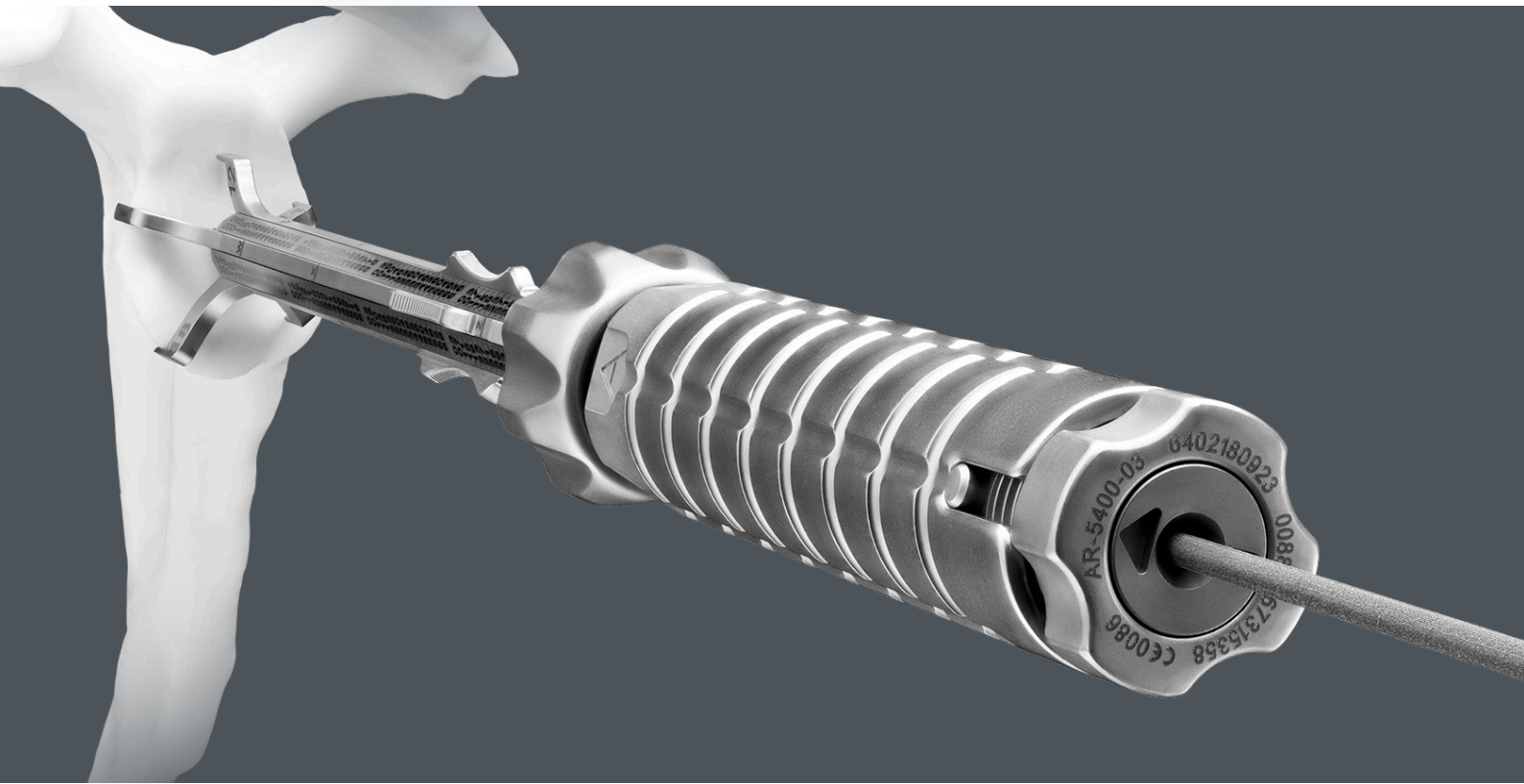


# Virtual Implant Positioning™ (VIP) Glenoid Targeter

Surgical Technique



**Arthrex**® 

# Introduction

The Virtual Implant Positioning™ (VIP) system provides surgeons with 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 based on the surgeon-approved preoperative plan.

## How it works

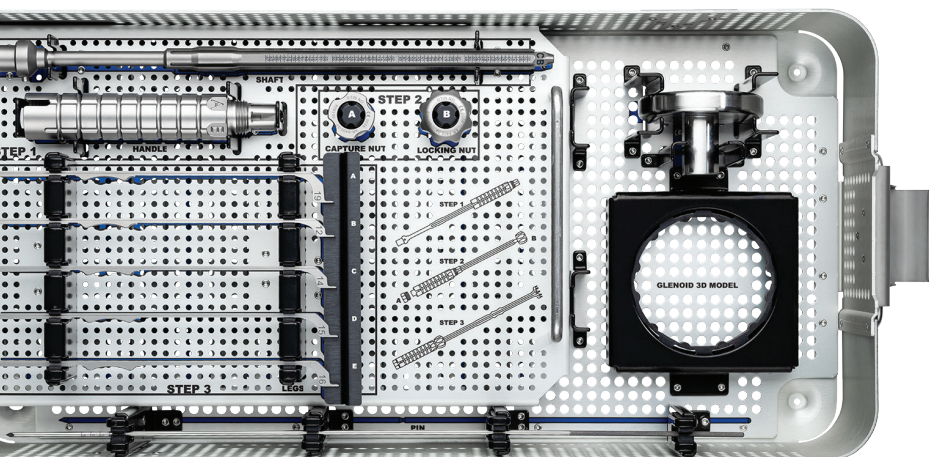
Arthrex uses unique and proprietary 3D preoperative planning software and the patient's uploaded CT data to replicate patient anatomy and allow for virtual planning and positioning of shoulder arthroplasty implants.

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.

# 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

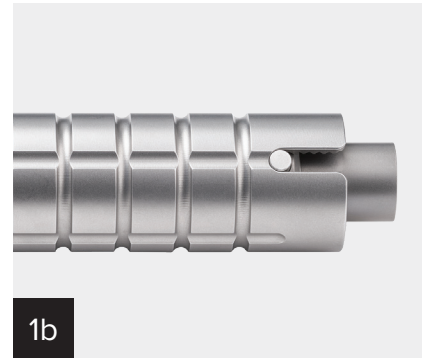
(b)

# Targeter Assembly

## Part A: Attach the glenoid targeter shaft and handle together

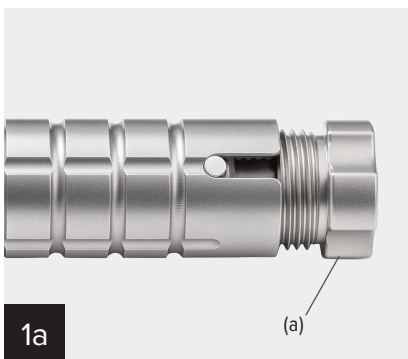


Pass the smaller nosed portion of the shaft through the handle.



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



Attach the capture nut **(a)** to the end of the newly created targeter foundation.



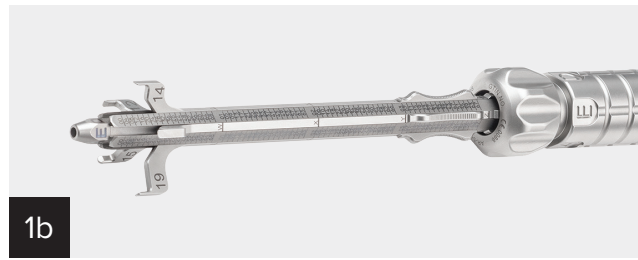
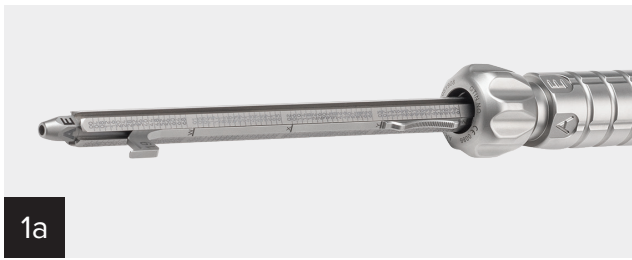
Tighten the capture nut until secure.



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 targeter legs to slide in place between the shaft and locking nut.

**Warning: Locking nut will fall off shaft if targeter is turned upside down.**

## Part C: Load targeter legs



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.

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

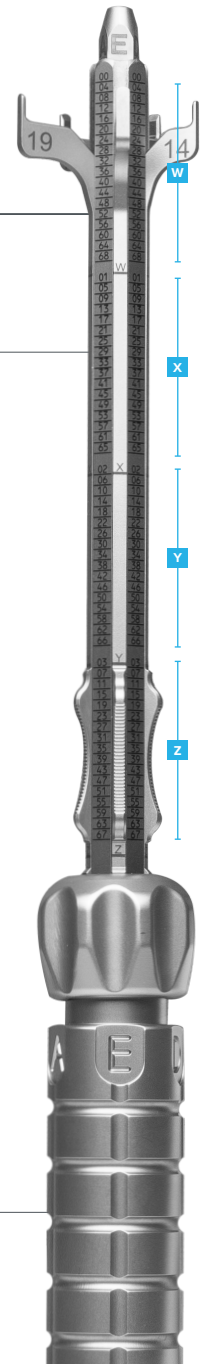
### Part A: Calibrate height settings



Preoperative Plan and 5-D Glenoid Targeter Instructions		
Patient	Arthrex VIP	
Date	1	
Surgeon	Dr. VIP	
Customer Order Number	1	
Procedure / Side	KSA / Right	
Date of Surgery	2020-May-17	
Native Version (deg)	-1.4	
Native Inclination (deg)	5.2	
Implant	Arthrex MG2 BP	
Implant Size	24mm x 25mm Screw	
Glenosphere or Inlay	36mm # Standard	
Implant Version (deg)	0	
Implant Inclination (deg)	0	
Implant Roll (deg)	12	
Humeral Head Size (mm)	47.6	
Planning Engineer	planervip@arthrex.com	
Expiration Date	2020-Oct-30	
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

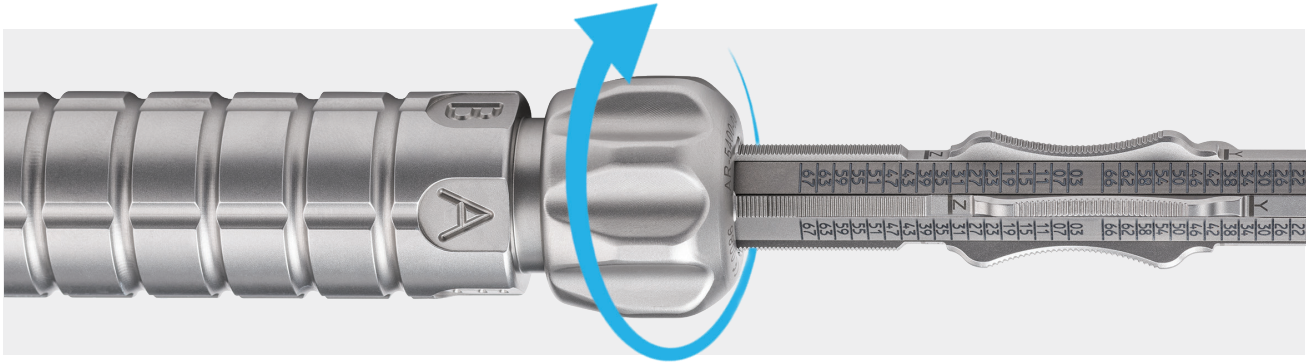
(a)

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	



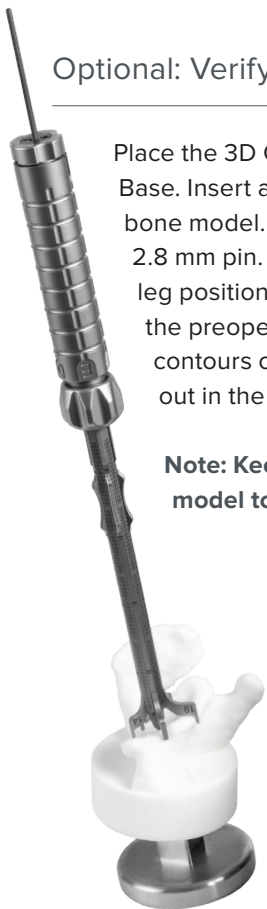
Each slot and targeter leg length in the preoperative plan lists a corresponding height setting (letter and number). The letter represents the quadrant on the targeter shaft and the number represents the height setting within that quadrant. Start with the “A” slot, line the laser etching beneath the 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



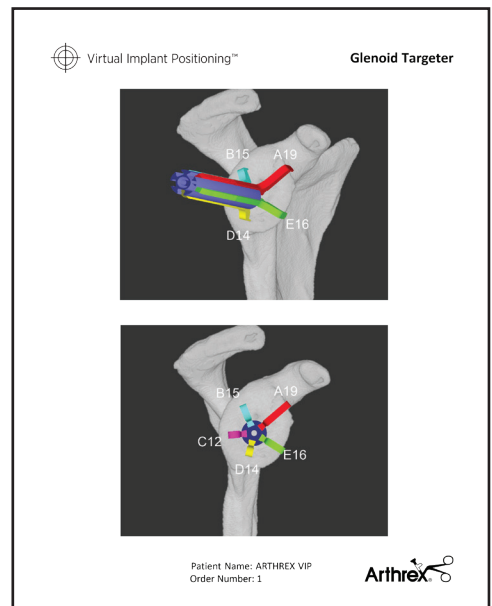
Engage the threads on the locking nut with those on the targeter handle, tightening the locking nut until it is completely snug and secure over the ends of the targeter legs. Verify that the legs have stayed in the proper position according to the preoperative plan.

## 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.**



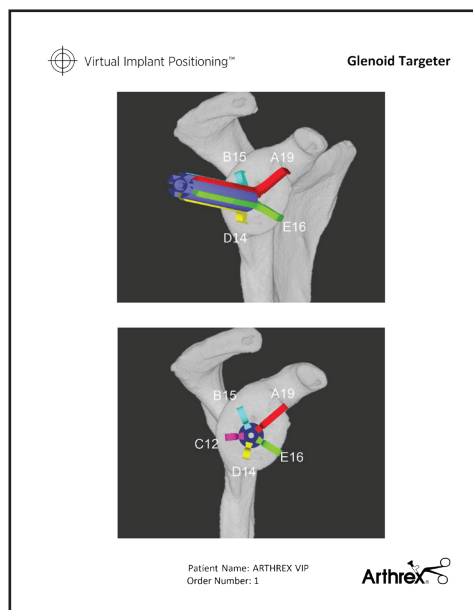
(a)

# Targeter Engagement

## Part A: Engage the targeter with preplanned leg locations

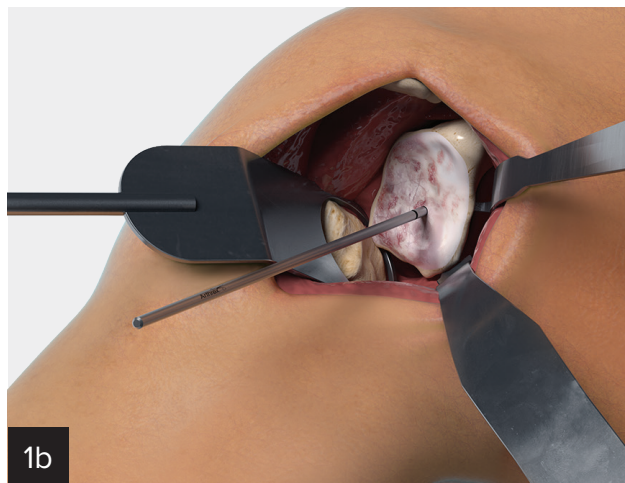


Engage the feet of the targeter legs with the patient's glenoid, making sure to mimic the targeter legs' locations detailed in the preoperative plan **(a)**.



(a)

## Part B: Pin insertion



Attach the 2.8 mm diameter (400 mm long) pin to a pin driver and insert the pin down the hole through the middle of the targeter. The pin should reach a positive stop at the surface of the glenoid. While holding the targeter in the preplanned location, fire the pin into the glenoid bone to complete VIP™ targeter surgical procedure. Continue the procedure based on the corresponding surgical technique for the implant being used.

## Ordering Information

### Required Instruments

Product Description	Item Number	Quantity
<b>Virtual Implant Positioning™ (VIP) Glenoid Targeter Set</b>	<b>AR-5400-S</b>	
VIP™ Glenoid Targeter Instrument Case	AR-5400-C	1
Glenoid Targeter Shaft	AR-5400-01	1
Glenoid Targeter Handle	AR-5400-02	1
Glenoid Targeter Capture Nut	AR-5400-03	1
Glenoid Targeter Locking Nut	AR-5400-04	1
Glenoid Targeter Leg, size 10	AR-5400-10	1
Glenoid Targeter Leg, size 11	AR-5400-11	1
Glenoid Targeter Leg, size 12	AR-5400-12	1
Glenoid Targeter Leg, size 13	AR-5400-13	1
Glenoid Targeter Leg, size 13	AR-5400-14	1
Glenoid Targeter Leg, size 15	AR-5400-15	2
Glenoid Targeter Leg, size 16	AR-5400-16	2
Glenoid Targeter Leg, size 17	AR-5400-17	2
Glenoid Targeter Leg, size 18	AR-5400-18	2
Glenoid Targeter Leg, size 19	AR-5400-19	2
Glenoid Targeter Leg, size 20	AR-5400-20	2
Glenoid Targeter Leg, size 21	AR-5400-21	2
Glenoid Targeter Leg, size 22	AR-5400-22	2
Glenoid Targeter Leg, size 23	AR-5400-23	2
Glenoid Targeter Leg, size 24	AR-5400-24	2
Glenoid Targeter Leg, size 25	AR-5400-25	2
VIP Glenoid 3D Model Base	AR-VIPBASE	1
2.8 mm Pin, stainless steel	AR-5400-400	2

### Optional Instrument

Product Description	Item Number	Quantity
2.8 mm Pin, Nitinol, sterile	AR-5400-400NS	1



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 or outcomes.

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