Dentistry • Imaging • Endoscopy

VETERINARY GUIDE











Solutions for higher standards of care

EN

ACTEON Veterinary



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 2018 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.
- Endoscopic medical technologies and piezoelectric surgery

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

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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.

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

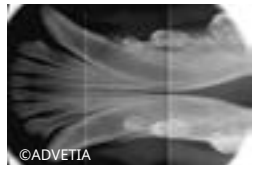
Clinical Application

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.

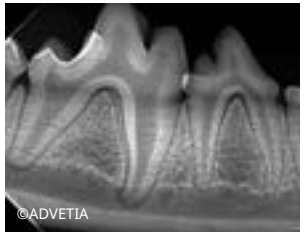


Fig. 1.4a: Mandibular Premolar 4 and Molar 1 in the dog



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).

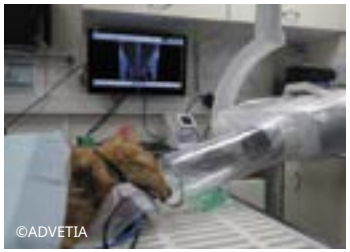


Fig. 1.5: Direct visualization of the image on the screen with the sopix2 sensor

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).

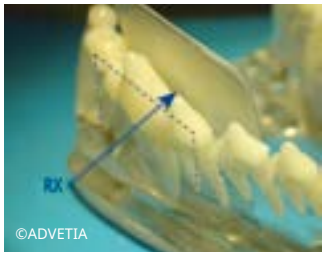


Fig. 1.6: Parallel radiographic technique



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 & 1.9)
- Canines, incisors with an intra-oral film in the occlusal position (Fig. 1.10)
- Mandibular or maxillary arch with an extra-oral film

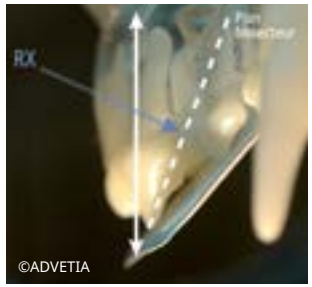


Fig. 1.8: Principle of the bisecting angle technique – retro-alveolar film



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



Fig. 1.9b: PSP!X2 plate placed intraorally for bissecting angle technique

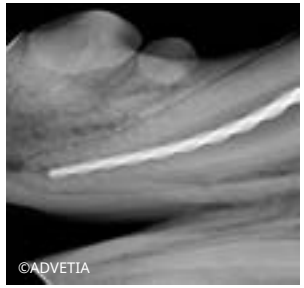


Fig. 1.9c: K-file at working length depicted by bisecting angle technique

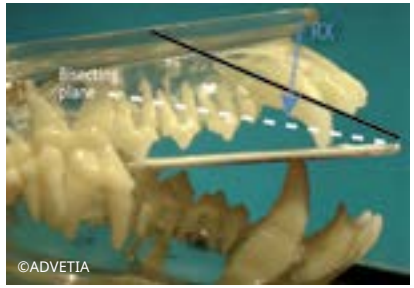


Fig. 1.10: Principle of the bisecting angle technique – film in the occlusal position

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.

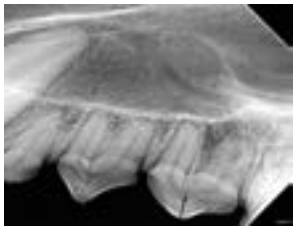


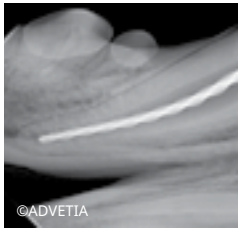
Fast and easy to use

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

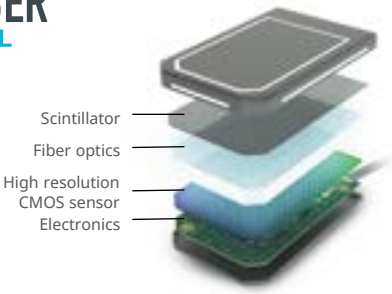
Ace technology

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

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.



SOPIX²

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

SOPIX² USB SENSOR SIZE 1
High definition - Ref. S_802_0010

SOPIX² 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 and cat		Cat and miniature dog	Rabbit and 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

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

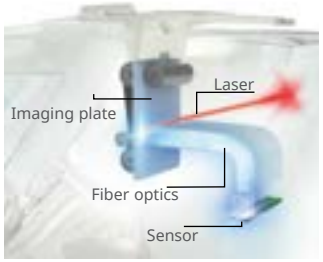
The First Personal Imaging Plate Scanner



PSPIX², kit size 4
Ref. S_702_0012



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



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**.



Medium-sized to large dog	Small dog and cat		Cat and miniature dog		Rabbit and 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

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



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

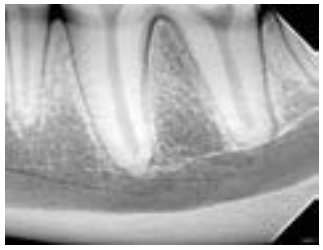
X MIND unity

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

IMAGING
Dental radiology equipment

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.

SOPIX®² INSIDE SENSOR SIZE 2
High definition - Ref. S_802_5007V

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

SOPIX®² INSIDE SENSOR SIZE 1
High definition - Ref. S_802_5006V

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

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

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, pictures, video, and more, with ability to print and export them

Ref. 505020



IMAGING
Dental radiology equipment



Photo: Dr. Vernay



MEDICAL ENDOSCOPY

ABOUT ENDOSCOPY FOR ORO-DENTAL & ENT CONDITIONS

Facts & Figures

- Otitis media can be identified in around 50% of cases of otitis externa (Spreull, 1964).
- The eardum can be examined by conventional otoscopy in, at best, 75% of cases where the ear is healthy and in 28% of cases where there is chronic otitis (Little, 1989).
- Performing biopsies under rhinoscopy will enable a nasal condition to be diagnosed in 80-90% of cases (Lent et al, 1992; Knotek et al.,2000).
- Per-endoscopic trans-tympanic traction of middle ear polyp in cats resulted in a high (94%) success rate with a low recurrence rate (13.5%) and lower complications (8%) than ventral bulla osteotomy or traction alone (Greci et al. J Feline Med Surg, 2014).
- Though not accurate as CT, which resulted in a diagnosis of nasal tumors in 92% of dogs and cats examined, rhinoscopy was able to diagnose a tumor in 64% of the cases (Finck et al. Can Vet J, 2015).

Only endoscopy offers the perfect means of examining natural cavities that are difficult to access. Modern technology provides a clear view of these structures, which is enlarged onto a video screen. The information gained by this kind of examination is far more useful and precise than the ones provided by conventional otoscopy. Apart from its value in visual diagnosis, endoscopic examination can be used when performing diagnostic or therapeutic procedures. Endoscopic examination must form an integral part of the oral examination in rabbits and other rodents and the ENT examination in carnivores.



Dental spurs in a rabbit



Rabbit cheek ulcer



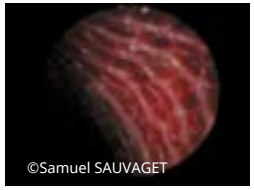
Endoscopically-assisted FNA of a laryngeal mass in a cat



Nasal tumor



Pharyngeal Eosinophilic grnulomatous lesions in a dog



Snake lung

MEDICAL ENDOSCOPY

Uses	Ears	Nasal cavities	Mouth / Pharynx / Larynx
Clinical examination	• External auditory canal and eardrum (secretions, inflammation, lesions, tumors) • Diagnosis of ottitis externa / otitis media	• Inflammation • Secretions • Foreign bodies • Polyp, tumor • Figured elements	• Oral and dental examination of rabbits and rodents (malocclusion, abscess, tumor) • Pharynx: foreign bodies, inflammation, tumor • Larynx: inflammation, paralysis, tumor
Diagnostic procedures	• Myringotomy • Cytology • Biopsy	• Cytology • Biopsy	• Biopsy
Therapeutic procedures	• Curettage of earwax and debris with a Billeau ear loop • Removal of foreign bodies • Irrigation / aspiration with catheter • Curettage, drainage of tympanic bulla • Trans-tympanic traction of middle ear polyp • Instillation of medicines in situ	• Removal of foreign bodies • Endoscopy-assisted surgery	• Removal of foreign bodies • Endoscopy-assisted tooth trimming

UBIPACK VET

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 examing adnexae of the eye or in fundus examination (Fig. 2.1).



Fig. 2.1: Retina

MEDICAL ENDOSCOPY
Medical endoscopy equipment

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.

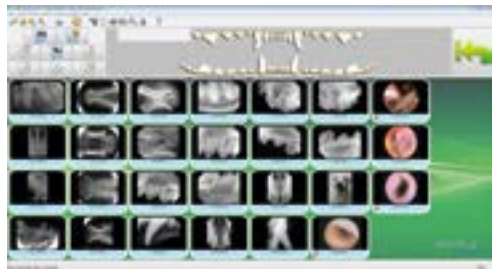
Composed of:
- USB camera, 1/3" CCD, C-mount
- A VETscope 0° autoclavable, C-mount
- LED light source with its cable (Storz connectors included)
- Three flexible instruments
- SOPRO IMAGING VET
- One holder

Delivered in its dedicated suitcase.



(Computer not included)

SOPRO imaging Veterinary



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)

UBICAM digital diagnosis set



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

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 (laryngoscope, tracheoscopy).
- Pediatric-type fiberscope 3.5 or 4mm (retrograde rhinoscopy, trachea-bronchoscopy).



Coupler Ref. S_067_0002

MEDICAL ENDOSCOPY
Medical endoscopy equipment

UBIlight



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



Photo: Dr. Vernay

SYMBIOZ +

SYMBIOZ+ allow you to perform high quality endoscopic procedures (arthoscopy, 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



		SYMBIOZ + 100 Ref. S_K30_1012	SYMBIOZ + 300 Ref. S_K30_1014	SYMBIOZ + 500 Ref. S_K30_1016
	FULL HD MONITOR	✓	✓	✓
SYME	SYMBIOZ Cam+ RECORDER	✓	✓	✓
SYME	SYMBIOZ Led	✓	✓	✓
SYME	SYMBIOZ Flow		✓	✓
SYMORE	MASTER			✓

MEDICAL ENDOSCOPY
Medical endoscopy equipment

SYMBIOZ 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



SYMBIOZ Led

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



SYMBIOZ 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

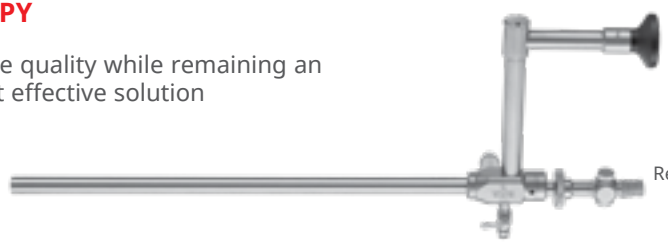


SCOPES

- Multilayer rod lenses optimized for optical performance and increased contrast
- Sapphire proximal and distal window for scratch resistance
- Gold used in distal parts to increase scopes lifetime
- Plastic Eyecup for electrical isolation
- 3 tube design to ensure durability
- Up to 500 cycles in autoclave sterilizers

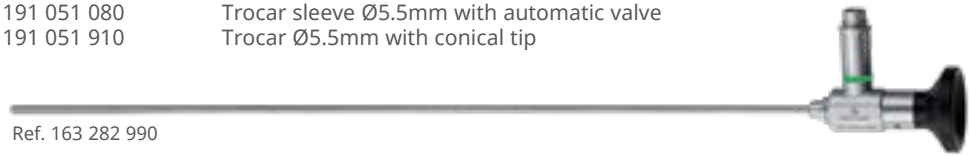
LAPAROSCOPY

Superior image quality while remaining an extremely cost effective solution



Ref. 162 102 730

163 312 990	Mini-laparoscope Ø3mm, 0°, 301mm
191 031 070	Trocar sleeve Ø3.5 mm with valve, 70mm
191 031 910	Trocar Ø3.5mm with conical tip
162 102 730	Straight forward laparoscope 10mm, 0°, Ø5mm, 268mm
191 101 070	Trocar sleeve Ø10mm, 95mm
191 101 900	Trocar Ø10mm with conical tip
162 103 250	Laparoscope HD Ø10mm, 0°, 323mm
162 053 150	Laparoscope HD Ø5.5mm, 0°, 316mm
191 101 080	Trocar sleeve Ø10mm with silicone valve and stopcock, 97mm
191 101 900	Trocar Ø10mm with conical tip
191 051 080	Trocar sleeve Ø5.5mm with automatic valve
191 051 910	Trocar Ø5.5mm with conical tip



Ref. 163 282 990



Trocar



Ref. 191 101 070

To view the full range, please contact your local sales rep.

MEDICAL ENDOSCOPY
Medical endoscopy equipment

ARTHROSCOPY & ENT

A wide variety of ENT products to meet various clinical needs and a range for arthroscopy from 4.0mm telescopes to the small-joint arthroscopic lines



Ref. 160 520 880

161 191 040	Endoscope Ø1.9mm, 104mm
191 191 111	Sheath, 1 fix stopcok, 73mm
161 240 982	Endoscope Ø2.4mm, 30°, 98mm
191 240 933	Sheath, 1 rotatable stopcock, 69mm
191 240 985	Trocar Ø2.4mm with conical point
161 271 770	Endoscope Ø2.7mm, 0°, 175mm
161 271 772	Endoscope Ø2.7mm, 30°, 175mm
191 271 734	Sheath, 2 rotatable stopcocks, for endoscopes Ø2.7mm (0° or 30°), 119mm
191 271 755	Trocar Ø2.7mm with conical tip
161 411 802	Endoscope Ø4mm, 30°, 175mm
191 401 757	Sheath, 2 rotatable stopcocks, for endoscope Ø4mm (0° or 30°), 119mm
191 401 755	Trocar Ø4.0mm with conical tip
160 520 880	Vetscope C-mount
160 520 870	Vetscope CS Mount, Ø5.2-16mm, 87mm

Cystoscopy

Broad product offerings for the most demanding urology procedures



Ref. 395 400 115

163 282 992	Endoscope Ø 2.7mm, 30°, 301 mm
191 273 202	Sheath Ø 14.9mm
191 273 052	Diagnostic sheath Ø 3.15mm
395 400 009	5Fr. monopolar button electrode
395 400 013	5Fr. monopolar needle electrode
395 400 023	5Fr. flexible bipolar electrode, button
395 400 024	5Fr. flexible bipolar electrode, needle
395 400 111	Scissors 5Fr. semi-rigid
395 400 113	Foreign body forceps, 5 Fr. semi-rigid
395 400 114	Biopsy body forceps, 5 Fr. semi-rigid
395 400 115	Flexible forceps (image catalogue vet)
395 400 116	Flexible biopsy forceps (image catalogue vet)
395 400 117	Flexible cissors (image catalogue vet)



Ref. 395 400 116



Ref. 395 400 117

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

ACCESSORIES

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.

DENTISTRY EQUIPMENT / ACCESSORIES
Scaling and periodontal pockets treatment

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

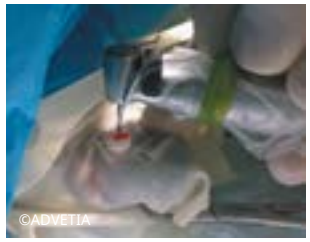
DENTISTRY EQUIPMENT / ACCESSORIES
Endodontics

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 vitalpulpectomy with sterile instrument and irrigation - step 2



Hemostasis following partial vital pulpectomy - step 3



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



Restorative matérial - 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 rot 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
- 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. 3.8: 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

DENTISTRY EQUIPMENT / ACCESSORIES
Endodontics



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

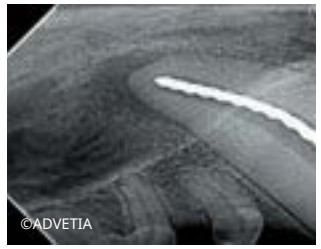


Fig. 3.12: Master K-file



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*

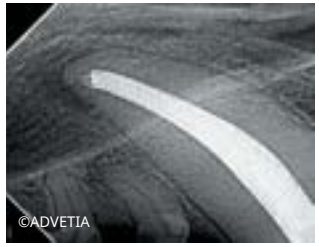


Fig. 3.17: Final Gutta-percha obturation

Scaling / debridement range



Water pump + connections
Ref. F00051



No.1 Tip
Ref. F00246



No.1S Tip
Ref. F00245



No.PV1 Tip
Ref. F00259



Universal wrench
Ref. F00406



Autoclavable dynamometric blue wrench
Ref. F81322



Autoclavable dynamometric green wrench
Ref. F81320

Endodontics range



ETBD
Ref. F88020

ET18D
Ref. F88017



Sealite Regular
Ref. 266264



Paper points assort N°15-40/2% - Ref. 200726
Paper points assort N°45-80/2% - Ref. 200727



Salvizol E.D.T.A
Ref. 266115

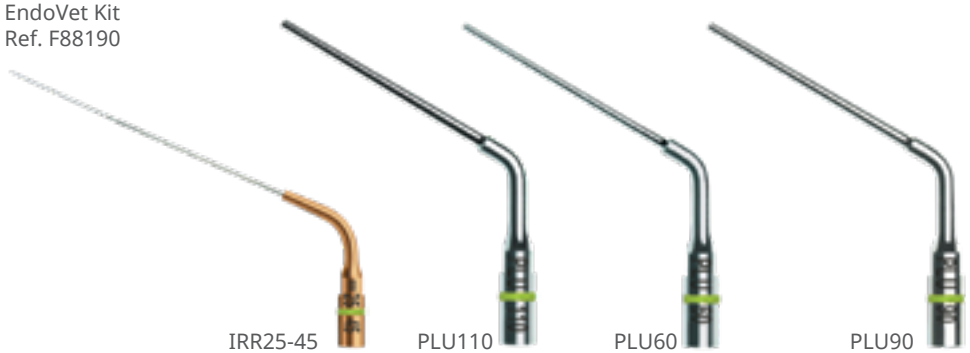


Gutta percha assort N°15-40/2%
Ref. 201116

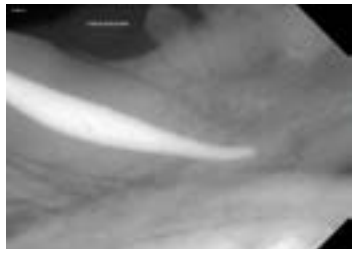
EndoVet kit.

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



IRR25-45
PLU110
PLU60
PLU90



Obturation done with SPR 80



SPR 60
SPR30
SPR80



ET25L
Ref. F88022

ET40
Ref. F88012

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

DENTISTRY EQUIPMENT / ACCESSORIES
Ultrasonics

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.



Low frequency

High frequency

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.



Low amplitude

High amplitude

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)

DENTISTRY EQUIPMENT / ACCESSORIES
Ultrasonics

Newtron® Technology

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.

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
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
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 veterinaries 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 then 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 adjestments chosen. The more refined design of the handpiece guarantees perfect balance regardless of the grip position.

DENTISTRY EQUIPMENT / ACCESSORIES
Ultrasonics equipment

NEWTRON P5XS B LED



Versatile and 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 B LED



Design and ergonomic

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

Ultrasonics equipment

NEWTRON
BOOSTER



Compact and efficient

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

DENTISTRY EQUIPMENT / ACCESSORIES



Photo: Dr. Vernay

COCOON® HYGIENIST LED

Combined Motor / Ultrasonics Generator



More intensive use

A genuine dental unit that offers:

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).



The possibility of carrying out 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.

Riskontrol®

Disposable tips for a air-water syringe



Box of 250 yellow tips
Ref. 201666

DENTISTRY EQUIPMENT / ACCESSORIES
Ultrasonics equipment

- Dimensions: Width 280 x Depth 260 x Height 100mm
- Weight: 3800g
- Frequency: 28-36kHz
- Motor: internal spray and light, 60 to 40 000rpm ±10%; rotation in both directions
- Syringe: Water, Air, Spray (water + air)
- RISKONTROL tips supplied

Contra-angles available (U.N.I) : see page 55.

	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: 28-36kHz
- Motor: external spray, 60 to 40 000rpm ±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.

DENTISTRY EQUIPMENT / ACCESSORIES
Ultrasonics equipment

NEWTRON® SLIM B.LED HANDPIECE



Ref. F12905

Compatible with the new range of NEWTRON® devices, the NEWTRON® SLIM B.LED handpiece is thinner, shorter and ligher, 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.

NEWTRON® HANDPIECE



Ref. F12281

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.

NEWTRON® LED HANDPIECE



Ref. F12609

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.



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.


Low power and amplitude: green


Medium power and amplitude: yellow


High power and amplitude: blue


Very high power and maximum amplitude: orange

- 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.



DENTISTRY EQUIPMENT / ACCESSORIES
Ultrasonics equipment

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

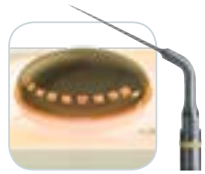
Prophylaxis





Endodontics





Surgical endodontics





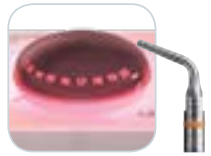
Periodontics





Conservative and restorative dentistry





Settings

	NEWTRON BOOSTER	NEWTRON P5 B.LED	NEWTRON P5XS	NEWTRON P5XS 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
Accessories						
Polishing contra-angle (1:1) (not supplied)					Yes	Yes
Straight handpiece (1:1) (not supplied)					Yes	Yes
Multiplier contra-angle Red Ring 1:5 internal spray (not supplied)						Yes
Multiplier contra-angle Red Ring 1:3 external spray (not supplied)					Yes	
Power setting						
No.1 tip	7 - 9	Blue	Blue	Blue	7 - 9 scaling mode	7 - 8
No.1S tip	7 - 10	Blue	Blue	Blue	7 - 10 scaling mode	7 - 8
PV1 tip	1 - 3	Green	Green	Green	1 - 3 endo mode	1 - 2
ETBD tip	6 - 8	Yellow	Yellow	Yellow	6 - 8 endo mode	3 - 4
ET18D tip	6 - 10	Yellow	Yellow	Yellow	8 - 10 endo mode	3 - 5
EX1 tip	6 - 8	Yellow	Yellow	Yellow	1 - 4 scaling mode	6 - 7
ET25L tip	3 - 5	Yellow	Yellow	Yellow	8 - 10 endo mode	3 - 5
ET40 tip	3 - 5	Yellow	Yellow	Yellow	8 - 10 endo mode	3 - 5
PLU60	3	Green	Green	8 endo mode	3	3
PLU90	3	Green	Green	8 endo mode	3	3
PLU110	3	Green	Green	8 endo mode	3	3
SPR30	3	Green	Green	8 endo mode	3	3
SPR 60	3	Green	Green	8 endo mode	3	3
SPR80	3	Green	Green	8 endo mode	3	3
IRR25-45	5	Green	Green	10 endo mode	5	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

DENTISTRY EQUIPMENT / ACCESSORIES

Settings

U.N.I

Handpieces·Motors·Turbines

Major partner for equipping dental chairs, ACTEON® is satisfying everyday clinical requirements even better with U.N.I, a new range of turbines, motors and contra-angles.
Due to high quality, inner kinematics and innovative features, U.N.I rotary instrumentation helps practitioners to deliver safe decisive treatments that reassure the patients.







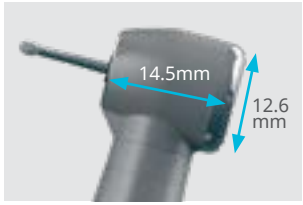
DENTISTRY EQUIPMENT / ACCESSORIES
Rotary Instruments

U.N.I

Turbines

Think durable with U.N.I turbines due to the ultra-resistant rotor and enduring ceramic ball bearings.
Get better efficacy on load thanks to the superior and constant torque and maximize precision with the vibration-free rotation.
Whilst operating gently with a lower sound volume and U.N.I TB.S small head size turbines providing enhanced ergonomics.

Power





U.N.I. TB turbine
Ref. F28122



U.N.I. TB LED turbine
Ref. F28120

Accessibility





U.N.I. TB.S turbine
Ref. F28123



U.N.I. TB.S LED turbine
Ref. F28121



U.N.I. Fix coupling
Ref. F28124



Multiflex coupling
Ref. F28125z

Preserve tissues and protect your patients with the U.N.I contra-angles and straight handpiece. The exclusive anti-heating system of U.N.I CA 1:5 contra-angles, with ceramic ball in the pushing button, avoids heat transfer and minimizes risks of patient burning. Air&water sprays, focused on bur extremity together with the double powerful LED lighting ensures a perfect cooling while avoiding glare effect.

U.N.I

Handpieces

Safety



Visibility



Precision





U.N.I. CA 1:1 contra-angle
Ref. F28203



U.N.I. CA 1:5 contra-angle
Ref. F28204"



U.N.I. CA 1:1 LED contra-angle
Ref. F28200



U.N.I. CA 1:5 LED contra-angle
Ref. F28201



U.N.I. HP straight hanpiece
Ref. F28202

DENTISTRY EQUIPMENT / ACCESSORIES
Rotary Instruments

U.N.I

Motors

Get the power in your hands and preserve your working capital with light U.N.I micro-motors providing effortless procedures. Resistant and ergonomics, U.N.I motors are supplied with smart electronic modules easy to integrate into dental chairs.

Performance



98g

U.N.I. MT motor (brush)
Ref. F28400

Endurance



79g

U.N.I. MT.BL motor (brushless)
Ref. F28401

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 prophy 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

DENTISTRY EQUIPMENT / ACCESSORIES
Polishing

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
- Water supply: irrigation flow at 15ml/min ± 5ml/min
- Intake air pressure: Static 3 bar minimum

DENTISTRY EQUIPMENT / ACCESSORIES
Polishing equipment

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



Polishing paste - 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 recommended: indirect pulp capping (**Cav-Hycal**). (see p.77)
- 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: Paring of the carious lesion close to the dental pulp



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

DENTISTRY EQUIPMENT / ACCESSORIES
Tooth restoration

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: Paring of a lesion with a diamond round tip (EX1)

Obturation with dental composite resin



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

- 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 manufacter'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).

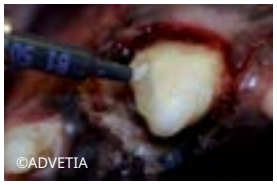


Fig. 3.32:
Placement of the resin composite on the tooth prepared with PR Bond™



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 / ACCESSORIES
Tooth restoration



Canine tooth prior to composite restoration



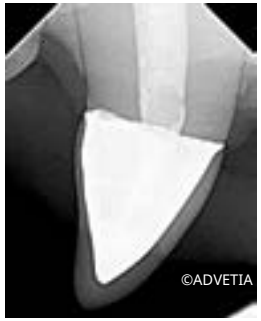
Canine tooth after composite restoration



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

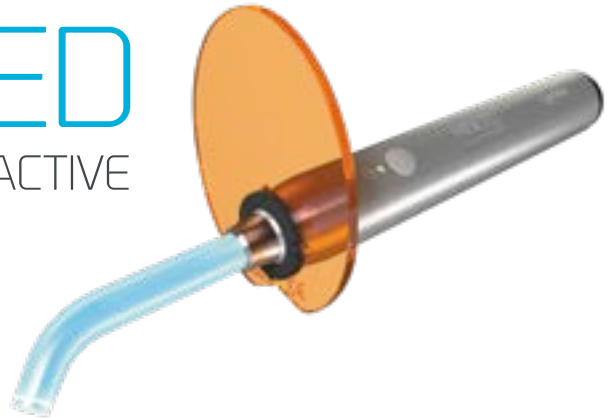


Ceramo-metallic crown



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

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 / ACCESSORIES
Tooth restoration equipment

Accessories



EX1
Ref. F02040



ETBD
Ref. F88020



PR Etch – Ref. 200322



PR Bond – Ref. 200948



Cimavit – Ref. 213859



PR Cell Glass Ionomer
Base Cement – Ref. 213770



Cav-Hycal – Ref. 213876



Hycal – Ref. 259314



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 power 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).

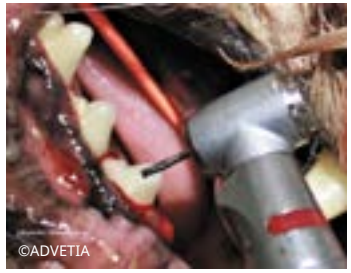


Fig. 4.1: Bur ready to section the tooth



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

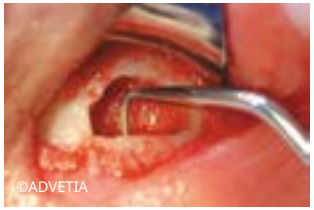


Fig. 4.5: Apical resection- Intraoral approach to canine tooth - retrograde cavity prep with ultrasonic tip

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).

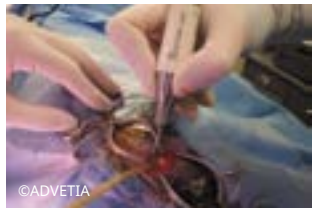


Fig. 4.6: Apical resection- ventral approach to canine tooth 1- bone trephination with Piezotome2



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

Dynamic power responsiveness for superior 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.

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

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.

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: 5000g
- Motor speed: 100 to 40,000rpm/min

Accessories



BS II Kit - Ref. F87509

BoneSurgery

Clean and thin cut for maximal bone volume



Extraction II Kit – Ref. F87546

Extraction

For maximum bone preservation

SURGERY
Surgery equipment



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).

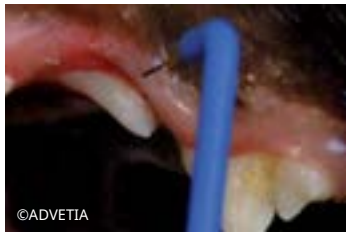


Fig. 4.12: Incision using an electric scalpel

SURGERY
Incisions / Haemostasis

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)

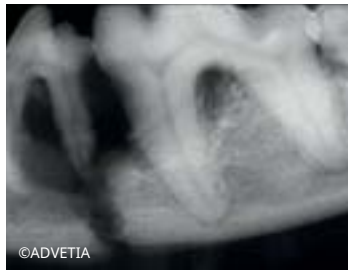


Fig. 4.13



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 ± 2min
- Remove excess resin material and polish

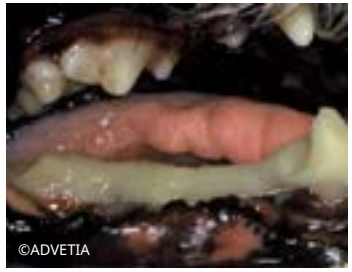


Fig. 4.15

Making an Interdental Splint Range



PR Etch - Ref. 200322



Coolsin Plus - Ref. 201070

SURGERY





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

UROLITHIASIS



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.

· *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.*

HYGIENE/MAINTENANCE

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



Septol spray 750ml
Ref. 268301

Septol enzymatic
Ref. 268291

Septol wripes
Ref. 210609

Fig. 1.2: Septol range

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.



Diagerm
Ref. E00017

- 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.

HYGIENE/MAINTENANCE



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	

nouveau PSPIX

SYSTEM

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

IMAGING PLATES

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

SOPIX & SOPIX² & SOPIX² INSIDE

SIZE 1

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

SIZE 2

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

SYSTEM

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

WORKSTATION CONFIGURATION

WINDOWS® RECOMMENDED CONFIGURATION

- Operating system ..... Windows® 10
- Processor ..... Intel Core i5
- RAM ..... 4 GB
- Hard disk ..... 1 TB
- USB ports ..... 4 USB2 Hi-speed ports
- Graphic card ... CHIPSET NVIDIA® or ATI® 2 GB unshared memory compatible DirectX 9 or more
- USB Chipset ..... Intel® or NEC® / RENESAS®
- Screen resolution ..... 1280 x 1024 or more
- Ethernet board ..... 1 Gbps

WINDOWS® MINIMUM CONFIGURATION REQUIRED

- Operating system ..... Windows® 7 SP1
- Processor ..... Intel® Core 2 duo - 3 GHz
- RAM ..... 2 GB
- Hard disk ..... 250 GB
- USB ports ..... 4 USB2 Hi-speed ports
- Graphic card ... 512 MB RAM unshared memory compatible DirectX 9
- USB Chipset ..... Intel® or NEC® / RENESAS®
- Screen resolution ..... 1280 x 1024
- Ethernet board ..... 100 Mb/s – 1 Gbps

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Veterinary



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