INSTRUMENTATION FOR MINIMALLY-INVASIVE FOREFOOT SURGERY
The aim of the surgical approach to Hallux Valgus referred to as “minimally invasive” is the same as that of open-air surgery:

1st shaft
M1:
>> to reduce the prominence of the medial side of the 1st metatarsal head;
>> to perform osteotomy of the basis of M1;
>> to perform distal osteotomy of M1;
    - with translation or not;
    - with correction of excess DMAA (Distal Metatarsal Articular Angle), by realignment of the distal articular surface of the 1st metatarsal.

MTP joint:
>> to perform lateral arthrolysis of the MTP joint (Metatarsophalangeal joint).

P1:
>> to perform every type of osteotomies: varisation, derotation, shortening.

Lesser rays:
>> to perform Distal Metatarsal Mini Invasive Osteotomies (DMMO).
>> to perform lesser toes deformities corrections.

The type of surgery is based on the use of specific equipment (Manual instruments, Fluoroscope, and appropriate power system) to allow the use 1 or 3 mm incisions (minimally invasive approaches). The FH ORTHOPEDICS manual instruments are ideally suited to the specific requirements of this type of surgery: a complete instrumentation and a wide range of specifics burrs.

Instrumentation

> Simple, compact instrumentation.
> 7 essential instruments:
  - 2 rasps to extract bone debris.
  - Separator and retractors to ease the surgical procedure.

Rasps

>> The rasps were designed to extract small bone debris (and not to rasp the bone) produced when reducing the volume of the 1st metatarsal head by the use of burr.
>> They have different orientations (angle: 15°) and are available in 2 widths (1.5 mm and 3 mm).
>> Anatomic handle for efficient ergonomy.
INSTRUMENTATION FOR MINIMALLY INVASIVE FOREFOOT SURGERY

>>>> Surgical knife

Beaver handle (ref. 254 327) + Beaver blade 3 mm (ref. 266 510)

To permit minimal invasive approaches.

It consists of a blade holder 75 mm long perfectly adapted to MIS gestures.

The Beaver blades used have the advantage of permitting an incision in the line of the surgical knife over a width of between 1 to 3 mm.

1° mini-incision using Beaver surgical knife

Lateral release using the Beaver surgical knife

Use of fluoroscopy to monitor the position of raspatory

1° mini-incision using Beaver surgical knife

Lateral release using the Beaver surgical knife

Use of fluoroscopy to monitor the position of raspatory

>>>> Separator

Periosteal elevators (ref. 258 160)

To elevate the soft tissues and create a "working" area.

To work directly in contact with the bone.

1 elevator and 1 raspatory assembled in one unique instrument.

Use of fluoroscopy to monitor the position of raspatory

Use of fluoroscopy to monitor the position of raspatory

>>>> Retractors

Percutaneous osteotomy bone lever (ref. 258 163)

Percutaneous bone lever is designed to displace easily (lateral translation) the 1st shaft osteotomy, by percutaneous approach.

Retractors are used to create a "working area" by exposing the metatarsal head for osteotomy procedure by mini-open approach.

Bottom retractor (ref. 258 161)

Top retractor (ref. 258 162)
A handpiece should be used.
8 specific burrs have been designed. Depending on their shape they enable the surgeon to perform osteotomies or bone resections.

>> Single use;
>> Individually sterile packed;
>> Protection by a silicone ring;
>> Easy identification thanks to the color coded;
>> Connection possibility: rounded end for Jacob chuck;
>> Rotation rate: 1500 to 8000 RPM (max); the use of a torque reducer is highly recommended.

### Instruments set

<table>
<thead>
<tr>
<th>Ref.</th>
<th>be POD MIS II</th>
</tr>
</thead>
<tbody>
<tr>
<td>258 158</td>
<td>RASP THICK. 1.5 MM MIS II be POD</td>
</tr>
<tr>
<td>258 159</td>
<td>RASP THICK. 3 MM MIS II be POD</td>
</tr>
<tr>
<td>258 160</td>
<td>ELEVATOR - RASPSATORY MIS II be POD</td>
</tr>
<tr>
<td>258 161</td>
<td>BOTTOM RETRACTOR MIS II be POD</td>
</tr>
<tr>
<td>258 162</td>
<td>TOP RETRACTOR MIS II be POD</td>
</tr>
<tr>
<td>258 163</td>
<td>PERCUTANEOUS OSTEOTOMY BONE LEVER MIS II be POD</td>
</tr>
<tr>
<td>254 327</td>
<td>BEAVER HEX. HANDLE 7.5 CM D. 0.5 CM MIS II be POD</td>
</tr>
<tr>
<td>258 164</td>
<td>BOX FOR MIS FOOT INSTRUMENTS MIS II be POD</td>
</tr>
</tbody>
</table>

A complete surgical technique is also available:
“Minimally Invasive Surgery”, a document produced by the GRECMIP group (Research and Study Group for Minimally Invasive Foot Surgery) and the TALUS group from GECO (www.geco-medical.org).