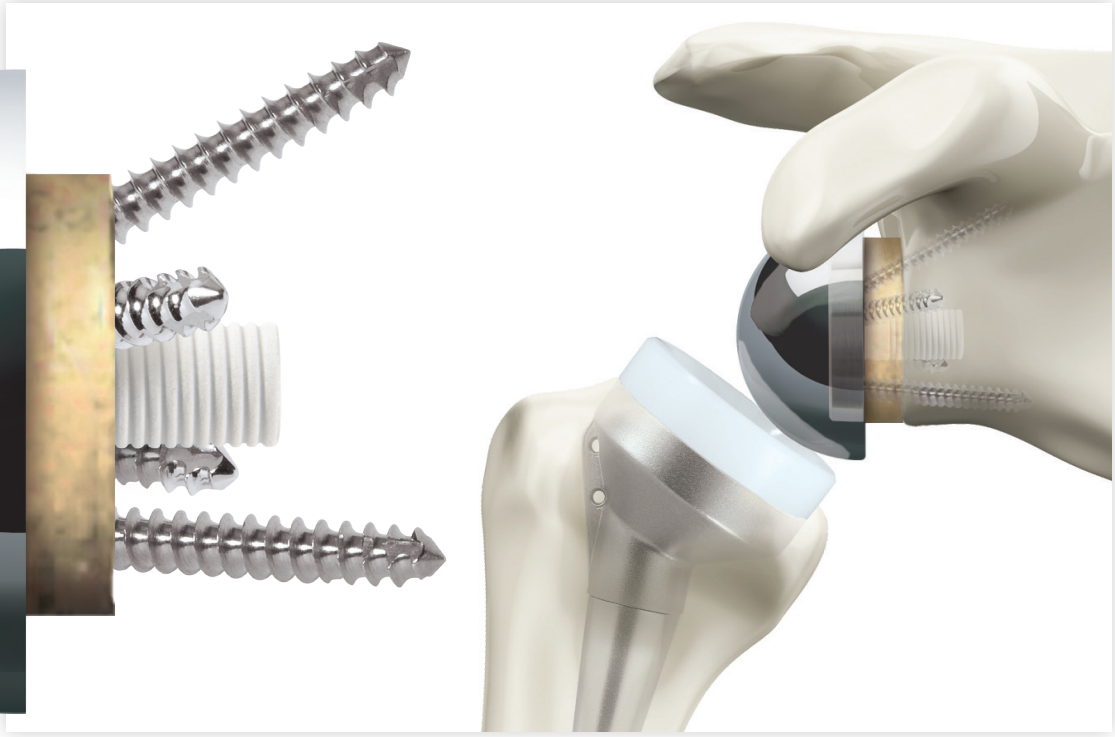
stryker

Tornier BIO-RSA®

Bony Increased Offset Reversed Shoulder Arthroplasty

System overview



Tornier BIO-RSA shoulder innovation from Stryker

Reversed lateralization

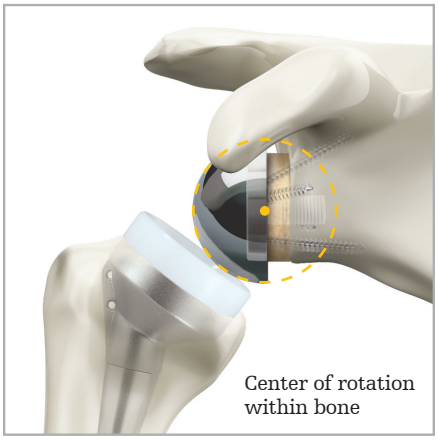
Today's reversed shoulder arthroplasty patient demands more from their shoulder replacement. And while reversed technology has revolutionized shoulder replacement for patients worldwide, scapular notching, rotational limitations and prosthetic instability can be persistent clinical issues—in addition to restoring the patient's own natural shoulder contour.

Pioneered by Professor Pascal Boileau (Nice, France), this technique, termed bony increased-offset for reversed shoulder arthroplasty, is designed to achieve lateralization of the glenoid implant through a novel approach—using the patient's own native bone.

Benefits of a lateralized reversed prosthesis

Lateralizing the glenoid implant through the use of specialized components has been a viable approach to addressing common issues associated with reversed shoulder arthroplasty. Tornier BIO-RSA is associated with:

- Low rates of scapular notching[1]
- Improved shoulder rotation[1]
- Improved shoulder contour[1]
- Low rates of instability[1]
- Significantly reduced scapular notching[2]
- Improved internal/external rotation[1]



Using Tornier BIO-RSA to achieve lateralization

The Tornier BIO-RSA technique uses the patient's own native bone to lateralize the prosthesis.

- When the bone heals, Grammont's Principle is observed by maintaining the center of rotation at the bone/baseplate interface
- This ideal center of rotation eliminates destructive forces that lead to glenoid loosening

The Tornier BIO-RSA technique

Used in conjunction with Stryker's Reversed Shoulder System, a simple auxiliary instrument set is used to create the graft from the patient's humerus.

1. The humeral pin guide is placed over the humerus for positioning of the guide wire.
2. The graft reamer is used to create the outside edges of the graft.
3. The drill is fed over the guide wire to create a hole in the center of the graft.
4. A cut guide is placed over the graft and a saw blade is used to create a 7mm or 10mm graft.
5. The bone graft is placed over the long post baseplate (25mm post length).
6. Holes are drilled in the glenoid to ensure a bleeding interface between the graft and the baseplate.
7. The long post baseplate and graft are impacted into the glenoid.
8. Screws are placed through the baseplate and graft to secure fixation of the baseplate to the glenoid.

1 Boileau P, Roussanne Y, Bicknell R, Brassart N, Chuinard C. Bony Increased-Offset Reverse Shoulder Arthroplasty (BIO-RSA): A biologic solution to scapular notching, prosthetic instability and limited shoulder rotation. Shoulder concepts 2008, arthroscopy and arthroplasty, Nice Shoulder Course, Nice, France.

2 Athwal GS, MacDermid JC, Reddy KM, Marsh JP, Faber KJ, Drosdowech D. Does bony increased-offset reverse shoulder arthroplasty decrease scapular notching? J Shoulder Elbow Surg. 2015 Mar;24(3):468-73.

Highlights – Tornier BIO-RSA clinical results[1]

The following results were observed on 34 patients with an average follow-up of 13 months by Boileau et al.:

- Significant reduction in scapular notching[2]
- No reported instability[1]
- No instances of glenoid loosening[1]
- Improved anterior elevation and rotation mechanics[1]
- Demonstrated graft healing[1]

	Pre-op	Post-op Avg. 13 month follow-up
Anterior elevation	72°	142°
External rotation	10°	18°
Internal rotation	L4	L3
Constant score	27	63
SSV	27%	73%

63 **Average constant score improvement** (up 36 from 27)

73% **Average subjective shoulder value** (up 46% from 27%)

142° **Mean active anterior elevation** (improvement of 70°)

97% **Percentage of grafts healed to the native glenoid as shown radiographically**

The Tornier BIO-RSA technique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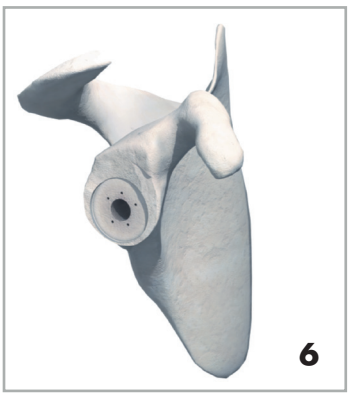
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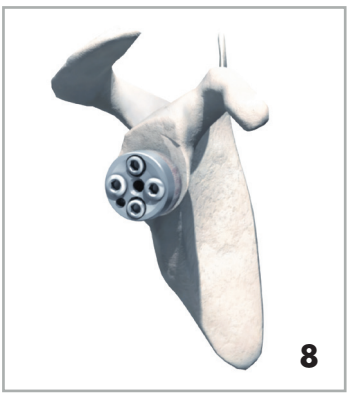
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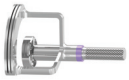
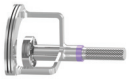
Tornier BIO-RSA instrumentation

Used in conjunction with the Aequalis Reversed Shoulder System, only a few additional instruments are needed to perform the Tornier BIO-RSA procedure. The Tornier BIO-RSA instrumentation set (YKAD100) includes the following items:

P/N	Description	
MWB360	Humeral pin guide (for Ø2.5mm pin)	
MWB361	Tornier BIO-RSA graft reamer (dia. 29mm)	
MWB362	Cannulated drill bit (dia. 8.3mm)	
MWB363	Large Tornier BIO-RSA cutting guide	
MWB364	Extra-large (XL) Tornier BIO-RSA cutting guide	
MWB366	Tornier BIO-RSA bone graft remover	

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Manufacturer:

Tornier SAS
161 Rue Lavoisier
38330 Montbonnot Saint Martin
France
t: +33 (0)4 76 61 35 00

stryker.com