

Virtual Implant Positioning™ (VIP™) Glenoid Targeter

Surgical Technique



Arthrex®

Virtual Implant Positioning™ (VIP™) Glenoid Targeter

Introduction

The Virtual Implant Positioning (VIP) system provides an accurate method for visualizing, understanding, and planning anatomic and reverse total shoulder arthroplasty cases, along with the necessary instrumentation for executing surgical plans.

The system's web-based portal helps preoperatively plan the location of glenoid implant components specific to each patient's anatomy. Reusable, adjustable instrumentation facilitates accurate intraoperative placement of the glenoid guide pin and reaming based on the surgeon-approved preoperative plan.

How it works

Arthrex uses unique and proprietary 3D preoperative planning software and the patient's uploaded CT data to replicate patient anatomy, which enables virtual planning and positioning of shoulder arthroplasty implants.

Arthrex planning engineers develop a preoperative plan that is subsequently reviewed and adjusted, as necessary, by the surgeon. Once a surgical plan is finalized in the VIP system portal, a virtual model of the patient's bony anatomy is used to determine settings for the glenoid targeter. The targeter is used intraoperatively to transfer the planned glenoid guide pin position and trajectory from the software to the patient's anatomy. Using the glenoid guide pin, the glenoid bone can be prepared and the desired prosthesis can be implanted.

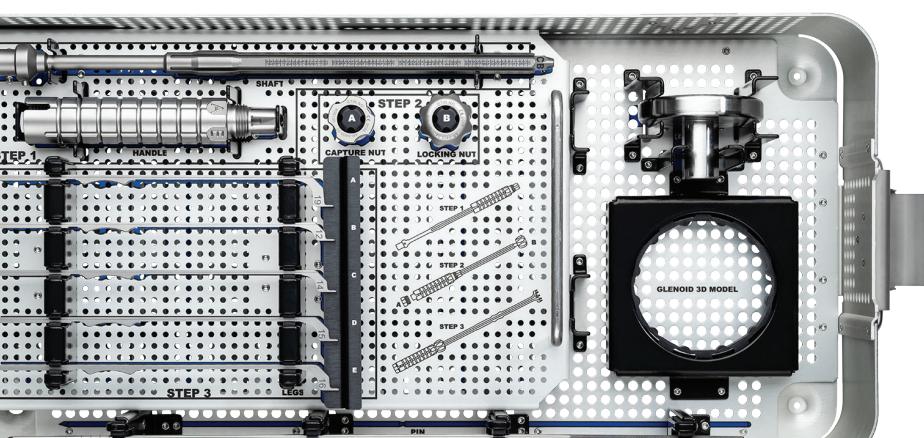
This technique describes the setup and calibration of the VIP glenoid targeter based on an approved preoperative plan.

Using the VIP glenoid reamer

Following exposure of the native glenoid and guide pin placement, begin preparing the glenoid per the Virtual Implant Positioning™ (VIP™) Glenoid Reamer Surgical Technique (LT1-000246-en-US).

Tray and VIP Targeter Pin Plan

Ensure that the VIP glenoid targeter tray ([a] AR-5400-S) and VIP preoperative plan ([b]) are available before beginning the procedure. Verify that the preoperative plan matches with the specific patient to be operated on.



(a)

Virtual Implant Positioning™

Preoperative Plan and 5-D Glenoid Targeter Instructions	
Patient	Arthrex VIP
MRN	1
Surgeon	Dr. VIP
Customer Order Number	1
Procedure / Side	RSA / Right
Date of Surgery	2020-May-17
Native Version (deg)	-1.4
Native Inclination (deg)	5.2
Implant	Arthrex MGS BP
Implant Size	24mm ø, 25mm Screw
Glenosphere or Inlay	36mm ø Standard
Implant Version (deg)	0
Implant Inclination (deg)	0
Implant Roll (deg)	12
Humeral Head Size (mm)	47.6
Planning Engineer	plannervip@arthrex.com
Expiration Date	2020-Oct-10
Comments	

Slot	Targeter Leg Length (mm)	5D Glenoid Calibrator Height Settings
A	19 mm	Z 31 Anterior Overhang
B	15 mm	X 41 On Surface
C	12 mm	Y 30 On Surface
D	14 mm	X 33 On Surface
E	16 mm	Y 30 Anterior Overhang

Glenoid Targeter

Patient Name: ARTHREX VIP
Order Number: 1

Arthrex

(b)

Targeter Assembly

Part A: Attach the glenoid targeter shaft and handle together

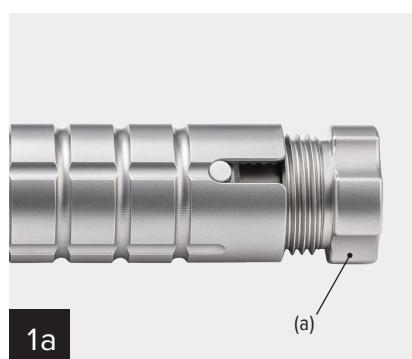


Pass the smaller-nosed portion of the shaft through the handle.

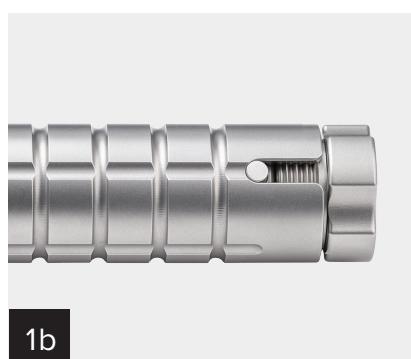


Line up the alignment peg of the shaft and insert it into the slot of the handle.

Part B: Add the capture and locking nut to the larger and smaller ends of the targeter, respectively



Thread the capture nut **(a)** into the targeter handle.



Tighten the capture nut until secure.



Slide the locking nut down the exposed shaft to meet the edge of the handle. Do not tighten the locking nut to allow adequate room for the targeter legs to slide in place between the shaft and locking nut.

Warning: The locking nut will fall off the shaft if the tip of the targeter is pointed downward.

Part C: Load targeter legs



1a

Starting with the “A” slot, select the leg with the length corresponding to the targeter leg length from the VIP™ preoperative plan (a), and load it into the slot labeled “A” on the targeter shaft until the end of the leg passes under the locking nut and meets a positive stop. Repeat this step for legs labeled “B” through “E,” matching them with the corresponding letters on the targeter shaft.



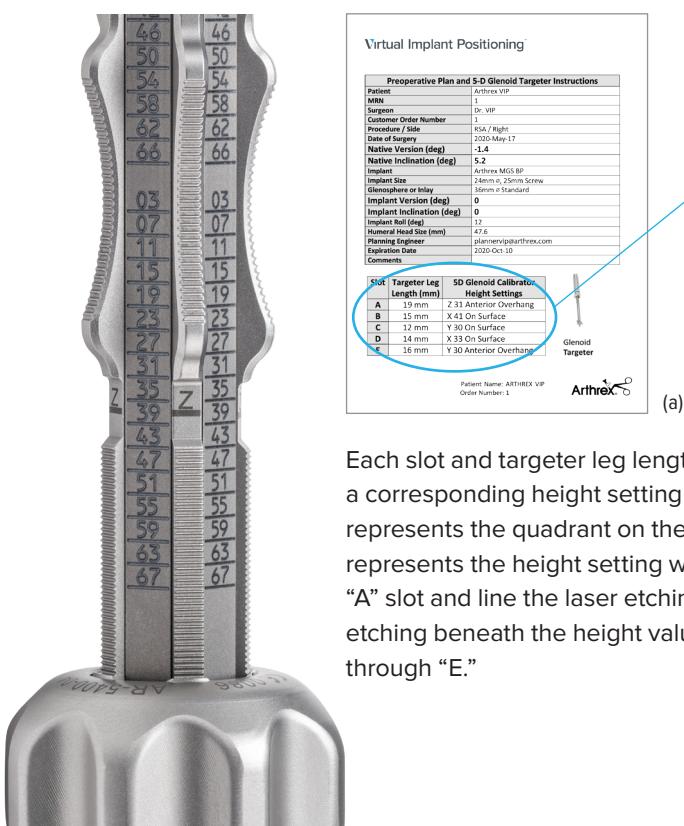
1b

VIP™ Preoperative Plan (a)

Slot	Targeter Leg Length (mm)	Targeter/5D Glenoid Calibrator Height Settings
A	19 mm	Z 31 Anterior Overhang
B	15 mm	X 41 On Surface
C	12 mm	Y 30 On Surface
D	14 mm	X 33 On Surface
E	16 mm	Y 30 Anterior Overhang

Targeter Calibration

Part A: Calibrate height settings

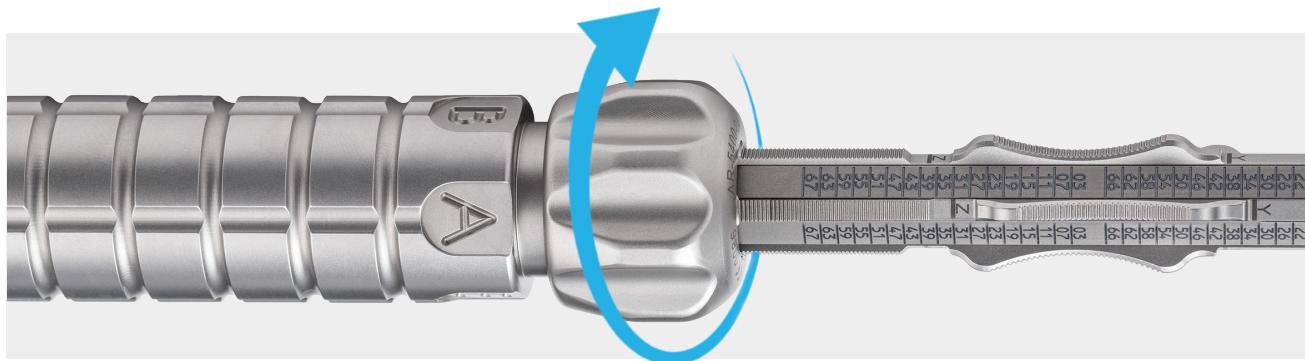


VIP Preoperative Plan	
Targeter/5D Glenoid Calibrator Height Settings	
Z 31	Anterior Overhang
X 41	On Surface
Y 30	On Surface
X 33	On Surface
Y 30	Anterior Overhang

Each slot and targeter leg length in the preoperative plan lists a corresponding height setting (letter and number). The letter represents the quadrant on the targeter shaft and the number represents the height setting within that quadrant. Start with the “A” slot and line the laser etching beneath the letter with the laser etching beneath the height value. Repeat this step for legs “B” through “E.”



Part B: Tighten the locking nut on the targeter

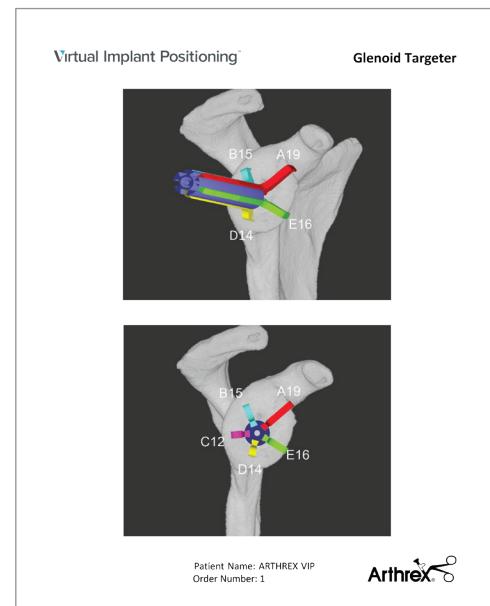


Engage the threads on the locking nut with those on the targeter handle, tightening the locking nut until it is completely snug and secure over the ends of the targeter legs. Verify that the legs have stayed in the proper position according to the preoperative plan.

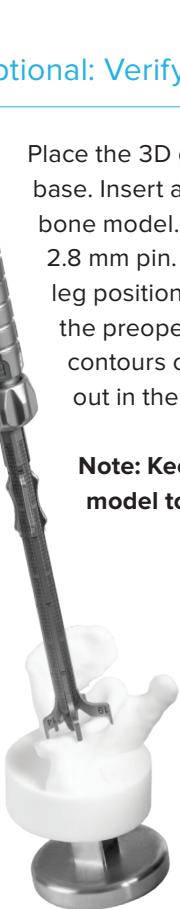
Optional: Verify targeter with 3D bone model

Place the 3D glenoid model onto the VIP™ glenoid 3D model base. Insert a 2.8 mm pin into the preformed hole on the 3D bone model. Slide the calibrated glenoid targeter over the 2.8 mm pin. Using the VIP preoperative plan, align the targeter leg positions to those displayed on the 3D images within the preoperative plan. Verify that the targeter engages the contours of the 3D glenoid surface in the fashion mapped out in the VIP preoperative plan (a).

Note: Keep one hand on the targeter and/or 3D glenoid model to prevent either from tipping over.



(a)

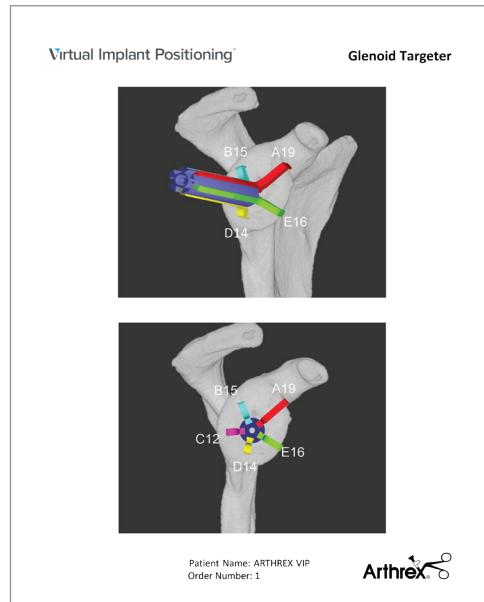


Targeter Engagement

Part A: Engage the targeter with preplanned leg locations



Engage the feet of the targeter legs with the patient's glenoid, ensuring that the feet are in the same orientation depicted in the preoperative plan (a).

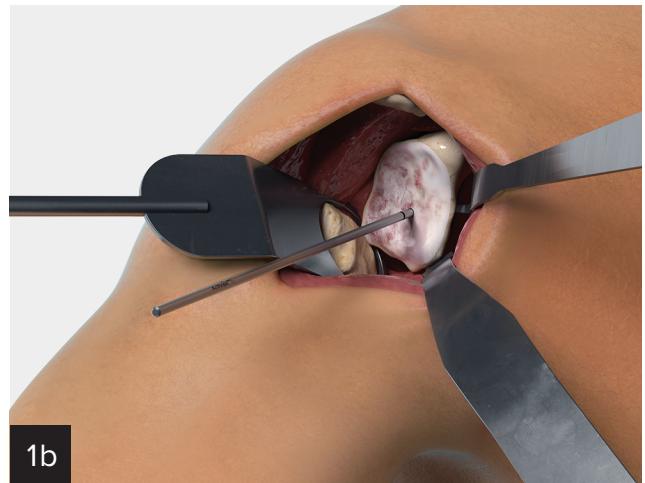


(a)

Part B: Pin insertion



1a



1b

Attach the 2.8 mm × 400 mm pin to a pin driver and insert the pin through the back of the targeter until the pin reaches the glenoid surface. While holding the targeter in the preplanned location, advance the pin into the glenoid to the desired depth to complete the VIP™ targeter surgical procedure. Continue the procedure based on the corresponding surgical technique for the implant being used.

Indications for Use

The **VIP™ glenoid targeter** is a manual instrument system intended to facilitate preoperative planning and intraoperative placement of the central glenoid guide pin used in the preparation of the glenoid in total shoulder systems that utilize a central guide pin for preparing the glenoid to receive the glenoid implant. The VIP glenoid targeter is indicated for use with the Univers™ II and Univers™ Apex total shoulder systems, keeled or pegged glenoid components, the Univers VaultLock® glenoid component, as well as the Univers Revers™ baseplate component (Universal Glenoid) and Univers Revers™ modular glenoid system (MGS) baseplates.

The **VIP glenoid reamer** is intended for use with the VIP Glenoid Targeter in total shoulder systems that utilize a central guide pin for preparing the glenoid to receive the glenoid implant. The VIP glenoid reamer is indicated for use with the Univers VaultLock® glenoid component and the Univers Revers™ modular glenoid system (MGS) baseplates.

The indications for use of the Arthrex shoulder systems with which the VIP glenoid instrumentation is intended to be used are the same as those described in the labeling for these shoulder systems.

The **OrthoVis preoperative plan** is a preoperative plan created via the OrthoVis software that facilitates accurate preoperative planning and intraoperative placement of the glenoid component in total shoulder replacement.

The VIP glenoid targeter is indicated for use with the Univers™ II and Univers™ Apex total shoulder systems, keeled or pegged glenoid components, the Univers VaultLock glenoid component, as well as the Univers Revers baseplate component (Universal Glenoid) and Univers Revers Modular Glenoid System (MGS) baseplates. The VIP glenoid reamer is indicated for use with the Univers VaultLock glenoid component and the Univers Revers Modular Glenoid System (MGS) baseplates.

The indications for use of the Arthrex shoulder systems with which the OrthoVis preoperative plan is intended to be used are the same as those described in the labeling for these shoulder systems.

Contraindications:

- The Arthrex VIP instrumentation and OrthoVis preoperative plan are not to be used with any shoulder replacement system or component other than the total shoulder systems and components identified in the indications for use of the VIP system.
- The contraindications for the total shoulder systems with which the Arthrex VIP instrumentation and OrthoVis preoperative plan are indicated for use remain the same as those described in each implant system's labeling.
- The glenoid targeter should not be used if the legs of the instrument are not stable or move when locking nut is tightened and used for guide pin placement, and the failure should be reported to Arthrex.
- If the seating of the glenoid targeter instrument on the patient cannot be exactly matched with the seating of the instrument on the glenoid 3D model, the surgeon must choose to either address the issue so that the glenoid targeter instrument seating is matched between the patient and the glenoid 3D model or, alternatively, refrain from using the glenoid targeter.

Ordering Information

Required Instruments

Product Description	Item Number
Virtual Implant Positioning™ (VIP™) Glenoid Targeter Set	AR-5400-S
VIP Glenoid Targeter Instrument Case	AR-5400-C
Glenoid Targeter Shaft	AR-5400-01
Glenoid Targeter Handle	AR-5400-02
Glenoid Targeter Capture Nut	AR-5400-03
Glenoid Targeter Locking Nut	AR-5400-04
Glenoid Targeter Leg, size 10	AR-5400-10
Glenoid Targeter Leg, size 11	AR-5400-11
Glenoid Targeter Leg, size 12	AR-5400-12
Glenoid Targeter Leg, size 13	AR-5400-13
Glenoid Targeter Leg, size 14	AR-5400-14
Glenoid Targeter Leg, size 15, qty. 2	AR-5400-15
Glenoid Targeter Leg, size 16, qty. 2	AR-5400-16
Glenoid Targeter Leg, size 17, qty. 2	AR-5400-17
Glenoid Targeter Leg, size 18, qty. 2	AR-5400-18
Glenoid Targeter Leg, size 19, qty. 2	AR-5400-19

Product Description	Item Number
Glenoid Targeter Leg, size 20, qty. 2	AR-5400-20
Glenoid Targeter Leg, size 21, qty. 2	AR-5400-21
Glenoid Targeter Leg, size 22, qty. 2	AR-5400-22
Glenoid Targeter Leg, size 23, qty. 2	AR-5400-23
Glenoid Targeter Leg, size 24, qty. 2	AR-5400-24
Glenoid Targeter Leg, size 25, qty. 2	AR-5400-25
VIP Glenoid 3D Model Base	AR-VIPBASE
2.8 mm Pin, stainless steel, qty. 2	AR-5400-400

Optional Instruments

Product Description	Item Number
2.8 mm Pin, nitinol, sterile	AR-5400-400NS
VIP Glenoid Reamer Set	AR-5410S



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Caution: Federal law restricts
this device to sale by or on the
order of a physician.



This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience, and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level and/or outcomes.

View U.S. patent information at www.arthrex.com/corporate/virtual-patent-marking

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