SWISS DOLORCLAST®

EVO BLUE

THE NEW ENERGY IN RSWT®

RSWT® EVO BLUE HANDPIECE

EMS
ELECTRO MEDICAL SYSTEMS

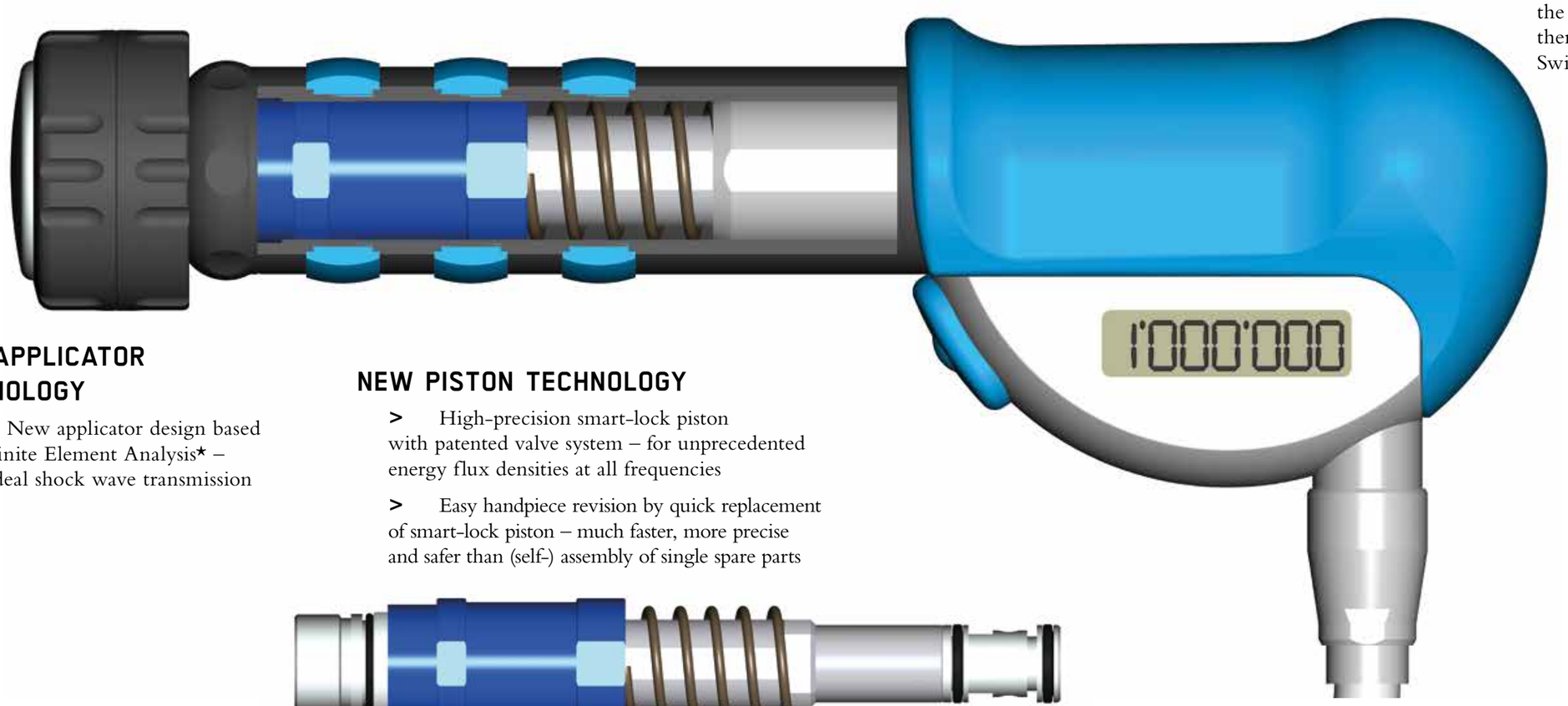
PIONEERING RSWT® HANDPIECE

RADIAL SHOCK WAVE THERAPY → NEW ENERGY FOR MORE SUCCESS

THE PATENTED TECHNOLOGY OF THE SWISS DOLORCLAST® EVO BLUE HANDPIECE DRAMATICALLY BROADENS THE SCOPE OF APPLICATION AND LEVEL OF PERFORMANCE OF OUR ORIGINAL SWISS DOLORCLAST® METHOD

MORE PERFORMANCE

> Latest masterpiece from the inventor of radial shock wave therapy (RSWT®) – the Original Swiss DolorClast® Method



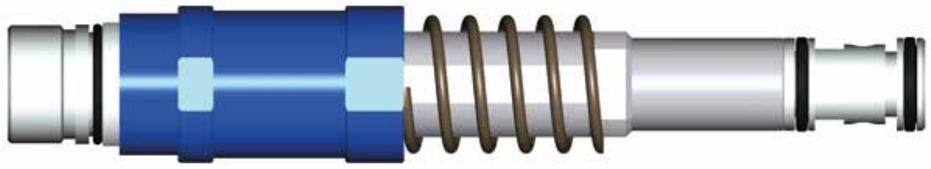
NEW APPLICATOR TECHNOLOGY

> New applicator design based on Finite Element Analysis* – for ideal shock wave transmission

NEW PISTON TECHNOLOGY

> High-precision smart-lock piston with patented valve system – for unprecedented energy flux densities at all frequencies

> Easy handpiece revision by quick replacement of smart-lock piston – much faster, more precise and safer than (self-) assembly of single spare parts



* Finite Element Analysis has become state-of-the-art for the modeling of physical systems in a wide variety of engineering disciplines

RADIAL SHOCK WAVES TODAY

CONSTANT ENERGY

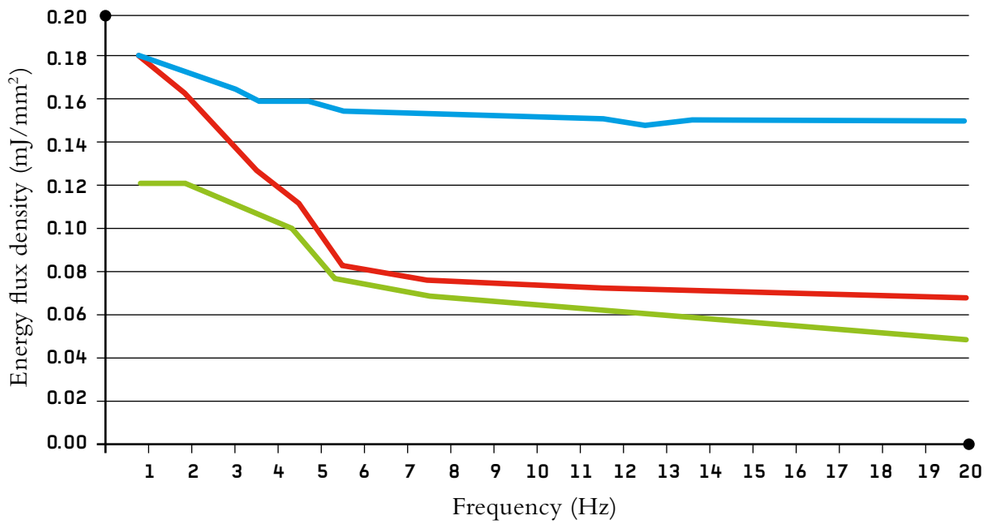
→ CONSTANT ENERGY FLUX DENSITY AT ALL FREQUENCIES

> The new Swiss DolorClast® EVO BLUE handpiece with constant energy output = blue curve

> The Swiss DolorClast® Radial handpiece = red curve

> Other handpieces on the market with lower output energy at all frequencies = green curve

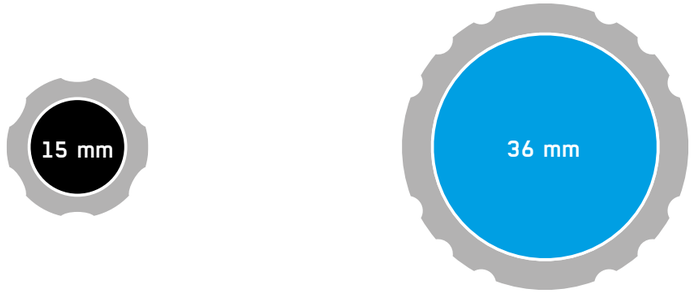
COMPARISON OF THE SWISS DOLORCLAST® EVO BLUE HANDPIECE, SWISS DOLORCLAST® RADIAL HANDPIECE AND OTHER HANDPIECES ON THE MARKET – 15 mm APPLICATOR, 4 bar
(Based on internal EMS studies)



Swiss DolorClast® EVO BLUE handpiece

Swiss DolorClast® Radial handpiece

Other handpieces on the market



6 x LARGER TREATMENT AREA

15 mm APPLICATOR

36 mm APPLICATOR

SAME ENERGY FLUX DENSITY

at 2.0 bar

at 4.0 bar

NEW APPLICATOR TECHNOLOGY
QUICKER PAIN RELIEF

HIGH-SPEED PHOTOGRAPHY →

HIGH-SPEED PHOTOGRAPHY WITH SEVERAL MILLION FRAMES PER SECOND
→ CAVITATION BUBBLES GENERATED BY RADIAL SHOCK WAVES BECOME VISIBLE

> Cavitation bubbles are consequent to the negative phase of the propagation of radial shock waves

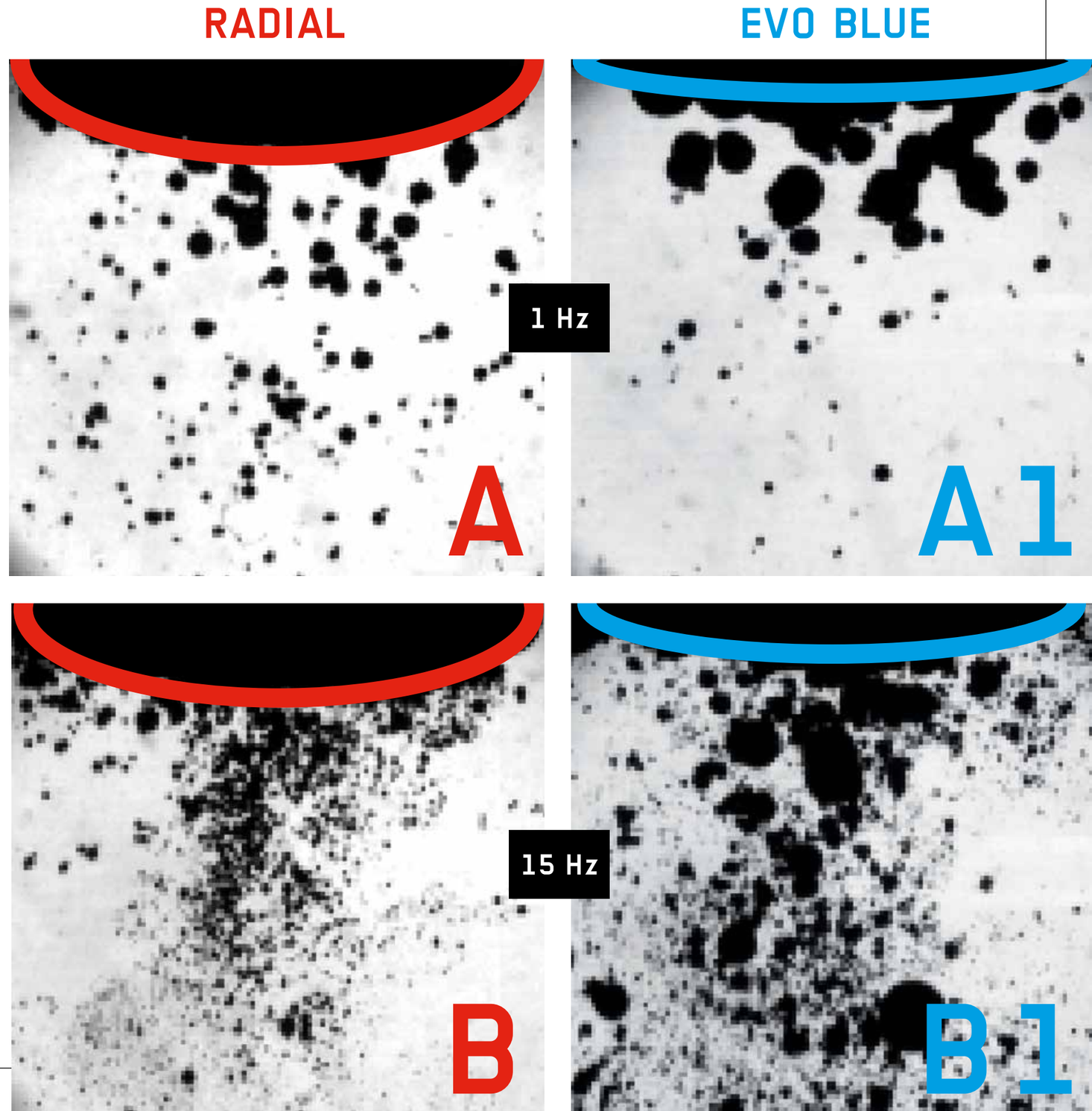
> Due to the constant energy flux density at all frequencies the new Swiss DolorClast® EVO BLUE handpiece generates at 15 Hz much more cavitation than the Swiss DolorClast® Radial handpiece – this allows users to treat patients much faster, with the same treatment success

FASTER THAN BEFORE
→ SAME TREATMENT SUCCESS

High-speed photography (in degassed water) of cavitation bubbles consequent to the negative phase of the propagation of radial shock waves generated with the previous Swiss DolorClast® Radial handpiece (A, B) and the new Swiss DolorClast® EVO BLUE handpiece (A1, B1), operated with 4 bar pressure at 1 Hz (A, A1) and 15 Hz (B, B1).

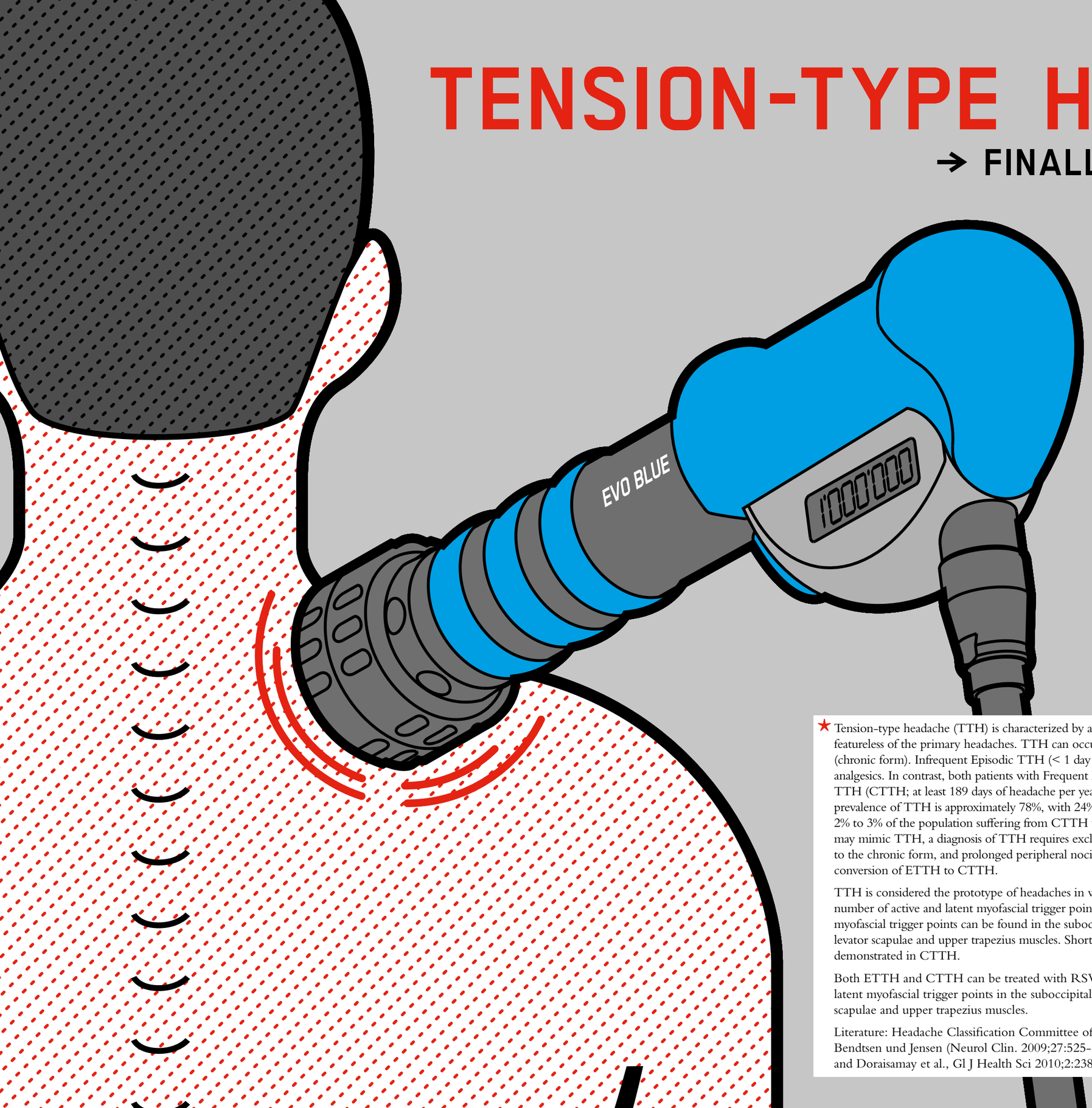
Note that at 1 Hz the cavitation fields of both handpieces are very similar. In contrast, at 15 Hz the new Swiss DolorClast® EVO BLUE handpiece generates a much stronger cavitation field than the Swiss DolorClast® Radial handpiece. The fact that at 15 Hz the cavitation field of the new Swiss DolorClast® EVO BLUE handpiece is even stronger than at 1 Hz (compare B1 with A1) is most probably due to persisting cavitation bubbles that were generated by earlier radial shock waves. The red lines in A and B as well as the blue lines in A1 and B1 depict the surface of the 15 mm applicators of the handpieces.

Cavitation is considered a central mechanism of action of shock waves on the musculoskeletal system (Schelling et al., Biophys J. 1994;66:133-140; Hausdorf et al., Brain Res. 2008;1207: 96-101; Schmitz and DePace, Urol Res. 2009;37:231-234).



TENSION-TYPE HEADACHE*

→ FINALLY, A QUICK SOLUTION



TENSION-TYPE HEADACHE IS A WIDESPREAD DISEASE
→ THE SWISS DOLORCLAST® EVO BLUE HANDPIECE ALLOWS USERS TO TREAT PATIENTS QUICKLY AND SUCCESSFULLY

> Treatment of myofascial trigger points in the muscles of the cervical spine and the upper trapezius muscle

> 36 mm applicator, 4000 to 6000 impulses – half of them to the left and the other half to the right – 4 bar, 20 Hz

> Pain-free within 5 minutes

★ Tension-type headache (TTH) is characterized by a bilateral, pressing, tightening pain of mild to moderate intensity, and is the most featureless of the primary headaches. TTH can occur in short episodes of variable duration (episodic forms) or continuously (chronic form). Infrequent Episodic TTH (< 1 day of headache per month) usually does not require medical treatment except of simple analgesics. In contrast, both patients with Frequent Episodic TTH (ETTH; between 12 and 180 days of headache per year) and Chronic TTH (CTTH; at least 189 days of headache per year) may encounter considerable disability and warrant specific intervention. The lifetime prevalence of TTH is approximately 78%, with 24% to 37% of the patients suffering from TTH several times a month, 10% weekly and 2% to 3% of the population suffering from CTTH which usually lasts for the greater part of a lifetime. Because many secondary headaches may mimic TTH, a diagnosis of TTH requires exclusion of other organic diseases. In most patients, TTH develops from the episodic form to the chronic form, and prolonged peripheral nociceptive stimuli from pericranial myofascial tissues seem to be responsible for the conversion of ETTH to CTTH.

TTH is considered the prototype of headaches in which myofascial pain plays an important role. Many studies have reported an increased number of active and latent myofascial trigger points in pericranial muscles in patients with ETTH and CTTH. These active and latent myofascial trigger points can be found in the suboccipital, splenius capitis, splenius cervicis, semispinalis capitis, semispinalis cervicis, levator scapulae and upper trapezius muscles. Short-term relief of headache by myofascial trigger points release has been successfully demonstrated in CTTH.

Both ETTH and CTTH can be treated with RSWT® using the Swiss Dolorclast® when focusing on the treatment of active and latent myofascial trigger points in the suboccipital, splenius capitis, splenius cervicis, semispinalis capitis, semispinalis cervicis, levator scapulae and upper trapezius muscles.

Literature: Headache Classification Committee of the International Headache Society (Chephalalgia 2004;24 [Suppl. 1]:1-150), Bendtsen und Jensen (Neurol Clin. 2009;27:525-535), Fernández-de-las-Peñas and Schoenen (Curr Opin Neurol 2009;22:254-261) and Doraisamay et al., Gl J Health Sci 2010;2:238-244), among many others.

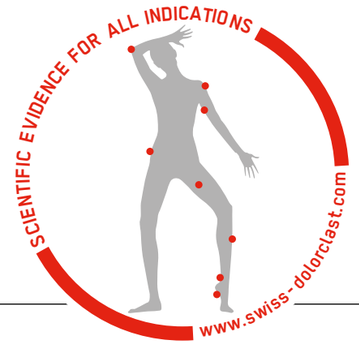
NEW APPLICATORS
→ NEW APPLICATIONS

OPTIMIZED RADIAL SHOCK WAVE THERAPY WITH THE SWISS DOLORCLAST® EVO BLUE HANDPIECE

	INDICATIONS →	15 mm	15 mm/TRIGGER	36 mm
MUSCULOSKELETAL INIDCATIONS	1 CALCIFYING TENDINITIS OF THE SHOULDER	✓		
	2 SUBACROMIAL PAIN SYNDROME	✓		
	3 TENNIS ELBOW	✓		
	4 GREATER TROCHANTERIC PAIN SYNDROME	✓	✓	✓
	5 OSGOOD-SCHLATTER DISEASE	✓		
	6 PATELLA TIP SYNDROME	✓		
	7 MEDIAL TIBIAL STRESS SYNDROME	✓		
	8 INSERTIONAL ACHILLES TENDINOPATHY	✓		
	9 MIDBODY ACHILLES TENDINOPATHY	✓		
	10 PLANTAR FASCIITIS	✓		
TRIGGER POINT THERAPY	11 IDIOPATHIC LOW BACK PAIN	✓	✓	✓
	12 PSEUDORADICULAR SYNDROMES	✓	✓	✓
	13 MYOFASCIAL PAIN SYNDROME	✓	✓	✓

> Moreover, the Swiss DolorClast® is also approved for the treatment of the following indications: primary and secondary lymphedema, Peyronie's disease, acute and chronic soft tissue wounds and cellulite

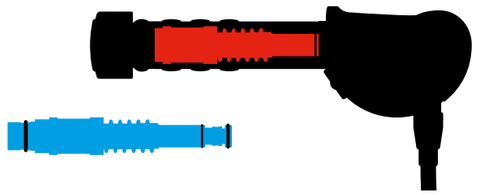
> Two optional applicators for the Swiss DolorClast® EVO BLUE handpiece are available: 10 mm and 15 mm focus



SERVICING IN 60 SEC.

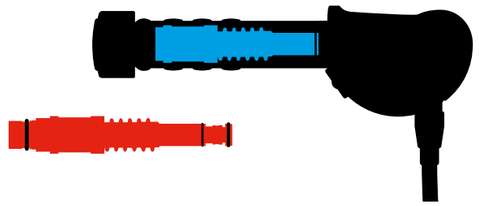
A GREAT PIECE OF HIGH TECH
→ CLOSE AT HAND

SWISS DOLORCLAST® EVO BLUE HANDPIECE
→ INNOVATIVE HANDPIECE REVISION BY REPLACEMENT OF THE SMART-LOCK SYSTEM



> Replacement of the smart-lock system (in red) by a new one (in blue) in less than 60 seconds – without any tools

> A clear advantage of the smart-lock system over conventional systems with individual spare parts



SERVICED IN 60 SECONDS
→ DONE IN NO TIME

TECHNICAL DATA

> Compatible with all Swiss DolorClast® devices

Frequency	1 – 20 Hz
Pressure	1.5 – 4.0 bar
Weight	0.88 kg
Dimensions (HxLxD)	113 x 250 x 51 mm

Swiss DolorClast® EVO BLUE handpiece set delivered with 15 mm, 15 trigger, 36 mm applicators and one maintenance kit

REFERENCES

Swiss DolorClast® EVO BLUE handpiece	FR-119A
Maintenance kit	EQ-209
Applicator 10 mm	FR-213
Applicator 15 mm	FR-214
Applicator 15 mm trigger	FR-215
Applicator 10 mm focus	FR-216
Applicator 36 mm	FR-217
Soft handle blue	EQ-120/D
Transportation case	DP-440/A

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