

| | |
|---------|---|
| JDID30 | Implant driver for JDNow® Ø 3.0 |
| JDIHD | Implant driver for JDNow® Ø 3.5, 4.2, 5.0 |
| JDTWAPM | Manual prosthetic adapter |
| EVSDP20 | Screwdriver machine prosthetic L 20 |
| EVSDP25 | Screwdriver machine prosthetic L 25 |
| EVSDP30 | Screwdriver machine prosthetic L 30 |

**Surgical Driver:**

| | |
|-------|-----------------|
| EVSUD | Surgical driver |
|-------|-----------------|



Torque wrench and compatible adapters:

| | |
|--------|------------------------------|
| JDTW | JDTorque® torque wrench |
| JDTWA | JDTorque® adapter surgical |
| JDTWAP | JDTorque® adapter prosthetic |



Prosthetic components:

| | |
|----------|---------------------------------|
| JDABEX35 | Extension Abutment JDNOW® Ø 3.5 |
| JDABEX42 | Extension Abutment JDNOW® Ø 4.2 |
| JDABEX50 | Extension Abutment JDNOW® Ø 5.0 |
| EVRAIC | Coping Rapid Abutment |
| EVRAHC | Rapid Abutment healing cap |



Surgical Kit:

| | |
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| JDSTRAYC | JDNOW® Surgical Tray |
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