Operative Technique

ST.A.R.90 F4 Wrist

Wrist
External Fixator

citieffe®
Essential Moves in Trauma

Surgeons must always decide on the best approach to follow according to their clinical judgement and the patient's needs. Citieffe does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery. The information presented is intended to demonstrate the extent of Citieffe product offerings.

Before use a surgeon must always consult the package insert, product label and/or instructions for use. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets.

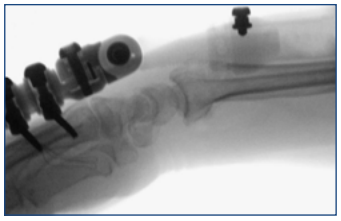
Please contact your Citieffe representative if you have questions about the availability of Citeffe products in your area.

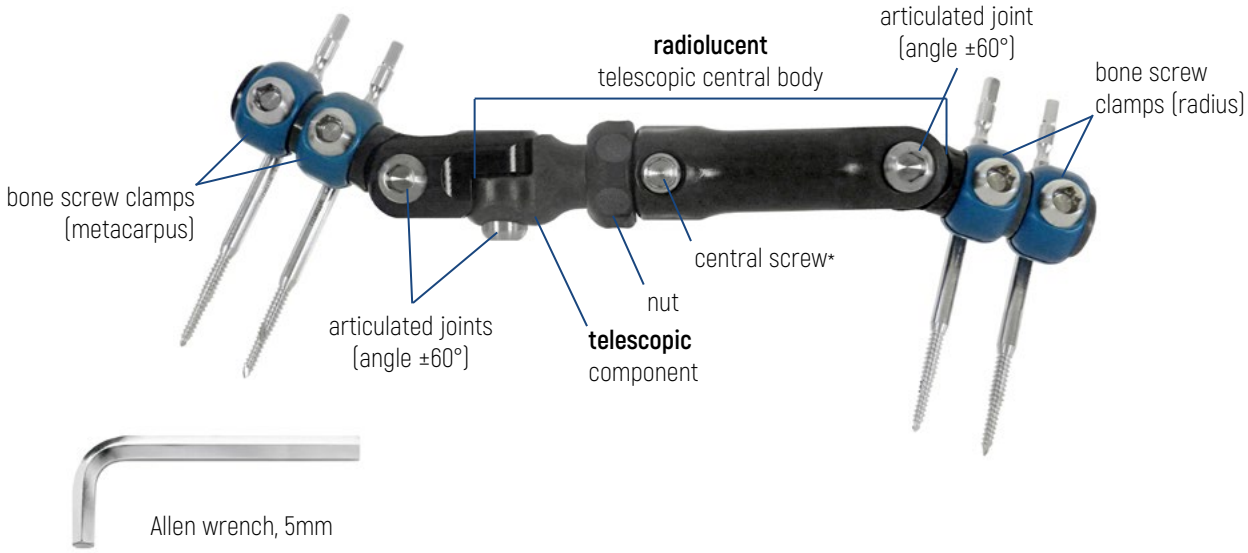
CONTENTS

INDICATIONS

Wrist fractures 23.A2, 23.A3, 23.B1, 23.B2, 23.B3, 23.C1, 23.C2 (AO classification).

PRODUCT DESCRIPTION





* The telescopic central body allows a **free excursion** (max 33mm) with the central screw loosened or **controlled distraction** (1 complete turn = 1.5mm) by turning the nut.

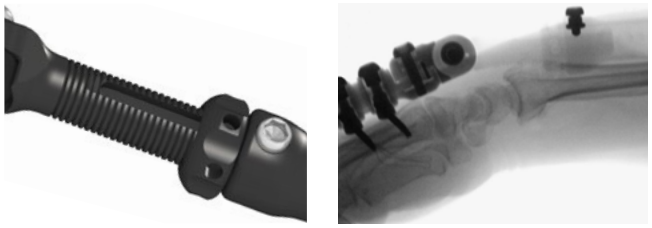
Features	Benefits
Independent, multiplanar and multi-directional bone screw clamp	Ease of application
Telescopic radiolucent central body	Easy visualization of the fracture site
Micrometric adjustment of the distraction	Control during reduction (prevent overdistraction)
Articulated joints of fixator body	Facilitate reduction maneuvers
Minimum weight and size	Increased comfort for the patient
Sterile, disposable kit	Ease of use
Bone screws in stainless steel with double diameter, self-drilling and self-tapping	Do not require pre-drilling

Bone screw clamps

The fixator is supplied in sterile, disposable kit that includes the fixator body with the clamps already assembled, able to guide the insertion of the bone screws allowing the user to move it freely and choose the insertion point (rotation of the pin and the clamps on the shaft).

The bone screw clamps of the fixator are mounted in such a way as to allow the insertion of the screws on the same plane.
The screws can be applied on different levels by disassembling and reassembling the clamp with the pin turned by 180°.

Central body



Visualization of the fracture site through the radiolucent body fixator. The radiolucent ring allows micrometric adjustment of the distraction.

The central telescopic section is able to slide freely up to a maximum stroke of 33mm; the movement is blocked by the dedicated screw.

The central section of the body is made of a mixture of plastic materials that ensure mechanical reliability and it is completely **radiolucent**, allowing to control the reduction of the fracture during surgery and the post-surgery healing process.

Articulated joints

The movements of the articulated joints associated with the telescopic movement of the fixator enable the latter to adapt to fracture reduction maneuvers.

The assembly can be locked quickly and securely with the wrist in neutral position.

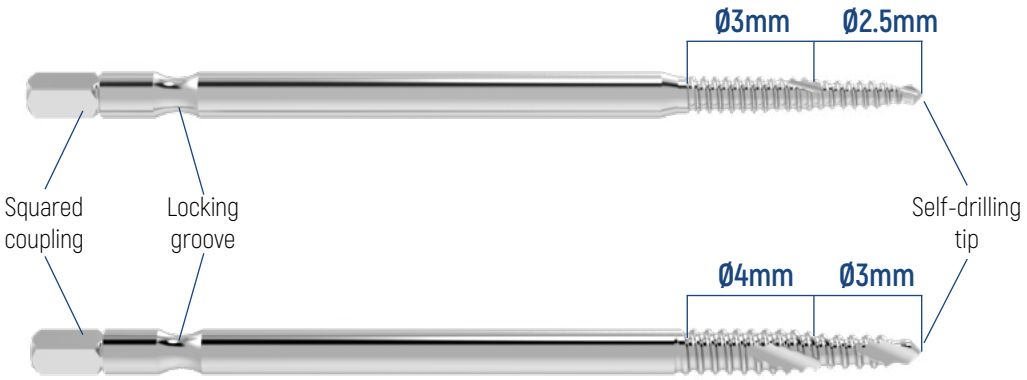
Cortical bone screw

A double diameter stainless steel bone screw, self-drilling and self-tapping, with no pre-drilling required.

Ensures easier insertion, strength over time and the possibility of retraction, in case of excessive penetration, without loss of strength.

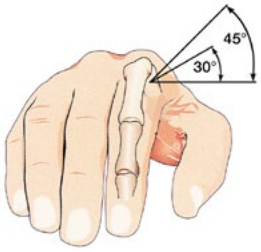
In case of hard cortical bone it may be necessary to pre-drill.

When the bone screw is inserted:
- the self-drilling tip creates a hole the size of the smaller diameter;
- the first self-tapping portion cuts the thread in the bone;
- the smaller diameter inserts easily into the bone;
- the second self-tapping portion cuts the thread for the larger diameter;
- the larger diameter is inserted creating a completely circular hole.



OPERATIVE TECHNIQUE

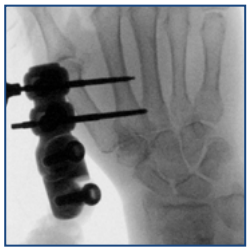
Insertion of first bone screw on the metacarpus



Make an incision at the base of the metacarpal bone. Insert the first bone screw manually, using the special chuck, until the screw protrudes beyond the second cortex, at an angle of 30° to 45° in relation to the axis of the metacarpal bone.

The screws normally used have 3mm diameter, thread length 20mm and total length 60mm.

Insertion of second bone screw on the metacarpus



Apply the fixator to the first bone screw and keep the body of the same in position with the articulated joints loose, insert the second bone screw in the diaphysis of the metacarpal bone proceeding as described above.

After checking that the fixing screws of the articulated joints are easily accessible, tighten the two bone screw clamps using the Allen wrench.

INSTRUMENTS REQUIRED

F4-0115
Bone screws guide

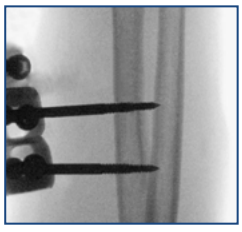
F4-0100
Allen wrench, 5mm

Insertion of bone screws on the radius

Before inserting the bone screws in the radius, you must obtain a preliminary reduction of the fracture by placing the forearm in supination. Use the clamps of the fixator as guides and, with the telescopic body closed, identify the level of incision for the insertion of the bone screws.
In order to avoid damaging the sensitive branch of the radial nerve (lateral cutaneous nerve of the forearm), apply the blunt dissection technique. We recommend you use the screw guide pliers. The bone screws of the radius should be inserted on the same plane as the bone screws of the metacarpal bone.
The screws normally used have 4mm diameter and thread/total length: 20/80mm or 34/95mm.

Once the implant is complete, tighten the clamps of the bone screws with the angle key and the body screw with the chuck.
Under fluoroscopic examination, check that the bone screws are fitted correctly and also the reduction obtained.

Final assembly



Under fluoroscopic examination and upon assembly completion, you can optimize the reduction of the fracture performing manual maneuvers or by moving the fixator within its range. During these maneuvers the telescopic body must be open.

At the end of the intervention make sure that:
- the wrist is in neutral position;
- the articulation is not over-stretched;
- all the pins of the fixator are tight.

NOTE Should it be necessary, assess the association of inner synthesis to a minimum value (Kirschner wires or cannulated screws) to optimize the reduction and provide stability to each fragments of the fracture.

Post-surgery

During the post-surgery period we recommend medication of bone screw incisions at least once a week.
The removal of the fixator and the bone screws must be preceded by a careful clinical and radiographic evaluation of the healing process.

INSTRUMENTS REQUIRED

F4-0115
Bone screws guide

F4-0100
Allen wrench, 5mm

F4-0220
T-handle for chuck

EBA-0050
Allen wrench, 6mm

SF1070
Chuck for bone screw

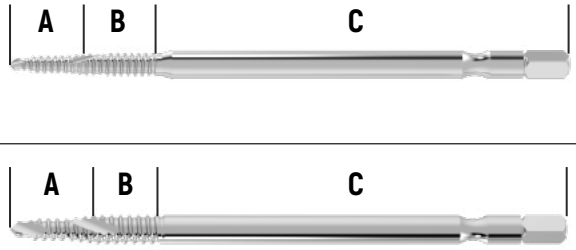
ORDERING INFORMATION

STERILE

F4-2210 Wrist external fixator

Contents:
1 external fixator
1 Allen wrench, 5mm

Cortical bone screw



Code	A - B thread ø (mm)	C stem ø (mm)	Thread L. (mm)	Total L. (mm)
F4-125360	2.5 - 3	4	20	60
F4-125380	2.5 - 3	4	20	80
F4-125390	2.5 - 3	4	20	100
F4-134080	3 - 4	4	20	80
F4-134095	3 - 4	4	34	95

Wrist fixator procedure kit

PK-060 Wrist fixator procedure kit 60/20
Includes the following products individually packaged

Code no.	Description	Qt.
F4-2210	Wrist external fixator *(with Allen wrench, 5mm)*	1
F4-125360	ø3mm bone screw - L. 60-20mm	4

PK-070 Wrist fixator procedure kit 60-80/20
Includes the following products individually packaged

Code no.	Description	Qt.
F4-2210	Wrist external fixator *(with Allen wrench, 5mm)*	1
F4-125360	ø3mm bone screw - L. 60-20mm	2
F4-125380	ø3mm bone screw - L. 80-20mm	2

PK-080 Wrist fixator procedure kit 80/20
Includes the following products individually packaged

Code no.	Description	Qt.
F4-2210	Wrist external fixator *(with Allen wrench, 5mm)*	1
F4-125380	ø3mm bone screw - L. 80-20mm	4

ORDERING INFORMATION - INSTRUMENT SET

F4-0100 Allen wrench, 5mm

F4-0115 Bone screws guide

F4-0220 T-handle for chuck

SF1070 Chuck for bone screw (stem ø4mm)

EBA-0050 Allen wrench, 6mm

SF1304 Quick-connect adapter for bone screw (stem ø4mm) STERILE

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citieffe®
Essential Moves in Trauma

INSPIRED BY PEOPLE
MOVED BY INNOVATION

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