







## How does OrthoPilot® work?

Various different components work together in OrthoPilot® to make navigation of the instruments possible. We would like to introduce and explain these briefly below:

### 1. Infrared camera

The camera uses infrared light to establish the position of the transmitters and the mobile palpation instruments. Infrared light is not dangerous to health and is also used as a form of treatment in other areas.

### 2. Transmitters

Transmitters are fixed to the instrumentation and send infrared light to the camera, from which the positional data are calculated.

### 3. Mobile palpation instrument

The mobile palpation instrument reflects infrared light emitted by the camera, and from this the positional data are calculated.

### 4. Screen

The screen displays the axes and other data.

### 5. Cart

This contains the computer, keyboard and mouse.



OrthoPilot® is a unit comprising a computer with keyboard and mouse, a screen, a camera and transmitters. On this basic unit the software for calculating the navigation is used, and it is possible to use different software applications for different operations. During the operation the position of the instrumentation is continuously displayed via the transmitters attached to the instruments and to the pelvis. From the different positions of the transmitters, the software is able to calculate a three dimensional image. The first step is to measure the pelvis and calculate the anatomical axes. The screen shows the surgeon the position of the instrumentation in relation to the calculated axes. This permits accurate positioning of the artificial knee joint.



## The surgical procedure with OrthoPilot®

1. An incision approx. 15 cm in length is made in the skin and the muscles and knee cap are moved aside to expose the knee joint.
2. Transmitters are fixed onto the foot, thigh and lower leg.
3. The midpoints of the hip, knee and ankle are calculated by moving the leg. The ideal load bearing axis runs through these points. The OrthoPilot® camera records the movements of the transmitters.
4. To achieve the optimum implant surface for the prosthesis components, the upper and lower leg bones are prepared with a saw at right angles to the leg axis.
5. The screen shows the doctor the exact position of the cutting templates and when these are in the right position and at the correct angle.
6. Once the optimum implant bed has been created, the knee prosthesis is implanted in correct axial alignment. The doctor can check the result of the implantation again by referring to the leg axis.



The calculation of the mechanical leg axis is displayed on screen



The mechanical leg axis



Positioning the cutting templates