Aesculap Orthopaedics

Columbus®

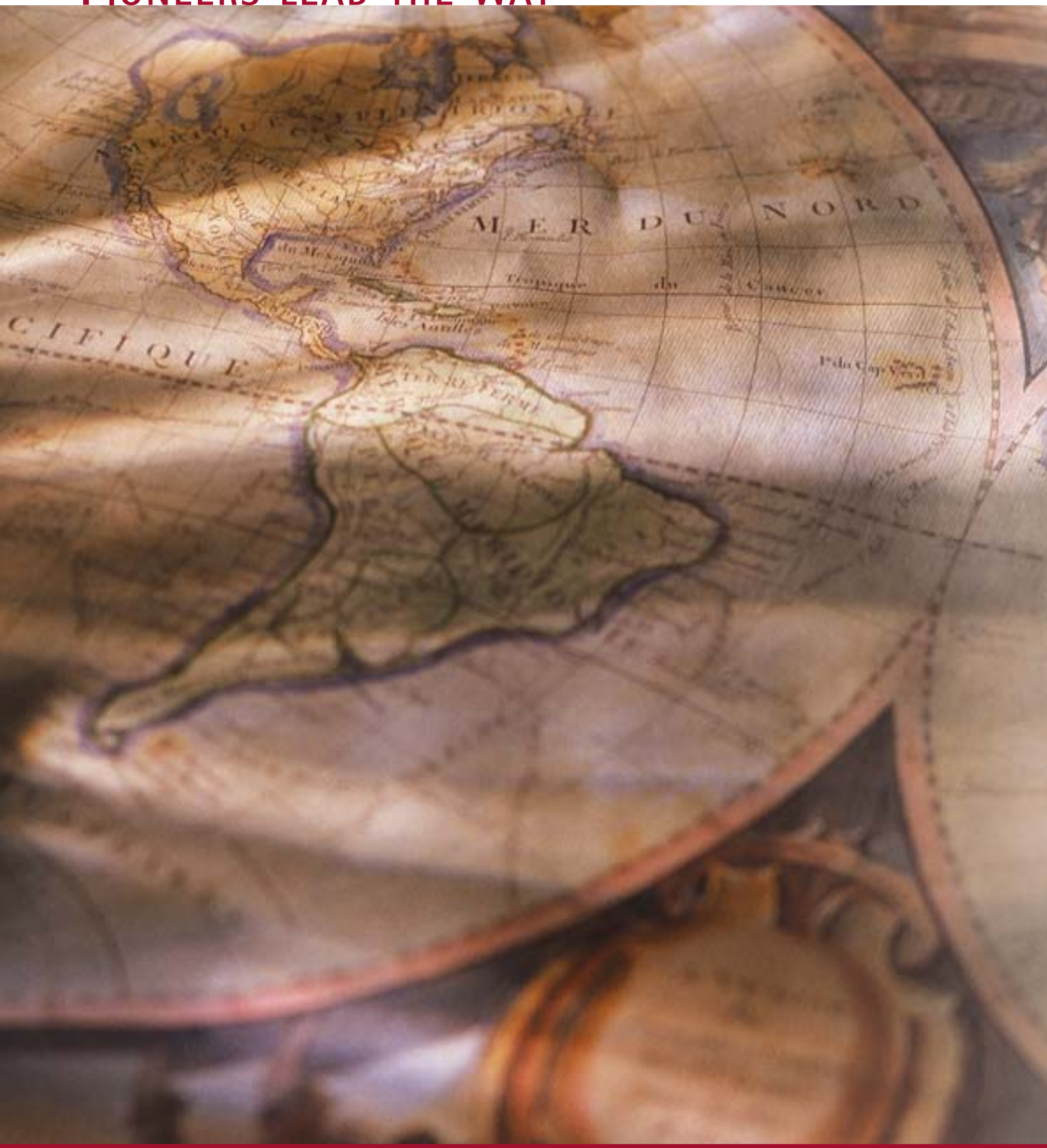
powered by OrthoPilot® navigation system

Knee system

Setting sail for new horizons

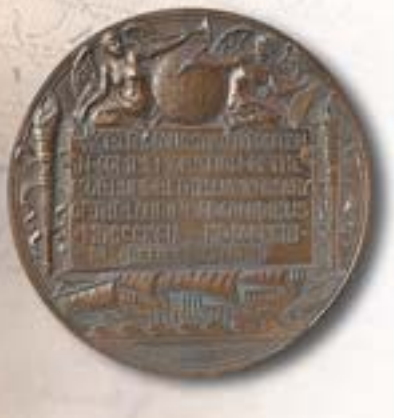
B BRAUN
SHARING EXPERTISE

Pioneers lead the way



Bringing experience into a new world

**Pioneers in all ages had a distant goal in sight –
they had the courage and determination to be the first to explore new paths.
Columbus set sail to search
for the western passage,
steered into the huge, unknown ocean and discovered America.**



More than 100 years ago the founding fathers of Aesculap, Jetter & Scheerer, attended an exhibition in America – to commemorate the four hundredth anniversary of its discovery by Columbus. The new Columbus knee system is conquering not only America, but also Europe and the entire world.

Today, as market leader and at the forefront of technology in CT-free navigation, we are successfully bringing our experience into the development of new knee endoprosthesis systems. More than 20.000 navigated knee endoprosthesis implantations document the success of our pioneering work in navigation, founded on careful evaluation of the experience and knowledge of a broad body of international experts, principally the clinical author Dr. Stulberg, USA. Years of experience in navigation and intensive research into design continue uninterrupted with one goal in sight: to provide the doctor with an outstanding, universal knee endoprosthesis system that can be used with both navigated and conventional techniques. Now we have arrived. And with Columbus, Aesculap presents you the accurate, safe knee endoprosthesis system perfectly designed to meet the demands of surgical practice for every indication, worldwide.

Columbus knee system

The best qualities combined

Precise resection ensures perfect fixation

Precise resection is of vital significance in ensuring that the implants fit exactly. The high cutting precision of the slotguided cutting blocks and the sawblades is almost unbeatable.

The Columbus knee endoprosthesis has impressively low manufacturing tolerances. This has a positive effect not only in combination with OrthoPilot®.

A more exact fit ensures a firm hold.

With Columbus you are on a safe and accurate course. And your patient benefits from improved quality of life. Thanks to an optimum of design, developed on the basis of numerous navigation studies and the combined experience of doctors and Aesculap staff:

The constant femur surface radius improves quality of life

The constant distance of the prosthesis surface from the rotational centre of the femur crucially improves extension and flexion functions in every position, ensuring even pressure on the patella. Ligamentary tension always remains constant and balanced. The geometry of the joint surfaces becomes a factor in improving the patient's quality of life.

The trochlea design creates stability

The outstanding design of the trochlea provides optimal support for the natural kinematics of patella tracking. Anatomical alignment, guidance over almost the entire range of movement and correct depth lend stability. Medial and lateral luxations are avoided. And patella pain caused by the prosthesis is prevented.

The wheel firmly in your hand

Implant with an innovative technique

Make perfect positioning and balancing easier for yourself

The advantages which navigation gives Columbus are convincing: exact 90° alignment of femoral and tibial resections to the measured mechanical leg axis. Precise definition of femoral rotation and posterior slope. Perfect positioning markedly improves function and increases the life of the implant. Columbus wins first place among the best systems in the world with its unique advantage: soft tissue balancing. Individual adjustment of ligamentary tension makes it possible to achieve greater stability.

Let yourself be safely guided with OrthoPilot®

Yesterday's pioneer is setting the standard for today. At Aesculap, we look back on years of successful experience in knee implantation with the OrthoPilot® CT-free navigation system. It is not without reason that we as the leader in technology have gained entry into operating theatres around the world. We are constantly developing our software and hardware and tuning them to coordinate perfectly with the individual implant.

Columbus knee system

Navigation makes the difference

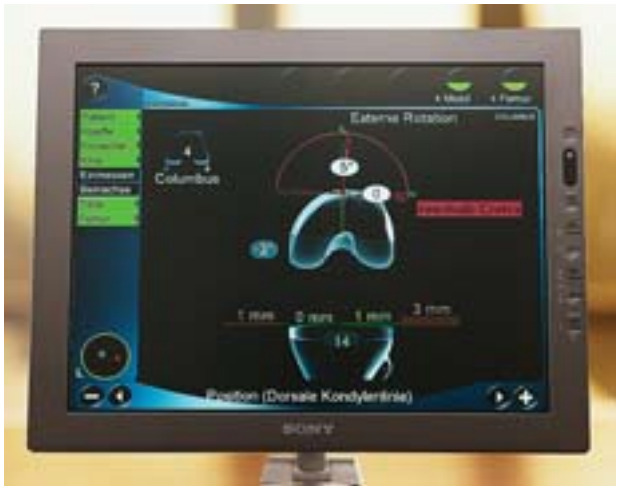
Modern instrumentation for precise implantation

Experience of over 20.000 navigated operations in knee arthroplasty characterises the design of Columbus instrumentation. Easy, ergonomic instrument handling forms an important quality requirement at Aesculap. When used with navigation, integration into the course of the surgery plays an important role. The perfect coordination of software, implant and instrumentation ensures an intuitively guided and highly accurate surgical operation from start to finish. Both sets of instrumentation for the navigated and the manual technique display outstanding features – easy and accurate adjustment of the cutting blocks in all planes with the tuner, for example, or soft tissue balancing via separate lateral and medial joint gap measurement.

Soft tissue balancing made to measure

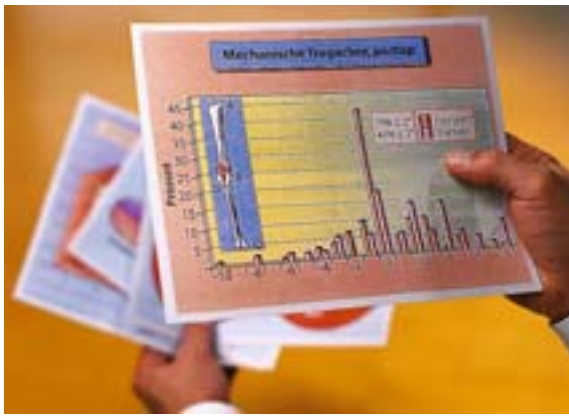
Columbus makes everything plain sailing. For Columbus is a trendsetter in stabilisation through soft tissue balancing, above all with the help of the OrthoPilot® CT-free navigation system. If the ligamentary tension is known, the resections and the position of the implant can be determined precisely.

The measurement of the individual joint space is vital for soft tissue balancing. The ligaments are released and movement becomes easier with less effort. There is no more unnecessary wear due to the displacement of forces caused by unequal tension in the ligaments. The best position is that of stable balance. Implanted manually or with the help of navigation.



OrthoPilot® as additional quality assurance

CT-free navigation with OrthoPilot® assures and documents quality. The high tech support it provides means that a consistent high level can be maintained and major deviations avoided. The prosthesis implantation procedure is precisely documented by the software. The results can be simply entered into the patient's medical record and also analysed statistically.



Freedom to decide

All implantation possibilities on board

Decide by indication

As a doctor, you take on responsibility for others. But how surely, confidently and flexibly you can decide at any one moment depends on the choice of resources. Columbus offers you a system to suit all indications. Where the posterior cruciate ligament is preserved and ligamentary conditions are stable, the rotating platform (RP) is the obvious choice. Where ligamentary conditions are normal, the CR or DD prosthesis which preserve the posterior cruciate ligament are a suitable option. Unstable ligamentary conditions can be addressed with the posterior stabilisation version (PS) or the ultra congruent version UC.

Adapt to the individual patient

You are always on course, because you are always operating with the security of highly developed technological standards. Whatever you prefer: manual or navigated implantation, with or without cement. You remain flexible for each individual patient morphology. With the Columbus modular system you can put the various components together to suit the individual patient. Those who seek this freedom and the wellbeing of their patient will experience and discover it with Columbus.

Columbus knee system

A SYSTEM FOR ALL INDICATIONS

The patella for all cases

If there is cartilage damage, you can select from four sizes of patella implant. The three fixation pins fix and assure a rotationally stable connection.

The tibial plateau that fits

In no situation must you give up stability. The nine standard and plus sizes are optimally adapted to the patient's anatomy. If necessary you choose the CRA/PSA plateau under which you can screw hemi spacers in two heights. The modular tibial plateau ensure secure fixation even in difficult cases, where they can be fitted with extension stems. The cemented version has cement pockets with a defined minimum amount of cement. Secure fixation and stability in all versions.

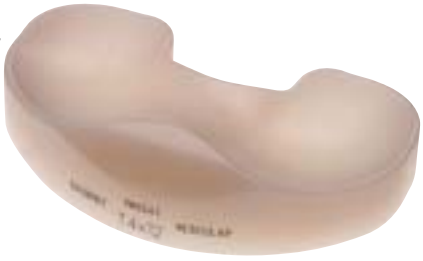
The femur design provides a firm hold

Where experience is what matters, Columbus is the right choice. You are availing yourself of an anatomical femur design in seven proportionally increasing sizes with a harmonious AP/ML radius. Of an optimised trochlea, retro-positioned with a constant 7° angle for all sizes and patella tracking up to 110° flexion. And therefore of constant congruence between patella and trochlea. Of a reduced dorsal condyle radius for high flexion up to 140°. The cemented version has cement pockets for a defined minimum cement thickness and firm hold.

The special design brings you safely to your goal

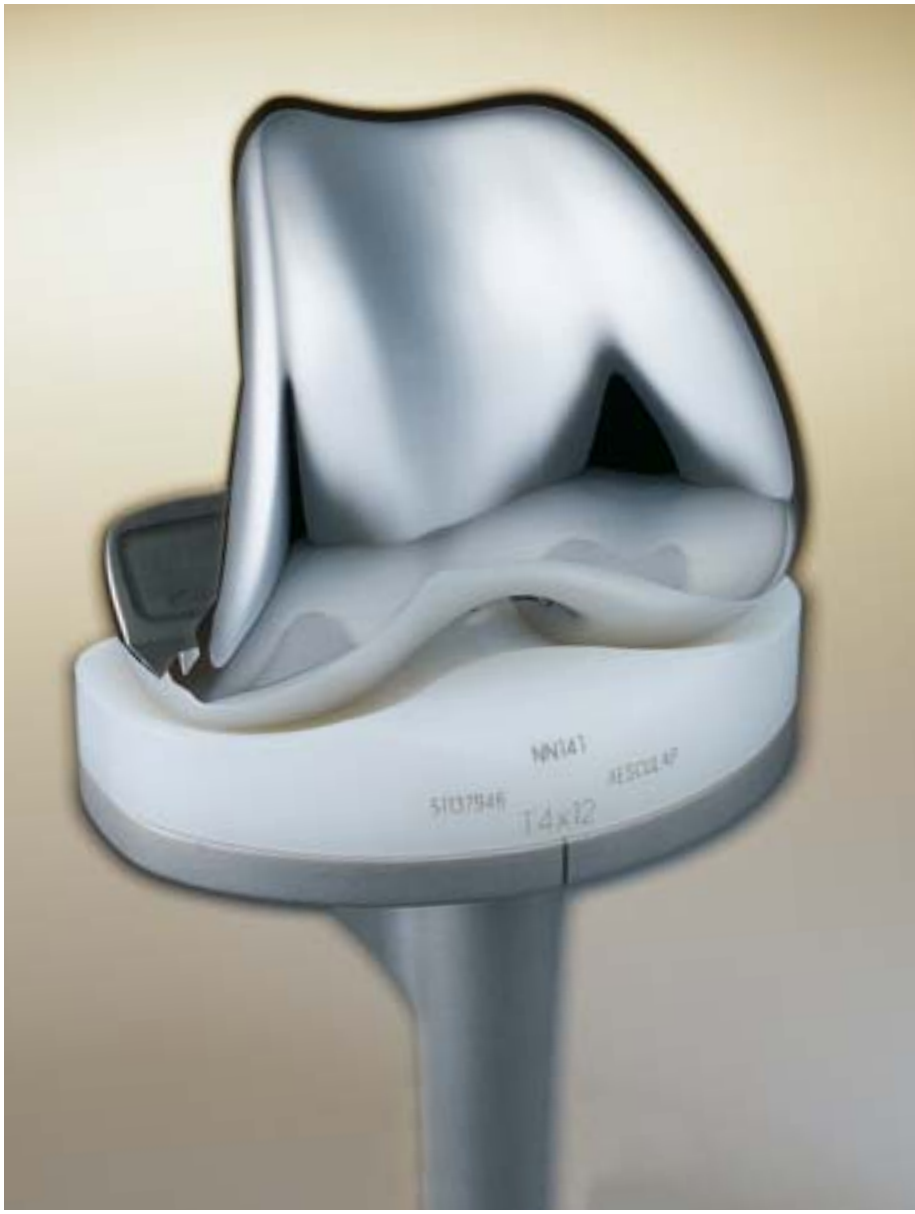
The gliding surfaces distribute the load

A new shape for a big effect. The design of the polyethylene gliding surface with an integrated posterior slope of 3° permits horizontal placement of the tibial plateau on the bone. For more stability, against anterior slope. In all you can choose from five standard sizes in four different heights between 10 and 16 mm. With the Deep Dish (DD), Ultra Congruent (UC) and PS implant, you have the choice of six different heights up to 20 mm. In all versions you achieve high congruence, since the femoral prostheses are designed to fit the gliding surfaces perfectly, preventing localised stress. This even distribution over the entire contact surface increases the life of the implant. In all five versions CR, DD, RP, UC and PS, all the femoral sizes can be combined with all sizes of gliding surface. Optimal kinematics with the PS version can be achieved by combining of the next three smaller sizes. With the UC version by combining with the same size and the next three smaller sizes.



The system

Even in Columbus's time, ship and crew worked together in perfect harmony. Exactly like today's Columbus knee endoprosthesis system: the prosthesis design with its CR, DD, UC, RP or PS versions adapts to every bone and soft tissue situation. Perfectly coordinated component sizes underline this flexibility. Cement-free or cemented, manually implanted or navigated: your goal will be safely and securely reached. Last but not least, the special instrumentation ensures harmonious interplay between Columbus and the entire surgical team.



The Columbus success story is convincing:

years of experience put into use with innovative and highly accurate techniques.

Giving you more freedom to decide and your patients a new quality of life.

AESCULAP®

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SHARING EXPERTISE

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