PILLAR® SA

PEEK AND PTC SPACER SYSTEM

Stand Alone Anterior Lumbar Interbody Fusion (ALIF) System

MICHELSON TECHNOLOGY AT WORK

ORTHOFIX® | SPINE

STAND ALONE INTERBODY IMPLANT FOR USE IN ALIF PROCEDURES

AVAILABLE IN BOTH PEEK TITANIUM COMPOSITE (PTC) AND PEEK MATERIAL OPTIONS

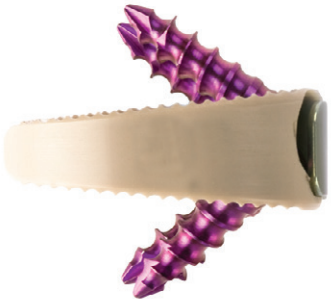
PILLAR SA PEEK

Multiple Implant Widths
33, 37, 40, 43mm widths

Multiple Implant Heights
12.5, 14, 16, 18, 20mm heights

Multiple Implant Depths
28 & 32mm depths

Multiple Implant Angles
7° & 12° Lordosis



PILLAR SA PTC

Multiple Implant Widths
33, 37, 40mm widths

Multiple Implant Heights
12.5, 14, 16, 18mm heights

Implant Depth
28mm depth

Multiple Implant Angles
7° & 12° Lordosis

Multiple Screw Types

Semi-Constrained 5.0mm
Constrained 5.5 neck/5.0mm
Rescue 5.5mm

Multiple Screw Lengths

20, 25, 30, and 35mm lengths

PILLAR® SA
PEEK AND PTC SPACER SYSTEM

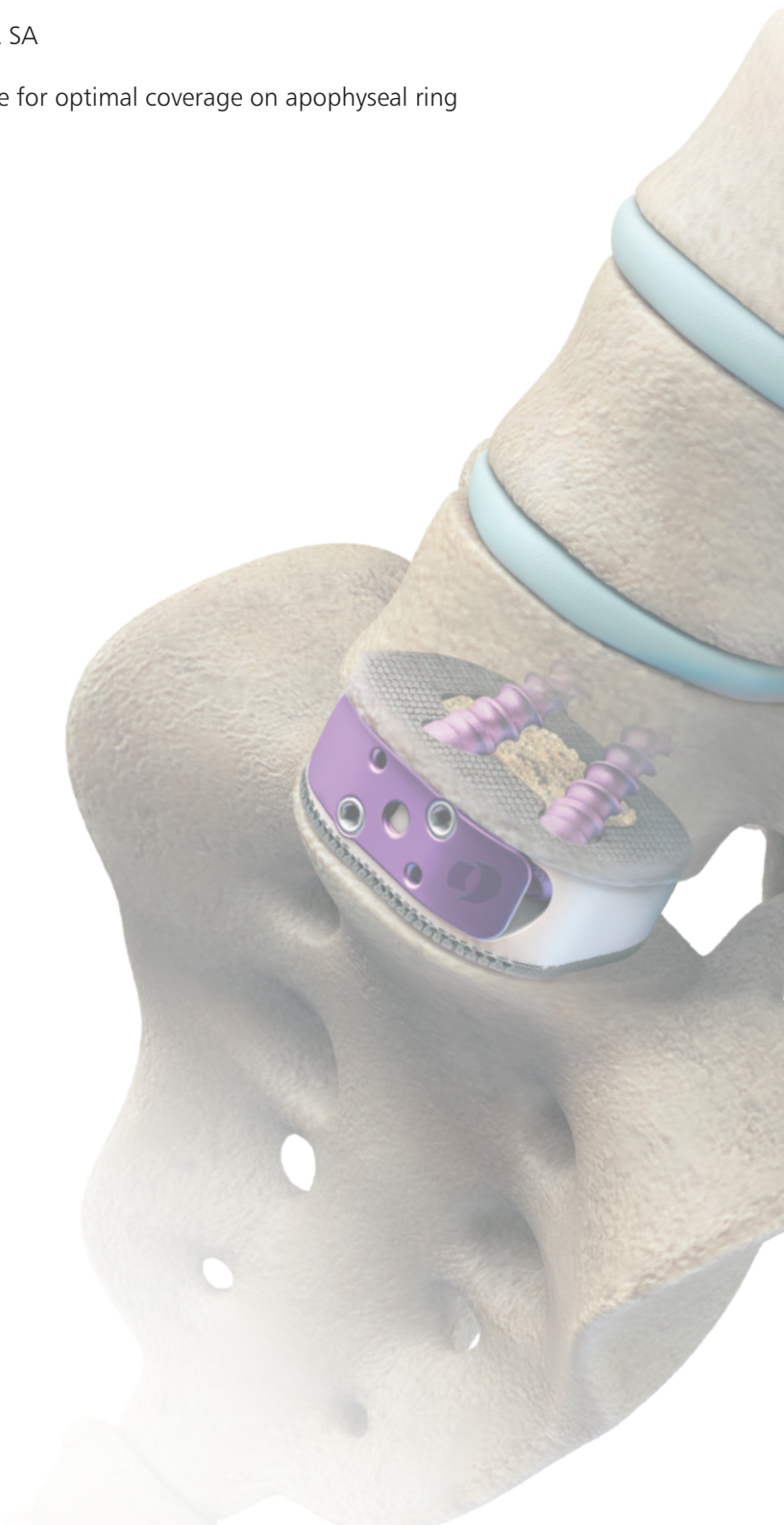
PILLAR SA PTC

Special features of the PILLAR SA PTC spacers include:

- 3D printed porous titanium endplates are designed to allow the patient bone to grow into the porous plate
- PEEK core to obtain imaging properties while assessing fusion
- Large opening for packing bone grafting material
- Medially oriented screw holes for easier insertion and sound Bone Screw fixation
- Provided sterile and uses the same instruments as PILLAR SA
- Ovoid shape designed to mimic vertebral anatomic shape for optimal coverage on apophyseal ring

PTC Technology

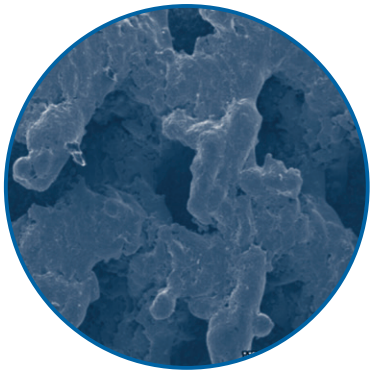
PEEK Titanium Composite (PTC) Technology is a proprietary design and manufacturing method combines a PEEK core and 3D printed titanium end plates into a single porous interbody solution for spine fusion procedures. The proprietary manufacturing process creates macroscopic 3D pores with a microscopic roughened surface and nano-scale surface features on the porous titanium end plates. The nano-scale surface has been shown to increase proliferation and alkaline phosphatase activity (an early osteogenic differentiation marker) in human stem cells in vitro.* 3D printed titanium endplates with 400 micron pores and 50% porosity designed to help facilitate bone ingrowth as suggested in an in-vivo ovine lumbar spinal fusion model. The PTC endplates provide an open porous environment.



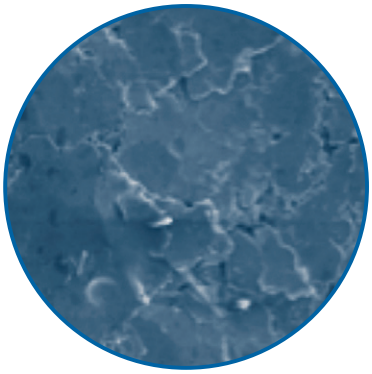
** In vitro performance may not be representative of clinical performance.*

Potential Bone Ingrowth

Literature has shown that interconnected pores greater than 300 microns in diameter are ideal for bone growth through porous biomaterials[1]. The PILLAR SA PTC 3D porous titanium end plate provide an open porous environment comprised of 400 micron pores with 50% porosity designed to help facilitate new bone ingrowth[2] as suggested in an in-vivo ovine lumbar spinal fusion model. This may compare favorably to the bone ongrowth potential of traditional plasma titanium coated interbodies with less than 100 micron pore diameter.



PTC Technology

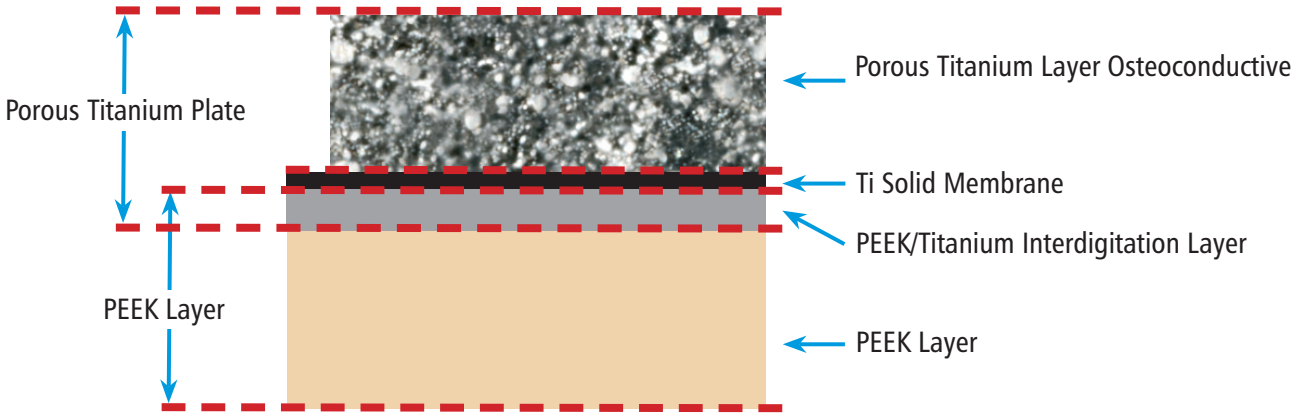


Plasma Sprayed Ti

1. Karageorgiou V(1), Kaplan D. "Porosity of 3D biomaterial scaffolds and osteogenesis." Biomaterials. 2005 Sep;26(27):5474-91.
2. Data on File, Orthofix

Advanced Design and Manufacturing

The pores of the 3-dimensional titanium endplates are specifically designed to size and interconnectivity requirements and are manufactured with 3D printing technology. The proprietary design creates a PEEK/Titanium inter-digitation layer that ensures an integrated and secure mechanical bond between the end plate and the PEEK core.



PILLAR SA PEEK

RELIABLE STABILITY

PEEK Implant

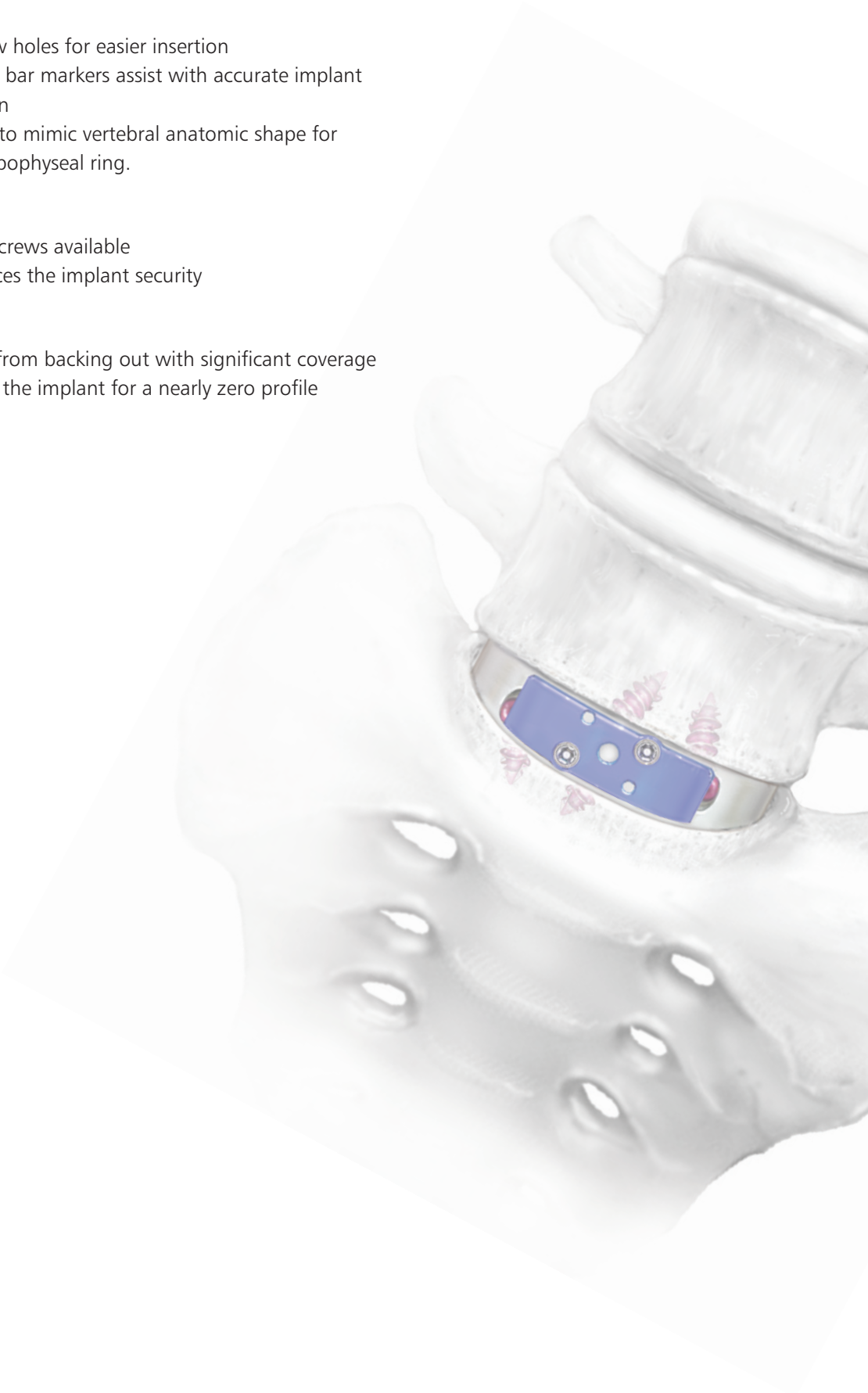
- Medially oriented screw holes for easier insertion
- Radiographic tantalum bar markers assist with accurate implant placement confirmation
- Ovoid shape designed to mimic vertebral anatomic shape for optimal coverage on apophyseal ring.

Bone Screws

- Multiple Self-tapping screws available
- 4-Screw design enhances the implant security

Cover Plates

- Stop the Bone Screws from backing out with significant coverage
- Lies virtually flush with the implant for a nearly zero profile



PILLAR® SA

PEEK AND PTC SPACER SYSTEM

SURGICAL FLEXIBILITY

VARIABLE SCREW ANGLES

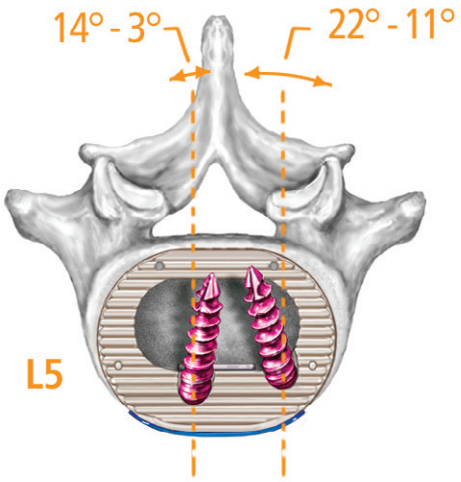
Constrained Bone Screws

- Medial / lateral – 7° range of motion from midline of the implant
- Caudal / cephalad – 2° variability from midline of the implant

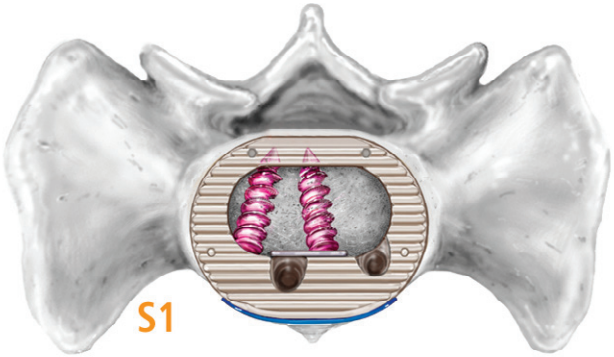
Semi-Constrained Bone Screws

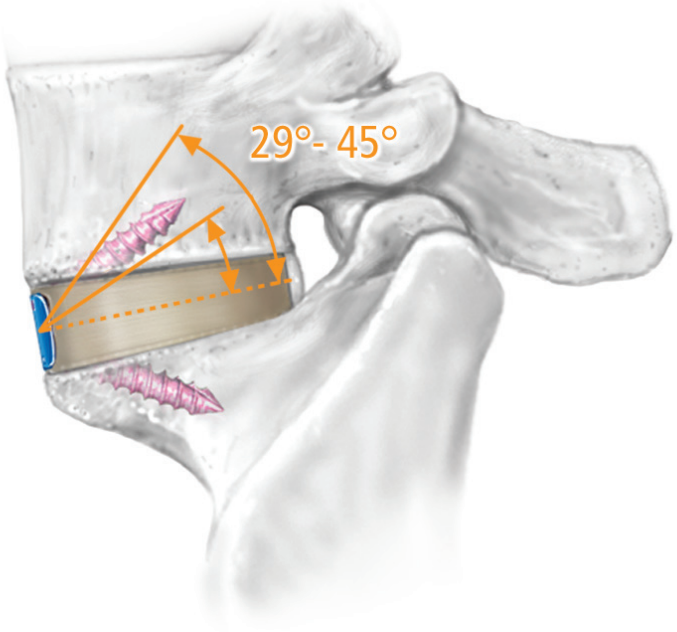
- Medial / lateral – 11° range of motion from midline of the implant
- Caudal / cephalad – 16° variability from midline of the implant

Semi-Constrained Screws



11° RANGE OF MOTION





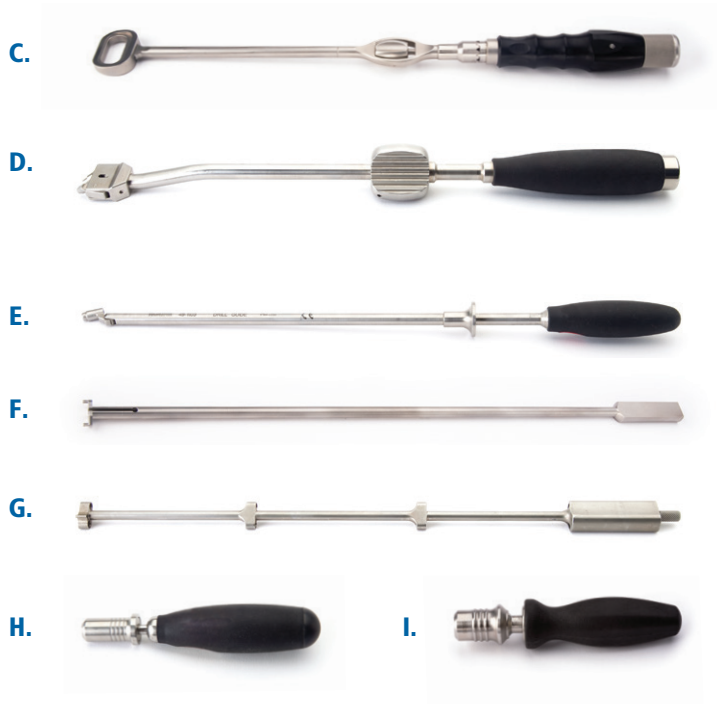
16° VARIABILITY

FLEXIBLE INSTRUMENTATION FOR DIFFICULT TO REACH AREAS

- Broad selection of instruments
- Jointed and flexible instruments for reaching varying anatomies
- Multiple instruments for efficiency

INSTRUMENTS

Top Tray	
49-1100	Implant Insertion Instrument
49-1008	Trial Insertion Instrument (2)
49-1113	Ratcheting Handle (2)
Middle Tray	
49-0712	12.5mm x 7° Distractor/Sizer
49-0714	14mm x 7° Distractor/Sizer
49-0716	16mm x 7° Distractor/Sizer
49-0718	18mm x 7° Distractor/Sizer
49-1212	12.5mm x 12° Distractor/Sizer
49-1214	14mm x 12° Distractor/Sizer
49-1216	16mm x 12° Distractor/Sizer
49-1218	18mm x 12° Distractor/Sizer
49-1033	33mm Width Sizer
49-1037	37mm Width Sizer
49-1040	40mm Width Sizer
49-1043	43mm Width Sizer
Bottom Tray	
49-1103	Drill Guide
49-1001	Straight Tamp
49-1002	Bone Awl
49-1104	Straight Drill
49-1005	U-Joint Driver without Retention
49-1006	U-Joint Driver with Retention (2)
43-0112	Hex Driver
49-1107	Flexible Shaft Driver
49-1102	Jointed Awl
49-1011	Cover Plate Inserter
49-1017	Cover Plate Holder
49-1012	Cover Plate Driver (2)
49-1109	Drill Tip (2)



A. Jointed Polyaxial Awl **B.** U-Joint Driver with Retention **C.** Trial Insertion Instrument and Trial **D.** Implant Insertion Instrument **E.** Drill Guide **F.** Cover Plate Holder **G.** Cover Plate Inserter **H.** Ratcheting Handle **I.** Torque Limiting Handle

PART NUMBER

PILLAR SA PEEK Implants

Implants	Dimensions	Graft Vol (cc)	Anterior (mm)	Posterior (mm)
Top Tray				
49-9012	33mm W x 28mm D x 12.5mm H,7º	2.7	12.5	9.4
49-9014	33mm W x 28mm D x 14mm H, 7º	3.1	14.0	11.0
49-9016	33mm W x 28mm D x 16mm H, 7º	3.6	16.0	13.0
49-9018	33mm W x 28mm D x 18mm H, 7º	4.1	18.0	14.9
49-9020	33mm W x 28mm D x 20mm H, 7º	4.6	20.0	16.9
49-9212	33mm W x 28mm D x 12.5mm H, 12º	2.3	12.5	7.2
49-9214	33mm W x 28mm D x 14mm H, 12º	2.7	14.0	8.7
49-9216	33mm W x 28mm D x 16mm H, 12º	3.2	16.0	12.9
49-9218	33mm W x 28mm D x 18mm H, 12º	3.7	18.0	12.7
49-9220	33mm W x 28mm D x 20mm H, 12º	4.2	20.0	16.9
49-2012	37mm W x 28mm D x 12.5mm H, 7°	3.3	12.5	9.4
49-2014	37mm W x 28mm D x 14mm H, 7°	3.7	14.0	10.9
49-2016	37mm W x 28mm D x 16mm H, 7°	4.4	16.0	12.9
49-2018	37mm W x 28mm D x 18mm H, 7°	5.0	18.0	14.9
49-2020	37mm W x 28mm D x 20mm H, 7°	5.6	20.0	16.9
49-2212	37mm W x 28mm D x 12.5mm H, 12°	2.8	12.5	7.2
49-2214	37mm W x 28mm D x 14mm H, 12°	2.3	14.0	8.7
49-2216	37mm W x 28mm D x 16mm H, 12°	4.0	16.0	10.7
49-2218	37mm W x 28mm D x 18mm H, 12°	4.6	18.0	12.7
49-2220	37mm W x 28mm D x 20mm H, 12°	5.2	20.0	14.7
49-3012	40mm W x 28mm D x 12.5mm H, 7°	3.7	12.5	9.4
49-3014	40mm W x 28mm D x 14mm H, 7°	4.2	14.0	10.9
49-3016	40mm W x 28mm D x 16mm H, 7°	5.0	16.0	12.9
49-3018	40mm W x 28mm D x 18mm H, 7°	5.7	18.0	14.9
49-3020	40mm W x 28mm D x 20mm H, 7°	6.4	20.0	16.9
49-3212	40mm W x 28mm D x 12.5mm H, 12°	3.2	12.5	7.2
49-3214	40mm W x 28mm D x 14mm H, 12°	3.7	14.0	8.7
49-3216	40mm W x 28mm D x 16mm H, 12°	4.4	16.0	10.7
49-3218	40mm W x 28mm D x 18mm H, 12°	5.1	18.0	12.7
49-3220	40mm W x 28mm D x 20mm H, 12°	5.9	20.0	14.7
49-4012	43mm W x 28mm D x 12.5mm H, 7°	4.1	12.5	9.4
49-4014	43mm W x 28mm D x 14mm H, 7°	4.7	14.0	10.9
49-4016	43mm W x 28mm D x 16mm H, 7°	5.5	16.0	12.9
49-4018	43mm W x 28mm D x 18mm H, 7°	6.3	18.0	14.9
49-4020	43mm W x 28mm D x 20mm H, 7°	7.1	20.0	16.9
49-4212	43mm W x 28mm D x 12.5mm H, 12°	3.6	12.5	7.2
49-4214	43mm W x 28mm D x 14mm H, 12°	4.2	14.0	8.7
49-4216	43mm W x 28mm D x 16mm H, 12°	5.0	16.0	10.7
49-4218	43mm W x 28mm D x 18mm H, 12°	5.7	18.0	12.7
49-4220	43mm W x 28mm D x 20mm H, 12°	6.5	20.0	14.7

PILLAR SA PEEK Implants

Implants	Dimensions	Graft Vol (cc)	Anterior (mm)	Posterior (mm)
Bottom Tray				
49-9412	33mm W x 32mm D x 12.5mm H, 7º	3.2	na	na
49-9414	33mm W x 32mm D x 14mm H, 7º	3.7	na	na
49-9416	33mm W x 32mm D x 16mm H, 7º	4.3	16.0	12.5
49-9418	33mm W x 32mm D x 18mm H, 7º	5.0	18.0	14.5
49-9420	33mm W x 32mm D x 20mm H, 7º	5.6	20.0	16.5
49-9612	33mm W x 32mm D x 12.5mm H, 12º	2.7	12.5	6.3
49-9614	33mm W x 32mm D x 14mm H, 12º	3.2	14.0	7.9
49-9616	33mm W x 32mm D x 16mm H, 12º	3.9	16.0	9.9
49-9618	33mm W x 32mm D x 18mm H, 12º	4.5	18.0	11.9
49-9620	33mm W x 32mm D x 20mm H, 12º	5.1	20.0	13.9
49-6012	37mm W x 32mm D x 12.5mm H, 7°	4.0	12.5	9.0
49-6014	37mm W x 32mm D x 14mm H, 7°	4.6	14.0	10.5
49-6016	37mm W x 32mm D x 16mm H, 7°	5.4	16.0	12.5
49-6018	37mm W x 32mm D x 18mm H, 7°	6.2	18.0	14.5
49-6020	37mm W x 32mm D x 20mm H, 7°	7.0	20.0	16.5
49-6212	37mm W x 32mm D x 12.5mm H, 12°	3.4	12.5	6.4
49-6214	37mm W x 32mm D x 14mm H, 12°	4.0	14.0	7.9
49-6216	37mm W x 32mm D x 16mm H, 12°	4.8	16.0	9.9
49-6218	37mm W x 32mm D x 18mm H, 12°	5.6	18.0	11.9
49-6220	37mm W x 32mm D x 20mm H, 12°	6.4	20.0	13.9
49-7012	40mm W x 32mm D x 12.5mm H, 7°	4.6	12.5	9.0
49-7014	40mm W x 32mm D x 14mm H, 7°	5.2	14.0	10.5
49-7016	40mm W x 32mm D x 16mm H, 7°	6.1	16.0	12.5
49-7018	40mm W x 32mm D x 18mm H, 7°	7.0	18.0	14.5
49-7020	40mm W x 32mm D x 20mm H, 7°	8.0	20.0	16.5
49-7212	40mm W x 32mm D x 12.5mm H, 12°	3.9	12.5	6.4
49-7214	40mm W x 32mm D x 14mm H, 12°	4.5	14.0	7.9
49-7216	40mm W x 32mm D x 16mm H, 12°	5.4	16.0	9.9
49-7218	40mm W x 32mm D x 18mm H, 12°	6.3	18.0	11.9
49-7220	40mm W x 32mm D x 20mm H, 12°	7.2	20.0	13.9
49-8012	43mm W x 32mm D x 12.5mm H, 7°	5.1	12.5	9.0
49-8014	43mm W x 32mm D x 14mm H, 7°	5.9	14.0	10.5
49-8016	43mm W x 32mm D x 16mm H, 7°	6.9	16.0	12.5
49-8018	43mm W x 32mm D x 18mm H, 7°	7.9	18.0	14.5
49-8020	43mm W x 32mm D x 20mm H, 7°	8.9	20.0	16.5
49-8212	43mm W x 32mm D x 12.5mm H, 12°	4.3	12.5	6.4
49-8214	43mm W x 32mm D x 14mm H, 12°	5.0	14.0	7.9
49-8216	43mm W x 32mm D x 16mm H, 12°	6.0	16.0	9.9
49-8218	43mm W x 32mm D x 18mm H, 12°	7.0	18.0	11.9
49-8220	43mm W x 32mm D x 20mm H, 12°	8.0	20.0	13.9

PILLAR SA PTC Implants

Implants	Dimensions	Graft Vol (cc)	Anterior (mm)	Posterior (mm)
39-9012SP	33mm W x 28mm L x 12mm H, 7º PTC	2.7	12.0	9.4
39-9014SP	33mm W x 28mm L x 14mm H, 7º PTC	3.1	14.0	11.0
39-9016SP	33mm W x 28mm L x 16mm H, 7º PTC	3.6	16.0	13.0
39-9018SP	33mm W x 28mm L x 18mm H, 7º PTC	4.1	18.0	14.9
39-9212SP	33mm W x 28mm L x 12mm H, 12º PTC	2.3	12.0	7.2
39-9214SP	33mm W x 28mm L x 14mm H, 12º PTC	2.7	14.0	8.7
39-9216SP	33mm W x 28mm L x 16mm H, 12º PTC	3.2	16.0	12.9
39-9218SP	33mm W x 28mm L x 18mm H, 12º PTC	3.7	18.0	12.7
39-2012SP	37mm W x 28mm L x 12mm H, 7º PTC	2.7	12.0	9.4
39-2014SP	37mm W x 28mm L x 14mm H, 7º PTC	3.1	14.0	11.0
39-2016SP	37mm W x 28mm L x 16mm H, 7º PTC	3.6	16.0	13.0
39-2018SP	37mm W x 28mm L x 18mm H, 7º PTC	4.1	18.0	14.9
39-2212SP	37mm W x 28mm L x 12mm H, 12º PTC	2.8	12.0	7.2
39-2214SP	37mm W x 28mm L x 14mm H, 12º PTC	2.3	14.0	8.7
39-2216SP	37mm W x 28mm L x 16mm H, 12º PTC	4.0	16.0	10.7
39-2218SP	37mm W x 28mm L x 18mm H, 12º PTC	4.6	18.0	12.7
39-3012SP	40mm W x 28mm L x 12mm H, 7º PTC	3.7	12.0	9.4
39-3014SP	40mm W x 28mm L x 14mm H, 7º PTC	4.2	14.0	10.9
39-3016SP	40mm W x 28mm L x 16mm H, 7º PTC	5.0	16.0	12.9
39-3018SP	40mm W x 28mm L x 18mm H, 7º PTC	5.7	18.0	14.9
39-3212SP	40mm W x 28mm L x 12mm H, 12º PTC	3.2	12.0	7.2
39-3214SP	40mm W x 28mm L x 14mm H, 12º PTC	3.7	14.0	8.7
39-3216SP	40mm W x 28mm L x 16mm H, 12º PTC	4.4	16.0	10.7
39-3218SP	40mm W x 28mm L x 18mm H, 12º PTC	5.1	18.0	12.7

Semi-Constrained Screws - 5.0mm

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

Rescue Screws - 5.5mm

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

Constrained Screws - 5.5mm Shaft/5.0 Body

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

Cover Plates

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

Notes

Please visit Orthofix.com/IFU for full information on indications for use, contraindications, warnings, precautions, adverse reactions and sterilization.

Caution: Federal law (USA) restricts this device to sale by or on the order of a physician. Proper surgical procedure is the responsibility of the medical professional. Operative techniques are furnished as an informative guideline. Each surgeon must evaluate the appropriateness of a technique based on his or her personal medical credentials and experience.

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