

Small Animal Arthroscopy

Instrument Set by Dr. Brian Beale



Canine Arthroscopy



Credentials

Brian Beale DVM, Diplomate ACVS
Gulf Coast Veterinary Specialists, Houston, TX
Surgeon and Owner, 1992-present
Compassion First Pet Hospitals, Red Bank, NJ
Head of Education, Training and Research, 2016-present

I remember performing my first arthroscopic procedure with my mentor Dr. Robert Goring at University of Florida in 1987. I was skeptical that arthroscopy would ever develop into a clinically practical modality in companion animals. The poor quality of the image and lack of dedicated hand instruments made early small animal arthroscopy impractical.

Fortunately, those days are long gone. Image quality now is superb, thanks to the innovation of high definition cameras and dramatic improvement in arthroscope optics by KARL STORZ Endoscopy and others.

I was very humbled when asked by KARL STORZ to assist them in their design of a dedicated line of high quality hand instruments for use in companion animals. Their dedication to develop instruments for specific indications and of appropriate size and durability will improve surgical expertise and outcome. Early on, the arthroscope was primarily used for diagnostic purposes or very simple removal of cartilaginous or osteochondral fragments. Currently, the indications and applications of arthroscopy seem endless. Arthroscopy provides a view of the anatomic structures of the joint that far exceeds that seen by arthrotomy. Wayne McIlwraith said it best back in 2003 in his forward in the Textbook of Small Animal Arthroscopy where he recognized the advantages of arthroscopy over arthrotomy including decreased surgical morbidity, greatly enhanced visualization and diagnostic evaluation of joints, and an enhanced success rate. The application of arthroscopy to the relatively small joints of the dog has been made possible through the development of small joint arthroscopy equipment and the perseverance of pioneers in the field such as George Seimering, Myron Person, Jean Francois Bardet, Bernadette Van Ryssen, Don Hulse, Wayne Whitney, Kurt Schulz, Ian Holsworth, Ken Bruecker, Jimi Cook, Chad Devitt, Tim McCarthy, Antonio Pozzi, Caleb Hudson and others.

Arthroscopy has become the modality of choice for the diagnosis and treatment of many diseases of the joint in dogs. Arthroscopic surgery is minimally invasive, thus reducing postoperative pain and accelerating recovery. Arthroscopy improves visualization by magnifying and intensely illuminating the joint within its natural fluid medium. Finally, because of its low morbidity, arthroscopy is an excellent choice when it becomes necessary to treat two or more joints at the same time. The benefits of complete visualization and magnification of articular surfaces and structures cannot be overstated. Surgeons have much improved ability to diagnose and treat partial CrCL tears, meniscal tears, ligamentous and tendinous injuries of the shoulder and developmental problems in the elbow, including FCP, UAP and OCD.

Arthroscopic evaluation of the integrity of the articular cartilage and extent of osteoarthritis helps the surgeon make important decisions on prognosis and long term management of the affected joints. Novel applications of arthroscopy in small animals include assessment of joints to determine their candidacy for major orthopedic surgeries such as DPO, TPO, SHO, CUE, TPLO, TTA, THR, FHO, partial arthrodesis and complete arthrodesis.

My hope is that all small animal surgeons make the commitment to become proficient in arthroscopy for the sake of the patient. This commitment includes adequate training, dedicated time to train and purchase of a high quality arthroscopic video system, hand instruments and power shaver. Most importantly, arthroscopy will become fun. You will enter a new world when viewing the joint in its natural state and under incredible magnification. Resist the temptation for mediocrity – join the rapidly expanding group of colleagues making the switch to small animal arthroscopy.

Check out our schedule of upcoming hands-on training courses at
<http://go.karlstorz.com/eventsVET>



Indications

Shoulder

- OCD and joint mice
- Microfracture
- Caudal glenoid fragmentation
- Shoulder subluxation and luxation
- Shoulder instability
- Medial and lateral glenohumeral ligament injury
- Biceps tendon tears
- Bicipital tenosynovitis
- Subscapularis tendon injury
- Septic arthritis
- Synovial Biopsy
- Osteoarthritis
- Synovitis

Elbow

- Fragmented medial coronoid process
- Biceps tendon release
- Subtotal coronoidectomy
- Abrasion arthroplasty
- Microfracture
- OCD of the humeral condyle
- Ununited anconeal process
- Incongruity
- Articular fractures
- Septic arthritis
- Synovial Biopsy
- Osteoarthritis
- Synovitis

Carpus

- Articular fractures
- Assessment of carpal trauma
- Evaluation for partial or pancarpal arthrodesis
- Carpal instability
- Septic arthritis
- Synovial Biopsy
- Osteoarthritis
- Synovitis

Hip

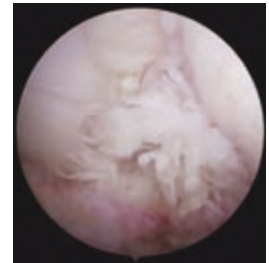
- Evaluation for DPO or TPO
- OCD and joint mice
- Osteoarthritis
- Microfracture
- Hip assessment with hip luxation
- Round ligament evaluation and repair
- Articular fractures
- Capital physeal fractures
- Septic arthritis
- Synovial Biopsy
- Synovitis

Stifle

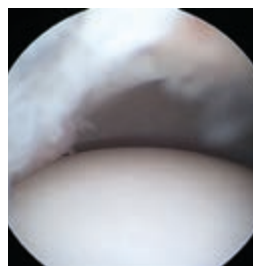
- Complete cranial cruciate ligament tears
- Partial cranial cruciate ligament tears
- Meniscal tears
- Partial meniscectomy
- Medial meniscotibial ligament release
- Medial meniscal midbody release
- Caudal cruciate ligament tears
- OCD and joint mice
- Microfracture
- Articular fractures
- Medial patellar luxation
- Trochlear groove evaluation
- Medial release incision
- Long digital extensor trauma
- Popliteal tendon injury
- Septic arthritis
- Synovial Biopsy
- Osteoarthritis
- Synovitis

Tarsus

- OCD and joint mice
- Articular fractures
- Assessment of tarsal trauma
- Evaluation for partial or pantarsal arthrodesis
- Septic arthritis
- Synovial Biopsy
- Osteoarthritis
- Synovitis
- Tarsal instability



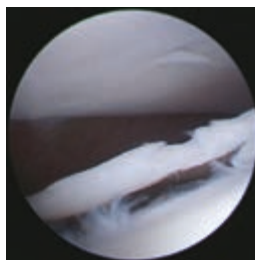
Complete cranial cruciate ligament rupture in a canine stifle



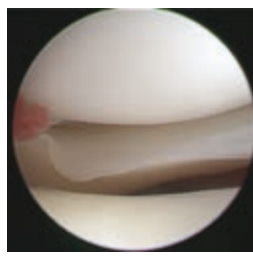
Femoral head assessment in a dog with juvenile hip dysplasia



Partial biceps tendon tear in a canine shoulder



Osteochondritis dissecans flap in a canine shoulder



Medial meniscal assessment in a canine stifle



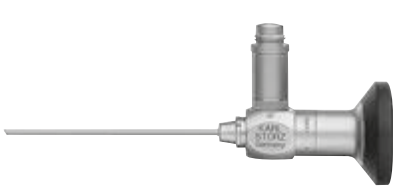
Round ligament wear and synovitis in a dog with juvenile hip dysplasia

Endoscopic photos courtesy of:
Caleb Hudson DVM, MS, Diplomate ACVS-SA, Gulf Coast Veterinary Specialists, Houston, TX

Arthroscopes

Telescope 1.9 mm, sheath diameter 2.5 mm, working length 4 cm

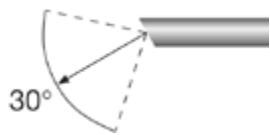
With a small diameter and short length, this telescope is ideal for the elbow in toy breeds and cats.



28305BA



64306S



28305BA

HOPKINS® Forward-Oblique Telescope 30°, diameter 1.9 mm, length 6.5 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red

64306S

High-Flow Arthroscope Sheath, with snap-in coupling mechanism, diameter 2.5 mm, working length 4 cm, one stopcock, fixed

For use with Arthroscope Sheath 64306 S

64306BT

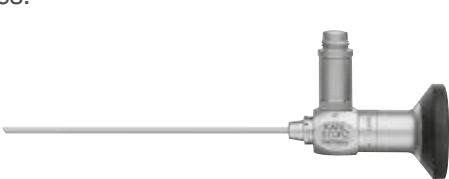
Obturator, blunt

64306BS

Obturator, sharp

Telescope 2.4 mm, sheath diameter 3.2 mm and 3.5 mm, working length 6.5 cm and 8.5 cm

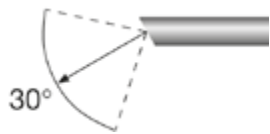
Extremely versatile, this telescope can be used in many different joints, in a variety of patient sizes.



64300BA



28303BS



64300BA

HOPKINS® Wide Angle Forward-Oblique Telescope 30°, diameter 2.4 mm, length 10 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red

28303BS

High-Flow Arthroscope Sheath, with snap-in coupling mechanism, diameter 3.2 mm, working length 8.5 cm, one stopcock, fixed

28303DS

High-Flow Arthroscope Sheath, with snap-in coupling mechanism, diameter 3.5 mm, working length 6.5 cm, two stopcocks, rotating

For use with Arthroscope Sheaths 28303BS and 28303DS

28302BV

Obturator, blunt

Telescope 2.7 mm, sheath diameter 4 mm, working length 7.5 cm

With the same outer diameter as the popular Multi-Purpose Rigid telescope, this scope is shorter and more convenient for arthroscopy.

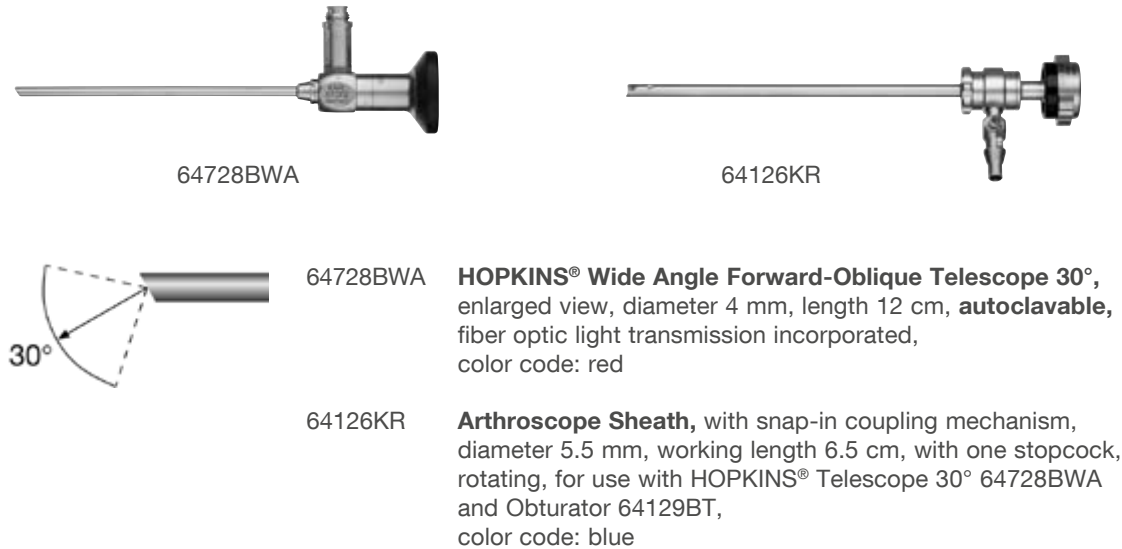


For use with Arthroscope Sheath 64133S:

- 64133BC **Obturator**, blunt
64133BT **Obturator**, sharp

Telescope 4 mm, sheath diameter 5.5 mm, working length 6.5 cm

Ideal for endoscopy of the knee in most dogs, this telescope offers the largest image in a convenient, short length.



For use with Arthroscope Sheath 64126KR:

- 64129BT **Obturator**, semisharp

Arthroscopy Instruments

Alligator Graspers

For removal of cartilage flaps and bone fragments. Aggressive teeth provide superior holding power. Good for OCD, FCP and meniscectomy.



64572AGS **SILGRASP® PRO Alligator Grasping Forceps**, serrated, tapered, low profile jaws, sheath diameter 2.8 mm, straight, handle with ratchet and cleaning connector, working length 8.5 cm



28571AG **SILGRASP® PRO Alligator Grasping Forceps**, straight jaws, sheath diameter 3.5 mm, straight, handle with cleaning connector, working length 12 cm

Small Cup Forceps

Removal of small fragments, OCD, synovial biopsy, meniscectomy.



28572CG **SILGRASP® PRO Cartilage Grasping Forceps**, spoon-shaped jaws, straight jaws, sheath diameter 2.8 mm, straight, handle with cleaning connector, working length 8.5 cm

Punch, Straight

For cutting and excising soft tissue, cartilage and meniscus. For biceps tendon release, cranial cruciate ligament resection and meniscectomy / meniscal release.



28572AD

SILCUT® PRO Punch, through-cutting, cross-toothed, cutting width 2 mm, straight jaws, sheath diameter 2.5 mm, straight, handle with cleaning connector, working length 8.5 cm



28572AE

Same, cutting width 1 mm, sheath diameter 2.5 mm



28171SPN

Same, cutting width 0.5 mm, sheath diameter 3 mm, working length 12 cm

Pointed Grasping Forceps

Pointed, serrated tip. Excellent for removal of small fragments in tight spaces, especially useful in small dogs and cats.



28572NJ

SILGRASP® PRO Suture Grasper, straight jaws, sheath diameter 2.8 mm, straight, handle with cleaning connector, working length 8.5 cm

Probes

To probe articular cartilage and subchondral bone. To probe cranial cruciate ligament and meniscus to assess tears. To apply traction to meniscus during partial meniscectomy.



64145S **Probe**, graduated, length of hook 2 mm, diameter 1.5 mm, working length 8.5 cm



28145SN **Probe**, graduated, length of hook 2 mm, diameter 1 mm, working length 4 cm

Small Curette

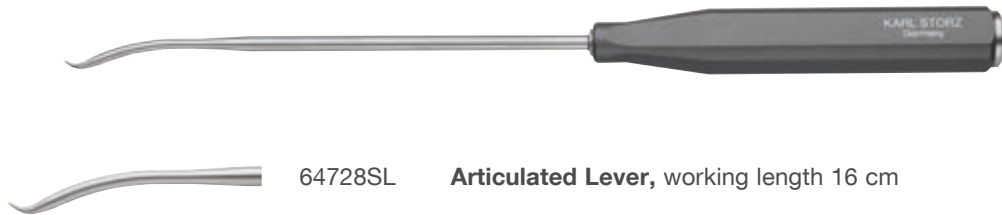
For debridement of articular cartilage or damaged subchondral bone: OCD, FCP, intraarticular fractures.



64146K **Curette**, spoon-shaped, round, straight, diameter 2.3 mm, for use with Trocar 64183X

Meniscal Lever

Levers tibia cranially and distracts femoral condyle away from the tibial plateau to allow better access to meniscus.



64728SL **Articulated Lever**, working length 16 cm

Egress Cannula

For efficient, adjustable outflow of distention fluid. Side holes prevent blockage of fluid flow.



64146T **Egress Cannula**, LUER-Lock, with stopcock, diameter 3.2 mm, length 7 cm



28146QB **Obturator, blunt**, for use with Egress Cannula 64146T

Small Diameter Arthroscopy Knives

For treating meniscal injuries, performing tenodesis and cutting soft tissue attachments to bony fragments.



64146MS **Knife**, curved, pointed, cuts both sides, width 2.5 mm



64146LS **Same**, hook-shaped



64146KS **Same**, straight

Osteotome

For making precise incisions. Flat, double edged tip.



486102 WALTER **Osteotome**, flat, double-edged grinding, width 2 mm, length 19 cm

64104 **Same**, width 4 mm, length 19 cm

Mallet

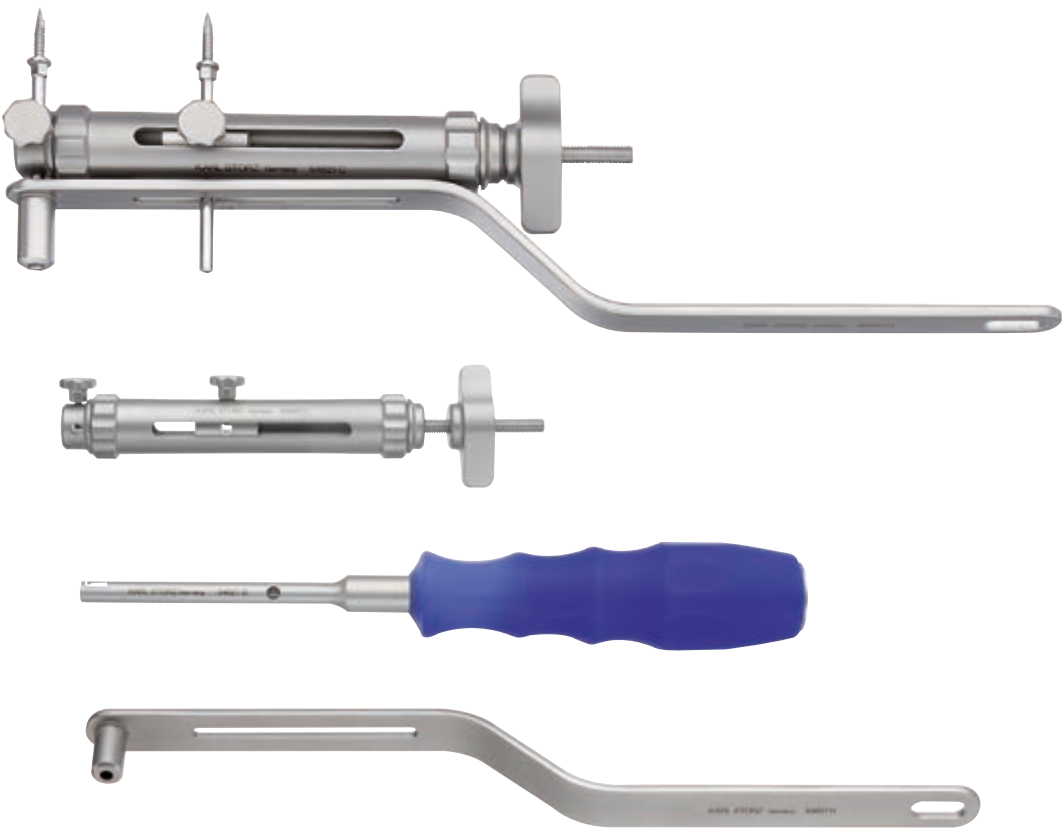
For use with osteotome.



174200 COTTLE **Metal Mallet**, length 18 cm

LEIPZIG Stifle Distractor

Distraction device for arthroscopic assessment of the medial meniscus in dogs.



64820LSD LEIPZIG Stifle Distractor,
including:
Distractor
Fixation Screw, package of 6
Lever Arm
Screwdriver

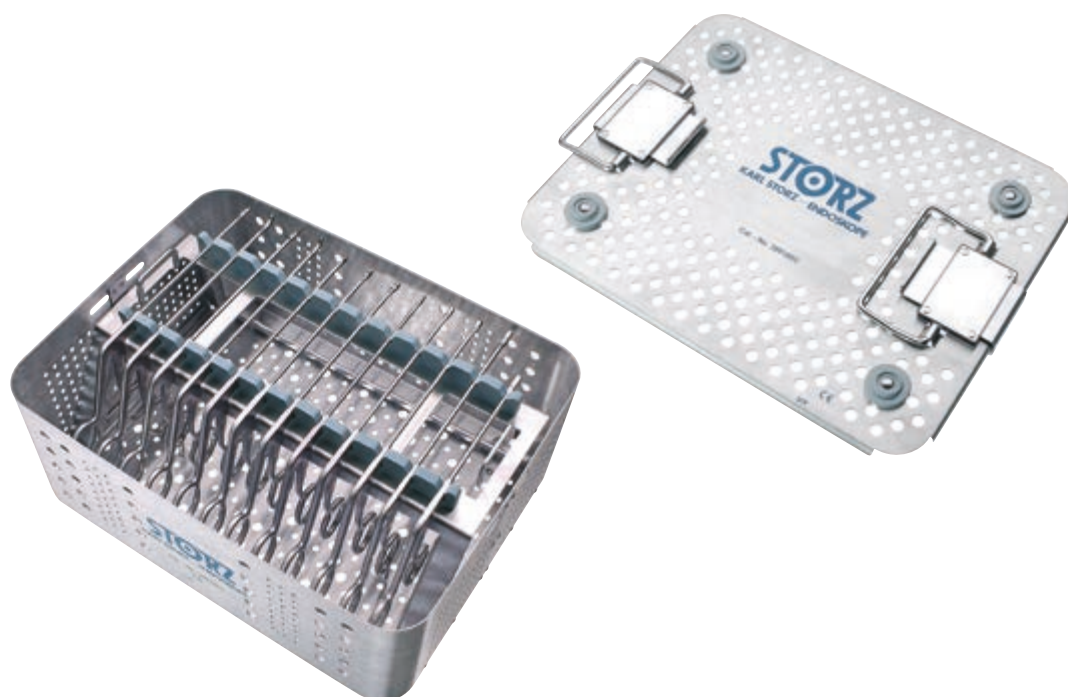
64821S **Fixation Screw**, package of 6

Basic Instrument Set as recommended by Dr. Brian Beale



- 28572AE **SILCUT® PRO Punch**, through-cutting, cross-toothed, cutting width 1 mm, straight jaws, sheath diameter 2.5 mm, straight, handle with cleaning connector, working length 8.5 cm
- 64572AGS **SILGRASP® PRO Alligator Grasping Forceps**, serrated, tapered, low profile jaws, sheath diameter 2.8 mm, straight, handle with ratchet and cleaning connector, working length 8.5 cm
- 64145S **Probe**, graduated, length of hook 2 mm, diameter 1.5 mm, working length 8.5 cm
- 28145SN **Probe**, graduated, length of hook 2 mm, diameter 1 mm, working length 4 cm
- 64146K **Curette**, spoon-shaped, round, straight, diameter 2.3 mm, for use with Trocar 64183X
- 64728SL **Articulated Lever**, working length 16 cm
- 64146T **Egress Cannula**, LUER-Lock, with stopcock, diameter 3.2 mm, length 7 cm
- 28146QB **Obturator**, blunt, for use with cannulas
- 64146LS **Knife**, hook-shaped, straight, width 2.5 mm
- 64146KS **Knife**, straight, width 2.5 mm
- 486102 WALTER **Osteotome**, flat, double-edged grinding, width 2 mm, length 19 cm
- 174200 COTTLE **Metal Mallet**, length 18 cm

Cleaning and Sterilization Tray



- 39910SC **Stainless Steel Tray for Sterilization, Storage and Transport** of up to 12 SILCUT® or RHINOFORCE® forceps, with lid, latches and handles, removable rack with double silicone holders for max. 12 instruments, external dimensions (w x d x h): 340 x 250 x 145 mm
- 39360AS **Silicone Tie-Downs**, package of 12, for use with Fixation Pins 39100PS and 39360AP
- 39100PS **Fixation Pin**, including screw and washer, to screw instruments into position in wire trays, height 38 mm, package of 12, for use with Silicone Tie-Downs 39360AS
- 39100S **Silicone Grid Insert LARGE DIAMOND GRID**, blue, extra wide meshed, for the storage of instruments in standard wire trays, plastic and sterilization containers, external dimensions: (w x d): 470 x 240 mm

For information on correct configuration please see the instruction sheet 96186603DF at www.karlstorz.com

ENDOMAT® SELECT VET

The most versatile and economical fluid pump for veterinary endoscopy from KARL STORZ.



ENDOMAT® SELECT VET is the ideal choice for safe and precise arthroscopic fluid irrigation in small and large animals. Irrigation and flow rate is set by the user using the intuitive, color touch screen.

ENDOMAT® SELECT VET is a cross-discipline roller pump device suitable for fluid irrigation and suction during a variety of surgical and diagnostic procedures in large and small animals such as laparoscopy, thoracoscopy and gastrointestinal endoscopy, as well as arthroscopy.

During any given procedure irrigation or suction can be selected, but only one function can be used during a single procedure. If suction is needed, such as with an arthroscopic shaver, a supplementary suction unit will be required.

ENDOMAT® SELECT VET comes programed with two primary menus, VET SURG and VET ART. VET ART is further subdivided into two programs with the following pre-programed settings:

ART SA

- Irrigation pressure: 20-150 mmHg; increments: 10 mmHg
- Boost function: 10% - 20% - 30% - 40%
- Irrigation flow rate: 1,500 - 2,000 - 2,500 ml/min

ART LA

- Irrigation pressure: 20-400 mmHg; increments: 10 mmHg
- Boost function: 10% - 20% - 30% - 40%
- Irrigation flow rate: 1,500 - 2,000 - 2,500 ml/min

Ordering Information:

When ordering an ENDOMAT® SELECT for veterinary use, the UP 210 basic device and the UP 609 software module must both be specified, otherwise the device is not functional.



- | | |
|-------|--|
| UP210 | ENDOMAT® SELECT , suction or irrigation pump,
incl. mains cord, power supply 100-240 VAC, 50/60 Hz |
| UP609 | VET Software for ENDOMAT® SELECT |

When ordering a ENDOMAT® SELECT for veterinary use, the UP210 basic device and the UP609 software modules must both be specified, otherwise the device is not functional.

Tubing Set for use with ENDOMAT® SELECT VET – ART SA and ART LA:



Single Use

- | | |
|-----------|--|
| 031523-10 | Tubing Set , irrigation, PC, sterile, for single use, package of 10 |
|-----------|--|

Reusable

- | | |
|-------|--|
| UP008 | Tubing Set , irrigation, PC, reusable, sterilizable |
|-------|--|

For further information regarding the VET SURG programs and tubing sets,
see MFL UNITS 2, 96321002

VITOM® 25



Make use of your endoscopy tower for open surgery too! The VITOM® provides a bright, magnified view of any open surgery. Particularly useful for teaching, recording, or performing any difficult access surgical intervention.



20916020 **VITOM® 25 Telescope 0°**, VITOM® 25 HOPKINS® straight forward telescope 0°, working distance 25-75 cm, diameter 10 mm, length 11 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green

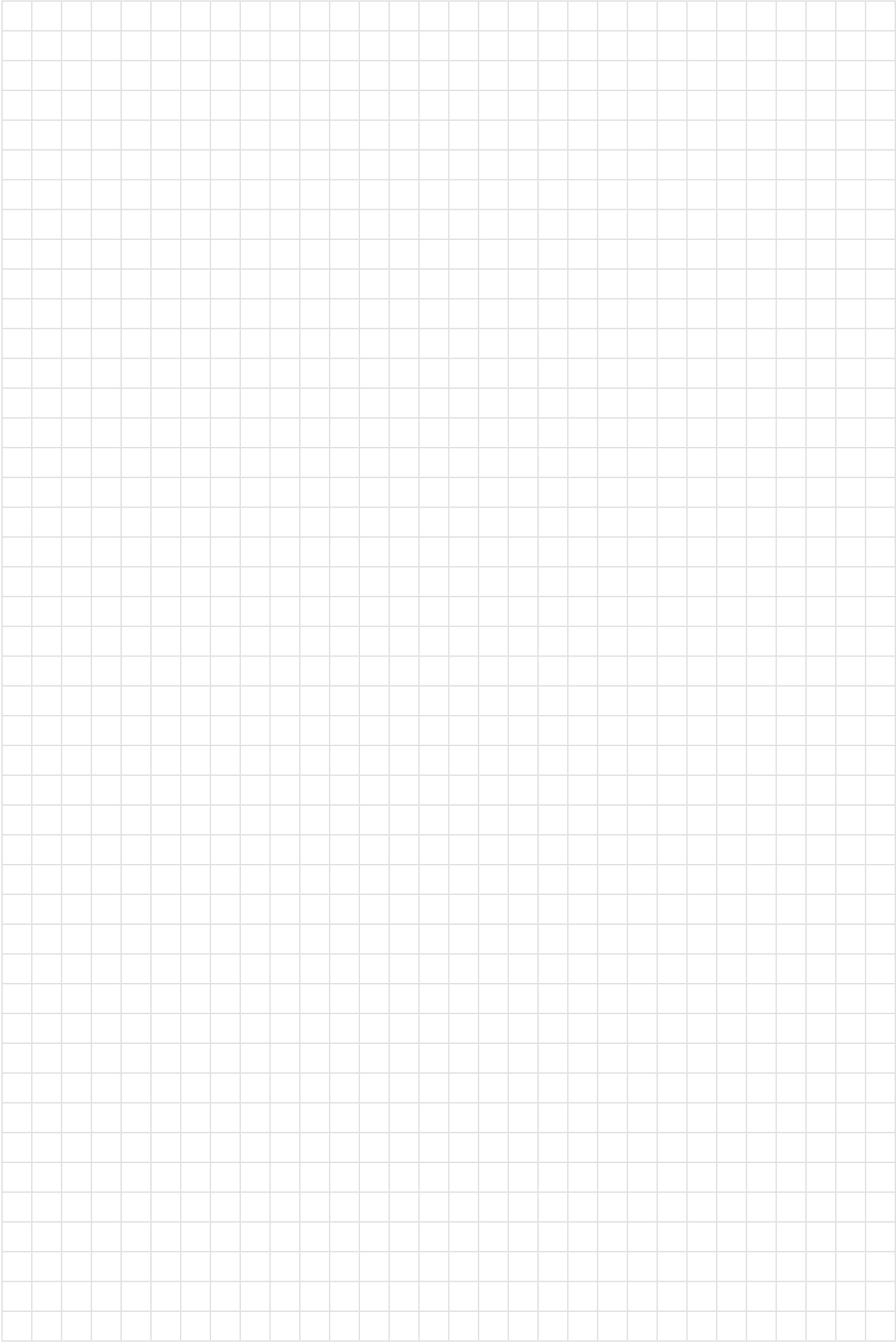
Holding System



28272RGC **Holding System, autoclavable**, with quick release coupling KSLOCK including:
Rotation Socket, to clamp to the OR table, for European and US standard rails
Articulated Stand, reinforced version, L-shaped, with quick release coupling KSLOCK (female)
Clamping Jaw, clamping range 16.5 up to 23 mm

Optional Accessory:

28272MR **Mobile OR Rail**, for installation on tables in veterinary and laboratory settings or experimental surgery including:
Retaining Plate
2x C-Clamp
2x Stop Block



More than
75
Years

*Shaping the Future
of Endoscopy with you*

STORZ
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