Coronoid fragmentation and its progression to medial compartment

As we develop our understanding of elbow disease and in particular elbow arthroscopy does not require the same level of instrumentation easier than stifle arthroscopy and most dogs will accept a 2.4mm scope.

Elbow arthroscopy has had wider acceptance since the first reports (unpublished work).

This may be all that is required in some patients with CCL tears and whilst at the same time allowing stifle flexion and extension.

A complete examination of the medial suprapatella pouch (5). A complete examination of the femoropatella and then femorotibial joint can then be performed and this can include examination of the caudal femorotibial joint where necessary. Arthroscopy size varies according to patient size but will usually use a 1.9mm scope although we regularly perform joint examinations in patients as small as cats (6) using a 1.9mm scope and for patients in excess of 60kg we use a 4mm scope.

The fat pad in dogs is considerably larger than that in humans and in order to create a viewing window a motorized shaver (Adapteur Power System, Arthrex) should be used to remove the inflamed fat pad, synovium and torn fibres of cranial cruciate ligament (CCL). The majority of dogs will require a 3mm aggressive style shaver blade (Dissector Range, Arthroscopy) and this is attached to suction so that the debrided tissue is removed from the viewing area. In order that the joint is distended a fluid ingress system is required and we use a fluid pump that automatically maintains the pressure as suction is used (Continuous Wave II Pump, Arthrex), which is available for free loan with an annual purchase commitment.

Meniscal injury occurs in around 40% of dogs with CCL damage (7, 8) and isolated medial (9) and lateral (10) meniscal injury have also been reported in the dog. Examination of both menisci can be extremely challenging via an arthrothyroid whilst the CCL is intact and recently Hulse and others (11) have suggested that the remaining functional CCL in partial tears may be “saved” by performing a tibial plateau leveling osteotomy. During arthroscopy both menisci may be completely examined, including careful palpation of the caudal horn, with the CCL intact. This is made possible by the use of a 2.4mm scope (Arthroscopic Instrumentation) applied via insertion of 2mm Ellis pins into the medial femoral condyle and proximal tibia. The use of this particular instrument does not “crowd” the joint space with instruments so reduces the risk for articular cartilage damage and leaves plenty of space for instruments to be inserted to palpate structures or remove torn portions of meniscus, whilst at the same time allowing stifle flexion and extension.

Meniscal resection is without doubt one of the most challenging arthroscopic procedures but with practice can be accomplished in a matter of minutes. These may be the common “bucket handle” tears, complex horizontal cleavage tears or “parrot beak” tears. We routinely perform meniscal resection with a combination of hook knives (Dr Fritz), fine angled punches (Slender Punch, Arthrex) and shavers (2mm to 3.5mm Dissector, Arthrex). Indeed some studies have shown that this may be all that is required in some patients with CCL tears and concurrently medial meniscal injury (12) and in selected patients this has become our approach to management in combination with rehabilitation (unpublished work).

Elbow arthroscopy has had wider acceptance since the first reports in 1993 (13). Work published by Meyer Linderberg and others (14) suggested that longer term dogs undergoing arthroscopy for coronoid fragmentation had a better outcome with a shorter convalescence than dogs that underwent an arthrotomy. Elbow arthroscopy is certainly easier than stifle arthroscopy and most dogs will accept a 2.4mm scope safely. The Dr Fritz set of forces and hand bars are well designed and elbow arthroscopy does not require the same level of instrumentation as stifle arthroscopy, a pressurised cuff provides sufficient fluid ingress. As we develop our understanding of elbow disease and in particular coronoid fragmentation and its progression to medial compartment syndrome arthroscopy plays a more and more important role, cartilage destruction is the key indicator of the extent of disease and arthroscopy remains the gold standard or cartilage assessment.

The understanding of shoulder lameness in dogs is in my view even more exciting and has advanced dramatically in the last few years, the traditional “dustbin diagnosis” of bicipital tenosynovitis has been replaced with a better recognition of other conditions including medial shoulder instability and lameness associated with damage to the lateral glenohumeral ligament. As in human medicine arthroscopy has remained the gold standard for investigation of intra articular shoulder injuries and arthroscopically guided reconstructions are being developed (15, 16, 17). One of the most useful developments has been the notion of using more than one portal and suspended limb shoulder arthroscopy with lateral and cranio medial portals has allowed us to examine the shoulder in far more detail, a simple ceiling hook, pulley and tilting table make complete examination of the shoulder easy and with minimal morbidity.

Arthroscopy has not been limited to canine examination either with feline shoulder, elbow and stifle arthroscopy with a 1.9mm scope proving beneficial for both diagnostic purposes and therapeutic interventions, as we do more we will learn more and this exciting field of orthopaedics will continue to advance.

For those who are interested both the ESVOT Arthroscopy Working Group and the Arthrex VA3 group have regular meetings providing an invaluable forum for discussion and practical experience in small animal arthroscopy.

6. Ridge, P. A. (2010) Femoral condyle lesions similar to osteochondritis dissecans. Call for opinions or similar cases. Letters to the Editor: Veterinary and Comparative Orthopaedics and Traumatology 23, 377-378
17. Ridge, P. A., Cook, J and Cook, C. Arthroscopically assisted treatment to injury of the lateral glenohumeral ligament in ten dogs. Veterinary Surgery (accepted for publication)
Arthroscopes

An arthroscope is a rigid endoscope consisting of a system of lenses, which collects and transmits an image from the tip of the instrument along the shaft to an eyepiece or camera. A light post close to the eyepiece allows light to be passed into the shaft and down optic fibres surrounding the lens system to illuminate the subject area at the tip.

The diameter refers to the outside diameter of the unsheathed shaft of the telescope. Three sizes are commonly used in small animal arthroscopy: 2.7mm, 2.4mm and 1.9mm. Arthroscope technology has improved so much that optically the new 2.4mm arthroscope is as good as the older 2.7mm version. The 2.4mm arthroscope is fine for most procedures but can prove a little large in small elbows. As the diameter of the arthroscope becomes smaller, there is less space for optical fibres, which has implications for light transmission and image size. Recent improvements in construction such as the use of rod lens systems as opposed to optic fibres has improved the performance of the smaller arthroscopes. Additionally the smaller arthroscopes are fragile and care must therefore be exercised to avoid damage in use, cleaning and storage.

The viewing angle is the angle between the lens face and a line drawn at right angles to the long axis of the arthroscope (see above right). A 0˚ scope views straight ahead from the front of the lens, while a 90˚ scope sees an image at right angles to the long axis of the scope. Most veterinary arthroscopes have a viewing angle of 30˚, which is a compromise between field of view and distortion. The user needs to be aware which way the lens is pointing. The light post is used as a reference point and is positioned opposite the angle of view. Rotating the scope along its long axis will allow the surgeon to view a large area within the joint with minimal repositioning. An oblique viewing angle does offer the surgeon a limited ability to see 'around corners'. Each arthroscope will require a dedicated sheath, which protects the arthroscope as well as delivering fluid to the tip. The sheath reduces the effective working length and increases the working diameter of the arthroscope.

Arthrex Arthroscopes

Arthrex are leaders in the field of arthroscopy with a deserved reputation for innovation and quality. We are pleased to offer their top of the range arthroscopes and sheaths at a very competitive price. 2.7, 2.4 and 1.9 arthroscopes are offered here but 4.0 are also available. Please e-mail or call our Vet Tech team for a quotation.

+44 114 2588530 info@vetinst.com

ARTHREX ARTHROSCOPES AND SHEATHES

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>AR-3350-2730</td>
<td>2.7 Arthroscope x 18cm 30 Degree</td>
<td>£1,745.00</td>
</tr>
<tr>
<td>AR-3350-2770</td>
<td>2.7 Arthroscope x 18cm 70 Degree</td>
<td>£1,745.00</td>
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<tr>
<td>AR-3370-4002</td>
<td>Arthroscopy Sheath 4mm x 12.5cm with Telescope Snap-in Locking Mechanism 2 Stopcocks</td>
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<tr>
<td>AR-3370-4001</td>
<td>Arthroscopy Sheath 4mm x 12.5cm with Telescope Snap-in Locking Mechanism 1 Stopcock</td>
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<tr>
<td>AR-3375-4001</td>
<td>Obturator Semi Sharp</td>
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<td>AR-3350-2430</td>
<td>2.4 Arthroscope x 10cm, 30˚</td>
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<td>AR-3370-2401</td>
<td>2.4 Sheath 3.2mm Dia x 8.5cm Working Length, 1 Stopcock</td>
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<tr>
<td>AR-3370-2402</td>
<td>2.4 Sheath 3.5mm Dia x 6.5cm Working Length, 2 Stopcock</td>
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<tr>
<td>AR-3375-2401</td>
<td>2.4 Obturator Blunt</td>
<td>£205.00</td>
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<tr>
<td>AR-3350-1930</td>
<td>1.9 Arthroscope, 30 Degree</td>
<td>£2,150.00</td>
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<td>AR-3370-1901</td>
<td>1.9 Sheath</td>
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<td>AR-3375-1901</td>
<td>1.9 Obturator Blunt</td>
<td>£205.00</td>
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<tr>
<td>AR-3375-1902</td>
<td>1.9 Obturator Sharp</td>
<td>£205.00</td>
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<tr>
<td>BX25060500</td>
<td>Arthroscope Sterilisation / Storage Box 250 x 60 x 50mm</td>
<td>£95.00</td>
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Arthroscopy Repairs

Most damaged or broken arthroscopes can be repaired. Although never cheap the repair is normally a full refurbishment to new standard and may be considerably cheaper than a new arthroscope. The same applies to hand instruments which by their nature are delicate and vulnerable. Send your repair to our Vet Tech team for a quotation.
Arthroscopic Instrumentation
Irrigation and Working Cannulae, Trochar Changing System designed by VAN BREE

Cannulae and portals: In order to fully examine the joint under investigation it may be necessary to manipulate some intra-articular structures. The instruments used must be small and be introduced either directly through the peri-articular soft tissues or via a dedicated cannula. Where serial insertions and withdrawals or a range of instruments are required, particularly through multiple layers of soft tissue, a cannula is preferable to minimize trauma, (trying to re-find a portal can be frustrating). Sets of cannulae dedicated to the most common joints are now available. Initially a small diameter cannula is inserted using a trochar, the portal may then be enlarged by the use of a ‘switching stick’. The stick is inserted into the joint through the small cannula which is then withdrawn. Larger cannulae may be slid down the changing stick and introduced into the joint. Exchanging a small cannula for a larger one can be surprisingly difficult without such an aid. The system is colour coded for ease of use.

Cannula Sets

<table>
<thead>
<tr>
<th>CANNULA SETS</th>
<th>description</th>
<th>Code</th>
<th>Price</th>
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<tbody>
<tr>
<td>I-17-755</td>
<td>Working Cannula Set “shoulder and elbow” designed by VAN BREE, D:2.3 / 2.9 / 3.5mm; WL:3.5-5cm and 7-8 cm, includes Sharp Trochar and Changing Rod</td>
<td>£595.00</td>
<td></td>
</tr>
<tr>
<td>I-17-500</td>
<td>Working Cannula Set “elbow” designed by VAN BREE, consist of 3 Cannulas D:2.3 / 2.9 / 3.5mm; WL:3.5-5cm. includes 1 Sharp Trochar and 1 Changing Rod (2.3mm)</td>
<td>£390.00</td>
<td></td>
</tr>
<tr>
<td>I-17-700</td>
<td>Working Cannula Set “shoulder” designed by VAN BREE, consist of 2 Cannulas D:2.9 / 3.5mm, WL:7-8cm. includes 1 Sharp Trochar and 1 Changing Rod (2.8mm)</td>
<td>£265.00</td>
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</table>

Egress Cannula

<table>
<thead>
<tr>
<th>EGRESS CANNULA</th>
<th>description</th>
<th>Code</th>
<th>Price</th>
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<tbody>
<tr>
<td>I-18-518</td>
<td>Egress Cannula, with Sharp Trochar Stopcock, ID:3mm, WL:7mm</td>
<td>£175.00</td>
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</tr>
</tbody>
</table>

For further information about the Arthroscopic Stifle Lever see page 59

Arthroscopy Starter Kit

Instrument choice is determined by personal choice and patient selection. However a Starter Kit is a useful starting point and offers a discounted approach to setting up.

The Arthroscopy Kit described is discounted by 10% compared to buying the individual components.

In addition to arthroscopic hand instrumentation a suitable camera and light source will be required. Several options, including pre-owned units, are available. Please telephone or e-mail to discuss options.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>AR-3350-2430</td>
<td>2.4 Arthroscope x 10.0cm, 30’</td>
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<tr>
<td>I-18-518</td>
<td>Egress Cannula, Sharp Trocar, Stopcock ID 3mm, WL 7cm</td>
</tr>
<tr>
<td>I-17-755</td>
<td>Working Cannula Set “shoulder &amp; elbow” Designed by van Bree, D: 2.3/2.9/3.5mm;WL: 3.5-5cm</td>
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<tr>
<td>S140-2438F</td>
<td>Target Instrument designed Dr.Lehmann for canine arthroscopy; comp.with S110-1932</td>
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<tr>
<td>AR-17-09S</td>
<td>Hook Probe, 2.2mm, silicon handle comp. autoclavable, colour code: red</td>
</tr>
<tr>
<td>AR-17-06S</td>
<td>Currette, small 2.7mm, silicon handle yellow, autoclavable, colour code: red</td>
</tr>
<tr>
<td>AR-17-07S</td>
<td>Ring Currette, 2.7mm, silicon handle red, autoclavable, colour code: black</td>
</tr>
<tr>
<td>AR-17-19S</td>
<td>Hook Knife, 2.7mm, silicon handle orange, autoclavable, colour code: blue</td>
</tr>
<tr>
<td>AR-17-11S</td>
<td>Smille Knife, 2.7mm, silicon handle yellow, autoclavable, colour code: red</td>
</tr>
<tr>
<td>AR-17-05S</td>
<td>Banana Knife, 2.7mm, silicone handle autoclavable, colour code: green</td>
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<tr>
<td>AR-17-03S</td>
<td>Bayonet Knife 2.7mm silicon handle yellow, autoclavable, colour code: black</td>
</tr>
<tr>
<td>AR-17-12S</td>
<td>Micro Picking Knife, designed by Brian Beale 2.7mm, silicon handle, colour code: yellow</td>
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<tr>
<td>AR-17-13</td>
<td>Special Elevator, 2.7mm, with handle colour code: metal</td>
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<tr>
<td>I-17-822</td>
<td>Milling Drill for arthroscopy</td>
</tr>
<tr>
<td>AS-17-561</td>
<td>Mini Ronguer - high performance 2.2/2.7mm 11cm colour code: black.</td>
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<tr>
<td>AS-17-662</td>
<td>Alligator Grasping Forces with Ratchet OD: 2.7mm; WL: 12cm, high quality</td>
</tr>
<tr>
<td>AS-17-762</td>
<td>Universal Rongeur and Grasping Forces OD: 3.4mm, WL: 12cm without Ratchet</td>
</tr>
<tr>
<td>AS-17-531</td>
<td>Mini Rongeur and Biopsy Forces OD: 2mm, WL: 11cm</td>
</tr>
<tr>
<td>AS-17-632</td>
<td>Universal Rongeur and Grasping Forces Fenestrated, OD: 2.7mm; WL: 12cm</td>
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<tr>
<td>AR-08-100</td>
<td>Pressure Infusion Cuff for 500-1000ml complete with Manometer and Hand Pump</td>
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<tr>
<td>DE-5-17</td>
<td>Cleaning Brush, small, 17cm</td>
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<tr>
<td>DE-10-425</td>
<td>Soak Basin for Chemical Solution Disinfection</td>
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<tr>
<td>DE-10-25</td>
<td>Camera Covers Disposable (30)</td>
</tr>
</tbody>
</table>
Hand Instruments

Hand instruments for investigation are designed to move or retract intra-articular structures and usually take the form of blunt probes or grasping forceps. Where intra-articular surgery or sampling is involved additional cutting instruments will be required.

AR-17-08S Hook Probe 2.2mm, with silicon handle £185.00
AR-17-13 Elevator, heavy, 2.7mm, with metal handle £185.00
AR-17-03S Bayonet Knife 2.7mm, with silicon handle £185.00
AR-17-06S Banana Knife 2.7mm, with silicon handle £185.00
AR-17-06S Curette 2.7mm, curved, with silicon handle £185.00
AR-17-07S Ring Curette 2.7mm, small, with silicon handle £185.00
AR-17-11S Meniscus Knife, Smillie, 2.7mm, with silicon handle £185.00
AR-17-12S Micro Picking Knife, acc to Dr Brian Beale 2.7mm, with silicon handle £185.00
AR-17-19S Hook Knife 2.7mm, with silicon handle £185.00

AR-17-08S Hook Probe 2.2mm, with silicon handle £185.00
AR-17-13 Elevator, heavy, 2.7mm, with metal handle £185.00
AR-17-03S Bayonet Knife 2.7mm, with silicon handle £185.00
AR-17-06S Banana Knife 2.7mm, with silicon handle £185.00
AR-17-06S Curette 2.7mm, curved, with silicon handle £185.00
AR-17-07S Ring Curette 2.7mm, small, with silicon handle £185.00
AR-17-11S Meniscus Knife, Smillie, 2.7mm, with silicon handle £185.00
AR-17-12S Micro Picking Knife, acc to Dr Brian Beale 2.7mm, with silicon handle £185.00
AR-17-19S Hook Knife 2.7mm, with silicon handle £185.00

Milling Drill designed by VAN RYSSEN & VAN BREE

This hand driven bur allows curretage of both cartilage and bone through the smallest working cannula. Much cheaper and easier than shaver systems.

MILLING DRILL
I-17-022 Milling Drill for arthroscopy complete OD: 2.2mm, WL: 12cm £375.00
I-17-021 Replacement Bur and Shaft £130.00

Arthroscopy Hand Instrument Set
A useful set of three arthroscopy instruments for examination and intra-articular surgery. The two hand held knives can deal with most meniscal tears, whilst the black shaft of the hook probe minimises reflection.

ARTHROSCOPY HAND INSTRUMENT SET
AR-17-19X Pull Knife £87.50
AR-17-11X Push Knife £87.50
AR-17-10 Hook Probe 2.2mm, with Stainless Handle Black Shaft £67.50
AR-17-SET Arthroscopy Hand Instrument Set £175.00

Gordon Coronoid Osteotome

Designed and developed by Ian Holsworth, this narrow osteotome is used for arthroscopic sub-total coronoidectomies.

GORDON CORONOID OSTEOTOME
AR-17-30 Gordon Coronoid Osteotome (4mm) £62.50
AR-17-29 Gordon Coronoid Osteotome (2mm) £62.50

Suture Passing Wire

Passing soft suture material through bone tunnels of soft tissues without causing additional trauma can be a challenge to the surgeon. The Arthrex Suture Passing Wire consists of a Nitinol loop attached to a flexible yet stiff wire. The wire may be pushed through bone tunnels of soft tissues and as the tip emerges the Nitinol loop naturally springs open to receive the suture which may then be pulled back through.

SUTURE PASSING WIRE
AR-1255-18 Suture Passing Wire 600mm £77.50

Crystal Cannula

Clear cannula has a tip at the tip to minimise 'fall out'.

CRYSTAL CANNULA
AR-6560 Crystal Cannula 5.75mm x 700mm (5 Pack) £120.00
Arthroscopic Punces, Biopsy Forceps, Rongeurs and Grasping Forceps

Arthroscopic forceps and rongeurs should be selected according to patient and portal size. A very small pair of grasping or cutting forceps will fit any portal but will be easily damaged if used on large fragments. Various designs are available for grasping cutting, or nibbling intra-articular structures.

2.0mm Instruments

AS-17-531 Mini Rongeur and Biopsy Forceps OD: 2.0mm £595.00
AS-17-551 Mini Punch for arthroscopy, OD: 2.0mm £595.00
AS-17-521 Mini Scissor for arthroscopy OD: 2.0mm £595.00

2.2/2.7mm Instruments

AS-17-561 Mini Ronguer - High performance 2.2mm / 2.7mm 11cm £925.00

2.7mm Instruments

AS-17-662 Alligator Grasping Forceps with Rachet OD: 2.7mm with overstraining protection £795.00
AS-17-632 Universal Rongeur and Grasping Forceps Fenestrated OD: 2.7mm with overstraining protection £725.00
AS-17-641 Biopsy and Spoon OD: 2.7mm with overstraining protection £725.00
AS-17-672 Arthroscopic Punch OD: 2.7mm with overstraining protection £825.00

Arthrex Hand Instruments

Useful Additions to the VAR-3000S Arthroscopy Set

Angled Slender Meniscus Punces

In the human knee management of meniscal tears is by arthroscopy punches. Most human arthroscopy punches are too large for the canine stifle even with appropriate distraction. Our External Stifle Distractor (AR-17-01, page 63) offers the best possible access. The Arthrex slender punches are small enough and the best available. The straight one is included in VAR-3000S. If you can afford them the punches angled left and right work best of all.

Slender Pointed Grasping Forceps

Pointed grasping forceps may be used for gentle dissection and grasping of small intra-articular objects.

Small Probe

ARThrex ADDITIONAL Hand Instruments

AR-11000 Slender Punch Straight £1,075.00
AR-11420 Slender Punch Angled Left £1,095.00
AR-11430 Slender Punch Angled Right £1,095.00
VAR-11700NR Slim Pointed Graspers Straight £1,095.00
AR-30000 Small Probe £225.00
Grasping and maintaining a grip on fragments can be very challenging for both surgeon and instrument. Once locked on, the surgeon is understandably reluctant to let go, sometimes taking an instrument beyond its working limits.

The VAR-11600SR Alligator forcep is toothed for maximum grip and has a self releasing handle.

The Alligator grasper is one of a range of canine arthroscopy instruments available as a set from Arthrex Vet Systems through Veterinary Instrumentation. Call or e-mail for a full brochure.

**Main Instrument Tray**

VAR-3008 Small Cup Curette, 2.5 mm diameter
VAR-3009 Banana Knife, 2.5 mm diameter
AR-5021 Graduated Black Probe, 1.5 mm Tip
AR-5007 Graduated Black Probe, 2.5 mm Tip
AR-10020 Probe, Stainless Steel
AR-3033 Obturator, Blunt

**Canine Cannula Set (VAR-3002S)**

VAR-3002 Cannulas (2.9, 3.7 & 4.3 mm)
VAR-3003 Cannulated Obturator
VAR-3004-2.9 Switching Stick, 2.9 mm
VAR-3004-3.7 Switching Stick, 3.7 mm
VAR-3005 Dilation Needles, qty. 5
VAR-3006 Stiffe Outflow Cannula with Stopcock
VAR-3007 Stiffe Outflow Obturator

The Cannula Set is available separately. The stand alone Cannula Set does not include the Outflow Cannula and Obturator.

**Forceps Tray**

VAR-11600SR Grasper, Alligator Hook Tip
VAR-11100 Punch, Slender Straight Tip

The forceps tray secures a Series I Grasper and Slender Punch in an upright position for easy accessibility. The tray has space for two further forceps.

**Grasper-Alligator Diameter 2.75mm with Hooked Tip Self Release**

Grasping and maintaining a grip on fragments can be very challenging for both surgeon and instrument. Once locked on, the surgeon is understandably reluctant to let go, sometimes taking an instrument beyond its working limits.

The VAR-11600SR Alligator forcep is toothed for maximum grip and has a self releasing handle.

The Alligator grasper is one of a range of canine arthroscopy instruments available as a set from Arthrex Vet Systems through Veterinary Instrumentation. Call or e-mail for a full brochure.

The Canine Arthroscopy Set combined with an Arthrex Camera and Light source would comprise a start up set for arthroscopy of the canine stifle, elbow, shoulder and hock.

<table>
<thead>
<tr>
<th><strong>ARTHREX HAND INSTRUMENTS</strong></th>
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<tbody>
<tr>
<td><strong>VAR-3000S</strong></td>
<td>Canine Arthroscopy Set Boxed</td>
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<tr>
<td><strong>VAR-11100</strong></td>
<td>Punch Slender Tip</td>
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<tr>
<td><strong>VAR-11600SR</strong></td>
<td>Grasper-Alligator Ø 2.75mm with Hook Tip</td>
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<tr>
<td><strong>VAR-3002S</strong></td>
<td>Canine Cannula Set</td>
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<td><strong>VAR-3006</strong></td>
<td>Outflow Cannula with Stopcock</td>
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<tr>
<td><strong>VAR-3007</strong></td>
<td>Outflow Cannula Obturator</td>
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<tr>
<td><strong>VAR-3009</strong></td>
<td>Banana Knife</td>
</tr>
<tr>
<td><strong>BRCANARTH</strong></td>
<td>Canine Arthroscopy Literature</td>
</tr>
</tbody>
</table>
VAN RYSSEN Signature Series

The shaft of standard arthroscopy forceps is typically offset from the axis of the human hand and wrist. Rotating the standard forceps requires the operator to make adjustments to minimise undesired movement of the forceps tip within the joint.

The new series of forceps developed in association with Bernadette Van Ryssen at the University of Ghent has a number of important advantages.

The ratchet based locking mechanism allows the surgeon to securely grasp intra-articular objects. Importantly the locking mechanism may be switched off when free cutting and grasping is required.

Most arthroscopy forceps fail when corrosion attacks the internal mechanisms. Corrosion develops because during procedures, saline under pressure within the joint is forced up into the forceps. Standard cleaning techniques, even ultrasounds, do not penetrate the shaft. The shaft of each of the van Ryssen series forceps incorporates an angled flushing port for rinsing the forceps internals.

Biopsy Forceps

The Cup Biopsy Forceps pinch off a sample of soft tissue approximately the diameter of the shaft. The forceps have a switchable locking ratchet.

**BIOPSY FORCEPS - PRO SERIES HANDLE**
- LE165102010 Biopsy Cup Forceps, 2.0 mm, Rotatable, PRO £845.00
- LE165102710 Biopsy Cup Forceps, 2.7 mm, Rotatable, PRO £825.00
- LE165103510 Biopsy Cup Forceps, 3.5 mm, Rotatable, PRO £825.00

**BIOPSY FORCEPS - STANDARD HANDLE**
- LE165102040 Biopsy Cup Forceps, 2.0 mm, Rotatable, Standard £825.00
- LE165102740 Biopsy Cup Forceps, 2.7 mm, Rotatable, Standard £765.00
- LE165103540 Biopsy Cup Forceps, 3.5 mm, Rotatable, Standard £765.00

Grasping Forceps

The Grasping Forceps securely grip fragments of bone, cartilage and soft tissue. The Forceps have a switchable locking ratchet.

**GRASPING FORCEPS - PRO SERIES HANDLE**
- LE165102020 Grasping Forceps, 2.0 mm, with Ratchet, Rotatable, PRO £845.00
- LE165102720 Grasping Forceps, 2.7 mm, with Ratchet, Rotatable, PRO £825.00
- LE165103520 Grasping Forceps, 3.5 mm, with Ratchet, Rotatable, PRO £825.00

**GRASPING FORCEPS - STANDARD HANDLE**
- LE165102045 Grasping Forceps, 2.0 mm, Rotatable, Standard £825.00
- LE165102745 Grasping Forceps, 2.7 mm, Rotatable, Standard £765.00
- LE165103545 Grasping Forceps, 3.5 mm, Rotatable, Standard £765.00

Grasping Forceps 1x2 Teeth

The 1x2 teeth provide a secure grip. The forceps have a switchable locking ratchet.

**GRASPING FORCEPS - ROTATABLE PRO**
- LE165102030 Grasping Forceps, 2.0 mm, 1x2 teeth, Rotatable, PRO £845.00
- LE165102730 Grasping Forceps, 2.7 mm, 1x2 teeth, Rotatable, PRO £825.00
- LE165103530 Grasping Forceps, 3.5 mm, 1x2 teeth, Rotatable, PRO £825.00

**GRASPING FORCEPS - ROTATABLE STANDARD**
- LE165102050 Grasping Forceps, 2.0 mm, 1x2 teeth, Rotatable, Standard £825.00
- LE165102750 Grasping Forceps, 2.7 mm, 1x2 teeth, Rotatable, Standard £745.00
- LE165103550 Grasping Forceps, 3.5 mm, 1x2 teeth, Rotatable, Standard £745.00

Hook Punch

The ‘hook’ nature of the punch prevents the tissue under investigation from slipping away. As the jaws close the tips contact the tissue first holding it for the punch action.

**HOOK PUNCH - PRO SERIES HANDLE**
- LE165102015 Hook Punch Forceps, 2.0mm, Rotatable, PRO £745.00
- LE165102715 Hook Punch Forceps, 2.7mm, Rotatable, PRO £685.00
- LE165103515 Hook Punch Forceps, 3.5mm, Rotatable, PRO £685.00

**HOOK PUNCH - STANDARD HANDLE**
- LE165102055 Hook Punch Forceps, 2.0mm, Rotatable, Standard £745.00
- LE165102755 Hook Punch Forceps, 2.7mm, Rotatable, Standard £685.00
- LE165103555 Hook Punch Forceps, 3.5mm, Rotatable, Standard £685.00

Hook Scissors

The ‘hook’ nature of the scissors prevents the tissue under investigation from slipping away. As the scissors close the tips contact the tissue first holding it for the scissors action.

**HOOK SCISSORS - PRO SERIES HANDLE**
- LE165102025 Hook scissors, 2.0mm, Rotatable, PRO £745.00
- LE165102725 Hook scissors, 2.7mm, Rotatable, PRO £685.00
- LE165103525 Hook scissors, 3.5mm, Rotatable, PRO £685.00

**HOOK SCISSORS - STANDARD HANDLE**
- LE165102065 Hook scissors, 2.0mm, Rotatable, Standard £745.00
- LE165102765 Hook scissors, 2.7mm, Rotatable, Standard £685.00
- LE165103565 Hook scissors, 3.5mm, Rotatable, Standard £685.00

Biopsy and Grasping Forceps

The Biopsy and Grasping forceps securely grasp soft tissue before pinching off a sample.

**BIOPSY AND GRASPING FORCEPS - PRO**
- LE165102035 Biopsy and Grasping Forceps, 2.0 mm, Rotatable, PRO £845.00
- LE165102735 Biopsy and Grasping Forceps, 2.7 mm, Rotatable, PRO £825.00
- LE165103535 Biopsy and Grasping Forceps, 3.5 mm, Rotatable, PRO £825.00

**BIOPSY AND GRASPING FORCEPS - STANDARD**
- LE165102060 Biopsy and Grasping Forceps, 2.0 mm, Rotatable, Standard £825.00
- LE165102760 Biopsy and Grasping Forceps, 2.7 mm, Rotatable, Standard £765.00
- LE165103560 Biopsy and Grasping Forceps, 3.5 mm, Rotatable, Standard £765.00
BLACK DIAMOND SERIES

The black diamond coating on the working tips serves two purposes. The coating is anti-reflective and provides an extra hard surface for a sharp edge and a long life.

New style grip provides fatigue free control of the working tip.

Hook Probe

Hook Probe 1.0mm Tip
LEI165011010 £155.00

Hook Probe 1.5mm Tip
LEI165011015 £155.00

Use to gently manipulate intra-articular structures.

Ball Head Bur 2.3mm

Ball Head Bur 2.3mm
LEI165011023 £215.00

Use to debride both cartilage and bone. Very effective and much less expensive than a full shaver.

Improved design of the mushroom handle offers better grip in the gloved hand.

Hook Knife

Hook Knife 2.2mm
LEI165013022 £155.00

Typically used for release of the meniscus of meniscal lesions.

Meniscus Knife

Meniscus Knife or Push Knife 2.5mm
LEI165013025 £155.00

Sometimes called the ‘Push Knife’, the cutting blade is in the groove behind the two protective tips.

Spoon Curette

Spoon Curette 1.5mm
LEI165012015 £155.00

Spoon Curette 2.7mm
LEI165012030 £155.00

This curette has a lower profile than the standard.

Premium Sterilisation Boxes for VAN RYSSEN Signature Series

Premium Sterilisation boxes with internal tray for holding either PRO or standard handles.

PREMIUM STERILISATION BOXES FOR VAN RYSSEN SIGNATURE SERIES

Premium Sterilisation Boxes for VAN RYSSEN Signature series – standard handles
LEI165500020 £445.00

Premium Sterilisation Boxes for VAN RYSSEN Signature series – PRO handles
LEI165500000 £445.00

Due to low stock levels, please order 4-6 weeks in advance of required date.

For more information, please contact us at info@vetinst.com or call us on 01234 567890.
**Shoulder Aiming Device**

Developed and tested at the Veterinary Faculty of Vienna, Austria by Dr Lehman.

Due to the dense muscle mass in shoulder joints, creating a puncture for a working cannula is often quite difficult. If a clean puncture allowing access directly to the joint is not achieved the first time, the risk of a subsynovial oedema increases greatly.

The shoulder puncture system has been specifically designed to help eliminate this risk. The system allows you to align your arthroscope accurately in the joint space. Simply attach the puncture system to the arthroscopic sheaths and maintain your arthroscopic vision in a parallel direction to the shoulder joint rim. At this point you will find the working triangulation portal in an ideal position. After a puncture is created with the desired trochar, simply replace the trochar with a working cannula and start working with your instruments. Useful for both cranial and caudal approaches. View at www.vetinst.com/videos

See VCOT 2004; 17:1-56 for review

**Light Sources & Cables**

Halogen light sources are inexpensive but not as good as the Xenon based systems, which are, unfortunately, significantly more expensive to purchase and maintain. Xenon light sources have a higher intensity and are essential if the unit is to be used for laparoscopic work. Thus Xenon is preferable but halogen can be used successfully in most joint investigations. Both Xenon and Halogen bulbs have a limited life (Xenon typically 500 hours, Halogen typically 2000 hours) and bulb failure is at best embarrassing so always carry a spare. The light cable carries light from the source to the arthroscope by fibre optics. Each cable has dedicated connectors to couple with the light source and the arthroscope. Connections on both light source and arthroscope vary from manufacturer to manufacturer. Convertors are available for both light source and arthroscope but it is wise, if possible, to purchase the appropriate cable for the system.

**Xenon Light Source**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>48-XE-300</td>
<td>Xenon Light Source</td>
<td>3,850.00</td>
</tr>
</tbody>
</table>

**Fibre Light Cable**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KW-48-231</td>
<td>Fibre Light Cable 4.8mm 2.3m both sides compatible to Wolf Autoclavable</td>
<td>495.00</td>
</tr>
<tr>
<td>KS-48-231</td>
<td>Fibre Light Cable 4.8mm 2.3m unit side compatible to Storz endoscope side compatible to Wolf Autoclavable</td>
<td>445.00</td>
</tr>
<tr>
<td>KS-48-230</td>
<td>Fibre Light Cable 4.8mm 2.3m Olympus/ Wolf</td>
<td>475.00</td>
</tr>
<tr>
<td>KS-48-300</td>
<td>Fibre Light Cable 4.8mm 3.0m Storz/ Storz</td>
<td>475.00</td>
</tr>
</tbody>
</table>

All cable combinations available.

**Joint Distraction**

**Arthroscopic Joint Distractor**

Osteoarthritic stifles can be very ‘tight’ making examination and treatment of intra-articular lesions difficult. Distraction of the articular surfaces using intra-articular instruments is difficult and clutters the operative field. Extra-articular distraction is very effective and leaves potential instrument portals available for more appropriate instrumentation.

**Arthroscopic Stifle Lever VSTL**

For further information including a detailed product description see page 59. Developed by Ian Holdsworth.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR-17-02</td>
<td>Arthroscopic Stifle Lever VSTL 280mm</td>
<td>145.00</td>
</tr>
</tbody>
</table>
Cameras & Monitors

Direct viewing of the joint through the eyepiece is possible. However, practicality and the issue of contamination dictate that a camera system is an essential part of the equipment. Arthroscopic cameras work in a very similar fashion to video cameras in common usage. The image at the eyepiece of the arthroscope is focussed on a light responsive electronic chip(s). The signal created is transferred to a camera controller, which processes the image into a signal recognized by the monitor and/or recording system.

Most veterinary cameras have a single chip, which is sufficient for most users.

The connection of the camera head to the eyepiece of the arthroscope is also variable. To maximise the choice and longevity of the instrumentation it is advised that a clip on camera head compatible with DIN standard eyepieces be selected. The camera heads are fully immersible.

Storz Arthroscopy – Cameras and Light Sources (Ex Demo/Pre owned)

Top quality equipment from a major human arthroscopic company but at a discount price.

Two levels are currently available as two starter kits
Standard Level in HD Quality or Basic Level in SD Quality.

Arthroscopy is difficult enough without working with poor quality images. Buy the best ‘scope and camera you can afford.

Please phone for current stock and availability.

Storz arthroscopy camera & light sources ex-demo/ pre-owned

STANDARD LEVEL IN HD QUALITY KIT

IR8101-1502 Camera, Control Unit, High Definition
IR8001 Camera Head, High Definition, 3-Chip
20161401-1 Light Source Power LED 175 watt
IR8305 26” HD Flat Screen monitor HB
STORZ CAMHD As Above (List price £33,201) £16,000

BASIC LEVEL IN SD QUALITY KIT

20213011 Camera Control Unit, Standard Definition, CCU, Telecam SL II
20212030 Camera Head, 1-Chip, PAL, Telecam
20131501 Light Source XENON NOVA 175
RR8302 Monitor 19”
STORZ CAMSD As Above (List price £18.595) £9,000

USB Based Image Capture System

The latest version of the image capture device captures both still images and mpegs directly onto a USB stick ready for transfer to permanent storage.

Capture is activated by pressing a button on the front panel or if the surgeon prefers to keep control there is an optional foot control.

USB BASED IMAGE CAPTURE SYSTEM

46-USB-200 USB Image Capture Jpeg and Mpeg £2,650.00
46-USB-15-1 Footswitch for USB Capture System £165.00
**Fluid Infusion and Outflow**

Infusion of fluids or gas into the joint is essential to create an environment in which the arthroscope can view joint structures. The joint must be expanded and debris removed to maintain a clear field of view.

To maintain an appropriate intra-articular pressure (between 40 and 100mm of mercury) (0.053 and 0.133 BAR) fluid inflow and outflow must be carefully regulated. Fluid under pressure may be obtained by either gravity feed systems or a pump. Gravity may be sufficient provided the fluid bags can be lifted high enough but greater, more controllable pressure may be obtained by use of a fluid compression bag.

The bag of fluid to be infused is placed into a pressure bag, which is inflated using a hand or machine pump. Without careful monitoring hand inflation systems offer erratic pressure levels and use of a regulated pump offers much better control. A carbon dioxide powered pump may be used to pressurize a compression bag or infuse carbon dioxide directly into the joint. Dedicated roller type pumps are able to maintain a constant line pressure over extended periods but they may require dedicated tubing, are expensive to purchase and are more prone to breakdown.

To create fluid flow through the joint, appropriate fluid outflow or egress must be maintained. In the smaller joints (elbow, hock and hip), a large bore hypodermic needle may be sufficient. In the larger joints (shoulder, stifle) where greater volumes of fluid are involved, dedicated multi fenestrated egress cannulae may be necessary, the waste fluid may be collected by either bag systems or suction devices.

Use of direct CO2 infusion is indicated in some inflamed joints where inflammatory synovial villae obstruct the visual field, the villae being flattened under gas pressure rather than floating free in infused fluid. In addition, use of CO2 increases the field of view and image clarity of the arthroscope. CO2 is usually used intermittently with fluid to allow for flushing.

**Peristaltic Infusion**

**Arthroscopy Infusion Pump**

Provided the surgeon is prepared to commit to the purchase of 100 patient infusion sets per year Arthrex is prepared to offer its Continuous Wave Arthroscopy Pump (AR-6475) (value £3,950) on free loan (with initial purchase of 2 x boxes of tubing). This pump has been in use in the human sector for some 15 years and is very reliable. Line pressure and flow rate are user defined. This means that the fluid pressure does not have to be continually monitored and adjusted by nursing staff. In addition, if the tube pressure is correct, any problems with fluid flow can be immediately localised to the arthroscope. This is not the case with inflated cuffs where only the pressure within the bag is known.

If you are performing 3 or more procedures per day it is cheaper to buy the separate Machine (one per day) and Patient Tube Sets.

---

**Hand Pressure Infusion Cuffs**

**Hand Pressure Infusion Cuffs**

**Pressures:**
- **Pressure Infusion Cuff** for 3000-5000ml complete with Pressure Gauge and Hand Pump Reusable
- **Pressure Infusion Cuff** for 500-1000ml complete with Pressure Gauge and Hand Pump Reusable
- **Pressure Infusion Cuff** for 500-1000ml without Pressure Gauge Luer Lock (flm) Reusable

**Features:**
- Automatic control
- Pressure continuously adjustable
- Max. 300mm Hg pressure
- Easy handling
- No mechanical parts
- Fluid and CO2 supply

---

**Pressure Pump Infusor**

**Pressure Pump Infusor**

**Features:**
- Automatic control
- Pressure continuously adjustable
- Max. 300mm Hg pressure
- Easy handling
- No mechanical parts
- Fluid and CO2 supply

---

**Pressure Pump Infusor CO2 and Accessories**

**CO2 Infusor for large/ small animal arthroscopy DIN Connector Tube to Pressure Reducer (DIN type) Pressure Setting 0-300mm Hg Tube Connection Luer-Lock(f) **£1,745.00

**Reduction Valve for CO2 Bottles UK Fitting** £185.00

**Sterile Filter System for CO2 Infusor Disposable Box with 50 Pieces** £225.00
Shaver Systems

Virtually the only powered instrument in use in veterinary arthroscopy is the shaver. The shaver is essentially a motorized bur. It may be used to debride cartilage, bone or soft tissues. A range of tips of different designs and sizes are available to manage the different tissues. Tips designed for soft tissues are typically larger and more aggressively toothed. Suction may be applied to the cutting tip via the hand piece to remove debris. The hand piece is driven by a control box operated by finger or foot controls. The speed and direction of cut are selectable. The tips are usually designed to be disposable, however with careful use, cleaning and re-sterilisation they may be re-used. Very expensive to buy new, Veterinary Instrumentation maintains a stock of high quality ex-hospital units for sale.

Linvatec Shaver

The Linvatec Shaver System is very interesting from a veterinary arthroscopy point of view as it is able to use 2.0mm micro burs. Other major brands have a minumum blade diameter of 2.8mm which may not seem a very big difference but is almost half as big again.

Includes the all important micro handpiece for the small burs.

**LINVATEC SHAVER SYSTEM AND BURS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBC9960</td>
<td>2mm Linvatec Micro Gator Shaver Blade</td>
<td>£135.00</td>
</tr>
<tr>
<td>SBC9950</td>
<td>2mm Linvatec Micro Cuda Shaver Blade</td>
<td>£155.00</td>
</tr>
<tr>
<td>SBC9911</td>
<td>2mm Linvatec Micro Spherical Shaver Blade</td>
<td>£150.00</td>
</tr>
<tr>
<td>SBC9961</td>
<td>2.9mm Linvatec Micro Gator Shaver Blade</td>
<td>£135.00</td>
</tr>
<tr>
<td>SBC9962</td>
<td>3.5mm Linvatec Micro Gator Shaver Blade</td>
<td>£135.00</td>
</tr>
<tr>
<td>SBC9964</td>
<td>3.5mm Linvatec Gator Shaver Blade</td>
<td>£135.00</td>
</tr>
<tr>
<td>SBC9953</td>
<td>3.5mm Linvatec Cuda Shaver Blade</td>
<td>£135.00</td>
</tr>
<tr>
<td>SBC9911</td>
<td>4.5mm Linvatec Spherical Shaver Blade</td>
<td>£150.00</td>
</tr>
</tbody>
</table>

Arthrex Shaver Offer

Adapteur Power Systems

**APS II Console**

The Arthrex Adapteur II shaver is a current shaver with a value of over £11,450. It takes a wide range of blades down to 2.0mm. Veterinary Instrumentation can offer the Arthrex shaver on FREE loan provided that the surgeon is prepared to offer its OPES Console (AR-9600) (Value £6,575) on FREE loan. Email info@vetinst.com or phone Steve to discuss the purchase commitment.

**AR-8339F Handpiece**

A comprehensive orthopaedic electrosurgical system combining arthroscopic ablation, arthroscopic coagulation, open surgery monopolar and bipolar surgery from one fully digital generator. With 3 in 1 system flexibility, the OPES Electrical Generator is also capable of controlling a host of different instruments, including disposable monopolar arthroscopic electrodes, reusable and disposable monopolar open procedure pencils and tips, and reusable bipolar forceps. The need for separate and costly systems is eliminated. Provided the surgeon is prepared to agree to an annual purchase commitment Arthrex is prepared to offer its OPES Console (AR-9600) (Value £6,575) on FREE loan. Email info@vetinst.com or phone Steve to discuss the purchase commitment.

**ARTHROSCOPIC PROCEDURE ELECTROSURGICAL SYSTEM (OPES)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR-9600</td>
<td>OPES Console</td>
<td>£6,575.00</td>
</tr>
<tr>
<td>AR-9600FB</td>
<td>Bipolar Foot Pedal</td>
<td>£295.00</td>
</tr>
<tr>
<td>AR-9611SFR</td>
<td>Bipolar Forceps</td>
<td>£325.00</td>
</tr>
<tr>
<td>AR-9610</td>
<td>Monopolar Handpiece Disposable Box of 5</td>
<td>£95.00</td>
</tr>
<tr>
<td>VAR-1005-01</td>
<td>Ground Pad</td>
<td>£60.00</td>
</tr>
<tr>
<td>VAR-1005-06 Cable</td>
<td>Ablation Wands and Electrodes from</td>
<td>£95.00</td>
</tr>
<tr>
<td>BRO-OPES</td>
<td>Opes Literature</td>
<td>£FOC</td>
</tr>
</tbody>
</table>

**Arthroscopic Procedure Electrosurgical System (OPES)**

Ablation wands

**Radiofrequency**

Arthroscopic electrocoagulation or radiofrequency devices focally create heat within the tissues to create haemostasis, debridement or to shrink the joint capsule in selected cases of instability. Long, fine insulated probes are available which may be powered by standard surgical electrocoagulation units. The tips are bathed in fluid at all times but essentially the same processes occur at the tissue level as in surgical electrosurgery.

Radiofrequency devices create heat by inter-molecular friction. Tips are available in both monopolar and bipolar formats and may be used to debride structures such as damaged meniscus or fat pad. Capsular shrinkage by radiofrequency may be used to tighten joint capsules following arthroscopy or injury. Radiofrequency ablation dissolves intra-articular tissues at a relatively low temperature. The resulting debris is removed by suction. The technique is therefore an alternative to the shaver for removing soft tissues. At least one manufacturer supplies combined shaver blades and ablator wands which offer both options on the same intra-articular device.

**Radiofrequency devices**

Radiofrequency devices create heat by inter-molecular friction. Tips are available in both monopolar and bipolar formats and may be used to debride structures such as damaged meniscus or fat pad. Capsular shrinkage by radiofrequency may be used to tighten joint capsules following arthroscopy or injury. Radiofrequency ablation dissolves intra-articular tissues at a relatively low temperature. The resulting debris is removed by suction. The technique is therefore an alternative to the shaver for removing soft tissues. At least one manufacturer supplies combined shaver blades and ablator wands which offer both options on the same intra-articular device.
**Positioning Aids**

Manipulation of arthroscopes and instrumentation inside a joint via an image on a monitor screen can be very demanding. Careful positioning of the patient and the surgeon is essential.

An operating table, fully adjustable for height and tilt is a prerequisite for good arthroscopy. Once fully draped, orientation around a canine limb can be difficult. Full use should be made of channels, ties and sand bags to fix the overall position of the dog. Sandbags may also be necessary to act as a fulcrum to open a joint maximally for investigation, e.g. elbow.

To provide multiple fixed positioning during an investigation a Multi-arm Positioning Device is available which when attached between the distal limb and the table may be locked into an infinite range of positions. An optional accessory allows the stifle to be accurately positioned for an investigation.

**MULTI-ARM**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>026000</td>
<td>Multi-arm Positioning Device with Single Foot Attachment</td>
<td>£275.00</td>
</tr>
<tr>
<td>020062</td>
<td>Double Limb Support for Multi-arm</td>
<td>£155.00</td>
</tr>
<tr>
<td>020065</td>
<td>Stifle Brace Attachment for Multi-arm (designed by Schulz and Ian Holsworth)</td>
<td>£155.00</td>
</tr>
<tr>
<td>MULTIARMSET</td>
<td>Multi-arm Set includes all of above</td>
<td>£495.00</td>
</tr>
</tbody>
</table>

**Table Top Stand for Hanging Limb Preparation**

Suspension of a limb can provide significant benefits in both arthroscopy and other orthopaedic procedures. The shoulder joint is distracted and 360 degree access becomes available. Height 1.2m (48”)

In 2012 our limb suspension stand was re-designed to give greater table-top stability. A cleat for tying off limb suspension ropes has also been added and the shaft can be dismantled for storage.

**TABLETOP STAND FOR HANGING LIMB PREPARATION**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>R463</td>
<td>Tabletop Stand for Hanining Limb Preparation</td>
<td>£185.00</td>
</tr>
</tbody>
</table>

**Vac Pac Vacuum Positioning Device.**

Simply mould the bead filled bag around or under the patient and hook up to any vacuum source, as the air is removed the bag solidifies in the set position. Especially useful for arthroscopy or any surgery requiring secure accurate positioning. The Vac Pac is:

- Re-useable
- Repairable
- Radiolucent
- Warm

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP23</td>
<td>Vac-Pac Size 23</td>
<td>45 x 50cm</td>
<td>£345.00</td>
</tr>
<tr>
<td>VP30</td>
<td>Vac-Pac Size 30</td>
<td>72 x 90cm</td>
<td>£465.00</td>
</tr>
<tr>
<td>VP31</td>
<td>Vac-Pac Size 31</td>
<td>98 x 90cm</td>
<td>£465.00</td>
</tr>
<tr>
<td>VP32</td>
<td>Vac-Pac Size 32</td>
<td>118 x 90cm</td>
<td>£465.00</td>
</tr>
</tbody>
</table>

**Clear Adhesive Antibacterial Surgical Drapes with Povidone**

The majority of human surgeries use clear adhesive drapes over the incision site. Benefits include fluid and pathogen resistance, antibacterial, transparent and permeable. 4 sizes available.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Size</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD1420</td>
<td>14cm x 20cm</td>
<td>20 Pieces/Box</td>
<td>£38.50</td>
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<tr>
<td>AD2030</td>
<td>20cm x 30cm</td>
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<td>AD3045</td>
<td>30cm x 45cm</td>
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<tr>
<td>AD4560</td>
<td>45cm x 60cm</td>
<td>10 Pieces/Box</td>
<td>£71.50</td>
</tr>
<tr>
<td>ID6650</td>
<td>Ioban™ Drape 56 x 45cm</td>
<td>Single</td>
<td>£32.50</td>
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</table>

**Redmark Cradles**

Available individually or as a Set of 3, these cradles are the best available.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>026022</td>
<td>Redmark Cradles - Set of 3 (S, M, L)</td>
<td>up to 13kg</td>
<td>£225.00</td>
</tr>
<tr>
<td>026022L</td>
<td>Redmark Cradle - Large over 32kg</td>
<td>&gt; 32kg</td>
<td>£105.00</td>
</tr>
<tr>
<td>026022M</td>
<td>Redmark Cradle - Medium over 13kg - 32kg</td>
<td>13kg - 32kg</td>
<td>£100.00</td>
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<tr>
<td>026022S</td>
<td>Redmark Cradle - Small up to 13kg</td>
<td>0 - 13kg</td>
<td>£95.00</td>
</tr>
</tbody>
</table>

See Chapter 18 for Drapes and Draping.
### Fluid Management

**Sterile Incise drape with Fluid Collection Pouch.**

Arthroscopy is messy. Collection of fluid run off will minimise what falls to the floor. This opaque plastic film drape has a 100mm x 100mm incise area and a 200mm x 300mm fluid collection pouch. Free sample on request.

### Sterility

**Arthroscopes**

Distilled water and an enzymatic cleaner are used to remove gross contamination from arthroscopes, sheaths and trochars. Arthroscopes are available which can be autoclaved. However, repeated autoclaving of even these arthroscopes will significantly reduce their working life. Sterility is more commonly achieved by soaking in an anti-microbial solution. Historically glutaraldehyde based solutions were the norm but health and safety concerns have led to the use of safer chemicals based on oxidation.

**Camera systems**

Most cameras used for veterinary arthroscopy cannot be autoclaved but the head and cable can usually be soaked in the same solution as the arthroscope. Care should be exercised to avoid contact of the sterilizing fluid with the electrical contacts at the end of the cable. An alternative is the use of a sterile disposable camera sleeve to separate the camera head and cable from the sterile arthroscope eyepiece.

**Perasafe**

Perasafe is a rapid, instrument compatible, user and environmentally friendly, chemical sterilant. Supplied as a safe, space-saving powder, Perasafe is activated by simply dissolving in luke-warm tap water. Provides rapid sterilisation and re-use of endoscopy instruments. Aldehyde-free formulation gives efficacy without harm to instruments, health risks to nursing staff and avoids the need for special fume extraction or waste disposal systems.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD199691</td>
<td>Incise Drape with Pouch Box of 40</td>
<td>£165.00</td>
</tr>
<tr>
<td>FCP2527</td>
<td>Fluid Collection Pouch 25cm x 27cm 200 Sterile</td>
<td>£305.00</td>
</tr>
</tbody>
</table>

**Puddle Vac Floor Suction Device**

The Puddle Vac can collect an average of 700ml of fluid per minute. Simply place where required. Connect to standard suction apparatus.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV9321</td>
<td>Puddle Vac Pack of 5</td>
<td>£72.50</td>
</tr>
</tbody>
</table>

**Super Absorbent Matting**

Water, saline, blood or any other fluid on the theatre floor represent a significant slip hazard to personnel. In addition free running fluid is much more likely to run and penetrate porous areas creating a longer term biosecurity hazard. Super Absorbent Matting is splash resistant and absorbs 6.5 litres of water(3.5 litres of saline)per mat. Supplied in 200cm x 40cm mats, perforated every 25cm for easy tearing. Also available as a 23 metre roll. Free sample on request.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABMAT40200</td>
<td>Super Absorbent Mat 200cm x 40cm</td>
<td>£8.00</td>
</tr>
<tr>
<td>ABMATROLL</td>
<td>Super Absorbent Matting 23 metre roll x 80cm</td>
<td>£185.00</td>
</tr>
</tbody>
</table>

**Rapizyme**

- Three new enzymes
- Easy to use measured bottle
- 2ml per litre dilution
- Removes all organic material
- Ideal for endoscopes
- Low foam for ultrasonics
- Complete rinsibility
- Biodegradable
- Tested by The Royal Institute of Public Health

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAPIZYME</td>
<td>Bottle 1 Litre</td>
<td>£49.00</td>
</tr>
</tbody>
</table>

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**Perasafe**

Perasafe is a rapid, instrument compatible, user and environmentally friendly, chemical sterilant. Supplied as a safe, space-saving powder, Perasafe is activated by simply dissolving in luke-warm tap water. Provides rapid sterilisation and re-use of endoscopy instruments. Aldehyde-free formulation gives efficacy without harm to instruments, health risks to nursing staff and avoids the need for special fume extraction or waste disposal systems.
Laparoscopies for Minimally Invasive Surgery

Good optics are a pre-requisite for successful laparoscopy. The more you see the easier it becomes. Fritz 'scopes have a patented large image optical system taking in a wide field of vision producing a full screen, very high definition image.

All the laparoscopes are autoclavable and have standard eyepiece and light cable connectors.

### Standard Laparoscopes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>T281-5030</td>
<td>Wide Angle Telescope, 0° OD: 5mm WL: 29cm, Standard Light Cable Connectors Autoclavable</td>
<td>£2,825.00</td>
</tr>
<tr>
<td>T291-1000</td>
<td>Wide Angle Telescope 0° OD: 10mm WL: 30cm SIRIUS System Standard Light Cable Connectors Autoclavable</td>
<td>£2,525.00</td>
</tr>
<tr>
<td>T141-2430</td>
<td>Wide Angle Telescope 30° OD: 2.4mm WL: 14cm Large Image Technology</td>
<td>£2,415.00</td>
</tr>
<tr>
<td>S140-2433</td>
<td>Examination Sheath OD: 3.2mm WL: 12cm Compatible with T140-2430 and T141-2430</td>
<td>£325.00</td>
</tr>
<tr>
<td>T181-4030</td>
<td>Wide Angle Telescope 30° Large Image Technology OD: 4mm WL: 18cm Autoclavable</td>
<td>£2,625.00</td>
</tr>
<tr>
<td>S180-4033</td>
<td>Examination Sheath OD: 5.5mm WL: 17cm compatible to T181-4030 Stopcock inc. Blunt Trochar</td>
<td>£395.00</td>
</tr>
</tbody>
</table>

Laparoscopy will require a bipolar electrocautery generator to power the handpieces. The GIMA unit is very effective and reasonably priced.

### Electrocautery & Suction

- **Electrocautery & Suction**
  - HF122 GIMA 122 Bipolar Electrocautery Kit £995.00
  - 185H350 HospiVac 350 Suction Unit* £845.00

* Carriage extra

Laparoscopy Start Up Kit

Instrument choice is determined by personal choice and patient selection. However, a starter kit is a useful starting point and offers a discounted approach to setting up. The Laparoscopy kit described is discounted by 10% compared to buying the individual components. In addition to laparoscopic hand instrumentation a suitable camera, light source, CO₂ insufflator and electrocautery generator will be required. Several options, including pre-owned units, are available please telephone or e-mail to discuss options.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>T281-5030</td>
<td>Wide Angle Telescope, 30° OD: 5mm WL: 29cm, Standard Light Cable Connectors Autoclavable</td>
<td>£2,825.00</td>
</tr>
<tr>
<td>DE4680-52</td>
<td>Sterilizing &amp; Storing Tray, 460 x 80 x 52mm Perforated Stainless Steel with Silicon Bars</td>
<td>£195.00</td>
</tr>
<tr>
<td>230-212V</td>
<td>Cannula only with Magnetic Valve ID: 10mm WL: 7cm, Inflation Stopcock, 55g</td>
<td>£29.00</td>
</tr>
<tr>
<td>230-213V</td>
<td>Cannula only with Magnetic Valve ID: 10mm WL: 7cm, 45g</td>
<td>£29.00</td>
</tr>
<tr>
<td>230-137V</td>
<td>Safety Trochar only compatible to Cannulas with ID: 10mm WL: 7cm, fully dismantable, Cork Screw Handle</td>
<td>£29.00</td>
</tr>
<tr>
<td>231-213V</td>
<td>Cannula only, Magnetic Valve ID: 5.5mm WL: 7cm, Inflation Stopcock</td>
<td>£29.00</td>
</tr>
<tr>
<td>231-212V</td>
<td>Cannula only, Magnetic Valve ID: 5.5mm WL: 7cm, 30g</td>
<td>£29.00</td>
</tr>
<tr>
<td>231-137V</td>
<td>Safety Trochar only compatible to Cannulas ID: 5.5mm WL: 7cm, fully dismantable, Cork Screw Handle</td>
<td>£29.00</td>
</tr>
<tr>
<td>230-505</td>
<td>Reducer Adapter for Trocar Cannulas with ID: 10 to 5.5mm</td>
<td>£29.00</td>
</tr>
<tr>
<td>L-19-120</td>
<td>Veress Needle, D: 2mm, 12cm, LL(f)</td>
<td>£29.00</td>
</tr>
<tr>
<td>531.23H11V</td>
<td>Atraumatic Grasper, curved, 5mm 33cm insulated, rotatable, dismantable, inside ratchet, HF Connector</td>
<td>£29.00</td>
</tr>
<tr>
<td>531.02H05V</td>
<td>Mini - Metzenbaum Scissors 5mm 33cm insulated, rotatable, dismantable</td>
<td>£29.00</td>
</tr>
<tr>
<td>531.40H11V</td>
<td>Dissecting Forceps, (Maryland) 5mm, 31cm, insulated, dismantable, Silicon Handle, inside ratchet</td>
<td>£29.00</td>
</tr>
<tr>
<td>X-300-26</td>
<td>Silicon Tube, ID: 5mm, 3m, LLM both ends</td>
<td>£29.00</td>
</tr>
<tr>
<td>BP-05-321</td>
<td>Bipolar Grasping &amp; Cutting Forceps 5mm, WL: 320mm, disposable, Universal Connector</td>
<td>£29.00</td>
</tr>
<tr>
<td>BP2-533-10</td>
<td>Bipolar Grasping Forceps with std. handle 5mm, WL: 34cm, jaws: 13 4.5mm with hook totally dismantable</td>
<td>£29.00</td>
</tr>
<tr>
<td>BP-500-11</td>
<td>Bipolar Cable, 5m, comp.to Martin Unit to Martin/ Berchtold Instrument</td>
<td>£29.00</td>
</tr>
</tbody>
</table>

**Code Description**

LAPAROSCOPIC STARTER KIT

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAPROKIT</td>
<td>Laparoscopy Starter Kit</td>
<td>£6,450.00</td>
</tr>
</tbody>
</table>
### Trochars and Cannulae

**Trochar Cannulas with Magnetic Valving**

- **231-213V**: Cannula only, Magnetic Valve, ID: 5.5mm, WL: 7cm, Inflation Stopcock. **£295.00**
- **231-137V**: Cannula only, Magnetic Valve, ID: 5.5mm, WL: 7cm. **£335.00**
- **230-212V**: Cannula only, Magnetic Valve, ID: 5.5mm, WL: 7cm, 45g. **£385.00**
- **230-105V**: Trochar only, with Sharp Tip, compatible to ID: 5.5mm, WL: 7cm. **£150.00**

**5.5mm Inner Diameter Cannulae for 5mm Scopes**

- **231-213V**: Cannula only, Magnetic Valve, ID: 5.5mm, WL: 7cm, Inflation Stopcock. **£295.00**
- **231-212V**: Cannula only, Magnetic Valve, ID: 5.5mm, WL: 7cm, 45g. **£335.00**
- **231-204V**: Cannula only, Magnetic Valve, ID: 5.5mm, WL: 7cm, 30g. **£385.00**
- **231-137V**: Safety Trochar only, comp. to cannulas ID: 5.5mm, WL: 7cm, fully dismantable. **£385.00**
- **231-105V**: Trochar only, with Sharp Tip, compatible to ID: 5.5mm, WL: 7cm. **£150.00**

**10mm Inner Diameter Trochars & Cannulae for 10mm Scopes**

- **230-212V**: Cannula only, Magnetic Valve, ID: 10mm, WL: 7cm, Inflation Stopcock, 55g. **£365.00**
- **230-213V**: Cannula only, Magnetic Valve, ID: 10mm, WL: 7cm, 45g. **£335.00**
- **230-137V**: Safety Trochar only, compatible to Cannulas with ID: 10mm, WL: 7cm, fully dismantable, cork screw handles. **£425.00**
- **230-105V**: Trochar only with Pyramidal Tip for Trochars Cannulas ID: 10mm, WL: 7cm. **£150.00**

### Trochar Cannulas

Trochar Cannulas are designed with different types of valves to reduce or avoid CO2 loss when changing instruments and telescope during laparoscopy and thoracoscopy. Our reusable and patented magnetic valve trocar system has several advantages compared to other valve types. They are lightweight and because of the valve construction, the insertion of instruments and scopes will pass smoothly through without scratching or touching the front lens like in a so called automatic valve system. In addition there is nearly no gas loss even when changing instruments. There are no mechanical parts to clean inside except the magnetic flap itself which is a great help to your staff.

### Palpation, Dissection and Puncture Instruments

**Laparoscopy First Puncture Needle, Veress**

- **L-19-120**: Veress Needle 2mm x 100mm Luer Lock. **£130.00**

**Thoracoscopy First Puncture Needle, Long Version**

- **TR-03-201**: Thoracoscopy Needle 3mm x 200mm includes Sharp Trochar. **£155.00**

**Palpation Probe and Puncture Cannula**

5mm diameter, 330mm long protected interchangeable needle with outer tube. Consists of:
- L-33 Inside tube Luer lock Connector
- L-33-2 Outside Tube/ Probe
- L-210 Needle 1 x 26mm

**Knot Tier and Cutter**

5mm diameter, 310mm long. Makes it easy to thread and tighten sutures. Integrated cutting device.

**Preparation Safety Sponge Forceps**

5mm diameter, 3 hooks, 330mm. Matt non reflective surface. Strips fully for cleaning.

**Auto Grasping Forceps**

5mm diameter, Working length (WL) 320mm. Easily dismantable.
Hand Instruments

Fritz hand instruments have a modular construction. The handles, the connecting tubes and the working jaw tips are interchangeable.

Easily stripped down for cleaning, compatible to 5mm and 10mm trochar cannulas. All handles have a High Frequency connector.

**Handles**

- Tubular sheaths

- The handles may have plastic coated or stainless handles. They may or may not have a ratchet. The ratchet may be external or enclosed. See individual instruments for exact construction.

**5mm Instruments Complete**

**Scissors**

- Mini-Metzenbaum Scissors 531.02H05V
- Hook Scissors 531.04H05V

**Biopsy Forceps**

- Biopsy Forceps 531.60H01V
- Biopsy Forceps 531.61H01V

**5mm Instruments Complete**

- 531.40H11V Dissecting Forceps, 5mm, 31cm, insulated, dismantlable, rotatable, consisting of: jaws insert (53 M 40), sheath (53 R 1) handle (H 01) colour code: black
- 531.23H11V Atraumatic Grasper, curved 5mm, 33cm, insulated, rotatable, dismantlable, inside ratchet, consisting of: jaws insert (53 M 23), sheath (53 R 1) handle (H11, HF-connector), colour code: black
- 531.22H21V Grasping Forceps, universal use, 5mm, 33cm, insulated, dismantlable, rotatable, outside ratchet, consisting of: jaws insert (53 M 22), sheath (53 R 1) handle (H 21, HF-connector), colour code: black
- 531.27H11V Babcock Grasping Forceps, 5mm, 33cm, insulated, dismantlable, rotatable, inside ratchet, consisting of: jaws insert (53 M 27), sheath (53 R 1) handle (H 11, HF-connector), colour code: black
- 531.35H21V DeBakey Grasping Forceps, 5mm, 33cm, insulated, dismantlable, rotatable, HF-connector consisting of: jaws insert (53 M 35), sheath (53 R 1) handle (H 21, colour code: black
- 531.36H21V Bowel Grasping Forceps, 5mm, 33cm, insulated, dismantlable, rotatable, outside ratchet, consisting of: jaws insert (53 M 36), sheath (53 R 1) handle (H 21), colour code: black
- 536.30H52V Claw Grasping Forceps, 5mm, 33cm, metal, fixed tube, outside ratchet, consisting of: jaws insert (53 M 36), sheath (53 R 6) handle (H 52), metal *Only available with Axial handles (the frog)*

**BIOPSY FORCEPS**

- Biopsy Forceps 531.60H01V
- Biopsy Forceps 531.61H01V

**Laparoscope Instrument Cleaning Kit**

Laparoscope Instrument Cleaning Kit consists of:
- 3 x General Brush Nylon Bristles
- 3 x Laparoscopic Trumpet Valve Brush
- 3 x Nylon Twisted Wire Brush 3mm diameter
- 3 x Nylon Twisted Wire Brush 5mm diameter
- 3 x Nylon Twisted Wire Brush 10mm diameter

**LAPROCLEAN Laparoscope Instrument Cleaning Kit**

£160.00