

faros™



oertli®
S W I T Z E R L A N D

os4 faros™ CataRhex 3®



farosTM

Brings Light to the World



Bringing Light to the World

Maintaining and restoring eyesight is the sophisticated task of ophthalmic surgery. Millions of visually handicapped people are waiting for it. faros makes cutting-edge operating techniques accessible to surgeons throughout the world. It fulfils the requirements of the most modern clinics just as well as it meets the challenges in developing regions and is therefore a light at the end of the tunnel for the healthcare sector, surgeons and patients.



Elegance and Ease of Use

faros captivates with its elegance and ease of use – it makes one want to use it. Working with faros should be delightful. With faros there is such a thing as love at first sight. And this love will endure.







Suitable for any Environment

faros not only matches your operating theatre visually, it pleasantly fills the room with its warm colour without taking up much space. It weighs little, can be moved around easily, joins you in the lift, and makes you feel at ease during the whole surgical procedure.

With a footprint of 55 x 55 cm faros requires very little space. Control elements can be used while sitting or standing comfortably. After surgery the IV pole is automatically retracted. Weighing only 31.5 kg when fully equipped, the device can then be moved aside easily with the foot handle, as the integrated foot aggregates lend stability to faros.

The foot pedal located under the table requires, with dimensions of 22 x 30 cm, remarkably little space. Under the table, the pedal, with only 22 x 30 cm requires remarkably little space. With a weight of 4.3 kg it stays safely in position, but the surgeon can still move it easily with the foot handle.

The optional instrument table (28 x 30 cm) can be fixed in any desired position. When not in use, it simply folds away on the side. Even during a vitrectomy with light, faros hardly requires more than 100 watts. There is no ventilator making noises and producing exhaust air, and after a power cut the device is in operating mode again within 10 seconds. In the case of insufficient supply pressure, you can simply dispense with the Visco function. Connection voltage is allowed to fluctuate between 100 and 240 V.



Perfect Fluidics

The faros fluidics system is the key element for the extraordinary performance of this platform. It makes optimum use of physical laws and is therefore not dependent on complex electronics and a sensory system prone to errors. The perfect flow control of the peristaltic principle allows high-precision control. The pump's superb efficiency creates velocity and suction power where required – the most important prerequisites for MICS and easyPhaco®. Hygiene and absence of contamination are guaranteed by the closed pressure measuring system.



Immediate Vacuum Buildup

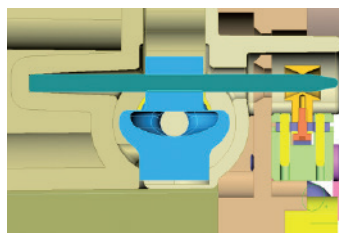
faros leaves competitors and the Venturi systems far behind! Only fractions of a second are needed for vacuum buildup.

Perfect Control of Aspiration Flow

No matter whether gentle suction or full performance suction is required, the flow can be precisely controlled by the foot pedal at all times. Also micro-flow rates in the area of 1 ml are under control and there are no disturbing effects due to peristaltic rolls.

Contamination-free Pressure Measurement

The Oertli pressure measurement principle has proven itself millions of times. It precludes contact of the sensor with the aspiration fluid, recognises even the lightest pressure fluctuation, doesn't disturb aspiration flow and remains completely free from air entrapment.



Patent-registered sensor principle

Physics, not Electronics

Constant intraocular pressure, be it in anterior or posterior segment surgery, is an indispensable prerequisite for every safe and successful operation.

faros and its instruments achieve superior stability as well as impressive dynamics by making clever use of physical laws. By means of gravity, nature offers the best possible stability and safety for infusion pressure. Calburn™ PMS system and easyPhaco® technology guarantee compactness in the incisions. The elimination of air in the whole fluidics system and optimised cross-section ratios are further key elements. Therefore, you can fully use faros' superb fluidics characteristics for modern operating techniques without any problems.

faros Peristaltic Technology

- Highest dynamics, extremely fast vacuum buildup
- Dual linear control creates optimum benefit
- Precise flow control, perfect for work on the retina
- Absolutely calm and stable even with micro flow rates
- No rolling effect

Highly Integrated Technology

You will doubly benefit from faros' highly integrated structural components and assemblies. Integration enhances reliability and enables a compact design with low weight and low space requirements. Accommodating all sub-systems needed for cutting-edge operations in such a small space is a superb accomplishment of the Oertli designers.



faros has been designed from scratch as a compact device. Individual modules can simply be exchanged and serviced as autonomous and tested units. The abandonment of windows operating systems in favour of embedded technologies and firmware enhances reliability. Maintenance and servicing are possible anywhere, including extensions and switching of software from a USB stick.

Comfortable and Precise Handling

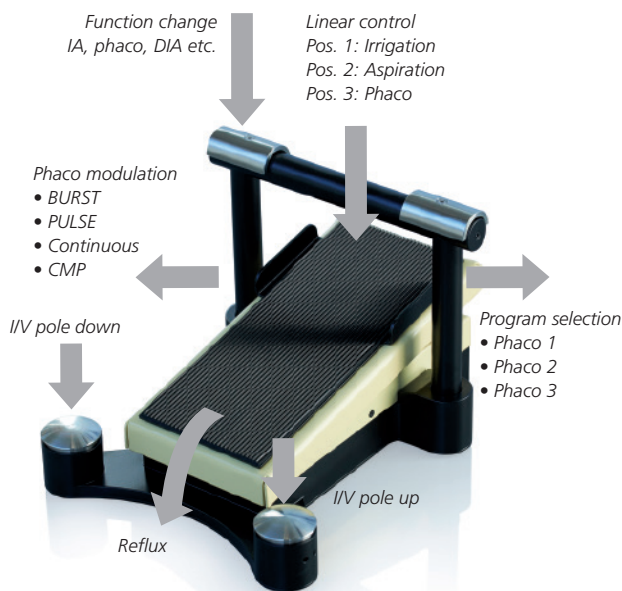
Light displays radiate through the black glass of the control panel and inform you precisely on operating values and settings. Entries can be made with the command keys that can easily be felt. The DirectAccess® surface makes menu navigation redundant. A precise click and faros is in the desired operating mode – also via the wireless remote control. There is a gentle, light and precise feel to the dual linear foot pedal. It can be moved with the foot and carries out a vast number of commands. Fluidics and instruments react to your commands precisely and without delay – an invaluable advantage, particularly in vitreoretinal surgery.



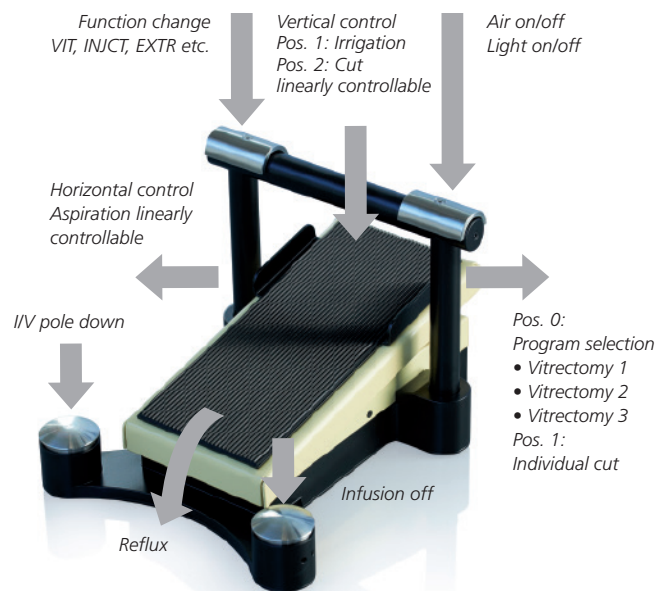
The same function is assigned to each of the clearly arranged control keys and is activated immediately by a click on the relevant key. There is no faster or clearer way. This is the principle of DirectAccess®.

In the background programme ParaProg® the manifold functions are set for the surgeon and his/her operating technique. This is possible for up to 50 surgeons. Preferred settings can be stored by the surgeon or the assistant at any time.

The faros pedal enables linear and dual linear pedal settings.



Example of pedal setting: phaco linear




Example of pedal setting: vitrectomy dual linear

Dual Linear Pedal


25 years ago Oertli introduced the dual linear foot pedal. It allows separate control of pump and instrument, thus providing unexcelled precision even with difficult maneuvers. The dual linear control especially brings to bear the advantages of the peristaltic pump in VR surgery. The flow and, independently of it, the cutting instrument can be controlled in the most subtle way, from an individual cut to maximum velocity.

Using the faros pedal, a great number of different commands can additionally be given, such as the shift between functions, programmes, modulation of ultrasound performance, activation of override as well as changes in the height of the bottle. Whether to use linear or dual linear operation, left foot or right foot control, and various other preferences can be individually stored in ParaProg®. To ensure the highest level of data transfer reliability, faros relies on a classic cable connection.


The Oertli easyPhaco® Evolution



easyTip® CO-MICS: 1.6-1.8 mm incision
Cutting-edge sub2mm surgery. For drastic miniaturisation of the wound surface and total astigmatism neutrality.



easyTip® 2.2 mm: 2.2-2.4 mm incision
Best possible chamber stability thanks to excellent fluidics concept.

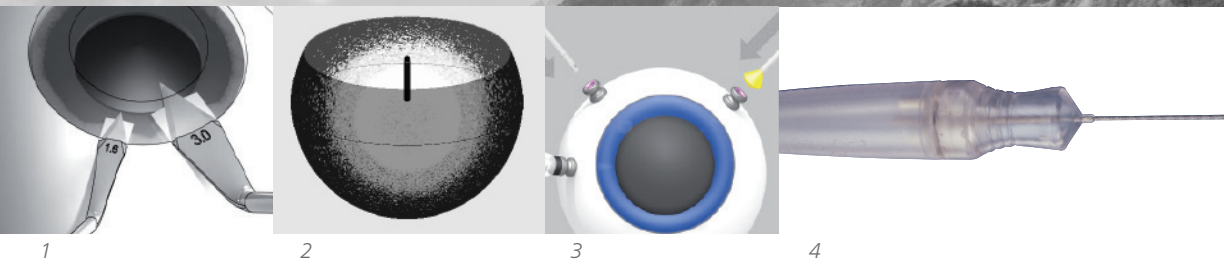


easyTip® 2.8 mm: 2.8-3.2 mm incision
Emulsifies even the hardest nuclei – in the most stable way imaginable.

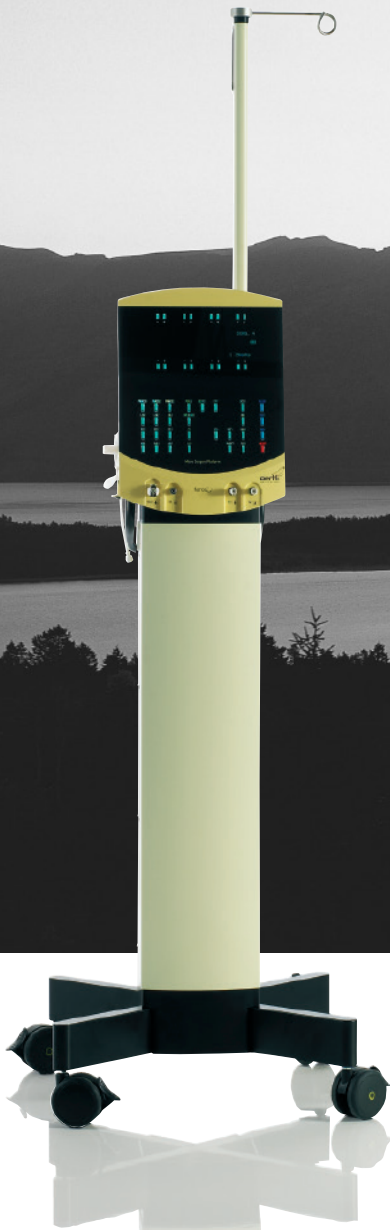


A Platform for your Future

The future belongs to easyPhaco® and micro-incision surgery. With faros the future has already begun. easyPhaco® and 23G & 25G MIVS technology (Minimally Invasive Vitrectomy Surgery) as well as a safe LED light are integrated. For years, Oertli has been successfully working on the development of new devices in the front line: the results are innovations which owners of a faros platform can benefit from as early as today.



- 1 *Reduction of wound surface thanks to easyTip® CO-MICS*
- 2 *Shielded panorama light instruments for optimum illumination with latest Goodlight® LED technology*
- 3 *Calibur™ PMS system for transconjunctival pars plana surgery with self-sealing pilot tube. Light conductor, cutting instrument and infusion are freely placeable.*
- 4 *Excellent cutting quality with up to 5000 cuts with Twinac® high-speed vitrectom thanks to its dual pneumatic drive.*



easyPhaco®

Discover the Magic of easyPhaco®!

Fluidics on! Let the elaborate fluidics concept of the Oertli system work for you! Even though it sounds implausible – Oertli easyPhaco® Technology brings to you unprecedented chamber stability, perfect emulsification and efficient fragment aspiration. And all of this without the undesired side effects hitherto caused by high vacuum. Intelligent and drastically improved fluidics properties – Oertli easyPhaco® Technology brings visible and noticeable advantages:

- no turbulence and efficient aspiration without repulsion of fragments
- concentrated axial ultrasound energy delivery for perfect emulsification
- no vacuum surge thanks to a capillary aspiration path



easyTip® CO-MICS

Ideal for 1.6-1.8 mm incisions.

Absolutely astigmatism-neutral sub2mm surgery without making any compromises in regard to efficiency and chamber stability. Work with a vacuum of 350 mmHg and 30 ml flow.

easyTip® 2.2 mm

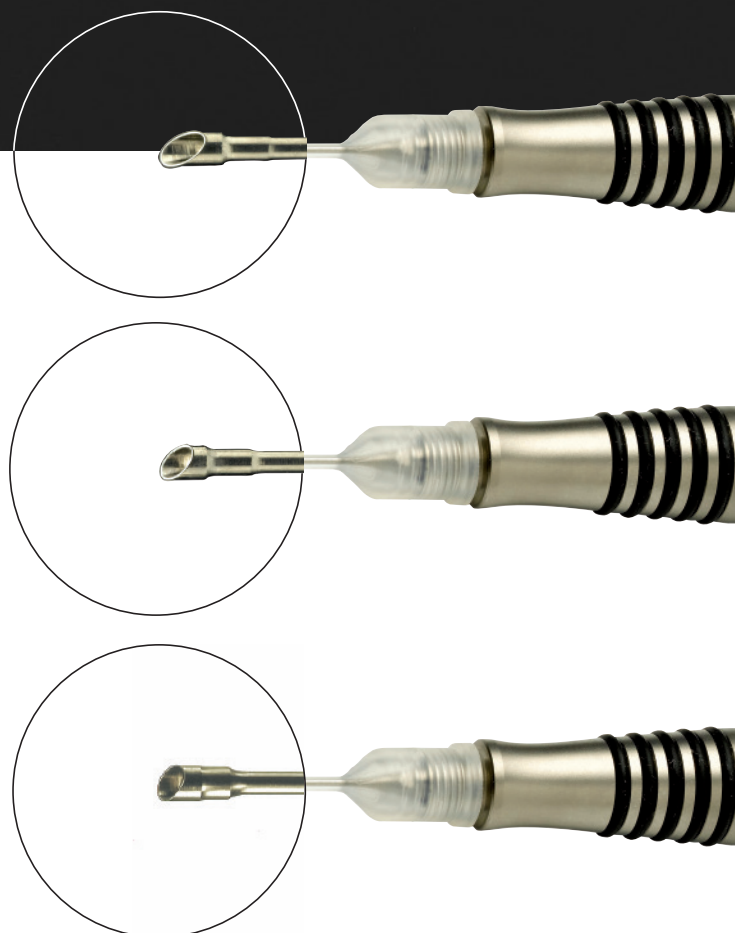
Ideal for 2.2-2.4 mm incisions.

Turn the vacuum on to 600 mmHg and 50 ml flow and enjoy absolute chamber stability and efficient emulsification.

easyTip® 2.8 mm

Ideal for 2.8-3.2 mm incisions.

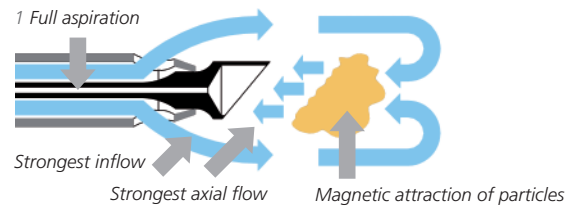
Work with maximum vacuum and flow and do not worry about the height of the bottle. You can emulsify even the hardest nuclei without any problems or clogging.



easyPhaco® Technology

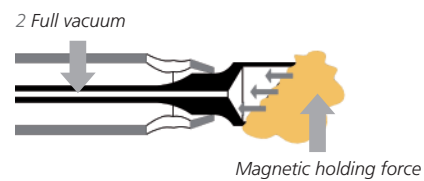
1 No Turbulence

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.



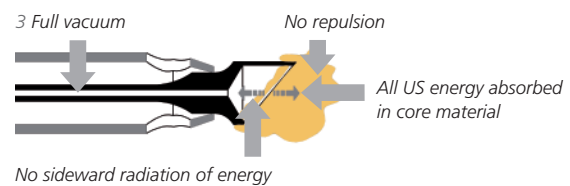
2 No Repulsion

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.



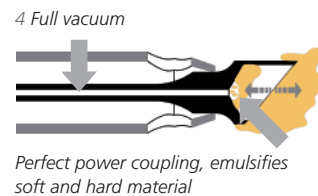
3 No Laterally Radiating Energy

US energy is applied axially and totally absorbed within the high vacuum locked core material.



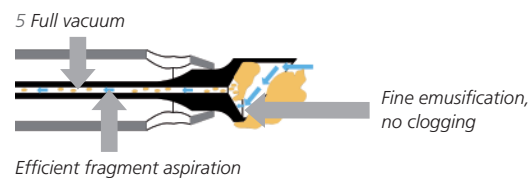
4 Perfect Emulsification

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.



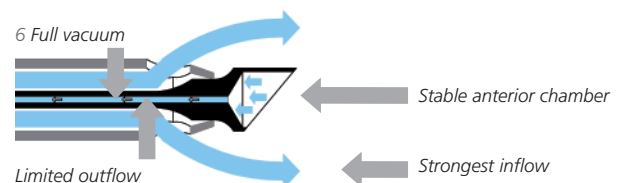
5 Efficient Fragment Aspiration

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



6 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.



Phaco Modulation

faros™ offers four kinds of power modulation that can be applied with easyPhaco® or any other phaco technology. The ideal fluidics support with easyPhaco® reduces ultrasound application to a minimum. Also with traditional linear control, shortest phaco times are therefore achieved.

Continuous Linear

The standard method. Very efficient. The surgeons need to set their own output level. The phaco intensity corresponds to the degree of pedal deflection.

PULSE Modulation*

Reduces the emitted ultrasound energy. The pulse frequency (up to 40 Hz) and cooling factor are freely selectable and not linked to the pedal position. The pulse intensity corresponds to the pedal position.



* PULSE modulation is recommended for lowest energy consumption.

BURST Modulation

Reduces the emitted ultrasound energy. The duration and intensity of the bursts (packets of energy pulses) are freely selectable and not linked to the pedal position. The pause between bursts is controlled by the pedal. The more the pedal is depressed, the shorter the pauses become.

CMP Cool Microincision Phaco

Genuinely cool phaco under all conditions – even at 100% phaco output! The pulse frequency (up to 40 Hz) and cooling factor are freely selectable within the CMP boundaries and remain unaffected by the pedal position. The pulse intensity corresponds to the pedal position. Ideal for bimanual MICS.



easyPhaco® is a development of Oertli R&D in scientific cooperation with Prof. Rupert Menapace, Vienna.

NovitreX® – the Latest Level of Precision in VR Surgery

The future of vitreoretinal surgery belongs to micro-incision technology with true flow control and a closed fluidics system. With its most modern peristaltic pump, faros allows precise direct control of the control of the flow and facilitates critical manoeuvres close to the retina.



Caliburn™ with razor-sharp blade

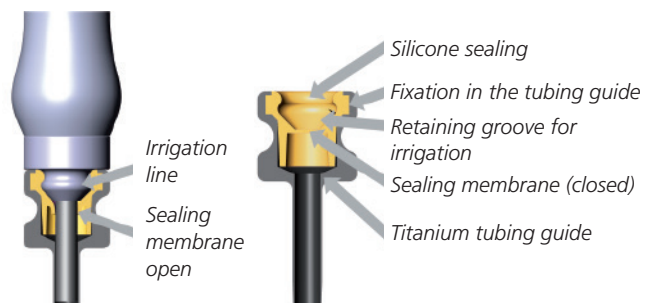


Caliburn™ PMS System

The innovative razor-sharp blade results in optimum cutting geometry in the sclera. The slim tunnel incision guarantees excellent postoperative wound tightness and thus fast healing of the wound. The penetrating forces are reduced to a minimum.

The integrated sealing membrane prevents an escape of BSS, air or oil. Constant IOP is guaranteed during the whole surgical process, even with critical procedures such as combined cataract and vitrectomy interventions. With some manoeuvres, the surgeon can simply remove the sealing membrane with the forceps. The integrated sealing membrane makes the use of plugs redundant. Moreover, BSS consumption is lower thanks to the stable condition.

Self-sealing Oertli trocar with integrated silicone sealing

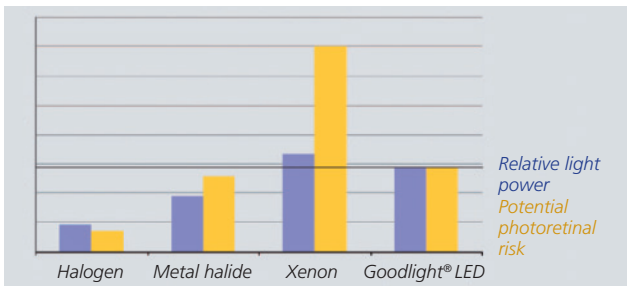


Goodlight® LED

Intraocular illumination has long become an important factor in modern vitrectomy surgery. 23 G and 25 G illuminators have set the benchmark and require ever stronger and better designed light sources.

Goodlight® LED is based on the advantages of the latest LED technology. The light intensity is increased by up to 60% compared with traditional light sources such as metal halide. Thanks to the outstanding longevity of the LED diodes maintenance-free operating time is guaranteed. When using LED, the danger of photoretinitis is minimised for both surgeon and patient. Goodlight® LED automatically absorbs all dangerous wave lengths under 435 nm. The pleasant colour of the light allows best contrast sensitivity. It enhances the effect of blue liquids and makes the membrane highly visible.

Comparison of Light Sources



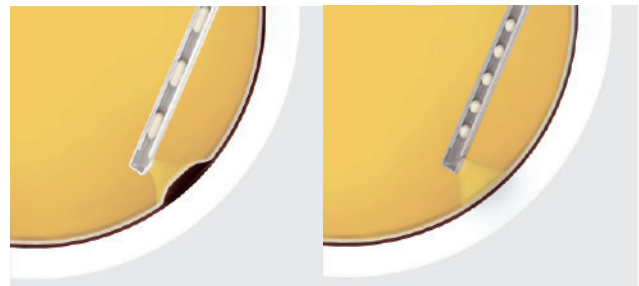
goodlight **LED**)))

Twinac® Precision Cutter

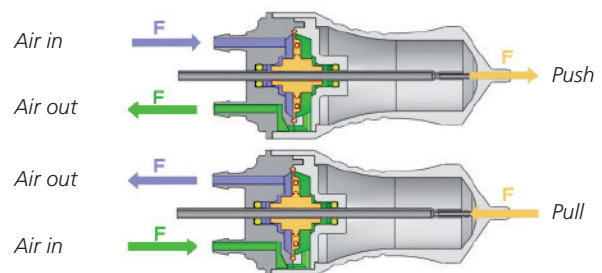
Working safely and closely to the retina is a need that Oertli's SPS precision cutter fulfills like no other product. TrueFlowControl® supports the surgeon when precisely manipulating tissues and enables total control in every surgical situation.

The optimum position of the cutting opening close to the tip of the cutter has been carefully determined by Oertli designers. It enables the surgeon to work more closely to and more safely on the retina and gives unprecedented control of the handpiece. The push and pull principle of the pneumatic cutter enables high cutting rates of up to 5000 cuts a minute without making any compromises in regard to the cutting quality.

Traction-free work close to the retina with high-speed cutting



The push-pull principle of the pneumatic Oertli precision cutters originally developed by Oertli



Bipolar Functions: More than Simply Diathermy

Micro-incision surgery also requires the back-up of a modern bipolar function. Oertli has been a pioneer in this field since 1973. faros offers the most up-to-date developments.

- Linear macro-haemostasis
- Linear endo-diathermy
- Coaptation of the conjunctiva
- RF capsulotomy
- HFDS glaucoma surgery

The haemostasis function can be activated at any time by a sideward deflection of the pedal (instant diathermy) or by pressing the DIA key. The CAPS key brings immediate access to the capsulotomy function, the GLAU key enables application of HFDS glaucoma surgery.

High Frequency Deep Sclerotomy

(Professor Bojan Pajic, Switzerland)

This ab interno method establishes direct access between the anterior chamber and the Schlemm's canal, whereby the effluent flow resistance of the trabecular network is avoided. The diathermy abee® tip is led through a corneal 1.2mm paracentesis and by means of diathermy six pockets (sclerotomies) of 0.3 x 0.6 mm are formed through the trabecular network and the Schlemm's canal.

abee® glaucoma tip

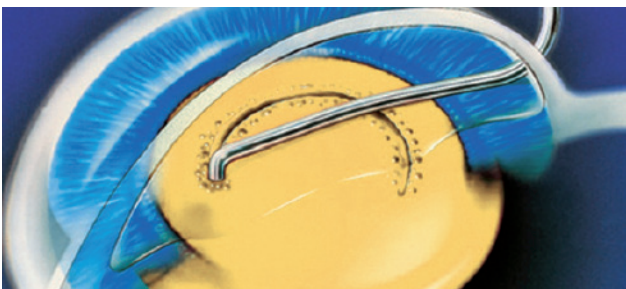




Klöti RF Capsulotomy: Safety for Difficult Cases

Few talk about it, many use it! Despite capsulorhexis and means of capsule staining, the Klöti RF capsulotomy is a welcome method again and again that has proven itself in hundreds of thousands of cases since 1991. For RF capsulotomy melts the capsular bag. There is no tearing with forceps or needle. Simply gliding over the tissues with the capsulotomy tip is enough. Even under the iris! Long clinical experience has shown that the characteristics of the resulting edge of the capsule meet all requirements, intra-operative and long term.

- No fundus reflex
- Hypermature cataract
- Traumatic cataract
- Intumescent cataract
- Juvenile cataract
- Narrow pupil
- Rhexis phimosis





Module Composition Anterior and Posterior Segment

Anterior Segment Basic Module

Fluidics System

- Peristaltic pump
- Gravity infusion, electric I/V pole
- Tubing system with integrated, closed pressure sensor
- Auto Venting
- Restrictable reflux

Control

- Control panel with glass covering, luminous display and silicon keys
- Dual linear multifunctional pedal
- Wireless remote control
- Individual programming with ParaProg® for up to 50 surgeons
- Self-testing function and preop function
- Audio signals

I/A Function

- 3 program memories with DirectAccess®
- Vacuum override function
- Continuous irrigation

Phaco Function

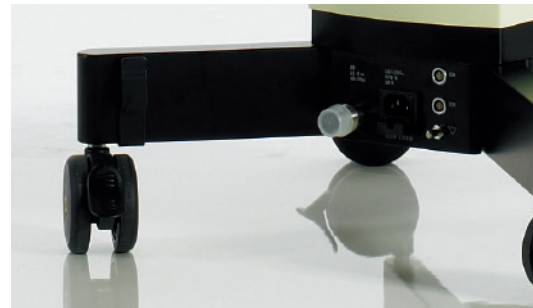
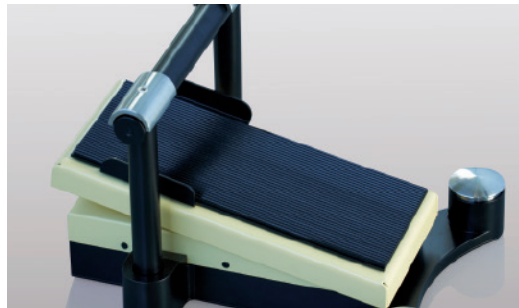
- 3 program memories with DirectAccess®
- Ultrasound phaco with auto tuning
- Hexadisq® handpiece with 6 piezo plates
- Linear, PULSE, CMP, BURST and panel mode
- Occlusion mode
- easyPhaco®, CO-MICS and MICS technique
- Dual linear phaco
- Override function

Anterior Segment Vitrectomy

- 3 program memories with DirectAccess®
- Electrically driven SUS guillotine cutter 20G, 23G
- Linear 30 to 1200 cuts/min
- Individual cut
- Dual linear or linear pedal control
- Irrigation/Aspiration/Cut
- Irrigation/Cut/Aspiration

Bipolar Functions

- Endo-diathermy
- Macro-diathermy
- Conjunctiva coaptation
- Instant diathermy function
- RF capsulotomy
- HFDS glaucoma function



NovitreX® Posterior Segment Extension Module

Vitrectomy

- Twinac dual pneumatically driven guillotine cutter
20G, 23G, 25G
- Linear or progressive, 30 to 5000 cuts/min
- Individual cut
- Dual linear or linear pedal control
- 3 program memories with DirectAccess®

Endo illumination

- Goodlight® LED light source
- Filter-free exit
- Anti-glare panorama illumination

Air

- Electric pump
- Constant pressure control with compensating reservoir
- Panel or remote activation
- Alarm function
- 3 program memories with DirectAccess®

Visco

- Injection
- Extraction
- Linear pedal control



Disclaimer

All information given in this publication is correct at the time of going to press. Oertli reserves the right to make changes without prior notice as a result of enhancements to the design or safety of products. The details specified in the relevant quotation or delivery documents shall apply.



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