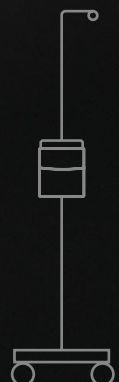


A detailed, high-contrast close-up of a bird of prey, likely a falcon or hawk, focusing on its head and eye. The bird has dark, textured feathers and a sharp, hooked beak. Its eye is a striking yellow with a dark pupil. The background is dark and out of focus.

**oerli**<sup>®</sup>  
S W I T Z E R L A N D

**CataRhex 3<sup>®</sup>**  
MAKING THE DIFFERENCE  
WITH MAXIMUM MOBILITY

EYE SURGERY. SWISS MADE.





# MAKING THE DIFFERENCE WITH UNIQUE VERSATILITY

«The best fluidics and versatility  
compared to other technologies.  
My professional life has changed  
since I started using Oertli.»

**Dr. Fernando Aguilera**  
Instituto de Ojos  
Mexicali, Mexico



# PERFECTION TO THE CORE

With its innovative developments and first-class quality, Oertli has set new standards in cataract surgery, vitrectomy and glaucoma surgery over and over again. Oertli surgical platforms, technologies and instruments enable surgeons and OR personnel to perform surgeries in a safer, easier and more efficient way – thus achieving better results for patients.

To ensure perfect processes and results, Oertli surgical platforms form a closed system together with their matching instruments. Every instrument is compatible with every Oertli surgical platform, provided the relevant function is available.

With its instruments, hand pieces, tips and auxiliary means, Oertli has consistently built on quality. Instruments are developed in Berneck, Switzerland, and perfected with the highest degree of precision to make surgeons fully rely on their tools.



Christoph Bosshard  
CEO

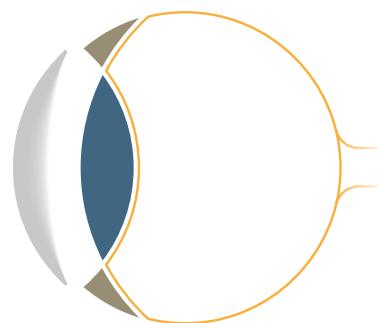
Thomas Bosshard  
Head of Marketing & Sales

# CATARHEX 3® – BOASTING FLEXIBILITY WITHOUT MAKING COMPROMISE IN PERFORMANCE

The Oertli surgical platform CataRhex 3 impressively demonstrates that great platforms can sometimes be very small. With hitherto unachieved compactness and a lightweight of five kilogrammes, the CataRhex 3 device is consistently geared to mobility and portability – without making any compromises on performance. easyPhaco technology ensures safe and efficient emulsification. Thanks to the HF capsulotomy tip, capsulorhexis has become incredibly easy. In the I/A mode, CortexMode ensures even greater safety. A compressor has been integrated for anterior vitrectomy, and in glaucoma surgery, the HFDS application ensures excellent long-term results.

**Make the difference –  
with the CataRhex 3 by Oertli.**

Cataract	●
Glaucoma	●
Vitrectomy	



# CONTENT

<b>Simple and safe operation</b>	<b>8</b>	Especially in unusual situations or under pressure of time, it is essential that eye surgery can be performed simply and efficiently. That is why the surgical platform CataRhex3 has been consistently geared to user-friendliness and does without complicated menu navigation.
<b>The multifunctional pedal</b>	<b>9</b>	Robust, mobile and intuitively controllable – the linear pedal of the CataRhex3 is the reliable control unit for the surgeon.
<b>Areas of application</b>	<b>10</b>	<b>Cataract surgery</b> Thanks to Oertli innovations such as easyPhaco or HF capsulotomy, cataract surgery now works as safely and calmly as never before.
	<b>16</b>	<b>Glaucoma surgery</b> In glaucoma treatment, Oertli's HFDS ab interno MIGS technology accomplishes excellent long-time results.
<b>Performance spectrum</b>	<b>18</b>	Despite its distinct compactness the CataRhex3 offers peak precision and impressive performance in cataract and glaucoma surgery.

# CATARHEX 3® – ALL ADVANTAGES AT A GLANCE

User-friendly and logically  
aligned control panel

CortexMode™ for  
greater safety in I/A

Highly precise  
flow control

easyPhaco® technology  
for safe and efficient  
emulsification

Easy capsulorhexis with  
the HF capsulotomy tip

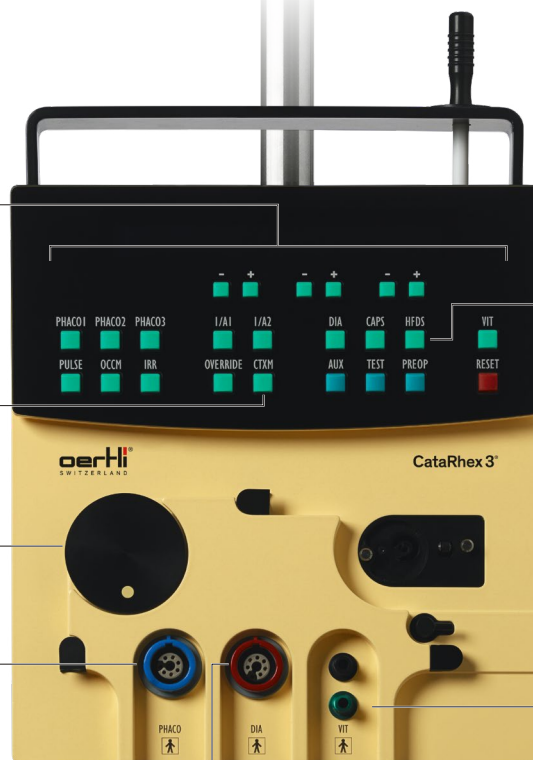
Ready for operation  
within seconds

Integrated HFDS™  
application for  
glaucoma surgery

Maximum mobility  
thanks to light weight  
and small size

Integrated compressor  
for anterior vitrectomy

Robust and precise  
multifunctional pedal



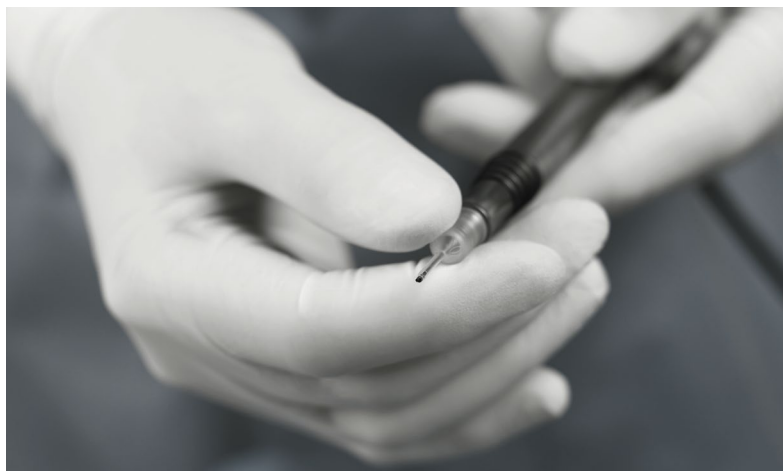
# SMALL PLATFORM, GREAT PERFORMANCE

The CataRhex 3 by Oertli is a consistently compact and portable surgical platform for cataract and glaucoma surgery. The whole load of Oertli's innovative power is hidden in an impressively small housing. The perfectly precise flow control, the powerful performance and the high user-friendliness of the CataRhex 3, make it the ideal device in eye surgery – in any situation anywhere.

## **Fluidics – perfectly used**

That it is for good reason Oertli is considered the innovative leader in eye surgery when it comes to making best use of fluidics and physics, is proved by the CataRhex 3 as well. The fluidics concept works with physical laws in a consistent way and makes additional software manipulations unnecessary. Nor is the CataRhex 3 device dependable on complicated electronics and sensor systems.

Thanks to the perfect flow control of the peristaltic principle, the CataRhex 3 develops incredible precision and tremendous power, with easyPhaco in phaco emulsification, and in I/A and anterior vitrectomy. The flow can be controlled at steps of 0.1 ml. With the innovative Cortex-Mode, the I/A vacuum can be built up instantly, and the flow can nevertheless be precisely limited. The vacuum sensor integrated into the tubing system ensures reliable monitoring.





## OPERATION

# FAST, SAFE AND INTUITIVE

As a multifunctional surgical platform for cutting-edge eye surgery, the CataRhex3 is a powerful and compact masterpiece of surgical technology. Despite impressive technology, the CataRhex3 is easily and safely operable in any situation. The display is clear, the user-comfort is high. Everything gives the impression of clarity and simplicity. This makes work for the surgeon and OR personnel understandable and safe. In addition, the surgical platform is ready for start incredibly quickly: within 5 seconds after it has been switched on, the system is ready for operation.

### Connections

The user-friendliness of the CataRhex3 reveals itself even prior to the surgery. All connections are easily accessible from the front and placed at the same operational height. All instruments can be plugged in from the front thanks to unmistakable coding. The tubing system can be mounted in a sterile way from the front.

### Control panel

The bright displays of the control panel are clear, very well readable, and inform the surgeon precisely of surgical values and settings. The operating buttons are arranged in logical sequence and always have the same function, which can be activated instantly by key pressure. The swivel-mounted display ensures unobstructed view for the surgeon and assistants. In the ParaProg background programme, the various functions have been individually stored for each surgeon and surgical technique. Programming is possible for up to 20 surgeons.

### Infusion pole and instrument table

The optional infusion pole and the easily mountable instrument table make the CataRhex3 a flexible surgical platform.





## PEDAL

# THE MULTIFUNCTIONAL PEDAL

The robust multifunctional pedal of the CataRhex3 enables reliable and precise navigation and control of the system by means of simple foot movements. The pedal is waterproof, incredibly compact and only weighs 2.6 kilogramme.

### **Strong, precise, reliable**

The linear foot pedal is the multifunctional control unit of the CataRhex3. Made of strong metal and manufactured in high quality, the pedal absorbs the commands of the surgeon instantly and in a sensitive way. The CataRhex3 can be controlled with great precision and efficiency by making simple foot movements. For fine linear control of all instruments, retrieving of stored data and On and Off functions, four movement ranges (position 0 to 3) are at the surgeon's disposal.

The pedal is waterproof and requires very little space, it can easily be moved with the foot and ensures fatigue-free operation. The CataRhex3 works with a classic cable connection to secure reliable data transfer.



- 
- Linear multifunctional pedal
  - Waterproof, robust and compact
  - Delay-free transmission of commands
  - Four movement areas for navigation and control
  - Cable connection
-



CATARACT SURGERY

# CATARHEX 3<sup>®</sup> IN CATARACT SURGERY

The CataRhex 3 makes cataract surgery incredibly fast, safe, calm, and – thanks to its excellent mobility – economical and everywhere accessible. The space-saving and portable surgical platform ensures safe cataract surgery of the highest level, both in cutting-edge high-performance operating theatres and under awkward circumstances or unusual conditions.

# HF CAPSULOTOMY EASYPHACO®

## HF capsulotomy

Since its launch in 1991, high-frequency capsulotomy has proven itself in hundred thousand of cases as the ideal method for opening lens capsules. By using high-frequency energy, the capsule bag can be melted very easily – totally without any of the usual tearing with forceps and needle. Gently sliding over tissues, and even under the iris using the capsulotomy tip and giving out diathermy power suffices. The capsule edge thus created meets the highest requirements – both intraoperatively and in the long run.

HF capsulotomy is particularly suited for indications such as no fundus reflex, hypermature cataract, traumatic cataract, intumescent cataract, and juvenile cataract. Even in the case of a narrow pupil, a rhexis that is out of control or rhexis phimosis, HF capsulotomy ensures the best results.

### Advantages of capsulotomy

- Particularly gentle alternative to capsulorhexis
- Melting of capsule bag without any tearing with forceps or needle
- Extremely fine and directly controllable dosing of HF energy
- Remarkably safe in difficult cases

## easyPhaco®

By making use of fluidics technology, easyPhaco enables immediate aspiration of the lens material and ensures perfect followability. The unique design of the tips (you will find more information on easyTips here) ensure unsurpassed chamber stability, while at the same time, incredibly high holdability can be felt. Aspiration of fragments runs efficiently and without any repulsions. The focussed axial output of ultrasound energy ensures targeted emulsification directly into the lens fragment. And, because the Oertli phaco hand piece is equipped with six Piezo crystals, the transmission of power to the tip happens in a direct and gentle way with less heat development.

### Advantages of easyPhaco®

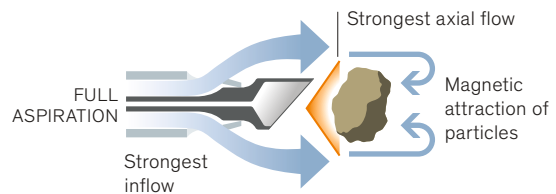
- Unsurpassed chamber stability
- Perfect followability thanks to precise flow control
- Focussed axial output of ultrasound energy
- Direct and gentle transmission of power to the tip
- Efficient fragment aspiration without repulsion
- Available from 1.6 mm up to 2.8 mm



# EASYPHACO® TECHNOLOGY

## No turbulence

The high vacuum setting of easyPhaco and a wide infusion path create a strong, axially directed flow. The result: no turbulence, no floating fragments, magnetic attraction of material and perfect followability.



## No repulsion

The high vacuum setting of easyPhaco and the optimised bevel of the easyPhaco tip lock fragments firmly to the tip mouth with magnetic holdability, strong enough to prevent repulsion.



## No laterally radiating energy

US energy is applied axially and totally absorbed within the high vacuum locked core material. This way repulsions can be effectively prevented.



## Perfect emulsification

High vacuum locking and optimised tip design provide superb coupling of US energy to the core material. Energy transfer to the core material is increased by a factor of 6. Hard and mature nuclei create no problems.



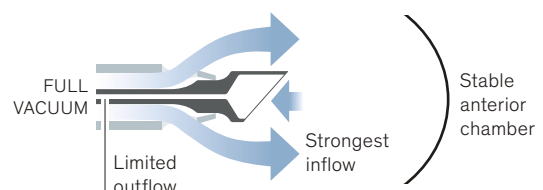
## Efficient fragment aspiration

Finely emulsified nuclear particles are smoothly aspirated by high vacuum through the capillary aspiration channel. No risk of clogging.



## No surge

Upon occlusion break, the capillary aspiration channel resists a sudden liquid flow while the wide infusion path provides constant IOP. The infusion capacity is 7 times higher than the aspiration volume. The AC remains almost unconditionally stable.

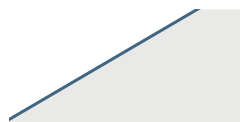


## Phako Modulation

CataRhex3 offers four different performance modulation types that can be used in combination with easyPhaco or any other phaco technique. The ideal fluidics-support with easyPhaco reduces ultrasound application to a minimum in any case. Even with the traditional linear control, very short phaco time duration is achieved.

### Continuous Linear

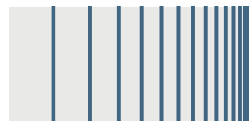
The standard method is very efficient. The surgeons have to adjust the power output themselves. The phaco power output corresponds to the pedal deflection.



Continuous linear

## Femto Aspiration

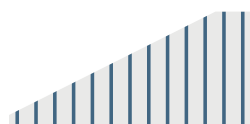
The femto laser promises to take over a number of operational steps in cataract surgery in the future – simply marvellous! There is only one exception: aspiration of nucleus and cortex and polishing the capsule. This is where CataRhex3 is at its best! easyPhaco high fluidics settings and burst mode make phaco energy for the aspiration of pre-fragmented nuclei go down up to zero, they provide tremendous speed and keep the capsule low. With Cortex-Mode, execution of the demanding cleaning procedure of the capsule following femto application is especially safe, thorough and efficient. CataRhex3 is the best partner for every femto laser!



Burst Modulation

### PULSE Modulation

Reduces the ultrasound energy delivered. Pulse frequency (up to 40 Hz) and cooling factor can be selected as desired and independently of the pedal setting. Pulse output corresponds to the pedal position.



PULSE Modulation



# IRRIGATION / ASPIRATION HF DIATHERMY

## I/A with Safety Design

The I/A instruments by Oertli make irrigation and aspiration even safer. The Quick Tips with Safety Design have an extended shaft length to enable better sub-incisional access. The minimized aspiration opening results in an improved occlusion capacity, increases the safety during aspiration and ensures optimum stability of the anterior chamber. The thoroughly thought-out positioning of the aspiration opening prevents unintended gripping of the capsule bag. Especially in a combined application with the CortexMode, the Quick Tips offer utmost safety.

### **Advantages of I/A with Safety Design**

- Absolutely stable anterior chamber
- Easy sub-incisional accessibility
- Occlusion achieved quickly
- High safety standard during capsule cleaning
- Highly efficient in combination with CortexMode
- Available from 1.6 mm up to 2.8 mm

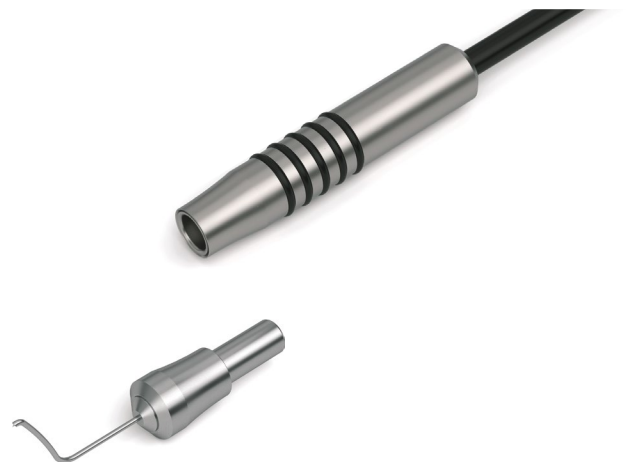


## HF bipolar diathermy

Thanks to its trendsetting control system, the CataRhex3 ensures extremely fine and directly controllable dosing of HF energy, optimized for proven applications of bipolar technology. Tips with cleverly thought-out geometry and excellent choice of material make bipolar diathermy to a true instrument of precision. The high frequency diathermy is extremely effective, even at a low level of power output. High quality titanium hand pieces and innovative tips enable absolute precision and the highest degree of safety.

### **Advantages of HF bipolar diathermy**

- A function for various applications:  
Oertli capsulotomy, HFDS, diathermy forceps
- Fine and directly controllable dosing of HF energy
- High-quality hand pieces of titanium
- Tips with well-thought-out geometry and high-quality materials
- High efficiency already at a low power output



# ANTERIOR VITRECTOMY

## Vitreous body removal

Thanks to the integrated compressor in Oertli's CataRhex3, anterior vitrectomy is always ready for immediate application. As an external compressed air supply is not necessary, surgeries can also be performed under exceptional circumstances. The pneumatically driven vitrectomy cutter enables extremely efficient work up to 2400 cuts a minute. Using the Caliburn trocar system, anterior vitrectomies can also be performed transconjunctivally with access via the pars plana.

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### **Advantages of physics and fluidics in anterior vitrectomy**

- Ready for use at any time
  - Thanks to integrated compressor, compressed air supply is not necessary
  - Pneumatically-driven vitrectomy cutter for traction-free work
  - Up to 2400 cuts/minute, depending on the type of cutting instrument
- 





GLAUCOMA SURGERY

# CATARHEX 3<sup>®</sup> IN GLAUCOMA SURGERY

With surgical treatments of glaucoma, the CataRhex 3 enables even greater safety and efficiency in micro-invasive glaucoma surgery (MIGS). HFDS creates a direct access from the anterior chamber to the Schlemm's canal, thereby avoiding the outflow resistance of the trabecular meshwork. Despite the short intervention time, this method boasts excellent long-time results.

# HFDS™

## High Frequency Deep Sclerotomy™

HFDS is short for *High Frequency Deep Sclerotomy*. In micro-invasive glaucoma surgery (MIGS) HFDS creates a direct access from the anterior chamber to the Schlemm's canal, and further to the sclera. This way, the outflow resistance of the trabecular meshwork is significantly reduced. The abee glaucoma tip is led through a paracentesis of 1.2 mm and places six small sclerotomy bags in the iridocorneal angle by means of high frequency diathermy output. This enables a better outflow of aqueous fluid.

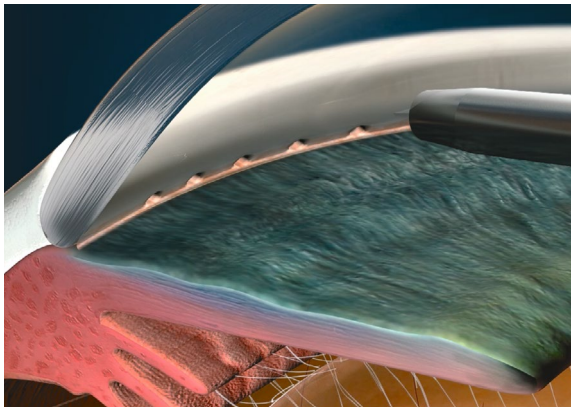
HFDS can be applied individually or in combination with cataract surgery. It is characterized by a very short intervention time. Bleb formation (filtration into the sub-conjunctival space) as well as fibroblast movement to the sclerotomy are effectively prevented. Neither will there be a corneal scar. Oertli's High Frequency Deep Sclerotomy ab interno boasts superb long-time results. An intervention with HFDS can be repeated if required.

### Advantages of HFDS

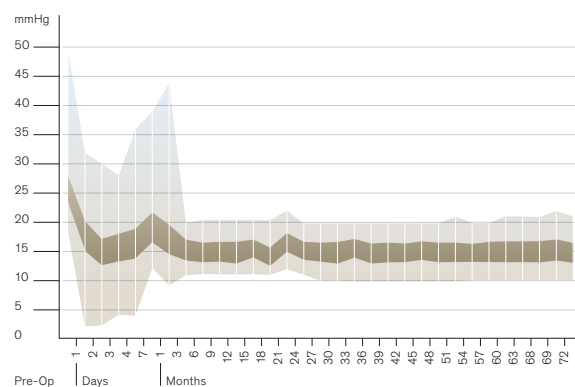
- Ideal in combination with cataract surgery or as individual application
- Very short intervention time
- Excellent long-term results
- No bleb-formation, no corneal scars
- Surgery can be repeated
- Very low complication rate



abee glaucoma tip



### Excellent long-time results (72 months) after performed HFDS\* procedure



\*Bojan Pajic: Long-term Results of a Novel Minimally Invasive High-Frequency Deep Sclerotomy Ab Interno Surgical Procedure for Glaucoma, European Ophthalmic Review, Volume 6, Issue 1, Spring 2012, ISSN 1756-1795

# CATARHEX 3<sup>®</sup> — PERFORMANCE SPECTRUM

## System

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### Fluidics system

- Peristaltic pump
- Tubing system with integrated closed pressure sensor
- Auto venting
- Limitable reflux
- Pre-op, self-testing and reset functions

### Operation

- Control panel with glass cover, translucent indicator lights, silicon buttons
- Linear multifunctional pedal
- Individual programming for 20 surgeons
- Audio signals

## Anterior segment

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### HF functions

- Capsulotomy
- HFDS ab interno MIGS glaucoma surgery
- Conjunctiva coaptation
- Macro diathermy

### Phaco function

- Three programme memories with DirectAccess
- Ultrasound phaco with auto tuning
- U/S phaco hand piece with six piezo crystals
- Linear, PULSE, BURST, CMP and Panel Mode
- Occlusion mode
- easyPhaco, CO-MICS and MICS technology

### I/A function

- Two programme memories with DirectAccess
- Vacuum-override function
- Continuous irrigation
- CortexMode

### Anterior segment vitrectomy

- Three programme memories
- Dual pneumatic guillotine cutter
- Linear 30 to 2400 cuts a minute
- Single cut
- Irrigation/aspiration/cut
- Irrigation/cut/aspiration



MOBILITY

# CATARHEX 3® – UNBEATABLE COMPACT



CataRhex3 – the only surgical platform that fits into a pilot case but is nevertheless extremely efficient.

# MAKING THE DIFFERENCE IN EYE SURGERY

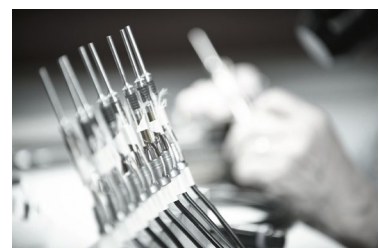
Oertli makes the difference. With its excellent surgical devices and instruments that make surgical interventions safer, easier and more efficient. With lasting innovations and new technology that have long-term impact on ophthalmology. With superb service and real added value for surgeons and OR personnel. And, in its consistent pursuit to accomplish the very best for customers, users and patients.

## Setting standards

The name Oertli stands for Swiss quality of the highest precision and reliability. We develop and produce our products exclusively in Switzerland, in the St. Gall Rhine Valley. Thanks to this, we can rely on excellently trained employees and a dynamic environment and have the quality and conditions of our products under our own control.

In the course of its company history, Oertli has developed numerous innovations that have had a sustainable impact on eye surgery. Such success, however, does not make us slow down – on the contrary. We spend every day refreshing our research spirit making sure our innovative thirst will have new challenges again and again.

Although we are present in the whole world and gear ourselves towards the international market, in our hearts, we will always remain an independent family business with a good backbone, strong roots, solid financing and active teamwork. Anyone who works for Oertli does so with great commitment and motivation. As everyone gives their best, we can position ourselves on the market with great confidence. On this basis, we make the difference – for eye surgery, for our customers, and for patients.





### Distribution network

Oertli commits itself to the Berneck location in Switzerland. It is here that ideals and innovations come to exist, and here that our devices and instruments are developed and manufactured. To ensure our products can be used in the whole world, we rely either on our own distribution companies or independent distribution partners, depending on the relevant region.

In every case, our ophthalmology customers throughout the world can count on competent and reliable contact persons. They offer excellent on-site service, can inform and advise you on our entire product range and have been perfectly trained for work with our products.

### Information on trademark protection

Oertli®, CataRhex3®, easyPhaco®, easyTip®, abee® as well as the Oertli logo are registered trademarks of Oertli Instrumente AG.

Faros®, OS4®, HFDS®, FEELceps®, DirectAccess®, SPEEPMoDe®, Caliburn®, CortexMoDe®, ParaProg®, True Flow Control® and GoodLight LED® are trademarks of Oertli Instrumente AG.



# MAKING THE DIFFERENCE IN SWITZERLAND



As a Swiss family-owned company with a long tradition, we focus on what is important: quality, reliability, safety, innovation and the needs of our customers.

We make the difference – for you and your patients.







EYE SURGERY. SWISS MADE.



**Surgical  
platforms**



OS 4™



Faros™



CataRhex 3®



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