

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

**OS 4**<sup>™</sup>

MAKING THE DIFFERENCE  
WITH ENHANCED VERSATILITY

EYE SURGERY. SWISS MADE.





# MAKING THE DIFFERENCE WITH SAFETY AND SIMPLICITY

«Safety, control and simplicity of use define the parameters I use when it comes to choosing a medical device. Oertli OS 4 cutting edge design built on time tested traditional features gives me that confidence when operating on challenging cataracts and performing vitreoretinal surgery. This is enhanced by excellent manufacturer's support. Thanks to its user friendly design, it is also an excellent machine for training junior surgeons.»

**Dr. Saeed Manzar**  
Queen Elizabeth Hospital  
King's Lynn, Norfolk, England

# 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

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# OS 4™ – EYE SURGERY OF THE HIGHEST LEVEL

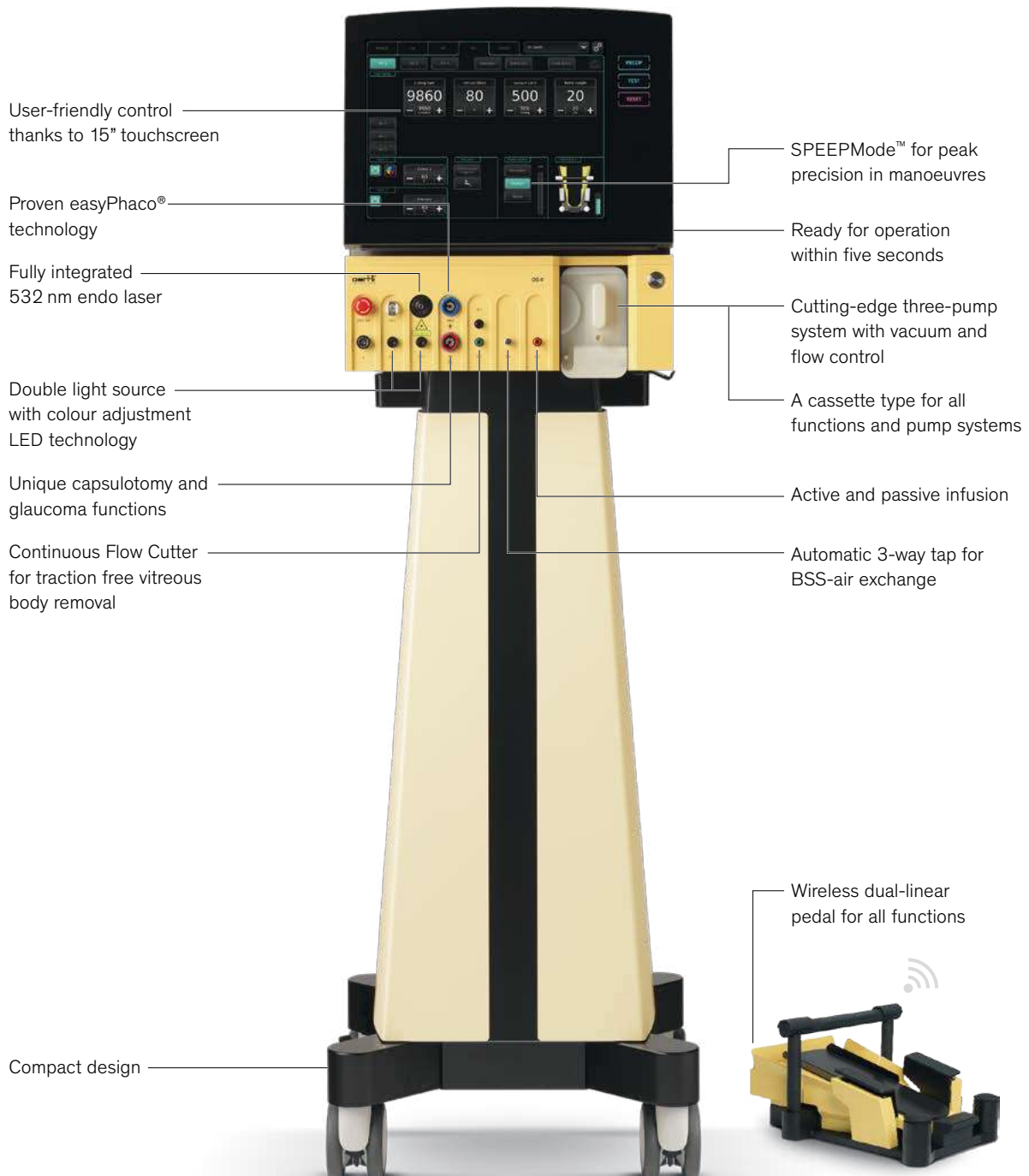
The OS 4 surgical platform uses the laws of physics and fluidics to make eye surgery safer, easier and more efficient than it has ever been. The core piece of the device is the three-pump system with vacuum and flow control and the innovative SPEEPMODE that ensures highly precise manoeuvres. All instruments are perfectly integrated into the system: cutting-edge LED technology provides for optimum visualisation, the continuous flow cutter ensures traction-free vitreous body removal, and, the fully integrated 532 nm endo laser opens up new possibilities in laser control.

## **Making the difference – with the OS 4 by Oertli.**

Vitreotomy	●
Glaucoma	●
Cataract	●



# OS4™ – ALL ADVANTAGES AT A GLANCE



# FLUIDICS AND THREE-PUMP SYSTEM





The OS 4 by Oertli is a powerfully efficient all-in-one platform for cataract, glaucoma and vitreoretinal surgery. As a versatile and user-specific OR device, the OS 4 works as the extended hand of the surgeon and carries out his orders and intuitions perfectly.

#### **Fluidics and three-pump system**

Fluidics can create excellent results, particularly in vitrectomy and in phaco surgery, provided one knows how to master fluidics. Oertli has proved itself as the innovative leader in this sector, which is best demonstrated by its OS4.

The innovative pump technology with vacuum and flow control is the heart of the OS4. The three-pump system does not only offer the advantages of a Venturi or a peristaltic pump but also boasts the unique SPEEPMODE. The system

ensures controlled flow and controlled vacuum at the same time. In their finest form, flow and vacuum become a dynamic tool ensuring unsurpassed precision in surgery. In the anterior segment, perfection is achieved by means of easyPhaco, in the posterior segment, the Caliburn trocar system and the continuous flow cutter make perfection possible. Only one cassette is necessary for all functions and all pump systems, which facilitates and accelerates OR processes even further.



## OPERATION

# FAST, SAFE AND INTUITIVE

The OS 4 is a complex masterpiece of surgical technology. This, however, does not mean that the surgical platform is complicated to operate. The contrary is true: everything about the OS 4 is clear and simple. This makes operation comfortable, understandable and safe – for both OR personnel and surgeons. Moreover, the surgical platform is ready for action incredibly quickly: 15 seconds after the device has been switched on, it is ready for operation. Among other advantages, this fact results in amazingly short time spans between different surgeries. The OS 4 increases efficiency in the OR noticeably – and it is not least because of this efficiency that costs are saved as well.

### Connections

All connections at the front are at the same operational height and easily accessible. All instruments can be plugged in from the front easily thanks to unmistakable coding. The cassette inserts itself gently into the device, which is ideal for operation in the sterile field.

### Touchscreen

The simple 15-inch touchscreen gently guides the eye to the correct function without causing any confusion. The proven DirectAccess of Oertli has obtained hugely extended functionality in the OS4! The graphic display is simple, friendly and provides for optimum user-safety: you instantly know what the situation is like, and the function can be mastered easily within seconds. With the OS 4, there is no confusion due to unnecessary displays or delays resulting from complicated menu navigation.

### Instrument table

The optional instrument table (83 × 35 cm) can be fixed at the position you wish. If you do not need the table, it can easily be folded in sidewise in hardly any time.



## PEDAL

# A PEDAL OF WORLD CLASS

The wireless dual-linear foot pedal is the multifunctional control unit and control centre of the OS 4. Made of strong metal and processed with the highest degree of perfection, the pedal absorbs the surgeon's commands instantly and sensitively.



### Dual-linear perfection

In the OS 4 foot pedal, the dual linear control presents itself in its most intelligent form and can be attuned to the surgeon's wishes and needs. Varied functions, such as the switchover between functions or colour settings, can be assigned to six auxiliary buttons. When using the integrated endo laser, the pedal immediately becomes a laser pedal without any manipulation required.

- Wireless, dual linear pedal
- Runtime up to 50 hours
- Laser controllable via the same pedal
- Individually programmable for up to 50 surgeons
- Six auxiliary buttons for various assignment capacities
- Integrated resting position



VITRECTOMY SURGERY

# OS 4™ IN VITRECTOMY SURGERY



As an excellent all-round device, the OS 4 sets standards in vitreoretinal surgery in terms of quality and functionality. The Calburn trocar systems captivate users with their smooth cuts. The GoodLight LED technology boasts superb illumination. The Continuous Flow Cutter ensures continuous flow and perfect portioning of the vitreous body. The FEELceps membrane enables perfectly dosed holding power. A fully integrated endo laser is available that can easily be controlled via the multifunctional foot pedal.

# CALIBURN™ GOODLIGHT LED™

## Caliburn™ trocar system

In vitrectomy, the OS4 Caliburn trocar system enables highly precise work with very sharp instruments. The lance-shaped knife of the Caliburn trocar system is characterised by an exceptional driving and cutting force. The razor-sharp Caliburn blade reduces the strength required for penetration to a minimum and results in optimum cutting geometry in the sclera. The slim tunnel incision ensures excellent postoperative wound-tightness and thus fast healing of the wound.

The trocar with its integrated lock membrane prevents the outflow of BSS, air and oil, which results in a constant IOP during the whole surgery. Thanks to its excellent holding power and optimum shaft length, the Caliburn boasts even more safety and more comfort. As all trocars have been built in the same way.

### Advantages of Caliburn™ trocar system

- Excellent postoperative wound-tightness
- New surface finish allowing for even smoother cuts
- Less resistance when inserting the trocar
- Integrated doubly slit sealing membrane
- Patented infusion tube with snap lock for better flexibility
- Reliably constant IOP during surgery

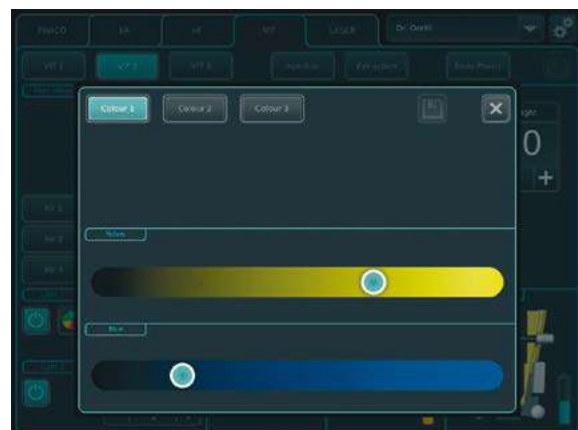
## GoodLight LED™

With GoodLight LED, Oertli has developed a light source that has approximately 60 percent more light intensity than metal halide, while ranging clearly below the similarly strong Xenon light in terms of toxicity.

The OS4 has a double light source that enables excellent homogeneous illumination. The colour spectrum is individually adjustable; yellow and blue are individually mixable on the screen in the way you like. A change of filter is not necessary. Thanks to the both comfortable and precise «Comfort Connector», a connection to all light conductors can be established quickly and safely.

### Advantages of GoodLight LED™

- Cutting-edge GoodLight LED technology with double light source
- Yellow and blue can be individually mixed on the touchscreen
- Particularly homogenous illumination and improved contrast seeing
- More precise and more comfortable Comfort Connector to all light probes

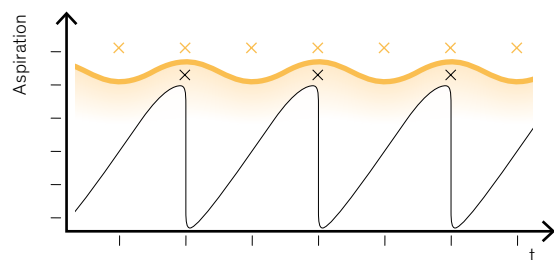


# TRUE FLOW CONTROL™

## Continuous Flow Cutter

With its fluidics concept that makes excellent use of physics and fluidics, Oertli has led flow and vacuum control to perfection. Thanks to True Flow Control, you can finely tune the flow with the dual-linear foot pedal in an incredibly subtle way – resulting in impressive precision and a high occlusion vacuum.

In vitreoretinal surgery, Oertli has already set standards with its dual-pneumatic drive that boasts great cutting force and traction-free high-speed cutting. Next, the Oertli continuous flow cutter was a significant quantum leap. The continuous flow cutting concept allows for continuous flow without any fluctuation. While with a standard cutter, the flow is interrupted with every cut, the continuous flow cutter ensures traction-free and precise flow as well as rapid aspiration and ideal portioning of the vitreous body for removal. The SPEEPMODE with new fluidics make flow and vacuum a dynamic yet directly controllable tool for unimaginably precise and efficient vitreoretinal surgery.



- × × Cut
- Oertli Continuous Flow Cutter: continuous flow without any noticeable fluctuations. With each cycle, vitreous body is removed twice.
- Standard Cutter: Flow is interrupted with each cycle.

### Advantages of Continuous Flow Cutter

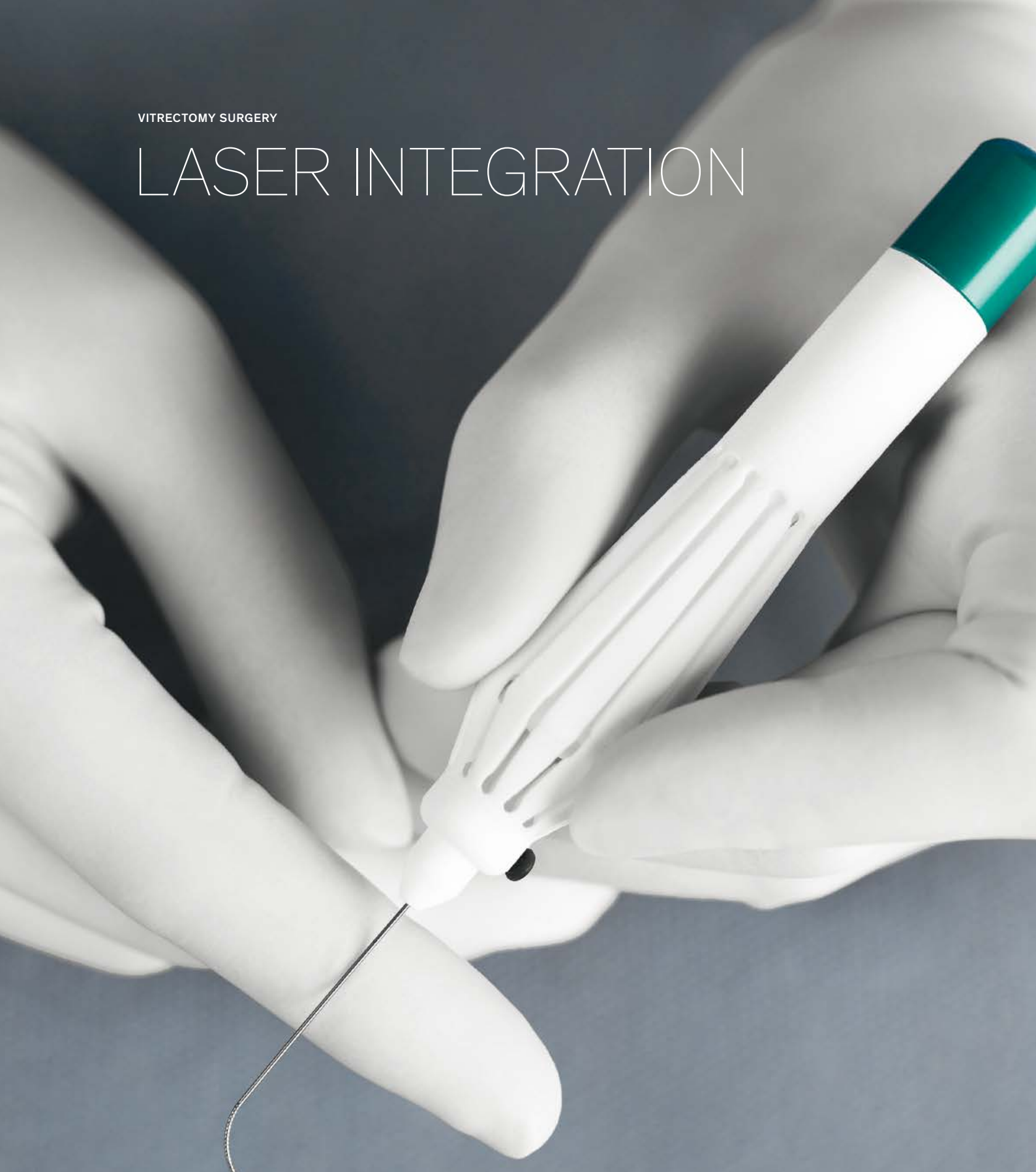
- Oertli's fluidic concept works with physics – additional software manipulations are no longer necessary
- The continuous flow cutter for 100% continuous flow
- Perfect portioning in the vitreous body removal process
- Highest degree of efficiency in central vitrectomy
- Maximum precision and safety in the periphery
- Perfect precision in all manoeuvres





VITRECTOMY SURGERY

# LASER INTEGRATION



The OS 4 offers a true laser function without compromise – thanks to a fully integrated 532 nm endo laser. Activating the laser function, makes the OS 4 pedal instantly become a laser pedal. In addition, applying the controllable laser probes offers new possibilities in laser technology application.



## Endo laser

The laser is an efficient and gentle surgical method for a large number of interventions. As an all-in-one device, the OS4 has an integrated endo laser – and thus a true laser function at the highest level.

In Oertli's surgical device, key switch, laser exit and emergency stop are arranged beside other connections with ergonomic perfection. When activating the laser function, the OS4 pedal becomes the laser pedal – instantly and without any manipulations required. This way, the endo laser has found its optimum place in the surgical process.

The steerable laser probe can be inserted and taken out safely and you can control it with the slightest touch of your finger – the pioneering spirit of the OS 4 also becomes evident in the endo laser sector. With the steerable laser probe by Oertli, the movability of the endo laser tip opens up access far in to the periphery and allows for the setting of a whole row of laser points by a most gentle movement of your fingertips.



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### Advantages of the endo laser

- Fully integrated 532 nm endo laser
  - Laser controllable via the same pedal
  - Ready for action in the shortest time possible
  - Unique steerable laser probes
  - Large selection of laser probes available
-



GLAUCOMA SURGERY

# OS 4™ IN GLAUCOMA SURGERY

In operative treatment of glaucoma, the OS 4 has created significant added value in micro-invasive glaucoma surgery (MIGS). High Frequency Deep Sclerotomy (HFDS) ensures excellent long-term results and has an extremely low complication rate, and short intervention time.

# HFDS™

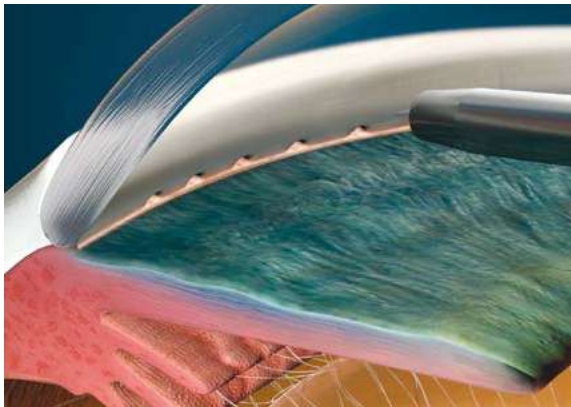
## High Frequency Deep Sclerotomy™

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 paracenteses 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.

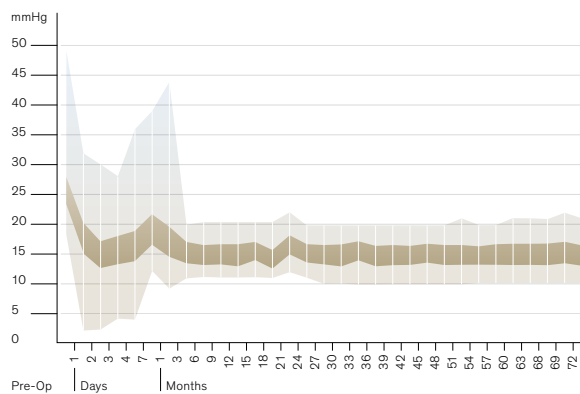
HFDS can be applied individually or in combination with cataract surgery. It is characterized by a very short intervention time. Bleb formation (filtration into the subconjunctival space) as well as fibroblast movement to the sclerotomy are effectively prevented. Neither will there be a corneal scar. 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



**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

CATARACT SURGERY

# OS 4™ IN CATARACT SURGERY

The OS 4 makes cataract surgery incredibly fast, safe and calm. Phaco has become even more precise and efficient thanks to easyPhaco. Capsulorhexis has gained a very gentle and careful alternative with HF capsulotomy. And, in glaucoma and vitreoretinal surgery, the OS 4 offers decisive advantages and superb features.

# 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 intra-operatively 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 HF 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



# IRRIGATION / ASPIRATION HF DIATHERMY

## I/A with Safety Design

Oertli I/A instruments make irrigation and aspiration even safer than before. The Quick Tips with Safety Design have an extended shaft length, to enable better sub-incisional access. The reduced aspiration opening creates better occlusion power, increases safety during aspiration and provides for optimum stability of the anterior chamber. The well-thought-out positioning of the aspiration opening prevents unintentional gripping of the capsule bag. Especially in combined application with SPEEPMODE, Quick Tips offer the highest degree of 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 SPEEPMODE
- Available from 1.6 mm up to 2.8 mm

## HF bipolar diathermy

The pioneering control systems of the surgical platforms by Oertli allow for extremely fine and directly controllable dosing of HF energy, optimally designed for proven applications in bipolar technology. Tips with their well-thought-out geometry and choice of material truly make diathermy to an instrument of precision. Even at low output, the high-frequency diathermy by Oertli creates an extraordinary effect. High-quality titanium hand pieces and innovative tips ensure both precision and safety.

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

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





# OS 4™ —

# PERFORMANCE SPECTRUM

## System

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### Fluidics system

- Peristaltic pump
- Venturi pump
- SLEEPMode
- Gravity infusion, electric pole drive
- Active infusion (GFI)
- Tubing system with integrated closed pressure sensor
- Auto venting
- Limitable reflux
- Pre-op, self-testing and reset functions

### Operation

- Control panel with 15-inch one touch glass monitor
- Dual linear wireless multifunctional pedal
- Individual programming for 50 surgeons
- Audio signals

### Pedal

- Wireless
- Integrated laser control
- User specific assignment
- Dual linear or linear
- Reflux function

## Anterior segment

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### HF functions

- Capsulotomy
- HFDS ab interno MIGS glaucoma surgery
- Conjunctiva coaptation
- Macro diathermy
- Endo 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
- easyPhaco, CO-MICS and MICS technology
- Dual linear phaco

### I/A function

- Three programme memories with DirectAccess
- Continuous irrigation

### Anterior segment vitrectomy

- Three programme memories
- Dual pneumatic guillotine cutter
- Linear 10 to 10,000 cuts a minute
- Single cut
- Irrigation/aspiration/cut
- Irrigation/cut/aspiration



## Posterior segment

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### Endo illumination

- GoodLight LED light source
- GoodLight LED light source Plus with adjustable colours
- Two independent light exists
- Anti-glare panorama illumination
- Filter-free exit

### Vitrectomy

- Three programme memories with DirectAccess
- Pneumatically driven Continuous Flow Cutter
- Linear or progressive, 10 to 10,000 cuts a minute
- Single cut
- Endo phaco

### Air

- Fluid/air exchange
- Fluid/air switchover via pedal
- Constant pressure control with compensation reservoir
- Three programme memories with DirectAccess
- Alarm function

### Visco

- Injection
- Extraction
- Linear pedal control

### Endo laser

- Green endo laser 532 nm
- Laser control without an additional pedal
- Laser power output controllable with pedal
- Laser class: pilot beam 3R, working beam 4



# 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 ideas 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.

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«I have performed vitreoretinal interventions for decades. Oertli devices have always accompanied me reliably from the beginning. Regular maintenance enhances the longevity of the equipment. The OS4 unites high-tech developments with sophisticated design and utmost user-friendliness. The touchscreen is clearly arranged, and due to the dark background, glare-free. The broad range of setting options offers the desired parameters to every surgeon, no matter whether he/she is a beginner or an expert user. This way, you can learn how to perform surgeries with great safety.»

**PD Dr. Ulrike Stolba**

Eye Department of the Rudolfstiftung  
Vienna, Austria

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®

**oertli**®  
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