

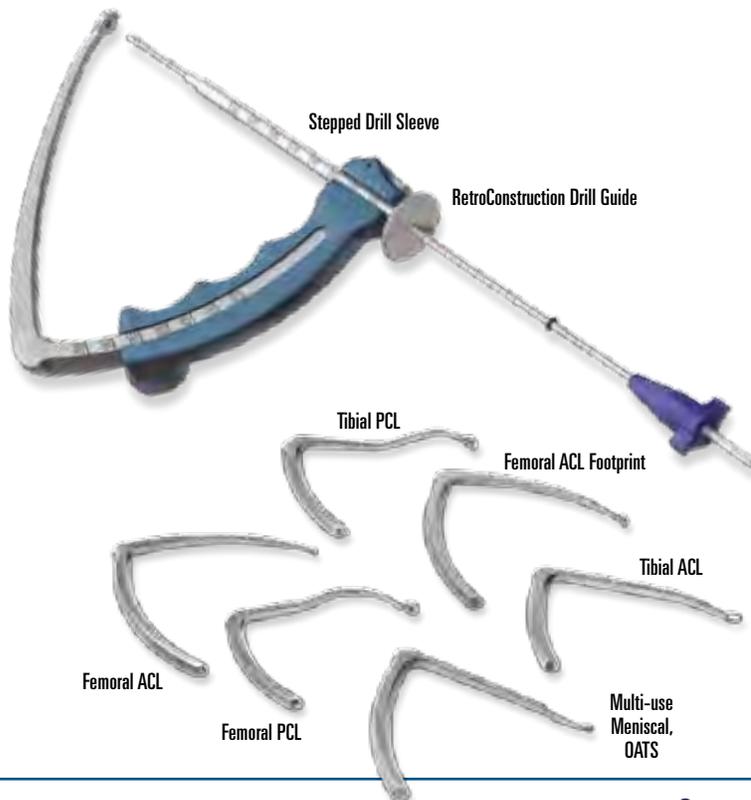
SCOPE THIS OUT

A Technical Pearls Newsletter for Arthroscopists

New RetroConstruction Drill Guide System for FlipCutter

Retrograde socket creation with the FlipCutter has revolutionized anatomic, minimally invasive socket placement for knee reconstruction procedures. The new RetroConstruction Drill Guide Set allows surgeons to use the FlipCutter for many different indications using a small, modular guide system.

This new set includes an adjustable C-Ring handle with six different marking hooks for ACL/PCL reconstruction, as well as a multi-use hook for meniscal root repair, meniscal allograft and osteochondral grafting techniques. Choose from a standard drill sleeve or the new stepped drill sleeve that can be impacted into the cortex, acting as a depth stop for socket drilling and allows simplified passage of FiberStick suture for graft passing.



BioComposite RetroScrews

The BioComposite RetroScrew complements the full range of BioComposite Interference Screw lengths and thread profiles for every ligament fixation procedure.

The BioComposite RetroScrews are comprised of 70% PLDLA and 30% biphasic calcium phosphate and are indicated for use as a fixation device in soft tissue and BTB all-inside ACL and PCL reconstruction procedures. Available in 7 mm - 10 mm x 20 mm sizes, each is inserted using the RetroScrew Driver.

Clinical reports suggest that biphasic calcium phosphate has excellent potential in orthopaedic applications. As the focus of many bone replacement studies, superior osteoblast adhesion, early bone formation and bony incorporation can be connected to the favorable osteoconductive and bioresorbable properties within biphasic calcium phosphate.



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Upper Extremity

Univers II - The Definitive and Simplified Solution for Total Shoulder Arthroplasty

Implant Design Rationale

Variable adjustment with respect to inclination angle, version and head offset are features critical to reconstruction of the glenohumeral joint. The Univers II was designed to account for the anatomical variations of the proximal humerus commonly encountered by the surgeon. The simplified design of the Univers II allows the surgeon to adapt the humeral stem and articular surface to the position that best represents the patient's normal anatomy and with this unique implant, all adjustments can be made with the prosthesis in the humeral canal. Ultimately, with anatomical restoration of the humerus and glenoid, soft tissue balancing of the rotator cuff is more accurate, allowing for improved functional outcome.



Implant Features:

- Variable inclination, version & offset
- Package-to-canal design: anatomic restoration in situ
- Pegged and keeled glenoid options available
- Eccentric humeral heads
- Multiple head diameters & heights
- Instruments and trays designed to maximize efficiency in the operating room



PassPort Button Cannulas

The PassPort Cannulas help maximize visibility and maneuverability inside and outside of the arthroscopic work space. The double-dam one-piece molded design has low profile flanges that seat flush to the skin and soft tissue. These flanges create a stable portal that allows instruments to be inserted and removed, without the concern of cannula loss. They are easily introduced by grasping the inside flange with a curved hemostat and inserting into the incision. Indications in the shoulder, knee, hip and elbow. Available in 6, 8, and 10 mm ID's and 20, 30, 40, and 50 mm lengths. Each cannula is supplied with a 5 mm spacer to ensure accurate length.



Vented SwiveLock

New "vented" versions of the knotless SwiveLock suture anchor are now available. The vents enhance the flow of blood and bone marrow directly to the repair site. Vented options currently include bioabsorbable 5.5 mm Bio-SwiveLock C and self-punching 4.75 and 5.5 mm PEEK SwiveLock SP. The Vented SwiveLock can be combined with FiberTape to create a quick and secure SpeedBridge construct with no knots and only two suture passing steps. The result is a low profile, transosseous equivalent suture bridge that enhances footprint compression to maximize contact between tendon and bone to promote healing.



Small Joint

Scientific Studies Support Innovative Products

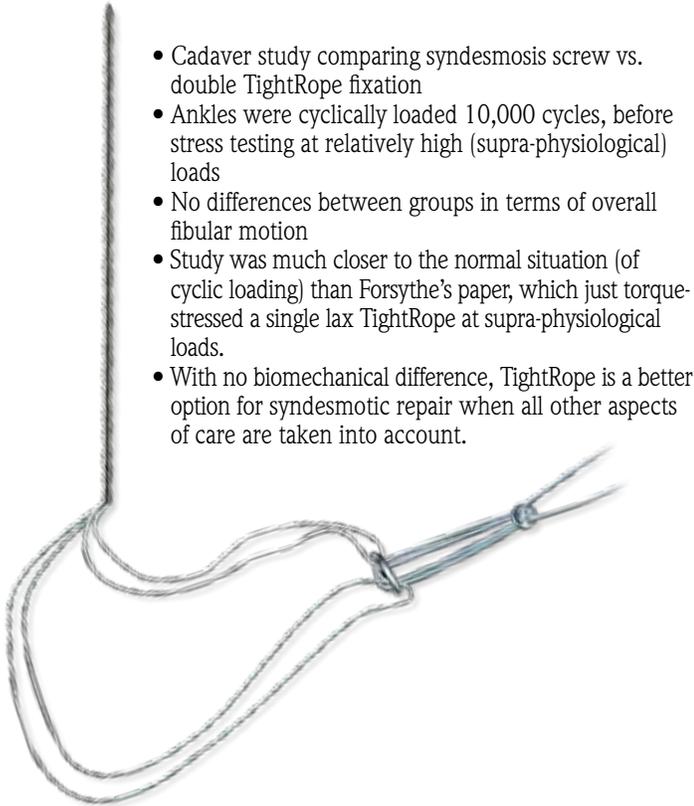
Recent articles published in *Foot & Ankle International* support innovative foot and ankle products. On the next page are summaries which support the LPS Lapidus Plate and Syndesmosis TightRope.

1. *Arthrodesis of the First Metatarsocuneiform Joint: A Comparative Study of Fixation Methods.* Scranton, P.; Coetzee, J.C.; Carreira, D.; *Foot & Ankle International*, 30(4) 341-345, April 2009.
2. *Suture-Button vs Screw Fixation in a Syndesmosis Rupture Model: A Biomechanical Comparison.* Sandeep P. Soin, BS; Trevor A. Knight, BS; A. Feroz Dinah, MRCS (Eng); Simon C. Mears, MD, PhD; Bart A. Swierstra, MD, PhD; Stephen M. Belkoff, PhD. *Foot & Ankle International*, 30:346-352 April 2009.

TightRope Syndesmosis Fixation System

NO Difference vs. Syndesmotic Screw in Terms of Overall Fibular Motion!

TightRope provides larger overall benefit in terms of faster rehabilitation and elimination of second surgery.



- Cadaver study comparing syndesmosis screw vs. double TightRope fixation
- Ankles were cyclically loaded 10,000 cycles, before stress testing at relatively high (supra-physiological) loads
- No differences between groups in terms of overall fibular motion
- Study was much closer to the normal situation (of cyclic loading) than Forsythe's paper, which just torque-stressed a single lax TightRope at supra-physiological loads.
- With no biomechanical difference, TightRope is a better option for syndesmotic repair when all other aspects of care are taken into account.

LPS Lapidus Plate

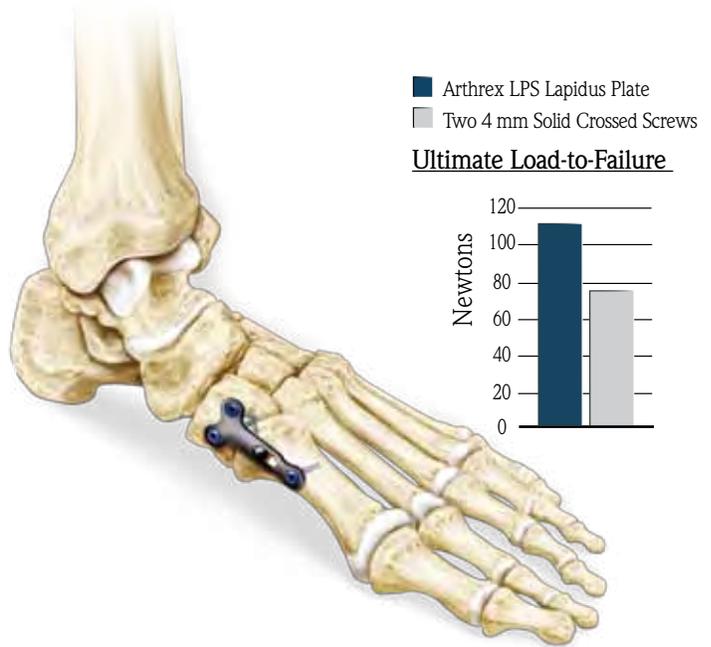
38% Stronger than Two Crossing Screws for First Metatarsal Cuneiform Arthrodesis!

- Study compares Arthrex LPS Lapidus Plate vs. two crossing screws for arthrodesis of first metatarsocuneiform joint
- LPS Lapidus Plate 38% stronger: 108Nm vs. 78Nm bending moment
- That is 38% stronger than the old "Gold Standard"

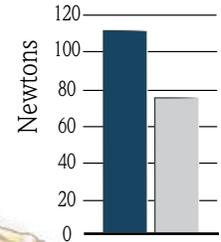


The LPS Lapidus Plate combines advantages of the locking construct, combined with the Compression Screw for 38% more stability.

The increased rigidity provided by these plates may help minimize the risk of nonunions or malunions. For use in HAV, severe HAV, adolescent HAV, first metatarsocuneiform hypermobility, primary or secondary medial column Lisfranc arthrodesis.



Ultimate Load-to-Failure



Bio-Tenodesis Screw System Update

Arthrex now offers the full array of Tenodesis Screws in PEEK, a nonabsorbable, radiolucent, high-strength polymer. This addition to the ever-popular Tenodesis System is in response to surgeon requests for a stronger screw that offers an extended shelf life. Current techniques and instrumentation will work the same with the new PEEK screws, as they have and continue to do with the PLLA versions.



Comprehensive Screw Selection

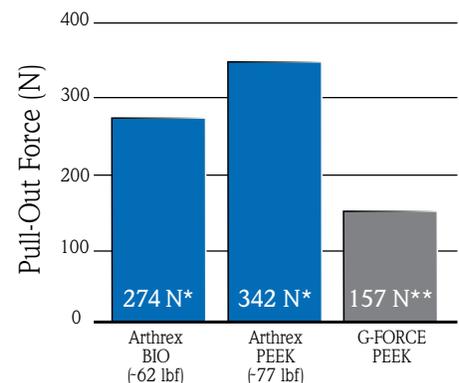
- Bio, PEEK, or metal in 3 mm - 9 mm diameters x 8 mm - 23 mm lengths

Unique Patented System for Blind Tunnel Tensioning

- Insert, tension and fixate a repair without transosseous tunnels

Complete Disposable Tenodesis System for Small Joint Applications

- Reusable or disposable instrument sets available



Over two times the pull-out strength of the G-Force PEEK Screw

*data on file
**as shown in G-FORCE's advertising

New 300 Power System

The 300 Power System has a unique ergonomic design that delivers highest precision due to the optimum balance. It is modular, which allows one system for all small bone applications. With a PEEK housing and Lithium-Ion battery technology, it is the only battery powered small bone system of this type on the market. The 300 small bone system also uses brushless motor technology which allows for maximum torque throughout the entire speed range, as well as providing a higher level of reliability than other devices.



New 600 Power System

The 600 Power System is modular and features PEEK housing and Lithium-Ion battery technology. The brushless motor technology allows for maximum torque throughout the entire speed range as well as providing a higher level of reliability than other competitive devices. The brushless motor is sealed and lifetime lubricated, which translates to no preventative maintenance. The 600 large bone system is designed for all applications in large bone surgery. It is the only modular large bone system on the market to use one hand piece for all attachments, including the oscillating saw.



ACP: Autologous Conditioned Plasma

The Autologous Conditioned Plasma (ACP) System is a unique device that is used to concentrate platelets and growth factors within a plasma layer separate from white and red blood cells. This plasma may then be used by the physician at the point of treatment for a variety of applications. It has been shown that delivering concentrated growth factors to a surgical site may improve the environment for healing.

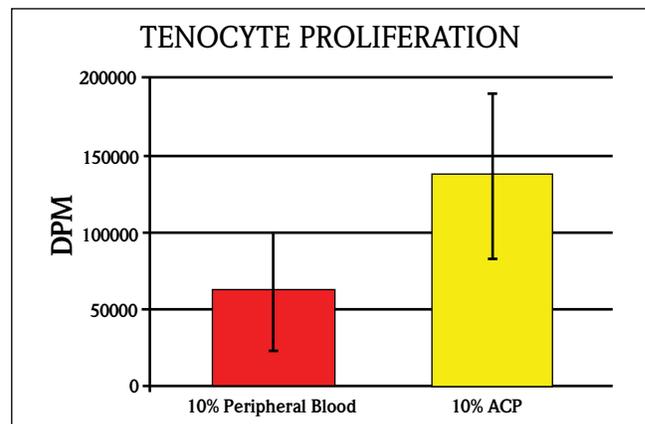
Features and Benefits:

- Concentrates platelets and growth factors without concentrating inflammatory white or red cells that can interfere with the healing process
- Affordable and easy to use procedure can be performed in a fraction of the time compared to other systems
- Requires only 10cc of blood, simplifying blood recovery from the patient
- No acidic anticoagulant like ACD-A required if used within 30 minutes of preparation



ACP: *In Vitro* Tenocyte Proliferation

Tenocytes are specialized mesenchymal-derived cells responsible for the synthesis, repair, and maintenance of connective tissue¹. For this study, human tenocytes were isolated, and then cultured in standard tenocyte media. While in culture, diluted ACP and peripheral blood (control) were independently administered and human tenocyte proliferation rates were measured. Tenocyte proliferation was measured after five days in culture using a thymidine incorporation assay. Even with a 10% dilution, it is evident that there was a significant increase in proliferation of tenocytes cultured in ACP versus peripheral blood ($p < 0.05$).



1. Schulze, Tanzil G, et al., Cultivation of Human Tenocytes in High Density Culture, Histochemistry and Cell Biology; 2004, 122, (3): 219-228.

Pointers & Pearls



PassPort Cannula with 5 mm Spacer

PassPort Button Cannulas Insertion Procedure

The unique design of the PassPort Cannula requires the surgeon to make a small portal incision and measure the depth of the portal to ensure the proper fit and function of the cannula. This flexible cannula should “fit” within the portal to ensure the cannula remains stable while inserting and withdrawing instrumentation.

1 Portal Incision

The incision should be smaller than the cannula to be inserted. When the incision is the correct size, the cannula will flex through the portal into position becoming resistant to pullout. The incision for the 8 mm PassPort Cannula should be slightly bigger than a scope portal or half the size of a traditional portal for an 8.25 mm cannula.

2 PassPort Length Measurement

Insert the Articulating Paddle Elevator, AR-8630, through the portal, flip the paddle, and pull back on the handle to determine the correct length. Always go long if between sizes, the specimen will swell and the 5 mm spacers (included with each PassPort) can help take up space. When undersized, the pullout strength will be compromised since the inner flange will not completely open and seat flush to the inner surface.



AR-8630

3 Grasping and Inserting the PassPort

There are two recommended methods to grasp the PassPort with a hemostat:



1. Fold the outer flange of the PassPort in half and grasp with a curved hemostat (AR-6592). Allow space at the tip of the hemostat to act as a guide through the portal.

Insert and verify the PassPort flange is through the portal. Release and retract the hemostat when fully inserted.



2. Insert a straight grasper or hemostat through the PassPort. Fold the flange over into the jaw. Be sure to grab a large enough bite of the flange to prevent it from tearing.

Insert and verify the PassPort flange is through the portal. Release and retract hemostat through the PassPort when fully inserted.



IN THE Loop

Described by Gregory S. DiFelice, M.D.

*Director of Sports Medicine & Joint Reconstruction Surgery
North Bronx Healthcare Network*

*Assistant Professor of Orthopaedic Surgery
Albert Einstein College of Medicine, Bronx, New York*

*Attending Orthopaedic Surgeon
Lenox Hill Hospital, New York, New York*

PCL Avulsion Repair Using the FlipCutter

On a routine basis, ligament repair has not been shown to be an effective treatment method, however a small percentage of PCL ruptures are “peel-off” or “avulsion” injuries that may be amenable to surgical repair. If recognized on an MRI (Fig. 1&2), these injuries may be optimally treated in the acute or subacute setting with ligament repair, using newer technologies. The PCL more commonly “peels” off of the femur (Fig. 1), however there are also episodes of tibial avulsion (Fig. 2). Oftentimes, these injuries are combined with other ligament injuries in the multiple ligament injured knee, and using repair techniques has been reported with success in the setting. Several reports of PCL repair to the femur have been described, however, repair to the tibia has not been reported.



Figure 1: PCL Femoral “Peel-Off”



Figure 2: PCL Tibial Avulsion

Using the Scorpion Suture Passer will allow numerous locking draw sutures to be passed into the PCL stump arthroscopically. Once control of the ligament has been achieved, the FlipCutter allows an anatomically placed intraosseous socket to be reamed in minimally invasive fashion. This socket, placed at the origin or insertion of the ligament depending on the situation, serves two functions: to provide a conduit for the repair sutures to be tied distally over a ligament button, and to provide a bleeding bed that maximizes the release of pleuripotential stem cells that aid in ligament repair.

Surgical Technique



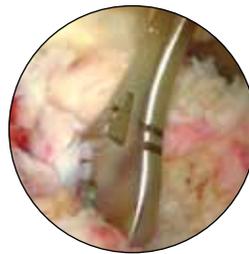
1. PCL Avulsion from tibia (Fig. 2) with stump flipped into notch



2. Using a Scorpion Suture Passer to pass multiple interlocking #2 FiberWires through stump



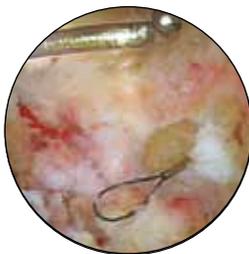
3. Multiple locking #2 FiberWires in PCL stump drawn towards anteromedial portal



4. FlipCutter Constant PCL Guide at former PCL insertion. View from posteromedial portal



5. 10 mm FlipCutter deployed at former PCL insertion. View from posteromedial portal



6. Nitinol passing wire at tibial PCL socket. View from posteromedial portal



7. Sutures passed through the tunnel. Prior to tensioning PCL. View from posteromedial portal



8. Sutures passed through the tunnel. PCL is now tensioned. View from posteromedial portal



9. Final view of PCL from anterolateral with PCL repaired. Sutures tied distally over suture button



What's in My Bag?

Featuring: James Bradley, M.D.

*Past President, NFL, Physicians Society
Head Orthopaedic Surgeon, Pittsburgh Steelers
President-Elect, Herodicus Society
Co-Director, Greg Norman Golf Institute, Pittsburgh, PA*



Q. Regarding bone-patellar tendon-bone (BTB) ACL reconstructions in which you use autograft tendon, what has been the biggest hurdle for patients postoperatively in regards to their rehab and healing?

A. The primary issues entail the healing of the BTB donor sites, which can result in kneeling and anterior knee pain as they recover.

Q. Prior to the release of the OSferion Trapezoids, did you use any implants to fill either the patella or tibial tuberosity bone voids and did these implant options work?

A. In the past, I utilized the excess bone from the patellar and tibia bone plugs to bone graft the patella and tibia. The problem was that there never seemed to be enough bone to completely fill the defects.

Q. What do you see as a viable treatment option for these issues?

A. OSferion Trapezoids made of tricalcium phosphate that act as a scaffold for complete bony reconstruction of the donor sites.

Q. What was your initial impression of the OSferion Trapezoid Implants?

A. Initially, I was skeptical that adding implants would result in a different post-op, but I have been pleasantly surprised at the results we've had at our facility.

Q. How long have you been using the OSferion Trapezoid implants now, and what are your initial patient outcomes?

A. I have been implanting OSferion for over 1-1/2 years and after an initial pilot study to assess efficacy, we embarked on a prospective randomized study. The PRCT has demonstrated significant differences in improved kneeling and anterior knee pain. The study is continuing into its second year.

Q. What future developments in ACL reconstruction techniques do you believe will further contribute towards improved patient outcomes?

A. The next big advancement will probably be a form of biologic enhancement/augmentation of the repair. Specifically platelet rich plasma from the patients' blood to "jump start" the reparative process.



One Week



Three Months



Six Months

Serial postoperative x-rays



Welcome to OrthoIllustrated - Patient Use

OrthoIllustrated.com is a leading Internet-based resource for patient education. On this interactive website, patients will find information about the diagnosis and treatment of common sports medicine injuries.



Multimedia videos and animations



Research surgical options



Search for doctors in your area (to be listed in the surgeon finder, contact your local sales representative)



Patients can use OrthoIllustrated to:

- ▶ Learn about the anatomy of the body
- ▶ Learn how a sports medicine injury occurs and how it is treated
- ▶ Review medical illustrations of the anatomy involved in common sports injuries
- ▶ Review illustrations of sports medicine surgical techniques
- ▶ Watch animations of common sports medicine procedures
- ▶ Locate a surgeon who performs the surgical techniques featured in the animations

OrthoIllustrated™
Orthopaedic Surgery Patient Education

STO Featured Product Information

RetroConstruction Drill Guide Set.....	AR-1510S
BioComposite RetroScrew, 7 mm.....	AR-1586RC-07
BioComposite RetroScrew, 8 mm.....	AR-1586RC-08
BioComposite RetroScrew, 9 mm.....	AR-1586RC-09
BioComposite RetroScrew, 10 mm.....	AR-1586RC-10
Univers II Glenoid Instrumentation.....	AR-9225S
Univers II Humeral Instrumentation.....	AR-9226S
Univers II Shoulder Head Resection Disposables Kit	AR-9206S
PassPort Cannulas, 6 mm ID x 2 cm - 5 cm.....	AR-6592-06-20 - 50
PassPort Cannulas, 8 mm ID x 2 cm - 5 cm.....	AR-6592-08-20 - 50
PassPort Cannulas, 10 mm ID x 2 cm - 5 cm.....	AR-6592-10-20 - 50
Vented SwiveLock	AR-2323BSLV
TightRope Syndesmosis Repair Implants, titanium	AR-8920DS
TightRope Syndesmosis Repair Implants, Stainless Steel.....	AR-8921DS
Lapidus Plate.....	AR-8941
PEEK Tenodesis Screw, 3 mm x 8 mm	AR-1530PS
PEEK Tenodesis Screw, 4 mm x 10 mm	AR-1540PS
PEEK Tenodesis Screw, 4.75 mm x 15 mm.....	AR-1547PS
PEEK Tenodesis Screw, 5.5 mm x 8 mm	AR-1655PS
PEEK Tenodesis Screw, 5.5 mm x 15 mm	AR-1555PS
PEEK Tenodesis Screw, 6.25 mm x 15 mm	AR-1562PS
PEEK Tenodesis Screw, 7 mm x 10 mm	AR-1670PS
PEEK Tenodesis Screw, 7 mm x 23 mm	AR-1570PS
PEEK Tenodesis Screw, 8 mm x 12 mm	AR-1680PS
PEEK Tenodesis Screw, 8 mm x 23 mm	AR-1580PS
PEEK Tenodesis Screw, 9 mm x 23 mm	AR-1590PS
300 Power System.....	V-300
600 Power System.....	V-600
FlipCutters, 6 mm - 13 mm.....	AR-1204F-60 - 130
Constant PCL Guide.....	AR-2500
Scorpion Suture Passer, 16 mm	AR-13990
Scorpion Suture Passer, 20 mm	AR-13992
OSferion Trapezoid, 8 mm x 25 mm x 7 mm x 75°.....	AR-13372-1
OSferion Trapezoid, 9 mm x 25 mm x 7 mm x 75°.....	AR-13372-2
OSferion Trapezoid, 10 mm x 25 mm x 7 mm x 75°.....	AR-13372-3

For more information or to order, contact your Arthrex representative or call Customer Service at 800-934-4404.



Scope This Out is an informational newsletter designed to educate orthopaedic surgeons on state-of-the-art surgical procedures and "pearls" to assist in improving surgical skills. This newsletter is published quarterly by Arthrex, Inc., exclusively for the orthopaedic surgeon community.

For more information or comments regarding the content of this newsletter, contact us at our Corporate Headquarters:

Arthrex, Inc.
1370 Creekside Boulevard
Naples, Florida 34108 USA
Phone: (800) 933-7001
Fax: (239) 598-5534
Email: information@arthrex.com

Eastern Hemisphere offices are located in Germany, France, England, Austria, Belgium, Sweden, Switzerland and Korea.

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