Performance and Functionality in a Convenient Compact Modular Design

R-EVO Smart
Ophthalmic Equipment

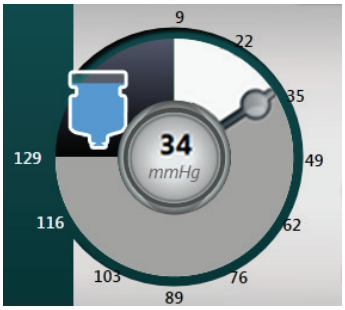
bvimedical.com

Agile Fluidics™

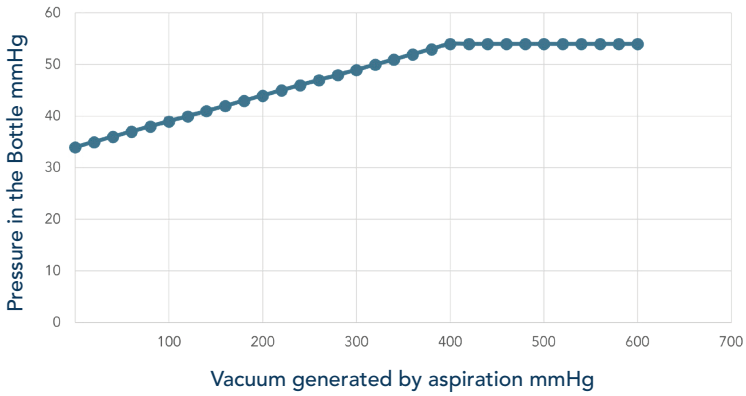
Active Irrigation System and Dynamic IOP Control

The advanced microprocessor-controlled active irrigation system linearly increases/decreases pressure in the irrigating solution container (up to a maximum of 20mmHg) to compensate for intraocular fluctuations caused by vacuum (up to a limit of 400mmHg). Active Irrigation System and Dynamic IOP Control act synergistically to mitigate surge.

PROGRAMMED IOP

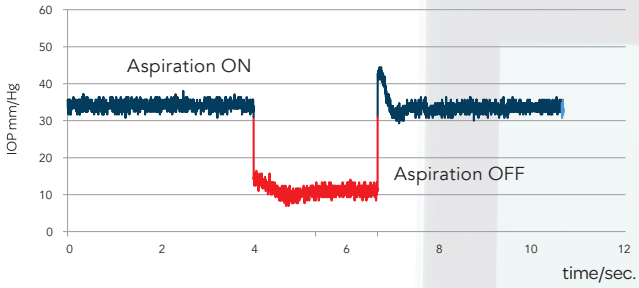


DYNAMIC IOP COMPENSATION



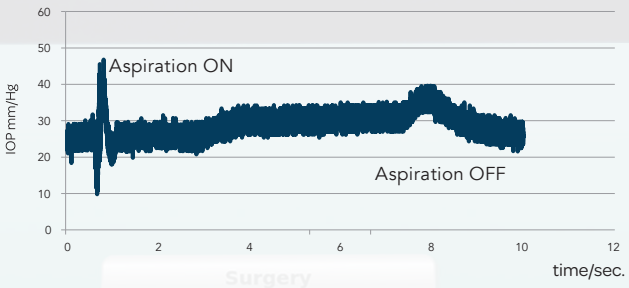
IOP MANAGEMENT

IOP 34 mmHg – VACUUM 600 mmHg
CONTROL OFF



The chart shows IOP fluctuations under active aspiration without an IOP control system*

IOP 34 mmHg – VACUUM 600 mmHg
CONTROL ON



The chart shows a constant IOP value, even under active aspiration, with the Dynamic IOP Control System*

With R-Evo Smart® a programmable IV pole is provided with the optional cart.

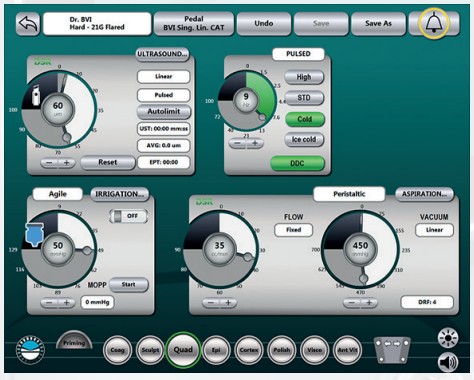
INTERCHANGEABLE FLOW AND VACUUM PUMPS

Selectable aspiration system between flow (Peristaltic) or vacuum based (Venturi) pump.

Interchangeable flow and vacuum pumps only for R-Evo Smart® S and R-Evo Smart® CR.

FLOW RANGE
1 - 65 cc/min

VACUUM RANGE
5 - 650 mmHg



VACUUM RANGE
5 - 650 mmHg

SELECTABLE
VACUUM RISE TIME
slow or fast

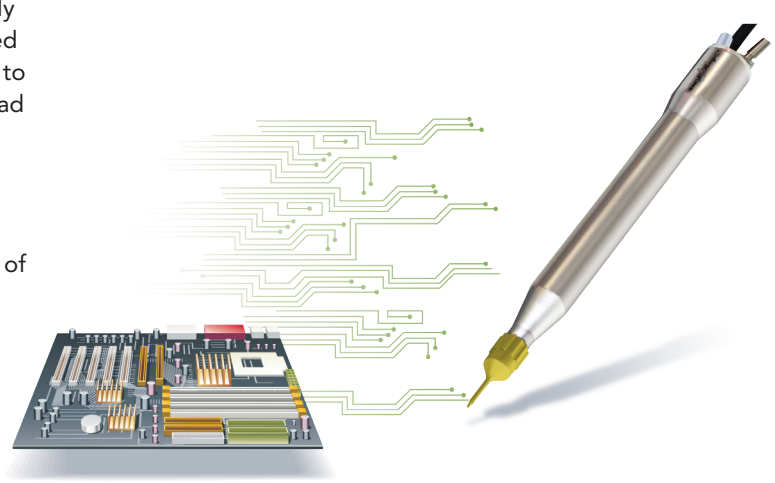
Reference:
* Data on file, BVI

Optimised Energy Management

Minimal Stress™ Technology

The patented Minimal Stress™ technology is the only system on the market that uses a feedback-controlled energy delivery to the piezoelectric crystals in order to mantain the exact tip stroke set point even under load conditions.

Minimal Stress™ technology optimises U/S energy delivery, always ensuring consistency between programmed and actual phaco tip stroke regardless of nucleus hardness.

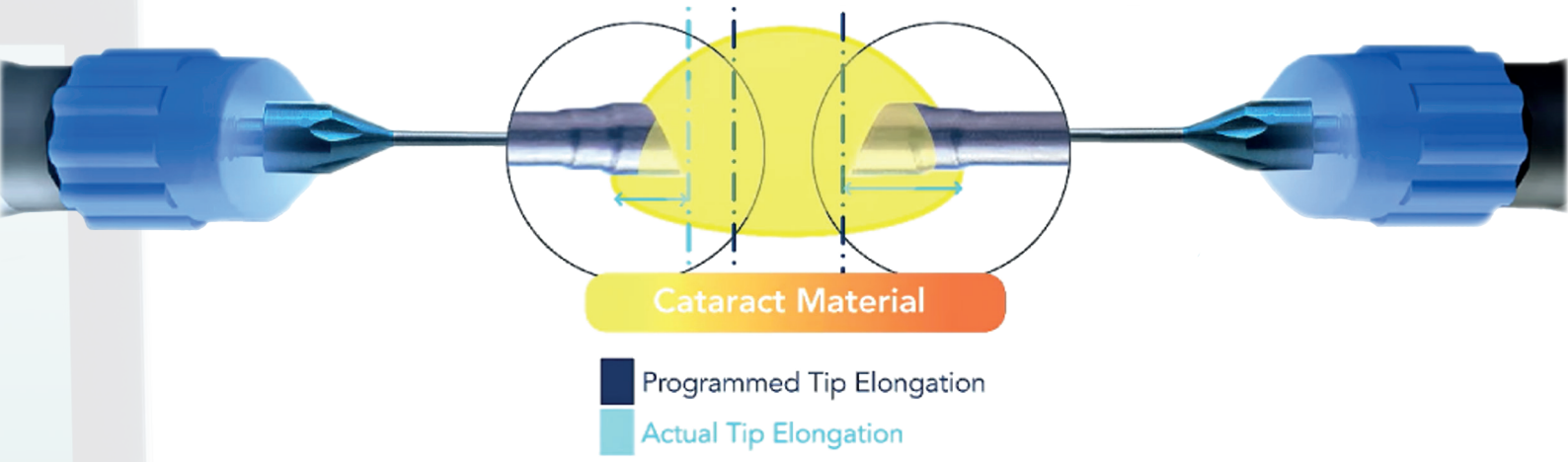


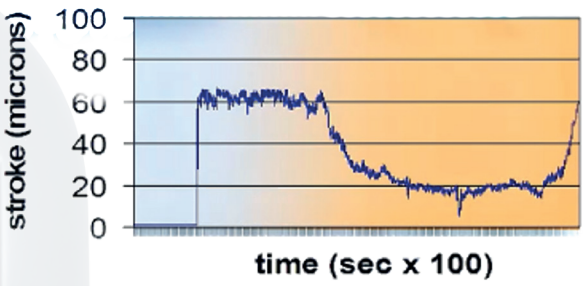
TRADITIONAL U/S DELIVERY TECHNOLOGY

TIP ELONGATION
PROGRAMMED ≠ ACTUAL

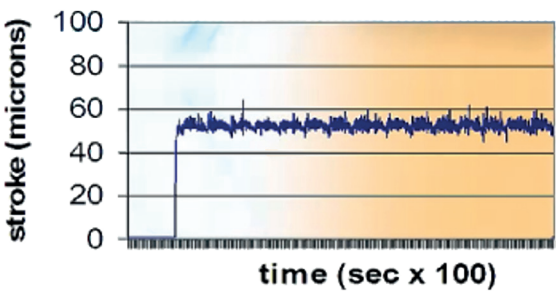
BVI® MINIMAL STRESS™ U/S DELIVERY TECHNOLOGY

TIP ELONGATION
PROGRAMMED = ACTUAL





NO consistency between the programmed phaco tip stroke and the actual tip elongation, when the phaco tip faces the resistance presented by hard lens material.*



Maintained consistency between the programmed phaco tip stroke and the actual tip elongation, when the phaco tip faces the resistance presented by hard lens material.*

Reference:
* Data on file, BVI.
Rossi T, et al. Testing a Novel Device for Accurate Ultrasound Delivery During Crystalline Lens Phacoemulsification Surgery. TVST Journal, February 2020.

LED Lighting System

The complete R-Evo Smart® CR unit is equipped with two independent, high-efficiency LED light sources, free of harmful UV and IR emissions.

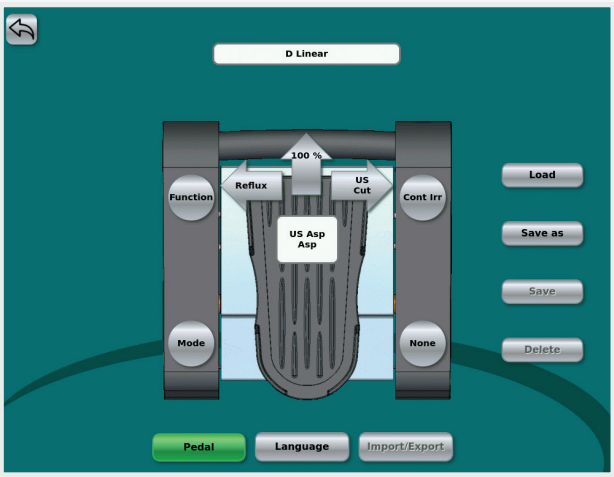
The LED lighting system allows surgeons an enhanced tissue visualisation and guarantees the maximum protection against phototoxicity.

In order to improve contrast and ocular tissue visualisation during VR surgery, both LED sources have 4 different selectable filters: three yellow (435nm, 475nm, 515nm), and one green.

Full Control Footpedal

The compact and lean R-Evo Smart® footpedal offers a streamlined programmability and accurate response.

The footplate features an integrated heel support that facilitates dual linear control, allowing simultaneous vertical and yaw control.



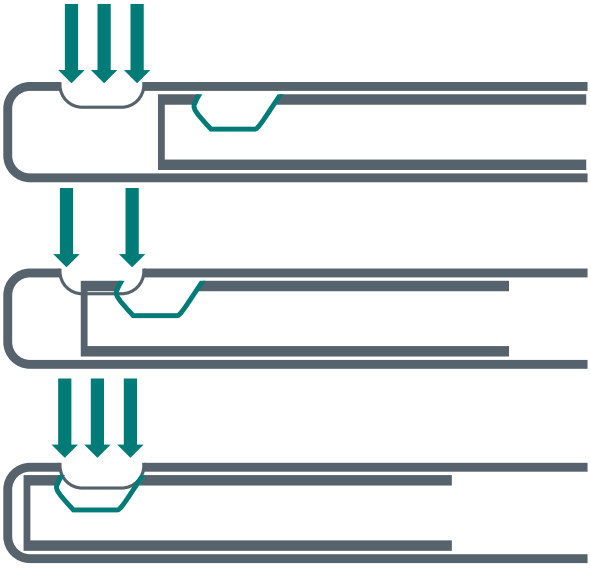
SINGLE LINEAR

DUAL LINEAR

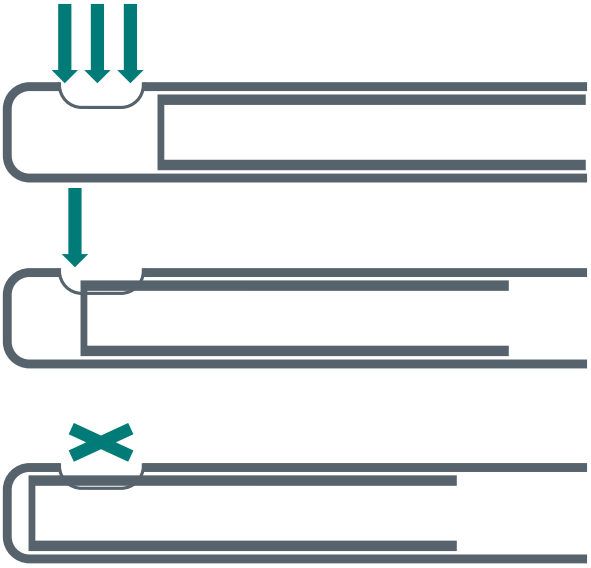
Integrated Solutions for Vitreoretinal Surgery

Twedge™ 20,000 Cuts/min Dual Blade Vitrectomy Probe

TWEDGE™ VITRECTOMY PROBE



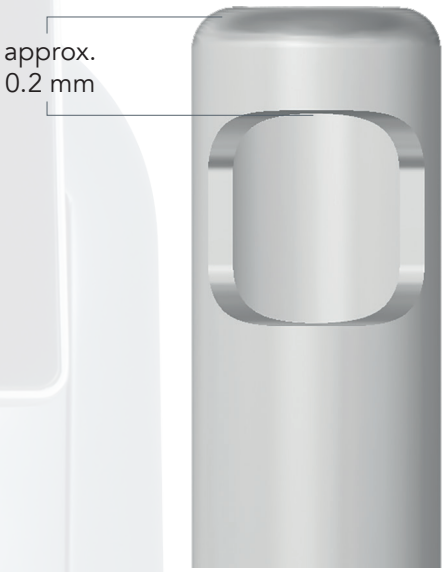
SINGLE-BLADE VITRECTOMY PROBE

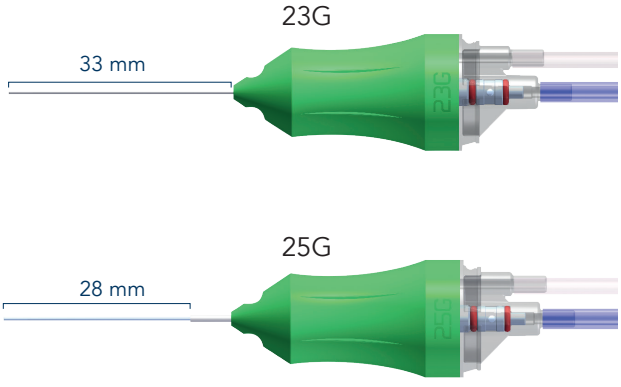


The First Dual Blade Vitrectomy Probe Ever Marketed

EVEN CLOSER TO THE RETINA

SHORT TIP TO PORT DISTANCE,
FOR ENHANCED RETINAL SHAVING ACTION





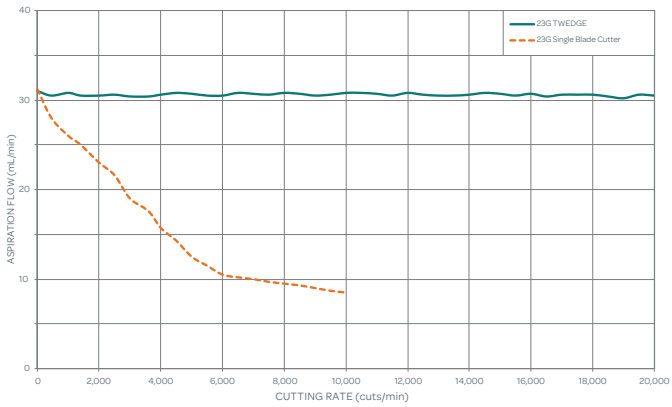
Integrated Solutions for Vitreoretinal Surgery

Optimised Vitrectomy Fluidics with the Twedge™ Vitrectomy Probe

CONSTANT FLOW AT ANY CUTTING RATE

The chart shows the different aspiration flow* achieved using the Twedge™ vitrectomy probe (solid line) compared to a single blade vitrectomy probe (dashed line), as the cutting rate changes.

In particular, the solid line shows how the flow remains constant up to 20,000 cuts/min with the Twedge™ vitrectomy probe; in comparison, the flow decreases as cutting rate increases using the single blade vitrectomy probe.

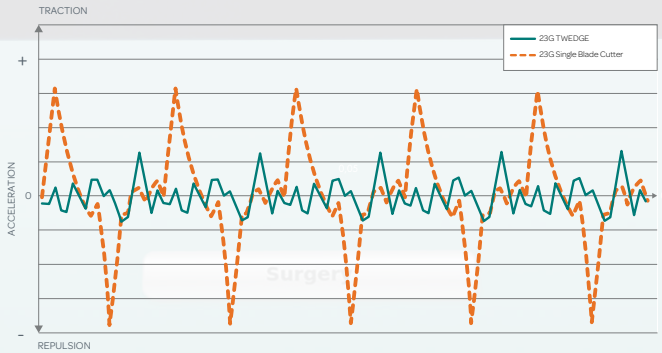


* balanced salt solution, Vacuum 650 mmHg, Venturi pump, R-Evolution® CR

ENHANCED STABILITY EVEN CLOSE TO THE RETINA

The chart shows the accelerations* induced by the Twedge™ vitrectomy probe (solid line) and a single blade vitrectomy probe (dashed line), as a function of time. At every blade work cycle the reduction of stress value using the Twedge™ generates a pulse-free action and the utmost safety close to the retina.

The Twedge™ vitrectomy probe leads to significant reduction of the stress value, generating a pulse-free action close to the retina.



* porcine vitreous, 3,000 cuts/min, 300 mmHg vacuum, Venturi pump, R-Evolution® CR

Reference:

"Fluid dynamics of vitrectomy probes" Rossi T., Querzoli G., Angelini G., Malvasi C, Iossa M., Placentino L., Ripandelli G.; Retina. 2014 Mar; 34(3): 558-67. doi: 10.1097/IAE.0b013e3182a0e628

"Introducing new Vitrectomy Probe blade shapes: a fluid dynamics study" Rossi T., Querzoli G., Angelini G., Malvasi C., Iossa M., Placentino L., Ripandelli G.; Retina. 2014 Sep; 1896-904.

"A new Vitrectomy Probe blade engineered for constant flow vitrectomy" Rossi T., Querzoli G., Malvasi C., Iossa M., Angelini G., Ripandelli G.; Retina. 2014 Jul; 34(7): 1487-91.

Technical Specifications

	R-EVO SMART®		
FLUIDICS	E	S	CR
AGILE Fluidics™	●	●	●
Gravity Fluidics	●	●	●
Integrated IV Pole (only with R-Evo Smart® cart)	●	●	●
Dynamic IOP Control	●	●	●
Reflux	●	●	●
Automatic Venting	●	●	●
One Disposable Cassette for Anterior and Posterior Procedures	-	-	●
Reusable Cassette	●	●	●
DSR (Dynamic Setting Regulation)	●	●	●
Peristaltic Pump	●	●	●
Venturi Pump	-	●	●
Linear/Fix Control	●	●	●
PHACOEMULSIFICATION			
Minimal Stress™ U/S Phaco	●	●	●
Slim 4 Handpiece	●	●	●
Six Crystal U/S Handpiece	●	●	●
U/S Emission Modes: Continuous, Burst, Pulsed with Selectable Duty Cycle Protocols	●	●	●
HD Pulse (Higher Duty) in Occlusion Status	●	●	●
Autolimit (U/S Power Limit in Occlusion Status)	●	●	●
Straight, Flared, Flared Bent Tips (20G, 21G and 22G)	●	●	●
Linear/Fix Control	●	●	●
ANTERIOR VITRECTOMY			
Twedge™ Dual Blade Cutter 23G, 25G	●	●	●
Cutting Rate up to 2,000 cuts/min	●	-	-
Cutting Rate up to 10,000 cuts/min	-	●	●
Linear/Fix Control	●	●	●

	R-EVO SMART®		
POSTERIOR VITRECTOMY	E	S	CR
Twedge™ Dual Blade Cutter 23G, 25G	-	-	●
DSR (Dynamic Setting Regulation)	-	-	●
Cutting Rate up to 10,000 cuts/min	-	-	●
Endo Phaco	-	-	●
Linear/Fix Control	-	-	●
ILLUMINATION			
2 Independent LED Sources	-	-	●
Phototoxicity Filters	-	-	●
Colour Enhancing Filters	-	-	●
Spot, Wide Angle Shielded and Wide Angle Fiber Optics 23G and 25G	-	-	●
Chandelier	-	-	●
AIR			
FAX / AFX	-	-	●
Display or Footpedal Switch	-	-	●
Dedicated Air Pump	-	-	●
Automatic Stopcock	-	-	●
SILICONE OIL			
Injection 0.4 -5 bar	-	-	●
Removal up to 650 mmHg	-	-	●
Simultaneous Active Aspiration	-	-	●
Linear/Fix Control	-	-	●
DIATHERMY			
Eso Diathermy	●	●	●
Endo Diathermy	-	-	●
Eso Diathermy Instruments	●	●	●
Endo Diathermy Disposable Probes 23G, 25G	-	-	●
Linear/Fix Control	●	●	●
FOOTPEDAL			
Programmable Dual/Single Linear Control	●	●	●
R-EVO SMART® CART			
Integrated IV Pole	●	●	●
Integrated Tray	●	●	●

R-EVO SmArt
Ophthalmic Equipment

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BVI
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