The Percutaneous Reduction Forceps
Technique Guide
Introduction

The Percutaneous Reduction Forceps

The Percutaneous Reduction Forceps facilitate standard technique for fixation of phalangeal fractures, by incorporating a cannulated percutaneous sleeve as one of the reduction points. The forceps allow placement of self-tapping screws of up to 1.5mm diameter through a minimal (approximately 6mm) incision.

The percutaneous sleeve accepts individual drill guides for accurate placement of the threaded and gliding holes. The trocar and drill guides screw into the sleeve separately and are offset slightly from the opposing reduction point to avoid interference with the drill bit.

A built-in screw length measurement gauge gives a direct reading of screw length by measuring the bone held between the points of the forceps.

The forceps rotate around the cannulated percutaneous sleeve and opposing reduction point for convenient access to the surgical site.

The self-retaining screwdriver shafts facilitate insertion and removal of the self-tapping screws through the percutaneous sleeve.
Indications + Product Overview

Final screw placement

Postoperative image of a fracture which was fixed with two 1.5mm cortex screws through the Percutaneous Reduction Forceps.

**Drill Bits**

- 0.76mm (green) for 1.0mm screws
- 1.0mm (yellow) for 1.3mm screws
- 1.1mm (red) for 1.5mm screws

**DRILL BIT REFERENCE CHART**

<table>
<thead>
<tr>
<th>Self-tapping Cortex Screw</th>
<th>Drill Bit for Threaded Hole</th>
<th>Drill bit for Gliding Hole</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0mm</td>
<td>0.76mm (green)</td>
<td>1.0mm</td>
</tr>
<tr>
<td>1.3mm</td>
<td>1.0mm (yellow)</td>
<td>1.3mm</td>
</tr>
<tr>
<td>1.5mm</td>
<td>1.1mm (red)</td>
<td>1.5mm</td>
</tr>
</tbody>
</table>
Technique for placement of 1.5mm self-tapping cortex screws

1 Reduce the fracture

Perform basic reduction and make a short (approximately 6mm) incision where the screw will be inserted. With the radiolucent trocar screwed into the sleeve, use the Percutaneous Reduction Forceps to achieve proper reduction.

Squeeze the handles together firmly to apply a preload to the forceps and secure the speed lock.

Confirm reduction and location of the trocar under image intensification. While firmly squeezing handles, remove trocar and resecure the speed lock.

Warning
This description is not sufficient for the immediate application of the instrumentation. Instruction by an experienced surgeon in handling this instrumentation is highly recommended.

Technique tip:
During application of the Percutaneous Reduction Forceps, the forceps sleeve may lie directly over a portion of the extensor mechanism so that the drill bit may penetrate or transgress the extensor mechanism. Full insertion of the screw to the bone will leave the extensor mechanism free for gliding motion during postoperative functional use.
2 Drill both cortices (threaded hole)

Screw the Drill Guide 1.1 into the forceps sleeve (Fig. 2A).
Drill through both cortices with a 1.1mm Drill Bit (Fig. 2B).
Remove the Drill Bit and Drill Guide.

3 Overdrill near cortex (gliding hole)

Insert the Drill Guide 1.5 into the sleeve (Fig. 3A).
Using a 1.5mm Drill Bit, drill the near cortex (Fig. 3B).
Remove the Drill Bit and Drill Guide.
4 Measure for screw length

Read the screw length directly on the built-in length gauge by counting up from the “0” measurement to the bottom of the sliding jaw (see arrow in illustration).

Note:
If the point of the forceps penetrates the cortex significantly, it may be necessary to increase screw length to compensate.

5 Insert self-tapping screw

With the self-retaining screwdriver, insert a 1.5mm self-tapping screw of the appropriate length. Tighten the screw and confirm fracture reduction and screw position under image intensification.

Repeat the procedure for additional screws as needed. In general, if a fracture extends more than two to three times the diameter of the bone the stability can be fixed with two or more lag screws alone.

Note:
Use the same technique to insert 1.0mm and 1.3mm screws in very small condylar fractures. Use the appropriately marked Drill Guide with each drill bit. (See Reference Chart on page 3 for the correct Drill Bits to use for each screw.)
Product Overview

Instruments and Implants

145.335 Percutaneous Reduction Set

304.565 Instrument and Implant Module for Percutaneous Reduction Forceps including three Screw-length marker Sets 306.668, without contents

<table>
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<tr>
<th>Instruments</th>
<th>Units</th>
<th>Implants</th>
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<tbody>
<tr>
<td>311.030 Handle, small, with mini quick coupling</td>
<td>1</td>
<td>399.007 Drill Guide 1.0 for Percutaneous Reduction Forceps</td>
</tr>
<tr>
<td>313.991 Screwdriver Shaft 1.0, cruciform, self-retaining</td>
<td>1</td>
<td>399.008 Drill Guide 1.1 for Percutaneous Reduction Forceps</td>
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<tr>
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<td>399.009 Drill Guide 1.3 for Percutaneous Reduction Forceps</td>
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<tr>
<td>313.993 Screwdriver Shaft 1.5/2.0mm, cruciform, self-retaining</td>
<td>1</td>
<td>399.011 Drill Guide 1.5 for Percutaneous Reduction Forceps</td>
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<tr>
<td>316.114 Drill Bit, 0.76mm dia., with Stop, drilling depth 14mm, for Stryker coupling</td>
<td>2</td>
<td></td>
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<tr>
<td>316.235 Drill Bit, 1.0mm dia., length 60/35mm, for Stryker coupling</td>
<td>2</td>
<td>400.526-1.0mm Cortex Screws, self-tapping, 6, 7, 8, 10, 12, 14mm, pure titanium, 2 ea.</td>
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<tr>
<td>316.335 Drill Bit, 1.3mm dia., length 65/40mm, for Stryker coupling</td>
<td>2</td>
<td>400.534</td>
</tr>
<tr>
<td>317.235 Drill Bit, 1.1mm dia., length 65/40mm, for Stryker coupling</td>
<td>2</td>
<td>400.686-1.3mm Cortex Screws, self-tapping, 6, 7, 8, 10, 12, 14mm, pure titanium, 2 ea.</td>
</tr>
<tr>
<td>317.435 Drill Bit, 1.5mm dia., length 85/60mm, for Stryker coupling</td>
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<td>400.694</td>
</tr>
<tr>
<td>399.003 Percutaneous Reduction Forceps</td>
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<td>400.808-1.5mm Cortex Screws, self-tapping, 8, 9, 10, 11, 12, 14, 16, 18mm, pure titanium, 3 ea.</td>
</tr>
<tr>
<td>399.004 Trocar for Percutaneous Reduction Forceps</td>
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<td>400.818</td>
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<tr>
<td>399.005 Plastic Trocar for Percutaneous Reduction Forceps</td>
<td>1</td>
<td>400.820-1.5mm Cortex Screws, self-tapping, 20, 22mm, pure titanium, 2 ea.</td>
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<tr>
<td>399.006 Drill Guide 0.76 for Percutaneous Reduction Forceps</td>
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<td>400.822</td>
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