RICHARD WOLF

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One System – A Wealth of Options

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Instrument System for Arthroscopic Cruciate Ligament Surgery

graftline

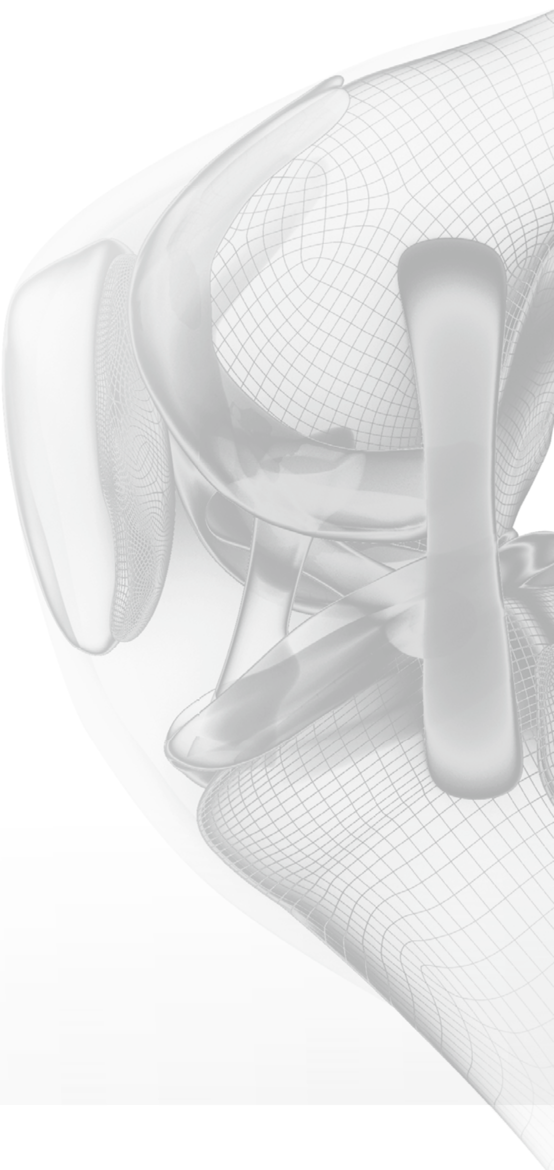
One System – A Wealth of Options

Graftline, the newly designed instrument and implant system from Richard Wolf provides the versatile, medical platform for successful reconstruction of anterior and posterior cruciate ligaments.

Modular structure

The high performance of the system is provided by unsurpassed diversity and universality. **Graftline** offers highly specialized, partly patented technology for an enormous range of surgical opportunities.

- **Efficiency hand in hand.** A few movements of the hand with intuitive connectivity for all instruments save weight and space.
- **ACL and PCL in one grip. Graftline** provides the instrument set for reconstruction of the anterior and posterior cruciate ligaments in an intelligent combination.
- **All clear for a good comfortable hand position.** The surgeon is ideally prepared with Graftline instruments and grafts to deal with all eventualities, e.g. if reruptures occur.



Convincing technology

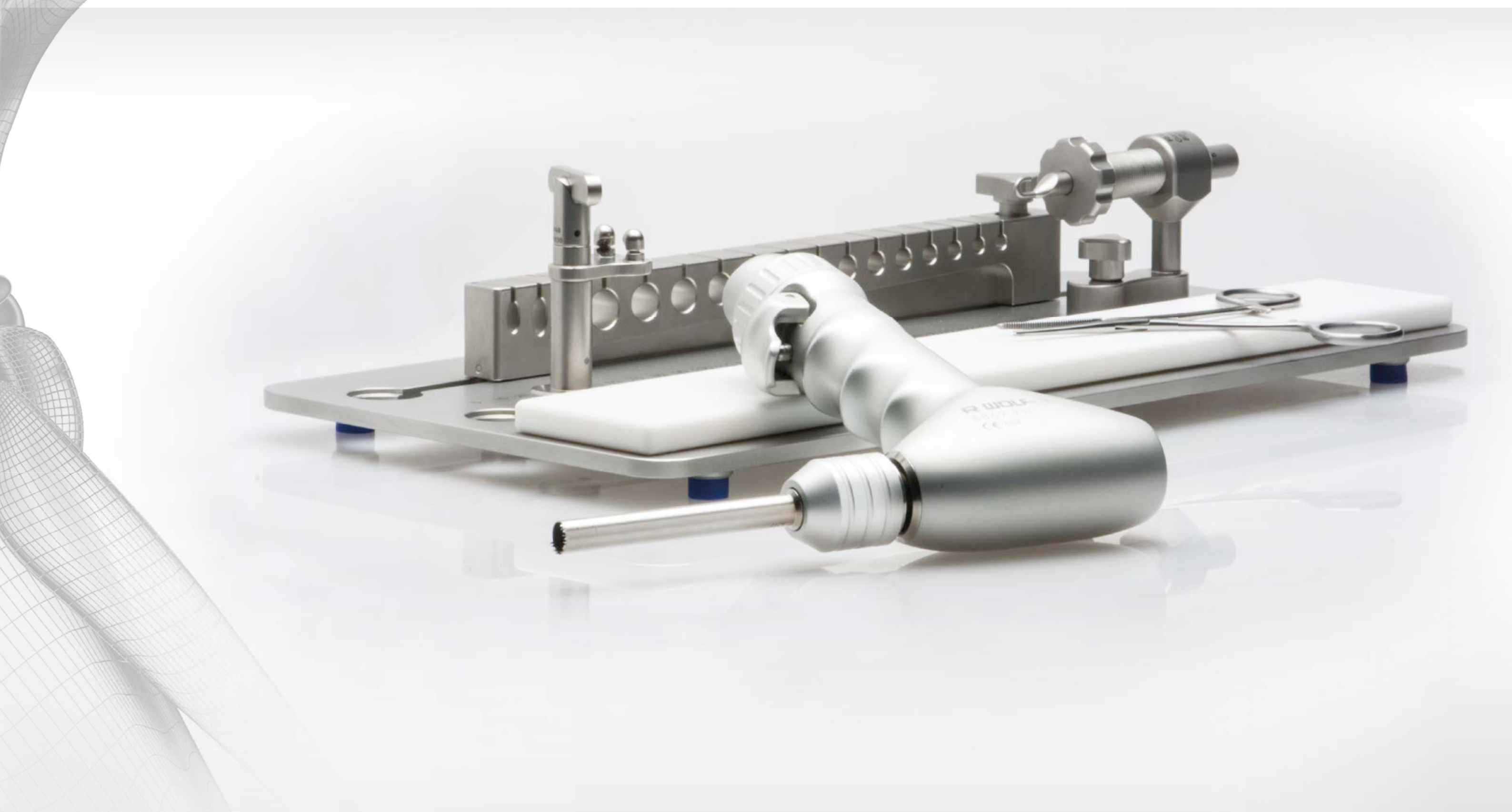
A new instrument solution supplied only by Richard Wolf to meet all the requirements of the surgeon and provide an exceptionally complete system.

Fixation with choice

Graftline provides a choice of the ideal fixation method for the cruciate ligament graft without having to spend time carrying out adjustments or modifications. A tried-and-tested selection of fixing implants is available for fixation.

Unique perspectives

Graftline gives surgeons access to all methodological channels – from standard techniques to innovative specific solutions. BTB, BT grafts, hamstrings or allografts, oval tunnel technique and hollow-burr technique: One System – A Wealth of Possibilities



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Removal of an autologous tendon

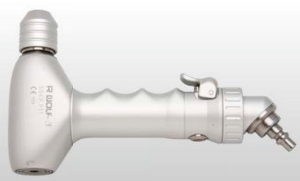
Semitendinosus tendon and /or gracilis tendon

Alongside the standard technique, surgeons can use the semitendinosus tendon and/or the gracilis tendon, the quadriceps tendon or the patellar tendon. Apart from the standard instrument set, Richard Wolf also offers special equipment, such as tendon harvester and compressed air drill which plays a major role in making work particularly efficient and precise.

	**Tendon harvester by Paessler** universal, ring diameter 8.0 mm, WL 300 mm 8866.951	• Universal open/lockable/cutting function • Blunt distal end • Detachable
	**Tendon harvester** standard, ring diameter 7.0 mm, WL 300 mm 891610070	• Closed • Sharp distal end

Quadriceps or patellar tendon

Graftline offers a unique removal technique for patellar and quadriceps tendon grafts with the oscillating hollow-burr system: The surgeon benefits from a faster and standardized removal (cylindrical shape) which requires virtually no reworking.

	**Compressed air drill** oscillating, Synthes connector 8869.911	• Standardized removal of cylindrical bone blocks with oscillating, rotating cutting movement • Time-saving • Avoidance of unwanted patellar fractures in graft removal
	**Hollow burr** Inside Ø 8.4 mm .... 8869.841 Inside Ø 9.4 mm .... 8869.843 Inside Ø 10.5 mm 8869.844	• Cutting teeth only on 2/3 of the distal burr, resulting in preservation of the tendon • Different diameters for removal of bone blocks
	**Bone elevator** Inside Ø 8.4 mm .... 8868.921 Inside Ø 9.4 mm .... 8868.922 Inside Ø 10.5 mm 8868.923	• Harvesting the bone blocks from the patella after using hollow burrs
	Suture hook Ø 5 mm, WL 350 mm 8869.921	• Passing the sutures through and pulling the graft into the hollow burr

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Preparation of the graft

Arthroscopic workstation

The **Graftline** workstation was developed with the aim of achieving maximum efficiency in tendon preparation irrespective of whether the graft is subsequently to be fixed in placed with a screw, T-Lock or RIWObutton, appropriate mounts for all fixation systems are available and simplify preparation. The system has a modular structure and can be configured to meet specific requirements for each individual case.

	**Preparation table** 8866 9023	• Robust table design for efficient graft preparation
	Preparation board 8866 905	• Plastic plate for positioning and preparation of tendons
	**Transplant template** 8866 953	• Simple and fast determination of the graft diameter • Additional oval templates for precise determination of the graft diameter for oval-shaped tunnels
	**Clamp holding fixture** 8866 962	• Mounting for the clamps
	**Clamp** **small** .... 8866 938 **large** 8866 939	• For grasping the graft during preparation
	**Hook clamp** 8866 935	• Mounting for a tendon loop with hamstring grafts
	**Parallel screw clamp cpl.** 8866 961	• Mount for bone-tendon grafts • Drill hole possible for the shuttle thread via guide in the clamp screw
	**RIWObutton holding fixture** 8866 969	• Clamping the RIWObutton and comparable implants • Adjustment of the loop length at the worktop
	**Tendon holding fixture cpl.** **Ø 6 mm** .... 8866 966 **Ø 8 mm** 8866 968	• Mounting bone-tendon and hamstring grafts (for holding bone-tendon and hamstring grafts (tendon knot, press-fit technology)
	**Pretension hook** 8866 936	• For tensioning a tendon loop in hamstring grafts → Pretensioning the graft

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Creation of the femoral tunnel

Modular handles

Graftline includes high-quality handles with intuitive connecting point to different instruments. Not many handles have this universal capability to meet all the requirements of surgeon and technology. The robust construction features ergonomic design, superlative quality and precise working.

	**Modular handle,** with coupling, cannulated Ø 3.2 mm 89301 1135
	**Modular handle,** L-shaped, with coupling, cannulated Ø 3.2 mm 89301 1132
	**Modular handle,** with coupling and lateral driving plate, cannulated Ø 3.5 mm 89301 1136

Femoral alignment devices

Wire guides for anteromedial and for transtibial access are supplied for reconstruction of the anterior cruciate ligament. The various offsets can easily be differentiated by the colored markings. **Graftline** also provides the opportunity to create an oval-shaped channel on the joint side. This means that the femoral insertion area of the anterior cruciate ligament can be anatomically replicated in a similar way to the two-bundle reconstruction. Special wire guides also guarantee optimum positioning of the tunnel in this technique. All wire guides, including the guides for PCL reconstruction, can be combined with the modular handles thanks to their innovative interface.

ACL		
	**ACL K-Wire Guide** femoral anteromedial, cannulated Ø 2.5 mm, WL 120 mm color coding blue, offset 5 mm..........................89101 3050 green, offset 6 mm.........................89101 3060 red, offset 7 mm ....89101 3070 blank, offset 8 mm.........................89101 3080	• For anteromedial access • Optimized distal head shape • Different offsets • For use with the modular handles
	**ACL K-Wire Guide** femoral transtibial, cannulated Ø 2.5 mm, WL 120 mm color coding blue, offset 5 mm ....89101 5050 green, offset 6 mm ....89101 5060 red, offset 7 mm.............................89101 5070	• For transtibial access • Different offsets • For use with the modular handles
	**ACL K-Wire Guide** femoral, cannulated Ø 2.5 mm, WL 120 mm color coding blue, oval 5 x 10 mm,....................89101 3510 green, oval 6 x 12 mm,..................89101 3612 red, oval 7 x 14 mm, ...89101 3714	• For different oval tunnels • Application with oval tunnel rasp • For use with the modular handles

PCL		
	**PCL K-Wire Guide** femoral, cannulated Ø 2.5 mm WL 120 mm color coding, red, offset 7 mm ....89101 4070 blank, offset 8 mm ....89101 4080 yellow, offset 9 mm ....89101 4090 white, offset 10 mm.......................89101 4100	• For anterolateral port • Different offsets • Open alignment plate for improved vision • For use with modular handles

UniCracker

Universal tunnel notcher

Notching the femoral tunnel allows the interference screw to be guided better when it is screwed in and prevents rotation of the graft around the screw. At the same time, the bone can be impacted.

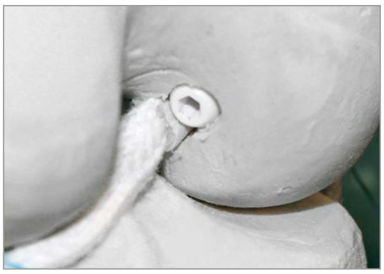


	**Universal tunnel notcher,** UNICRACKER, impacting rongeur for notching the tunnel from Ø 4 to 9 mm, cannulated 2.5 mm, WL 130 mm 89161 1110	The stepped design permits universal application for all standard graft diameters • For use with modular handles

Notch rongeur

For detaching a bone flake in the femoral tunnel. The screw is positioned between bone flake and bone so as to prevent damage to the graft by the screw thread.





	**Notch hollow chisel** length of chisel 30 mm, WL 130 mm 89151 1000	Graft protecting fixation when using interference screws • For use with modular handles

Tunnel probe

	Tunnel probe, calibrated, WL 140 mm 89151 0012	For measuring the length of the femoral tunnel – in particular when using the RIWObutton for determining the loop length

Instruments for creating oval tunnels

Graftline has a complete instrument set for creating an oval shape for the femoral part of the tunnel on the joint side in order to achieve a more anatomical replication of the insertion surface. A range of different rasps is supplied to match the diameter of the graft.

	**Tunnel rasp,** oval, cannulated Ø 2.5 mm, WL 130 mm blue, 5.0 x 10.0 mm .... 89161 1101 green, 6.0 x 12.0 mm.................. 89161 1102 red, 7.0 x 14.0 mm...................... 89161 1103	For creating an oval shape on the joint side of the femoral tunnel • Matching wire guide, see page 7 • For use with modular handles

	**Tendon fork,** cannulated Ø 2.0 mm, WL 125 mm blue, fork width 5 mm .... 89151 1101 green, fork width 6 mm .... 89151 1102 red, fork width 7 mm..................... 89151 1103	Positioning of the graft in the oval tunnel • For use with modular handles

Compactors

	**Compactor,** cannulated 2.5 mm, WL 290 mm, calibrated Ø 8.0 mm................................. 89151 1708 Ø 9.0 mm................................. 89151 1709 Ø 10.0 mm................................. 89151 1710	A compactor head flattened at the side is used to compress the spongy bone while creating an asymmetrical shape for the femoral tunnel. Serves for positioning and press-fit anchoring of bone blocks for the BT and BTB grafts. • For use with modular handles

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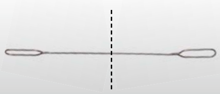
Creation of the tibial tunnel

Tibial Alignment Devices

The Richard Wolf alignment devices for creating the tibial tunnel were developed to meet the very highest specifications. The unique mechanical stability of our tibial alignment devices always permits very precise positioning of the tunnel, also at an adjustable entry angle.
Alongside the two versions of the standard alignment device for ACL reconstruction, special alignment bows are supplied for ACL double-bundle reconstruction, as well as an alignment spoon for PCL reconstruction.
The Graftline hollow drill set can be used to remove cylindrical bone blocks when creating the tibial tunnel. The autologous bone material harvested in this way is ideal for filling removal defects.

ACL single-bundle reconstruction		
	**ACL alignment device, adjustable** ...... 8874.014 Comprising: Base section .... 8874.113 Alignment spoon .... 8874.123 Drill guide, (for K wire), outer diameter 6.2 mm, inner diameter 2.5 mm 8874.131	The standard for anteromedial port in very stable design. • Range of different alignment hooks adaptable
	**Alignment hook** 8874.121	Can be used selectively instead of target spoon 8874.123.

ACL double-bundle reconstruction		
	**Alignment bow** tibial, for ACL double-bundle reconstruction on the right knee 8874 130	The special shape of the relevant alignment device takes account of the anatomical structures of the right and left knee. Two target guide wires are drilled in succession. After the first drill has been carried out, the distal fork is created at the first guide wire→ Drilling the second guide wire at a defined distance.
	**Alignment bow** tibial, for ACL double-bundle reconstruction on the left knee 8874 1301	

PCL reconstruction		
	**Alignment spoon** tibial, for PCL reconstruction 8874 129	• The alignment spoon protects the dorsal structures when the guide wire is drilled • The pull wire can be snagged at the distal end and drawn through the joint
	**Guiding wire (Pack = 3 pcs.)** for single use, L = 400 mm, unsterile.. 891010740	For easily pulling the PCL graft through the tibial channel

Auxiliary set of hollow drills for harvesting cylindrical bone blocks

Hollow drills can be used to harvest bone blocks when the tibial tunnel is created, for example in order to fill removal defects. For this purpose, the standard alignment hooks (8874.123 or 8874.121) are combined with the appropriate drill guides for hollow drills so that the precise positioning of the tibial tunnel is guaranteed.

	**Base section** 8874111	• Mounting the drill guides for hollowing drill and guide wire • Compatible with standard alignment hooks 8874.123 and 8874.121
	**Drill guide** for guide wire, Ø 2.5 mm.. 8874151 Hollow drill, Ø 9.5 mm....................... 8874152 Hollow drill, Ø 10.5 mm..................... 8874153 Hollow drill, Ø 11.6 mm..................... 8874154	• Guide of the hollow drill for removal of a tibial bone block
	**Hollow drill and ejector** Ø 9.5 mm.................. 8869 851 + 8869 852 Ø 10.5 mm.................. 8869 853 + 8869 854 Ø 11.6 mm.................. 8869 855 + 8869 856	• Application of the hollow drill with pneumatic drill 8869.911 • Drills are simultaneously guided via the drill guide, and using canullated ejectors, aligned using the guide wire – safe tunnel positioning

ACL/PCL impactors

Impactors are used to impact the soft bony part of the tunnels. Impacting becomes increasingly important here as the bone gets softer, in particular for the tibial channel.
The tunnel is initially drilled small to allow adequate impacting, in order to be subsequently dilated to the graft diameter using the appropriate impactor.
Staged impactors are used in order to be able to adequately impact bottle-neck shaped tunnels, for example when using the T-lock tendon anchor for femoral fixation.

	**Impactor** cannulated ø 2.5 mm, WL 150 mm, Ø 5.0 mm .... 8866 0011 Ø 5.5 mm .... 8866 0012 Ø 6.0 mm .... 8866.001 Ø 6.5 mm .... 8866.002 Ø 7.0 mm .... 8866.003 Ø 7.5 mm .... 8866.004 Ø 8.0 mm .... 8866.005 Ø 8.5 mm .... 8866.006 Ø 9.0 mm .... 8866.007 Ø 9.5 mm .... 8866.008 Ø 10.0 mm .... 8866.009 Ø 10.5 mm .... 8866.011 Ø 11.0 mm 8866.012	Impactors, standard, cannulated, for guide wire/ Kirschner wire Ø 2.5 mm
	**Stepped impactor** cannulated Ø 2.5 mm, WL 150 mm, Ø 8/5 mm....................................... 8866.014 Ø 9/6 mm....................................... 8866.015 Ø 10/6 mm..................................... 8866.016 Ø 11/6 mm..................................... 8866.017 Ø 12/6 mm..................................... 8866.018	Stepped impactors cannulated, for guide wire/ Kirschner wire, Ø 2.5 mm
	**Instrument tray**................................ 8866.982	For storage and Sterilization of up to 14 impactors

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Cannulated drills

	**Drill** cannulated, WL 145 mm, Ø 4.5 mm .... 89960 1045 Ø 5.0 mm .... 89960 1050 Ø 5.5 mm .... 89960 1055 Ø 6.0 mm .... 89960 1060 Ø 6.5 mm .... 89960 1065 Ø 7.0 mm .... 89960 1070 Ø 7.5 mm .... 89960 1075 Ø 8.0 mm .... 89960 1080 Ø 8.5 mm .... 89960 1085 Ø 9.0 mm .... 89960 1090 Ø 9.5 mm .... 89960 1095 Ø 10.0 mm .... 89960 1010 Ø 10.5 mm .... 89960 1910 Ø 11.0 mm .... 89960 1011 Ø 11.5 mm .... 89960 1911 Ø 12.0 mm .... 89960 1012 Ø 12.5 mm .... 89960 1912 Ø 13.0 mm 89960 1013	Drill, cannulated for guide wire/Kirschner wire 2.5 mm
	Alignment wire Ø 2.5 mm .... 89120 3025 **Alignment wire** Ø 2.5 mm .... 89960 1025 **Alignment wire** Ø 2.5 mm 89960 1125	Total length 300 mm without thread eyelet Total length 310 mm with thread eyelet Total length 430 mm with thread eyelet

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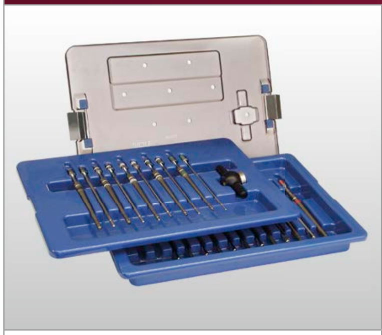
Auxiliary equipment

Special punches for revision

When carrying out revision interventions, it is initially necessary to fill old drill channels with autologous bone material. The ACL Punch Sleeve Sets have cylindrical hollow punches with a range of different diameters which can be used to harvest appropriate bone blocks, for example from the iliac crest.

	**ACL-Tubular-Chisel-Set** Comprising: 6 punch sleeves Ø 7.0/7.5/8.0/8.5/9.0/9.5 mm, 6 ejectors, 1 handle attachment, 1 tray 8866 302	For removal of bone blocks from the femur and tibia
	**ACL-Revision-Set** Comprising: 4 punch sleeves Ø 10/11/12/13 mm, 1 ejector, 1 handle attachment, 1 tray 8851 302	For removal of bone blocks from the iliac crest

Sterilization and storage

Four sterilization baskets with logical allocation of instruments facilitate safe reprocessing of their valuable Graftline Instrument Set as well as always providing the necessary overview and orderly access.
Two stages, marked with the contours of the individual instruments, simplify configuration while also providing adequate scope for instrument allocation according to individual requirements.

	**Instrument basket** **Basic Tray for knee** 85841221	Accommodation of hand instruments, punches, telescopes and meniscal suture instruments, etc.
	**Instrument basket** **ACL/PCL 1** 85841220	Accommodation of modular handles, ACL/PCL alignment devices, tendon stripper, hammer etc.
	**Instrument basket** **ACL/PCL 2** 85841219	Accommodation of impactors, modular instruments, pneumatic drill with hollow burrs and accessories, etc.
	**Instrument basket** **Workplate** 85841218	Accommodation of preparation table and accessories

The instrument baskets shown above are supplied without instruments. You are very welcome to ask us about complete sets for specific applications.

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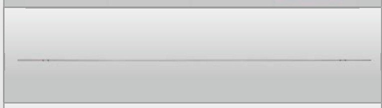
Fixation of grafts

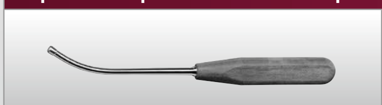
Implants and accessories

The tendon grafts provided with pulling sutures are initially drawn into the joint through the tunnels and either fixed with special implants or using implant-free press-fit techniques. Richard Wolf offers a range of high-quality implants for fixation of cruciate ligaments. The composite material OSTEOTRANS plays an outstanding role and sets new benchmarks among resorbable implants.

T-Lock Osteotrans		
	**T-Lock Osteotrans Tendon anchor, sterile** bioactive and resorbable, Size 5 .... OLRA-5 Size 6 .... OLRA-6 Size 7 .... OLRA-7 Size 8 .... OLRA-8 Size 9 .... OLRA-9	Bioresorbable and bioactive tendon anchor for femoral graft fixation

RIWObutton		
	**RIWObutton, sterile** for tendon fixation, 2 threads (green/white), Ø 0.7 mm Loop L 15 mm .... 491801015 Loop L 20 mm .... 491801020 Loop L 25 mm .... 491801025 Loop L 30 mm .... 491801030 Loop L 35 mm 491801035	Femoral fixation with titanium anchor and a ready-made loop from 15 to 35 mm loop length, including pulling threads.

BioactIF Osteotrans		
	**BioactIF OSTEOTRANS, sterile** Ø 7.0 mm, L 25 mm........ OK0725A Ø 7.0 mm, L 30 mm........ OK0730A Ø 8.0 mm, L 25 mm........ OK0825 Ø 8.0 mm, L 30 mm........ OK0830 Ø 9.0 mm, L 25 mm........ OK0925 Ø 9.0 mm, L 30 mm........ OK0930	Bioresorbable and bioactive interference screws for ACL and PCL reconstruction.
	**Screwdriver 30** 89180 0030	Cannulated screwdriver for all BioactIF Osteotrans interference screws
	**Guide wire (pack = 3 pieces)** flexible, Ø 1.5 mm, TL 350 mm 891202015	Guides screw and screwdriver into the tunnel, prevents the screw from deviating into the cancellous bone (spongy bone).
	**Thread cutter** Ø 7 mm........ 89180 0700 Ø 8 mm........ 89180 0800 Ø 9 mm........ 89180 0900	For application with BioactIF Osteotrans interference screws, in particular with BT and BTB grafts.

Implant-free press-fit fixation for patella or quadriceps tendon		
	**Pusher,** curved 8869.991	Reimplanting and press-fit fixation of bone blocks of BT and BTB grafts. Straight version is available on request.

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