

NEW WITH  
SPEEP®


**oerli**®  
SWITZERLAND

**CataRhex 3**®  
MAKING THE DIFFERENCE  
WITH SPEEP®

EYE SURGERY. SWISS MADE.



# MAKING THE DIFFERENCE WITH RELIABILITY

A black and white portrait of a man with short hair and a beard, wearing glasses and a dark button-down shirt. He is smiling and looking directly at the camera. The background is dark and out of focus.

«We are thrilled with the CataRhex3, which is used in our practice for 100% of our in-office phaco applications. The platform is indestructible, totally reliable and completely intuitive, so there is virtually no learning curve. The device is very beautiful in its simplicity and using it is pure delight.»

**Jack Parker, MD PHD**  
Parker Cornea Alabama, USA

# PERFECTION TO THE CORE

Using its innovative developments and high-quality products, Oertli is continuously setting new standards in cataract, vitrectomy and glaucoma surgery. Oertli's surgical platforms, technologies and instruments allow surgeons and OR personnel to perform surgeries in a safer, easier and more efficient way providing better results for patients.

So as to ensure perfect processes and outcomes, Oertli surgical platforms and their corresponding instruments form a closed surgical system. Each instrument is compatible with all Oertli surgical devices, provided that the relevant function is available.

It goes without saying that Oertli is consistently committed to quality in its instruments, handpieces, tips and auxiliaries. Instruments are developed in Berneck, Switzerland, and manufactured with maximum precision, to ensure surgeons can totally rely on their tools.



Christoph Bosshard  
CEO

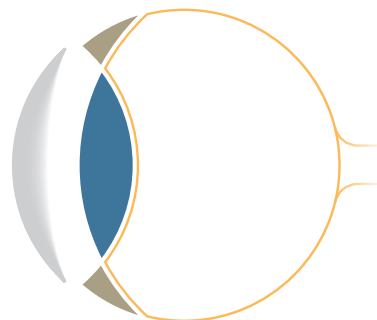
Thomas Bosshard  
Leiter Marketing & Verkauf

# CATARHEX 3<sup>®</sup> – FLEXIBILITY WITHOUT ANY COMPROMISES IN PERFORMANCE

The CataRhex3 surgical platform from Oertli impressively demonstrates that great things can sometimes be very small. With unbeatably compact dimensions and a light weight of only five kilograms, the CataRhex3 is thoroughly targeted to mobility and portability – without compromising on performance. With the new SPEEP pump, you are given a highly effective tool for even easier, safer and more efficient work in your daily surgical routine. easyPhaco technology ensures safe and extremely efficient emulsification. Thanks to the HF capsulotomy tip, capsulorhexis now turns out to be incredibly easy. A compressor has been integrated for anterior vitrectomy, and HFDS application boasts very promising long-term results in glaucoma surgery.

**Make the difference – with  
the CataRhex3 from Oertli.**

Cataract	●
Glaucoma	●
Vitrectomy	



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<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.
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# CATARHEX 3<sup>®</sup> – NEW WITH SPEEP<sup>®</sup>

## SPEEP – Speed and Precision

The unique pump innovation by Oertli is at your disposal now! The SPEEP pump\* offers you more efficiency and precision in your cataract surgery through its precise control of flow and vacuum. With the SPEEP pump, you are given a highly effective tool for even easier, safer and more efficient work in your daily surgical routine.

\*Modulation according to the principle of the peristaltic pump

## How does the SPEEP pump work?

SPEEP combines the advantages of a flow-controlled peristaltic pump with the sportiness of a Venturi pump. With the SPEEP pump, both flow and vacuum can be controlled independently of each other. This results in the desired mastery over fluidics and takes efficiency and safety to a new level. You will experience complete control, whether required for speedy nucleus preparation or fine capsule polishing.

The pre-set flow rate supports chamber stability in anterior segment surgery. The directly controllable vacuum ensures a fast response time and enhances the pump's sporty performance while maintaining subtle control. Even under



occlusion, you will be in complete control of the vacuum. Suction or release via the foot pedal can be performed easily and you will experience controlled holdability and manipulation of both fragments and tissue. With SPEEP, it is you who determines the speed of work.

#### What are the advantages of the SPEEP pump?

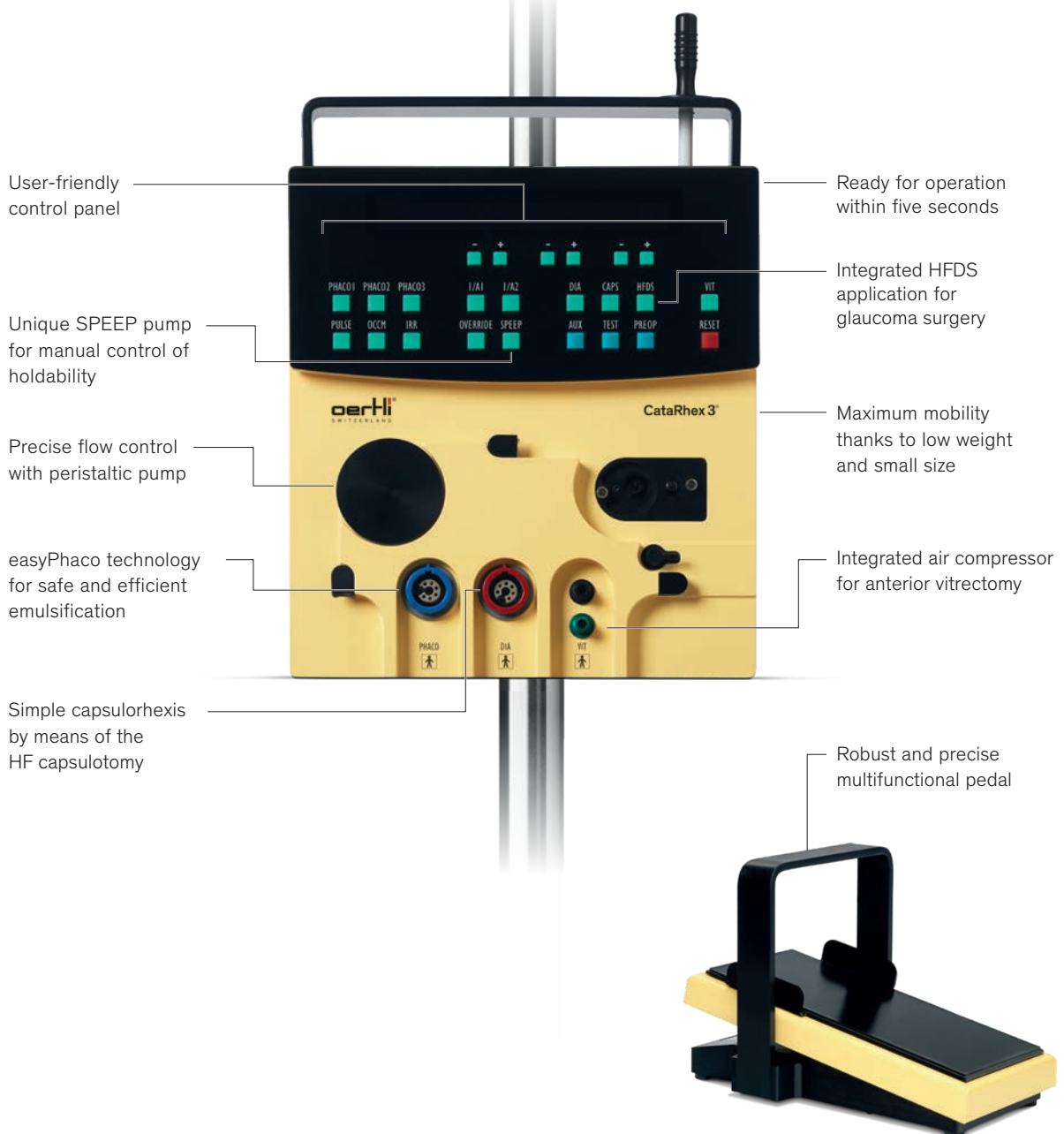
In cataract surgery, the SPEEP pump assists you in eyes with severe zonular weakness or floppy iris syndrome. Even during the removal of the epinucleus, the finely adjustable holdability of the SPEEP pump offers you complete control.

#### Fluidics: Unique 2-pump system

- Unique SPEEP pump – for manual control of holdability irrespective of the type of tissue
- Immediate and direct pump response – facilitates precise and fine manoeuvring directly at the tissue
- Independent control of flow and vacuum – developed to work under safe circumstances with maximum control and efficiency
- Precise fluidics based on physics – for a stress-free and sporty performance while simultaneously maintaining high chamber stability



# CATARHEX 3® — ADVANTAGES AT A GLANCE





# SMALL PLATFORM, GREAT PERFORMANCE

The CataRhex 3 is a thoroughly compact and portable surgical platform for cataract and glaucoma surgery. The impressively small housing contains all of Oertli's innovative power. The supremely precise flow control, the powerful performance and the high user-friendliness make the CataRhex 3 the perfect device for ophthalmic surgery in a variety of conditions.

#### **Fluidics based on physics – perfectly used**

Through the use of fluidics based on physics, Oertli's reputation as an innovative leader in ophthalmic surgery is reconfirmed by the CataRhex 3. The fluidics concept makes consistent use of the laws of physics.

Thanks to the perfect flow control of the peristaltic principle, the CataRhex 3 unfolds unimaginable precision and power in phaco emulsification by means of easyPhaco, in I/A and in anterior vitrectomy. The flow can be controlled in steps of 0.1 ml.

#### **SPEEP – Speed and Precision**

Due to enabling precise control of both flow and vacuum, the SPEEP pump creates efficiency and precision in your cataract surgery. Through controlled holding and suction of fragments, you can determine the working speed with the SPEEP pump.



## OPERATION

# SPEEDY, PLEASANT AND INTUITIVE

The multifunctional surgical platform CataRhex3 designed for cataract and glaucoma surgery is a masterpiece of surgical technology, boasting powerful performance and compact design. The device's display is clearly laid out, its ease of use is high, and everything about it looks clear and simple. In addition, the surgical platform is ready for operation incredibly quickly: after switching on, the system is ready for operation within five seconds.

### Connections

Even prior to the surgery, the CataRhex3 proves to be user-friendly. All connections are accessible from the front at and the same operating height. All instruments can be connected from the front with unmistakable coding. The tubing system is hooked in sterilely on the front side.

### Control panel

The bright displays on the control panel are clear and easily legible and provide you with precise information about surgical values and settings. The operating keys are logically arranged and always assigned to the same function, which can be activated without delay by pressing a key. The pivotable display panel provides the surgeon and assistant with unrestricted view. Programming is possible for up to 20 surgeons.

### Infusion pole/ instrument tray

The optional infusion pole and easy-to-mount instrument tray make the CataRhex3 a flexible surgical work station.



## MULTIFUNCTIONAL PEDAL

# THE MULTIFUNCTIONAL PEDAL

The robust multifunctional pedal of the CataRhex 3 enables reliable and precise control over the system through simple foot movements. The pedal is waterproof, extremely compact and weighs only 2.6 kilograms.

### **Robust, precise and reliable**

The linear foot pedal is the multifunctional control unit of the CataRhex 3. Made of robust metal and with a high-quality finish, the pedal responds to the surgeon's commands sensitively and without delay. The CataRhex 3 can be controlled precisely and efficiently through simple foot movements. Four movement ranges are available for fine linear control, recalling stored data and switching functions on and off.

The pedal is waterproof and takes up little space, it can be moved with the foot. To ensure reliable data transmission, the pedal of the CataRhex 3 operates via a classic cable connection.



- 
- Linear multifunctional pedal
  - Waterproof, robust and compact
  - Delay-free transmission of commands
  - Four movement ranges for command 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 challenging circumstances or unusual conditions.

# HIGH FREQUENCY- CAPSULOTOMY

## The gentle choice

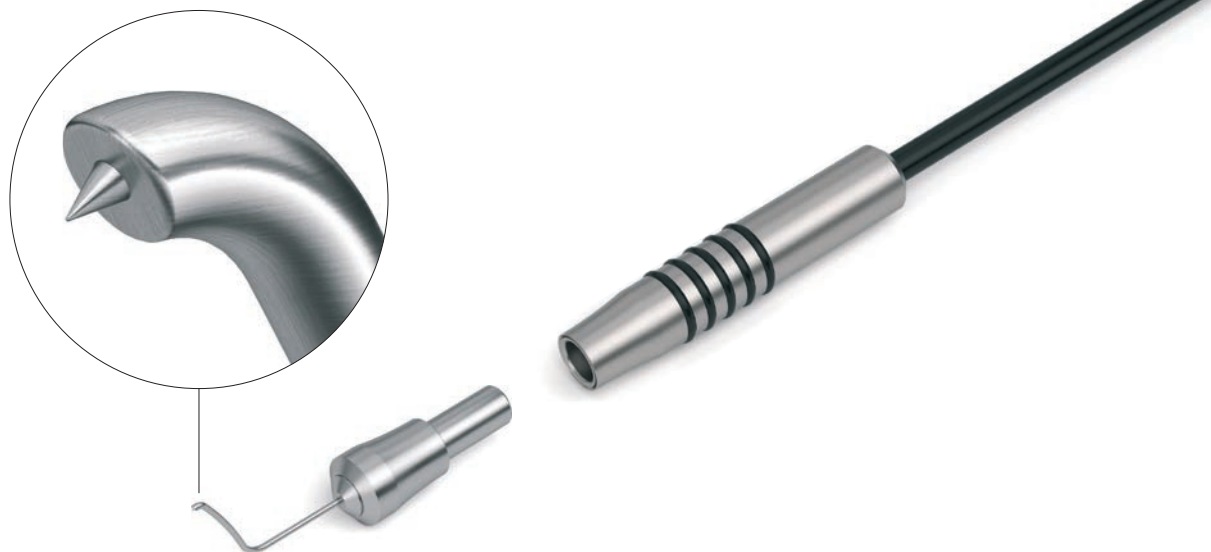
Since its launch in 1991, the high-frequency capsulotomy has proven to be the ideal method for opening the lens capsule in countless cases. By using high-frequency energy, the capsular bag can be easily melted – without the usual tearing with forceps or a needle. It is sufficient to glide gently over the tissue with the capsulotomy tip while delivering diathermy power, even under the iris.

Oertli's HF capsulotomy is particularly suitable for indications such as absent fundus reflex, hypermature cataract, traumatic cataract, intumescent cataract, juvenile cataract. Also in cases of narrow pupil, out-of-control rhexis or rhexis phimosis, the HF capsulotomy brings best results.

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### Advantages of HF capsulotomy

- Unique capsulotomy procedure using high-frequency diathermy
  - The gentle alternative to capsulorhexis
  - Melting of the capsular bag without tearing with forceps or needle
  - Finely and directly controlled dosing of the HF energy
  - Maximum control, even in difficult cases
- 



# EASYPHACO® TECHNOLOGY

## 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 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 easyPhaco handpiece is equipped with six Piezo crystals, the transmission of power to the tip happens in a direct and gentle way with less heat development.

### New easyPhaco® handpiece

The new easyPhaco handpiece offers surgeons optimized phaco performance over the entire product lifetime as well as more user comfort.

### No compromises in phaco emulsification

The new piezo crystals ensure optimized phaco performance\* over the entire product lifetime.

The shortened cable length promises more user comfort thanks to less weight and additional space savings in processing and storage (standard sterilization container).

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### Advantages of easyPhaco®

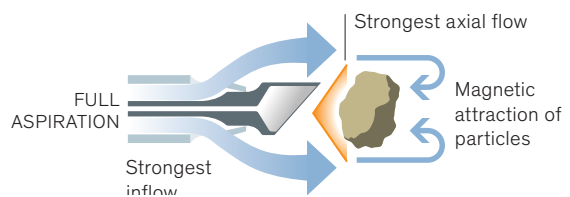
- Unsurpassed chamber stability
  - Perfect followability thanks to precise flow control
  - Focussed axial output of ultrasound energy
  - Direct and gentle transmission of power to the tip
  - Efficient fragment aspiration without repulsion
  - Available from 1.6 mm up to 2.8 mm
- 



\*internal wetlab measurements with aged handpieces, Oertli data on file.

### Control of fragments

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



### Excellent holdability

The high vacuum setting of easyPhaco and the optimised bevel of the easyPhaco tip hold the fragments securely at the tip opening. The holdability is so strong that the fragments are no longer repelled.



### No lateral energy output

The US energy is delivered purely axially and absorbed directly by the aspirated nucleus material – with the aim of preventing repulsions.



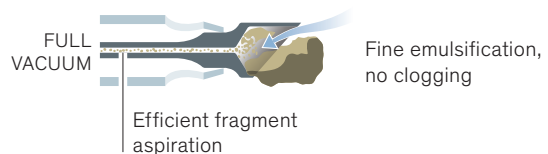
### Perfect emulsification

Thanks to a high vacuum and an optimised tip design, the coupling of the US energy into the nucleus material is optimal. The energy transfer is six times higher as with conventional tips. The removal of hard cataracts is therefore no longer a problem.



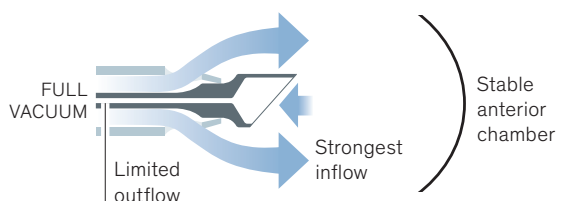
### Efficient fragment aspiration

Thanks to a high vacuum, the risk of blockage in the hair-thin aspiration channel can be prevented. The fragments are perfectly aspirated.



### Stable anterior chamber

When the occlusion loosens, the thin aspiration channel acts as a brake and prevents a sudden change in pressure in the chamber. A seven times higher infusion capacity ensures constant intraocular pressure and creates stable anterior chamber conditions.

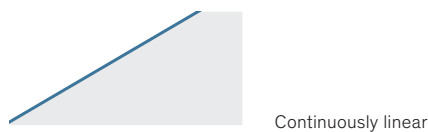


## Phaco modulation

The CataRhex3 offers three types of performance modulation that can be applied with easyPhaco. The ideal fluidic support with easyPhaco reduces the application of ultrasound. Even with traditional linear control, it is easy to achieve the shortest possible phaco times.

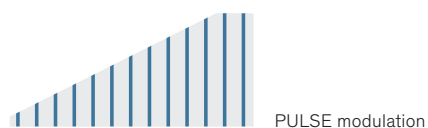
### Continuously linear

The standard method is very efficient. The surgeon doses the phaco power output via the multifunctional pedal: the phaco power output corresponds to the pedal deflection.



### PULSE modulation

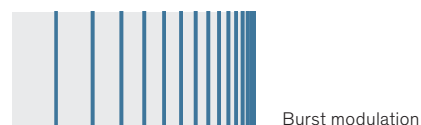
The PULSE modulation reduces the energy consumption, because it reduces the emitted ultrasonic energy. The pulse frequency (up to 40Hz) and cooling factor are freely selectable and independent of the pedal position. The power of the pulse is controlled directly via the pedal.



## Femto aspiration

### BURST modulation

The Femto laser is able to do a lot. Yet, it cannot aspirate the nucleus and cortex and polish the capsule. This is where the CataRhex3 is in its element! The Burst Mode can enable phaco energy to aspirate pre-fragmented nuclei down to zero. Using the SPEEP pump, capsule polishing after Femto application is particularly thorough and efficient. CataRhex3 is the best partner for every Femto laser!





# IRRIGATION / ASPIRATION

## I/A with well thought-out Safety Design

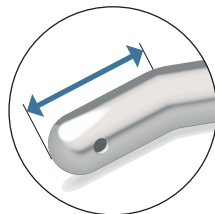
The Quick Tips with Safety Design have an extended shaft length to allow for better subincisional access. The reduced aspiration opening results in better occludability, it increases safety during aspiration and ensures optimal stability of the anterior chamber. The well thought-out positioning of the aspiration opening prevents unintentional grasping of the capsular bag. The Quick Tips offer the highest level of safety, particularly when they are applied in combination with the SPEEP pump.

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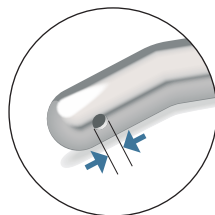
### Advantages of I/A with Safety Design

- Absolutely stable anterior chamber conditions
  - Easy subincisional accessibility
  - Fast occlusion capability
  - High standard of safety during capsule cleaning
  - Very efficient in combination with the SPEEP pump
  - Available from 1.6 mm to 2.8 mm
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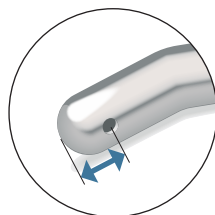
**Extended shaft length** to allow for better subincisional access.



**Smaller aspiration** opening for better occlusion during aspiration.



**Repositioning of the aspiration opening** to prevent unintentional gripping of the capsular bag.



# HF-BIPOLAR DIATHERMY

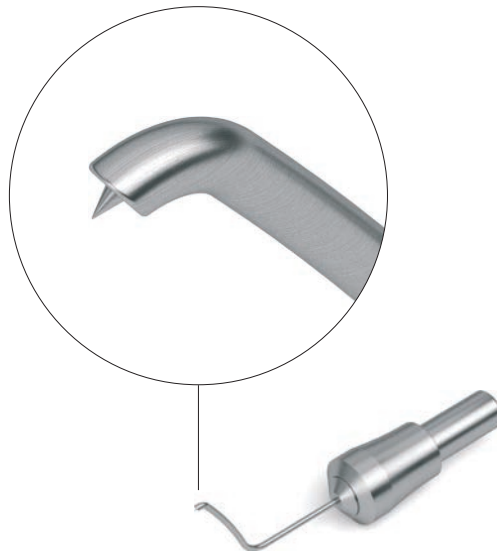
## Precision in bipolar diathermy

With its trend-setting control system, the CataRhex3 allows for extremely fine and directly controlled dosing of RF energy, designed for any proven applications of bipolar technology. Tips boasting ingenious geometry and a fine selection of materials make bipolar diathermy become a true precision instrument. Oertli's high-frequency diathermy is extraordinarily effective, even when used at low power.

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### Advantages of HF-bipolar diathermy

- One function for several applications: Oertli capsulotomy, HFDS, diathermy forceps
  - Fine and directly controlled dosing of HF energy
  - High quality titanium handpieces and tips
  - Highly efficient, even at low power
- 



# 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 per minute. Using the Caliburn trocar system, anterior vitrectomies can also be performed transconjunctivally with access via the pars plana.

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### **Advantages 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 cpm, 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™

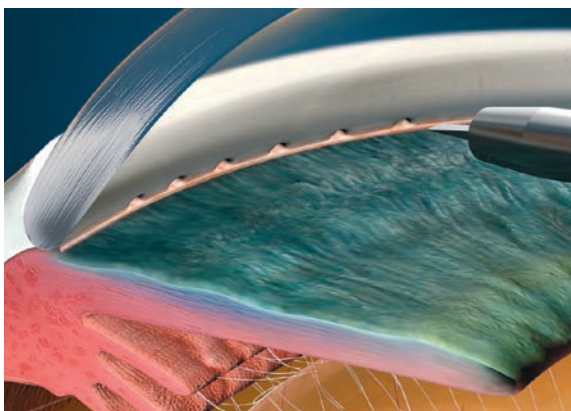
Applied in no time,  
successful in the long run

HFDS stands for *High Frequency Deep Sclerotomy*. In microinvasive glaucoma surgery (MIGS), HFDS provides direct access from the anterior chamber to the Schlemm's canal and further into the sclera. The outflow resistance of the trabecular meshwork is thus significantly reduced. The HFDS glaucoma tip is inserted through a paracentesis of 1.2 mm and uses high-frequency diathermy delivery to place six small sclerotomy bags in the iridocorneal angle, which provide an improved outflow of the aqueous humour.

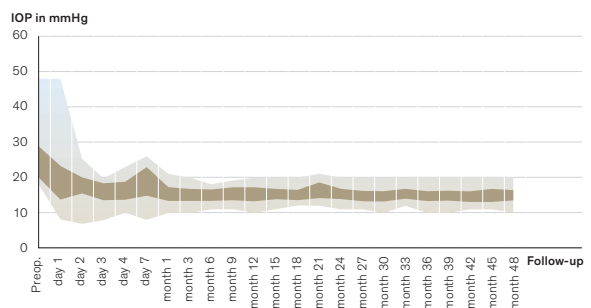
HFDS can be individually applied or combined with cataract surgery, which works perfectly. HFDS is characterised by very short intervention times. Bleb formation (filtration into the subconjunctival space) is avoided, as is fibroblast movement to the sclerotomy. Moreover, there are no corneal scars. The High Frequency Deep Sclerotomy ab interno by Oertli boasts excellent long-term results. If required, an intervention using HFDS can also be repeated.

## Advantages of HFDS

- Ideal in combination with cataract surgery or as a single application
- Very short intervention time
- Excellent long-term results
- No Bleb formation, no corneal scars
- Surgery can be repeated if necessary
- Minimal complication rate



## Excellent long-term results (48 months) following HFDS procedure\*



\* B. Pajic, Z. Cvejic, K. Mansouri, M. Resan, and R. Allemann, «High-Frequency Deep Sclerotomy, A Minimal Invasive Ab-interno Glaucoma Procedure Combined with Cataract Surgery: Physical Properties and Clinical Outcome,» Applied Sciences, vol. 10, no.1, p. 218, 2020, doi: 10.3390/ app10010218.

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

## System

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### Fluidics system

- Peristaltic pump
- SPEEP 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

### Pedal

- Cable connection
- Linear
- Reflux function

## 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

### Anterior segment vitrectomy

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

MOBILITY

# CATARHEX 3<sup>®</sup> – 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®, HFDS®, SPEEP® as well as the Oertli logo are registered trademarks of Oertli Instrumente AG.

Faros™, OS4™, DirectAccess™, Caliburn™, ParaProg™, True Flow Control™ and GoodLight LED™ are trademarks of Oertli Instrumente AG.

### References

Oertli data on file

# 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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