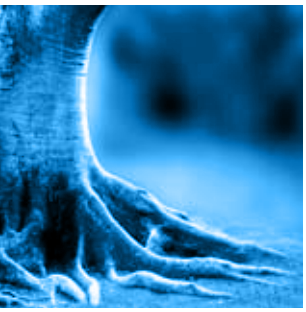
LARGE Qwix™

Positioning and fixation screws

LARGE Qwix™ • ENGLISH

newdeal®
New ideas for foot surgery™



Surgical technique

ORTHOPAEDICS
LOWER
EXTREMITY

INTEGRA™
Extremity Reconstruction

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Introduction

Concept

The LARGE Qwix™ positioning and fixation screws were designed for extremity fixation and provide speed and precision for challenging surgical situations. The LARGE Qwix™ screw's unique design allows:

- Optimal and reproducible compression (fixation screws)
- An accurate insertion with minimal soft tissue conflict: the head is totally embedded in the bone.
- To address multiple fixation and osteotomy sites, two diameters are available (5.5 mm and 7.5 mm) with two different designs:
  - positioning screws (fully threaded), for stabilizing without any compression (e.g. bone graft),
  - fixation screws (partially threaded), for fixation with compression.
- Precise placement over a K-Wire (cannulated screws).
- The unique design with enhanced mechanical strength of shaft provides long -term stability also for delayed bone healing (e.g. arthrodesis in Charcot feet).

Indications

The LARGE Qwix™ are indicated for fixation of bone fractures or for bone reconstruction:

- Arthrodesis in foot (mid & hindfoot) and ankle surgery.
- Fractures management in the foot and ankle.
- Mono or bi-cortical osteotomies in the foot and ankle.

The size and length (partially or fully threaded) of the chosen screw should be adapted to the specific indication.

Contraindications

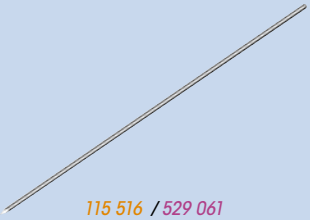
The implant should not be used in a patient who has currently, or who has a history of:

- Local or systemic acute or chronic inflammation;
- Active infection or inflammation;
- Suspected or documented metal allergy or intolerance.

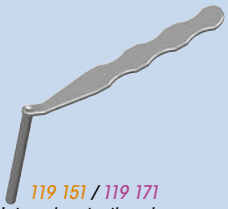
Description

Titanium screw diameters 5.5 mm and 7.5 mm.

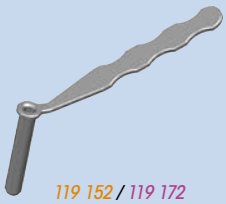
- Cannulated screws: K-wire guided drilling and insertion.
- Self-drilling and self-tapping.
- Totally intra-osseous fixation.
- Large range of screw lengths in 5 mm increment for the 2 diameters and designs.
- 2 designs:
  - Fixation screws: compression screw with a lag part (partially threaded and decreased thread at the head)
  - Positioning screws: no compression (fully threaded)
- Variable lags designed specifically for extremity fixation.
- Manufactured from Titanium alloy. Ti-6Al-4V, ISO 5832-3 ASTM F136.
- Sterily packaged.
- Large Qwix™ system is color coded:
  - Yellow for diam. 5.5 mm screws
  - Purple for diam. 7.5 mm screws



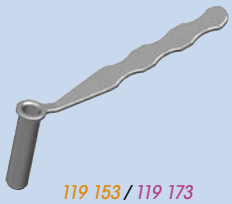
115 516 / 529 061
K-wire



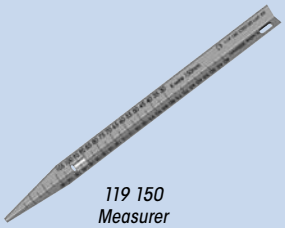
119 151 / 119 171
Internal protection sleeve



119 152 / 119 172
Drilling guide



119 153 / 119 173
External protection sleeve



119 150
Measurer

LARGE Qwix™

Surgical technique

Designed in conjunction with Prof. Beat Hintermann, Liestal - Switzerland.

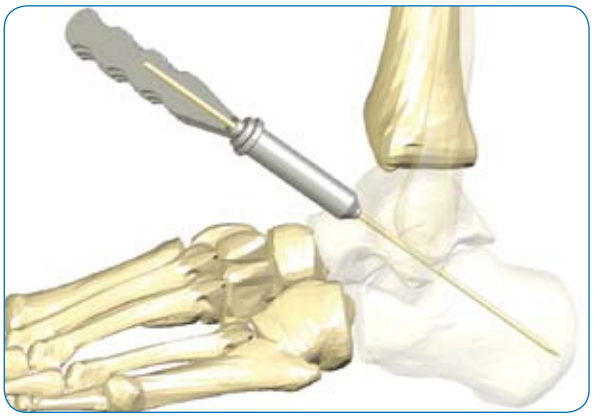
NEWDEAL® as the manufacturer of this device, does not practice medicine and does not recommend this or any other surgical technique for use on a specific patient. The surgeon who performs any implant procedure is responsible for determining and using the appropriate techniques for implanting the device in each patient.

Text corresponding to the Large Qwix™ screw diam. 5.5 mm
Text corresponding to the Large Qwix™ screw diam. 7.5 mm

1 • Positioning of the pin

A 1.6 / 2.5 mm diameter K-wire, 200 / 250 mm long *(115 516 / 529 061)*, is introduced into the site where the Large Qwix™ screw is to be implanted. The K-wire is implanted by means of a drilling guide and soft tissue protector (*119 151, 119 152 and 119 153 / 119 171, 119 172 and 119 173*). Failure to use the drilling guide and protection sleeve when inserting the K-wire may result in soft tissues entrapment. Care should be taken when K-wire is inserted to respect neighbouring blood vessels, nerves and tissues. The depth of insertion of the k-wire depends upon the surgeon's will to achieve a mono or bi-cortical osteosynthesis.

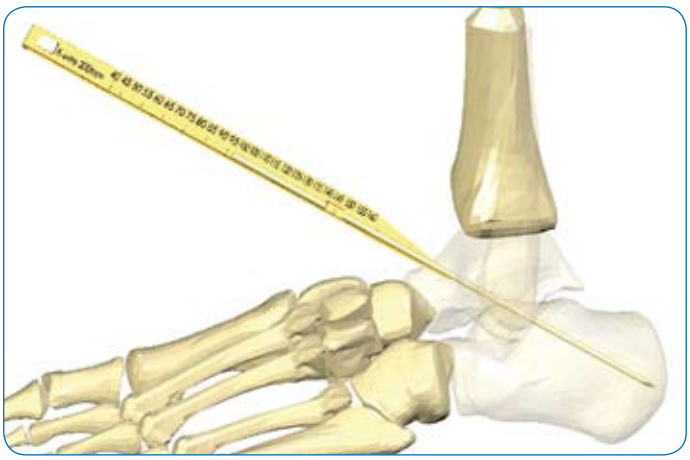
The use of x-rays is recommended to check the good positioning and depth insertion of the k-wire.



2 • Determination of the length of the screw to be implanted

At insertion of the k-wire, the appropriate length of screw is determined from a measurer *(119 150)*. The measurer is placed so that the thin side is aligned with the base of the k-wire. Care should be taken to hold the measurer in perfect alignment with the visible part of the k-wire. The appropriate screw length is then read directly from the measurer, marked on the side «K-wire 200 mm» / «K-wire 250 mm».

The surgeon may decide to add or deduct a few millimeters to/from the length read from the ruler. For example, if needed, a few millimeters may be deducted to ensure that the second cortex will not be penetrated.



119 155 / 119 175
Short cannulated drill

119 154 / 119 174
Cannulated drill

IMPORTANT:
The measurement taken from the ruler/k-wire is directly related to the positioning of the k-wire and cannot therefore be considered ideal unless the K-wire is correctly positioned. The positioning of the K-wire can be validated by means of peri-operative X-ray or fluoroscopy.

The superior part of the measurer *(119 150)* allows for the control of the screw to be implanted. The head of the Large Qwix™ screw is positioned on the top of it, the distal part directed towards the thin part of the measurer.

3 • Use of the drills

Once the 1.6 / 2.5 mm diameter K-wire is in place, the drills are used to prepare the insertion of the screw. Although the Large Qwix™ screws are self-drilling and self-tapping, preparing the insertion of the screw thanks to the drill is recommended, specially in case of sclerotic bone.

3.1 • Preparation of the screw head (Fixation Screws)

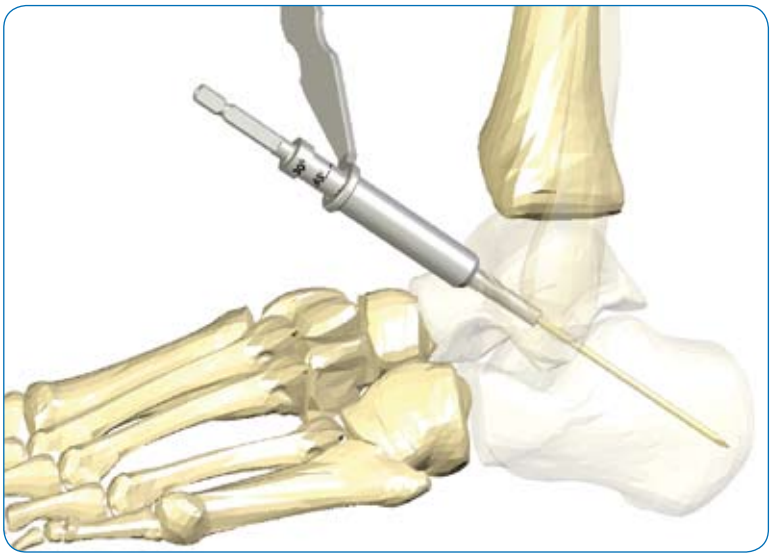
The short cannulated drill *(119 155 / 119 175)* is used to prepare the location of the screw head. The external protecting sleeve *(119 153 / 119 173)* must be used during this stage.

The short drill will be inserted in the sleeve before drilling. This allows to limit the depth of reaming thanks to marks on the drill.

When the drill is used perpendicular to the bone, the mark 90° must be flush to the top side of the sleeve.

When the drill has a 45° angulation, the mark 45° will be aligned with the top side of the sleeve. It is only when there is a 30° degree orientation that the drill will be fully engaged in the protection sleeve.

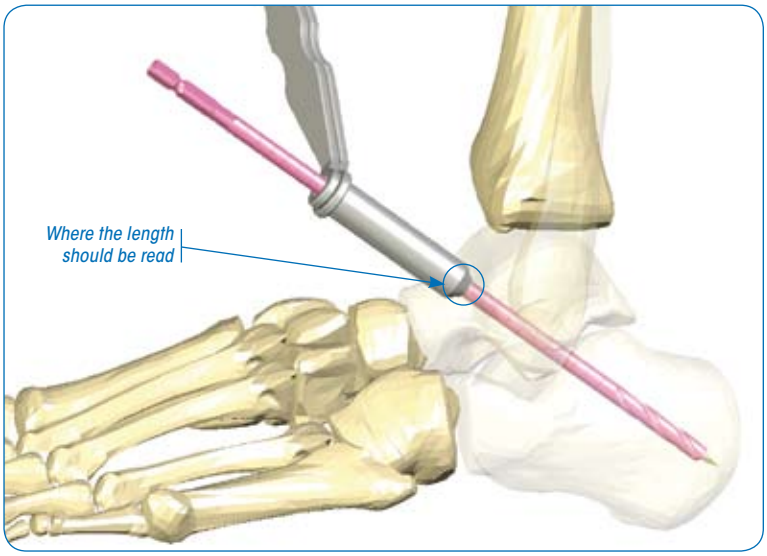
This allows for reaming only to a sufficient depth.

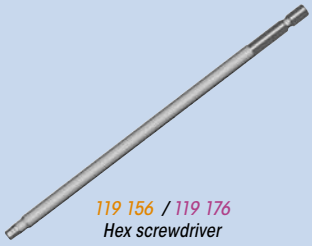


3.2 • Preparation of the distal cortex (Fixation and positioning screws)

The countersinking for the outer thread thus prepared, the cannulated drill *(119 154 / 119 174)* is used to prepare the distal cortex for introduction of the screw. The use of this cannulated drill is only recommended when a bi-cortical fixation is required. This cannulated drill is introduced over the K-wire left in place and through the drilling guide *(119 152 / 119 172)*.

It is graduated so that the drilled depth can be read directly. The visible number nearest to the point of entry of the drill into the bone is the length of the buried part of the drill.





119 156 / 119 176
Hex screwdriver

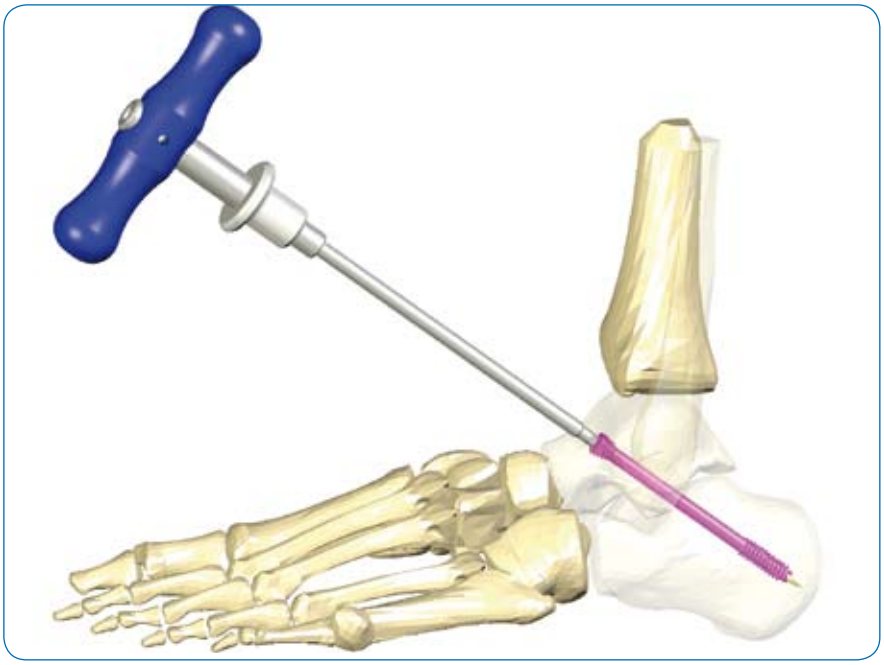
119 177
T-Handle quick coupling

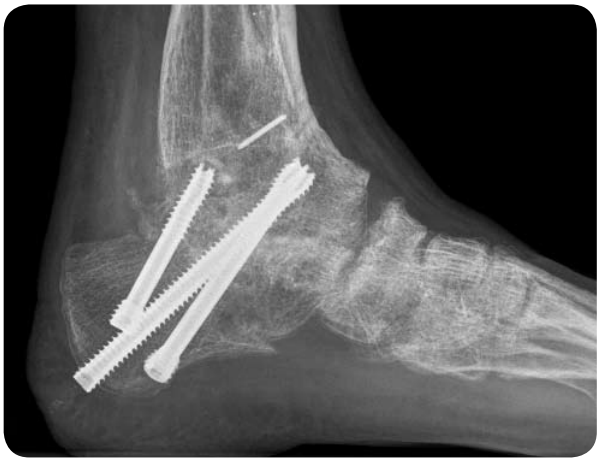
4 • Screw insertion

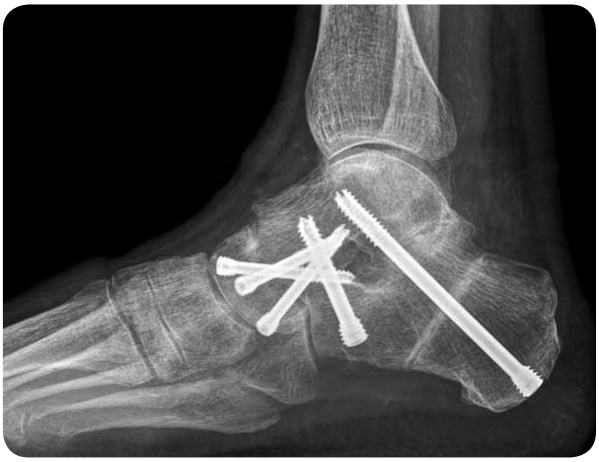
With the K-wire still in place, the Large Qwix™ screw is selected and introduced by means of a cannulated screwdriver tip *(119 156 / 119 176)* powered or attached on the quick coupling T-handle.

The extremity of the head of the screw should be flush to the bone cortex.

The screwdriver tip can either be attached to the T-handle quick coupling *(119 177)* or be powered.







Instructions for use

In accordance with the directive 93/42/EEC relative to medical devices, this product must be handled and/or implanted by WELL-TRAINED and QUALIFIED PERSONS, AWARE OF THESE DIRECTIONS FOR USE.

• Description
Newdeal®'s osteosynthesis systems are designed for the fixation of fractures, fusions and osteotomies, more especially for foot, ankle and hand surgery.
Newdeal®'s products are made from Titanium alloy Ti-6Al-4V (ISO 5832-3 / ASTM F136).

• Indications
For fixation of bone fractures or for bone reconstruction.
Examples include:
- Mono or Bi-cortical osteotomies in the foot or hand (Hallux Valgus treatment…)
- Fractures management in the foot or hand
- Fixation of bone fragments in long bones or small bones fractures
- Arthrodesis in hand, foot or ankle surgery
The size of the chosen screw should be adapted to the specific indication.

• Contraindications
The implant should not be used in a patient who has currently, or who has a history of:
- Local or systemic acute or chronic inflammation;
- Active infection or inflammation;
- Suspected or documented metal allergy or intolerance.

• Warnings
Serious post-operative complications may occur from use of the implant in a patient who:
- Lacks good general physical condition;
- Has severe osteoporosis;
- Demonstrates physiologic or anatomic anomalies;
- Has immunological responses, sensitization, or hypersensitivity to foreign materials;
- Systemic or metabolic disorders.

• Precautions for use
Physician must determine if implant is appropriate for patients who have any of the following conditions:
- Drug and/or alcohol and/or smoke addiction and/or abuse;
- Infectious disease;
- Malignancy;
- Local bone tumors;
- Compromised wound healing;
- Obesity;
- Demonstrated psychological instability, displayed a lack of understanding, inappropriate motivation, or attitude;
- Unwillingness to accept the possibility of multiple surgeries for revision or replacement;
- Lacks an understanding that a metallic implant is not as strong as normal healthy bone and will bend, loosen, or fracture if excessive demand is placed on it;
- Lacks an understanding that their preoperative capacity may not be fully recovered even after successful implantation;
Knowledge of surgical techniques, proper reduction, selection and placement of implants, and post-operative patient management are considerations essential to a successful outcome.
Criteria for patient selection are the responsibility of the surgeon. Information contained within this document should be taken into consideration during the selection process. Recognition of the appropriate indications and contraindications and the selection of the proper surgical procedures and techniques determined to be best for the patient are the responsibility of the surgeon. Each surgeon must evaluate the appropriateness of the procedure and instruments used during the procedure based on his or her own training and experience.
The surgeon should discuss with the patient prior to surgery possible risks, precautions, warnings, consequences, complications, and adverse reactions associated with the surgical procedure and implantation of the device.
Each patient must be evaluated by the surgeon to determine the specific risk/benefit relationship in light of the patient's condition and the surgeon's practice, training, experience, and knowledge of the related medical literature.
Complications with the use of osteosynthesis systems have been reported in the medical literature. Any patient undergoing a surgical procedure is subject to intra-operative and post-operative complications.
Each patient's tolerance to surgery, medication, and implantation of a foreign object may be different.
Possible risks, adverse reactions, and complications associated with surgery and the use of osteosynthesis systems should be discussed with and understood by the patient prior to surgery.
The implant is made from metallic alloys; therefore, it is subject to possible reactions and complications, including those listed herein. The patient should not be led to unrealistic expectations as to the performance or results that the surgery and implant can provide. The patient should be informed that the life expectancy of the device is unpredictable once implanted, and that successful results cannot be guaranteed.
IT IS THE RESPONSIBILITY OF THE SURGEON TO PROVIDE THE PATIENT WITH INFORMATION PRIOR TO SURGERY.
Complications may include but are not limited to:
- Pain, discomfort, or abnormal sensations due to presence of the implant;
- Bending, loosening, and/or breakage, which could make removal impracticable or difficult;
- Risk of additional injury from post-operative trauma;
- Migration of the implant position or implant material resulting in injury;
- Bone loss due to stress shielding;
Side effects may include but are not limited to:
- Infections;
- Hematoma;
- Allergy;
- Thrombosis;
- Bone non-union or delayed union.
Adverse effects may necessitate re-operation, revision or removal surgery, arthrodesis of the involved joint, and /or amputation of the limb.
Implant removal should be followed by adequate postoperative management to avoid fracture or re-fracture.
Interference risks during medical imaging:
MRI/SCANNER: ask the patient to systematically mention that he/she was implanted with a metallic device.

• Packaging - sterility
This product is sold either sterile or non sterile.
The sterilization method is specified on the packaging.
Components sterilized by radiation are exposed to a minimum of 25 kGy of gamma irradiation.
If the product is not labeled « STERILE», it must be sterilized prior to use, in compliance with current regulations.
If the product has been removed from packaging but not used, it may be re-sterilized.
Check packaging and labeling integrity before use. The sterility is guaranteed as long as the packaging has not been damaged or opened and before the expiration date.
Do not use any implant for which the packaging has been opened or damaged outside the operating theatre.
Inner packaging should be handled under sterile conditions (persons/instruments).

• Use of the products
The surgeon must use the instrumentation recommended in accordance with the operative technique available from the manufacturer. The medical device must be used in compliance with the use of the profession and the standard of art. Do not attempt a surgical procedure with faulty, damaged or suspect instruments or implants. Inspect all components preoperatively to assure utility. Alternate fixation methods should be available intraoperatively.
Opening of the instruments set must be done according to aseptic condition.
When handling the implants, avoid any contact with other material or tools which may damage the implant surface. Under no circumstances should the implant be modified.
The multi-component devices (such as plates-screws systems) should only associate the appropriated Newdeal® products and should never be used in conjunction with components of any other manufacturers, as these products may not be compatible. The company accepts no responsibility for such use.
Specific cautions for plates
The plates should never been excessively bent, nor reverse bent.

• Re-use of the implants
Orthopedic implants already implanted must never be re-used. The company accepts no responsibility for such re-use.

• Re-sterilization of non-implanted implants and sterilization of non-sterile products
Unless supplied sterile and clearly labeled as such, all implants and instruments must be steam autoclaved prior to use in surgery. Re-sterilization is only allowed for non-implanted products. Remove delivery packaging in compliance with current regulations to sterilize non-sterile products. Newdeal®'s osteosynthesis implants are recommended to be sterilized by the steam autoclaving procedure regularly used in the hospital. The implants can be sterilized several times in the same conditions.
The following two methods have been validated by the manufacturer:

Newdeal® Stainless Steel sterilization trays

Cycle Type: Gravity Displacement
5 pulses
[Maximum 900 mbar; Minimum 200 mbar]
Minimum Temperature: 134°C (273° F)
Exposure Time: 18 minutes
20 minute vacuum drying

Cycle Type: Pre-Vacuum
3 pulses
[Maximum 26.0 psig (2.8 bar); Minimum 10 inHg (339 mbar)]
Minimum Temperature: 132°C (270° F)
Exposure time: 4 minutes
2-3 minute purge
20 minute vacuum drying

These sterilization parameters assume that all instruments have been properly decontaminated prior to sterilization. The parameters are validated to sterilize specific configurations as noted in the tray markings. If other products are added to the tray or to the sterilizer, the recommended parameters may not be valid and new cycle parameters may need to be validated by the user. The autoclave must be properly installed, maintained and calibrated.

Other sterilization method and cycles may also be used. However, individuals or hospitals not using the recommended method are advised to validate the alternative method using appropriate laboratory techniques. EtO sterilization or cold sterilization techniques are not recommended.

• Information related to postoperative care
- The patient should be advised that a second more minor procedure for the removal of the implants is usually necessary
- While the surgeon must make the final decision regarding implant removal, wherever possible and practical for the individual patient, fixation devices should be removed once their service as an aid to healing is accomplished. In the absence of a bursa or pain, removal of the implant in elderly or debilitated patients is not suggested.
- Postoperative instructions to patients and appropriate nursing care are critical. Early weight bearing substantially increases implant loading and increases the risk of loosening, bending, or breaking the device. Patients who are obese or non-compliant, as well as patients who could be predisposed to delayed or non-union must have auxiliary support.
- Even after full healing, the patient should be cautioned that re-fracture is more likely with the implant in place and soon after its removal, rather than later, when the voids in the bone left by implant removal have been filled in completely.
- Patients should be cautioned against unassisted activity that requires walking or lifting.
- Postoperative care and physical therapy should be structured to prevent loading of the operative extremity until stability is evident.
- The patient should be encouraged to report to his/her surgeon any unusual changes of the operated extremity. If evidence suggests loosening of the implant (particular pain and progressive changes in the radiographs) an intensified schedule of check-ups is advised and new warning and instructions to the patient may be appropriate regarding further activity restrictions.
- The patient should be encouraged to receive prompt medical attention for any infection that could occur, whether at the operated-member level or elsewhere in the body.

• Storage
Store in dry place.

• Product information disclosure Liability
Newdeal®, an Integra LifeSciences Company, has exercised reasonable care in the selection of materials and the manufacture of these products. Newdeal® excludes all other than public order warranties, whether expressed or implied, including but not limited to, any implied warranties of merchantability or fitness for a particular purpose. Newdeal® shall not be liable for any incidental or consequential loss, damage, or expense, directly or indirectly arising from use of this product. Newdeal® neither assumes nor authorizes any person to assume for it any other or additional liability or responsibility in connection with these products. Newdeal® intends that this device should be used only by physicians having received proper training in orthopedic surgery technique for use of the device.

• WARNING
This device is not approved for screw attachment or fixation to the posterior elements (pedicles) of the cervical, thoracic or lumbar spine.

• INFORMATION
Should any information regarding the products or their uses be required, please contact your representative or distributor or directly contact the manufacturer.

LARGE QWIX™
Positioning and fixation screws

7.5 mm Large Qwix™ fixation screw

Reference	Length
111 740 S	40 mm
111 745 S	45 mm
111 750 S	50 mm
111 755 S	55 mm
111 760 S	60 mm
111 765 S	65 mm
111 770 S	70 mm
111 775 S	75 mm
111 780 S	80 mm
111 785 S	85 mm
111 790 S	90 mm
111 795 S	95 mm
111 800 S	100 mm
111 805 S	105 mm
111 810 S	110 mm
111 815 S	115 mm
111 820 S	120 mm

7.5 mm Large Qwix™ positioning screw

Reference	Length
121 740 S	40 mm
121 745 S	45 mm
121 750 S	50 mm
121 755 S	55 mm
121 760 S	60 mm
121 765 S	65 mm
121 770 S	70 mm
121 775 S	75 mm
121 780 S	80 mm
121 785 S	85 mm
121 790 S	90 mm
121 795 S	95 mm
121 800 S	100 mm
121 805 S	105 mm
121 810 S	110 mm
121 815 S	115 mm
121 820 S	120 mm

5.5 mm Large Qwix™ fixation screw

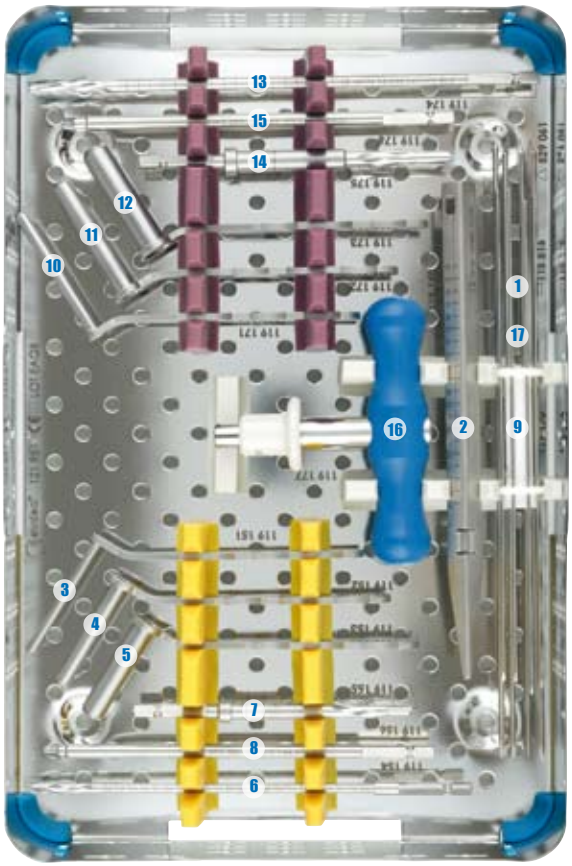
Reference	Length
111 530 S	30 mm
111 535 S	35 mm
111 540 S	40 mm
111 545 S	45 mm
111 550 S	50 mm
111 555 S	55 mm
111 560 S	60 mm
111 565 S	65 mm
111 570 S	70 mm
111 575 S	75 mm
111 580 S	80 mm

5.5 mm Large Qwix™ positioning screw

Reference	Length
121 530 S	30 mm
121 535 S	35 mm
121 540 S	40 mm
121 545 S	45 mm
121 550 S	50 mm
121 555 S	55 mm
121 560 S	60 mm
121 565 S	65 mm
121 570 S	70 mm
121 575 S	75 mm
121 580 S	80 mm

Instruments

	Reference	Description
1	**115 516**	K-wire diam. 1.6 mm / L. 200 mm
2	**119 150**	Measurer 200 and 250 mm
3	**119 151**	Internal protection sleeve for 5.5 mm screws
4	**119 152**	Drilling guide for 5.5 mm screws
5	**119 153**	External protection sleeve for 5.5 mm screws
6	**119 154**	Cannulated drill diam. 4.2-1.8 mm / L. 180 mm
7	**119 155**	Short cannulated drill for 5.5 mm screws
8	**119 156**	Hex screwdriver 3 mm
9	**119 170**	Cylinder
10	**119 171**	Internal protection sleeve for 7.5 mm screws
11	**119 172**	Drilling guide for 7.5 mm screws
12	**119 173**	External protection sleeve for 7.5 mm screws
13	**119 174**	Cannulated drill diam. 5.5-2.7 mm / L. 210 mm
14	**119 175**	Short cannulated drill for 7.5 screws
15	**119 176**	Hex screwdriver 4 mm
16	**119 177**	T-Handle quick coupling
17	**529 061**	K-wire diam. 2.5 mm / L. 250 mm
	121 950	Instrumentation set, composed of: 121 951: Stainless steel rack (Basis) 996 200: Lid



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- *See instructions for use*
- *Single use*
- *Sterile* — STERILE | R

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