

A detailed close-up of a bird of prey, likely a falcon, showing its intense yellow eye, sharp beak, and textured feathers. The bird is looking slightly to the right.

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


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

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 shirt. He is smiling and looking directly at the camera. The background is dark and out of focus.

«We have been thrilled with the  
CataRhex 3, which our practice is using  
for 100% of our in-office phacos.  
The machine is indestructible, utterly  
reliable, and completely intuitive,  
so there is zero learning curve. The  
machine is beautiful in its simplicity and  
a true joy to use.»

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

Customer feedback, statements, opinions and recommendations (summarised as testimonials) relate to the persons depicted. Results may vary and may possibly not be representative of other people's experiences. Testimonials are provided voluntarily and are not paid for. The testimonials reflect the experiences of the users, but the specific results and experiences are unique and individual for each user.

# SWISS QUALITY DOWN TO THE LAST DETAIL

Using its innovative developments and high-quality products, Oertli is continuously setting new standards in cataract, vitreoretinal 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.

To ensure smooth workflows and results, the surgical platforms from Oertli and the corresponding instruments form a closed surgical system. Every instrument is compatible with all Oertli surgical devices, provided that the relevant function is available.

Of course, Oertli is consistently committed to the quality of its instruments, handpieces, tips and auxiliaries. The product portfolio is developed in Berneck, Switzerland, and manufactured under Swiss quality standards.



Christoph Bosshard  
Co-CEO

Thomas Bosshard  
Co-CEO

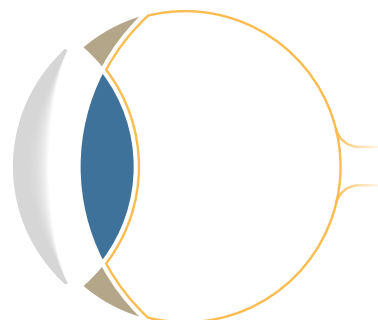
# CATARHEX 3® — FLEXIBILITY AND PERFORMANCE

The CataRhex 3 surgical platform from Oertli proves that great things sometimes come in small packages. With extremely compact dimensions and a lightweight at just five kilograms, the CataRhex 3 is systematically focused on mobility and portability. With the unique SPEEP pump and the familiar easyPhaco technology, we have developed an effective tool for simple, safe and efficient work in routine surgery.

The capsulotomy tip is used to open the capsular bag using high-frequency diathermy. There is an integrated compressor for anterior vitrectomy, and HFDS ab interno MIGS procedure from Oertli delivers promising long-term results.

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

Cataract	●
Glaucoma	●
Vitrectomy	



# CONTENTS

<b>The unique SPEEP pump</b>	<b>6</b>	The unique SPEEP pump provides control over both vacuum and flow*.
<b>Easy operation</b>	<b>10</b>	It is critical that eye surgery is straightforward and efficient, particularly in unusual situations.
<b>The multifunctional pedal</b>	<b>11</b>	The linear pedal of the CataRhex 3 is the reliable control unit for the surgeon.
<b>Areas of application</b>	<b>12</b>	<b>Cataract surgery</b> Innovations such as HF capsulotomy and easyPhaco are developments that aim to make cataract surgery faster and more efficient.
	<b>20</b>	<b>Glaucoma surgery</b> In the treatment of glaucoma, the HFDS ab interno MIGS procedure from Oertli delivers promising long-term results <sup>4</sup> .
<b>Performance spectrum</b>	<b>22</b>	Despite its exceptionally compact size, the CataRhex 3 offers precision and a suite of impressive functions for cataract and glaucoma surgery.

# CATARHEX 3<sup>®</sup> — WITH SPEEP<sup>®</sup>

## SPEEP – Speed and precision

The unique pump innovation from Oertli. The SPEEP pump uses the same principle as a peristaltic pump\* to control the flow. With SPEEP the vacuum can also be controlled using the foot pedal. This enables precise control of the holdability generated right at the instrument opening\*.

## How does the SPEEP pump work?

SPEEP combines the advantages of a flow-controlled peristaltic pump with the sportiness of a vacuum-controlled venturi pump\*.

The SPEEP pump allows both the flow and the vacuum to be controlled independently of each other. The foot pedal not only allows aspiration and release but also gives the surgeon complete control when holding and manipulating fragments and tissue. SPEEP continues to control the vacuum even under occlusion\*.

\*Modulation based on the principle of a peristaltic pump





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

With challenging cases such as floppy iris syndrome or zonular weakness, precise control of the fluidics is essential\*.

Thanks to the independent settings for flow and vacuum, SPEEP generates dosable holdability at the instrument opening and gives the surgeon control\*.

### Fluidics: Unique 2-pump system

- Unique SPEEP pump – for manual control of the holdability regardless of the tissue type\*
- Pump responds immediately and directly – facilitating precise and fine manoeuvres right at the tissue\*
- Independent control of flow and vacuum – developed for safe work with maximum control\*



# CATARHEX 3® – ADVANTAGES AT A GLANCE

User-friendly  
control panel

SPEEP pump for  
precise manoeuvres\*

Precise flow control  
with peristaltic pump

easyPhaco technology,  
developed for safe and  
efficient emulsification

Unique capsulotomy  
technique\*

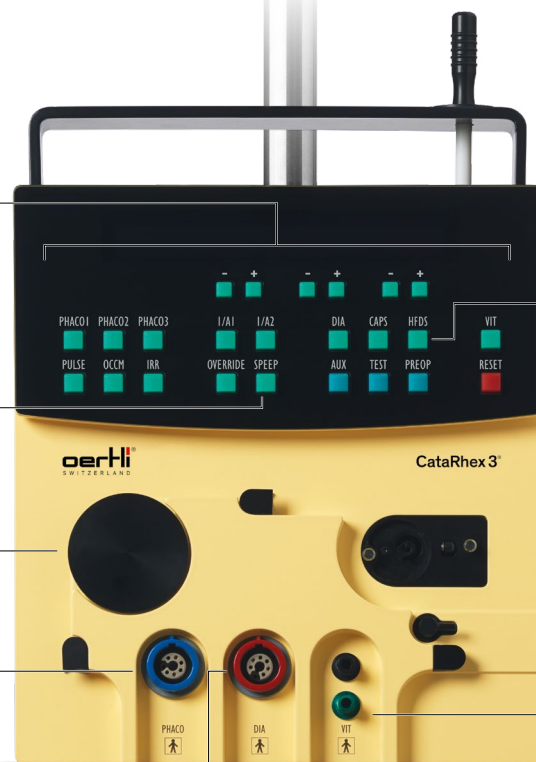
Ready to use in just  
a few seconds

Optional HFDS application  
for glaucoma surgery

Maximum mobility  
thanks to low weight  
and small size

Integrated air compressor  
for autonomous work  
in anterior vitrectomy\*

Robust and precise  
multifunctional pedal





# SMALL PLATFORM, BIG PERFORMANCE

The CataRhex 3 is the systematically compact and portable surgical platform for cataract and glaucoma surgery. The full innovative strength of Oertli is packed into the impressively small housing. Its powerful performance and high user friendliness make the CataRhex 3 the ideal device for ophthalmic surgery under a range of conditions.

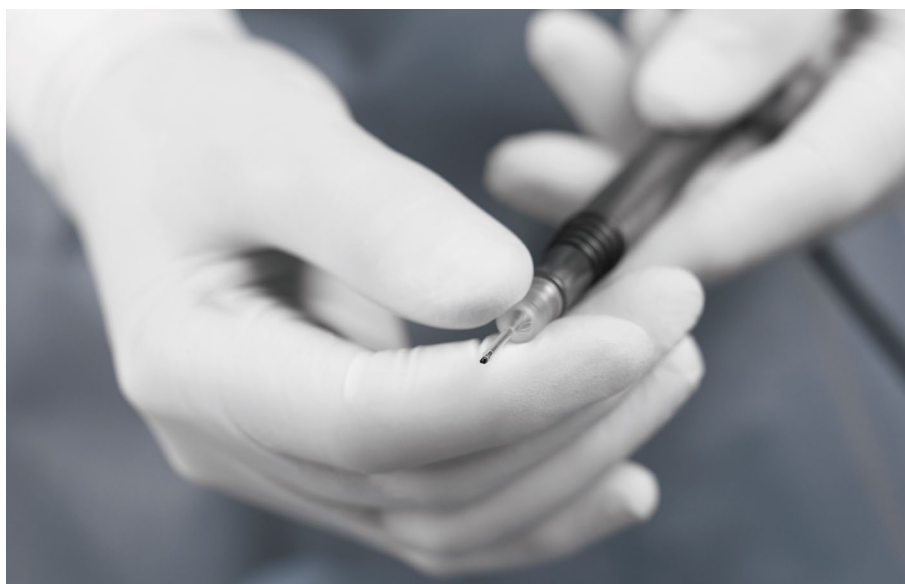
## **Fluidics based on physics**

CataRhex 3 is further proof that Oertli is one of the innovation leaders when it comes to harnessing fluidics based on physics. The fluidics concept works systematically with physical laws.

Thanks to the precise flow control provided by the peristaltic principle, the CataRhex 3 provides precision and force, both for phacoemulsification with easyPhaco and for I/A and anterior vitrectomy. The flow can be controlled in increments of 1.0ml.

## **SPEEP – Speed and precision**

The SPEEP pump gives you precise control over the efficiency and precision of flow and vacuum in cataract surgery. Controlled holding and aspiration of fragments allows you to determine the pace of work using the SPEEP pump.



## OPERATION

# SPEEDY, PLEASANT AND INTUITIVE

As a multifunctional surgical platform for advanced cataract and glaucoma surgery, the CataRhex 3 is a highlight of surgical technology that is as powerful as it is compact. The display is clearly laid out, the device is easy to use, everything is streamlined. The surgical platform is also quick to start up: the system is ready to use just a few seconds after being switched on.

### Connections

Even prior to the surgery, the CataRhex 3 reveals its user-friendly side. All connections can be accessed from the front of the device at the same operating height. All instruments are connected at the front using clear colour coding. The tubing system is suspended sterile on the front of the platform.

### Control panel

The bright displays on the control panel are easy to read and give you precise information about surgical values and settings. The control buttons are arranged logically and always have the same function that is activated without delay when a button is pressed. The pivotable display panel gives surgeon and assistant an unimpeded view. Up to 20 surgeons can be programmed to use the device.

### Infusion pole / instrument trays

The optional infusion pole and easy-to-assemble instrument trays turn the CataRhex 3 into a flexible surgical station.



## MULTIFUNCTIONAL PEDAL

# THE MULTIFUNCTIONAL PEDAL

The robust multifunctional pedal of the CataRhex 3 enables reliable control of the system with simple foot movements. The pedal is waterproof<sup>1</sup>, extremely compact and weighs just 2.6 kilograms.

### **Robust and reliable**

The linear foot pedal is the multifunctional control unit of the CataRhex 3. Manufactured from robust metal with a high-quality finish, the pedal responds precisely to the surgeon's commands with no delay. Simple foot movements efficiently control the CataRhex 3. There are four movement areas available for fine linear control, accessing saved data, and switching functions on and off.

The pedal is waterproof<sup>1</sup>, takes up little space and is light enough to move with your foot. To ensure reliable data transfer, the pedal of the CataRhex 3 works with a classic cable connection.



- 
- Linear multifunctional pedal
  - Waterproof<sup>1</sup>, robust and compact
  - Cable connection for uninterrupted transfer of commands
  - Four movement areas for control and monitoring
-



CATARACT SURGERY

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

The CataRhex 3 is used to make cataract surgery quick, safe, calm and, thanks to its exceptional mobility, accessible everywhere. The space-saving and portable surgical platform enables cataract surgery at a high level, both in modern high-performance operating theatres and under difficult conditions or special circumstances.



# HIGH-FREQUENCY CAPSULOTOMY

## High-frequency capsulotomy

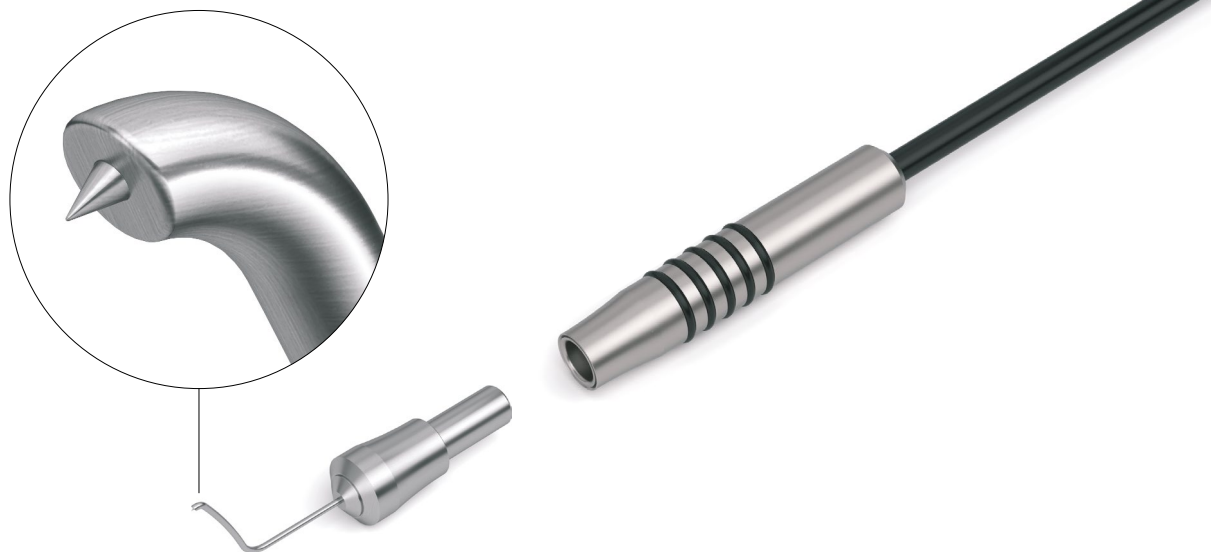
Since its launch in 1991, high-frequency capsulotomy has proven to be the ideal method for opening the lens capsule in uncountable cases. The use of high-frequency energy melts the capsular bag – entirely without the usual tearing by forceps or needles. It is sufficient to gently slide the capsulotomy tip over tissues, even under the iris, while dosing the diathermy energy. The resulting capsular edge conforms to the current standard – both during surgery and over the long term.

HF capsulotomy is suitable for indications such as a lack of fundus reflex, hypermature cataract, traumatic cataract, intumescent cataract and juvenile cataract. Even with narrow pupils, out-of-control rhexis or rhexis phimosis, HF capsulotomy delivers reliable outcomes.

---

### Advantages of HF capsulotomy

- Gentle alternative to capsulorhexis
  - Melting the capsular bag without tearing with forceps or needles
  - Fine and directly controlled dosing of the HF energy
- 



# EASYPHACO®

## easyPhaco® – Fluidics based on physics

The easyPhaco technology is developed for safe and efficient phacoemulsification. Thanks to Oertli's unique fluidics concept, easyPhaco allows direct control over fragments and ensures a high holdability\*. The occluded fragments absorb the ultrasound energy and are then efficiently aspirated with no clogging\*. The infusion capacity is several times higher than the aspiration, enabling the intraocular pressure to be maintained for a stable anterior chamber<sup>2</sup>.

### easyPhaco® handpiece

With an external diameter of 13 mm, an internal infusion line and a low weight of 42 grams, the titanium easyPhaco handpiece has set the standard since 2002. The handpiece has six piezo crystals. The five rubber rings on the handpiece make it comfortable to hold.

### easyTips phaco tips

The angled easyTip opening has been designed to hold fragments firmly at the tip\*. Thanks to the high vacuum created, the fragments are efficiently aspirated\*. The single-use easyTips are supplied with an irrigation sleeve, a test chamber and a phaco and emergency key. The easyTip range includes six different tips: from CO-MICS (1.6 mm) up to 3.2 mm incisions.

---

### Advantages of easyPhaco®

- easyPhaco technology, developed for safe and efficient emulsification
  - Fragment followability and holdability thanks to Oertli fluidics concept\*
  - U/S energy absorbed by the occluded fragments
  - Smooth fragment aspiration without clogging\*
  - Stable anterior chamber<sup>2</sup>
  - Available from 1.6 mm to 3.2 mm incisions
- 

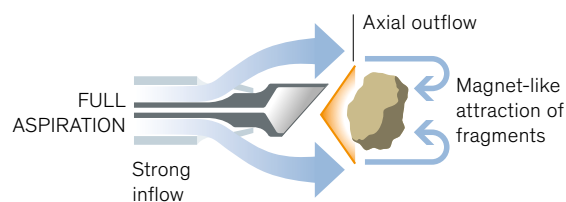


JUST  
42  
GRAMS

# EASYPHACO® TECHNOLOGY

## Direct fragment followability

The high vacuum setting and the wide infusion path of the easyTips create a direct flow to the tip. This results in a magnet-like attraction of the fragments\*.



## Strong fragment holdability

The angled easyTip opening has been designed to hold fragments firmly at the tip\*.



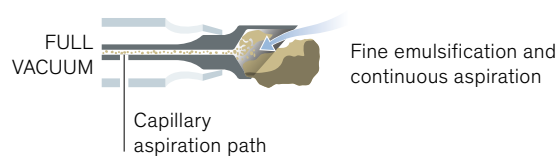
## U/S energy absorbed by the occluded fragments

Thanks to the strong holdability and the longitudinal movements of the easyTips, ultrasound is directed axially to the occluded fragments.



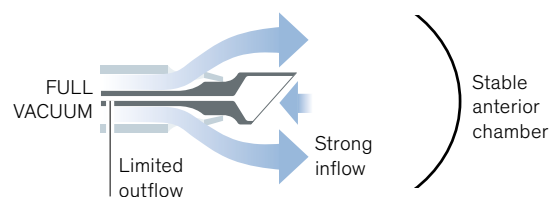
## Smooth fragment aspiration

Following an occlusion break, the capillary aspiration path of the easyTips provides continuous aspiration. Thanks to the high vacuum created, the fragments are efficiently aspirated\*.



## Stable anterior chamber

The infusion capacity is several times higher than the aspiration, enabling the intraocular pressure to be maintained for a stable anterior chamber<sup>2</sup>.

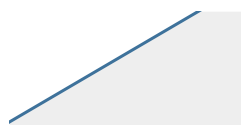


## Phaco-modulation

The CataRhex 3 offers three types of power modulation that can be used with easyPhaco.

### Continuous linear

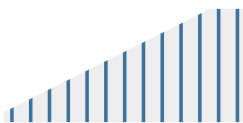
The surgeon doses the phaco power using the multifunctional pedal: the phaco power corresponds to the pedal deflection.



Continuously linear

### PULSE mode

PULSE modulation reduces energy consumption as it reduces the amount of U/S emitted per time compared to continuous linear phaco control. Power is controlled via the pedal.

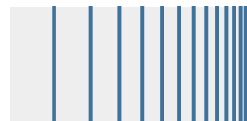


PULSE mode

## Femto aspiration

### BURST mode

The Femto laser can do a lot but it can't aspirate nucleus and cortex or polish the capsule. But this is where the CataRhex 3 is in its element! The Burst mode can reduce the phaco energy down to zero to aspirate pre-fragmented nuclei. CataRhex 3 is the best partner for every Femto laser!



BURST mode



# IRRIGATION / ASPIRATION

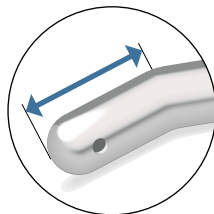
## I / A with Safety Design

The Quick Tips with Safety Design feature an extended shaft for improved subincisional access. The small aspiration port results in better occludability and ensures a stable anterior chamber. The well-considered position of the aspiration port is intended to prevent unintended grasping of the capsular bag.

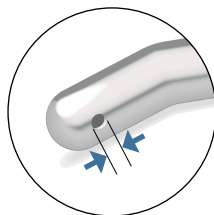
### Advantages of I / A with Safety Design

- Developed to ensure stable anterior chamber conditions
- Long shaft for subincisional access
- Rapid occludability
- Ideal when combined with the SPEEP pump
- Available from 1.6 mm to 2.8 mm

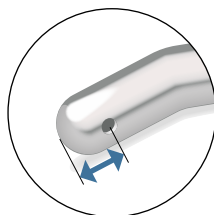
**Extended shaft length** for improved subincisional access.



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



**Repositioned aspiration opening** to prevent unintentional grasping of the capsular bag.



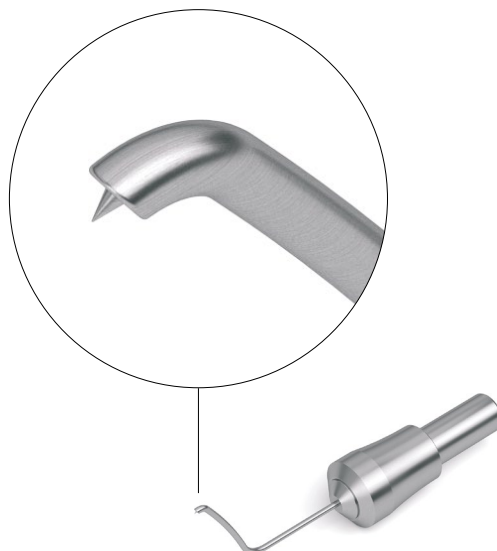
# HF BIPOLAR DIATHERMY

## HF bipolar diathermy

The bipolar diathermy function of the CataRhex 3 offers a number of applications such as the unique capsulotomy (page 13), the HFDS procedure for MIGS surgery (page 21) and the diathermy forceps. Handpieces and the easy-to-attach tips are manufactured from high-quality titanium.

### Advantages of HF bipolar diathermy

- One function for several applications:  
Oertli capsulotomy, HFDS, diathermy forceps
- Fine and controlled dosing of HF energy
- High-quality titanium handpieces and tips



# ANTERIOR VITRECTOMY

## Vitreous body removal

Thanks to the integrated compressor, Oertli's CataRhex 3 is quickly ready to use for anterior vitrectomy. There is no need for an external compressed air supply, which also enables operating under exceptional circumstances. The pneumatically driven Continuous Flow Cutter enables efficient work with up to 2400 cuts per minute.

---

### **Advantages for anterior vitrectomy**

- No compressed air supply needed thanks to the integrated compressor
  - Pneumatically driven Continuous Flow Cutter developed for low-traction work
  - Up to 2400 cuts/minute depending on the cutting instrument
- 





GLAUCOMA SURGERY

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

The CataRhex 3 provides an option for surgical treatment of glaucoma in micro-invasive glaucoma surgery (MIGS). High-Frequency Deep Sclerotomy (HFDS) creates a direct access between the anterior chamber and the Schlemm canal that bypasses the outflow resistance of the trabecular meshwork.

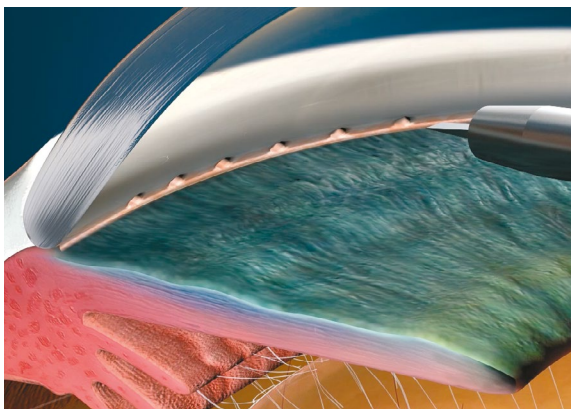


# HFDS®

## Rapidly applied, long-term results

HFDS stands for *High-Frequency Deep Sclerotomy*. In micro-invasive 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 1.2-mm paracentesis and uses high-frequency diathermy delivery to place six small sclerotomy pockets in the iridocorneal angle, which provide an improved outflow of the aqueous humour.

HFDS can be used alone but can also be ideally combined with cataract surgery and is distinguished by a short procedure time<sup>5,6,7</sup>. Bleb formation (filtration into the subconjunctival space) is avoided, as is fibroblast migration to the sclerotomy, plus there is no corneal scar. High-frequency deep sclerotomy ab interno from Oertli delivers promising long-term results<sup>4</sup>. If needed, a procedure with HFDS can also be repeated.

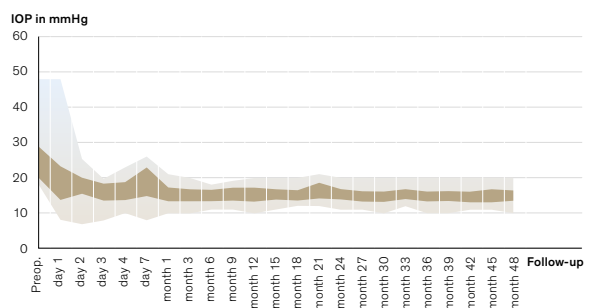


### Advantages of HFDS

- Implant-free micro-invasive glaucoma surgery<sup>3</sup>
- Convincing long-term results with a stable and long-term reduction in IOP and AGM<sup>4</sup>
- Short procedure time with high safety profile<sup>5,6,7</sup>
- Combined with cataract surgery or a stand-alone application



### Convincing long-term results (48 months) after HFDS procedure<sup>4</sup>



# CATARHEX 3® – PERFORMANCE SPECTRUM

## System

---

### Fluidics system

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

### Operation

- Control panel with glass cover, crystal-clear indicator lights and silicone buttons
- Linear multifunctional pedal
- Individual programming for 20 surgeons
- Audio signals

### Pedal

- Cable connection
- Linear
- Reflux function

## Anterior segment

---

### HF functions

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

### Phaco function

- Three program memories with DirectAccess
- Ultrasound phaco with auto tuning
- Ultrasound phaco handpiece with six piezo crystals
- Linear, PULSE, BURST, CMP and Panel modes
- Occlusion mode
- easyPhaco, CO-MICS and MICS technology

### I / A function

- Two program memories with DirectAccess
- Vacuum Override function
- Continuous irrigation

### Anterior segment vitrectomy

- Three program memories
- Dual pneumatic guillotine cutter
- Linear 30 to 2400 incisions/min
- Single incision
- Irrigation / Aspiration / Cut
- Irrigation / Cut / Aspiration

MOBILITY

# CATARHEX 3® – EXTREMELY COMPACT



CataRhex 3 – the surgical platform that fits into a pilot case but is nevertheless extremely efficient.

# MAKING THE DIFFERENCE IN EYE SURGERY

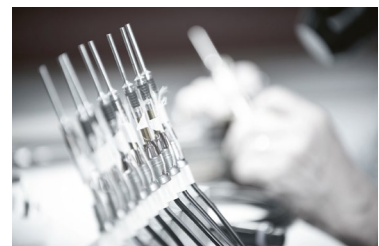
Oertli makes the difference. With surgical devices, instruments, and consumables of high quality, aimed at making the surgical process safer, simpler, and more efficient. With sustainable innovations and new technologies to shape ophthalmology for decades to come. With superb service provision and significant added value for surgeons and OR personnel. And with our continuous striving to achieve the best for our customers, users and patients.

## Setting benchmarks

The name Oertli is synonymous with Swiss quality, highest precision and the reliability. We develop and produce our products exclusively at our site in the St Gallen Rhine Valley in Switzerland. Not only does this allow us to rely on expertly trained staff and a dynamic environment, we always have complete control over the quality and properties of our products.

Throughout the history of the company, Oertli has developed many innovations that have shaped eye surgery for the long term. We are not content to rest on our laurels – instead, our successes drive us further. Every day we work hard to maintain our vibrant research spirit and provide our innovative hunger with new avenues to explore.

Although we have an international presence, at heart we remain an independent family-run business with a fighting spirit, deep roots, solid financing and authentic teamwork. Anyone who works at Oertli does so with great commitment and motivation. Because everyone gives their best and applies their whole range of talents, we can successfully position ourselves with confidence. Based on this solid foundation, we make the difference – for eye surgery, for our customers, for patients.







### Distribution network

Oertli makes a firm commitment to its site in Berneck, Switzerland. Here is where we generate ideas and develop innovations, where our devices, instruments and consumables are developed and produced. So that our products can be used globally, we rely on our own distribution companies or independent distribution partners depending on the region.

In every case, our ophthalmology customers around the world can rely on expert contact partners. They provide excellent service on site, can advise about our entire product range and are perfectly trained in the use of our products.

### Information on trademark protection

Oertli®, CataRhex 3®, easyPhaco®, easyTip®, HFDS®, SPEEP® and the Oertli logo are registered trademarks of Oertli Instrumente AG.

Faros™, OS 4™, DirectAccess™, Caliburn™, ParaProg™ and Power LED™ are trademarks of Oertli Instrumente AG.

# MAKING THE DIFFERENCE IN SWITZERLAND



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

We make the difference – for you and your patients.







EYE SURGERY. SWISS MADE.

# REFERENCES

\* Oertli data on file

- 1 As per standard, IPX6
- 2 With the settings recommended on [www.oertli-instruments.com](http://www.oertli-instruments.com)
- 3 Aleksandar Pavlovic, Ab-Interno Deep Sclerotomy in Eight Simple Steps
- 4 Glaucoma: the silent thief of sight," The Lamp, vol. 52, no. 8, p. 15, 1995
- 5 B. Pajic, B. Pajic-Eggspuehler, and I. Haefliger, «New minimally invasive, deep sclerotomy ab-interno surgical procedure for glaucoma, six years of follow-up,» Journal of glaucoma, vol. 20, no. 2, pp. 109–114, 2011, doi: 10.1097/IJG.0b013e3181dddf31.
- 6 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,
- 7 Kaweh Mansouri, M.D., M.P.H., A Multicenter Prospective Study of High-Frequency Deep Sclerotomy (HFDS) in Open-Angle Glaucoma: 3-Year Outcomes: Manuskript (unpublished data)

## Surgical Platforms



OS4™



Faros™



CataRhex 3®



**Oertli Instrumente AG**  
Hafnerwissenstrasse 4  
9442 Berneck  
Switzerland

T +41 71 747 42 00  
F +41 71 747 42 90

[www.oertli-instruments.com](http://www.oertli-instruments.com)