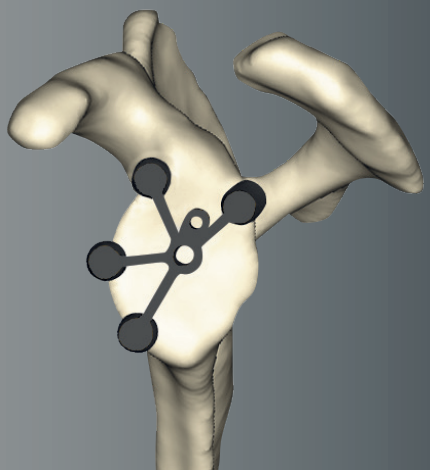
stryker

Blueprint™

Patient-specific instrumentation



Operative technique

Blueprint Patient-Specific Instrumentation

This publication sets forth detailed recommended procedures for using Stryker devices and instruments. It offers guidance that you should heed, but, as with any such technical guide, each surgeon must consider the particular needs of each patient and make appropriate adjustments when and as required.

Important

- Cleaning and sterilization information is provided in the applicable instructions for use.
- Non-sterile instruments must be cleaned and sterilized prior to use, in accordance with validated methods.
- Please remember that the compatibility of different product systems has not been tested unless specified otherwise in the product labeling.
- Consult Instructions for Use (https://ifu.stryker.com) for a complete list of potential adverse effects and adverse events, contraindications, warnings and precautions.
- The surgeon must advise patients of surgical risks, and make them aware of adverse effects and alternative treatments.
- An instrument whose packaging is open or damaged or whose expiration date has passed must not be used.

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Notice:
As PSI is dedicated for helping to position glenoid implants only, the humeral planning technique is not detailed in this document. Please refer to Blueprint user manual for further information.

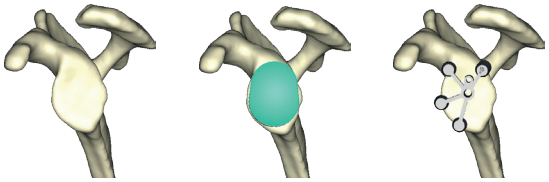
If pre-operative planning and patient-specific instrumentation (PSI) are desired, Blueprint may be used prior to the procedure to visualize the anatomy in 3-dimensional space (automated 3D reconstruction) and perform a virtual implantation of select shoulder implants available in the software. The software allows the surgeon to virtually position the various implants and understand the appropriate path of treatment based on the patient's anatomy. The software creates a visual aid when making important treatment decisions, including:

- Identification of glenoid wear patterns
- Visualization of humeral head subluxation and migration
- Planning correction of glenoid version and inclination
- Assessing full implant seating
- Analyzing bone removal for various implant options
- Assessing implant containment within the glenoid vault (size and radius curvature)

When the planning is complete, the software can generate PSI that replicates intra-operatively the same implant positioning as previously planned.

3D planning

Visualize

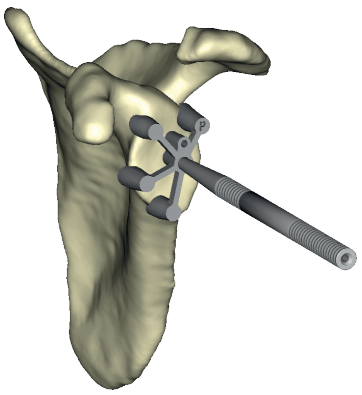


Virtual implantation

Create guide

Replicate plan on patient

Operating room



Patient-specific guide

Operative technique

3D planning

Once Blueprint is installed on a clinic, hospital, or personal computer and a compatible CT scan is obtained (refer to Blueprint scan protocol), run the software and plan a new case by loading the CT scan (in DICOM format). Blueprint provides preoperative glenoid measurements in order to identify the glenoid wear patterns, humeral head subluxation and migration, and bone stock.

Select and place the glenoid component in order to obtain an appropriate position within the three displayed views of scapula.

Positioning is defined by adjusting the following parameters:

- Version
- Inclination
- Position (antero-posterior, supero-inferior, implant rotation)
- Medialization or lateralization
- Bone seating of implant

Operative technique

PSI guide creation and ordering

When the glenoid implant positioning is set and a patient specific guide is desired, select the green "Finalize Plan" button in the lower right corner of the screen (fig. 1).

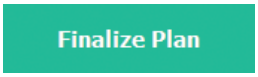


Fig. 1

Choose four different points on the edge of the glenoid (fig. 2). These points will establish the position of the feet of the PSI guide. One point needs to be on the posterior part of the glenoid fossa and three points on the anterior part of the glenoid fossa.

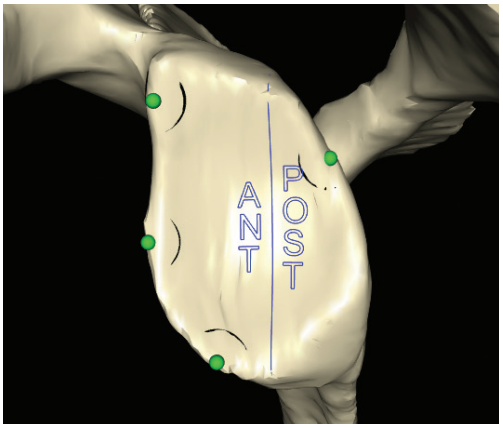


Fig. 2

Notice:
Select the four points according to the position of retractors of desired surgical approach.

A 3D PSI guide will be generated automatically based on the four selected points (fig. 3).

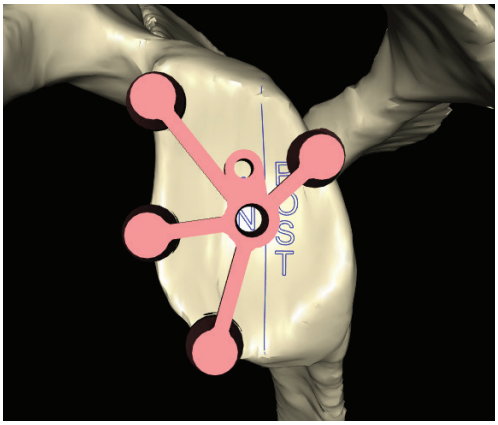


Fig. 3

By saving the plan and specifying the date of surgery, the software will generate a planning report including a summary of parameters and the specifications of the created PSI guide.

Notice:
When a PSI guide needs to be ordered for a case, confirm the computer is connected to the internet and upload the planned case.

All planned cases and PSI orders can be reviewed and managed online at **shoulderblueprint.com** in your surgeon portal.

Operative technique

Use of PSI guide intra-operatively

PSI guide assembly

The case identification (anonymous patient specific tracking information) is available on the PSI guide.

Insert the Blueprint Reusable Pin Guide into the central hole on the PSI guide and give a quarter turn to secure the assembly (fig. 4).

Notice:
The pin guide features a Morse taper style press-fit design which fits in the central hole on the PSI guide.

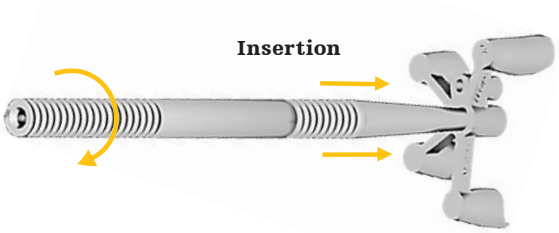


Fig. 4

Use of the glenoid bone model and the PSI guide

The PSI guide matches the patient's glenoid bone.

Caution:
Osteophytes must be kept in order to ensure a good fit of the guide.

Notice:
Additionally, the operative glenoid must be cleaned of soft tissues such as cartilage and labrum prior to use of the PSI guide on the patient's glenoid bone.

The surgeon may use the PSI guide with the Glenoid Bone Model and compare the fit to the glenoid (fig. 5 and 6).

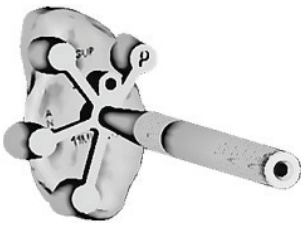


Fig. 5

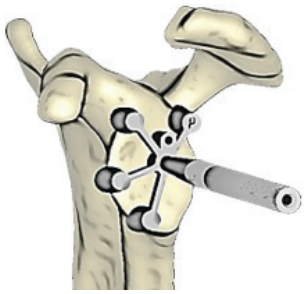


Fig. 6

The feet of the PSI guide are designed to match the landmarks chosen previously by the surgeon during the final guide design process.

Once the PSI guide is in place on the glenoid, insert the 2.5mm diameter pin into the orientation hole (fig. 7) in order to create a bony hole 5mm deep that will serve as a rotational marker for the final implant. Remove the 2.5mm diameter pin and insert it into the central pin guide.

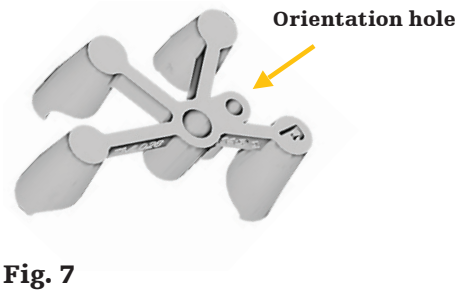


Fig. 7

Notice:
This step is not available for reversed implants

Notice:
In case of Tornier Perform Anatomic Glenoid implantation, the orientation hole is placed superiorly. In case of Tornier Perform Anatomic Augmented Glenoid implantation, the orientation hole is placed anteriorly.

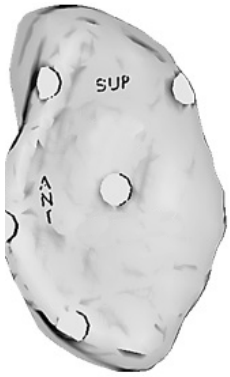
The 2.5mm diameter pin will guide the subsequent cannulated drills and reamers. After reaming the glenoid surface and drilling the central hole, use the rotational bony marker to align the drill guide. These steps allow the surgeon to replicate the preoperative planning (fig. 6).

Patient-specific instrumentation breakdown

MWJ003

MWJ004

MWJ021



MWJ013

MWJ020

Description	References	Associated implants
BLUEPRINT PERFORM GLENOID GUIDE	MWJ003	Tornier Perform Anatomic Glenoid
BLUEPRINT REVERSED GLENOID GUIDE	MWJ004	Aequalis Reversed II Shoulder System Tornier Perform Reversed Augmented Glenoid and Reversed Glenoid
BLUEPRINT PERFORM+ GLENOID GUIDE	MWJ021	Tornier Perform Anatomic Augmented Glenoid
BLUEPRINT GLENOID BONE MODEL	MWJ013	All implants
BLUEPRINT REUSABLE PIN GUIDE	MWJ020	All implants

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The information presented is intended to demonstrate a Stryker product. A surgeon must always refer to the package insert, product label and/or instructions for use, including the instructions for cleaning and sterilization (if applicable), before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

The instructions for use, operative techniques, cleaning instructions, patient information leaflets and other associated labeling may be requested online at ifu.stryker.com or stryker.com. If saving the instructions for use, operative techniques, cleaning instructions from the above mentioned websites, please make sure you always have the most up to date version prior to use.

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