

Elevating shoulder arthroplasty



Blueprint[®]

Preoperative planning software

Elevated by **Blueprint**

Blueprint is a surgeon-controlled 3D planning software for shoulder arthroplasty cases, from an A1 glenoid to a revision case, and everything in between. Whether you're just starting out, aren't seeing many shoulder replacements, or are a shoulder expert, Blueprint helps support your clinical decision making. Together, with a market leading portfolio and backed by a clinically proficient sales force and a team of experts, Blueprint makes it possible to visualize and plan your cases.

The value of planning

Blueprint supports surgeons in understanding glenoid, humeral, and soft tissue deformities, as well as their patients' anatomy¹, allowing them to anticipate challenges and assess the range of implant options prior to entering the OR.

Primary planning

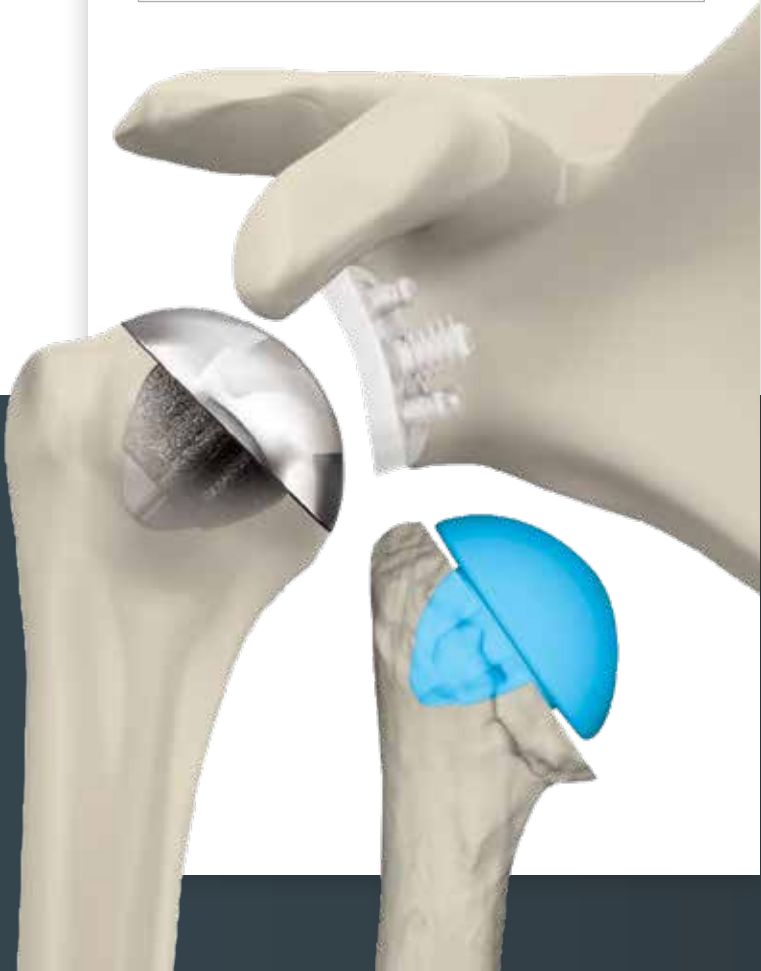
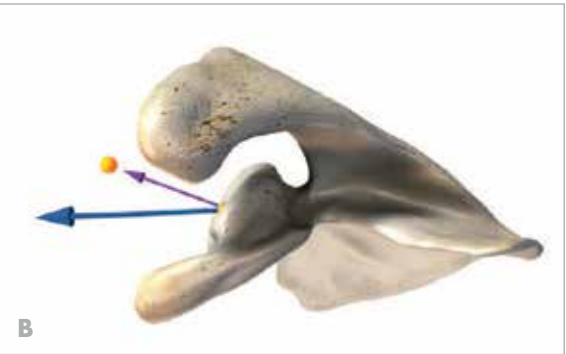
Reproducible 3D virtual implantation

Blueprint's automated 3D measurements* have been demonstrated to be both precise and reproducible.¹ For primary shoulder cases, Blueprint is not dependent on third party manual segmentation or reference point selection, measurements and reconstructions are independent of surgeon experience.¹

Blueprint uses thousands of data points from the glenoid face and scapular body to create a best fit glenoid sphere, (A) automatically calculate glenoid version and inclination (B).¹

Planning in Blueprint allows you to select implant type, size and position virtually. Easily switch between an anatomic or reverse procedure and choose which Stryker shoulder implant you believe is best for your patient. In either procedure, when the entire scapula is used as a reference, glenoid vault perforation is less frequent.²

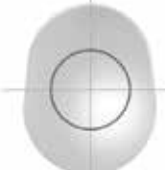
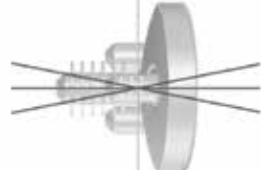
*Automated measurements and PSI are currently unavailable for revisions and complex primaries.



Patient-specific accuracy

Glenoid guide

Using 3D planning and patient-specific instrumentation (PSI)* glenoid guide enables the surgeon to more accurately position the glenoid implant and replicate the pre-operative surgical plan compared to standard techniques.^{1,3} Patient-specific instrumentation guides can be manufactured and delivered in as little as two weeks.

	3D planning and patient-specific instrumentation	Standard instrumentation
Entry point	 1.05 mm	 2.9 mm
Version	 1.64°	 11.1°
Inclination	 1.42°	 10.7°

*Automated measurements and PSI are currently unavailable for revisions and complex primaries.

Shoulder iD™

Personalization powered by Blueprint

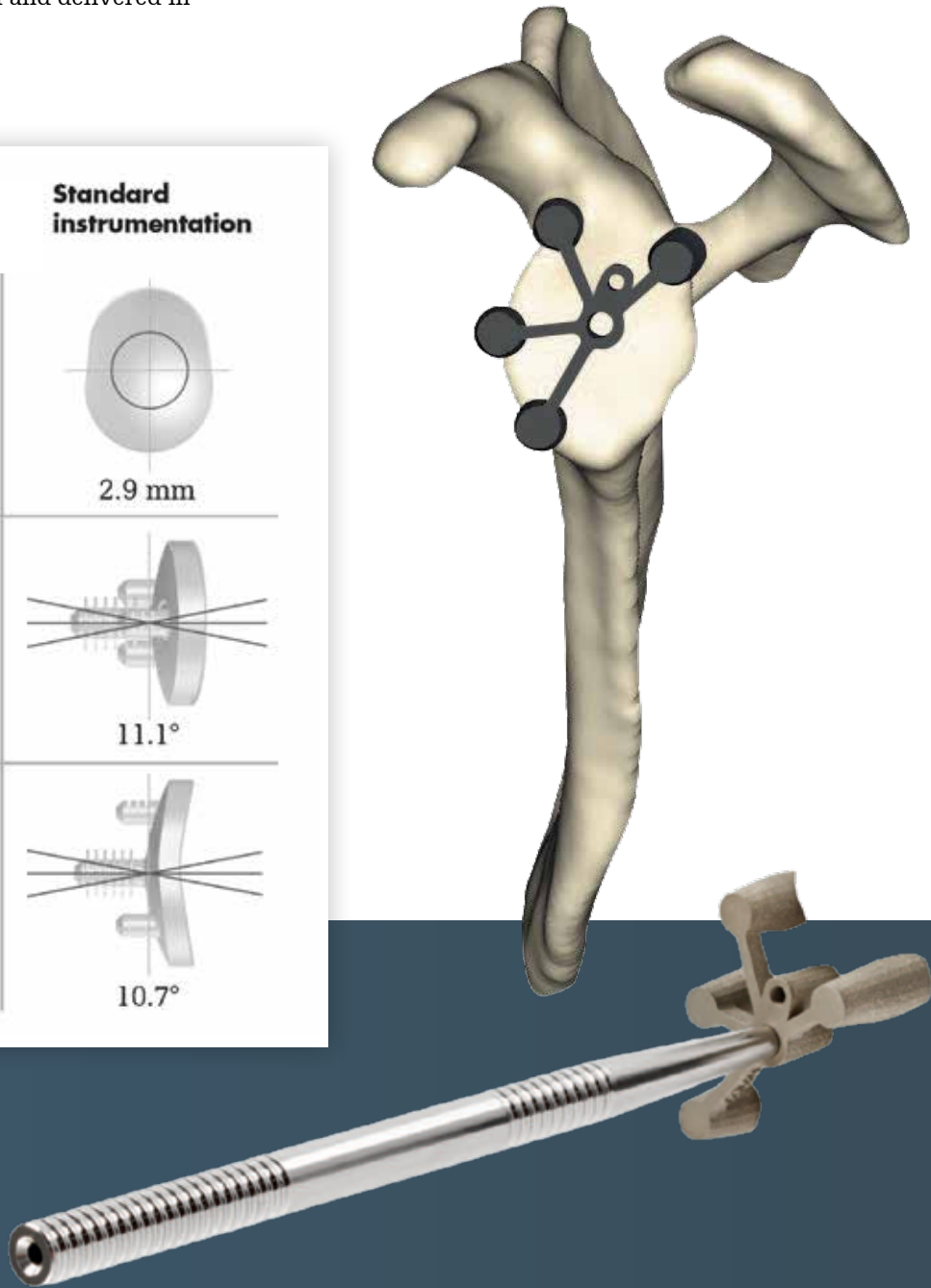
With Shoulder iD, we're making our primary reversed glenoid implants more tailored than they've been before. Visualize, plan and order your patient's unique glenoid implant directly through Blueprint 3D planning software.

Our Shoulder iD system puts patients first with a design to minimize bone loss and create a patient matched fit. The Shoulder iD system is designed to achieve the following outcomes:

- + Eliminate the need for glenoid reaming
- + Match implants to unique anatomy
- + Fine-tuned glenoid lateralization
- + Reduce instrument and implant burden compared to off-the-shelf implants

The process

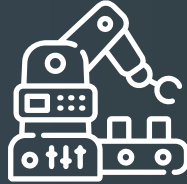
Using Shoulder iD starts with a CT scan. Blueprint uses CT scans to create a 3D model of the patient's anatomy, which is used in planning the position of the implants. After the plan is complete, an order can be submitted. The patient-specific implants and instrumentation are manufactured and delivered sterile to the OR.



Step 01
CT scan



Step 02
Plan and order



Step 03
Manufacture and delivery



Step 04
Surgery

Revision planning

What's your plan?

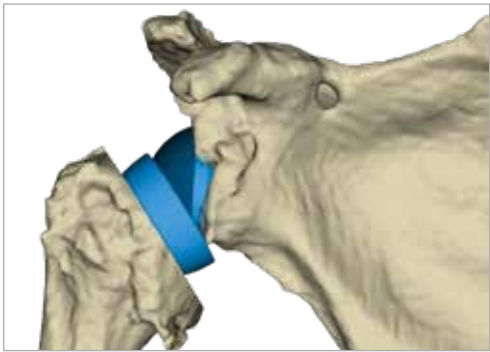
Planning for a challenging shoulder case is as unique as a patient's anatomy. Elevate even your complex shoulder arthroplasty cases with digitally driven hardware, designed with you in mind.



Plan refinement

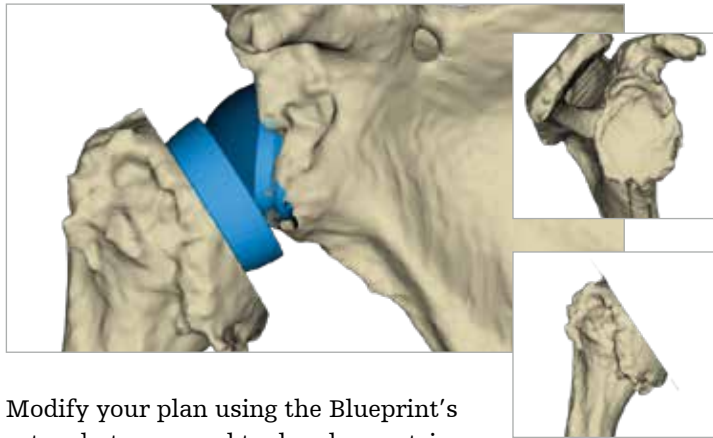
Blueprint generates a real-time glimpse into how factors such as implant selection, placement and osteoarthritic osteophytes may affect bony impingement.¹

+ 1. Boney impingement identification



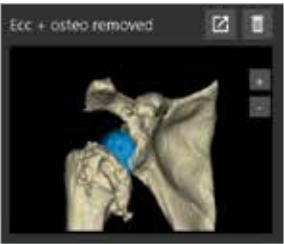
For all primary reverse procedures, Blueprint measures bony impingement-free values based off surgeon implant selection and positioning.

+ 2. Modify plan



Modify your plan using the Blueprint's osteophyte removal tool and eccentric baseplates to help you achieve decreased bony impingement.

+ 3. Refine plan



Bony Impingement		
Adduction	33°	50°
Abduction	64°	64°
Extension	37°	120°
Flexion	55°	74°
Internal Rotation 0°	46°	74°
External Rotation 0°	40°	68°

Blueprint allows for comparison of up to three plans side-by-side to help you identify which implant combinations decrease post-operative bony impingement.

One platform.

Broad capabilities.

Blueprint Assist

Blueprint Assist is an algorithm validated by over 170 unique cases and 550 surgical plans that suggests initial implant positioning(s) based on the combination of the patient's anatomy and the surgeon's input planning preferences.

+ Why Blueprint Assist?

- Blueprint Assist reduced the number of actions during the planning process by 29% compared to surgeon 3D manual planning⁴
- For complex cases, Blueprint Assist reduced planning time by 25% compared to surgeon 3D manual planning⁴



Mako Shoulder

Mako Shoulder combines Tornier implants, Blueprint planning software and Mako SmartRobotics™ into a single integrated shoulder solution.

Mako Shoulder leverages AccuStop™ haptic technology for guided reverse shoulder glenoid implant preparation for primary joint replacement, including the glenoid surface, boss and post/screw.

A benchtop study demonstrated that glenoid preparation with Mako Shoulder resulted in significantly better baseplate placement to plan than with standard instrumentation.⁵



To learn more visit
MakoMeansMore.com

One platform. Broad capabilities.



Pre-pathological glenoid

+ What is it?

Blueprint provides a model of the pre-pathological glenoid based on an analysis of a cohort of shoulders.

+ How is the prediction made?

The glenoid model is computed using a statistical shape model applied to the pathological glenoid. The statistical shape model was validated using a cohort of healthy scapulae, and it represents the average shape of a healthy glenoid before any pathology or injury occurred.

With pre-pathological glenoid, you can **overlay** implants for both TSA and RSA procedures.

Instability on Blueprint

Instability on Blueprint empowers surgeons to make informed,⁶ patient-specific decisions as they consider soft tissue, bone block and Latarjet procedures.

+ Key features include:

- Automated glenoid bone loss measurement
- 3D anatomy visualization
- Scapula curvature analysis
- 3D pre-pathological glenoid prediction

Blueprint Mobile App

Allows surgeons and reps to access their surgical plans on mobile devices anywhere – both in the OR and on the go.

+ Key features include:

- View ready to plan and finalized cases
- Cases organized by surgical date entered
- Access to individual case data:
 - Native measurements, post-operative measurements, implant information
- View surgeon favorited cases
- Receive notifications for new ready to plan cases
- Demo and offline mode



Download the
Blueprint mobile app
in the app store today

References

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2. Berhouet J, Gulotta L, Dines DM, Craig E, Warren RE, Choi D, Chen X, Kontaxis A. Preoperative planning for accurate glenoid component positioning in reverse shoulder arthroplasty. *Orthop Traumatol Surg Res.* 2017 May;103(3):407-413.
3. Jacquot A, Gauci MO, Chaoui J, et al. Proper benefit of a three-dimensional pre-operative planning software for glenoid component positioning in total shoulder arthroplasty. *Int Orthop.* 2018;42:2897-2906. doi:10.1007/s00264-018-4037-1
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6. Werner BS, Hudek R, Burkhart KJ, Gohlke F. The influence of three-dimensional planning on decision-making in total shoulder arthroplasty. *J Shoulder Elbow Surg.* 2017;26(8):1477-1483. Published online February 2, 2017. doi:10.1016/j.jse.2017.01.006

Upper Extremities

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