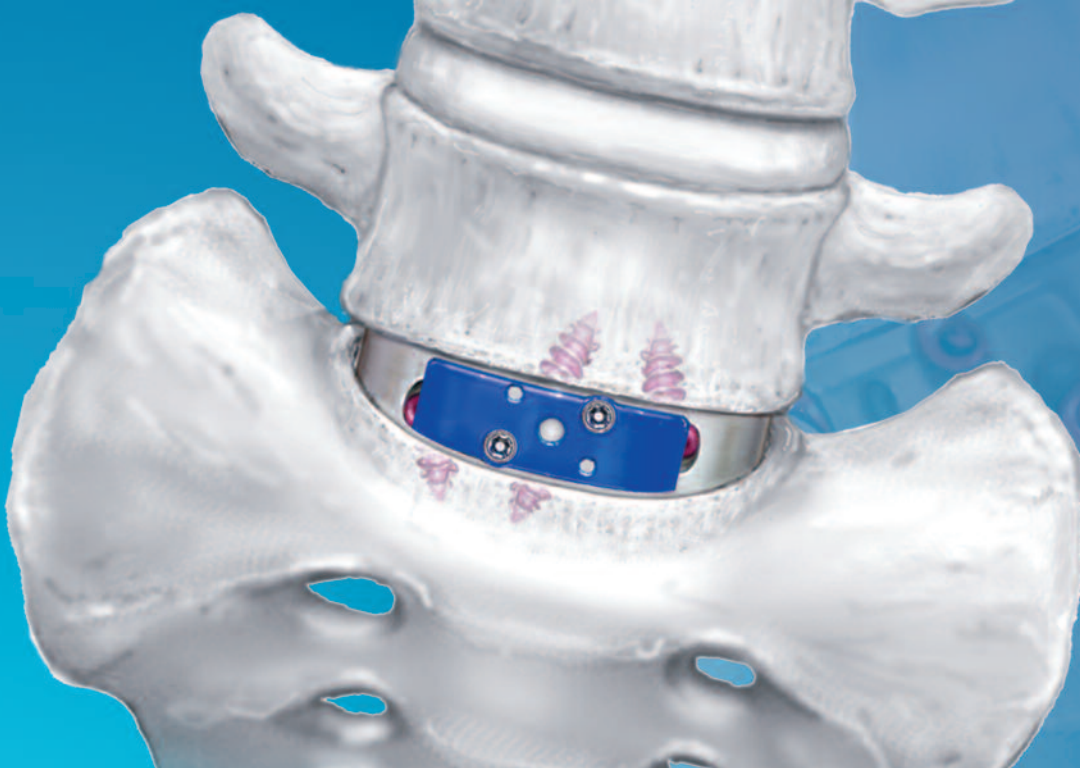


# PILLAR™ SA

PEEK Spacer System



## **PILLAR SA Operative Technique**

**Stand Alone Anterior Lumbar Interbody Fusion (ALIF)  
with Four Screws Using the PILLAR SA PEEK Spacer System**

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**Orthofix wishes to thank the following surgeon for his contribution to the development of the technique:**

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## INTRODUCTION

Anterior lumbar interbody fusion (ALIF) procedures are commonly performed to treat lumbar spine pathology such as disc herniations and spinal stenosis, which may result from degenerative disc disease, traumatic disruption, spinal instability, or grade I and II spondylolistheses. Anterior lumbar interbody spacers should:

- Align the spine in an anatomical position
- Maintain graft position
- Increase the likelihood of a fusion
- Allow patients to increase activity in a timely fashion

The PILLAR SA PEEK Spacer System provides fixation within the intervertebral disc space with Bone Screws and a locking Cover Plate to prevent screw back-out. The Bone Screws are self-tapping; however, several options for screw placement are available. The trajectory of Bone Screw placement within the PILLAR SA PEEK cage enhances bone purchase. The locking Cover Plate is very low profile and sits flush with the implant. This is very important as such an innovation eliminates any instrumentation bulk adjacent to vital vascular structures.

The PILLAR SA PEEK Spacer System is a reliable, versatile system that can be used to suit surgeon preferences as they repair a wide spectrum of anterior lumbar spinal disorders.

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## IMPLANTS

- 4 Bone Screw design enhances implant stability
- Wide central opening to hold optimal graft material
- PEEK material provides modulus of elasticity similar to cortical bone
- Ovoid shape parallels the apophyseal ring of the vertebral body
- Multiple sizes match variable patient anatomies: 33mm – 43mm widths
- Self-tapping Screws and Rescue Screws in multiple lengths
  - Constrained, Semi-Constrained, and Rescue Screws available



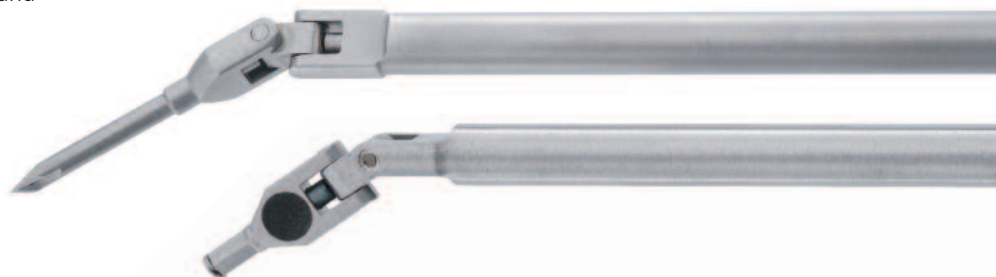
## LOCKING MECHANISM FOR SCREWS

- 1mm Cover Plate sits flush with the PEEK cage for a nearly zero profile
- Choices of instruments for easy assembly



## FLEXIBLE INSTRUMENTS

- Multiple choices for difficult surgical apertures
- Multiple instruments provide versatility and physician selectivity



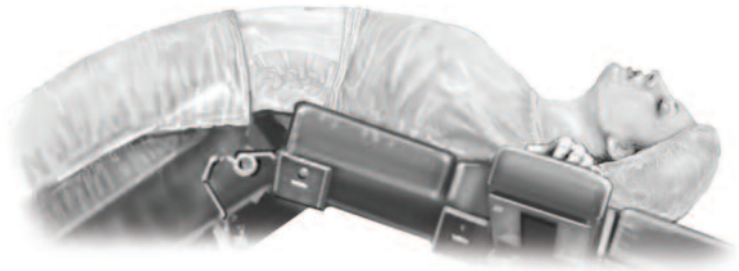


Fig. 1a

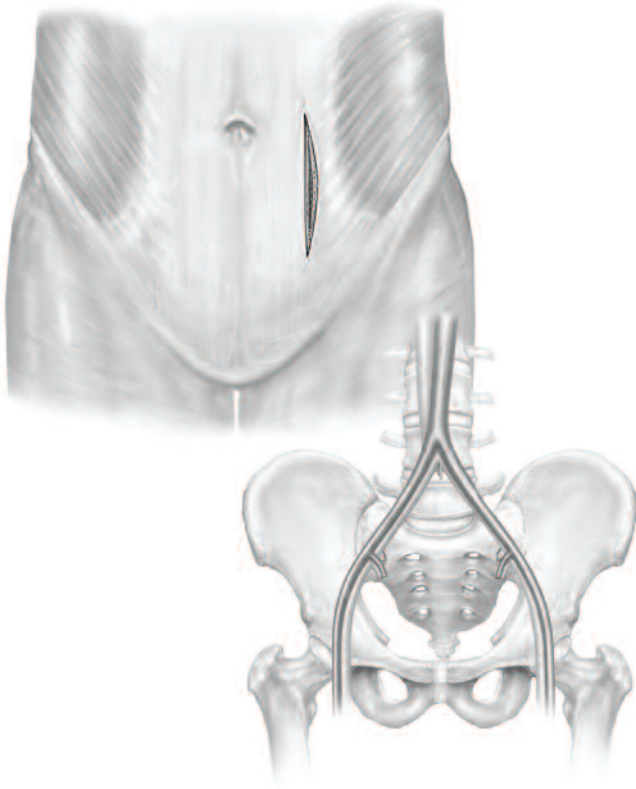
## 1. PREOPERATIVE PLANNING AND PATIENT POSITIONING

Preoperative planning is critical in the preparation for spinal surgery. A complete radiographic evaluation (A/P and lateral films) measuring the vertebral body dimension is recommended for proper diagnosis prior to surgery.

Carefully place the patient in the supine position on the operating table with all bony prominences padded and the lumbar spine in neutral to slight extension following

induction of anesthesia. Once the patient is placed on the table, use a lateral C-Arm fluoroscopy to visualize the lumbar spine.

**NOTE:** At times you may want to break the table in order to gain better access to the level, particularly in treating L5/S1 (Fig. 1a).  
J. Garber, M.D., F.A.C.S.



## 2. EXPOSURE

The PILLAR SA PEEK Spacer System instrumentation is designed for use with a direct anterior retro-peritoneal approach.

Adequate visualization of the cephalad and caudal vertebra and disc space is critical. Width of the disc space exposure should be lateral enough for lateral visualization of the sympathetic chains. Use standard radiographic techniques to identify the correct disc level.



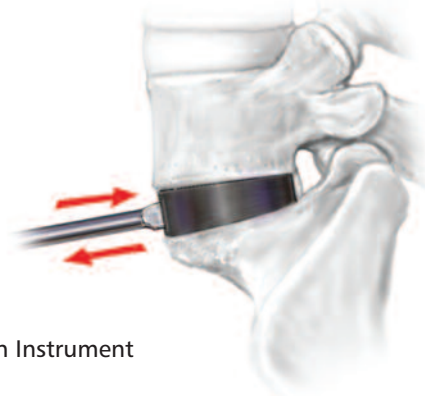
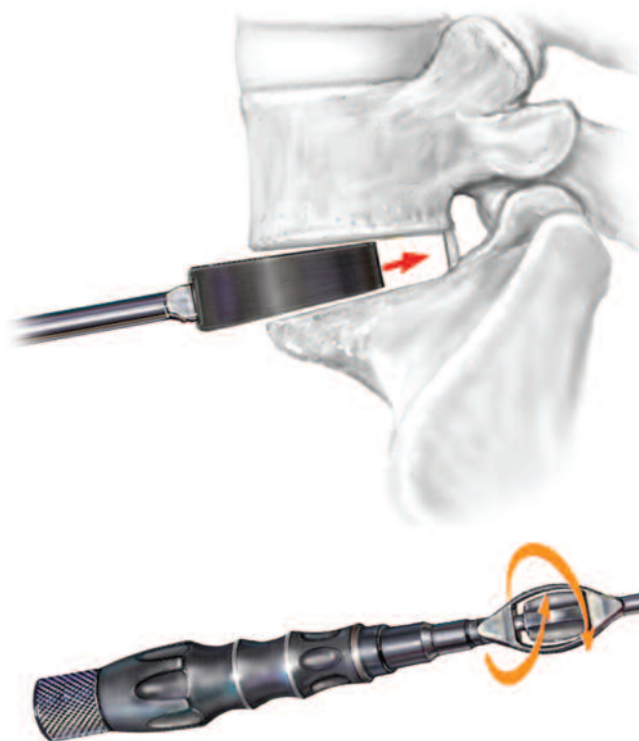
## 3. DISCECTOMY AND DISC SPACE PREPARATION

Sterilize the implants and instruments as described in the Instructions for Use.

Perform a complete anterior lumbar discectomy and remove all residual interbody material.

In order to square off the end plates to make the PILLAR SA PEEK Spacer insertion more efficient, the surgeon may want to remove any osteophytes using an osteotome of their choice.

**NOTE:** PILLAR SA PEEK Spacer System does not include rasps, osteotomes, or a mallet.



Trial Insertion Instrument

## 4. IMPLANT SIZING

X-ray templates are available for pre-operative sizing, and implant trials are available for intra-operative sizing. (See page 10 for further details of X-ray templates.) Multiple trial sizing options are provided in the PILLAR™ SA PEEK Spacer System.

### Width and Distractor Sizers

**Width Sizers** are provided to predetermine the desired implant width and depth for the disc space. For use after discectomy, slide a Width Sizer's flat face into the disc space until it stops. The correct Width Sizer will be 1-2mm smaller than the vertebrae on each side.

While the **Width Sizer** is inside the disc space, predetermine the desired implant depth by associating the depth indicators to the most anterior portion of the vertebrae. If not visible, use radiography oriented in the most cephalad or caudal direction to see the indicators.

**Distractors/Sizers** are provided to predetermine the desired implant height and confirm the implant depth for the disc space. In collapsed vertebrae, these tools can be used as Distractors by first sliding its flat portion into the disc space until it stops and then slowly rotating the tool 90°. Confirm the desired implant height by trying several

sizes and verifying the fit using radiography oriented in the lateral direction. Depth markers will also be visible on this direction to confirm the desired implant depth.

### Trial Sizing

The PILLAR SA **Trials** correspond to the PILLAR SA implant sizes available. (see Trial sizes on page 11.)

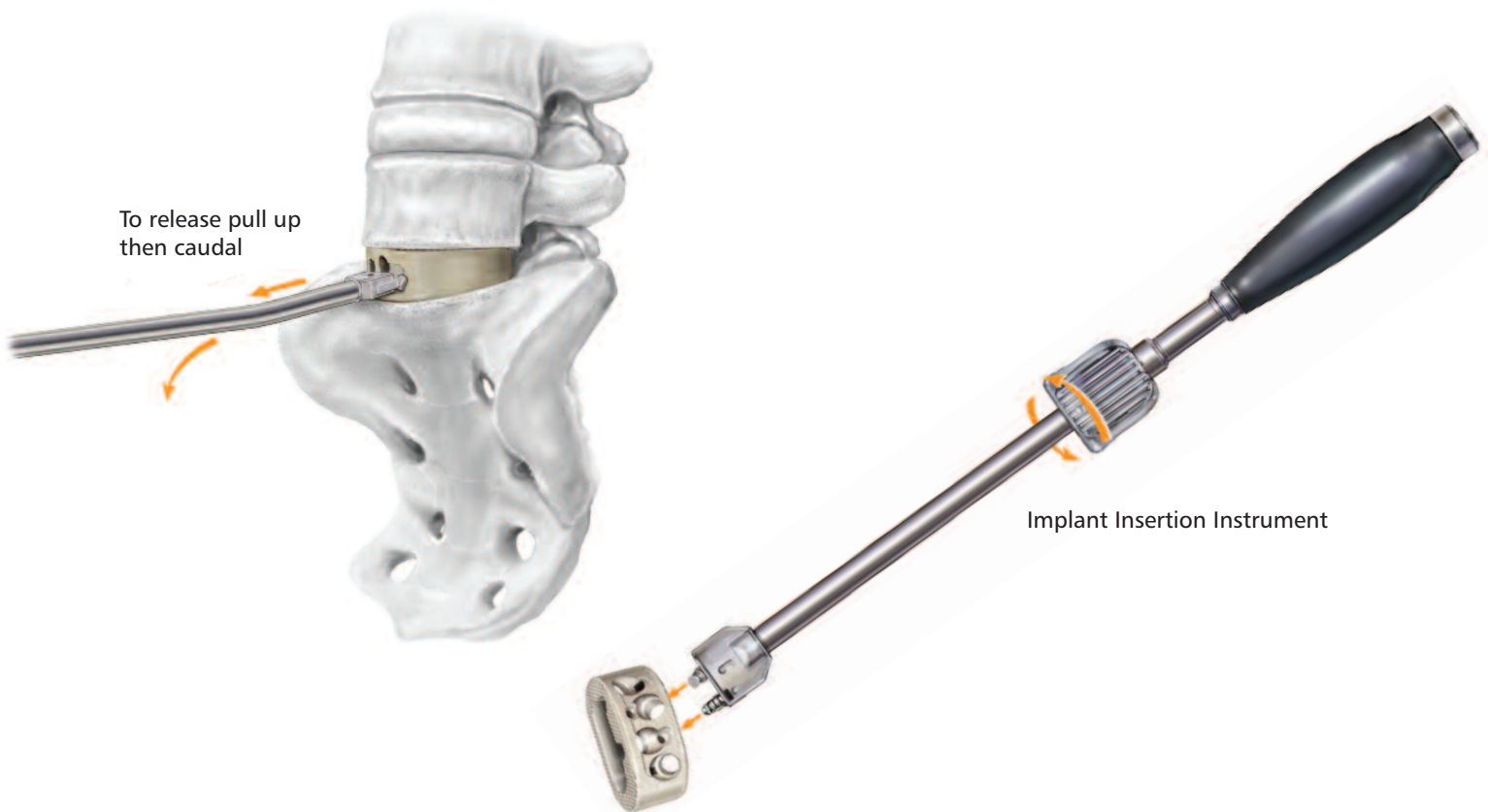
Select the appropriate Trial by size and lordotic angle, and attach it to the Trial Insertion Instrument. Turn the center knob clockwise until it stops to secure the Trial to the instrument.

Insert sequential size Trials into the prepared disc space until an appropriately tight fit is achieved and placement is confirmed with a radiograph. Disengage the Trial from the prepared disc space by gently tapping it out using the integrated slap hammer. When moving the instrument cephalad to caudal, there should be no toggling of the Trial within the space with the appropriate size.

Disengage the Trial from the Trial Insertion Instrument by turning the center knob counter-clockwise.

Select the size for the PILLAR SA implant according to the appropriate Trial size.





## 5. IMPLANT INSERTION

Prior to attaching the implant to the instrument, add autograft in the wide central opening.

To attach the PILLAR SA implant to the **Implant Insertion Instrument**, align the indicator marked tip to the hole with the indicator mark of the implant. Insert the other tip of the instrument into the third hole of the implant.

Close the jaws on the Implant Insertion Instrument tips by turning the knob clockwise to secure the implant onto the instrument. Fill the wide central opening with autograft as desired. See graft volume table on page 12.

Implant the PILLAR SA into the prepared interbody space with the Implant Insertion Instrument and tap it into place with a mallet. The PILLAR SA should not be counter sunk, but placed flush to the anterior endplates (apophyseal ring).

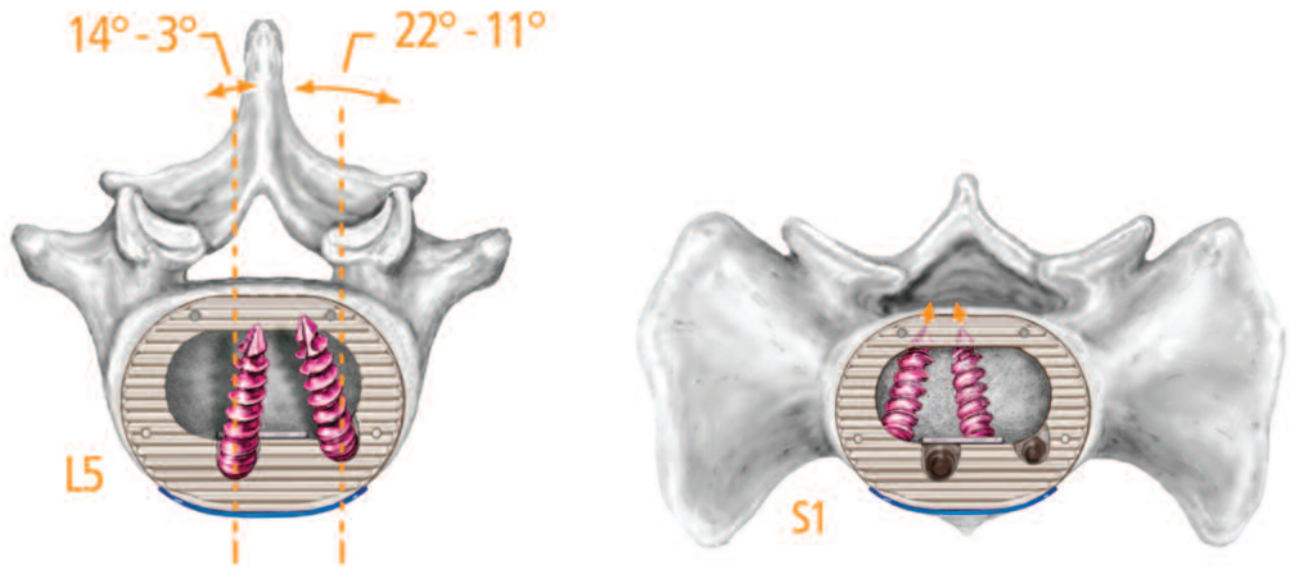
To disengage the Implant Insertion Instrument from the

implant, turn the knob counter-clockwise and pull the instrument up and caudal to work with the bend of the instrument. If the PILLAR SA implant needs to be positioned further into the prepared space, gently tap the implant with the Straight Tamp provided in the instrument tray.

Confirm implant placement radiographically. The posterior tantalum X-ray markers are 2mm away from the center of the pin to the posterior side of the implant. The anterior tantalum X-ray markers are 10mm away from the center of the pin to the anterior side of the implant.

**Note:** You may need to wiggle the Implant Insertion Instrument once you have loosened the knob in order to disengage the implant from the instrument. If the implant moves while wiggling the instrument, you may not have used a large enough implant for the inner space (i.e. you may have undersized the graft). Consider a larger implant.

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Note: Semi-Constrained Bone Screws – 11° variability from midline  
 Constrained Bone Screws and Rescue Bone Screws – 7° variability from midline

## 6. BONE SCREW HOLE PREPARATION FOR SCREW PLACEMENT

The **Bone Screws** are self-tapping; however, additional options are provided for placing the starter holes into the cortical bone.

When using the **Sleeved Awl**:

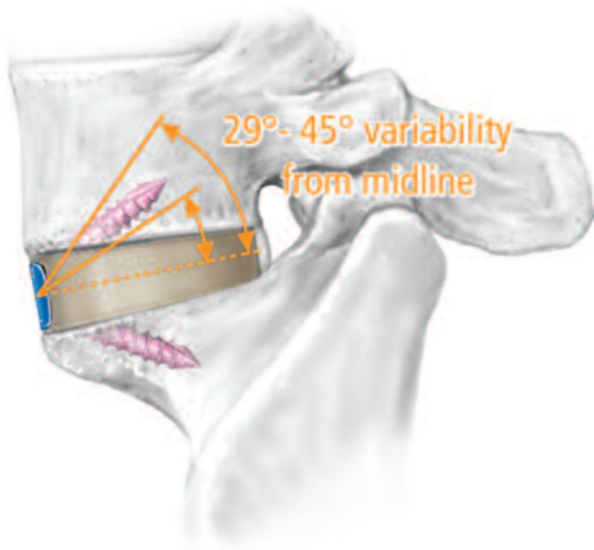
Fully seat the **Awl** within the Bone Screw hole and punch through the cortical bone.

When using the **Jointed (polyaxial) Awl** and **Drill Guide** for screw trajectory options:

1. Fully seat the Drill Guide within the Bone Screw hole.
2. Fully seat the Jointed Awl within the Drill Guide and punch through the cortical bone.

Depth marks are indicated on the tip of the Awls at **5mm** and **10mm**. The depth of the Sleeved Awl is **10mm**. The depth of the Jointed Awl with the **Drill Guide** is **10mm**. Without the Drill Guide, the depth of the Jointed Awl is **15mm**. Using the Drill Guide, however, will prevent the Awl from possible skidding or slipping.





**Note:** Semi-Constrained Bone Screws – 16° range of motion  
 Constrained Bone Screws and Rescue Bone Screws – 2° range of motion

When using the **Drill**, there are multiple options: a **Straight Shaft** and a **Flex Shaft**. Both work with the **Ratcheting Handle**. When drilling, always use the Drill Guide to establish accurate orientation and depth of each pilot hole.

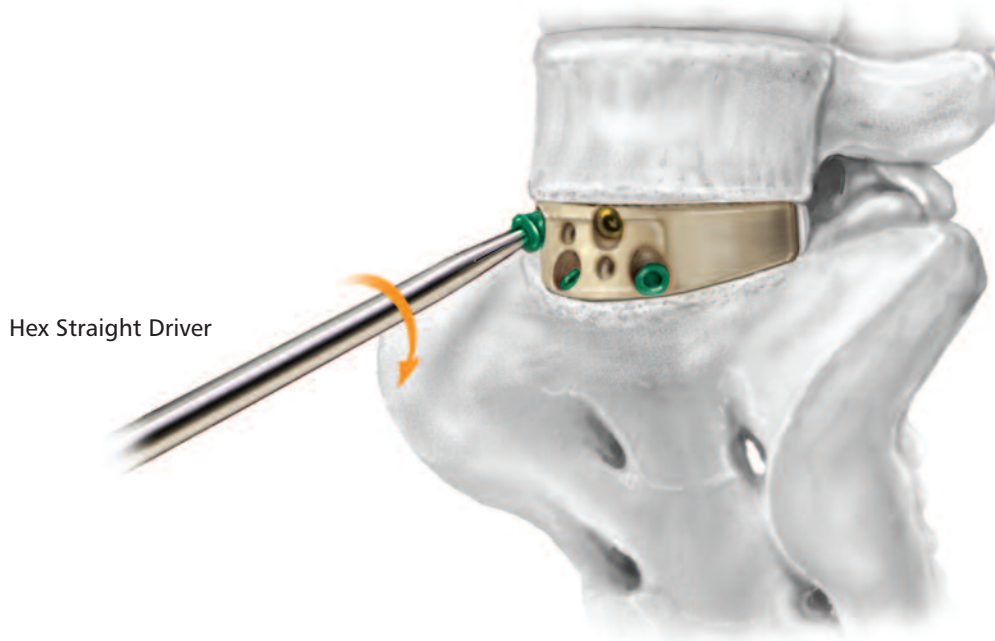
1. Attach the Straight Shaft to the **Drill Tip**, and attach the Ratcheting Handle to the Straight Shaft.
2. For difficult to reach areas, use the Drill Tip and Flex Shaft with the Ratcheting Handle. Assemble the Ratcheting Handle to the Flex Shaft by pushing down the mating instrument into the handle until a click is heard. To release, press the top face of the handle and pull the mating instrument out. The Handle has the ability to ratchet clockwise, counter-clockwise, or remain stationary in a locked position. These options are indicated on the dial located on the handle. Turn

the dial for the option of choice, indicated by laser markings.

Insert the Drill Guide into the PILLAR SA implant holes. Place the Drill into the Drill Guide. Depth marks are indicated on the Drill Tip at **5mm** and **10mm**. The Drill depth with the Drill Guide is **15mm**. Although not recommended, the depth of the Drill Tip without the Drill Guide is 28mm.

Repeat for preparing the four (4) Bone Screw holes.

**Note:** It is not recommended to drill without the **Drill Guide** but if it is necessary, use extra precaution to avoid creating a pilot hole that is too deep and any potential challenges with removing the instruments from the implant. The depth of the Drill Tip without the Drill Guide is **28mm**.



#### **Semi Constrained Bone Screws**

5.0mm X 20mm length - Magenta
5.0mm X 25mm length - Green
5.0mm X 30mm length - Gold
5.0mm X 35mm length - Blue

#### **Constrained Screws** 1/2 black head

5.0mm X 20mm length - Magenta
5.0mm X 25mm length - Green
5.0mm X 30mm length - Gold
5.0mm X 35mm length - Blue

#### **Rescue Screws** silver head

5.5mm X 20mm length - Magenta
5.5mm X 25mm length - Green
5.5mm X 30mm length - Gold
5.5mm X 35mm length - Blue

## 7. SCREW PLACEMENT

The self-tapping **Semi-Constrained** and **Constrained Bones Screws** are available in four lengths (see table below). Once the appropriate **Bone Screw** length is determined (See X-ray templates, page 10), place the four Bone Screws into the PEEK implant. Options are listed below.

### 1. Hex Straight Driver and Ratcheting Handle:

Assemble the Ratcheting Handle to the Hex Straight Driver by pushing down the mating instrument into the handle until a loud click is heard. To release press the top face of the handle and pull the mating instrument out. The **Handle** has the ability to ratchet clockwise, counter-clockwise, or remain stationary in a locked position. These options are indicated on the dial located on the handle. Turn the dial for the option of choice, indicated by laser markings.

### 2. U-Joint Driver with Retention and Ratcheting Handle (elbow joint with screw retention):

Assemble the Ratcheting Handle to the U-Joint Driver with Retention as described above with the Hex Straight Driver. The Handle has the ability to ratchet clockwise, counter-clockwise, or remain stationary in a locked position. These options are indicated on the dial located on the handle. Turn the dial for the option of choice, indicated by laser markings.

**Note:** A U-Joint Driver without Retention is also provided if screw retention is not desired. To implant the screws, start with the two middle holes to implant in the Bone Screws, turning the Screw clockwise until finger tight.

Once completed, the position of the Bone Screw heads should be completely recessed within the PILLAR SA PEEK implant.

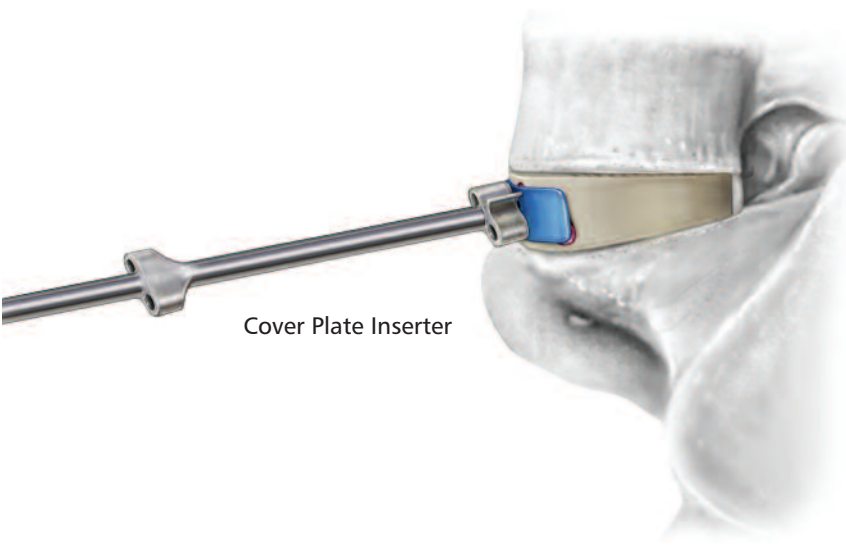
**IMPORTANT:** Four (4) Screws should be used for every stand alone PILLAR SA construct or supplemental fixation is required. Verify placement with radiography.

**Note:** Typically 25mm or 30mm Bone Screws will be used. To eliminate the possibility of screw convergence or posterior cortical body breach (ventral to thecal sac), do not use two 35mm Bone Screws in the same vertebral body.

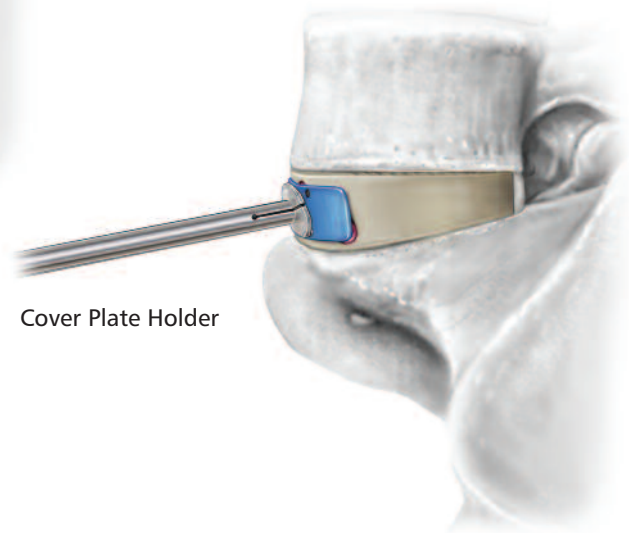
J. Garber, M.D., F.A.C.S.

**Note:** You may want to use a double action rongeur to remove anterior osteophytes that might prevent proper screw placement within the PILLAR SA PEEK implant.

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Cover Plate Inserter



Cover Plate Holder

#### Cover Plate Sizes

33mm wide Cover Plate - Magenta
37mm wide Cover Plate - Blue
40mm wide Cover Plate - Green
43mm wide Cover Plate - Gold

## 8. COVER PLATE ASSEMBLY

In order to secure the Bone Screws in place, a **Cover Plate** is provided to prevent bone screw back-out. The Cover Plates are available in four (4) sizes (see table below). The sizes correspond with the widths of the PEEK PILLAR SA implants.

**Note:** The titanium screws in the locking cover plate engage directly into titanium receptacles in the PILLAR SA PEEK implant for stronger fixation.

J. Garber, M.D., F.A.C.S.

There are two (2) options for securing the Cover Plate over the Bone Screws into the PILLAR SA PEEK implant.

#### Option 1: Cover Plate Inserter

The guides on the **Cover Plate Inserter** will line up the Cover Plate Driver with the Cover Plate Screws that secure the Cover Plate.

First make sure that the Cover Plate caddy is on a stable, flat surface. Place the end of the Cover Plate Inserter over the Cover Plate and line up the openings over the Cover Plate screw heads. Then gently turn the top knob clock-wise until the Cover Plate is engaged.

**Please note: Do not over-tighten the knob.**

Engage the **Torque Limiting Handle** onto a Cover Plate Driver provided in the set by pressing down the mating feature, inserting the Driver, turning slightly, and releasing the mating feature. Please note that the Cover Plate Driver and the mating feature of the Torque Limiting Handle must line up for proper connection. Both mating features are a specific "D" shape to ensure that no other handle can be used on the Cover Plate Drivers. Using a different handle may strip the small screws of the Cover Plate.

Place the Cover Plate Inserter, loaded with the Cover Plate, over the bone screws on the PILLAR SA PEEK implant. Holding the Cover Plate Inserter at the top, insert the Cover Plate Driver with the Torque Limiting Handle through the top driver guide, then advance it through the middle guides, and the bottom driver guide. The guides will line up the Cover Plate Driver with the Cover Plate Screws. Turn the Torque Limiting Handle clock-wise until it clicks to secure the Cover Plate. The torque on the Torque Limiting Handle is **2in/lb.**

After locking both screws of the Cover Plate securely, remove the Cover Plate Inserter by turning the top knob counter clock-wise and lifting it off of the Cover Plate.

## 8. COVER PLATE ASSEMBLY (CONT.)

### Option 2: Cover Plate Holder

The **Cover Plate Holder** was designed to allow the surgeon to tilt and rock the instrument when locking the Cover Plate to the **PILLAR SA PEEK** cage. It provides maximum visibility as well as flexibility. It does not have guides for the Cover Plate Driver.

Before loading the Cover Plate onto the Cover Plate Holder, make sure that the Cover Plate caddy is on a stable, flat surface. Mate the two holes of the Cover Plate to the pins of the Cover Plate Holder and press down.

Engage the Torque Limiting Handle onto a Cover Plate Driver provided in the set by pressing down the mating feature, inserting the Driver, turning slightly, and releasing the mating feature. Please note that the Cover Plate Driver and the mating feature of the Torque Limiting Handle must line up for proper connection. Both mating features are a specific "D" shape to ensure that no other handle can be used on the Cover Plate Drivers. Using a different handle may strip the small screws of the Cover Plate.

Once loaded to the Cover Plate Holder, the Cover Plate will be held securely. Place the Cover Plate attached to the Holder, over the Bone Screws of the PILLAR SA PEEK cage. Directly engage the Cover Plate Driver with the Torque Limiting Handle to the screws of the Cover Plate. Turn the Torque Limiting Handle clock-wise until it clicks to secure the Cover Plate. The torque on the Torque Limiting Handle is **2in/lb.**

After locking both screws of the Cover Plate securely, remove the Cover Plate Holder from the Cover Plate by tilting the instrument perpendicular to the axis connecting the two screws.

## IMPLANT REMOVAL AND REVISION

In the case of implant revision or removal, follow the appropriate steps:

**1. Stripped Screw** – If it is determined that the Bone Screw assembly is inadequate due to a stripped Bone Screw, the Bone Screw should be removed and exchanged for a self-tapping 5.5mm Rescue Screw.

**2. Late Implant Removal or Revision** – Caution should be exercised before deciding to reapproach the anterior lumbar spine as adhesions between and around the great vessels make the approach hazardous. Once the PILLAR SA implant is exposed, simply reverse the insertion technique with the same instruments. Do not attempt to remove the construct unless it is completely exposed to avoid inadvertent injury to the great vessels.

a. Remove the Cover Plate with the Cover Plate Holder

or Cover Plate Inserter and the Cover Plate Driver attached to the Torque Limiting Handle.

b. Remove the Bone Screws with the Hex Driver, U-Joint Driver with Retention, or the U-Joint Driver without Retention with the Ratcheting Handle.

**Note:** On initial implantation of the PILLAR SA PEEK implant, the surgeon may want to consider placing a protective patch over the surgical interbody site under the great vessels in the event that the site needs to be re-explored. This protective patch may prevent vascular adhesions to the PEEK implant or surgical inner space. J. Garber, M.D., F.A.C.S.

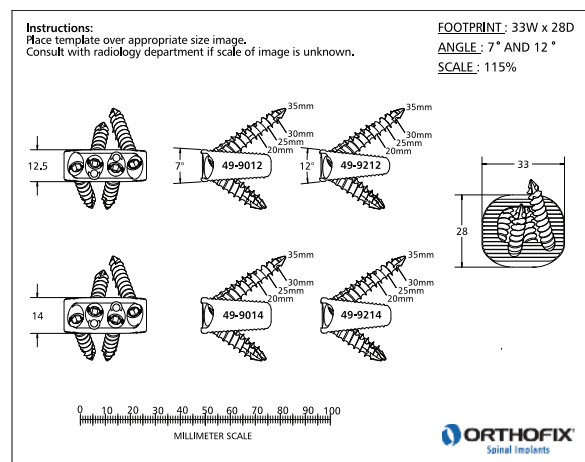
**Note:** Also on removal if necessary, you may want to consider a ureteral stenting placed by Urology in order to better identify the ureters and prevent injury in the setting of scar tissue and dissection. J. Garber, M.D., F.A.C.S.

## X-RAY TEMPLATES

**PILLAR SA X-Ray Templates** are available to initially determine sizes of the implants and Bone Screws with an x-ray in advance. There are separate templates for each footprint - height, depth, and lordosis.

The X-Ray Templates are magnified to 115% in order to match most x-ray magnification.

To use the Templates, hold the PILLAR SA X-Ray Template over the x-ray, placing the implant over the disc space that will be prepared. By doing this you can initially determine the approximate correct width, depth, height, and lordosis for the disc space. The Bone Screw sizes are also available on the templates in order to initially determine the anticipated screw length for the patient's vertebrae.



## IMPLANTS & TRIALS

Implants	Trials	Dimensions
<b>Top Tray</b>		
49-9012	49-9112	33mm W x 28mm D x 12.5mm H, 7°
49-9014	49-9114	33mm W x 28mm D x 14mm H, 7°
49-9016	49-9116	33mm W x 28mm D x 16mm H, 7°
49-9018	49-9118	33mm W x 28mm D x 18mm H, 7°
49-9020	49-9120	33mm W x 28mm D x 20mm H, 7°
49-9212	49-9312	33mm W x 28mm D x 12.5mm H, 12°
49-9214	49-9314	33mm W x 28mm D x 14mm H, 12°
49-9216	49-9316	33mm W x 28mm D x 16mm H, 12°
49-9218	49-9318	33mm W x 28mm D x 18mm H, 12°
49-9220	49-9320	33mm W x 28mm D x 20mm H, 12°
49-2012	49-2112	37mm W x 28mm D x 12.5mm H, 7°
49-2014	49-2114	37mm W x 28mm D x 14mm H, 7°
49-2016	49-2116	37mm W x 28mm D x 16mm H, 7°
49-2018	49-2118	37mm W x 28mm D x 18mm H, 7°
49-2020	49-2120	37mm W x 28mm D x 20mm H, 7°
49-2212	49-2312	37mm W x 28mm D x 12.5mm H, 12°
49-2214	49-2314	37mm W x 28mm D x 14mm H, 12°
49-2216	49-2316	37mm W x 28mm D x 16mm H, 12°
49-2218	49-2318	37mm W x 28mm D x 18mm H, 12°
49-2220	49-2320	37mm W x 28mm D x 20mm H, 12°
49-3012	49-3112	40mm W x 28mm D x 12.5mm H, 7°
49-3014	49-3114	40mm W x 28mm D x 14mm H, 7°
49-3016	49-3116	40mm W x 28mm D x 16mm H, 7°
49-3018	49-3118	40mm W x 28mm D x 18mm H, 7°
49-3020	49-3120	40mm W x 28mm D x 20mm H, 7°
49-3212	49-3312	40mm W x 28mm D x 12.5mm H, 12°
49-3214	49-3314	40mm W x 28mm D x 14mm H, 12°
49-3216	49-3316	40mm W x 28mm D x 16mm H, 12°
49-3218	49-3318	40mm W x 28mm D x 18mm H, 12°
49-3220	49-3320	40mm W x 28mm D x 20mm H, 12°
49-4012	49-4112	43mm W x 28mm D x 12.5mm H, 7°
49-4014	49-4114	43mm W x 28mm D x 14mm H, 7°
49-4016	49-4116	43mm W x 28mm D x 16mm H, 7°
49-4018	49-4118	43mm W x 28mm D x 18mm H, 7°
49-4020	49-4120	43mm W x 28mm D x 20mm H, 7°
49-4212	49-4312	43mm W x 28mm D x 12.5mm H, 12°
49-4214	49-4314	43mm W x 28mm D x 14mm H, 12°
49-4216	49-4316	43mm W x 28mm D x 16mm H, 12°
49-4218	49-4318	43mm W x 28mm D x 18mm H, 12°
49-4220	49-4320	43mm W x 28mm D x 20mm H, 12°

Implants	Trials	Dimensions
<b>Bottom Tray</b>		
49-9412	49-9512	33mm W x 32mm D x 12.5mm H, 7°
49-9414	49-9514	33mm W x 32mm D x 14mm H, 7°
49-9416	49-9516	33mm W x 32mm D x 16mm H, 7°
49-9418	49-9518	33mm W x 32mm D x 18mm H, 7°
49-9420	49-9520	33mm W x 32mm D x 20mm H, 7°
49-9612	49-9712	33mm W x 32mm D x 12.5mm H, 12°
49-9614	49-9714	33mm W x 32mm D x 14mm H, 12°
49-9616	49-9716	33mm W x 32mm D x 16mm H, 12°
49-9618	49-9718	33mm W x 32mm D x 18mm H, 12°
49-9620	49-9720	33mm W x 32mm D x 20mm H, 12°
49-6012	49-6112	37mm W x 32mm D x 12.5mm H, 7°
49-6014	49-6114	37mm W x 32mm D x 14mm H, 7°
49-6016	49-6116	37mm W x 32mm D x 16mm H, 7°
49-6018	49-6118	37mm W x 32mm D x 18mm H, 7°
49-6020	49-6120	37mm W x 32mm D x 20mm H, 7°
49-6212	49-6312	37mm W x 32mm D x 12.5mm H, 12°
49-6214	49-6314	37mm W x 32mm D x 14mm H, 12°
49-6216	49-6316	37mm W x 32mm D x 16mm H, 12°
49-6218	49-6318	37mm W x 32mm D x 18mm H, 12°
49-6220	49-6320	37mm W x 32mm D x 20mm H, 12°
49-7012	49-7112	40mm W x 32mm D x 12.5mm H, 7°
49-7014	49-7114	40mm W x 32mm D x 14mm H, 7°
49-7016	49-7116	40mm W x 32mm D x 16mm H, 7°
49-7018	49-7118	40mm W x 32mm D x 18mm H, 7°
49-7020	49-7120	40mm W x 32mm D x 20mm H, 7°
49-7212	49-7312	40mm W x 32mm D x 12.5mm H, 12°
49-7214	49-7314	40mm W x 32mm D x 14mm H, 12°
49-7216	49-7316	40mm W x 32mm D x 16mm H, 12°
49-7218	49-7318	40mm W x 32mm D x 18mm H, 12°
49-7220	49-7320	40mm W x 32mm D x 20mm H, 12°
49-8012	49-8112	43mm W x 32mm D x 12.5mm H, 7°
49-8014	49-8114	43mm W x 32mm D x 14mm H, 7°
49-8016	49-8116	43mm W x 32mm D x 16mm H, 7°
49-8018	49-8118	43mm W x 32mm D x 18mm H, 7°
49-8020	49-8120	43mm W x 32mm D x 20mm H, 7°
49-8212	49-8312	43mm W x 32mm D x 12.5mm H, 12°
49-8214	49-8314	43mm W x 32mm D x 14mm H, 12°
49-8216	49-8316	43mm W x 32mm D x 16mm H, 12°
49-8218	49-8318	43mm W x 32mm D x 18mm H, 12°
49-8220	49-8320	43mm W x 32mm D x 20mm H, 12°

### Semi-Constrained Screws – 5.0mm Shaft/ Body

49-5020	20mm Bone Screw
49-5025	25mm Bone Screw
49-5030	30mm Bone Screw
49-5035	35mm Bone Screw

### Constrained Screws – 5.5mm Shaft/5.0 Body

49-5120	20mm Bone Screw
49-5125	25mm Bone Screw
49-5130	30mm Bone Screw
49-5135	35mm Bone Screw

### Rescue Screws – 5.5mm Shaft/Body

49-5520	20mm Bone Screw
49-5525	5mm Bone Screw
49-5530	30mm Bone Screw
49-5535	35mm Bone Screw

### Cover Plates

49-0033	33mm W Cover Plate
49-0037	37mm W Cover Plate
49-0040	40mm W Cover Plate
49-0043	43mm W Cover Plate

Items in blue must be ordered separately.

## GRAFT VOLUMES

Part #	Description	Graft Vol. (cc)	Part #	Description	Graft Vol. (cc)
49-9012	33mm W x 28mm D x 7° x 12.5mm H	2.7	49-9412	33mm W x 32mm D x 7° x 12.5mm H	3.2
49-9014	33mm W x 28mm D x 7° x 14mm H	3.1	49-9414	33mm W x 32mm D x 7° x 14mm H	3.7
49-9016	33mm W x 28mm D x 7° x 16mm H	3.6	49-9416	33mm W x 32mm D x 7° x 16mm H	4.3
49-9018	33mm W x 28mm D x 7° x 18mm H	4.1	49-9418	33mm W x 32mm D x 7° x 18mm H	5.0
49-9020	33mm W x 28mm D x 7° x 20mm H	4.6	49-9420	33mm W x 32mm D x 7° x 20mm H	5.6
49-9212	33mm W x 28mm D x 12° x 12.5mm H	2.3	49-9612	33mm W x 32mm D x 12° x 12.5mm H	2.7
49-9214	33mm W x 28mm D x 12° x 14mm H	2.7	49-9614	33mm W x 32mm D x 12° x 14mm H	3.2
49-9216	33mm W x 28mm D x 12° x 16mm H	3.2	49-9616	33mm W x 32mm D x 12° x 16mm H	3.9
49-9218	33mm W x 28mm D x 12° x 18mm H	3.7	49-9618	33mm W x 32mm D x 12° x 18mm H	4.5
49-9220	33mm W x 28mm D x 12° x 20mm H	4.2	49-9620	33mm W x 32mm D x 12° x 20mm H	5.1
49-2012	37mm W x 28mm D x 7° x 12.5mm H	3.3	49-6012	37mm W x 32mm D x 7° x 12.5mm H	4.0
49-2014	37mm W x 28mm D x 7° x 14mm H	3.7	49-6014	37mm W x 32mm D x 7° x 14mm H	4.6
49-2016	37mm W x 28mm D x 7° x 16mm H	4.4	49-6016	37mm W x 32mm D x 7° x 16mm H	5.4
49-2018	37mm W x 28mm D x 7° x 18mm H	5.0	49-6018	37mm W x 32mm D x 7° x 18mm H	6.2
49-2020	37mm W x 28mm D x 7° x 20mm H	5.6	49-6020	37mm W x 32mm D x 7° x 20mm H	7.0
49-2212	37mm W x 28mm D x 12° x 12.5mm H	2.8	49-6212	37mm W x 32mm D x 12° x 12.5mm H	3.4
49-2214	37mm W x 28mm D x 12° x 14mm H	3.3	49-6214	37mm W x 32mm D x 12° x 14mm H	4.0
49-2216	37mm W x 28mm D x 12° x 16mm H	4.0	49-6216	37mm W x 32mm D x 12° x 16mm H	4.8
49-2218	37mm W x 28mm D x 12° x 18mm H	4.6	49-6218	37mm W x 32mm D x 12° x 18mm H	5.6
49-2220	37mm W x 28mm D x 12° x 20mm H	5.2	49-6220	37mm W x 32mm D x 12° x 20mm H	6.4
49-3012	40mm W x 28mm D x 7° x 12.5mm H	3.7	49-7012	40mm W x 32mm D x 7° x 12.5mm H	4.6
49-3014	40mm W x 28mm D x 7° x 14mm H	4.2	49-7014	40mm W x 32mm D x 7° x 14mm H	5.2
49-3016	40mm W x 28mm D x 7° x 16mm H	5.0	49-7016	40mm W x 32mm D x 7° x 16mm H	6.1
49-3018	40mm W x 28mm D x 7° x 18mm H	5.7	49-7018	40mm W x 32mm D x 7° x 18mm H	7.0
49-3020	40mm W x 28mm D x 7° x 20mm H	6.4	49-7020	40mm W x 32mm D x 7° x 20mm H	8.0
49-3212	40mm W x 28mm D x 12° x 12.5mm H	3.2	49-7212	40mm W x 32mm D x 12° x 12.5mm H	3.9
49-3214	40mm W x 28mm D x 12° x 14mm H	3.7	49-7214	40mm W x 32mm D x 12° x 14mm H	4.5
49-3216	40mm W x 28mm D x 12° x 16mm H	4.4	49-7216	40mm W x 32mm D x 12° x 16mm H	5.4
49-3218	40mm W x 28mm D x 12° x 18mm H	5.1	49-7218	40mm W x 32mm D x 12° x 18mm H	6.3
49-3220	40mm W x 28mm D x 12° x 20mm H	5.9	49-7220	40mm W x 32mm D x 12° x 20mm H	7.2
49-4012	43mm W x 28mm D x 7° x 12.5mm H	4.1	49-8012	43mm W x 32mm D x 7° x 12.5mm H	5.1
49-4014	43mm W x 28mm D x 7° x 14mm H	4.7	49-8014	43mm W x 32mm D x 7° x 14mm H	5.9
49-4016	43mm W x 28mm D x 7° x 16mm H	5.5	49-8016	43mm W x 32mm D x 7° x 16mm H	6.9
49-4018	43mm W x 28mm D x 7° x 18mm H	6.3	49-8018	43mm W x 32mm D x 7° x 18mm H	7.9
49-4020	43mm W x 28mm D x 7° x 20mm H	7.1	49-8020	43mm W x 32mm D x 7° x 20mm H	8.9
49-4212	43mm W x 28mm D x 12° x 12.5mm H	3.6	49-8212	43mm W x 32mm D x 12° x 12.5mm H	4.3
49-4214	43mm W x 28mm D x 12° x 14mm H	4.2	49-8214	43mm W x 32mm D x 12° x 14mm H	5.0
49-4216	43mm W x 28mm D x 12° x 16mm H	5.0	49-8216	43mm W x 32mm D x 12° x 16mm H	6.0
49-4218	43mm W x 28mm D x 12° x 18mm H	5.7	49-8218	43mm W x 32mm D x 12° x 18mm H	7.0
49-4220	43mm W x 28mm D x 12° x 20mm H	6.5	49-8220	43mm W x 32mm D x 12° x 20mm H	8.0



**HEIGHTS – ANTERIOR AND POSTERIOR**

Desc	Assembly	Anterior (mm)	Posterior (mm)	Desc	Assembly	Anterior (mm)	Posterior (mm)
49-9012	33mm W x 28mm D x 7° x 12.5mm H	12.5	9.4	49-4218	43mm W x 28mm D x 12° x 18mm H	18	12.7
49-9014	33mm W x 28mm D x 7° x 14mm H	14	11.0	49-4220	43mm W x 28mm D x 12° x 20mm H	20	14.7
49-9016	33mm W x 28mm D x 7° x 16mm H	16	13.0	49-9416	33mm W x 32mm D x 7° x 16mm H	16	12.5
49-9018	33mm W x 28mm D x 7° x 18mm H	18	14.9	49-9418	33mm W x 32mm D x 7° x 18mm H	18	14.5
49-9020	33mm W x 28mm D x 7° x 20mm H	20	16.9	49-9420	33mm W x 32mm D x 7° x 20mm H	20	16.5
49-9212	33mm W x 28mm D x 12° x 12.5mm H	12.5	7.2	49-9612	33mm W x 32mm D x 12° x 12.5mm H	12.5	6.3
49-9214	33mm W x 28mm D x 12° x 14mm H	14	8.7	49-9614	33mm W x 32mm D x 12° x 14mm H	14	7.9
49-9216	33mm W x 28mm D x 12° x 16mm H	16	10.7	49-9616	33mm W x 32mm D x 12° x 16mm H	16	9.9
49-9218	33mm W x 28mm D x 12° x 18mm H	18	12.7	49-9618	33mm W x 32mm D x 12° x 18mm H	18	11.9
49-9220	33mm W x 28mm D x 12° x 20mm H	20	14.7	49-9620	33mm W x 32mm D x 12° x 20mm H	20	13.9
49-2012	37mm W x 28mm D x 7° x 12.5mm H	12.5	9.4	49-6012	37mm W x 32mm D x 7° x 12.5mm H	12.5	9.0
49-2014	37mm W x 28mm D x 7° x 14mm H	14	10.9	49-6014	37mm W x 32mm D x 7° x 14mm H	14	10.5
49-2016	37mm W x 28mm D x 7° x 16mm H	16	12.9	49-6016	37mm W x 32mm D x 7° x 16mm H	16	12.5
49-2018	37mm W x 28mm D x 7° x 18mm H	18	14.9	49-6018	37mm W x 32mm D x 7° x 18mm H	18	14.5
49-2020	37mm W x 28mm D x 7° x 20mm H	20	16.9	49-6020	37mm W x 32mm D x 7° x 20mm H	20	16.5
49-2212	37mm W x 28mm D x 12° x 12.5mm H	12.5	7.2	49-6212	37mm W x 32mm D x 12° x 12.5mm H	12.5	6.4
49-2214	37mm W x 28mm D x 12° x 14mm H	14	8.7	49-6214	37mm W x 32mm D x 12° x 14mm H	14	7.9
49-2216	37mm W x 28mm D x 12° x 16mm H	16	10.7	49-6216	37mm W x 32mm D x 12° x 16mm H	16	9.9
49-2218	37mm W x 28mm D x 12° x 18mm H	18	12.7	49-6218	37mm W x 32mm D x 12° x 18mm H	18	11.9
49-2220	37mm W x 28mm D x 12° x 20mm H	20	14.7	49-6220	37mm W x 32mm D x 12° x 20mm H	20	13.9
49-9412	33mm W x 32mm D x 7° x 12.5mm H	12.5	9.0	49-7012	40mm W x 32mm D x 7° x 12.5mm H	12.5	9.0
49-9414	33mm W x 32mm D x 7° x 14mm H	14	10.4	49-7014	40mm W x 32mm D x 7° x 14mm H	14	10.5
49-3012	40mm W x 28mm D x 7° x 12.5mm H	12.5	9.4	49-7016	40mm W x 32mm D x 7° x 16mm H	16	12.5
49-3014	40mm W x 28mm D x 7° x 14mm H	14	10.9	49-7018	40mm W x 32mm D x 7° x 18mm H	18	14.5
49-3016	40mm W x 28mm D x 7° x 16mm H	16	12.9	49-7020	40mm W x 32mm D x 7° x 20mm H	20	16.5
49-3018	40mm W x 28mm D x 7° x 18mm H	18	14.9	49-7212	40mm W x 32mm D x 12° x 12.5mm H	12.5	6.4
49-3020	40mm W x 28mm D x 7° x 20mm H	20	16.9	49-7214	40mm W x 32mm D x 12° x 14mm H	14	7.9
49-3212	40mm W x 28mm D x 12° x 12.5mm H	12.5	7.2	49-7216	40mm W x 32mm D x 12° x 16mm H	16	9.9
49-3214	40mm W x 28mm D x 12° x 14mm H	14	8.7	49-7218	40mm W x 32mm D x 12° x 18mm H	18	11.9
49-3216	40mm W x 28mm D x 12° x 16mm H	16	10.7	49-7220	40mm W x 32mm D x 12° x 20mm H	20	13.9
49-3218	40mm W x 28mm D x 12° x 18mm H	18	12.7	49-8012	43mm W x 32mm D x 7° x 12.5mm H	12.5	9.0
49-3220	40mm W x 28mm D x 12° x 20mm H	20	14.7	49-8014	43mm W x 32mm D x 7° x 14mm H	14	10.5
49-4012	43mm W x 28mm D x 7° x 12.5mm H	12.5	9.4	49-8016	43mm W x 32mm D x 7° x 16mm H	16	12.5
49-4014	43mm W x 28mm D x 7° x 14mm H	14	10.9	49-8018	43mm W x 32mm D x 7° x 18mm H	18	14.5
49-4016	43mm W x 28mm D x 7° x 16mm H	16	12.9	49-8020	43mm W x 32mm D x 7° x 20mm H	20	16.5
49-4018	43mm W x 28mm D x 7° x 18mm H	18	14.9	49-8212	43mm W x 32mm D x 12° x 12.5mm H	12.5	6.4
49-4020	43mm W x 28mm D x 7° x 20mm H	20	16.9	49-8214	43mm W x 32mm D x 12° x 14mm H	14	7.9
49-4212	43mm W x 28mm D x 12° x 12.5mm H	12.5	7.2	49-8216	43mm W x 32mm D x 12° x 16mm H	16	9.9
49-4214	43mm W x 28mm D x 12° x 14mm H	14	8.7	49-8218	43mm W x 32mm D x 12° x 18mm H	18	11.9
49-4216	43mm W x 28mm D x 12° x 16mm H	16	10.7	49-8220	43mm W x 32mm D x 12° x 20mm H	20	13.9

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