

# Partial ECLIPSE™ – Stemless Shoulder Arthroplasty

Surgical Technique



## Basic Design Principle

The general development of the glenohumeral joint replacement is, technically speaking, outstanding. Many of the requirements vis-à-vis the correct anatomical and biomechanical replacement of the articular surfaces have been realized and are now in everyday use. However, the soft tissue can often not be protected as necessary and, in turn, early functional mobilization of the patient cannot be guaranteed.

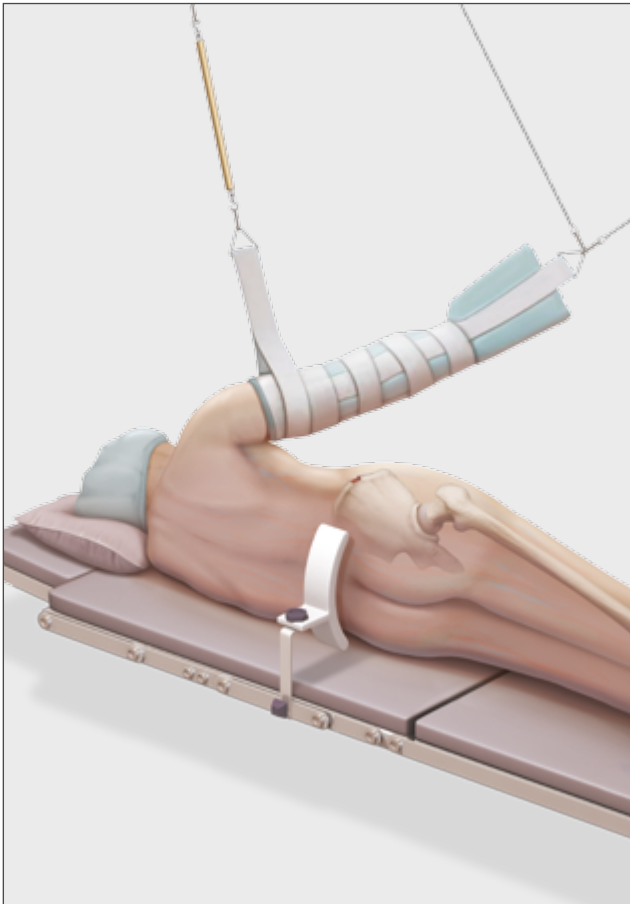
The Partial ECLIPSE was developed specifically with this in mind. The focus here was on combining the very latest prosthetics know-how with the most minimally invasive surgical intervention possible. The arthroscopic procedure chosen here for bone preparation and the insertion of the prosthesis enables the approach to be kept to a minimum and also ensures that the functional anatomy is left untouched. Thus all the options for short and effective after-care are facilitated.

This quick and simple-to-reproduce procedure enables a technique to be used which, to date, was not possible with shoulder prosthetics and which also offers the surgeon the following advantages:

- Ideal adaptation to the position of the focal humeral defect
- Simple planning, positioning and sizing
- Implantation can be performed in addition to an ongoing arthroscopy at any time
- In the case of revision, a changeover to an anatomical or reverse prosthesis is possible without complications
- The prosthesis base induces optimal bone ingrowth into the designated cavities of the titanium mesh backside

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## 1. Patient Positioning

The patient is placed in the lateral decubitus position. On the 30° elevated arm a 5 kg horizontal load as well as a 3 kg vertical load is being applied by using the 3-point shoulder distraction system (AR-1630). This will ensure an optimal distraction of the glenohumeral joint space and an adequate external rotation, if required. A patient placement in beach chair position is also possible.

## Humeral Preparation and Implantation for Sizes 20 + 25 mm

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### **2. Arthroscopy of the Shoulder Joint**

Explorative arthroscopy: Under use of a posterior standard portal a diagnostic arthroscopy is being performed in combination with a treatment of possible secondary lesions. Optionally a release of the joint capsule can be necessary for easier joint approach.

An anterosuperior portal is being established. Chondral defects are cleaned using a shaver to estimate the total defect size. An implant size of 20mm and 25mm diameter can be chosen for later defect repair.

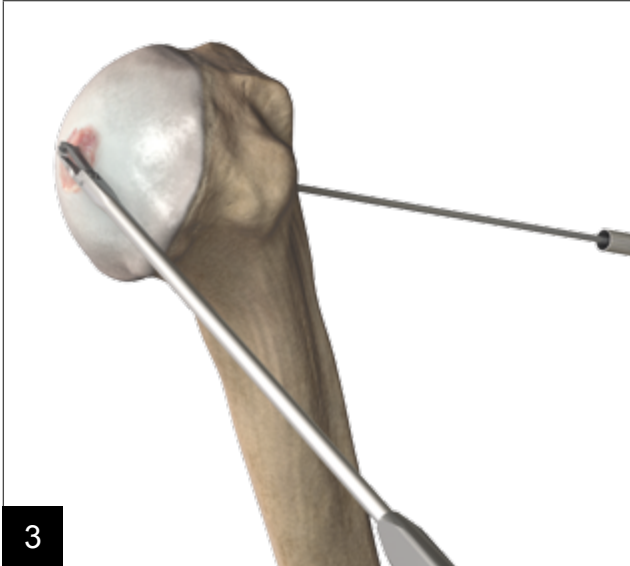
The rotator interval is being opened. The anterior incision needs to be enlarged to 3.5cm and soft tissue is opened in a traumatic manner. The index finger can be used now to palpate the glenohumeral joint. This procedure will support the consecutive placement of instruments and implants.



Introduce the drill guide through an anterosuperior portal into the glenohumeral joint space. The tip of the guide can be used to measure the defect size and to choose the appropriate implant diameter. The center of the drill guide tip indicates the position of the center of the implant.



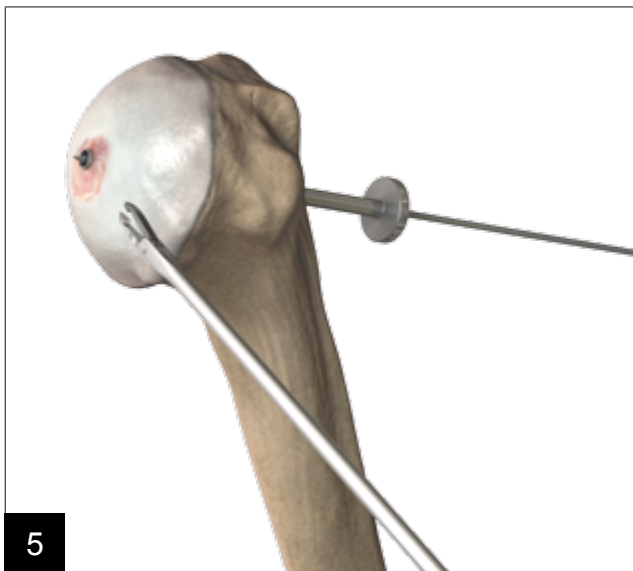
On the lateral side of the drill guide the drill sleeve is being placed. A short incision is made followed by a blunt soft tissue preparation in the area of drilling. The drill sleeve is advanced until the tip reaches the cortical bone. A 2.4 mm drill pin is advanced through the humeral head until it hits the drill guide tip.



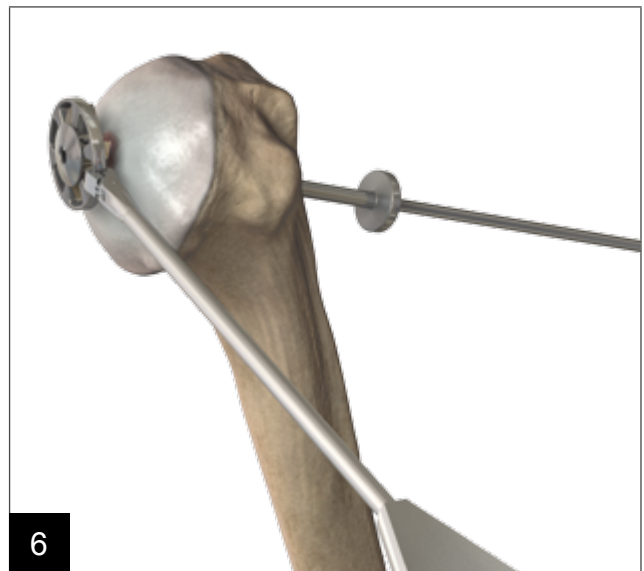
To remove the drill guide it is recommended to hold the drill pin tip with a grasper. The adequate tissue protector can be placed over the drill pin



The 4 mm cannulated drill is used to prepare the final transhumeral canal. The pin tip is still fixed with a grasper.



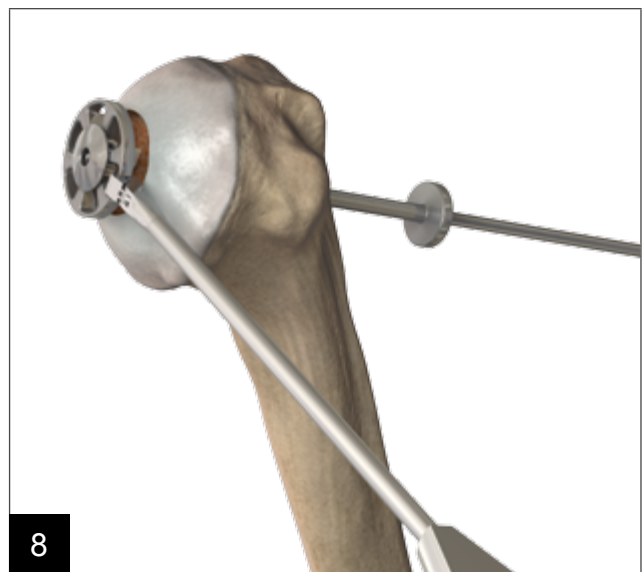
After drilling with the 4 mm drill the tissue protector is removed. The single use guide sleeve is introduced into the canal. Afterwards the drill pin is removed. For reaming (Step 7) the guide sleeve should be placed at a level below the corticalis to accommodate for the thickness of the implant.



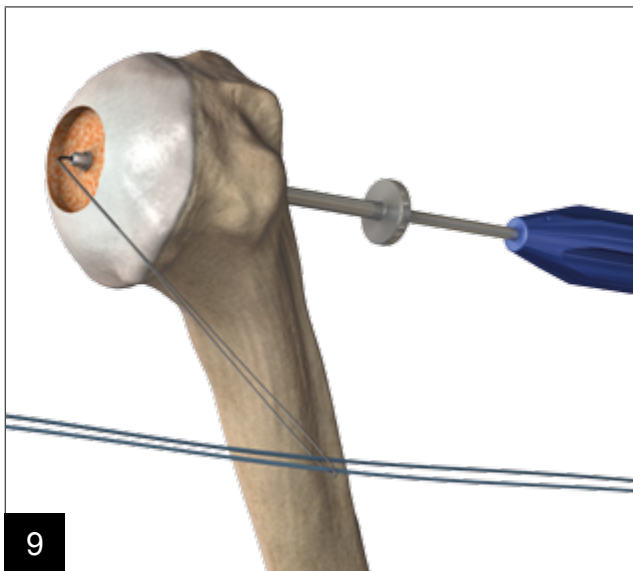
The single use retro pin for the reamer is introduced into the joint space through the guide sleeve. The according reamer head is introduced into the joint space under use of the reamer grasper. After the pin is located in the reamer thread, the reamer is fixed to the pin by turning it clockwise manually. A power tool is attached to the retro pin. The reamer grasper is removed from the joint space.



By turning the reamer clockwise and pulling it retrogradely, the humeral head surface is being reamed. The reamer has a collar which will only allow to ream the correct depth for implant seating. The reaming progress can be controlled by arthroscopic support at any time. It may be helpful to prepare the center of the milled area with a burr.

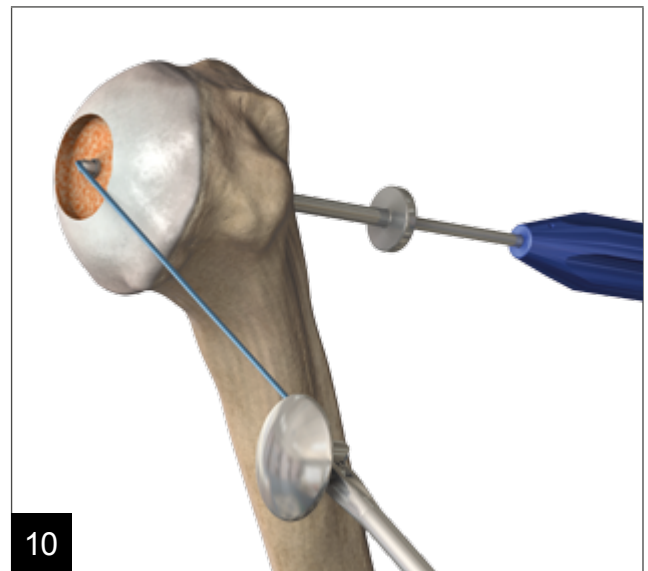


After finishing the defect, the reamer is attached to the reamer grasper and the retro pin is disconnected by turning it counterclockwise. The reamer and the pin are removed from the joint.



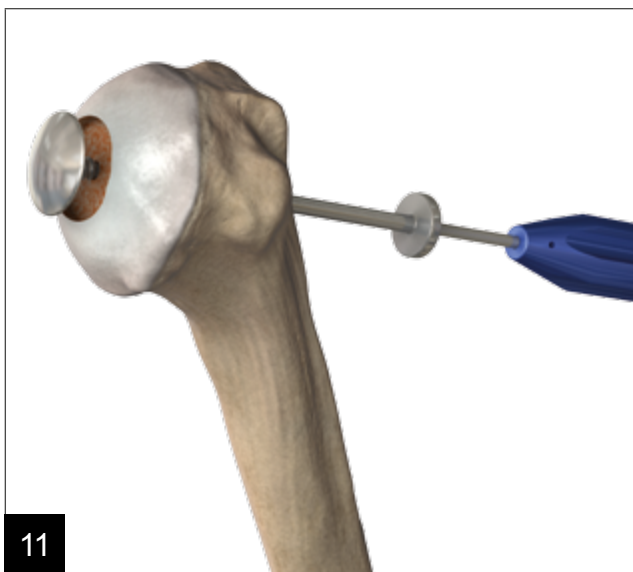
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The implant driver is placed in the joint through the guide sleeve. A SutureLasso™ can be used to shuttle the FiberWire® of the implant through the driver.



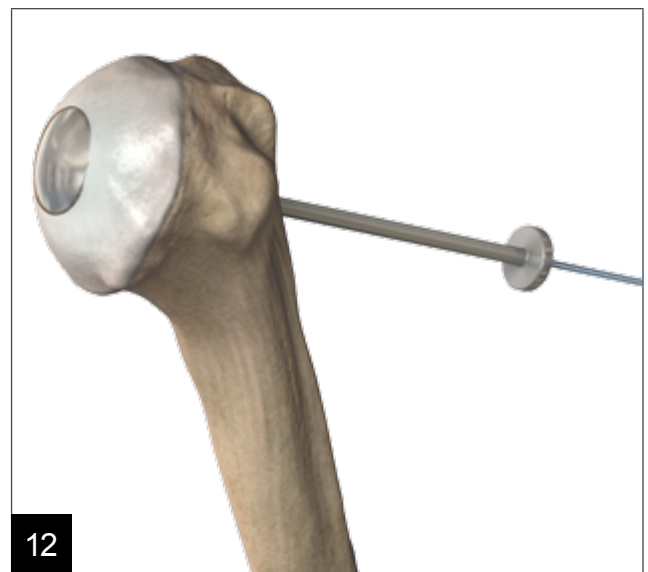
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The implant is introduced into the joint space under use of the implant grasper. After it has been positioned over the implant driver the implant can be pulled onto the driver tip by pulling the FiberWire.



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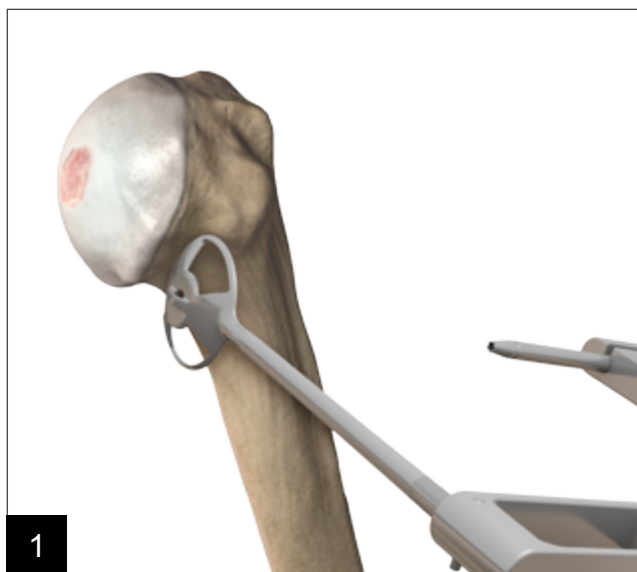
The implant grasper is removed from the joint space. The implant can now be screwed into the humeral head by turning it counterclockwise.



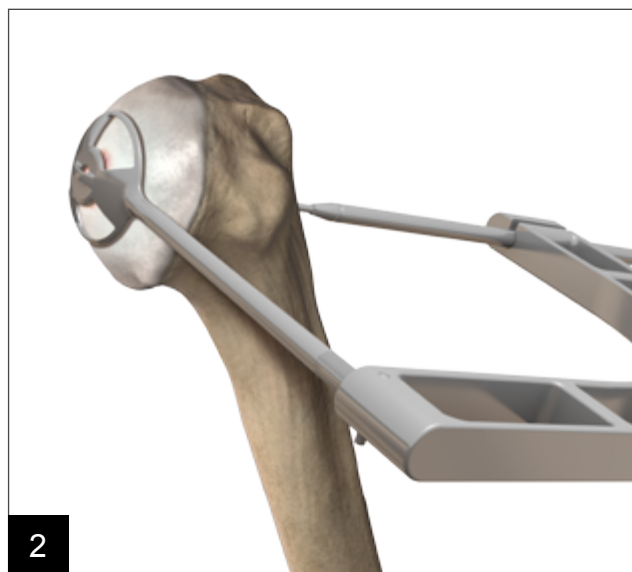
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The position of the implant can be checked using an arthroscope. After the implant has been fixed in the bone, the inserter, guide sleeve and FiberWire sutures can be removed. Then the incisions can be closed.

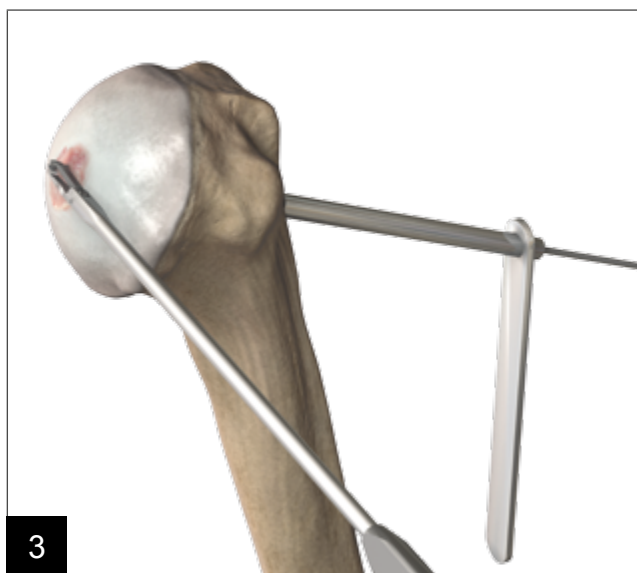
## Humeral Preparation and Implantation for Sizes 30 + 35 mm



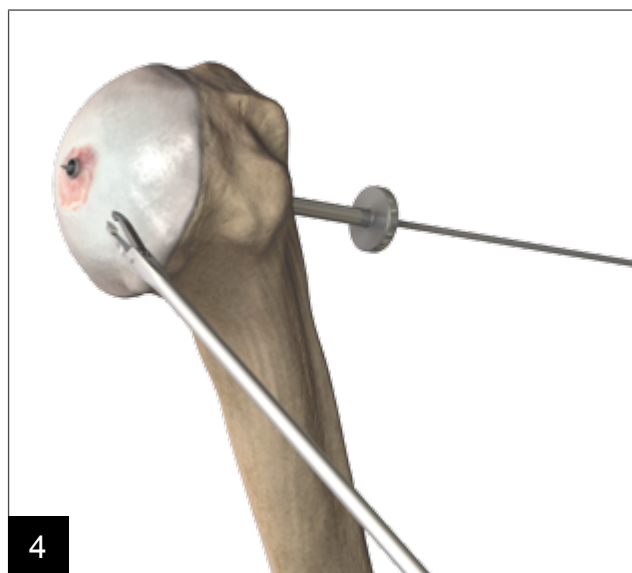
The humeral drill guide (AR-2820-35) for 30/35mm is introduced into the joint space through an anterosuperior portal. The tip of the drill guide protects the joint when the drill pin emerges, and at the same time can be used to choose the appropriate implant diameter. The center of the drill guide tip determines the exit point of the drill pin.



At the lateral end of the drill guide, the drill sleeve is inserted up to the skin and a mark is made. Here a 1 cm long stab incision is made in the same way as with the 20/25 mm implant. Then blunt dissection down to the bone is performed, and the drill sleeve is advanced. Now drilling with the 2.4 mm drill pin can be carried out.

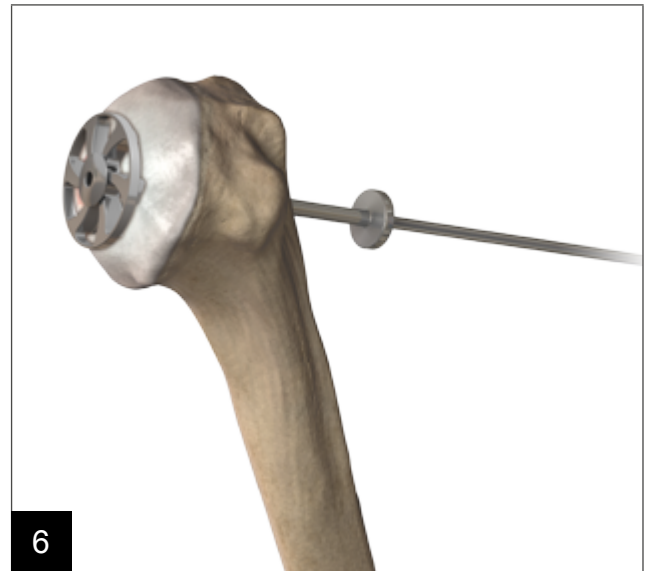
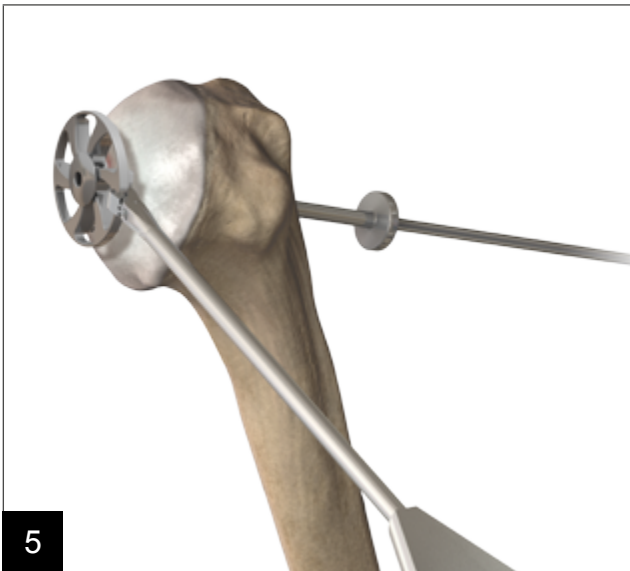


A cannulated 4 mm drill is placed over the drill pin in order to predrill into the joint transhumeraly. The tip of the drill pin is still secured with a grasper.  
Optional: 5.5 mm cannulated drill for 30/35 mm PE.



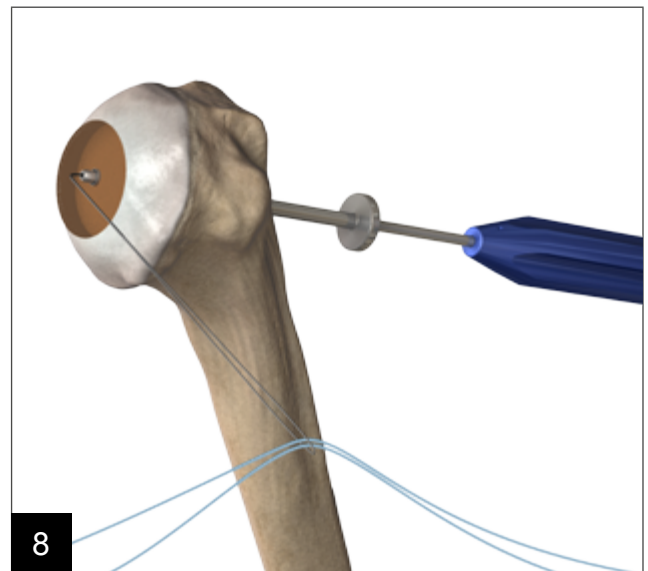
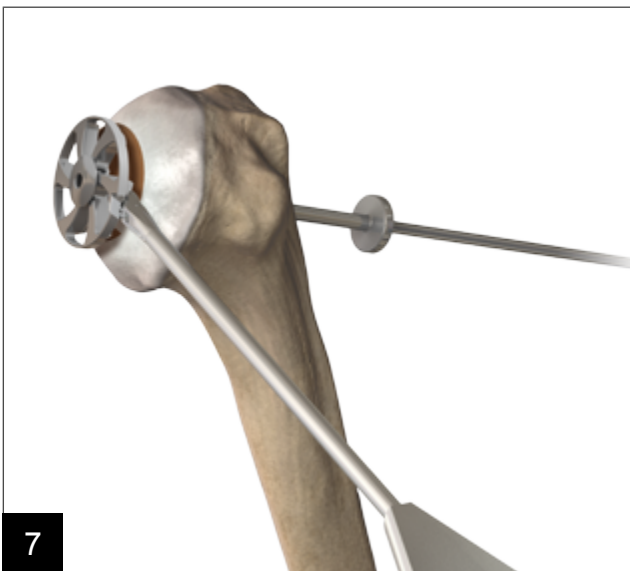
The charge transhumeral sleeve (AR-2845-2) is inserted over the drill pin.





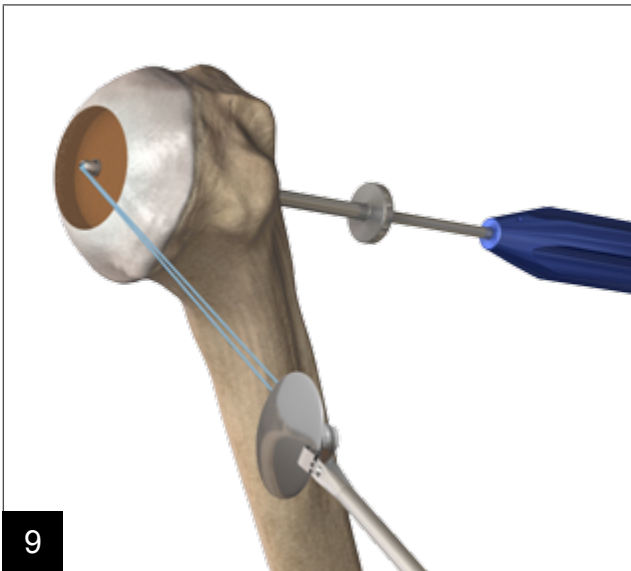
5 The single use retro pin for the reamer is introduced into the joint through the guide sleeve. Now the 30mm or 35mm reamer head can be introduced into the joint using the reamer grasper. The corresponding reamer head is fixed to the retro pin by turning the pin clockwise by hand so that the thread can grip. Then a power drill can be connected to the retro pin and the reamer grasper is removed. For reaming the guide sleeve (Step 6) should be placed at a level below the corticalis to accommodate for the thickness of the implant.

6 After reaming, the reamer head is secured again with the reamer grasper, and the retro pin is disconnected by turning it counterclockwise. The reamer head and retro pin are removed from the joint.

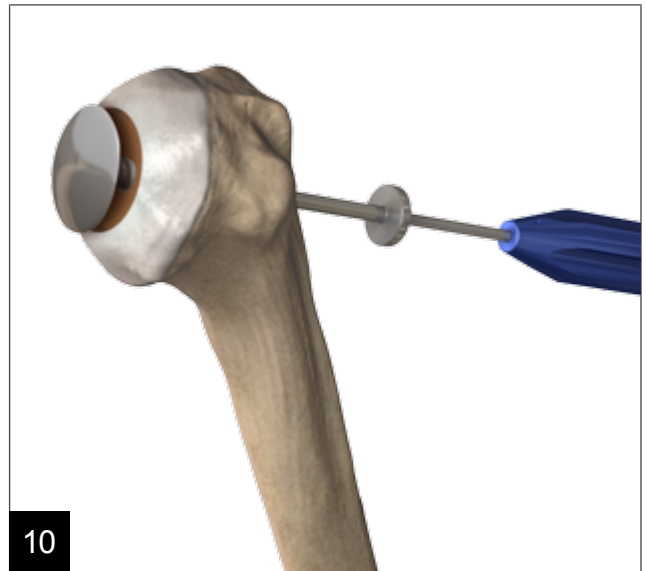


7 The implant driver is introduced into the joint through the guide sleeve. A SutureLasso™ can be used to shuttle the FiberWire® of the implant through the driver.

8 The implant is introduced into the shoulder joint using the implant grasper. After the Partial ECLIPSE has been positioned over the driver, it can be released from the grasper and connected to the driver by pulling on the FiberWire®.



The implant grasper is removed from the joint. The implant can now be screwed into the bone by turning it counter-clockwise. Optional larger 30/35mm implant.



The position of the implant can be checked using a scope. After the implant has been fixed in the bone, the driver, guide sleeve and FiberWire can be removed. Then the incisions can be closed.

## **Postoperative Management**

The arm is placed in a standard arm sling for temporary immobilization.

From the first postoperative day a physical program is initiated. The patient is allowed to perform assisted and active-assisted therapy. No further immobilization of the glenohumeral joint is necessary.

After suture removal all activities of daily living and recreational activities are allowed, followed by light labor from the 7<sup>th</sup> postoperative week.

Return to heavy work activities can be allowed 3 months postoperatively.

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## Ordering Information

<b>Implants:</b>	<b>Item Number</b>
Partial ECLIPSE implant 20 mm	AR-2800PE-20
Partial ECLIPSE implant 25 mm	AR-2800PE-25
Partial ECLIPSE implant 30 mm	AR-2800PE-30
Partial ECLIPSE implant 35 mm	AR-2800PE-35
<b>Optional Implants for 20/25mm PE:</b>	
Partial ECLIPSE Reamer 20 mm	AR-2810-20
Partial ECLIPSE Reamer 25 mm	AR-2810-25
Partial ECLIPSE reamer pin, small	AR-2850
<b>Instruments:</b>	
Drill guide for 20/25 mm PE	AR-2820
Drill guide for 30/35 mm PE	AR-2820-35
Drill sleeve for PE	AR-2825
Tissue protector for 20/25 mm PE	AR-2840
Tissue protector for 30/35 mm PE	AR-2840-2
Charge transhumeral sleeve	AR-2845-2
Silicon dams (transhumeral sleeve)	AR-1923MC-03
Implant driver PE	AR-2855
Grasper for PE reamer	AR-2830
Partial ECLIPSE Drill / Guide/Sizer	AR-2820
Drill tip guide pin, 2.4 mm	AR-1250L
4 mm drill for 20/25 mm PE	AR-1204LX
5.5 mm drill for 30/35 mm PE	AR-1404-5
SutureLasso™ SD wire loop	AR-4068-05SD

Please note that not all products advertised in this brochure / surgical technique guide may be available in all countries. Please ask the Arthrex Customer Service or your local Arthrex Representative before ordering if the desired product is available for delivery. Thank you very much.



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