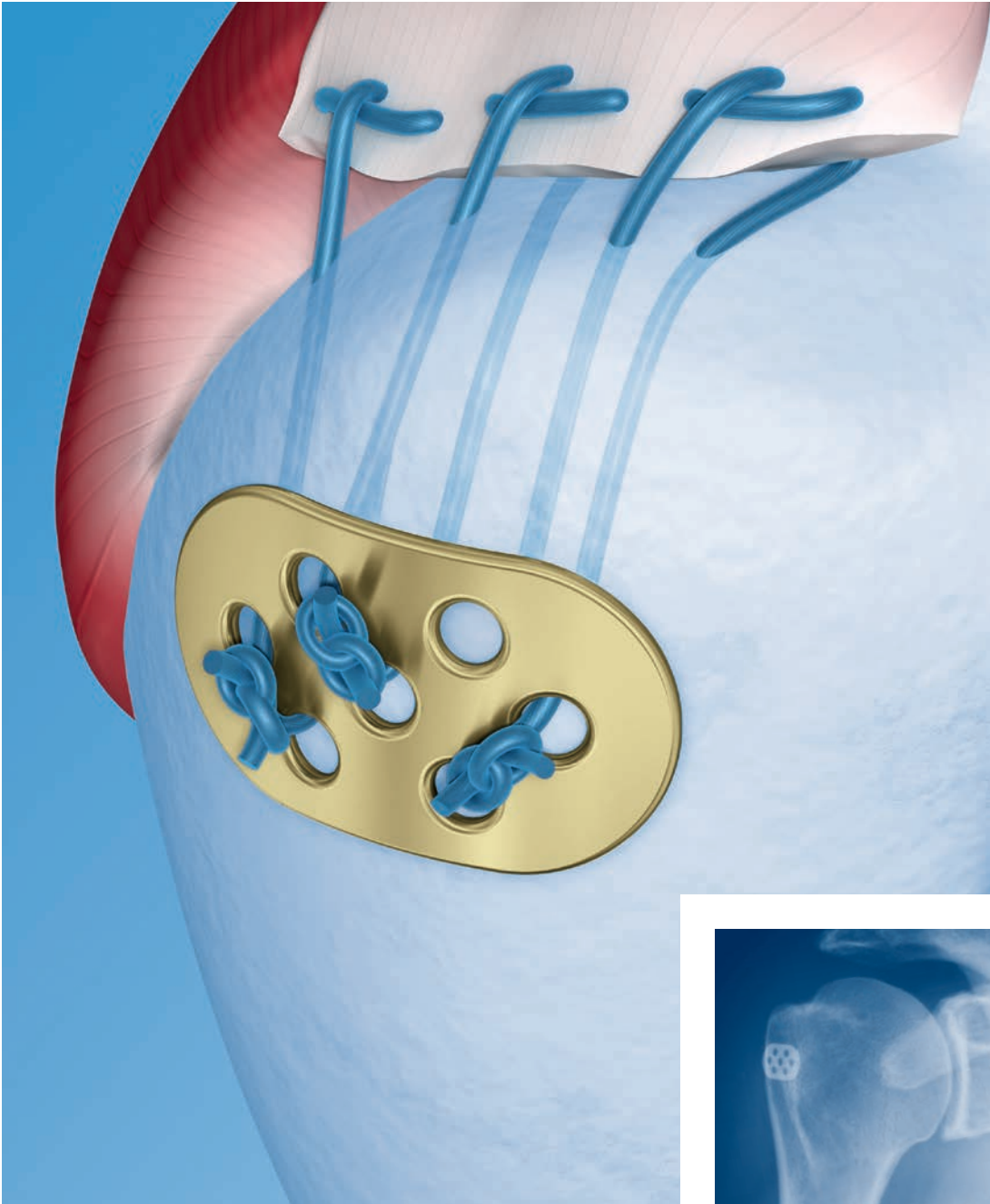


# Button Plate. Reinforcement for transosseous fixations.

Surgical Technique



This publication is not intended for distribution in the USA.

Instruments and implants approved by the AO Foundation.

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 Image intensifier control

This description alone does not provide sufficient background for direct use of DePuy Synthes products. Instruction by a surgeon experienced in handling these products is highly recommended.

**Processing, Reprocessing, Care and Maintenance**

For general guidelines, function control and dismantling of multi-part instruments, as well as processing guidelines for implants, please contact your local sales representative or refer to:

<http://emea.depuyshnthes.com/hcp/reprocessing-care-maintenance>

For general information about reprocessing, care and maintenance of Synthes reusable devices, instrument trays and cases, as well as processing of Synthes non-sterile implants, please consult the Important Information leaflet (SE\_023827) or refer to:

<http://emea.depuyshnthes.com/hcp/reprocessing-care-maintenance>

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## Features, Benefits, Indication and Contraindication

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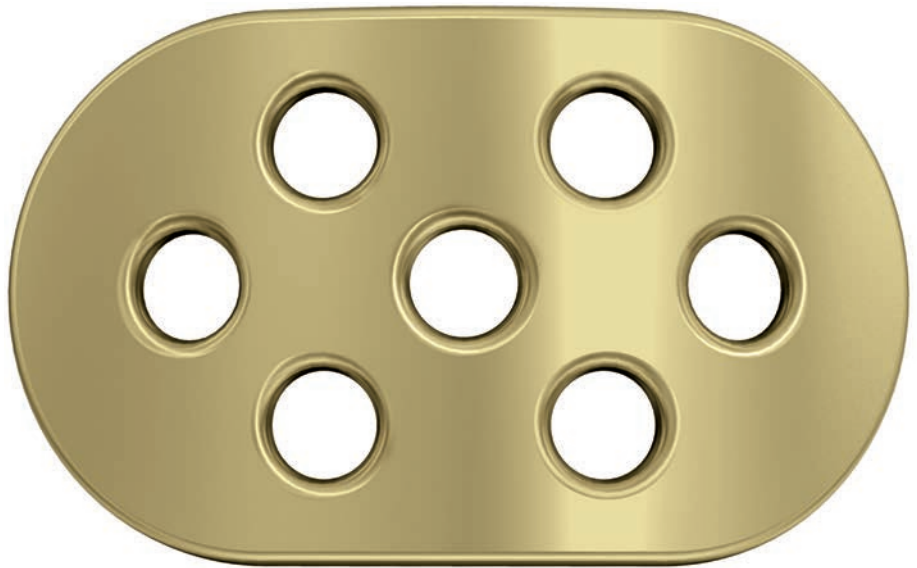
Smooth plate holes and edges do not provoke tearing the sutures.



Flexible choice of number and position of sutures, which can be placed in the 7 plate holes ( $\varnothing$  1.9 mm) either way, be that between the holes or between one hole and the edge of the plate.



Low profile (0.7 mm) and precise anatomical fit reduce the risk of subacromial impingement.



## Indications

Rotator cuff tears (especially in osteoporotic bone).

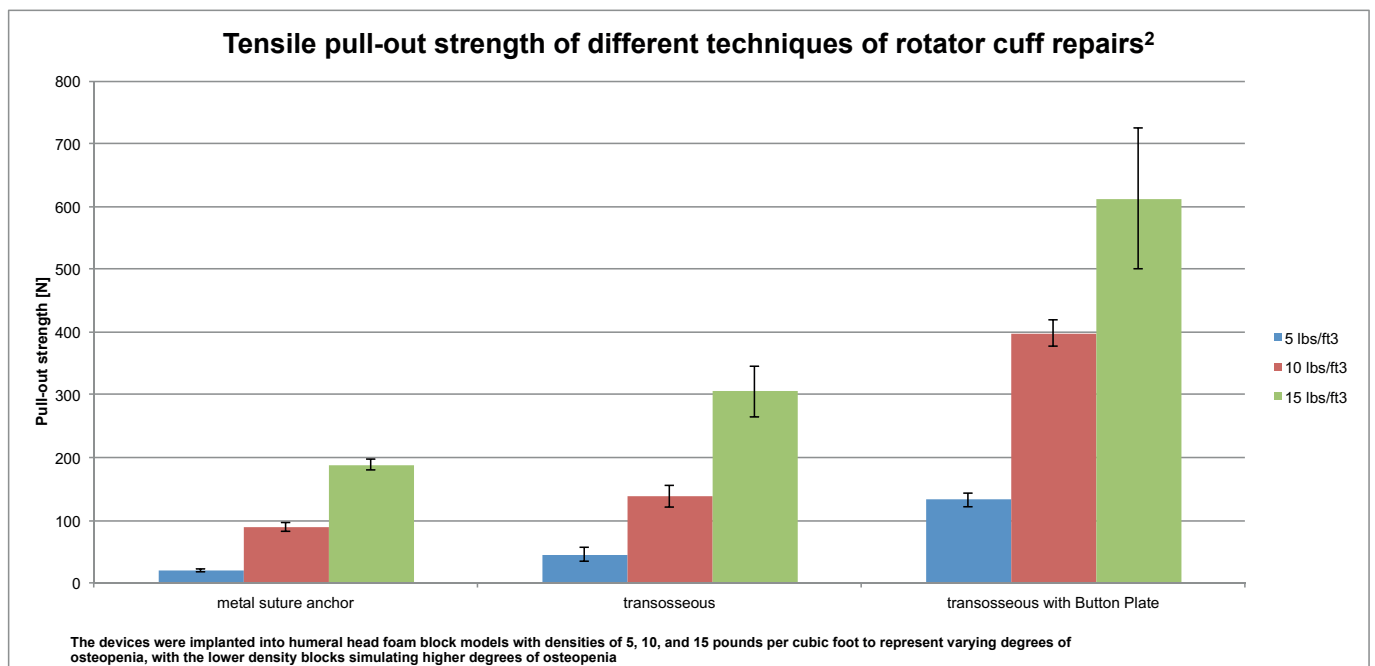
## Contraindication

No specific contraindications.

## Reliable augmentation of cortical bone

Large-surface augmentation of cortical bone does not provoke the pull-out of sutures through the bone.

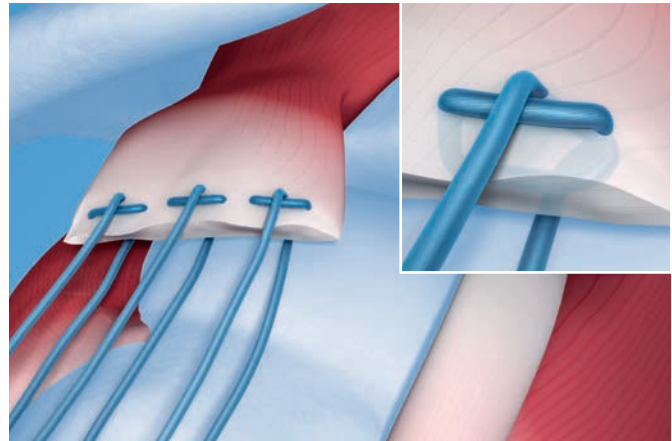
High initial fixation strength and durable holding strength while the tendon heals, ensure high success rates.



# Surgical Technique

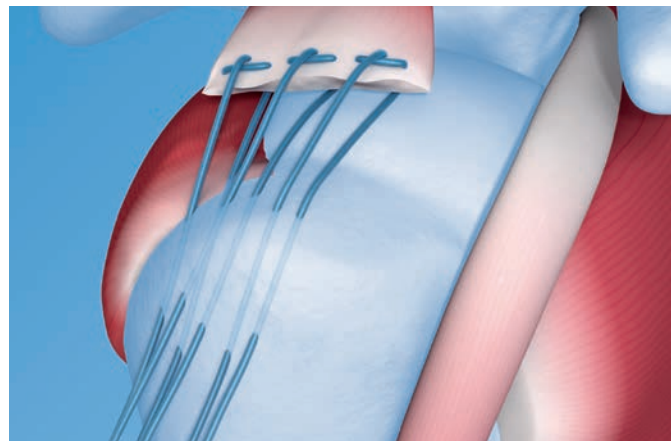
## 1

Position the patient in a beach chair position and perform a superolateral or deltopectoral approach. Expose the rotator cuff and the proximal humerus using the general shoulder instruments. Grasp the ruptured tendons with sutures. (Recommendation: non-absorbable suture material, at least size 3 but no larger than size 7, using modified Mason-Allen technique<sup>1</sup>).



## 2

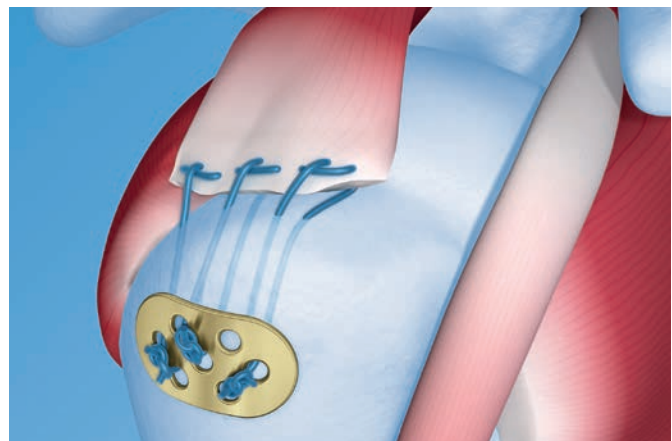
Prepare a minimal bone trough along the contact area of bone and cartilage at the level of the greater tuberosity using a chisel or Gouge Pliers. Predrill the cortex of the bone trough to establish transosseous channels (2.0 mm drill bit). Insert the needle (less than  $\varnothing$  1.85 mm) with sutures transosseously through the predrilled entry point, exiting below the greater tuberosity.



## 3

Pull the sutures through the corresponding holes of the button plate (concave curvature of the plate against the humeral head). Tie the sutures over the button plate.

**Note:** Do not bend the button plate.



# Implant removal

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In case the physician decides to remove the implants, implants can be removed by using general surgical instruments.

# Implants, Instruments, Set

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## Implants

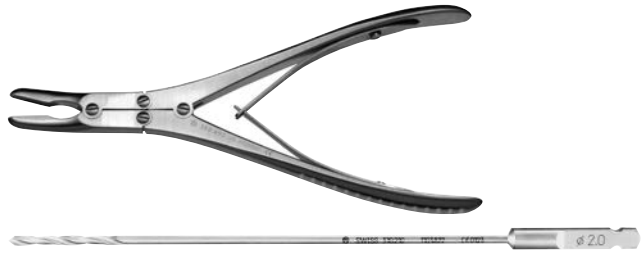
482.823	Button Plate, 7 holes, Pure Titanium
482.8235	Button Plate, 7 holes, Pure Titanium, sterile



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## Instruments

389.493	Gouge Pliers, curved, length 190 mm
310.210	Drill Bit Ø 2.0 mm, length 125/100 mm, 2-flute, for Quick Coupling



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## Set

01.401.039	General Shoulder Instrument Set
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## **Torque, Displacement and Image Artifacts according to ASTM F 2213-06, ASTM F 2052-06e1 and ASTM F2119-07**

Non-clinical testing of worst case scenario in a 3 T MRI system did not reveal any relevant torque or displacement of the construct for an experimentally measured local spatial gradient of the magnetic field of 3.69 T/m. The largest image artifact extended approximately 169 mm from the construct when scanned using the Gradient Echo (GE). Testing was conducted on a 3 T MRI system.

## **Radio-Frequency-(RF-)induced heating according to ASTM F2182-11a**

Non-clinical electromagnetic and thermal testing of worst case scenario lead to peak temperature rise of 9.5 °C with an average temperature rise of 6.6 °C (1.5 T) and a peak temperature rise of 5.9 °C (3 T) under MRI Conditions using RF Coils [whole body averaged specific absorption rate (SAR) of 2 W/kg for 6 minutes (1.5 T) and for 15 minutes (3 T)].

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**Precautions:** The above mentioned test relies on non-clinical testing. The actual temperature rise in the patient will depend on a variety of factors beyond the SAR and time of RF application. Thus, it is recommended to pay particular attention to the following points:

- It is recommended to thoroughly monitor patients undergoing MR scanning for perceived temperature and/or pain sensations.
  - Patients with impaired thermo regulation or temperature sensation should be excluded from MR scanning procedures.
  - Generally it is recommended to use a MR system with low field strength in the presence of conductive implants. The employed specific absorption rate (SAR) should be reduced as far as possible.
  - Using the ventilation system may further contribute to reduce temperature increase in the body.
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## References

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- <sup>1</sup> C. Gerber et al. (1994): Mechanical strength of repairs of the rotator cuff. *J. Bone Joint Surg. Br.* 76, 371–380. C. Gerber et al. (2000): The results of repair of massive tears of the rotator cuff. *J. Bone Joint Surg. Am.* 82, 505–515.
- <sup>2</sup> C. Humphrey et al. "The Fixable Suture Anchor Plate: A Mechanical Comparison to Other Devices Commonly Used for Tendon Anchorage to Bone during Rotator Cuff Repair Surgery." *Orthoprenuer* (2010): n. pag. ResearchGate. Orthoworld, 25 Nov. 2015. Web. 3 Aug. 2016.



