



SWISS LITHOCLAST[®]2 EVOLUTION THE GENUINE SWISS LITHOCLAST[®] 2 THE EVOLUTION IN LITHOCLAST® STONE THERAPY - FROM THE INVENTOR OF THE SWISS LITHOCLAST[®] METHOD

- → BETTER TREATMENT RESULTS
- → BETTER HANDLING
- → EASIER REPROCESSING

SETTING A NEW STANDARD FOR SAFETY AND EFFECTIVENESS

SWISS LITHOCLAST[®]2

THE ORIGINAL PNEUMATIC PN3 HANDPIECE -INNOVATIVE FUNCTION AND DESIGN →

THE RESULT OF RESEARCH AND DEVELOPMENT – THE INNOVATIVE HANDPIECE OF THE SWISS LITHOCLAST[®] 2→

- > The Pn3 handpiece is extremely lightweight and ensures optimum operator control with its good ergonomic design.
- > The coupling section of the air supply tube rotates and the compressed-air tube is now longer without losing any pulse efficiency. This allows greater freedom of movement for the user in all treatment situations.
- > The Pn3 handpiece and compressed-air tube is a sealed system and can be autoclaved or sterilized without additional sealing caps. This means no penetration of liquids and moisture, no blocking of the projectile and no related handpiece failure.
- > The quick-connection probe caps provide easy, fast and sterile probe change.
- > All components handpiece and probes remain extremely durable due to highest material and manufacturing quality.

INNOVATION IN THE HANDS OF THE PHYSICIAN →

→ GREATLY REDUCED PROBE DISPLACEMENT WITH THE Pn3 HANDPIECE IMPROVES FRAGMENTATION CONTROL AND REDUCES PUSH-BACK EFFECT

→ SWISS LITHOCLAST® Pn3 HANDPIECE COMPARED TO STANDARD HANDPIECE -PROBE DISPLACEMENT MEASURED AT A PRESSURE OF 2 BAR



PN3→ STATE OF THE ART

Ratio 1:1



SWISS LITHOCLAST[®]2 FLEXIBLE

FLEXIBLE IMPULSE FREQUENCY, CONTROLLED BY THE PHYSICIAN \rightarrow

SELECTION OF IMPULSE FREQUENCY IN 12 STEPS, WITH SINGLE IMPULSE SHOTS OR WITH CONTINUOUS IMPULSES ON BOOST FREQUENCY -CONTROLLED BY THE PHYSICIAN THROUGH A DUAL FOOT PEDAL



THE CHALLENGE FOR THE DEVELOPMENT TEAM OF THE SWISS LITHOCLAST[®] METHOD WAS THE "PUSH-BACK EFFECT"→

> Loss of mobile stones up the ureter, caused by the lithotripsy impulse, was frustrating. This was often caused by an impulse frequency badly suited to the treatment situation. This problem occurs, if the physician cannot control or adapt the impulse frequency quickly and easily.

THE SWISS LITHOCLAST® 2 FIGHTS THE PUSH-BACK EFFECT BY MEANS OF THREE ESSENTIAL INNOVATIONS →

- > The impulse frequency can be adjusted in single Hertz increments by means of the dual foot pedal, the physician can intraoperatively select between single impulse, low impulse frequency and boost frequency.
- > The probe displacement has been greatly reduced this reduces forward momentum on the stone at impact.
- > The newly developed Swiss LithoVac[®] suction system suction lithotripsy in the ureter – enables continuous irrigation ureteroscopy and controls the push-back effect on its own.



SWISS LITHOCLAST[®]2 FLEXIBLE

→ SELECTION OF SINGLE IMPULSES, OR PRESET IMPULSE FREQUENCY OR **BOOST FREQUENCY VIA A DUAL** FOOT PEDAL

EVERYTHING IS UNDER CONTROL



FLEXIBILITY LINKED TO CONTROL →



NEWLY DEVELOPED SWISS LITHOVAC® SUCTION SYSTEM FOR CONTINUOUS IRRIGATION URETEROSCOPY HELPS TO CONTROL THE PUSH-BACK EFFECT →

CLINICAL PROOF FOR THE EFFECTIVENESS OF THE SWISS LITHOVAC[®] SUCTION SYSTEM →

> Stenzl, Seibold et al. – Pneumatic lithotripsy with an optional suction device (LithoVac[®]) for treatment of ureteric stones – Japanese Journal of Endourology, vol. 9, No.1, 1996

Haupt, Pannek et al. – The LithoVac[®]: New suction device for the Swiss LithoClast[®], Journal of Endourology, vol. 9, No. 5, 1995



FIRST-SHOT SOLUTION \rightarrow

SAFE AND SUCCESSFUL LITHOTRIPSY WITH VERY SHORT TREATMENTS, INDEPENDENT OF STONE COMPOSITION

→ SUCCESSFUL TREATMENT OF ALL TYPES OF URINARY STONES



URINARY STONES OF DIFFERENT COMPOSITION - FRAGMENTED WITH THE SWISS LITHOCLAST[®] METHOD →

- The Swiss LithoClast[®] transmits energy from the probe onto the stone > thermal tissue damage is excluded.
- The urothelium remains intact even after being hit repeatedly with impulses > at the highest energy setting of the Swiss LithoClast[®]2.

LARGE, MEDIUM, SMALL→



1 Flexible lithotripsy with the Swiss LithoClast[®] in the ureter

2 Suction lithotripsy of ureteric stones with Swiss LithoClast® and Swiss LithoVac®

3 Percutaneous application with flexible nephroscope and flexible Swiss LithoClast[®] probe

Percutaneous stone fragmentation 4 with Swiss LithoClast[®] and Swiss LithoVac[®]

5 Pneumatic suction lithotripsy using Swiss LithoClast® and Swiss LithoVac® in the bladder







SWISS LITHOCLAST[®] 2 GENUINE METHOD

SWISS LITHOCLAST® 2, SWISS LITHOCLAST® ENDOSCOPES, SWISS LITHOVAC® SUCTION → THE GENUINE SWISS LITHOCLAST® METHOD

Safe, effective and cold: these are the main features of the genuine
Swiss LithoClast[®] Method – developed by EMS – since it's market introduction in 1990.

> The Swiss LithoClast[®] generates energy without heat development – thermal damage in the urinary tract is eliminated for maximum tissue safety.

> No electrical energy is used for generating the acoustic waves – the highest safety for the patient and physician is guaranteed.

> The outstanding effectiveness of the Swiss LithoClast[®] results in short treatment duration, independent of the stone composition, with the flexibility of use in the entire urinary tract. And, last but not least, it is the quality of all components, as well as their ease of use and maintenance which made this a unique success.

THE ROAD TO SUCCESS →

- > The newly developed Swiss LithoVac[®] suction system is user friendly and easy to clean and to sterilize.
- > The new generation of Swiss LithoClast[®] endoscopes has an impressive and outstanding optical system – ureteroscopy with 50000 Pixel image resolution in small-diameter scopes represents a new dimension in endoscopic image quality.
- > The Swiss LithoClast[®] endoscopes enhance stone therapy simple, safe handling, no kinking of lithotripsy and suction probes thanks to special guidance adapters.

THE GENUINE SWISS LITHOCLAST[®] METHOD - FOR MORE THAN A DECADE THE MODERN TERM FOR ENDOSCOPIC LITHOTRIPSY, SETTING THE BENCHMARK FOR SAFE AND EFFECTIVE STONE THERAPY



ONE OPTIMIZES THE OTHER

SWISS LITHOCLAST® Pn3 HANDPIECE AND SWISS LITHOVAC® SUCTION SYSTEM WITH SWISS LITHOCLAST® URETEROSCOPE→



SWISS LITHOCLAST[®] 2 SYSTEM

DEVICES, OPTIONS, ACCESSORIES \rightarrow COVERING ALL NEEDS FOR **A SUCCESSFUL STONE THERAPY**

SWISS LITHOCLAST[®]2

Swiss LithoClast®2 basic unit 100-240 VAC, 40 VA, 50/60 Hz incl. dual foot pedal, compressed-air connection, pneumatic Pn3 handpiece, Swiss LithoClast® probes 0.8/1/1.6/2 mm

STONE CATCHER

Stone catcher holder Stone catcher sterile (box of ten)



> Stone catcher: collection of stone fragments

SWISS LITHOVAC®

Swiss LithoVac® set lv3 Suction probe Ø 1.6 mm, 595 mm length Suction probe Ø 3.5 mm, 380 mm length Suction probe Ø 4mm, 353mm length

SWISS LITHOCLAST® PROBES FT-158#

FR-126

DT-059

Probe Ø 2mm, 425mm length	EL-044
Probe Ø 1.6 mm, 605 mm length	EL-058
Probe Ø 1mm, 605mm length	EL-045
Probe Ø 0.8 mm, 605 mm length	EL-046
Probe Ø 3.2 mm, 425 mm length	EL-092
Handpiece probe cap for 3.2-mm probe	AD-425
Probe Ø 1.6 mm, 453 mm length	
for suction probe EL-212	EL-081
Probe Ø $0.8\mathrm{mm},668\mathrm{mm}$ length	
for suction probe EL-213	EL-080
Flexible probe Ø $0.89\mathrm{mm},940\mathrm{mm}$ length	
for flexible ureterorenoscopes	EL-254B
Flexible probe Ø $0.89\mathrm{mm},600\mathrm{mm}$ length	
for flexible nephroscopes	EL-304 B

ADAPTERS FOR ENDOSCOPES

- For EMS Lithovision ureterorenoscope FR-167 and FR-168
- For Richard Wolf ureterorenoscope FR-107, FR-108 and FR-132



FR-211

FR-172

For Olympus OES Pro Serie ureterorenoscope WA29042A with irrigation attachment A0396

STERILIZATION TRAY

Sterilization tray 700x120x75mm, autoclavable

STERILIZATION TRAY

Sterilization tray 500 x 200 x 60 mm, autoclavable

MILLIONS 25 OF STONES CANNOT BE WRONG

THE SWISS LITHOCLAST® PRINCIPLE IS TODAY'S MOST COMMONLY USED ENDOSCOPIC STONE TREATMENT METHOD - ITS PROVEN SAFETY AND ITS SUCCESS RATES MAKE IT ALSO THE MOST EFFICIENT AND COST-EFFECTIVE MODALITY

BEST RESULTS

FOUR HUNDRED AND TWELVE (412) PUBLISHED STUDIES ON THE SWISS LITHOCLAST® AND PNEUMATIC LITHOTRIPSY PROVIDE AMPLE CLINICAL EVIDENCE ON EFFICIENCY AND SAFETY OF THE SWISS LITHOCLAST® METHOD

HIGH STONE-FREE RATES

- > Up to 95% for ureteral stones using pneumatic lithotripsy
- > Up to 90% for PNL procedures using combination lithotripsy

HIGH TISSUE SAFETY

> The highest tissue safety of all endoscopic lithotripters

BEST COSTS

A FASTER STONE CLEARANCE WITH THE SWISS LITHOCLAST® RESULTS IN A SHORTER OPERATING TIME FOR COST-EFFECTIVE OR MANAGEMENT

- > Save 28 minutes compared to laser lithotripsy¹
- > OR time costs 62 \$ per minute²
- > Save on average 1,736 \$ per PNL compared to laser lithotripsy

¹ Malik, Rizvi et. al, 2007: Comparison of HO-YAG laser and Swiss LithoClast⁴ in percutaneous nephrolithotomy

² A. Macario, Stanford University USA, 2010; What does one minute of operating room time cost

FR-127# EL-213 EL-212 EL-211

FR-107 FR-108 FR-112

> FR-082 FR-166

SINCE 1991

FAST FRAGMENTATION AND CLEARANCE TIME

> Combination mode with the Swiss LithoClast[®] Master clears stones twice as fast as ultrasound-alone lithotripters

> Pneumatic lithotripters with the Swiss LithoClast[®] fragments stones on average faster than Holmium laser

SWISS LITHOCLAST

HISTORY

FUTURE

"I FEEL GOOD"

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TECHNICAL DATA

CARACTÉRISTIQUES TECHNIQUES

EMS SA CH-1260 Nyon (Switzerland)	Fabricant
Swiss LithoClast®2	Modèle
100 – 240 V AC	Tension d'alimentation
50 – 60 Hz	Fréquence secteur
40 VA	Puissance nominale
Approx. 85 mJ	Energie de sortie
EN-60601-1 Class I IP 20 (Foot pedal : IP X8) MDD 93 /42 EEC Class IIb	Classification
Continuous duty	Mode de travail
T 1.6 A 250 VAC (Ø5 X 20mm, time lag, low breaking capacity)	Fusibles
3.5 to 6.5 bar	Alimentation en air co
Weight : 10.5 kg Dimensions height : 136 mm Width : 280 mm Depth : 365 mm	Boîtier
Temperature +10°C to +40°C Relative humidity 30 % to 75 % Atmospheric pressure 700 hPa to1060 hPa Altitude max. 3000 m	Environnement d'expl
-10°C to +40°C 10% to 95% relative humidity 500 hPa to 1060 hPa air pressure	Conditions de stockag et de transport
	EMS SA CH-1260 Nyon (Switzerland) Swiss LithoClast® 2 100 - 240 V AC 50 - 60 Hz 40 VA Approx. 85 mJ EN-60601-1 Class I IP 20 (Foot pedal : IP X8) MDD 93 /42 EEC Class IIb Continuous duty T 1.6 A 250 VAC (Ø5 X 20mm, time lag, low breaking capacity) 3.5 to 6.5 bar Weight : 10.5 kg Dimensions height : 136 mm Width : 280 mm Depth : 365 mm Temperature +10°C to +40°C Relative humidity 30 % to 75 % Atmospheric pressure 700 hPa to1060 hPa Altitude max. 3000 m -10°C to +40°C 10% to 95% relative humidity 500 hPa to 1060 hPa air pressure

Fabricant	EMS SA CH-1260 Nyon (Suisse)
Modèle	Swiss LithoClast [®] 2
Tension d'alimentation	100 – 240 V AC
Fréquence secteur	50 – 60 Hz
Puissance nominale	40 VA
Energie de sortie	Environ 85 mJ
Classification	EN-60601-1 Class I IP 20 (pédale de commande : IP X8) MDD 93 /42 CEE Class IIb
Mode de travail	Service continu
Fusibles	T 1.6 A 250 VAC (Ø5 x 20mm, temporisés, bas pouvoir de coupure)
Alimentation en air comprimé	3.5 à 6.5 bar
Boîtier	Poids : 10.5 kg Dimensions hauteur : 136 mm Largeur : 280 mm Profondeur : 365 mm
Environnement d'exploitation	Température : + 10 à + 40°C Humidité relative : 30 - 75% Pression atmosphérique : 700-1060 hPa Altitude max. 3000 m
Conditions de stockage et de transport	-10°C à +40°C 10% à 95% d'humidité relative pression atm. 500 hPa à 1060 hPa