

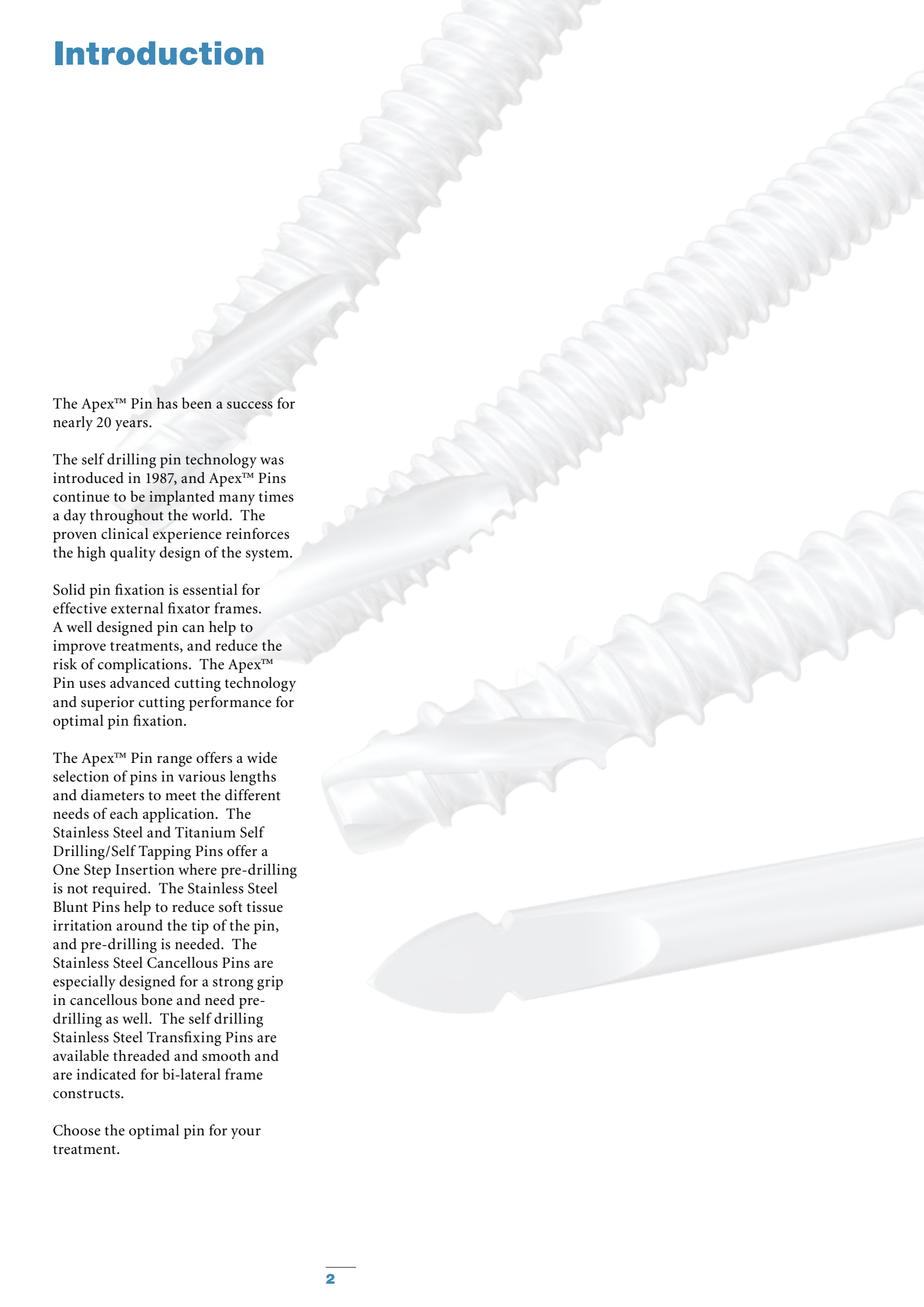
**Apex™**

# Pin Fixation System

Half Pins, Transfixing Pins  
& Instruments



# Introduction



The Apex™ Pin has been a success for nearly 20 years.

The self drilling pin technology was introduced in 1987, and Apex™ Pins continue to be implanted many times a day throughout the world. The proven clinical experience reinforces the high quality design of the system.

Solid pin fixation is essential for effective external fixator frames. A well designed pin can help to improve treatments, and reduce the risk of complications. The Apex™ Pin uses advanced cutting technology and superior cutting performance for optimal pin fixation.

The Apex™ Pin range offers a wide selection of pins in various lengths and diameters to meet the different needs of each application. The Stainless Steel and Titanium Self Drilling/Self Tapping Pins offer a One Step Insertion where pre-drilling is not required. The Stainless Steel Blunt Pins help to reduce soft tissue irritation around the tip of the pin, and pre-drilling is needed. The Stainless Steel Cancellous Pins are especially designed for a strong grip in cancellous bone and need pre-drilling as well. The self drilling Stainless Steel Transfixing Pins are available threaded and smooth and are indicated for bi-lateral frame constructs.

Choose the optimal pin for your treatment.

# Technical Details

## Self Drilling/Self Tapping Apex™ Pin

### Pin Design

The self drilling tip of the Apex™ Pin acts like a new, sharp drill bit every time and therefore pre-drilling is not necessary. Combined with the unique cutting geometry, this One Step Procedure allows the pin to maintain a reduced insertion temperature below 50°C due to decreased friction.

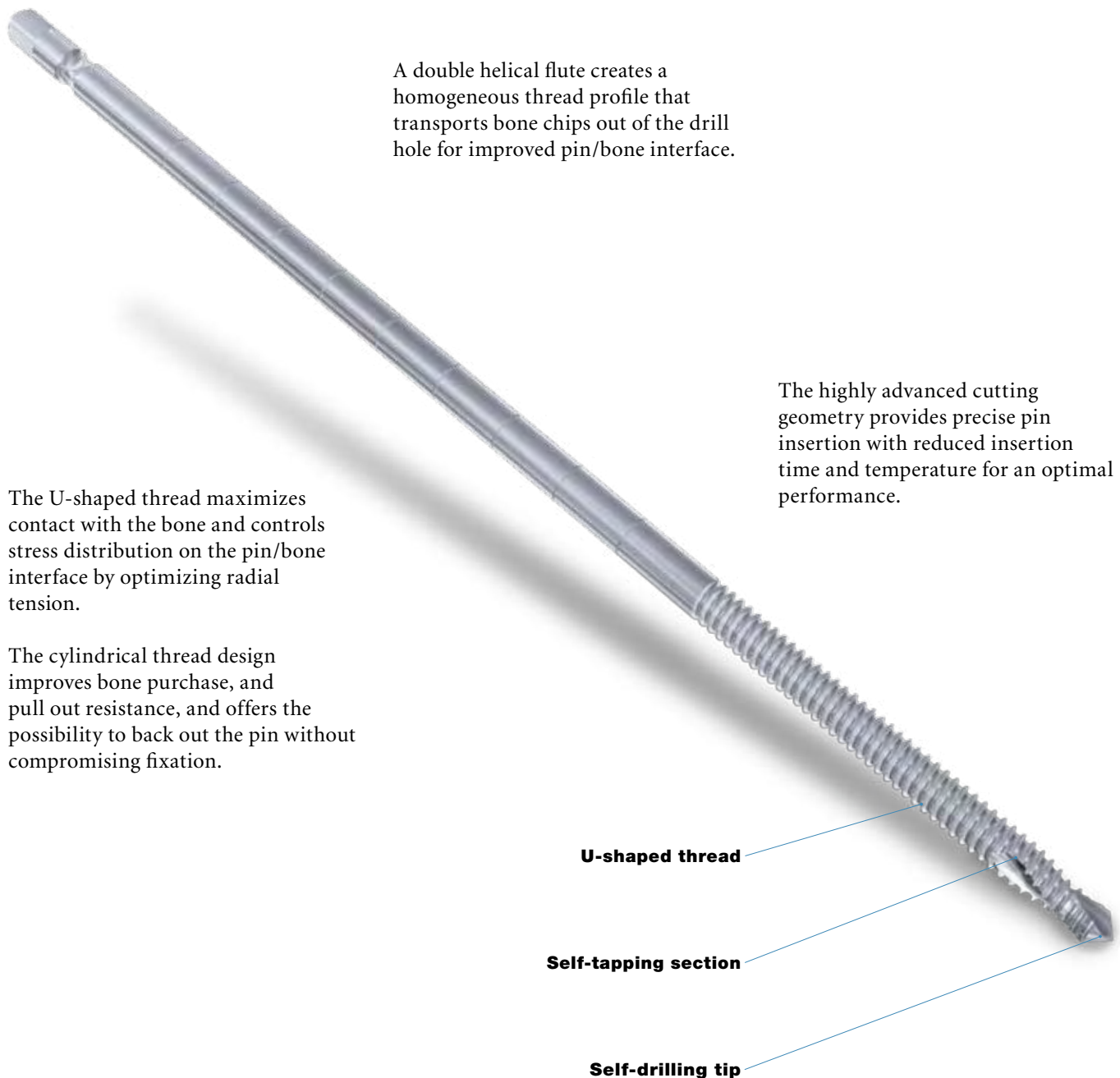


A double helical flute creates a homogeneous thread profile that transports bone chips out of the drill hole for improved pin/bone interface.

The U-shaped thread maximizes contact with the bone and controls stress distribution on the pin/bone interface by optimizing radial tension.

The cylindrical thread design improves bone purchase, and pull out resistance, and offers the possibility to back out the pin without compromising fixation.

The highly advanced cutting geometry provides precise pin insertion with reduced insertion time and temperature for an optimal performance.



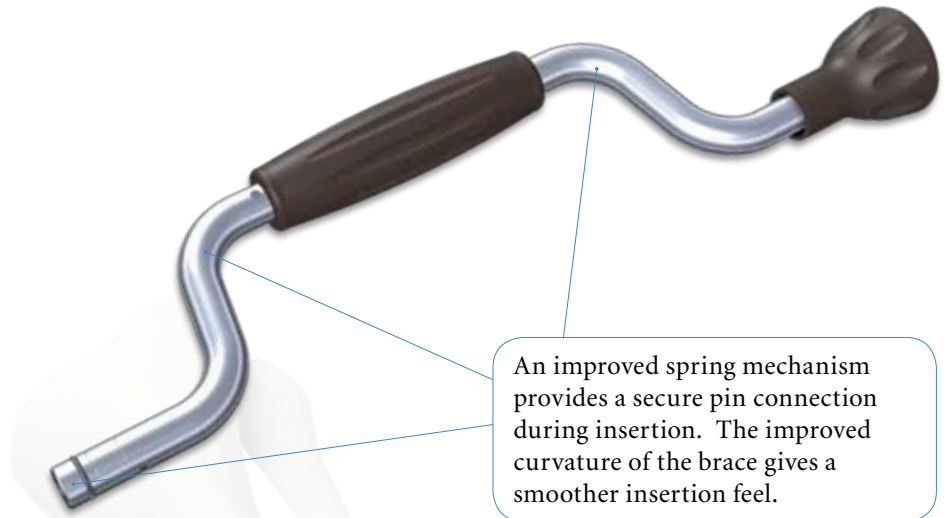
# Instruments

## Apex™ Instruments

### Drill Brace

The Drill Brace is designed for manual pin insertion for better control and reduced insertion temperature.

It provides integrated attachments for 3mm & 4mm and 5mm & 6mm pins. Simply by changing the Drill Handle from one end to the other you gain access to the different attachments.



### Predrilling Assembly

The Predrilling Assembly consists of a Trocar, a Drill Sleeve and a Soft Tissue Protector which allows for pre-drilling and pin insertion without causing additional damage to the soft tissues. Different lengths enable you to choose the correct device for the soft tissue envelope.



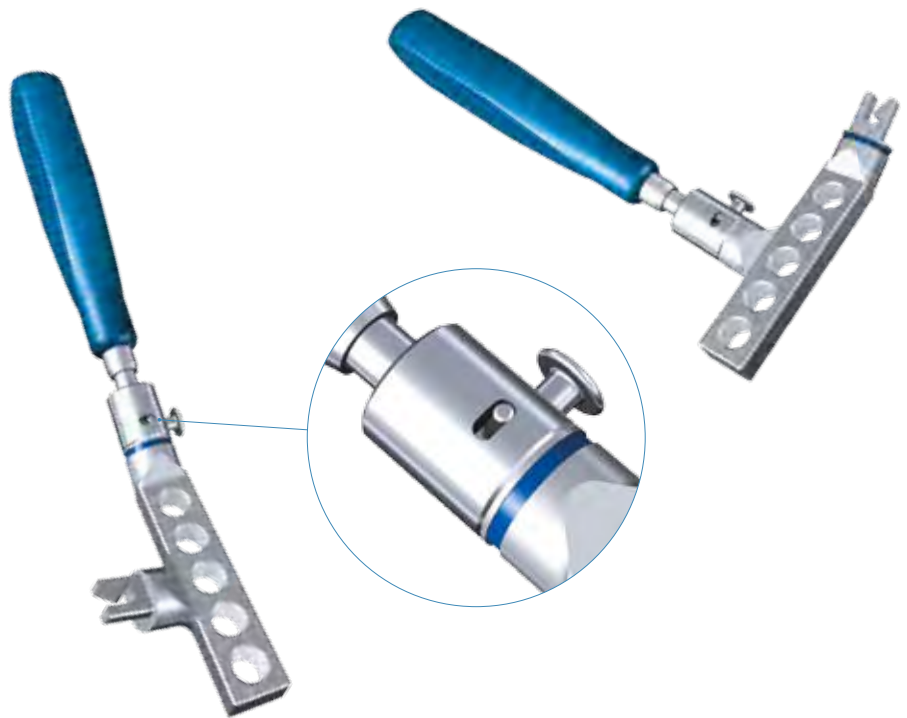
# Instruments

## Apex™ Instruments

### Drill Guide

The Drill Guide is designed for simplified parallel pin insertion. The colour coded Drill Guide Blocks provide the correct distance for the various pin clamps of the Hoffmann® II, Hoffmann® II Compact™ and Monotube® TRIAX™ systems. The colour coding matches the colours of the various systems for easier selection.

The Drill Guide Block offers the possibility for perpendicular and horizontal attachment to the handle, which allows adaptation to the anatomical requirements.



### Quick Release Apex™ Chuck

The Quick Release Apex™ Chuck is designed for a fast and easy engagement of the Apex™ Pins and has a standard AO and a tri-flange connector. It is designed for insertion of Apex™ Pins by power.



### T-Wrench/Pin Inserter

The T-Wrench/Pin Inserter is a combined instrument. It is used to insert 4mm & 5mm pins and tighten 7mm Hoffmann® II and TenXor™ bolts.

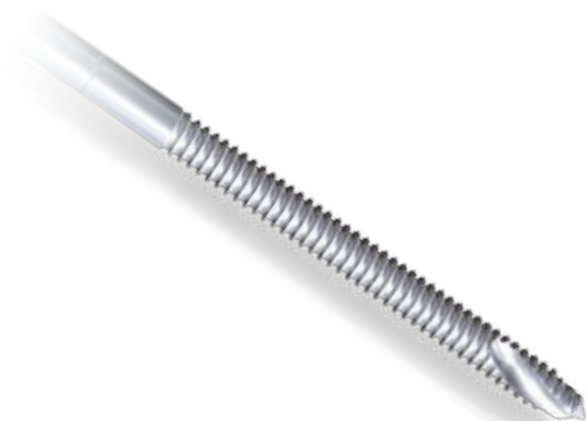


#### Note:

For the final seating in the second cortex the T-Wrench/Pin Inserter or the Drill Brace should be used.

# Implants

## Apex™ Pin Range



### Self Drilling/Self Tapping Pin

The Stainless Steel and Titanium Self Drilling/Self Tapping Pins allow a One Step Procedure due to the advanced self drilling and cutting technology.



### Blunt Pin

The Stainless Steel Blunt Pins help to reduce soft tissue irritation around the tip of the pin. Pre-drilling is required for this pin.



### Cancellous Pin

The Stainless Steel Cancellous Pins are designed for a strong grip in cancellous bone. The specially designed thread provides an increased contact area between the cancellous bone and the pin. This pin is blunt and requires pre-drilling.



### Transfixing Pin

The self drilling Transfixing Pins are available threaded and smooth and are indicated for bi-lateral frame constructs.

**The Apex™ Pin Range is safe for MRI procedures up to 3.0 Tesla.**

For more information we refer to the Hoffmann® II MRI brochure (ref.-no.5075-1-600)

# Technical Details

## Instructions for Use

### Drill Brace

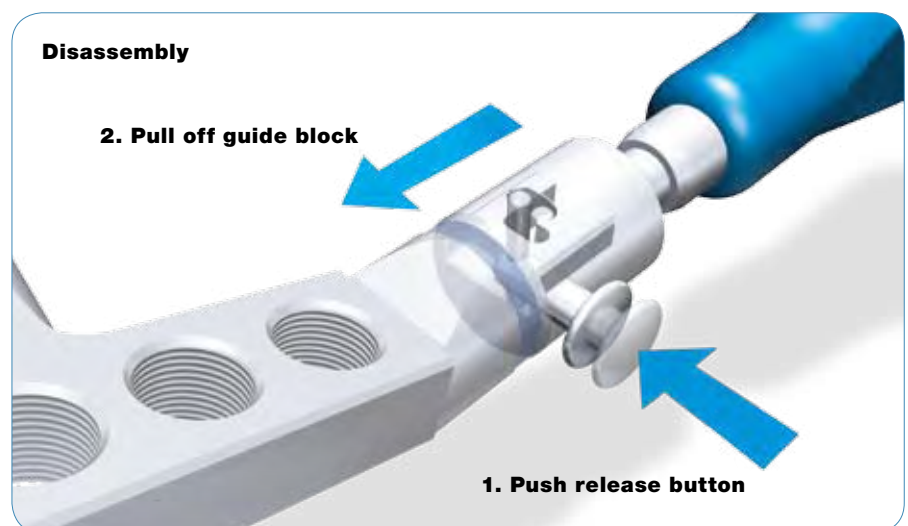
The Drill Brace provides attachments for 3mm & 4mm pins on one end and 5mm & 6mm pins on the other end. For pin insertion, place the pin into the end correlating to the chosen pin diameter.

To access the different attachments for the pins remove the handle and assemble it on the other end.



### Drill Guide Block

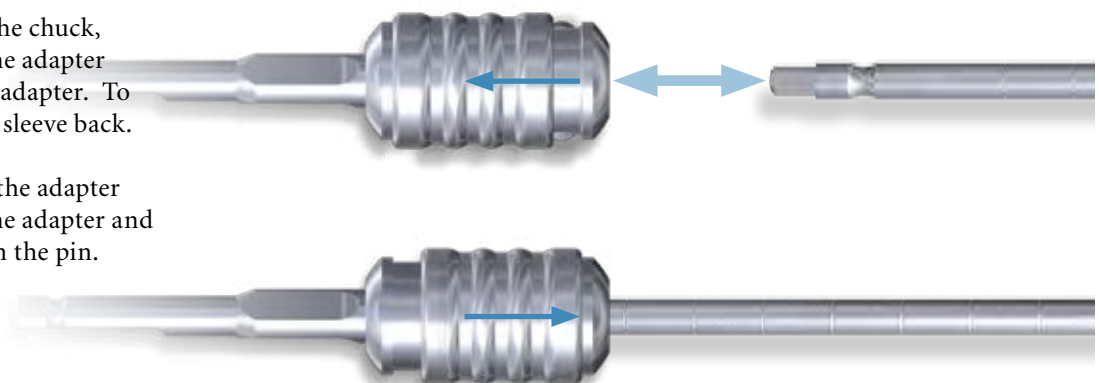
To assemble the Drill Guide Block, choose the correct block for your pin clamp. Set the Drill Guide Block horizontal or perpendicular and push it onto the handle. To release the block, push the button on the handle and pull it off.



### Quick Release Apex™ Chuck

To assemble the pin to the chuck, pull the sleeve toward the adapter and place the pin in the adapter. To secure the pin, push the sleeve back.

To release the pin from the adapter pull the sleeve toward the adapter and remove the adapter from the pin.



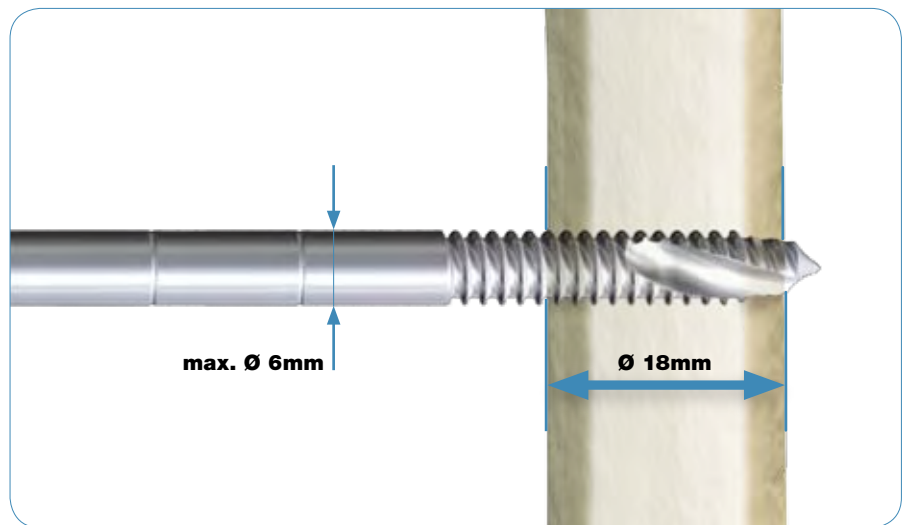
# Technical Details

## Pin Insertion Guidelines

The maximum pin diameter should not exceed 30% of the diameter of the bone. For example: bone diameter 18mm = maximum pin diameter 6mm

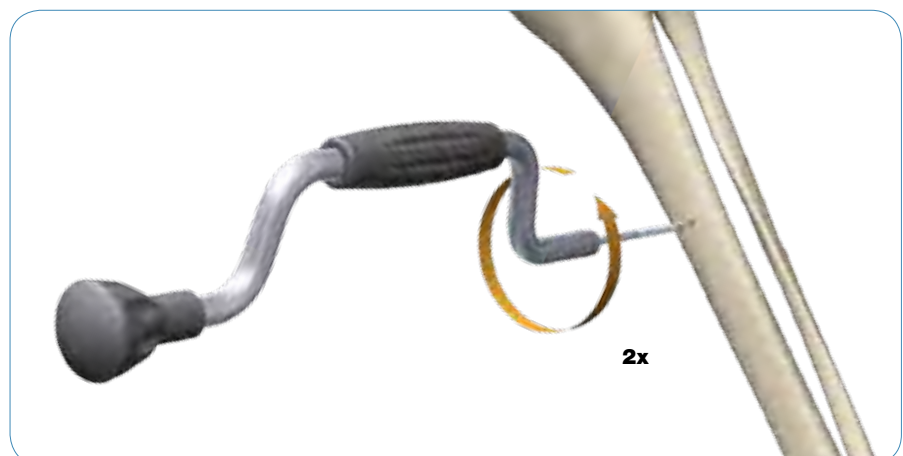
The pin diameter influences the axial frame rigidity. A 1mm increase in pin diameter will approximately double its stiffness and thereby increase the frame rigidity.

The number of pins used in a frame construct depend on the patients condition and the indication. By increasing the number of pins the frame rigidity increases.

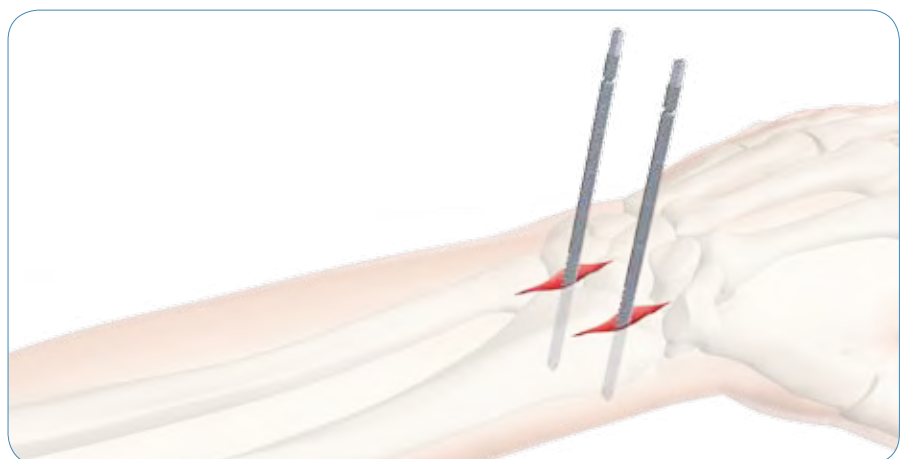


When using a Self Drilling/Self Tapping Pin, turn the Drill Brace two times counter-clockwise to create a small notch for the pin. This helps to prevent the pin from slipping on the cortex.

Afterwards, turn the Drill Brace clockwise for pin insertion.



Make a skin incision in the direction the skin will move during mobilization to avoid tension around the pin. This helps to prevent irritation of the skin and reduces the risk of skin infection.



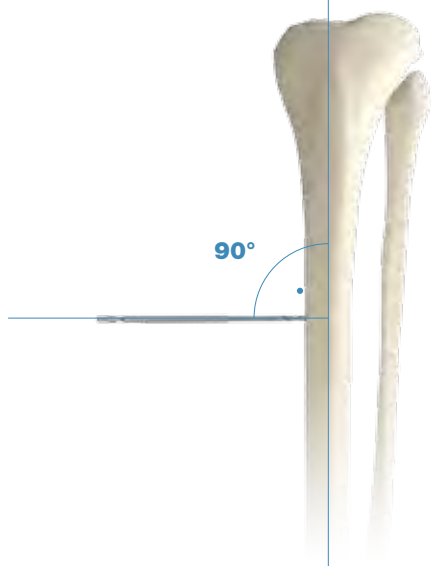
# Technical Details

## Pin Insertion Guidelines

When inserting the pin by power, make sure to use a low speed to avoid significant temperature increase which can cause bone necrosis.



**Long Axis**



Insert the pins 90° to the long axis of the bone to reduce pull in and push out forces on the pins.

**Surgeons must always rely on their own clinical judgement when deciding which treatment and product to use with their patients.**

# Ordering Information - Implants

## Self Drilling/Self Tapping



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5080-1-612             | 1.65/2.0                       | 45                    | 12                     |
| 5080-1-620             | 1.65/2.0                       | 45                    | 20                     |
| 5080-2-012             | 2.0                            | 45                    | 12                     |
| 5080-2-020             | 2.0                            | 45                    | 20S                    |
| 5038-5-060             | 3.0                            | 60                    | 10                     |
| 5038-1-080             | 3.0                            | 80                    | 10                     |
| 5038-2-080             | 3.0                            | 80                    | 15                     |
| 5038-5-080             | 3.0                            | 80                    | 20                     |
| 5038-1-110             | 3.0                            | 110                   | 10                     |
| 5038-2-110             | 3.0                            | 110                   | 25                     |
| 5023-1-090             | 4.0                            | 90                    | 10                     |
| 5023-2-090             | 4.0                            | 90                    | 20                     |
| 5023-3-090             | 4.0                            | 90                    | 30                     |
| 5023-3-120             | 4.0                            | 120                   | 30                     |
| 5023-5-120             | 4.0                            | 120                   | 35                     |
| 5023-5-150             | 4.0                            | 150                   | 40                     |
| 5023-6-150             | 4.0                            | 150                   | 50                     |
| 5023-4-180             | 4.0                            | 180                   | 40                     |
| 5023-6-180             | 4.0                            | 180                   | 50                     |
| 5018-3-120             | 5.0                            | 120                   | 30                     |
| 5018-5-120             | 5.0                            | 120                   | 35                     |
| 5018-5-150             | 5.0                            | 150                   | 40                     |
| 5018-6-150             | 5.0                            | 150                   | 50                     |
| 5018-3-180             | 5.0                            | 180                   | 35                     |
| 5018-6-180             | 5.0                            | 180                   | 50                     |
| 5018-8-180             | 5.0                            | 180                   | 60                     |
| 5018-5-200             | 5.0                            | 200                   | 50                     |
| 5018-6-200             | 5.0                            | 200                   | 60                     |
| 5018-5-250             | 5.0                            | 250                   | 50                     |
| 5018-7-250             | 5.0                            | 250                   | 70                     |
| 5021-7-150             | 6.0                            | 150                   | 50                     |
| 5021-6-180             | 6.0                            | 180                   | 60                     |
| 5021-8-200             | 6.0                            | 200                   | 70                     |
| 5021-8-250             | 6.0                            | 250                   | 80                     |

## Self Drilling/Self Tapping - Titanium



| Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm | Titanium<br>REF |
|--------------------------------|-----------------------|------------------------|-----------------|
| 5.0                            | 120                   | 35                     | 5016-5-111      |
| 5.0                            | 150                   | 40                     | 5016-5-117      |
| 5.0                            | 150                   | 50                     | 5016-5-118      |
| 5.0                            | 180                   | 50                     | 5016-5-122      |

## Blunt



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5065-3-312             | 2.0                            | 33                    | 12                     |
| 5065-3-615             | 2.0                            | 36                    | 15                     |
| 5065-3-918             | 2.0                            | 39                    | 18                     |
| 5065-4-520             | 2.0                            | 45                    | 20                     |
| 5065-5-020             | 2.0                            | 50                    | 20                     |
| 5065-6-020             | 2.0                            | 60                    | 20                     |
| 5065-9-015             | 2.0                            | 90                    | 15                     |
| 5036-2-060             | 3.0                            | 60                    | 10                     |
| 5036-1-080             | 3.0                            | 80                    | 10                     |
| 5036-1-580             | 3.0                            | 80                    | 15                     |
| 5036-2-080             | 3.0                            | 80                    | 20                     |
| 5036-1-110             | 3.0                            | 110                   | 10                     |
| 5036-2-110             | 3.0                            | 110                   | 25                     |

For Sterile Apex™ Pins, add 'S' to the end of the REF.

# Ordering Information - Implants

## Blunt (cont)



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5027-1-090             | 4.0                            | 90                    | 10                     |
| 5027-2-090             | 4.0                            | 90                    | 20                     |
| 5027-3-090             | 4.0                            | 90                    | 30                     |
| 5027-3-120             | 4.0                            | 120                   | 30                     |
| 5027-4-120             | 4.0                            | 120                   | 35                     |
| 5027-4-150             | 4.0                            | 150                   | 40                     |
| 5027-5-150             | 4.0                            | 150                   | 50                     |
| 5027-4-180             | 4.0                            | 180                   | 40                     |
| 5027-5-180             | 4.0                            | 180                   | 50                     |
| 5020-3-120             | 5.0                            | 120                   | 30                     |
| 5020-6-120             | 5.0                            | 120                   | 35                     |
| 5020-3-150             | 5.0                            | 150                   | 40                     |
| 5020-7-150             | 5.0                            | 150                   | 50                     |
| 5020-7-180             | 5.0                            | 180                   | 50                     |
| 5020-8-180             | 5.0                            | 180                   | 60                     |
| 5020-7-200             | 5.0                            | 200                   | 50                     |
| 5020-6-200             | 5.0                            | 200                   | 60                     |
| 5020-7-250             | 5.0                            | 250                   | 50                     |
| 5020-8-250             | 5.0                            | 250                   | 70                     |
| 5019-7-150             | 6.0                            | 150                   | 50                     |
| 5019-6-180             | 6.0                            | 180                   | 60                     |
| 5019-8-200             | 6.0                            | 200                   | 70                     |
| 5019-8-250             | 6.0                            | 250                   | 80                     |

## Cancellous



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5015-3-120             | 6.0/5.0                        | 120                   | 35                     |
| 5015-4-150             | 6.0/5.0                        | 150                   | 40                     |
| 5015-5-150             | 6.0/5.0                        | 150                   | 50                     |
| 5015-6-180             | 6.0/5.0                        | 180                   | 60                     |
| 5015-7-250             | 6.0/5.0                        | 250                   | 70                     |

## Transfixing Pins



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5030-3-200             | 5.0/4.0                        | 200                   | 35                     |
| 5030-4-200             | 5.0/4.0                        | 200                   | 40                     |
| 5030-5-200             | 5.0/4.0                        | 200                   | 50                     |
| 5030-3-250             | 5.0/4.0                        | 250                   | 35                     |
| 5030-4-250             | 5.0/4.0                        | 250                   | 40                     |
| 5030-5-250             | 5.0/4.0                        | 250                   | 50                     |
| 5030-6-250             | 5.0/4.0                        | 250                   | 60                     |
| 5030-4-300             | 5.0/4.0                        | 300                   | 40                     |
| 5030-5-300             | 5.0/4.0                        | 300                   | 50                     |
| 5030-7-300             | 5.0/4.0                        | 300                   | 70                     |

## Transfixing - Smooth Pin



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5045-5-200             | 3.0                            | 200                   | --                     |

For Sterile Apex™ Pins, add 'S' to the end of the REF.

# Ordering Information - Implants

## HA Coated Self Drilling/Self Tapping



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5013-3-090S            | 4mm                            | 90                    | 30                     |
| 5013-2-120S            | 4mm                            | 120                   | 20                     |
| 5013-8-120S            | 4mm                            | 120                   | 25                     |
| 5013-3-120S            | 4mm                            | 120                   | 30                     |
| 5013-9-120S            | 4mm                            | 120                   | 35                     |
| 5013-2-150S            | 4mm                            | 150                   | 20                     |
| 5013-8-150S            | 4mm                            | 150                   | 25                     |
| 5013-3-150S            | 4mm                            | 150                   | 30                     |
| 5013-4-150S            | 4mm                            | 150                   | 40                     |
| 5017-9-120S            | 5mm                            | 120                   | 35                     |
| 5017-2-150S            | 5mm                            | 150                   | 20                     |
| 5017-8-150S            | 5mm                            | 150                   | 25                     |
| 5017-3-150S            | 5mm                            | 150                   | 30                     |
| 5017-9-150S            | 5mm                            | 150                   | 35                     |
| 5017-4-150S            | 5mm                            | 150                   | 40                     |
| 5017-5-150S            | 5mm                            | 150                   | 50                     |
| 5017-6-150S            | 5mm                            | 150                   | 60                     |
| 5017-3-180S            | 5mm                            | 180                   | 30                     |
| 5017-4-180S            | 5mm                            | 180                   | 40                     |
| 5017-5-180S            | 5mm                            | 180                   | 50                     |
| 5017-6-200S            | 5mm                            | 200                   | 60                     |
| 5017-7-200S            | 5mm                            | 200                   | 70                     |
| 5014-2-120S            | 6mm                            | 120                   | 30                     |
| 5014-8-150S            | 6mm                            | 150                   | 25                     |
| 5014-3-150S            | 6mm                            | 150                   | 30                     |
| 5014-4-150S            | 6mm                            | 150                   | 40                     |
| 5014-5-150S            | 6mm                            | 150                   | 50                     |
| 5014-6-150S            | 6mm                            | 150                   | 60                     |
| 5014-3-180S            | 6mm                            | 180                   | 30                     |
| 5014-4-180S            | 6mm                            | 180                   | 40                     |
| 5014-5-180S            | 6mm                            | 180                   | 50                     |
| 5014-6-180S            | 6mm                            | 180                   | 60                     |
| 5014-3-200S            | 6mm                            | 200                   | 30                     |
| 5014-4-200S            | 6mm                            | 200                   | 40                     |
| 5014-5-200S            | 6mm                            | 200                   | 50                     |
| 5014-6-200S            | 6mm                            | 200                   | 60                     |
| 5014-7-250S            | 6mm                            | 250                   | 70                     |
| 5014-8-250S            | 6mm                            | 250                   | 80                     |
| 5014-9-250S            | 6mm                            | 250                   | 90                     |

## HA Coated Blunt



| Stainless Steel<br>REF | Diameter<br>mm<br>Thread/Shaft | Total<br>Length<br>mm | Thread<br>Length<br>mm |
|------------------------|--------------------------------|-----------------------|------------------------|
| 5008-2-150S            | 4mm                            | 150                   | 20                     |
| 5008-8-150S            | 4mm                            | 150                   | 25                     |
| 5008-3-150S            | 4mm                            | 150                   | 30                     |
| 5008-4-150S            | 4mm                            | 150                   | 40                     |
| 5009-2-200S            | 5mm                            | 200                   | 20                     |
| 5009-8-200S            | 5mm                            | 200                   | 25                     |
| 5009-3-200S            | 5mm                            | 200                   | 30                     |
| 5009-9-200S            | 5mm                            | 200                   | 35                     |
| 5009-4-200S            | 5mm                            | 200                   | 40                     |
| 5009-5-200S            | 5mm                            | 200                   | 50                     |
| 5009-6-200S            | 5mm                            | 200                   | 60                     |
| 5009-7-250S            | 5mm                            | 250                   | 70                     |
| 5009-8-250S            | 5mm                            | 250                   | 80                     |
| 5009-9-250S            | 5mm                            | 250                   | 90                     |
| 5010-8-200S            | 6mm                            | 200                   | 25                     |
| 5010-3-200S            | 6mm                            | 200                   | 30                     |
| 5010-4-200S            | 6mm                            | 200                   | 40                     |
| 5010-5-200S            | 6mm                            | 200                   | 50                     |
| 5010-6-200S            | 6mm                            | 200                   | 60                     |
| 5010-7-250S            | 6mm                            | 250                   | 70                     |
| 5010-8-250S            | 6mm                            | 250                   | 80                     |
| 5010-9-250S            | 6mm                            | 250                   | 90                     |

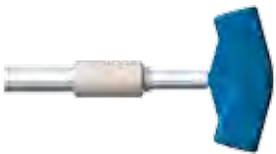
### Note:

For additional information on HA Coated Apex™ Pins please refer to brochure 5075-4-001

■ Special Order

All Implants are single packed and sterile.

# Ordering Information - Instruments

|                                                                                     | REF        | Description                                                             |
|-------------------------------------------------------------------------------------|------------|-------------------------------------------------------------------------|
| <b>Apex™ Instruments</b>                                                            |            |                                                                         |
|    | 5057-0-300 | Drill Brace Assembly                                                    |
|    | 5057-0-310 | Handle for Drill Brace                                                  |
|    | 4920-9-030 | T-Wrench/Pin Inserter, 7mm                                              |
|                                                                                     | 5057-1-003 | Quick Release Apex™ Chuck with AO fitting, 3mm                          |
|    | 5057-1-004 | Quick Release Apex™ Chuck with AO fitting, 4mm                          |
|                                                                                     | 5057-1-005 | Quick Release Apex™ Chuck with AO fitting, 5mm                          |
|                                                                                     | 5057-1-006 | Quick Release Apex™ Chuck with AO fitting, 6mm                          |
|  | 5057-1-110 | Drill Guide Handle                                                      |
|  | 5057-1-115 | Drill Guide Block, 5 holes, Hoffmann® II                                |
|  | 5057-1-116 | Drill Guide Block, 10 holes, Hoffmann® II                               |
|  | 5057-1-117 | Drill Guide Block, 4 holes, Hoffmann® II Compact™                       |
|  | 5057-1-118 | Drill Guide Block, 4 holes, Hoffmann® II Compact™, Peri Articular Clamp |
|  | 5057-1-119 | Drill Guide Block, 4 holes, Monotube® Triax™, blue, red                 |
|  | 5057-1-120 | Drill Guide Block, 2 holes, Monotube® Triax™, yellow                    |

# Ordering Information - Instruments

| REF | Description |
|-----|-------------|
|-----|-------------|

## Apex™ Instruments



|            |                                           |                         |
|------------|-------------------------------------------|-------------------------|
| 5057-4-000 | Pedrilling Assembly, Ø 4.0mm, extra short | 35mm protection length  |
| 5057-5-000 | Pedrilling Assembly, Ø 5.0mm, extra short | 50mm protection length  |
| 5057-6-000 | Pedrilling Assembly, Ø 6.0mm, extra short | 60mm protection length  |
| 5057-3-100 | Pedrilling Assembly, Ø 3.0mm, short       | 33mm protection length  |
| 5057-4-100 | Pedrilling Assembly, Ø 4.0mm, short       | 70mm protection length  |
| 5057-5-100 | Pedrilling Assembly, Ø 5.0mm, short       | 73mm protection length  |
| 5057-6-100 | Pedrilling Assembly, Ø 6.0mm, short       | 90mm protection length  |
| 5057-3-200 | Pedrilling Assembly, Ø 3.0mm, long        | 43mm protection length  |
| 5057-4-200 | Pedrilling Assembly, Ø 4.0mm, long        | 100mm protection length |
| 5057-5-200 | Pedrilling Assembly, Ø 5.0mm, long        | 113mm protection length |
| 5057-6-200 | Pedrilling Assembly, Ø 6.0mm, long        | 120mm protection length |



|            |                                               |
|------------|-----------------------------------------------|
| 5057-6-300 | Pin Cutter, 4mm, 5mm & 6mm, Extension Handles |
|------------|-----------------------------------------------|



|            |                                  |
|------------|----------------------------------|
| 5057-9-913 | Apex™ Storage Tray, Metal Lid    |
| 5057-9-912 | Apex™ Storage Tray, Upper Insert |
| 5057-9-911 | Apex™ Storage Tray, Lower Insert |
| 5057-9-910 | Apex™ Storage Tray, Metal Base   |



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## Joint Replacements

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## Trauma, Extremities & Deformities

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## Craniomaxillofacial

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## Spine

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## Biologics

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## Surgical Products

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## Neuro & ENT

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## Interventional Pain

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## Navigation

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## Endoscopy

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## Communications

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## Imaging

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## Patient Handling Equipment

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## EMS Equipment

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CH-2545 Selzach  
Switzerland

[www.osteosynthesis.stryker.com](http://www.osteosynthesis.stryker.com)

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