

Dentistry • Imaging • Instrumentation

VETERINARY GUIDE

**Solutions for
higher
standards
of care**





by kind authorisation of "Zooparc de Beauval"

The first English edition of this veterinary guide was published in 2007 to help practitioners better understand the use of equipment and materials in veterinary dentistry and to stimulate their interest. Throughout the years, we have succeeded in making veterinary dentistry and stomatology a well recognized speciality. This would not have been possible without the strong involvement of many partners, the European Veterinary Dental Society (EVDS), the European Veterinary Dental College (EVDC), national veterinary dental groups and the industry. Industrial partners, such as ACTEON® Group, have played a key-role in building a link between human and veterinary dentistry, in providing us with the best innovative equipment and kindly supporting practical training sessions throughout Europe.

I hope that this 2019 ACTEON®'s guide to veterinary dentistry will help you discover new technology and products that might be more than useful in your daily practice.

Enjoy Dentistry!

Philippe HENNET

Veterinary Surgeon

Dental and oro-maxillofacial surgery

Specialist in Stomatology and Veterinary Dentistry

Diplomate, American Veterinary Dental College

Diplomate, European Veterinary Dental College



MORE INVENTIVE
LESS INVASIVE

ABOUT ACTEON®

ACTEON® creates and develops hightech medical devices and consumables that enable dentists, surgeons and veterinary doctors to implement less invasive, less traumatic and quicker operating protocols for patients.

ACTEON® has strived to play a key-role in building a link between human and veterinary medicine, particularly in dentistry, through providing innovative solutions and supporting practical training sessions throughout the world.

ACTEON® is a global pioneer in:

- Digital medical imaging, which provides a digital view of the operative sites during micro dental surgery
- High-frequency ultrasonics, specifically developed for high-precision treatments
- Piezoelectric surgery medical technologies

While headquarters are located in France, a network of 26 offices as well as distributors in 94 countries ensure proximity with our users.

SUMMARY

IMAGING

ABOUT DENTAL RADIOLOGY DENTAL RADIOLOGY EQUIPMENT

SOPIX SERIES	9
PSPIX ²	10
X-MIND DC	14
X-MIND UNITY	14
SOPROCARE	16
SOPROLIFE	18
SOPRO 717 FIRST	20
SOPRO IMAGING VETERINARY	22
TECHNICAL SPECIFICATIONS	23
	24
	25
	26

MEDICAL ENDOSCOPY

MEDICAL ENDOSCOPY EQUIPMENT

UBIPACK VET	29
SOPRO IMAGING VETERINARY	30
UBICAM	30
UBILIGHT	31
SYMBIOZ+	32
	33
	34

DENTISTRY EQUIPMENT

SCALING AND PERIODONTAL POCKETS TREATMENT ENDODONTICS

ENDOVET KIT	39
ENDODONTIC TIPS	40
PERIO TIPS	42
EXCAVATION TIPS	46

ABOUT ULTRASONICS

ULTRASONICS EQUIPMENT

NEWTRON	47
COCOON MOBILE	47
COCOON HYGIENIST LED	48
COCOON SPRAY	52
HANDPIECES	55
TIPS RANGE	56
SCALING TIPS	57
WRENCHES & WATER PUMP	58
HANDPIECES	60
F.L.A.G. FOR B.LED	62
ENDODONTIC PHARMA RANGE	63

SETTINGS

ABOUT POLISHING

POLISHING EQUIPMENT

AIR-N-GO EASY	64
AIR MAX	66

TOOTH RESTORATION	72
TOOTH RESTORATION EQUIPMENT	76
MINILED ACTIVE	76
ACCESSORIES	77

INSTRUMENTATION

ELEVATORS	79
CHOMPRET SYNDESMOTOME	80
PERIOSTEAL ELEVATORS	81
DENTAL FORCEPS	81
BONE CURETTES	82
TWEEZERS	83
PROBES & CURETTES	83
VETERINARY 15 INSTRUMENTS KIT	84
	85

DENTAL SURGERY

EXTRACTION	87
MAXILLO-FACIAL SURGERY	88
SURGERY EQUIPMENT	90
PIEZOTOME CUBE	92
PIEZOTOME CUBE STAR	93
IMPLANTCENTER 2	94
ACCESSORIES	95
INCISIONS/HAEMOSTASIS	96
NON-INVASIVE TOOTH BORN FIXATION DEVICES	98

UROLITHIASIS

PREPARATION OF THE ANIMAL	103
USING THE PROBE	104
APPLICATION AND ADVICE ON USAGE	105
	106

HYGIENE/MAINTENANCE

FACTS & FIGURES	109
CLEANING & DECONTAMINATION	110
RISKONTROL	111
SEPTOL RANGE	112
ADVICE FOR WATER PUMP MAINTENANCE	113
	114

SETTINGS

INDEX	118
	120



IMAGING

ABOUT DENTAL RADIOLOGY

Principle of Radioprotection

Like all professionals using electrical generators producing ionizing radiation, the veterinary surgeon is subject to obligations aimed at ensuring the protection of the public and their staff.

Ionizing radiation can have serious consequences for the health of people in contact with it. The practitioner must not misunderstand the texts governing this radioprotection because it is their responsibility and they must implement a certain number of measures related to radiology equipment and how they fit into their premises. The veterinary surgeon must request authorization for the possession of radiology equipment, and ensure that the standards of conformity for this equipment and radiological installations are met. They must carry out controls on the sources of radiation, the atmosphere and the premises to measure the risks and limit them.

- 10 According to the regulatory texts, the organisation of radioprotection for staff in a veterinary clinic is based on a person competent in radioprotection being designated. This person, who undergoes regulated training, must ensure that protection measures are observed, organize the monitoring of personnel and implement the means for protecting staff and the public from radiation.

Facts & Figures

- ➔ Dental X-rays enable lesions that are not clinically visible to be detected in 42% of cats and 28% of dogs (Vestraete, 1998) (Fig. 1.1 & 1.2).
- ➔ When a cat has a missing tooth, an X-ray will reveal there are still root fragments present in 75% of cases (Lommer et al. JVMA 2001).
- ➔ 82% of 74 dogs and 93% of 42 cats which had extractions of carnassial teeth performed by general practitioners had evidence of retained tooth root fragments and periapical pathology was found in 56.8% of all patients compared to none in animals which had pre operative and post operative dental radiographs taken (Moore et al. JAAHA, 2014).



Fig. 1.1: Localized periodontitis on the mandibular first molar of a cat



Fig. 1.2: Radiograph with a Sopix² sensor showing extent of alveolar bone lesion

Clinical Application

Although multi-detector helical computed tomography (helical CT) and cone-beam computed tomography (CB-CT) have become available to the veterinary market and are also nowadays used for assessment of oro-dental diseases in dogs, cats, rabbits and rodents, intraoral radiography still remains the major diagnostic imaging system used in the clinical setting in veterinary dentistry. It is a readily available and cost effective diagnostic system providing essential information for evaluating:

- ➔ Root resorption in cats and dogs
- ➔ Caries in dogs
- ➔ The presence of root tips and unerupted teeth
- ➔ Periapical pathology in an endodontically-involved tooth (Fig. 1.3)
- ➔ The extent and type of bone resorption of periodontally-involved teeth
- ➔ The different steps of root canal treatment and obturation
- ➔ Etc.



Fig. 1.3: Apical abscess in a premolar tooth in a dog



Radiograph size 4 with PSPIX²

Applications and Advice on Usage

The digital sensor or the phosphor plate is used in the mouth the same way a dental film is. The rigid digital sensor is thicker and may be more troublesome to use in very small patients compared to the phosphor plate. Additionally, the later comes into more sizes than the sensor (only two sizes). They are used to take radiographs of any teeth and surrounding bony structures. They may also enable evaluation of the jaws or nasal cavity in small size patients.

Additionally, they can also be used to take radiographs of other structures (Fig. 1.4a) such as limb extremities in cats, miniature/small breed dogs, rabbits and rodents or beak in birds (Fig. 1.4b). With Sopro Imaging Veterinary software, the radiograph is either transmitted directly, within seconds, to the computer screen when using the digital sensor, or through the PSPIX² when using the phosphor plate.



Fig. 1.4a: Mandibular Premolar 4 and Molar 1 in the dog



Fig. 1.4b: Tarsus of a ferret taken with a digital SOPIX² sensor

Advice on Usage

Dental radiology involves the use of a dental radiology generator X-Mind® and a digital sensor SOPIX® and SOPIX2®, imaging plates PSPIX2® or even dental X-ray films (silver film).

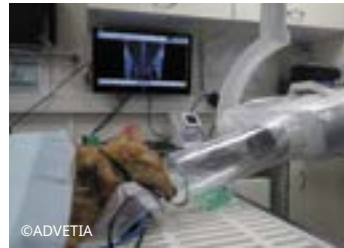


Fig. 1.5: Direct visualization of the image on the screen with the sopix2 sensor

Positioning techniques

Parallel technique

For mandibular molars and premolars, the imaging plate or sensor can be placed against the structure to be X-rayed (Fig. 1.6), parallel to its long axis. The animal is placed lying on the opposite side to the structure to be X-rayed (Fig. 1.7a & 1.7b).

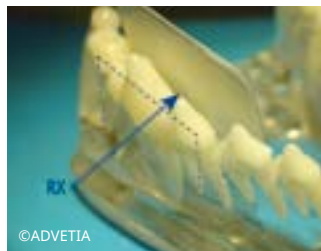


Fig. 1.6: Parallel radiographic technique



Fig. 1.7a: Sopix2 in intraoral position parallel to the mandible



Fig. 1.7b: Placement of the Sopix2 sensor with its protective sheath in the mouth of a cat



Clinic - cat - perio

Bisecting angle technique

For the other teeth, the imaging plate or sensor must be placed at a certain angle to the structure to be X-rayed. The incident beam must be perpendicular to the bisecting plane formed by the plane of the film and the long axis of the tooth.

This technique can be used in the various sectors of the oral cavity:

- ➔ For an isolated tooth with a retro-alveolar film (Fig. 1.8 & 1.9a,b,c)
- ➔ Canines, incisors with an intra-oral film in the occlusal position (Fig. 1.10)
- ➔ Mandibular or maxillary arch with an extra-oral film

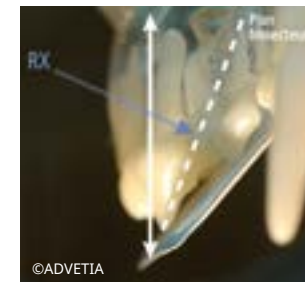


Fig. 1.8: Principle of the bisecting angle technique - retro-alveolar film



Fig. 1.9a: Bisecting technique with an Sopix size 2 in occlusal position



Fig. 1.9b: PSPIX2 plate placed intraorally for bisecting angle technique

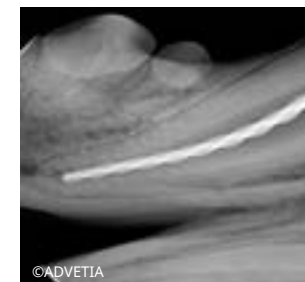


Fig. 1.9c: K-file at working length depicted by bisecting angle technique

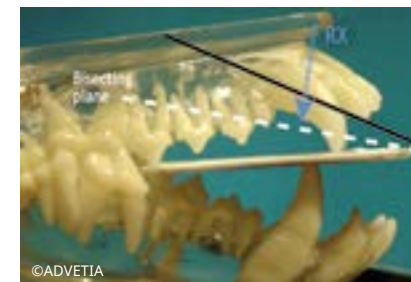


Fig. 1.10: Principle of the bisecting angle technique - film in the occlusal position

SOPIX SERIES

A successful X-ray every time with minimal exposure to radiation

- Reduced exposure time.
- Images are acquired in few seconds, whereas it takes several minutes to develop silver films.
- Images are stored into a database and can be easily shared, sent by email and printed with comments.



Fast and easy to use

Save time with a sensor that is **always ready to acquire**.

The image is **displayed immediately**.

White side stripes ensure high visibility of the sensor in the dark area of the mouth, to correctly position the X-ray tube perpendicular to the sensor.



No more overexposed images

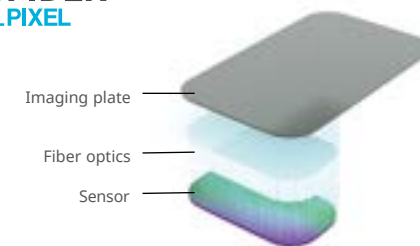


Available on all SOPIX® series sensors, the patented ACE® technology freezes the image during acquisition **to protect it from over-exposure. Acquire perfect image the first time and every time!**

Striking contrast for a more reliable diagnosis

Thanks to the use of **broad spectrum optical microfibers**, the **different tooth anatomic structures**, such as the bone, roots, pulp... are highlighted with **extreme precision** on the image.

**2 FIBER
PIXEL**



SOPIX²

USB Sensor

Delivered with a sensor holder, 10 sensor sheaths, SOPRO® Imaging Veterinary software and its licence.

SOPIX^{®2} USB SENSOR SIZE 1
High definition - Ref. S_802_0010

SOPIX^{®2} USB SENSOR SIZE 2
High definition - Ref. S_802_0011V

SOPIX

USB Sensor

Delivered with a sensor holder, 10 sensor sheaths, SOPRO® Imaging Veterinary software and its licence.

SOPIX[®] USB SENSOR SIZE 1
Standard definition - Ref. S_802_3010V

SOPIX[®] USB SENSOR SIZE 2
Standard definition - Ref. S_802_3011V

Medium-sized to large dog	Small dog & cat		Cat & miniature dog	Rabbit & rodent
Size 2	Size 1	Size 2	Size 1	Size 2
Intra or Extra-oral	Intra-oral	Intra or Extra-oral	Intra or Extra-oral	Extra-oral

Accessories



Antibiting protection
Ref. 403037



Sheaths for SOPIX® series sensors
(500 pieces in a single pasteboard)
Size 1 SOPIX® series sensors - Ref. 403026
Size 2 SOPIX® series sensors - Ref. 403027

PSPIX²

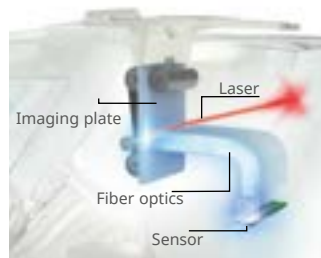
The first personal
imaging plate scanner



PSPIX²® provides streamline workflow with images in seconds: drop your imaging plate in the PSPIX²® and let it do the rest!



PSPIX², kit size 4
Ref. S_702_0012



Striking contrast
for a more reliable
diagnosis

2FIBER
PIXEL

Thanks to the use of **broad spectrum optical microfibers**, the **different tooth anatomic structures**, such as the bone, roots, pulp... are highlighted with **extreme precision** on the image.

Perfectly adapted to
all clinical applications

Various sizes are available depending on **animal morphology** and **clinical applications**. Thinner and **more flexible**, the PSPIX² imaging plates are **easy to use**.



Imaging Plates (Set of 2)



Size 0
25x35mm
Ref. 990215



Size 1
24x40mm
Ref. 990216



Size 2
31x41mm
Ref. 990217



Size 3
27x54mm
Ref. 990218

Medium-sized to large dog	Small dog & cat		Cat & miniature dog		Rabbit & rodent	
Size 2/3/4	Size 0/1	Size 2/3/4	Size 0/1	Size 2/3/4	Size 0	Size 2/3/4
Intra-oral	Intra-oral	Intra or Extra-oral	Intra or Extra-oral	Extra-oral	Intra-oral	Extra-oral

Accessories



Kit size 4

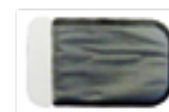
Ref. 990250

Includes 1 support plastic box size 4,
100 protective bags size 4, 3 imaging plates size 3

Refills

- Support box size 4 - Ref. 990251
- Protective bags

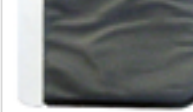
Bag & cover for imaging plate (Set of 300)



Size 0
Ref. 700342L



Size 1
Ref. 700343L



Size 2
Ref. 700344L



Size 3
Ref. 700345L



Ref. 700546



Ref. 700547



Ref. 700548



Ref. 700549

X MIND DC

The easy and smart intraoral X-ray system for high quality requirements

Reliability

The X-Mind™ DC generators are renowned for their reliability and their consistent performance. Two beam limitation devices made of lead, along with the expansion chamber ensure maximum protection for the practitioner and his personnel.



Naturally protective

The exposure time control pre-set by the microprocessor ensures a controlled dose for a better protection of you and your collaborators. Exposure times are reduced with the use of digital intraoral X-ray systems.

User-friendly

Your workflow is improved with clearly organized dedicated pre-programming keys. The exposure times can be customized and programmed to adapt to your clinical needs.



Delivered with a generator 70KV, a pantograph, an extensor and a timer.

Wall mounted

Extensor 0.40m (max. distance 143cm) - Ref. 5.92.23180

Extensor 0.80m (max. distance 184cm) - Ref. 5.92.23181

Extensor 1.10m (max. distance 212cm) - Ref. 5.92.23182

Ceiling

Extensor 0,40m (standard Faro column Ø 60cm) - Ref. 5.92.23185

Ceiling fasteners not included



Mobile
X-Mind® DC Mobile
Ref. 5.92.23183

X MIND unity

Where quality
becomes beauty



A sharp and
contrasted image



The X-Mind® unity has a 0.4mm focal spot. It has several configurable radiological settings:

- The anodic voltage (60, 65 and 70kV)
- The anodic current (from 4 to 7mA)

These parameters ensure a sharp and contrasted image.



The generator focal spot Y: 0.7mm



The generator focal spot
of X-Mind® unity: 0.4mm

Stop excessive radiation

Animal and staff are protected from excessive radiation thanks to the unique communication between the X-Mind™ unity and SOPIX® inside. When SOPIX® inside has received enough energy to provide **an exceptional image quality**, it tells the X-Mind™ unity to **stop the X-ray emission**.

The animal only receives the necessary dose adapted for their dental morphology, which **protects them from unnecessary exposure**.



Exclusive traceability

SOPRO® Imaging systematically records the **X-Mind® unity settings** as well as **the effective dose received by the animal** for each acquisition.

Wall mounted

X-Mind® unity is pre-wired for integration of the SOPIX² inside sensor.
Extensor 0.40m LONG CONE - Ref. W0800070
Extensor 0.80m LONG CONE - Ref. W0800071
Extensor 1.10m LONG CONE - Ref. W0800072

Mobile

X-Mind® unity is pre-wired for integration of the SOPIX² inside sensor.

Digital X-ray Systems to integrate into X-Mind® unity

Delivered with a sensor holder integrated to the controller, 10 sensor sheaths, SOPRO® Imaging software and its licence.



SOPIX² INSIDE SENSOR SIZE 2
High definition - Ref. S_802_5007V

SOPIX® INSIDE SENSOR SIZE 2
Standard definition - Ref. S_802_6007V



SOPIX² INSIDE SENSOR SIZE 1
High definition - Ref. S_802_5006V
SOPIX® INSIDE SENSOR SIZE 1
Standard definition - Ref. S_802_6006V

SOPROCARE

Selective chromatic amplification

Differentiates the colour of tissue and reveals oral hygiene pathologies

3 needs, 3 modes

- **PERIO mode:** highlight plaque, calculus, and gingival inflammation.
- **CARIO mode:** caries are detected as red, surrounding tissue is displayed in black and white.
- **DAYLIGHT mode:** communicate more effectively with your patient and see details that are not visible with the naked eye.

SOPROCARE® is an unparalleled communication tool in the dental practice!

With the push of a button, SOPROCARE® instantly and easily highlights caries, plaque, calculus and gingival inflammation.

SOPROCARE®
Ref. S_950_0001



SOPROLIFE

Autofluorescence

Highlights decay and promotes minimally invasive treatment

The power of autofluorescence

- **DIAGNOSTIC aid mode:** identify the development of occlusal and proximal carious lesions.
- **TREATMENT aid mode:** perform minimally invasive treatment by preserving healthy tissue.
- **DAYLIGHT mode:** from portrait to macrovision, obtain sharp images with the large depth of field.

SOPROLIFE® offers two different visions: white light (daylight) and blue light (fluorescence).

SOPROLIFE® is a revolutionary camera that differentiates between healthy and infected tissue facilitating less invasive treatments.

SOPROLIFE®
Ref. S_90080001



SOPRO 717 First

Macrovision

Reveals what was once invisible

Magnification of the image
up to 115 times*

- Large depth of field from extraoral to macrovision
- Exceptional image quality provided by a highly sophisticated optical system
- Extremely small camera head for easier access
- Successfully capture images with a simple glide over the SOPRO® touch high quality images

SOPRO® 717 First reveals micro fissures, infiltrations, lesions, everything that is not visible with the naked eye.

SOPRO® 717 First
Ref. S_717_0100

* On a 17" screen



SOPRO imaging Veterinary

Complete and intuitive software

SOPRO IMAGING VET:

- Capture of videos and images
- Add comments
- Print, send by email and export of all datas
- DICOM compatible

The installation and use of SOPRO® IMAGING VET is simplified when configured into a computer network.

- Ergonomic and intuitive
- Multilingual software, available in 27 languages
- Compatible with Windows and constantly updated packs
- User friendly database to store all patient information.



PSPIX²**SYSTEM**

- Resolution 20lp/mm
- Scan Time (fast mode) 1.6s - 2.7s
- Scan Time (high definition mode) 2.1s - 3.6s
- Connection Ethernet RJ-45
- Dimensions L. 154 x D. 204 x H. 193mm
- Weight 2.6kg
- Operating voltage 100 - 240V ~ 50 - 60Hz

IMAGING PLATES

- Dimensions IP Size 0 22 x 35mm
- Dimensions IP Size 1 24 x 40mm
- Dimensions IP Size 2 31 x 41mm
- Dimensions IP Size 3 27 x 54mm
- Dimensions IP Size 4 (3 x IP Size 3) 69 x 54mm

SOPIX SOPIX² SOPIX² INSIDE SOPIX² INSIDE**SIZE 1**

- External dimensions 25 x 39mm
- Active surface area 600mm² (20 x 30mm)
- Number of pixels 1.50millions

SIZE 2

- External dimensions 31 x 42mm
- Active surface area 884mm² (26 x 34mm)
- Number of pixels 2.21millions

SYSTEM

- Technology .CMOS + scintillator+ optic fiber
- Pixel size 20 x 20µm
- Theoretical resolution 25lp/mm
- Connection USB 2.0
- Total cable length for SOPIX²/SOPIX 3.70m
- Sensor cable length for SOPIX² INSIDE/ SOPIX INSIDE 0.70m

	X MIND DC	X MIND unity
Classification	Electromedical equipment, Class 1, type B	
Supply voltage	115/230V - 50/60Hz	100 - 240V - 50/60Hz
Power absorption at 230 V	1.4kVA	0.85kVA
X-ray tube	New Toshiba DG 073B	Toshiba D-041 5
X-ray tube voltage	60-70kV	60kV / 65kV / 70kV
Anode current	4 - 8mA	7mA
Focal spot	0.7mm	0.4mm
Total filtration	Equivalent to 2mm Al at 70kV	> 1.5mm Al at 70kV
Leakage radiation	< 0.25mGy/h	
Technology	DC	High frequency DC
Timer	from 0.02 to 3.2 seconds	from 0.02 to 2 seconds
Weight of the head	5.5kg	6kg
Total weight	25kg	23kg
Accessories	Second control button with remote exposure switch RX indicator light for external use Adaptable mounting wall plate	Circular cone Ø60mm Rectangular cone 45x36mm Arm extension Sopix inside / Sopix ² inside Remote exposure switch

SOPRO⁷¹⁷

- High sensitivity 1/4" CCD
- Resolution (752x582) PAL
..... (768x494) NTSC
- Definition 470 lines
- Sensitivity 2lux
- Lighting 8 LED
- Adjustment 3 pre-set positions
(Extraoral, Intraoral, Macro)

- Freeze Frame with SOPRO[®] Touch or pedal (option)
- Angle of view 70°
- Cable length 2.5m
- Dimensions (mm) L. 200 x W. 28 x H. 24
- Weight 75g

SOPRO^{LIFE}

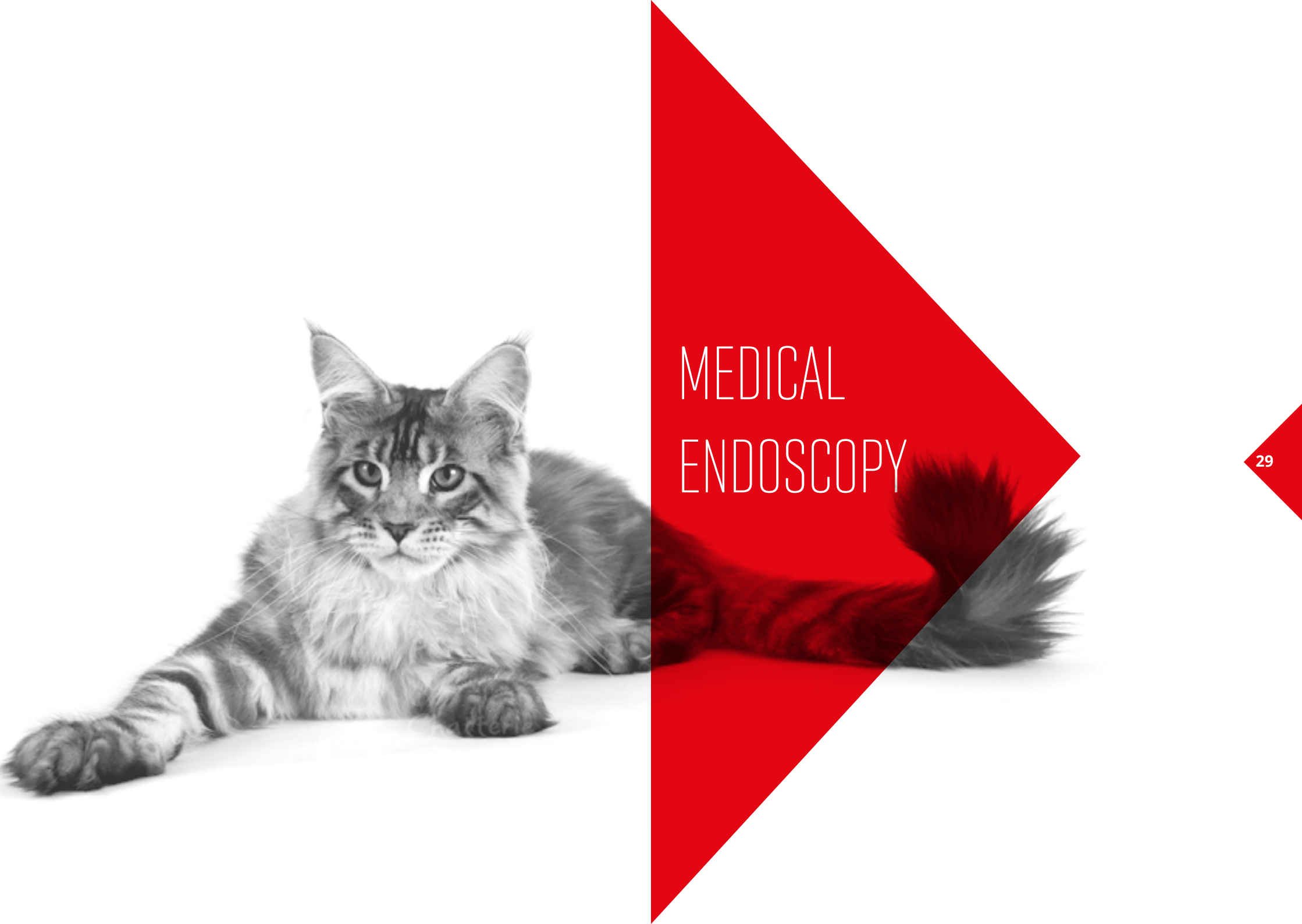
- High sensitivity 1/4" CCD
- Resolution (752x582) PAL
..... (768x494) NTSC
- Lighting White Mode: 4 LED;
Blue Mode: 4 LED
- Adjustment 4 pre-set positions
(Extraoral, Intraoral, One tooth, Macro)

- Freeze Frame with SOPRO[®] Touch or pedal (option)
- Angle of view 70°
- Cable length 2.5m
- Dimensions (mm) L. 200 x W. 30 x H. 24
- Weight 78g

SOPRO^{CARE}

- High sensitivity 1/4" CCD
- Resolution (752x582) PAL
..... (768x494) NTSC
- Lighting 7 LED (4 white; 3 blue)
- Adjustment 4 pre-set positions
(Extra-oral, Intraoral, One tooth, Macro)

- Freeze Frame with SOPRO[®] Touch or pedal (option)
- Angle of view 70°
- Cable length 2.5m
- Dimensions (mm) L. 200 x W. 30 x H. 24
- Weight 78g



MEDICAL ENDOSCOPY



The perfect combination to fit your needs in your daily practice:

- ➔ **Portable:** it will follow you in your different exam rooms.
- ➔ **Smart design of the whole package.**



Applications and Advice on Usage

In endoscopy, the camera is connected either to a laptop or a camera control unit, depending on the material used.

ACTEON® offers a complete range dedicated to both consultation and therapeutic surgeries.

In any case, the camera should be connected to a light source, and a very high-quality exploratory ENT, VETscope, endoscope is screwed onto the camera. The instrument is fitted with a 2mm operating channel and it is completely watertight.

In addition, the VETscope endoscope can be used in other fields to complement clinical examination or to highlight lesions to the animal's owner; for example, in ophthalmology when examining adnexae of the eye or in fundus examination (Fig. 2.1).



Fig. 2.1: Retina

Endoscopy is a communication tool which allows to:

- ➔ Sensitize the pet's owner to the disease: it is more convenient to give explanations illustrating with images or videos.
- ➔ Get a better understanding of the treatment to give.
- ➔ Motivate the pet's owner to do homecare treatments.
- ➔ Justify the costs of the treatment showing images or videos before and after the treatment.

Composed of:

- USB camera, 1/3" CCD, C-mount
 - LED light source with its cable (Storz connectors included)
 - Three flexible instruments
 - SOPRO® IMAGING VET
 - One holder
- Delivered in its dedicated suitcase.



(Computer and Vetscope not included)



Ref. 505020

SOPRO IMAGING VET:

- ➔ Capture of videos and images
- ➔ Add comments
- ➔ Print, send by email and export of all datas

The installation and use of SOPRO IMAGING VET is simplified when configured into a computer network.

- ➔ Ergonomic and intuitive
- ➔ Multilingual software, available in 27 languages
- ➔ Compatible with Windows 7, 8 10 Professional
- ➔ Compatible with Management software Packages
- ➔ Data base for both X-ray and intra-oral camera images (photos/videos)



Ref. S_181_0013V

Smart and user-friendly

All in one USB2 camera for diagnosis aid to connect directly to your computer.

- ➔ "Plug and Diag": so easy to use
- ➔ Anti-shimmering filter for flexible applications
- ➔ Automatic video settings
- ➔ Waterproof



Ref. S_281_0003V

- ➔ LED light source
- ➔ LED technology for extended product life and reduced emitted heat
- ➔ Bright and uniform illumination under all conditions with minimal shading
- ➔ Color temperature close to daylight for the best color contrast
- ➔ LED technology emits no ultraviolet (UV) rays or infrared (IR) radiation

Compatibility with other endoscopes

The camera can also be connected, via a rigid endoscope adapter (coupler), to different endoscopes in the COMEG range or to a pediatric-type flexible fiberscope:

- ➔ Rigid endoscope 2.7mm with protective sheath (otoscopy, rhinoscopy, laryngoscopy, cystoscopy).
- ➔ Rigid 4mm with protective sheath (laryngoscopy, tracheoscopy).
- ➔ Pediatric-type fiberscope 3.5 or 4mm (retrograde rhinoscopy, trachea-bronchoscopy).



Coupler Ref. S_067_0002

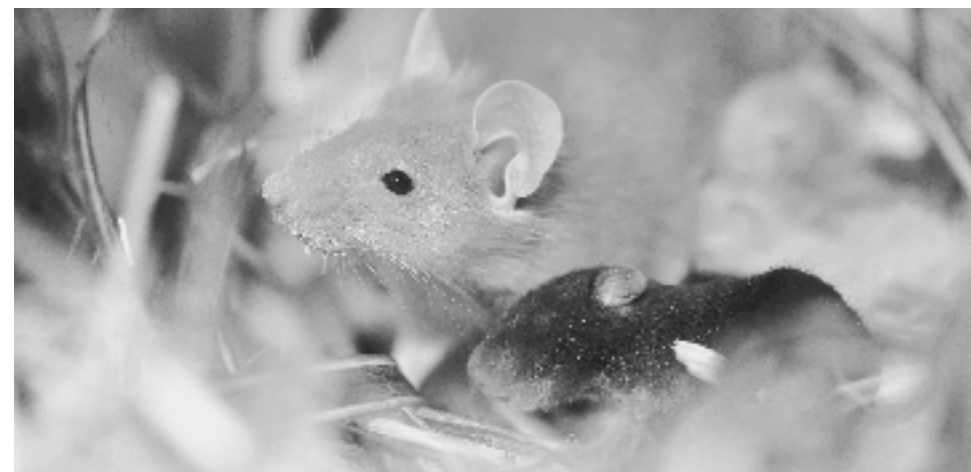


Photo: Dr. Vernay

SÝMBIOZ +

SÝMBIOZ+ allow you to perform high quality endoscopic procedures (arthroscopy, thoracoscopy, coelioscopy).

- Great visibility in terms of light
- Great image quality thanks to the Full HD sensor

Composed of:

- Symbioz CAM+: control unit and camera head
- Symbioz LED: light source
- Monitor 26"

Options:

- Symbioz FLOW: insufflator
- MASTER: high performances computer for picture/video data base and chromatic amplification for diagnosis help



		SÝMBIOZ + 100 Ref. S_K30_1012	SÝMBIOZ + 300 Ref. S_K30_1014	SÝMBIOZ + 500 Ref. S_K30_1016
	FULL HD MONITOR	✓	✓	✓
	SÝMBIOZ <i>Cam+</i> RECORDER	✓	✓	✓
	SÝMBIOZ <i>Led</i>	✓	✓	✓
	SÝMBIOZ <i>Flow</i>		✓	✓
	MASTER			✓

SÝMBIOZ *Cam+*

- 1 CMOS sensor with full HD resolution (1920x1080 pixel)
- Integrated 15-35mm HD zoom
- Integrated HD image and HD video recording capability
- All functions are programmable for camera head use
- Touch screen with 16:9 resolution



SÝMBIOZ *Led*

- 40000h lifetime
- LED intensity equivalent to a 300W Xenon light source
- Automatic light cable detection for safety
- Automatic luminosity adjustment



SÝMBIOZ *Flow*

- Insufflation can be controlled directly from the camera head
- From 2L/min to 45L/min insufflation range
- Automatic management of insufflation flow to maintain desired pressure
- Proprietary technology to calculate remaining available insufflation time



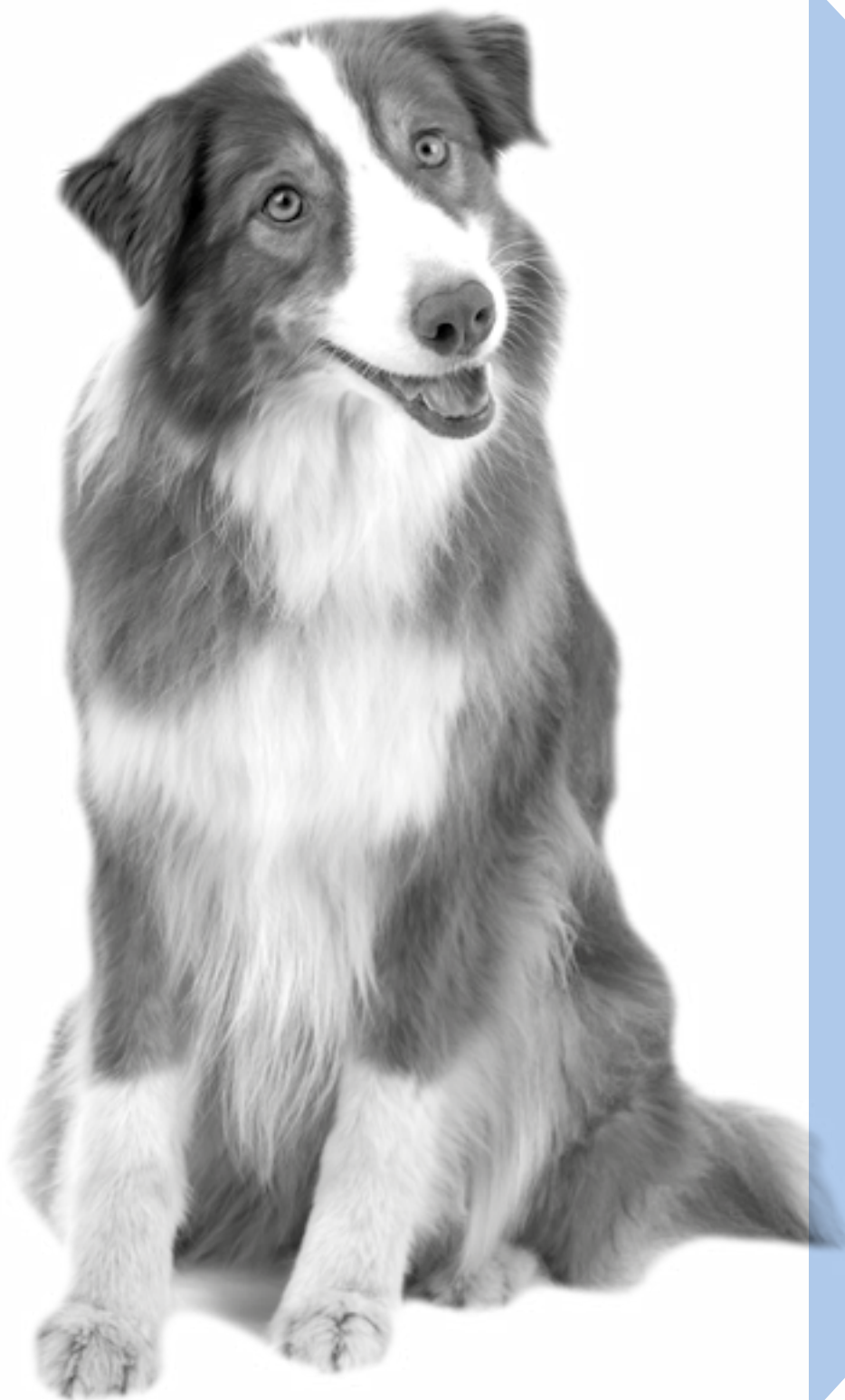
Monitor TFT LDC 21.5"

Specifications:

- ➔ Panel type: TFT 21,5"
- ➔ Max. resolution: 1920x1080 pixels
- ➔ Brightness: 250cd/m² (typical)
- ➔ Contrast ratio: 1 000:1
- ➔ Video input 1xHDMI, 1xVGA, 1xDVI-D, S-Video and 2xCVBS
- ➔ Delivered with desktop stand



Photo: Dr. Vernay



DENTISTRY EQUIPMENT

Facts & Figures

- ➔ Around 75% of cats and dogs suffer from periodontal disease (Bell A.F., 1965; Verhaert 2000)
- ➔ 60% of dogs present periodontitis (Kyllar et al. 2005)
- ➔ 80% of small dogs aged over five years have moderate to severe periodontitis characterized by bone destruction (Hamp, 1975)

Periodontal disease is characterized by the build-up of a bacterial film on the tooth surface, known as bacterial dental plaque (BDP). This leads to inflammation of the gums (gingivitis), then destruction of the supporting tissue of the teeth: alveolar bone, periodontal ligament and cementum (periodontitis).

BDP forms a real bacterial biofilm that adheres strongly to the tooth surfaces and is resistant to chemical agents. Mechanical disruption of this biofilm is essential. Calculus forms by calcification of BDP but it is not the etiological agent of periodontal disease (Fig. 3.1a & 3.1b).



Fig. 3.1a: Severe periodontitis in a dog



Fig. 3.1b: End-stage periodontitis requiring extractions

As calculus originates from BDP and is intimately linked to it, calculus must be removed in order to eliminate the BDP. The calculus is removed by fragmentation using an ultrasonic instrument.

It is not only the readily visible, supragingival calculus/BDP that has to be removed but also – and above all – the subgingival calculus/BDP along the root surface deep in the periodontal pocket.

Applications and Advice on Usage

Supragingival scaling

No.1 tip must be used tangentially to the tooth surface at an angle not exceeding 15°. As calculus is mainly fragmented by vibration of the tip, it is not necessary to press heavily on the tooth; the tip simply needs to be slightly swept over the tooth. The end of the tip must not be used perpendicular to the surface (Fig. 3.2).



Fig. 3.2: Supragingival scaling with No.1 tip

Subgingival scaling (shallow pockets)

No.1S tip is thinner and longer than No.1 tip, which means it can be used for more delicate work and for mixed supra/subgingival applications. It is mainly used for supragingival scaling in small cats and dogs (Fig. 3.3).

For subgingival work it is swept obliquely over the root, starting from the bottom of the periodontal pocket (Fig. 3.4).



Fig. 3.3: Supragingival scaling with No.1S tip



Fig. 3.4: Subgingival scaling with No.1S tip

Subgingival debridement (deep pockets)

PV1 tip (PerioVet 1) is a subgingival tip especially designed for veterinary use. It resembles a universal curette. **PV1 tip** is introduced into the periodontal pocket parallel to the root surface.

A sweeping movement over the root surface from top to bottom is then performed with very slight pressure applied. The curette is mostly used with a push stroke. The tip simply has to be allowed to work in contact with the root, without excessive lateral pressure being exerted on the tooth. **PV1 tip** has been perfectly designed to perform effective debridement and preserve tissue.



Fig. 3.5 et 3.6: Subgingival debridement with a PV1 tip introduced into the periodontal pocket

Facts and Figures

- Around 25% of cats and dogs have at least one broken tooth (Golden, 1982; Crossley, 1991).
- A broken tooth with an exposed dental pulp is infected. Endodontic treatment is necessary to avoid extracting the tooth.
- An overall success rate of 95% has been shown for properly performed conventional root canal treatment in dogs (Kuntsi-Vaattovaara et al., JAVMA, 2002).
- An overall success rate of 92% has been shown for properly performed partial vital pulpectomy with MTA pulp capping in dogs (Luotonen et al., JAVMA, 2002).

Apart from subgingival scaling/debridement and tooth extractions, other branches of dentistry often require more sophisticated equipment, including the facility for rinsing and drying the tooth surfaces. For these tasks, a compressed air source becomes an absolute necessity (restorative dentistry, prosthodontics, orthodontics).



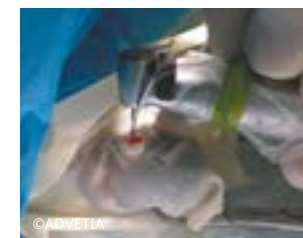
Photo: Dr. Vernay

Treatment of teeth with vital pulp

The exposed contaminated pulpal tissue is removed with a diamond round bur or carbide bur, which is slightly larger than the diameter of the root canal, under sterile conditions. A MTA biological dressing is placed over the pulp stump (Fig. 3.7) then the cavity is filled (see crown restoration).



Fig. 3.7.: Crown Amputation & partial vital pulpectomy - step 1



Partial vital pulpectomy with sterile instrument and irrigation - step 2



Hemostasis following partial vital pulpectomy - step 3



Placement of MTA over the amputated pulp followed by Glass-ionomer base - step 4



Restorative material - step 5

Treatment of teeth with infected pulp (non vital)

The different stages of root canal treatment:

- ➔ Trepanation of the pulp chamber or widening of the fracture opening using a round, a pear-shape or a conico-cylindrical FG bur (diamond-coated or tungsten carbide) (Fig. 3.8).
- ➔ Identification of the opening to the root canals within the pulpal chamber with a pointed probe or a thin K file (Fig. 3.9). When necessary, in multi-rooted teeth, the entrance of the root canal can be exposed on the floor of the pulpal chamber with a spherical diamond ultrasonic tip (**ETBD**).
- ➔ Enlarging the coronal third of the root canal with Gates-Glidden burs or with diamond-coated ultrasonic canal enlarger under continuous irrigation (**ET18D**) (Fig. 3.10).
- ➔ Canal preparation performed manually with K and H files (25 or 31mm, or 60mm for the canines of large dogs) (Fig. 3.11) or with rotary instrumentations (25 or 31mm).
- ➔ Radiographic verification of the working length (Fig. 3.12, 3.13).
- ➔ Root canal irrigation with 2.5% sodium hypochlorite and **SALVIZOL E.D.T.A.**
- ➔ Optionally, ultrasonic root canal cleaning with **Irrisafe** file (**EndoVet** instruments).
- ➔ Drying the canal with paper cones (Fig. 3.14).
- ➔ Try-in of a **Gutta-Percha** master cone
- ➔ Preparation of the sealing cement for **Gutta-Percha** cones (**Sealite Regular**)
- ➔ Coating the canal walls with endodontic cement (**Sealite Regular**)
- ➔ Radiographic control



Fig. 3.8: Canine tooth with necrotic pulp



Fig. 3.9: Location of the entry to the pulp chamber of a canine



Fig. 3.10: Enlargement of the orifice of the pulp chamber of a canine with an **ET18D** instrument

- ➔ Placement of the **Gutta-Percha** master and accessory cones (Fig. 3.15)
- ➔ Addition of accessory cones after lateral cold condensation of the **Gutta-Percha** with lateral condensers or ultrasonic condensation (**ET25L**, **ET40** and **EndoVet** instruments) (Fig. 3.16)
- ➔ Radiographic control of the total, dense canal obturation (Fig. 3.17)
- ➔ Cold vertical condensation of **Gutta-Percha** with vertical condensation pluggers or ultrasonic compaction with ultrasonic pluggers (**EndoVet** instruments)



Fig. 3.11: Canal preparation of the three roots of the maxillary carnassials with root canal files



Fig. 3.12: Master K-file



Fig. 3.13: Working lengthfiles in a 3-rooted tooth



Fig. 3.14: Drying the pulp canals of a maxillary carnassial with paper cones



Fig. 3.15: Placement of the master cones in the two mesial roots of the maxillary carnassial



Fig. 3.16: Condensation of **Gutta Percha** cones with an **ET25L** or **ET40** condenser depending on the size of the tooth except the canines

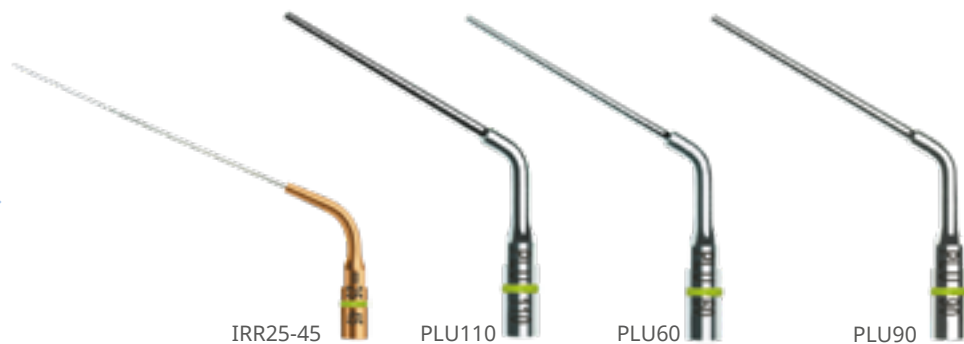


Fig. 3.17: Final **Gutta-percha** obturation

EndoVet kit

The purpose of the EndoVet kit is to facilitate the root canal filling protocol. It allows for the passive irrigation of ultrasound thanks to the Irrisafe file 25-45, lateral thermocompaction thanks to the spreaders (condensers) SPR 30, 60 and 80, and vertical ultrasonic thermocompaction thanks to the pluggers (compactors) PLU 60, 90 and 110.

EndoVet Kit
Ref. F88190



Obturation done with **SPR 80**



Endodontics tips



Perio tips



Excavation tip



ABOUT ULTRASONICS

Piezoelectricity

The technology used in dental and surgical instrumentation is based on inversed piezoelectric activity. Alternative current applied to piezoelectric ceramic disks generates high-frequency ultrasonic (> 20kHz) vibratory energy leading to mechanical oscillation of a tip.

ACTEON® was the first to patent the use of Piezoelectricity in dentistry in 1972. ACTEON® was precursor again in 2000 with the patented and never competed Newtron® technology, offering the highest level of quality of treatment.

Ultrasonics in dentistry offer many advantages:

Technical advantages	Clinical advantages
 • Linear movement of the tip	• Movement on the tooth surface is easy to control • Heightened tactile sense for more precise treatment • No percussion effect on the tooth during tangential use • Subgingival scaling / debridement possible with different tip shapes • Effective and speedy removal of calculus accumulations • Wide range of different tip shapes
• Amplitude from 20 to 300 microns	• Wide range of possible applications : from thin subgingival calculus to thick supragingival accumulations
• Minimal heat generated. • Less water required	• No thermal aggression • Possible to adapt irrigation spray for better visibility of the operating field
• Less than 10% energy loss	• Maximum efficiency
• Ergonomic handpiece	• Less muscle fatigue in the hands
• Detachable, autoclavable handpiece	• Improved hygiene

Mechanical effects

The piezoelectric ultrasonic system works with electric alternative current applied to ceramic disks in the transducer. Their deformation creates linear vibrations to the tip, in the axis of the ultrasonic handpiece.

In comparison, sonic or magnetostrictive systems create erratic or elliptical vibrations.



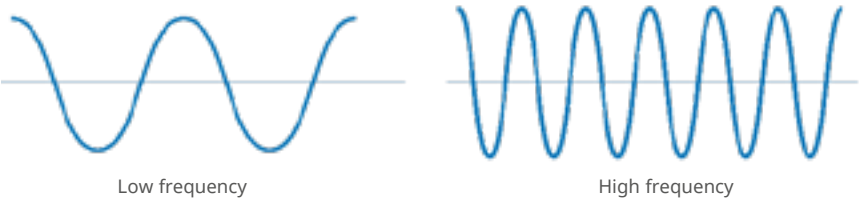
Thus, by applying the ultrasonic tip parallel to the tooth, practitioners can benefit from a sweeping movement very efficient to remove calculus deposits.

A hammering effect (axial vibrations) can also be obtained by facing the hard deposits to remove. This action may be used punctually on specific cases, and not directly on enamel.

In general, the tangential use is preferred, and may not create noise. Indeed, the less noise is caused by the contact of the tip on the tooth, the more effective and safe is the treatment.

Two important notions are linked with the ultrasonic vibrations and the clinical treatment: the frequency and the amplitude.

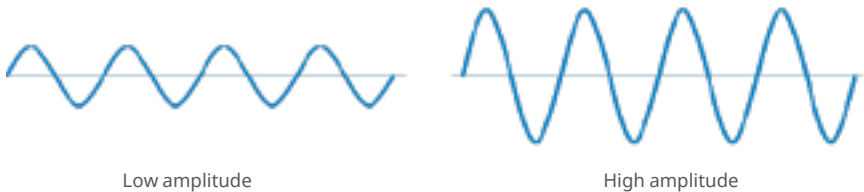
The frequency (in Hz) is the vibration speed. It corresponds to the number of back and forth motions per second of the tip.



Given for each tip, linked to their shape, alloy, weight..., the frequency changes when load is applied in order always to guarantee a continuous and perfect vibration.

NEWTRON® technology gives access to the widest frequency range, from 28 to 36kHz, allowing many different tips to vibrate in any clinical conditions.

The amplitude (in µm) is the displacement, that's to say the distance made by the tip vibration, depending of its shape, alloy, weight...When changing the power settings on the ultrasonic generator, it's the tip's amplitude which is modified.

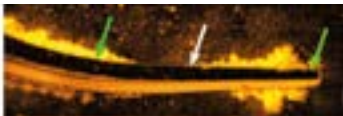


Biological effects

When ultrasonic waves spreads into liquid, a phenomenon called cavitation potentiates the tip's energy. Micro bubbles come up and implode under ultrasonic vibrations, leading to a strong mechanical action of fragmentation and elimination of deposits, and bacteria leasing.

At the same time, the implosion of bubbles releases oxygen generating a cleaning and disinfecting effect.

Cavitation is essential, and must happen at tip's extremity, where it is active, to cool down the tip and maximize ultrasonics' effect.



Cavitation



ACTEON® tip 1 at power max (20)

NEWTRON® Technology

The NEWTRON® range ultrasonic generators are equipped with the exclusive and patented NEWTRON® technology, which brings to treatments more preservation, efficacy and comfort.



NEWTRON® PRESERVATION	
Controlled vibrations	More precise treatment and gentle on teeth
Steel tip quality	Anatomy and enamel preservation
Total irrigation control	No heating = safer for tissues
NEWTRON® EFFICACY	
Frequency adjustment	Maximal and continuous efficiency whatever the load applied
Power regulation	Constant performances, no pressure needed
Powerful cavitation	Fragmentation and elimination of deposits, cleaning and disinfecting effect
NEWTRON® COMFORT	
Linear and regular vibrations	Tactile sense conserved
	Decreased fatigue for the clinician
	Painless treatment for the patient

NEWTRON® technology benefits do not not only come from of the electric module, but also from the handpiece and the tips. The 3 may work together in harmony to deliver the best patient care.

Any copy of handpiece or tip would lead to an electrical and a mechanical compatibility, reducing drastically the efficacy, damaging the equipment, but above all risking to damage patients' teeth.

NEWTRON

**Preserve teeth
with perfect
ultrasonic
vibrations and
steel tip quality**



Preserving teeth

NEWTRON® range gathers all the technical and clinical expertise gained by ACTEON® to support veterinarians every day with the promise of the best possible care.

- Teeth and tissues are preserved thanks to the perfectly controlled and constant amplitude. NEWTRON® tips, manufactured in a specific steel which hardness is nearest to enamel, preserve teeth.
- Efficacy is maximal with the automatic and continuous frequency adjustment, providing a constant efficacy. The real-time power compensation improves tips performances while reducing hand fatigue.
- Comfort is optimal for practitioner and patient. Linear and regular vibrations conserve tactile sense, and treatments are softer than less painful.

Design responds to ergonomics and hygiene

The elegance as well as the ergonomics of NEWTRON® generators were studied to meet dental practice. The front plane, inclined at 45° and the luminous power button of these multi-clinical generators enhance the display of the adjustments chosen. The more refined design of the handpiece guarantees perfect balance regardless of the grip position.

NEWTRON

P5XS BoLED



Versatile & autonomous

- Dimensions:
Width 260 x Depth 145 x Height 155mm
with 500ml tank
- Weight: 1.7kg
- Frequency: 28-36kHz

NEWTRON

P5XS



Without light

- Dimensions:
Width 260 x Depth 145 x Height 155mm
with 500ml tank
- Weight: 1.7kg
- Frequency: 28-36kHz

NEWTRON

P5 BoLED



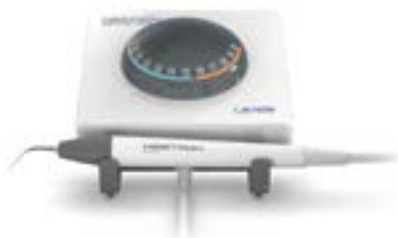
Design & ergonomic

- Dimensions:
Width 156 x Depth 186 x Height 102mm
- Weight: 1.65kg
- Frequency: 28-36kHz

DENTISTRY EQUIPMENT

Ultrasonics equipment

NEUTRON
BOOSTER



Compact & efficient

- Dimensions:
Width 130 x Depth 161 x Height 88mm
- Weight: 1.10kg
- Frequency: 28-36kHz

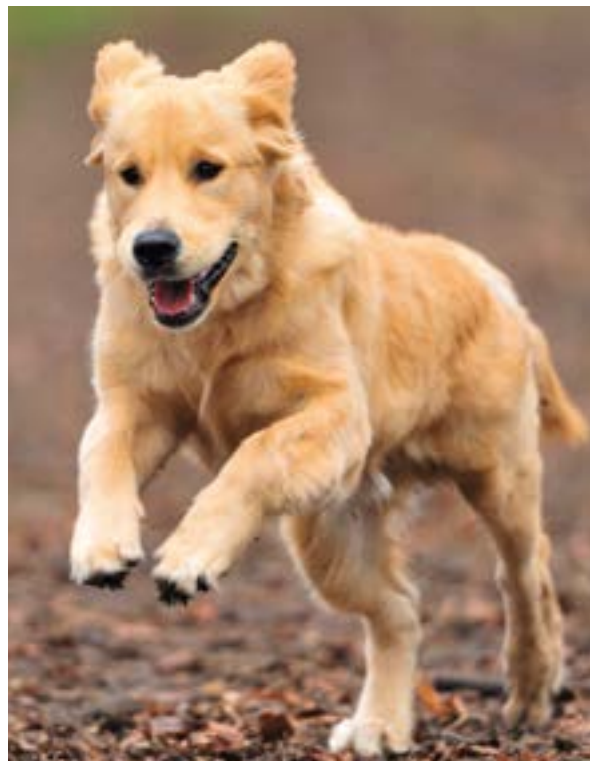


Photo: Dr. Vernay

DENTISTRY EQUIPMENT

Ultrasonics equipment

COCOONmobile

- Fully autonomous with integrated oil-free compressor (only plug and play)
- Easy to move with a handle. Mounted on wheels, with no cable on the floor
- Tactile interface to be able to adjust parameters during treatment, with easy access: directly on the top panel
- Automatic detection of instruments
- Pneumatic foot control
- Distilled water system with 2 liters container for long autonomy
- 10h autonomy compressor.
- Soundproof casing
- Easy to clean
- 85cm high to guarantee ergonomic work, sitting or standing



©ADVETIA



Options to choose from:

- Aspiration
- Syringe
- NEWTRON® Technology Scaler
- Low Speed Micromotor
- High speed micromotor
- Turbine

COCOON® HYGIENIST LED

Combined Motor /
Ultrasonics Generator

More intensive use

A genuine dental unit.

The motor of the unit may be used for an extended period of time when performing multiple dental extractions requiring tooth sectioning or when performing root canal treatment followed by crown restoration. Applications such as exodontics (tooth extraction) or endodontics (root canal treatment) are therefore possible because of:

- Cooling of the micromotor (air + water: built-in spray).
- Cooling of the bur (use of a contra-angle with built-in spray).

More clinical procedures

COCOON® HYGIENIST LED can be used for bonding work in restorative dentistry, in orthodontics or for fabricating a denture or a dental splint in traumatology.



Kart Cocoon
Ref. F24417

- Dimensions: Width 280 x Depth 260 x Height 100mm
- Weight: 3.8kg
- Frequency: 28-36kHz
- Motor: internal spray and light, 60 to 40 000rpm $\pm 10\%$; rotation in both directions
- Syringe: Water, Air, Spray (water + air)
- RISKONTROL tips supplied

	Bur	Speed setting	Recommended rotation speed
Contra-angle red ring 1:5 internal spray	FG Ø1.6	8-10 (160 000 - 200 000rpm)	See recommendations of the bur manufacturer
Contra-angle blue ring 1:1 internal spray	CA Ø2.35 polishing cup	40 000rpm	
Straight handpiece 1:1	HP Ø2.35 length 44mm	40 000rpm	

COCOON™ SPRAY



Piezoelectric ultrasonic generator
Suprasson, micromotor, water pump (or tap)

- Dimensions: Width 280 x Depth 260 x Height 100mm
- Weight: 3.8kg
- Frequency: 27-32kHz
- Motor: external spray, 60 to 40 000rpm $\pm 10\%$; rotation in both directions

	Bur	Speed setting	Recommended rotation speed
Contra-angle red ring 1:3 internal spray	FG Ø1.6	8-10 (88 000 - 140 000rpm)	See recommendations of the bur manufacturer
Straight handpiece 1:1	HP Ø2.35 length 44mm	40 000rpm	

CONTRA-ANGLES for COCOON SPRAY

Ref. F36120

Technical characteristics: Contra-angle red ring (X3) external spray

Ref. X36121

Irrigation connection for Cocoon Spray



Handpieces



A fine and balanced handpieces

The NEWTRON® handpiece is a piezoelectric transducer that offers a consistent performance despite the type of ACTEON® tip or treatment that you choose. The composite materials used in the handpiece housing are also autoclave-safe. The titanium amplifier (exclusive manufacturing process) provides the transducer with unequalled torque reliability and durability.

Our ultrasonic generators, which are controlled by the SP NEWTRON® electronic module, boast the following features:

- ➔ The broadest range of frequencies on the market: 28 to 36kHz
- ➔ The broadest power range: 0.1W to 10W
- ➔ The largest vibration amplitudes: 4µm to 200µm

The automatic tuning control provides maximum performance while limiting transducer heating.

The amplitude is electronically monitored approx. 30,000 times per second in real time, which is why NEWTRON® handpieces generate homogeneous vibrations that are both more effective and more comfortable for the patient.

NEWTRON® SLIM B.LED HANDPIECE

Compatible with the new range of NEWTRON® devices, the NEWTRON® SLIM B.LED handpiece is thinner, shorter and lighter, for better ergonomics.

Available with power LED white light, for maximal visibility, the handpiece can also be supplied with a blue light, dedicated to dental plaque revelation.

The F.L.A.G.™ for B.LED plaque revealer, applied directly on teeth or diluted in the NEWTRON® P5XS tank, turns fluorescent under the NEWTRON® SLIM B.LED handpiece blue light. The areas to be treated are clearly identified and the procedure is guided in real time. Treatments become more effective, with 20% more plaque removed, and more precise by preserving healthy tissues.



Ref. F12905

NEWTRON® HANDPIECE

The handpiece housing is made of a specially designed composite material that sustains sterilization in Class B autoclaves.

The front section can be removed for better decontamination of the titanium amplifier.



Ref. F12281

NEWTRON® LED HANDPIECE

Good visibility is essential. ACTEON® is the first manufacturer to offer autoclavable ultrasonic handpieces with integrated electro-luminescent diodes (LED light). The NEWTRON® LED, a new-generation ultrasonic transducer, illuminates the operating area with "cold" light in a 360° radius at 65,000 Lux (Fig. 3.18).

The light guide and the front part are removable and allow easy cleaning and decontamination of the handpiece. Comfort and ergonomics are two further advantages for the user.



Ref. F12609



©ADVETIA

Fig. 3.18: Newtron handpiece with a 1S tip

Tips range

Top of the range tips to provide first-class and caring treatments

Mastering ultrasound does not stop at devising generators and control software, it also means designing the appropriate accessories that will give them optimum vibration power and guarantee their reliability.

Having nearly 80 different tips, ACTEON® offers the widest range of instruments covering all clinical fields: prophylaxis, periodontics, implant care, endodontics and prosthesis.

For each indication, NEWTRON® tips are designed with exclusive alloys respecting the surfaces treated: enamel, prosthesis, implants.

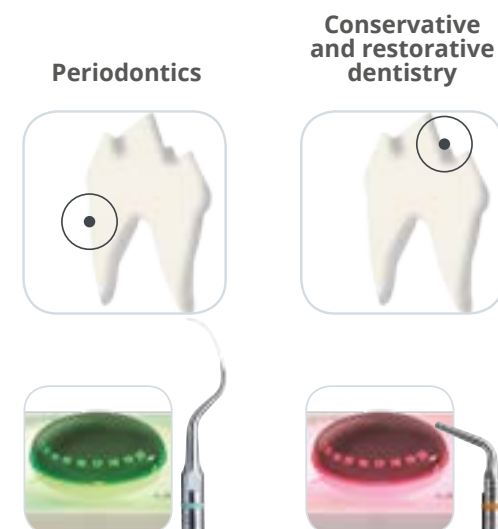
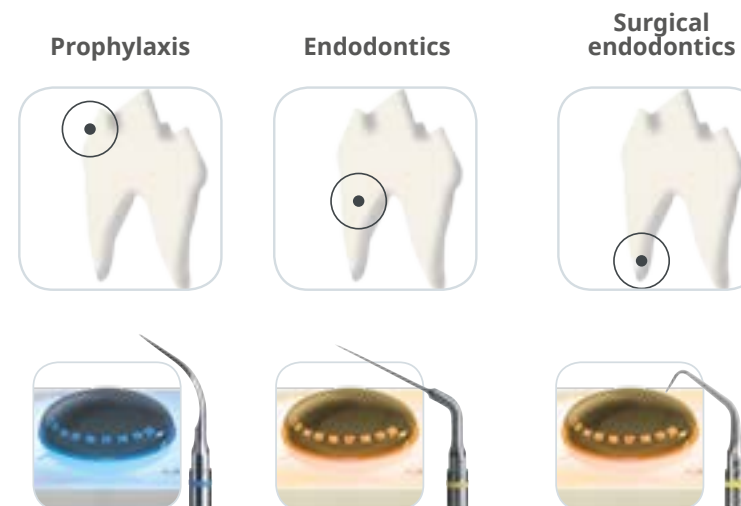
Power use is accurately determined with the Color Coding System™, which intuitively associates each tip with one of the 4 power ranges.



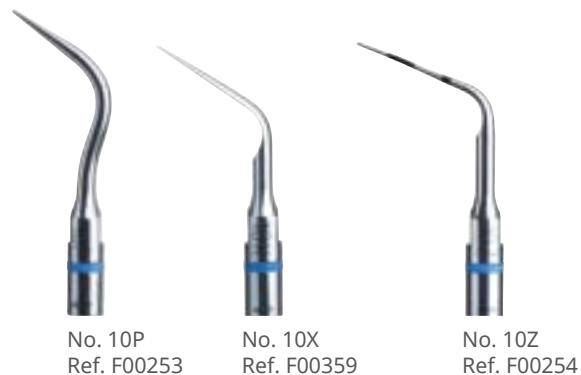
- The color coding identifies the power that gives the best safety / performance ratio (no instrument breakages / amplitude and resistance to the ideal load).
- Immediate identification of the recommended power range on the ultrasonic generator display and on the instrument, available throughout the time of use.
- The individual wrenches and storage kits guard against the risk of cross contamination to the user and auxiliary staff.
- The coding resists decontamination and sterilization.



The **widest range** in the market, having nearly 80 different tips, with exclusive designs, alloys and coatings for clinical versatility



Prophylaxis tips



Universal wrench
Ref. F00406



Autoclavable
dynamometric
blue wrench
Ref. F81322



Water pump +
connections
Ref. F00051

Handpieces



Dental plaque discloser



F.L.A.G. for B.LED 5x 1.5ml
Ref. F62200



F.L.A.G. for B.LED 100ml
Ref. F62203

Endodontics range



Sealite Regular
Ref. 266264



Sealite Ultra
Ref. 266268



EDETAT
Ref. 231201



Salvizol E.D.T.A
Ref. 266115



CIMAVIT
Ref. 213859



HYCAL
Ref. 259314



Paper points assort N°15-40/2%
Ref. 200726

Paper points assort N°45-80/2%
Ref. 200727



Gutta percha assort N°15-40/2%
Ref. 201116

	NEWTRON BOOSTER	NEWTRON PS B LED	NEWTRON PSXS	NEWTRON PSXS B LED	COCOON™ SPRAY	COCOON® HYGIENIST LED
Technical characteristics						
Piezoelectric ultrasonic scaler (range of frequencies)	28 - 36kHz	28 - 36kHz	28 - 36kHz	28 - 36kHz	27 - 32kHz	28 - 36kHz
L.E.D. for the scaler				L.E.D.		L.E.D.
Ultrasonic NEWTRON® technology	Yes	Yes	Yes	Yes		Yes
Irrigation	Water pump or tap	Integrated tank	Integrated tank	Integrated tank	Water pump or tap	Water pump or tap
Electronic micro-motor					0-40,000rpm	0-40,000rpm
Light for the motor						Yes
Motor cooling					Air (self ventiled)	Air and Water
Motor spray irrigation					External	Internal
Air/Water Syringe						Yes
Air compressor needed 4 to 6 bars (not supplied)						Yes
Power setting						
n.1 ; n.1S ; n.2 ; n.3 tips	14	14	14	14	7 - 9 scaling mode	7 - 8
n.10P tip	14	14	14	14	7 - 9 scaling mode	7 - 8
n.10X ; n.10Z tips	12	12	12	12	1 - 4 scaling mode	6 - 7
PV1 tip	3	3	3	3	1 - 3 endo mode	1 - 2
H3 tip	2	2	2	2	2 perio mode	1 - 2
ETBD tip	7	7	7	7	6 - 8 endo mode	3 - 4
ET18D tip	10	10	10	10	8 - 10 endo mode	3 - 5
EX1 tip	12	12	12	12	1 - 4 scaling mode	6 - 7
ET25L tip	7	7	7	7	8 - 10 endo mode	3 - 5
ET40 tip	7	7	7	7	8 - 10 endo mode	3 - 5
PLU60 ; PLU 91 ; PLU 110 tips	3	3	3	3	1 - 3 endo mode	3
SPR30 ; SPR 60 ; SPR 80 tips	3	3	3	3	1 - 3 endo mode	3
Irrisafe IRR25-45	6	6	6	6	6 - 8 endo mode	5
Clinical uses						
Supragingival scaling	Yes	Yes	Yes	Yes	Yes	Yes
Subgingival scaling	Yes	Yes	Yes	Yes	Yes	Yes
Pocket debridement	Yes	Yes	Yes	Yes	Yes	Yes
Polishing					Yes	Yes
Root separation					Yes (occasional use)	Yes (intensive use)
Root canal treatment					Yes, use that is not intensive	Yes (intensive use)
Crown restoration (endo-canal + crown reconstitution)						Yes

ABOUT POLISHING

Facts & Figures

- Bacterial dental plaque (BDP) re-forms less quickly on a dog's teeth that have been polished after scaling (Pollmeier S, 1994).
- Polishing is the finishing stage once the dental crown and the roots have been cleared of calculus/BDP. It is a way of achieving a better surface quality that offers less retention for the microbial biofilm to re-form.
- Glycine powder air polishing can be used subgingivally and results in clinically significant improvement in plaque and gingival index scores and histologically causes less gingival erosion than sodium bicarbonate power air polishing or ultrasonic instrumentation (Simon et al., Int J Dental Hyg, 2015).

Applications and Advice on Usage

Polishing with a prophyl cup

Polishing is done at low speed with a rubber polishing cup coated in polishing paste and used for about five seconds per tooth. The cup must be changed regularly (Fig. 3.19).

Low-speed polishing instruments are reduction contra-angles or specific polishing contra-angle.



Fig. 3.19: Polishing with a cup and polishing paste

Polishing with air polisher

Air polishers make it possible to spray a mist of very small sodium bicarbonate or glycine particles under pressure. This is a very efficient system for polishing tooth surfaces without damaging the gums. Its major advantage over cup polishing lies in greater accessibility and efficiency in all the areas that are difficult to reach (interdental spaces, dental grooves).

It is also more effective than cup polishing for removing bacterial dental plaque and surface stains on teeth (Fig. 3.20).

Furthermore, since polishing is done without direct contact between the instrument and the tooth surface, the risks of thermal damage are thus removed.



Fig. 3.20

Tooth trimming in rabbits and rodents

A 1:1 ratio straight handpiece with an abrasive bur for a handpiece can be used at a speed of around 6,000rpm for trimming the teeth of rabbits and rodents in cases of malocclusion (Fig. 3.21).



Fig. 3.21

An irrigation spray is tricky to use in these conditions (small mouth, absence of endotracheal intubation). It is therefore preferable to use a high-powered cutting abrasive instrument to limit the temperature build-up. A filing bur is used for the larger tooth areas, whereas a polisher can be used for finishing and for smaller areas.

AIR N GO

EASY

All clinical applications are easy with the all-in-one air polisher



Dual functions

ACTEON® EQUIPMENT has created the new generation of portable air polishers, AIR-N-GO® easy with dual functions:

- "SUPRA function" for supra-gingival polishing: daily prophylactic polishing.
- "PERIO function" for sub-gingival polishing: maintenance, periodontal and peri-implant treatments.

This medical device allies simplicity with performance.

Single handpiece

A single handpiece to cover a range of care and treatment.

AIR-N-GO® easy combines essential functions with reliability to facilitate your everyday life:

- Fast start-up: direct connection to the high speed handpiece connector.
- Greater freedom of movement: 360° rotation, fast and accurate treatment of areas requiring care.
- Easier cleaning of the handpiece: main parts can be dismantled.

- Length: 180mm - 205mm depending on adapter
- Height: 70mm - 95mm depending on adapter

- Weight: 114g - 155g depending on adapter
- Irrigation flow at 15ml/min ± 5ml/min
- Intake air pressure: static 3 bars minimum

airMax

Fast and straightforward prophylactic treatment for perfect results every time



Versatile and mobile

The simple quick-coupling connection allows leak-free installation of AirMax, just like a mobile unit, in different treatment rooms.

Accessories



Box of 4 bottles of Neutral Sodium Bicarbonate based powder
Ref. F10254



SITASALICINE
Ref. 277803

The aim of restorative dentistry is to treat surface defects and loss of tooth substance leading to partial or total destruction of the coronal part of a tooth. This may result from developmental defects, carious lesions, resorptive lesions, dental trauma (fracture) or iatrogenic conditions linked to root canal treatment (Fig. 3.22 & 3.23).



Fig. 3.22: Enamel hypoplasia lesion on a maxillary incisor



Fig. 3.23: Appearance of the incisor after restoration with dental composite

In veterinary dentistry, tooth restoration is largely confined to the filling of cavity access in case of carious defect or fracture. Nevertheless, when a certain amount of the crown of the tooth has been damaged, the lost coronal part may be reconstructed by means of a prosthetic device (metallic or ceramic crown).

Modern dental restorative treatments are mainly performed through the use of tooth-colored organo-mineral materials (composite resins), which are bond to dentin and enamel through the use of a bonding agent. Bonding strength of new bonding agents enables conservative cavity preparation.

The different stages in crown restoration

For a tooth with vital pulpal tissue,

- ➔ When the pulp is close, placement of the bonding agent provides sufficient insulation.
- ➔ When the pulp is near exposure, placement of a calcium hydroxide-containing base material may be recommended: indirect pulp capping (**Cav-Hycal**).
- ➔ When the pulpal tissue has been exposed, a direct pulp capping can be performed using a calcium hydroxide-containing dressing (**HYCAL**) or **MTA** (Fig. 3.24, 3.25, 3.26).



Fig. 3.24: Caries on the occlusal face of maxillary M1



Fig. 3.25: Parings of the carious lesion close to the dental pulp



Fig. 3.26: Placement of a calcium hydroxide cavity base (indirect pulp capping)

For a non vital tooth after root canal treatment has been performed:

- ➔ Excess obturation material (**Gutta Percha** and cement) must be removed from the pulpal chamber. This can be effectively and conservatively performed using ultrasonic diamond-coated instruments **EX1** (Fig. 3.27) or **ETBD** (Fig. 3.28).
- ➔ A glass-ionomer cavity base material (**PR Glass Ionomer Base Cement**) is placed over the root canal obturation material to provide perfect insulation prior to placement of the composite restoration and to favor adhesion of the composite.
- ➔ Shaping and cleaning of the cavity may be performed with an air polisher (**AIR-N-GO® easy** or **AIR MAX®**) (Fig. 3.29) and/or ultrasonic instruments **EX1** (Fig. 3.30). As a result of the bonding capacity of composite resins through the use of a bonding agent, the cavity or lesion can be minimally prepared.
- ➔ When a root canal treatment is performed in two steps, the cavity is obturated with a temporary cavity cement, until the second step is performed.



Fig. 3.27: Cleaning of the pulp chamber with an **EX1** instrument



Fig. 3.28: Cleaning of the narrower pulp chamber in a cat with an **ETBD** instrument



Fig. 3.29: Cleaning of a cavity with an air polisher (**AIR-N-GO® easy**)



Fig. 3.30: Parings of a lesion with a diamond round tip (**EX1**)

Obturation with dental composite resin

- As adhesion strength to dentin is less than that of enamel, when the cavity is fully comprised within dentin, placement of a retention groove at the base of the cavity increases retention. This can be easily and conservatively achieved with an ultrasonic round diamond tip (**ETBD**) tip.
- When enamel is present on the periphery of the cavity, etching of the enamel margin is performed using an acid-etching gel applied on enamel surfaces for 20 seconds (Fig. 3.31).
- The etching gel is rinsed with water using an air/water syringe fitted with a **RISKONTROL** tip.
- Moderate drying of the prepared tooth surface (wet bonding technique) with the air/water syringe fitted with a **RISKONTROL** tip is required for most Etch-and-Rinse type of bonding agent (see manufacturer's instructions).
- The bonding agent is placed on the enamel and the dentin (**PR Bond™**). Some products have different steps and may combined etching and priming without the need for rinsing in between (Self-Etch bonding agent), or even all step in one (etching, priming, bonding).
- Light curing with a curing lamp (**MiniLED™ Active**).
- Surface filling with a light-cure dental composite (Fig. 3.32).
- The composite is put in place by 2-3 mm layers in the cavity (Fig. 3.33) and cured after each layer with a curing lamp (**MiniLED™ Active**) (Fig. 3.34).
- Finishing of the composite surface and the juncture with the tooth using a finishing bur, polishing stones and disks (Fig. 3.35).



Fig. 3.31:
Acid etching enamel and dentine (Total etch technique with PR Etch™)



Canine tooth prior to composite restoration



Canine tooth after composite restoration



Ceramo-metallic crown -Final composite restoration prior to crown preparation for cosmetic prosthesis



Ceramo-metallic crown



Ceramo-metallic crown
-Radiograph of the cast ceramometallic cosmetic crown



Fig. 3.32:
Placement of the resin composite on the tooth prepared with PR Bond™



Fig. 3.33:
The composite is put in place in layers until the restoration is complete



Fig. 3.34:
Polymerization of the dental composite



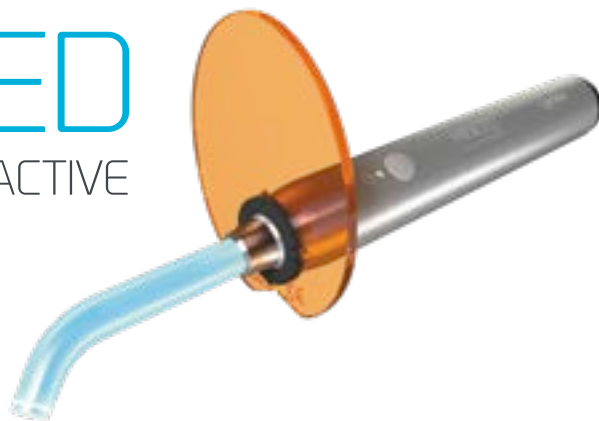
Fig. 3.35:
Polishing of the composite with a mounted point with irrigation

DENTISTRY EQUIPMENT

Tooth restoration equipment

MINILED ACTIVE

**Fast
polymerization
for long term
esthetic results**



Reach the essential of polymerization with MiniLED™ Active, a new ready-to-use curing light.

This very intuitive lamp combines efficiency and simplicity with the push of one button: reach a unique 10 sec cycle at high power 1492 mW/cm². Covering a large wavelength spectrum, MiniLED™ Active can cure most of the composites fastly and safely.

Smartly balanced, short and light thanks to its integrated battery, the handpiece is very comfortable and easy to grip, while being protected against falls. The long-lasting battery, rechargeable with a universal power supply, have an autonomy of 100 cycles of 10 sec, to serenely enjoy a full day of polymerization.

→ Efficiency and simplicity in one click

Unique 10 sec cycle, with microflash at 5 sec

→ Easy to use

Smartly balanced, the handpiece does not roll for a protection against falls

→ Work in freedom

Handy and light (103g) thanks to its integrated battery

→ Long service life

100 cycles of 10sec. to enjoy a full day of polymerization

→ Universal power supply

Battery level indicator

→ Power: 1492mW/cm² (Ø7.5mm light guide)



DENTISTRY EQUIPMENT

Tooth restoration equipment

Accessories



EX1
Ref. F02040



ETBD
Ref. F88020



PR Etch – Ref. 200322



PR Bond – Ref. 200948



Cimavit – Ref. 213859



PR Scell Glass Ionomer
Base Cement – Ref. 213770



Cav-Hycal – Ref. 213876



Hycal – Ref. 259314

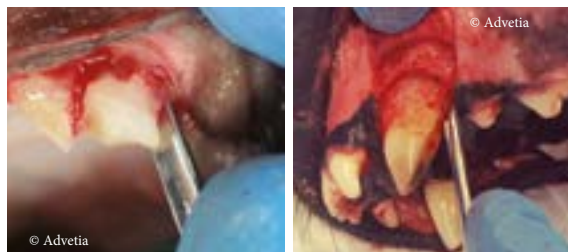


INSTRUMENTATION

Elevators

Easy elevation of tooth roots by sectioning the periodontal ligament and luxating the root from the alveolar bone.

Perfectly adapted to the contour of small teeth such as incisor teeth, the roots of small premolar teeth and deciduous teeth.



Root elevation with a 2mm elevator



Cambray elevator Forward 2mm
Ref. 156.AV



Cambray elevator Backward 2mm
Ref. 156.AR



Vignal Elevator
Ref. 149.21



Coupland Elevator
Ref. 156.30



Coupland Elevator
Ref. 156.84

Chompret syndesmotome

Unique instrument allowing easy separation of the attached gingiva to create a mucogingival flap. Prevents laceration or perforation of the mucosa.



Chompret syndesmotome blade 3
Ref. 264.03

Periosteal elevators



The periosteal elevators are the perfect instruments to create muco-gingival flaps after gingival separation with the Chompret syndesmotome. Two sizes fitting all cats, small and large dogs.



Molt mini-elevator
Ref. 407.07D



Molt mini-elevator
Ref. 407.09D

Dental forceps

Forceps with a new anatomic handle reducing fatigue. The jaws are closing parallel to each other reducing the risk of tooth fracture and ensuring perfect grip.

Can also be used for rodents & rabbits tooth extractions. Atraumatic jaws.



Root tip forceps
Ref. 751.00



© Advetia

Easy grasp of small teeth such as cat's, during extraction



Large teeth angled forceps
Ref. 290.13



Small dogs and cats teeth forceps
Ref. 297.29



Big dogs' forceps
Ref. 290.02

Bone curettes

Instruments to clean the dental alveolus and remove granulation tissue.



Hemingway Curette
Ref. 135.01D



Darby Curette
Ref. 162.07D

Tweezers



Adson tweezers
Ref. 222.12



Adson tweezers
Ref. 743.00

Scissors



Scissors
Ref. 636.00

Probes & Curettes

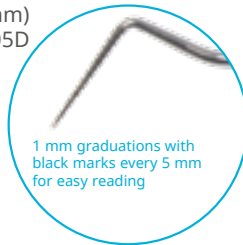
The PV1 subgingival curette has a universal blade design. The working blade is thin and short allowing easy subgingival debridement in cats and small breed dogs.



PV1 subgingival curette
Ref. 403.01XL



Graduated periodontal probe (15mm)
Ref. 418.05D



Spot irregularities at the dental surface, the entry of the dental canal on broken teeth. Identify dental resorptions in cats in particular.



Double end dental explorer
Ref. 263.05D

Veterinary 15 essential instruments kit

Ref. 156.VT

Delivered with 4 elevators (156.AV, 156.AR, 149.21, 156.30), 2 mini-elevators (407.07D, 407.09D), 1 syndesmotome (264.03), 1 plier (751.00), 2 forceps (290.13, 297.29), 2 curettes (135.01D, 162.07D), 1 graduated probe (418.05D), 1 double end explorer (263.05D), 1 PV1 curette (403.01XL).



Stainless steel big tray (in option)
Ref. 233.25



DENTAL SURGERY

Facts and Figures

- ➔ Out of 184 mandibular teeth (P4 and M1) evaluated radiographically in 50 dogs weighing less than 8kg, more than 50% of the teeth need to be extracted (Hennet P., 2001).
- ➔ Out of 128 cats and dogs brought in for "scaling", 297 teeth underwent simple extraction, 202 teeth were extracted with root separation and 48 teeth underwent surgical extraction (Girard N., 2005).

"Dental Scaling" or "prophy" are generic terms, which should not be used as blanket term to refer to any oral and dental surgery procedure in animals (Hennet P., Girard N., 2005). Aside from non-surgical periodontal treatment (supragingival scaling, subgingival debridement & polishing), treatment of periodontitis in animals often requires dental extractions to be performed.

Any veterinary surgeon providing dental care to dogs and cats therefore needs to have rotary equipment on hand so that he can correctly perform all the treatments, which an animal brought in for "scaling" may require.

Only with rotary instrumentation can any dental extraction be performed quickly and efficiently.



Photo: Dr. Vernay

Applications and Advice on Usage

For tooth sectioning or tooth trepanation, high-speed burs with water-cooling must be used.

The feedback function of the micromotors of the **COCOON® SPRAY** and **COCOON® HYGIENIST LED** devices means that this speed can be kept constant even when it is subject to resistance (increased torque).

By way of comparison, a compressed-air turbine running at 350,000rpm has a low torque. When it is used under pressure (sectioning a tooth to separate the roots) the speed falls by about half to around 150,000rpm.

Multiplication-gear contra-angles cut more efficiently and generate less heat than turbines (Eikenberg SL, 2001). They have higher power and torque. However, even with the general trend to weight reduction, turbines are still smaller and lighter than contra-angle handpiece systems powered by electric motors.

Tooth extractions can be performed by three techniques:

- ➔ Simple extraction: the single-rooted tooth is extracted with hand instrument only.
- ➔ Extraction with root separation: the tooth is sectioned into several pieces with a rotary instrument, then each root is extracted as a simple extraction.
- ➔ Extraction with a mucosal flap and bone surgery ("surgical extraction"): the mucosa and bone are exposed to allow easier access to the root. A rotary instrument is used to perform alveolar osteotomy and, in the case of a multi-rooted tooth, root separation.

It may be sometimes necessary to use a haemostatic dressing to stop the bleeding at the extraction site.

Root separation: A contra-angle or a turbine can be used at high speed with the fissure bur intermittently rested on the tooth so that the bur can be cooled and cleaned by the spray (Fig. 4.1 and 4.2).



Fig. 4.1: Bur ready to section the tooth



Fig. 4.2: Sectioned tooth

Maxillo-facial bone surgery in veterinary medicine comprises oncology surgery (maxillectomy and mandibulectomy), traumatology (plate osteosynthesis, bone grafts harvesting) and correction of defect (condylectomy, correction osteotomy). Different instruments have been used to cut bone: manual osteotome, bone-drilling bur or oscillating saw.

Piezoelectric bone surgery or piezo-ultrasonic surgery is an innovative technique based on high frequency vibration of a metallic tip to cut bone. The tip works alone and only requires low to moderate pressure on the bone, which with direct sterile irrigation of the operative site reduces thermal damage to the bone (Fig. 4.3).

This technology offers a cutting selectivity: Due to the selected frequencies ranging between 28 and 36kHz, the tips are only active on hard tissue, limiting the risk of soft tissue injury. Unless totally entrapped within bone, soft tissue vibrates at the same frequency as the tip. So it is possible to perform an osteotomy without the risk of vasculo-nervous pedicle lesions (Labanca et al., 2008). Curvilinear bone incisions of any shape can be designed. It is as easily as drawing with a pencil (Fig. 4.4 & 4.5). In cranial surgery, it is therefore possible to perform a parietal bone osteotomy without causing a lesion of the dura mater (Kotrikova et al., 2006).



Fig. 4.3: Caudal maxillectomy with Piezotome2



Fig. 4.4: Maxillectomy-Orbitectomy with Piezotome2



Fig. 4.5: Apical resection- Intraoral approach to canine tooth - retrograde cavity prep with ultrasonic tip

Possible indications for piezo-ultrasonic surgery in veterinary surgery are many: dental surgery (complex dental extractions, root tip removal, apical surgery, bone curettage, periodontal surgery), maxillo-facial surgery (maxillary and mandibular resection, preparation of fracture abutments, harvesting bone grafts, TMJ surgery), nasal surgery (rhinotomy, sinusotomy) middle ear surgery (trepanation and curettage), osteo-articular surgery and spinal and central neurosurgery (Fig. 4.6, 4.7, 4.8, 4.9, 4.10, 4.11). A complete review of applications of piezoelectric bone surgery in the veterinary field has recently been published (Hennet, Frontiers in Veterinary Science, 2015).



Fig. 4.6: Apical resection- ventral approach to canine tooth 1- bone trephination with Piezotome2



Fig. 4.7: Apical resection- ventral approach to canine tooth 2- exposure of apex



Fig. 4.8: Apical resection- ventral approach to canine tooth 3- apical resection

In comparison with other bone cutting instruments (manual osteotome, bone-drilling burs, oscillating saw) the main advantages of piezoelectric bone surgery are:

- ➔ Selective cutting of mineralized tissue
- ➔ Significant reduction of trauma to soft tissue
- ➔ Reduced hemorrhage (cavitation effect)
- ➔ Excellent visibility within the surgical field, due in part to minimal bleeding, to high luminosity LED lights and effective irrigation
- ➔ Precise cutting (limited vibration amplitude and specific design of osteotome tips)
- ➔ Numerous tips with various design fully adapted to all situations
- ➔ Curvilinear cutting
- ➔ No thermal damage
- ➔ Sterile irrigation – steam sterilization

The cutting action and tactile sensations are different with ultrasonic tips compared with rotary instruments. A training phase is necessary. Initially, 20 to 30% longer than usual must be planned for cutting the bone (Landes et al., 2008).



Fig. 4.9: Caudal osteotomy of the mandible with Piezotome2 - 1



Fig. 4.10: Caudal osteotomy of the mandible with Piezotome2 - 2 - deep cut



Fig. 4.11: Caudal osteotomy of the mandible with Piezotome2 - 3 - preservation of inferior alveolaris neurovascular bundle

PIEZOTOME

CUBE

Facilitated teeth extractions and osseous surgery

Expand your expertise

Highly powerful, reliable and naturally intuitive, Piezotome® Cube drastically improves the experience of bone surgical procedures. It opens new horizon in a more predictable, accurate, faster and atraumatic bone treatments.

Adapted to your needs

Piezotome® Cube is piloted by an essential asset, the patented Newtron® technology. The advanced unit, the handpiece and the tips are perfectly tuned introducing unique clinical benefits, to tackle each surgery serenely:

- ➔ Preservation (Soft tissue preservation with better tissue recovering, cells regeneration and minimal bone loss for less invasive procedure)
- ➔ Efficacy (frequency adjustment and power regulation for maximal performances and effortless cut adjusted to the resistance met by the tip)
- ➔ Comfort

Naturally intuitive, Piezotome® Cube features the exclusive D.P.S.I. smart assistance. This smart assistance will provide:

- +30%** of power, improving cutting performance,
- 10%** of power adjusting to the anatomical area encountered, to be even safer for a more relaxing experience.



- ➔ Frequency: 28-36kHz
- ➔ Length: 251 x Height 160 x Depth 271mm
- ➔ Weight: 3500g

+30%
POWER

- ➔ Socket preservation⁽¹⁾
- ➔ Safe for soft tissues
- ➔ Recommended for immediate implant placement
- ➔ No force needed
- ➔ 98% less analgesics intake⁽²⁾



(1) Kleiber J. Immediate extraction placement and loading in the aesthetic zone. Implant Dentistry Today. 2013 Jan;7-13
 (2) Troedhan A, Kurrek A, Wainwright M. Ultrasonic Piezotome surgery: it is a benefit for our patients and does it extend surgery time? A retrospective comparative study on the removal of 100 impacted mandibular 3rd molars. Open Journal of Stomatology. 2011;1:179-184

IMPLANTCENTER 2

**The alliance of technologies
for fast and secure bone
surgeries**



The alliance of the most advances ultrasonic and rotating technologies ensures total independence in increasingly diverse clinical areas. ImplantCenter2 is the ideal combined device dedicated to:

- ➔ Ultrasonic bone surgery (piezo-ultrasonic surgery)
- ➔ Implantology using surgical micromotor and contra-angle with sterile irrigation
- ➔ Ultrasonic conventional treatments (scaling, debridement, endodontics and restorative dentistry)

- ➔ Frequency: 28-36kHz
- ➔ Dimensions: Length 473 x Height 150 x Depth 340mm
- ➔ Weight: 5kg
- ➔ Motor speed: 100 to 40,000rpm/min

BoneSurgery

Clean and thin cut for maximal bone volume



BS II Kit - Ref. F87509



Extraction II Kit - Ref. F87546

Extraction

For maximum bone preservation



BS1L
Ref. F87612



BS1RD
Ref. F87608



BS1S
Ref. F87611



BS2L
Ref. F87613



BS2R
Ref. F87614



LC1 XL
Ref. F8760



Etik Collagène - Ref. 281970

Facts

As craniofacial region is highly vascularized, oromaxillofacial surgery is always accompanied by bleeding which can sometimes be copious. Good haemostasis is part of a successful procedure.

Applications and Advice for Usage

To stop alveolar bleeding, placement of a hemostatic sponge into the socket can be performed (Etik Collagène).

The electrosurgical scalpel can be used for both electro-section and electro-coagulation. Thanks to its interchangeable electrodes, numerous procedures can be performed, including the most delicate operations. The fine precision of the electrodes means that bleeding can be effectively controlled and all areas can be accessed (Fig. 4.12).

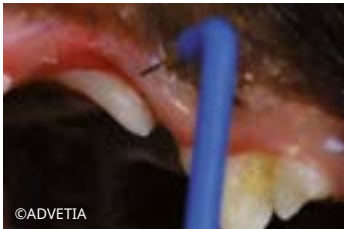


Fig. 4.12: Incision using an electric scalpel

Surgical applications		I80DEC	I40CA	I22CA	FC10N	FC32B	TR22R	TR22GR
References		F10455	F10432	F10421	F10430	F10429	F10425	F10426
General Surgery	Electrosection	X	X	X				
	Haemostasis by coagulation				X	X		
Oral and maxillo-facial Surgery	Access Flap			X				
	Major resection (maxillectomy mandibulectomy)			X				
	Biopsies						X	X
Periodontal surgery	Flaps			X				
	Gingivectomy-gingivoplasty		X	X			X	



Box of Electrodes
Ref. F10440



Etik Collagène - Ref. 281970

Facts and Figures

Jaw fractures in the dentate area can be successfully treated by non-invasive techniques, particularly in small dogs and cats (Hennet, 1998). These techniques preserve the fractured site and the teeth while ensuring rapid bone healing.

Applications and Advice on Usage

The teeth are used as anchor points for stabilization of the fracture. It may concern teeth of the maxilla and of the mandible or teeth on the same dental arch.

Maxilla-mandibular fixation

Caudal lesions (affecting the ramus of the mandible or the temporo-mandibular joint), particularly in cats, can be treated by this technique. While maintaining the mouth half open in semi occlusion, maxillary and mandibular canine teeth are bonded together using dental composite resin according to the techniques of restorative dentistry.

Wire-reinforced interdental composite splint (WRICS)

This is the technique of choice for all fractures located between the canine and the carnassial tooth (maxillary fourth premolar tooth or mandibular first molar tooth). After placement of metallic interdental wiring, the splint is made of non-exothermic acrylic/composite resin (**Coolsin Plus**). Interdental wiring increases retention and enhance the mechanical properties of the splint (Kern et al., 1993).

Fractures of the mandibular angle, complex caudal fractures and fractures of the body of the mandible in the absence of solid abutment teeth (carnassial and canine) for creating a splint are outside the scope of these techniques. These cases require internal fixation such as plate and screws.

The Different Stages of Making an Interdental Splint

- ➔ Intubate the animal by pharyngostomy
- ➔ Precisely assess the fracture site (dental X-ray – Fig. 4.13)
- ➔ Suture soft tissues
- ➔ Scale and polish the teeth
- ➔ Reduce the fracture while restoring the initial occlusion
- ➔ Place a metal interdental between the carnassial and the canine without compression (neutral position – Fig. 4.14)

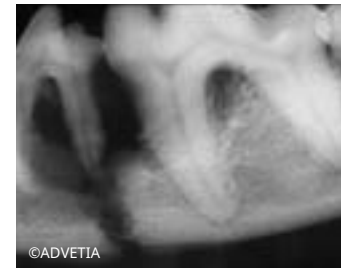


Fig. 4.13



Fig. 4.14

- ➔ Etch the teeth (**GEL DE MORDANÇAGE**)
- ➔ Rinse and dry with **RISKONTROL®** syringe
- ➔ Prepare the composite resin (**Coolsin Plus**)
- ➔ Apply the resin to the etched teeth and the metal ligature, while maintaining the fracture reduction (Fig. 4.15)
- ➔ Close the oral cavity in occlusion
- ➔ Wait until the resin sets (self-curing)
Keep the oral cavity closed and wait until the resin is set $\pm$ 2min
- ➔ Remove excess resin material and polish



Fig. 4.15

Making an Interdental Splint Range



PR Etch - Ref. 200322



Coolsin Plus - Ref. 201070





UROLITHIASIS

PREPARATION OF THE ANIMAL

Dog

- ➔ Positioning of the animal:
 - No sedation: stand up
 - Sedation: lying on the side or supine (in this case, venous access for using a minimal anaesthetic dose)
- ➔ Clipping
- ➔ Disinfection (Fig. 5.1)
- ➔ Selecting the probe depending on the size of the dog (Fig. 5.2)



Fig. 5.1



Fig. 5.2

Cat

- ➔ Sedation or light anaesthesia (venous catheter fitted before sedation to limit the dose)
- ➔ Supine position
- ➔ Clipping:
 - abdominal for cystocentesis
 - perineal
- ➔ Disinfection
- ➔ Cystocentesis
- ➔ Immobilization of the penis with a clamp (Fig. 5.3)



Fig. 5.3

USING THE PROBE

- ➔ Sterilize the probes beforehand
- ➔ Set the ultrasonic equipment to medium power
- ➔ Set the water to maximum, continuous jet
- ➔ Move the probe back and forth to avoid a build-up of heat (Fig. 5.4)
- ➔ Where there is a single calculus, regularly position the probe to contact it in order to break it down

The proximal urethra has been cleared when advancing progressively the probe into the urethra (Fig. 5.5).



Fig. 5.4



Fig. 5.5

APPLICATIONS & ADVICE ON USAGE

Urolithiasis probes are compatible with the whole range of ACTEON® devices. Using ultrasonics for this treatment means the work can be done quickly and efficiently. Urolithiasis probes are connected to the device in the same way as tips.



Cat calculus probe – Ref. F00257



Dog calculus probe 102mm – Ref. F00256



Dog calculus probe 156mm – Ref. F00258



Photo: Dr. Vernay



HYGIENE MAINTENANCE

Facts & Figures

Viral cross-contamination is a constant concern in feline dentistry in view of the high prevalence of viral infections.

Cleaning and decontamination must precede sterilization as part of a strict protocol. This applies to instruments but equally to equipment and drapes. Cleaning is the necessary first step of any disinfection process. Cleaning removes organic matter, salts, and visible soils, all of which interfere with microbial inactivation. The physical action of scrubbing with detergents and surfactants and rinsing with water removes substantial numbers of microorganisms. **If a surface is not cleaned first, the success of the disinfection process can be compromised.** Removal of all visible blood and inorganic and organic matter can be as critical as the germicidal activity of the disinfecting agent. When a surface cannot be cleaned adequately, it should be protected with barriers (e.g. digital sensors, radiology tube).

In contrast to disinfection, sterilization destroys all microorganisms, including substantial numbers of resistant bacterial spores. Disinfection does not ensure the degree of safety associated with sterilization processes.

Heat is by far the most broad spectrum method of disinfection: moist heat is more effective than dry heat, especially under pressure (steam autoclave). Recommended sterilization cycle in an autoclave is 121°C at 15psi for 15 mins or 126°C at 20 psi for 10 mins.

For the protocol of cleaning, disinfection, decontamination, sterilisation of ACTEON® accessories (handpiece, tips, wrenches, etc.) refer to the manual that comes with the device.

Cleaning & Decontamination

Cleaning and decontamination of instruments (tips, wrenches, etc.) may be performed by immersion for 15 minutes with **Septol Instruments Enzymatic** and equipment and surfaces with **Septol Spray** (bactericidal, virucidal and fungicidal product).

Septol Wipes may be used for disinfection and cleaning, and disinfection of small smooth equipment surfaces (medical devices, turbines, contra-angles, trays, handpieces, endoscopy optics, and lighting equipment).



Fig. 1.1: Scaler sleeve contaminated with blood



Fig. 1.2: Septol range

- <http://www.abcdcatsvets.org/disinfectants/>: accessed on April 17, 2017
- <https://www.cdc.gov/oralhealth/infectioncontrol/questions/cleaning-disinfecting-environmental-surfaces.html>: accessed on April 17, 2017
- Kampf G, Grotheer D, Steinmann J. Efficacy of three ethanol-based hand rubs against feline calicivirus, a surrogate virus for norovirus. J Hosp Infect. 2005, 60(2):144-9
- Levy et al. "2008 American Association of Feline Practitioners" feline retrovirus management guidelines. Journal of Feline Medicine and Surgery 2008, 10: 300-316
- Park GW, Barclay L, Macinga D, Charbonneau D, Pettigrew CA, Vinjé J. Comparative efficacy of seven hand sanitizers against murine norovirus, feline calicivirus, and GII.4 norovirus. J Food Prot. 2010, 73(12):2232-8
- Yagami K, et al. Studies on viral respiratory disease in laboratory cats. I. Isolation of feline herpes virus and choice of proper disinfectant. Jikken Dobutsu 1982, 31(1):27-35.

Riskontrol

Ris<ontrol®

Riskontrol - Box of 250 non-sterile yellow tips
Ref. 201666



Riskontrol - Box of 250 non-sterile white tips
Ref. 201664



Riskontrol Ecologic - Box of 250 non-sterile tips
Ref. 201705



Riskontrol Sterile -
Box of 96 sterile white tips under individual blister
Ref. 201770



Riskontrol Total Protect -
Box of 100 non-sterile blue tips with plastic sheath
Ref. 201750

Riskontrol Total Protect -
Box of 100 non-sterile white tips with plastic sheath
Ref. 201751



Septol range



Septol spray - 750ml
Ref. 268301



Septol spray - 5L
Ref. 268300



Septol wipes
Ref. 210609

Septol Empreinte - 1L
Ref. 268322
Septol Empreinte - empreintes immersion tank
Ref. 268325



Septol Aspiration
Ref. 210297



Septol Rotative - 2L
Ref. 268305
Septol Rotative - rotative immersion tank
Ref. 268326



Septol Mains - 6x 300ml
Ref. 268290



Septol Savon Doux - 1L
Ref. 268507
Septol Savon Doux - 5L
Ref. 268506
Septol Savon Doux - Bottle for wall dispenser
Ref. 268510
Septol Savon Doux - Metal wall dispenser
Ref. 268511



Diagerm
Ref. E00017



Septol Enzymatic - 1L
Ref. 268291



SEPTOL Powered Gloves (10 boxes of 100)
XS: Ref. 219300
S: Ref. 219305
L: Ref. 219310
XL: Ref. 219315



SEPTOL N.P. Nitrile Gloves (10 boxes of 100)
XS: Ref. 219400
S: Ref. 219405
L: Ref. 219410
XL: Ref. 219415

SEPTOL N.P. Nitrile Gloves (1 box of 100)
S: Ref. 219278
L: Ref. 219279
XL: Ref. 219280



SEPTOL N.P. Aloe Vera (10 boxes of 100)
XS: Ref. 219500
S: Ref. 219505
L: Ref. 219510
XL: Ref. 219515

Advice for water pump maintenance

- Change the water pump regularly. There is no need to fill the pump reservoir completely. Any water that stagnates for too long may cause algae profusion, which can damage the water filter.
- Use demineralized water with DIAGERM disinfectant to avoid algae profusion.
- Regularly (about twice a year) check the filter on the water supply line. Regularly run it under the tap and dry it with compressed air. Before replacing the filter, drain water from the line.
- Do not leave the pump under pressure when not in use.



Photo: Dr. Vernay

CONNECTORS, LINES, FILTERS		
CONNECTORS	References	
Male CPC Connector	E32127	
Female CPC Connector	E32129	
Male Staubli Connector Water	E49021	
Female Staubli Connector Water	E49010	
Male Staubli Connector Air	E10372	
LINES	References	
Water line (green)	A65016	
Air line (blue)	A65017	
FILTER (P5, COCOON)	References	
Filter and seal	F10389	
Complete filter	F10386	



A

AirMax®	71
Air-N-Go® easy	70
Antibiting protection	15

B

Bone curettes	83
Bone Surgery Kit	95

C

Cav-Hycal™	77
Cimavit™	65 & 77
Cocoon® Hygienist Led	56
Cocoon® Mobile	55
Cocoon® Spray	57
Connectors	118
Contra-angle (Cocoon Spray)	57
Coolsin™ Plus	100
Curettes	84

D

Dental Forceps	82
Diagerm	114

E

EDETAT	64
Electrodes box	97
Elevators	80
Elevators - Periosteal	81
EndoVet Kit	46
Etik™ Collagène	95 & 97
Extraction Kit	95

F

Filters	115
F.L.A.G. for B.Led	64

G

Gutta Percha	65
--------------	----

H

Handpieces - Slim B.Led	63
Handpiece - Newtron®	63
Handpiece - Newtron® Led	63
Handpiece - Suprasson	63
Hycal™	65 & 77

I

Imaging Plates	17
Imaging Plate - Bag	17
Imaging Plate - Cover	17
Imaging Plates - Kit Size 4	17
ImplantCenter™ 2	94

L

Lines	115
-------	-----

M

MiniLED® Active	76
Monitor TFT	36

N

Newtron® P5 Booster	54
Newtron® P5 B.Led	53
Newtron® P5XS	53
Newtron® P5XS B.Led	53

P

Paper points	65
Piezotome® Cube	92
Piezotome® Cube Star	93
Powder Polishers	71
PR Bond™	77
PR Scell Glass Ionomer	77
PR Etch™	77 & 100
Probes	84
Probes - cat calculus	100
Probes - dog calculus	100
PSPIX²	16

R

Riskontrol®	112
-------------	-----

S

Salvizol™ E.D.T.A	65
Scissors	83
Sealite™ Regular	64
Sealite™ Ultra	64
Septol™ Aspiration	113
Septol™ Empreinte	113
Septol™ Enzymatic	114
Septol™ Gloves	115
Septol™ Mains	114
Septol™ Rotative	114
Septol™ Savon Doux	114
Septol™ Spray	113
Septol™ Wripes	113
Sheaths for Sopix® Series	15
Sitsalicine™	65
Sopix® inside	21
Sopix® inside 2	21
Sopix® Series	14
SoproCare®	22
SoproLife®	23
Sopro® 717 First	24
Sopro® Imaging Vet	25 & 31
Symbioz+	34
Symbioz Cam+	35
Symbioz Flow	35
Symbioz Led	35
Syndesmotome - Chompret	81

T

Tip - 1	62
Tip - 1S	62
Tip - 2	62
Tip - 3	62
Tip - 10P	62
Tip - 10X	62
Tip - 10Z	62
Tip - BS1L	95
Tip - BS1RD	95

Tip - BS1S	95
Tip - BS2L	95
Tip - BS2R	95
Tip - ET18D	47
Tip - ET25L	47
Tip - ET40	47
Tip - ETBD	47 & 77
Tip - EX1	47 & 77
Tip - H3	47
Tip - Irr25-45	46
Tip - LC1XL	95
Tip - PLU60	46
Tip - PLU90	46
Tip - PLU110	46
Tip - PV1	47
Tip - SPR30	46
Tip - SPR60	46
Tip - SPR80	46
Tweezers	83

U

UbiCam	32
UbiLight	33
Ubipack Vet	30

V

Veterinary kit	85
----------------	----

W

Water pump	62
Wrenches	62

X

X-Mind® DC	18
X-Mind® DC Mobile	18
X-Mind® unity	20



