EXACTECH | SHOULDER

Operative Technique Addendum

equinoxe®

Augmented Reverse Glenoid Implants

exactech

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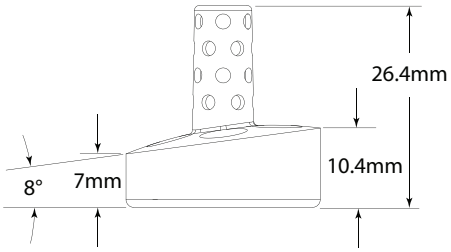
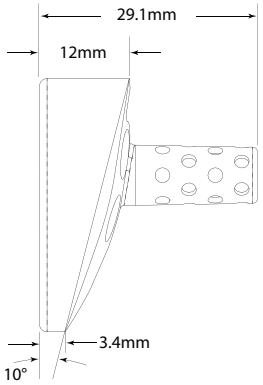
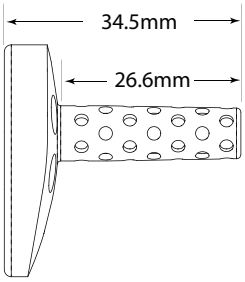
POSTERIOR AUGMENT GLENOID PLATE



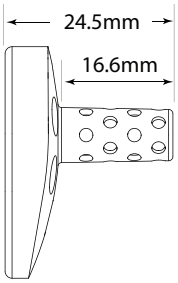
SUPERIOR AUGMENT GLENOID PLATE



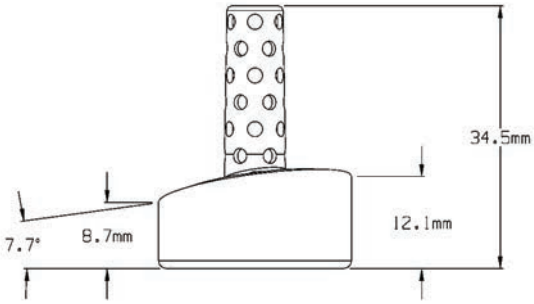
EXTENDED CAGE GLENOID PLATE, +10MM

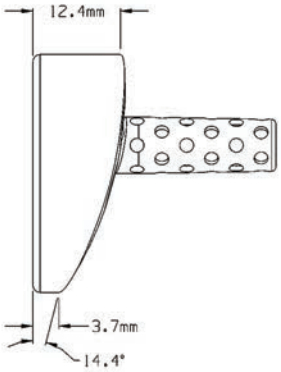


STANDARD CAGE GLENOID PLATE

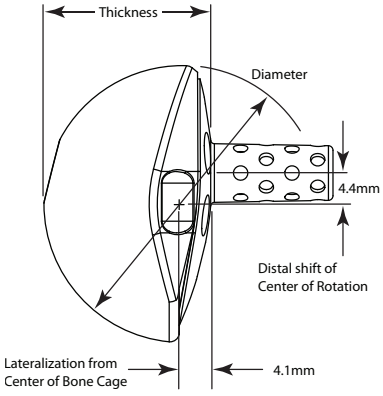


SUPERIOR/POSTERIOR AUGMENT GLENOID BASEPLATE

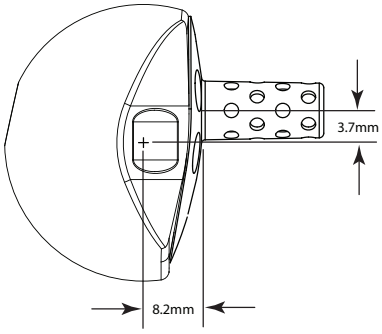




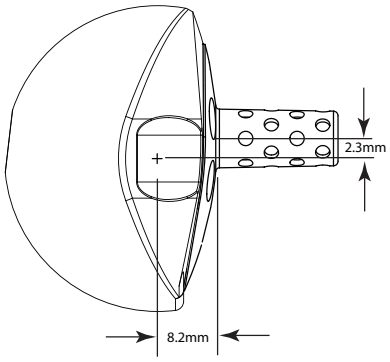
GLENOSPHERES



Standard Glenosphere



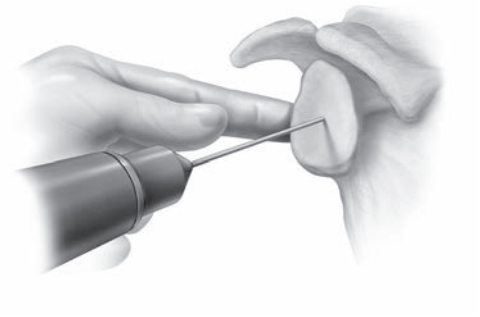
38mm Expanded Glenosphere



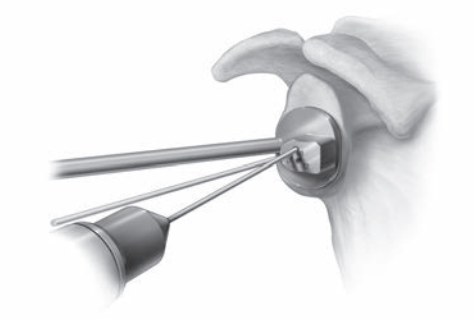
42mm Expanded Glenosphere

POSTERIOR AUGMENT GLENOID PLATE OVERVIEW TECHNIQUE

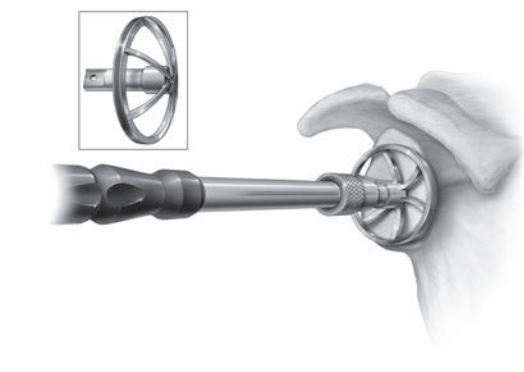
A
Establish Central Axis of the Scapula



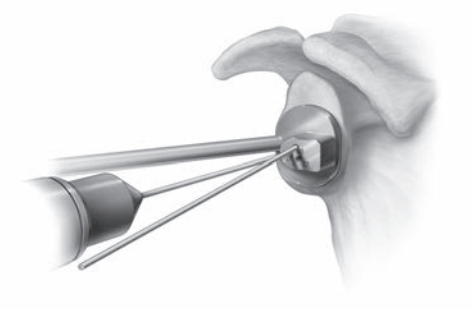
B
Insert Zero-Degree K-wire
Along Central Axis of Scapula



C
Insert Eight-Degree K-wire from
Central Axis of Scapula



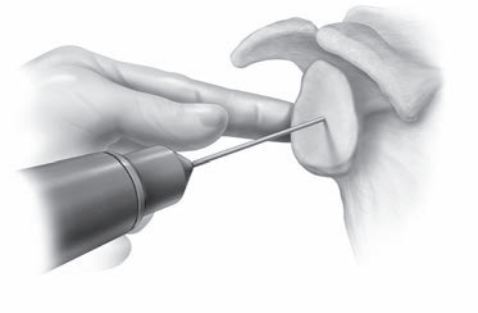
D
Ream the Glenoid Over the
Eight-Degree K-Wire



E
Re-insert Zero-Degree K-wire

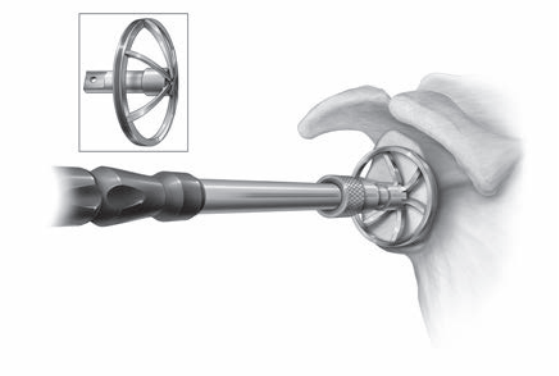
F
Drill Over Zero-Degree K-wire
to Establish Axis of Cage

A
Establish Central Axis of the Scapula

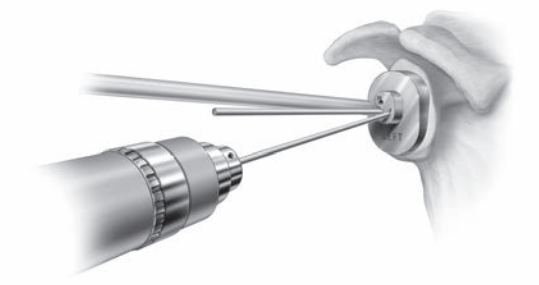


B
Insert Zero-Degree K-wire
Along Central Axis of Scapula

C
Insert 10-Degree K-wire from
Central Axis of Scapula



D
Ream the Glenoid Over the
10-Degree K-wire

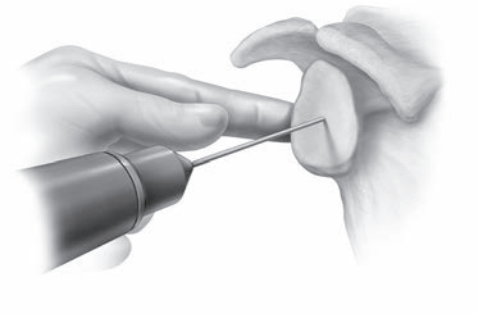


E
Re-insert Zero-Degree K-wire

F
Drill Over Zero-Degree K-wire
to Establish Axis of Cage

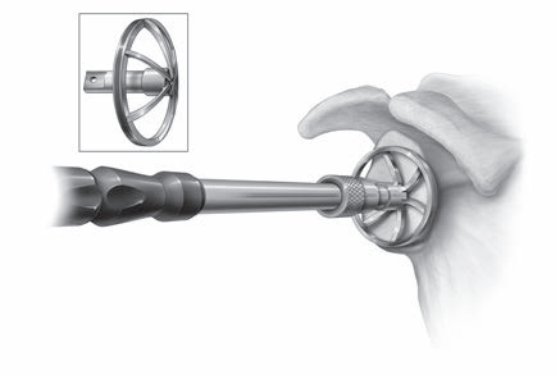
SUPERIOR/POSTERIOR AUGMENT PLATE OVERVIEW TECHNIQUE

A
Establish Central Axis of the Scapula



B
Insert Zero-Degree K-wire
Along Central Axis of Scapula

C
Insert 13-Degree K-wire from
Central Axis of Scapula



D
Ream the Glenoid Over the
13-Degree K-wire

E
Re-insert Zero-Degree K-wire

F
Drill Over Zero-Degree K-wire
to Establish Axis of Cage

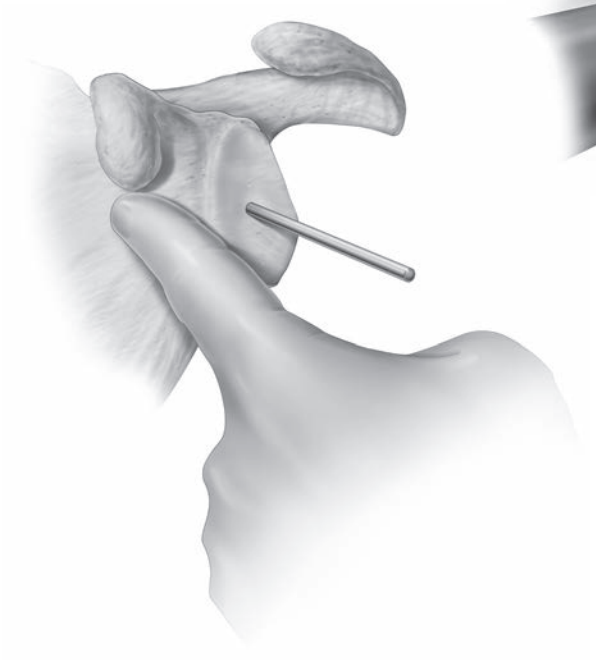


Figure 1
Establish Central Axis of the Scapula

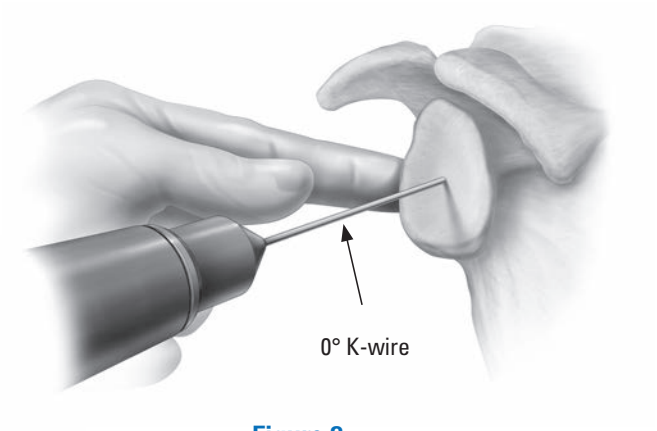


Figure 2
Insert Zero-Degree K-wire Along Central Axis of the Scapula to Establish the Central Cage Axis

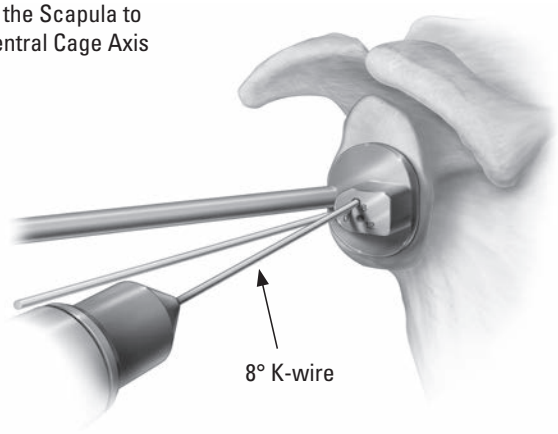


Figure 3
Insert Eight-Degree K-wire Eight Degrees Posteriorly Offset from Central Axis of Scapula

REVERSE SHOULDER POSTERIOR AUGMENT GLENOID PLATE TECHNIQUE

The reverse shoulder **Posterior Augment Glenoid Plate** is designed to minimize the removal of anterior cortical bone when reaming a posteriorly worn glenoid in order to correct its version.

Assuming the patient has posterior wear, an irreparable rotator cuff tear and the surgeon wants to correct the glenoid back to neutral version:

- If glenoid retroversion is less than six degrees; use the **standard Glenoid Plate** and eccentrically ream as needed.
- If glenoid retroversion is between six degrees and 11 degrees, use the Posterior Augment Glenoid Plate.
- If glenoid retroversion is between 12 degrees and 18 degrees; use the Posterior Augment Glenoid Plate and eccentrically ream if there is sufficient bone stock.
- If the surgeon deems that there is insufficient glenoid bone stock to achieve fixation, bone graft and use the **+10mm Extended Cage Glenoid Plate** and/or use the **Expanded Glenospheres.**

Insert the zero-degree K-wire along the central axis of the glenoid to establish the axis of the glenoid plate cage *(Figure 1 and 2).*

Insert the eight-degree **K-wire** eight degrees posteriorly off-axis from the zero degree K-wire using the **Posterior Augment K-wire Alignment Guide** to establish the glenoid reaming axis *(Figure 3).*

Note: *Eight degrees is used to eccentrically ream the glenoid in order to correct for the posterior glenoid defect as this corresponds to the build-up of the Posterior Augment Glenoid Plate.*

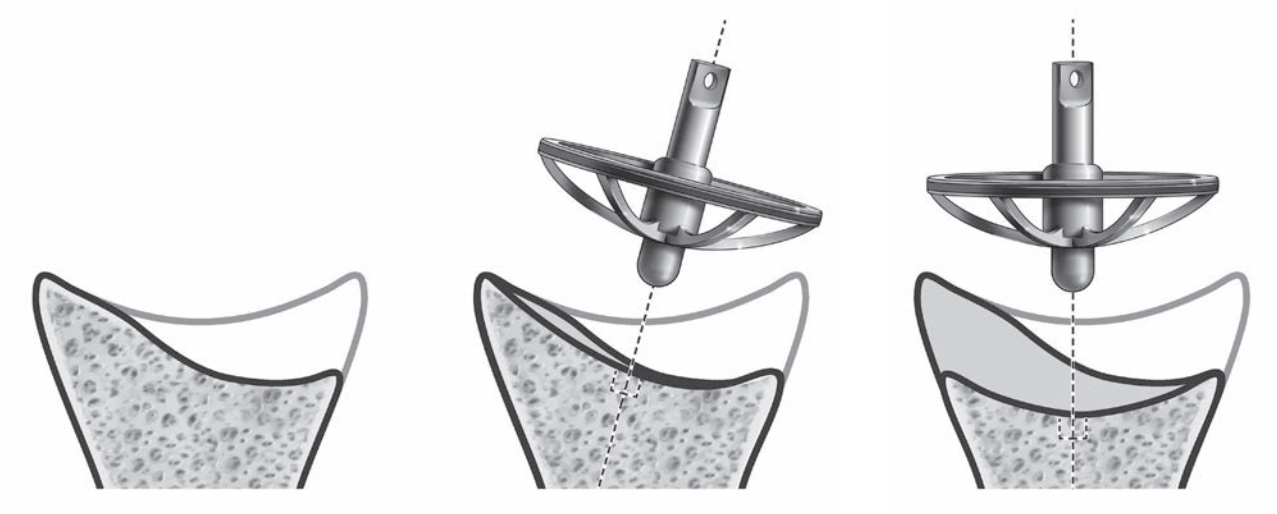


Figure 4
Bone Conservation

Remove the zero-degree K-wire and Posterior Augment K-wire Alignment Guide.

Note: *Off-axis reaming removes less bone than would occur ordinarily during eccentric reaming to correct the same defect (i.e., reaming down the high side). For example, compare the bone removed between off-axis reaming and eccentric reaming of a defect (Figure 4).*

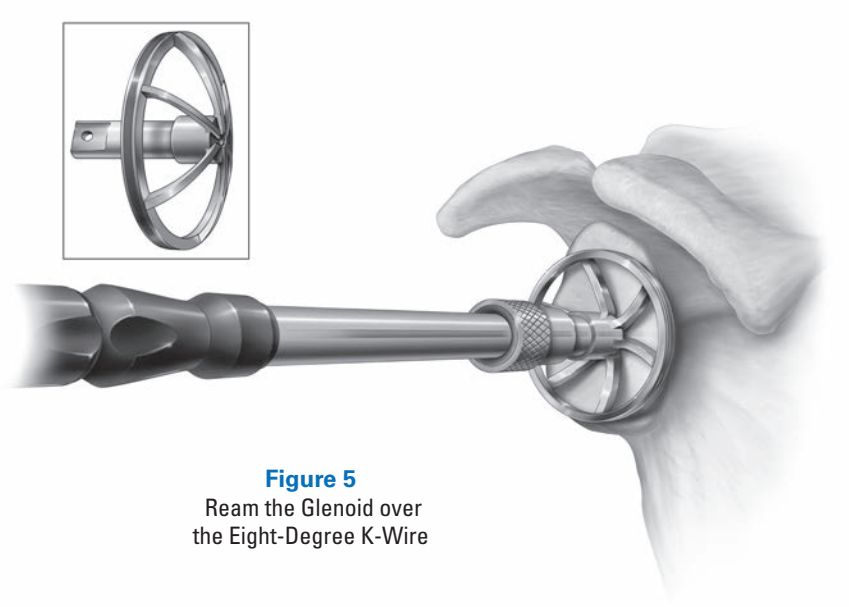


Figure 5
Ream the Glenoid over
the Eight-Degree K-Wire

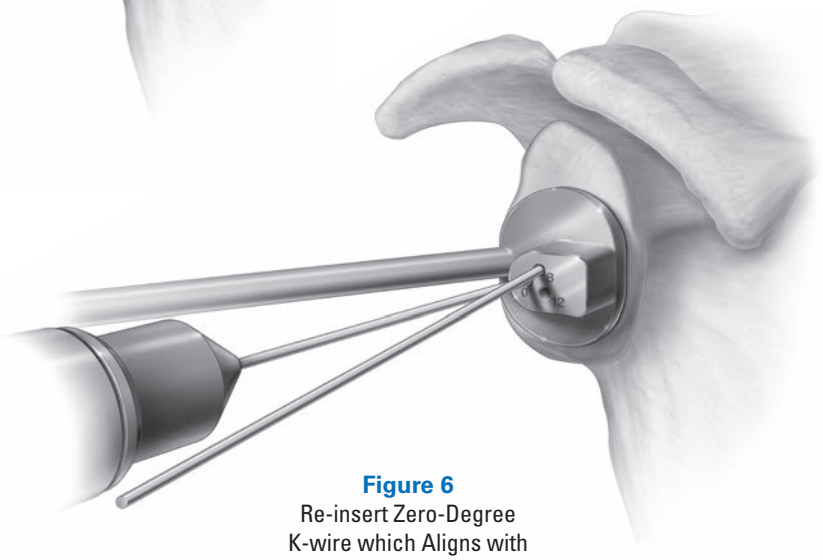


Figure 6
Re-insert Zero-Degree
K-wire which Aligns with
Central Axis of Scapula

Ream the glenoid over the eight-degree K-wire using the appropriately sized cannulated reamer *(Figure 5).*

After reaming, re-insert the zero-degree K-wire to re-establish the axis of drilling the Posterior Augment Glenoid Plate cage. Remove the eight-degree K-wire and the Posterior Augment K-wire Alignment Guide *(Figure 6).*

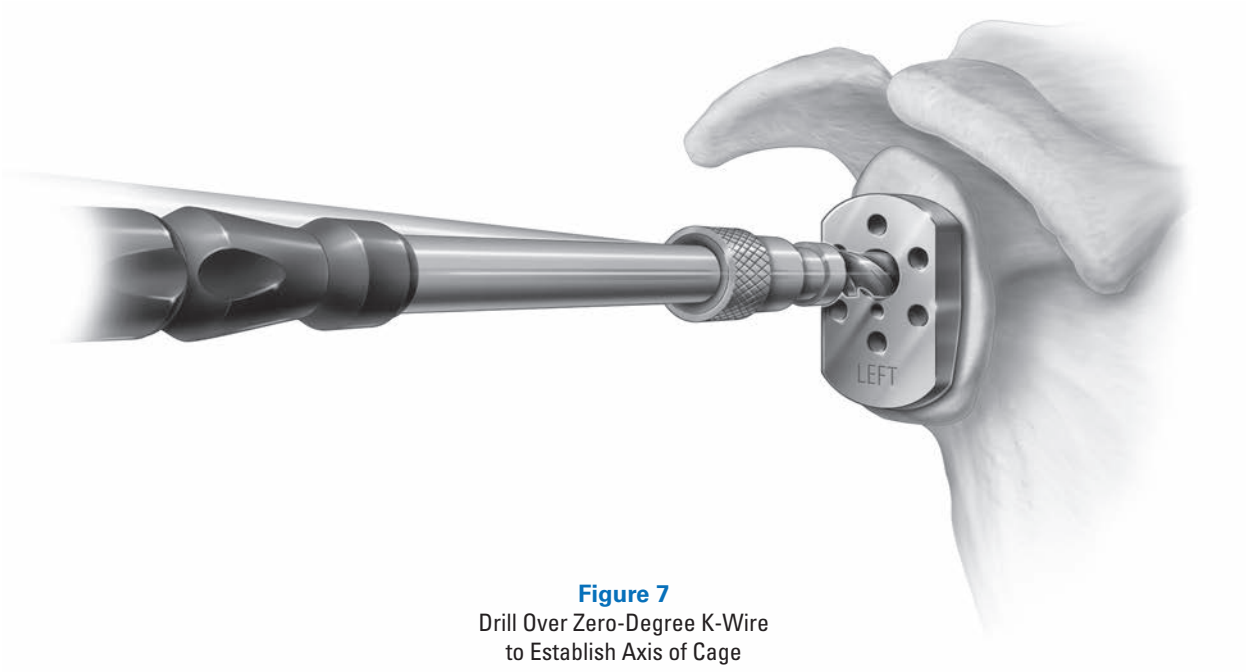


Figure 7
Drill Over Zero-Degree K-Wire
to Establish Axis of Cage

Drill the hole for the Posterior Augment Glenoid Plate cage over the zero-degree K-wire (e.g., central axis of the scapula) using the reverse shoulder **Posterior Augment Drill Guide**, the 2mm K-wire, and the **Cannulated Center Cage Drill** *(Figure 7).*

Impact the Posterior Augment Glenoid Plate and continue with the existing **Primary/Reverse Operative Technique (Lit#718-01-30).**

Note: *Avoid applying a bending force to the pilot tip reamer or using the reamer to retract the humeral head as this may cause fracture of the 2mm K-wire or pilot tip.*

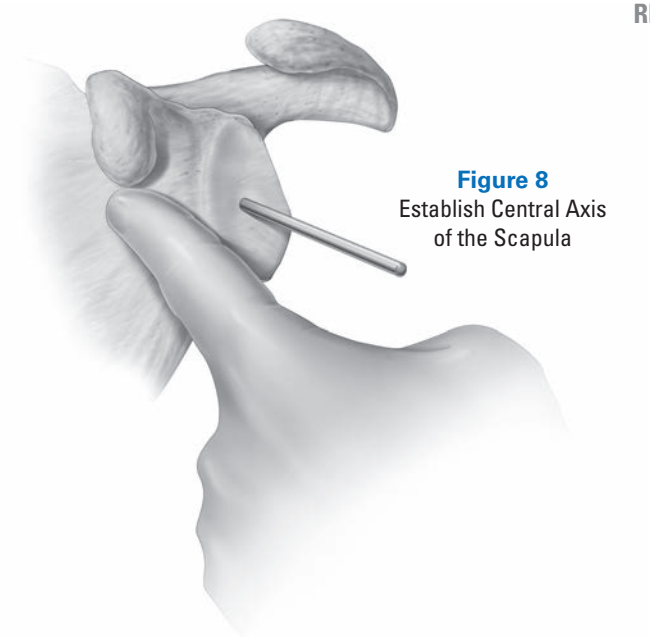


Figure 8
Establish Central Axis of the Scapula

Figure 9
Insert Zero-Degree K-wire Along Central Axis of the Scapula to Establish the Cage Axis

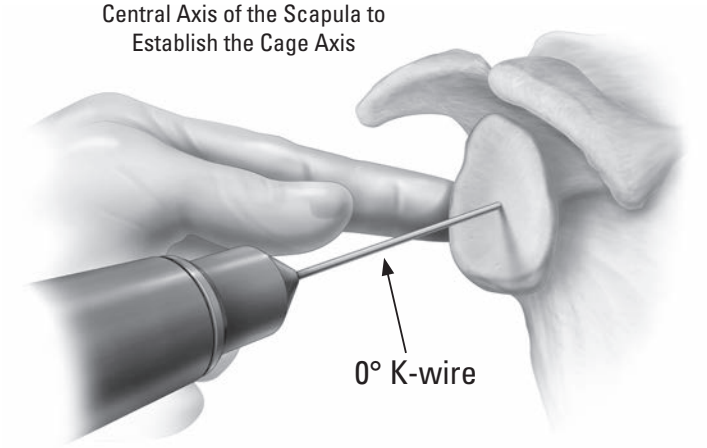
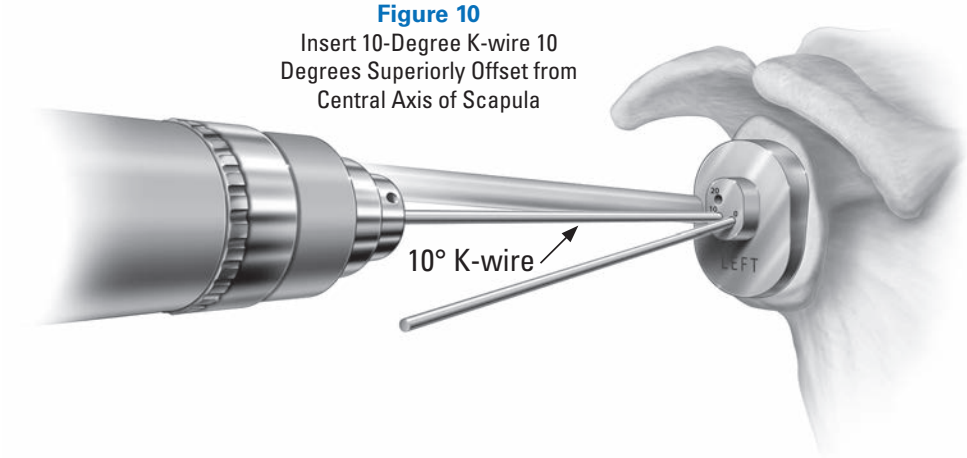


Figure 10
Insert 10-Degree K-wire 10 Degrees Superiorly Offset from Central Axis of Scapula



REVERSE SHOULDER SUPERIOR AUGMENT GLENOID PLATE TECHNIQUE

The reverse shoulder **Superior Augment Glenoid Plate** is designed to minimize the removal of the inferior cortical bone when reaming a superiorly worn glenoid in order to correct its inclination.

Assuming the patient has superior wear, an irreparable rotator cuff tear and the surgeon wants to correct the glenoid back to neutral inclination:

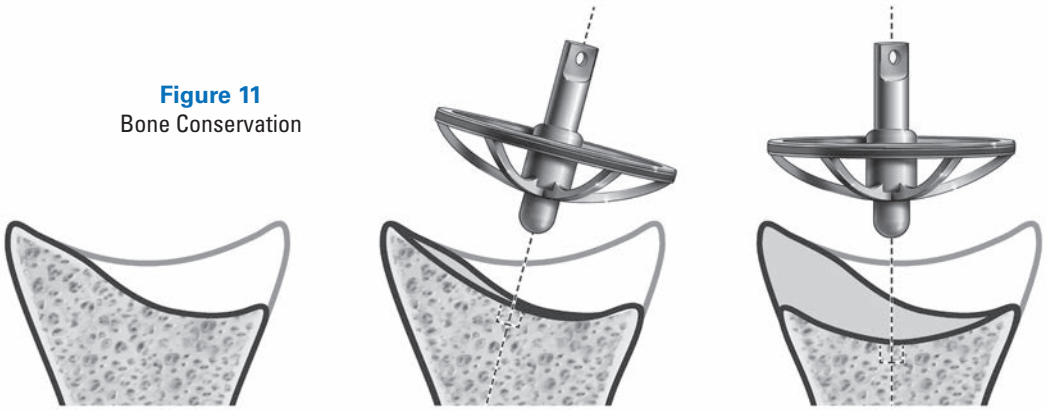
- If the glenoid is superiorly worn less than seven degrees, use the standard Glenoid Plate and eccentrically ream as needed.
- If the glenoid is superiorly worn between seven degrees and 13 degrees; use the Superior Augment Glenoid Plate.
- If the glenoid is superiorly worn between 14 degrees and 18 degrees; use the Superior Augment Glenoid Plate and eccentrically ream if there is sufficient bone stock.
- If the surgeon deems that there is insufficient glenoid bone stock to achieve fixation, bone graft and use the **+10mm Extended Cage Glenoid Plate** and/or use the **Expanded Glenospheres**.

Insert the zero-degree K-wire along the central axis of the glenoid to establish the axis of the glenoid plate cage *(Figure 8 and 9)*.

Insert the 10-degree K-wire 10 degrees superiorly off-axis from the zero-degree K-wire using the **Superior Augment K-wire Alignment Guide** to establish the glenoid reaming axis *(Figure 10)*.

Note: *10 degrees is used to off-axis ream the glenoid in order to correct for the superior glenoid defect as this corresponds to the build-up of the Superior Augment Glenoid Plate.*

Figure 11
Bone Conservation



Glenoid Defect | Off-Axis Reaming with Augmented Implant | Eccentric Reaming

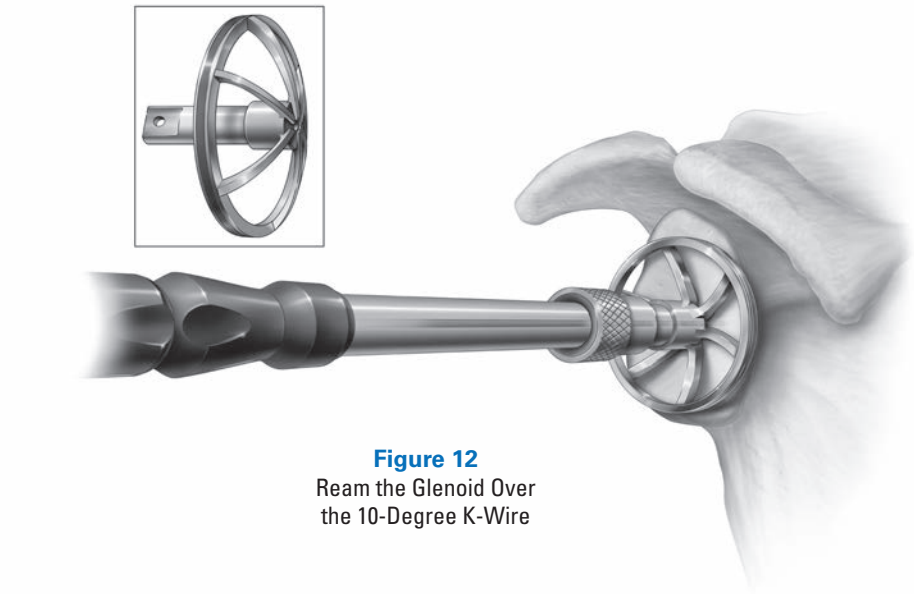


Figure 12
Ream the Glenoid Over the 10-Degree K-Wire

Remove the zero-degree K-wire and Superior Augment K-wire Alignment Guide.

Note: *Off-axis reaming removes less bone than would occur ordinarily during eccentric reaming to correct the same defect (i.e., reaming down the high side). For example, compare the bone removed between off-axis reaming and eccentric reaming of a defect (Figure 11).*

Ream the glenoid over the 10-degree K-wire using the appropriately sized cannulated reamer *(Figure 12).*

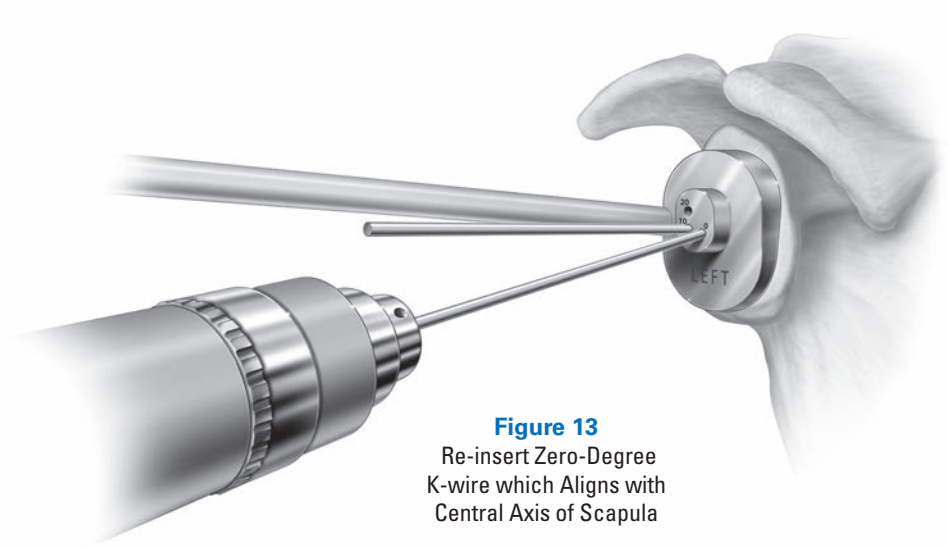


Figure 13
Re-insert Zero-Degree K-wire which Aligns with Central Axis of Scapula

Figure 14
Drill Center Hole Over Zero-Degree K-wire to Establish Axis of Cage

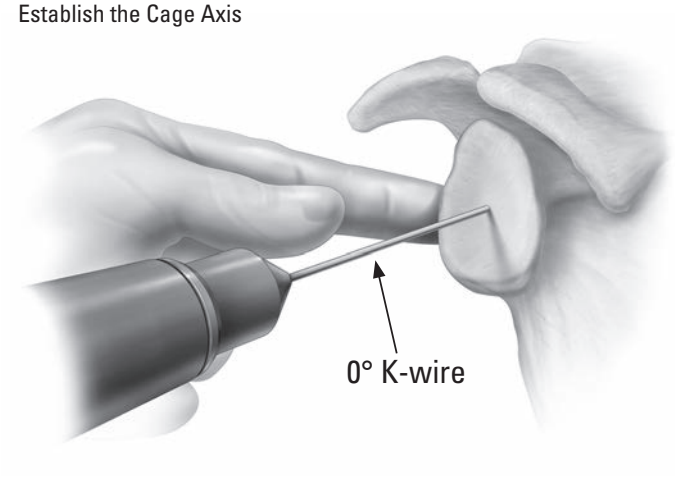
After reaming, re-insert the zero-degree K-wire to re-establish the axis of drilling the Superior Augment Glenoid Plate cage. Remove the 10-degree K-wire and the Superior Augment K-wire Alignment Guide *(Figure 13).*

Drill the hole for the Superior Augment Glenoid Plate cage over the zero-degree K-wire (e.g., central axis of the scapula) using the reverse shoulder **Superior Augment Drill Guide**, the 2mm K-wire, and the **Cannulated Center Cage Drill** *(Figure 14).*

Implant the Superior Augment Glenoid Plate and continue with existing **Primary/Reverse Operative Technique (Lit#718-01-30).**

Note: *Avoid applying a bending force to the pilot tip reamer or using the reamer to retract the humeral head as this may cause fracture of the 2mm K-wire or pilot tip.*

Figure 16
Insert Zero-Degree K-wire Along Central Axis of the Scapula to Establish the Cage Axis



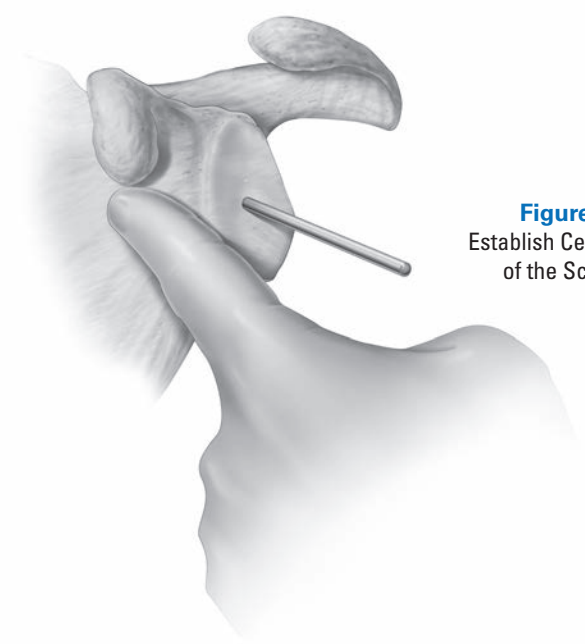


Figure 15
Establish Central Axis of the Scapula

REVERSE SHOULDER SUPERIOR/POSTERIOR AUGMENT GLENOID PLATE TECHNIQUE

The reverse shoulder **Superior/Posterior Augment Glenoid Plate** is designed to minimize the removal of the inferior cortical bone and anterior cortical bone when reaming a superiorly and posteriorly worn glenoid in order to correct its inclination and version.

Assuming the patient has superior and posterior wear, an irreparable rotator cuff tear and the surgeon wants to correct the glenoid back to neutral inclination and version:

- If glenoid wear is less than six degrees in both superior and retroversion planes, use the standard glenoid plate (320-15-01) and eccentrically ream as needed.
- If glenoid is superiorly worn between seven degrees and 13 degrees, and glenoid retroversion is between six degrees and 11 degrees, use the Superior/Posterior Augment Plate.
- If the glenoid is superiorly worn between 14 degrees and 18 degrees and retroversion is between 12 degrees and 18 degrees, use the Superior/Posterior Augment Plate and eccentrically ream if there is sufficient bone stock.
- If the surgeon deems that there is insufficient glenoid bone stock to achieve fixation, bone graft and use the +10mm Extended Cage Glenoid Plate and/or the Expanded Glenosphere.

Insert the zero-degree K-wire along the central axis of the glenoid to establish the axis of the glenoid plate cage *(Figures 15 and 16)*.

Figure 17
Insert 13-Degree K-wire
13 Degrees Superiorly Offset from
Central Axis of Scapula

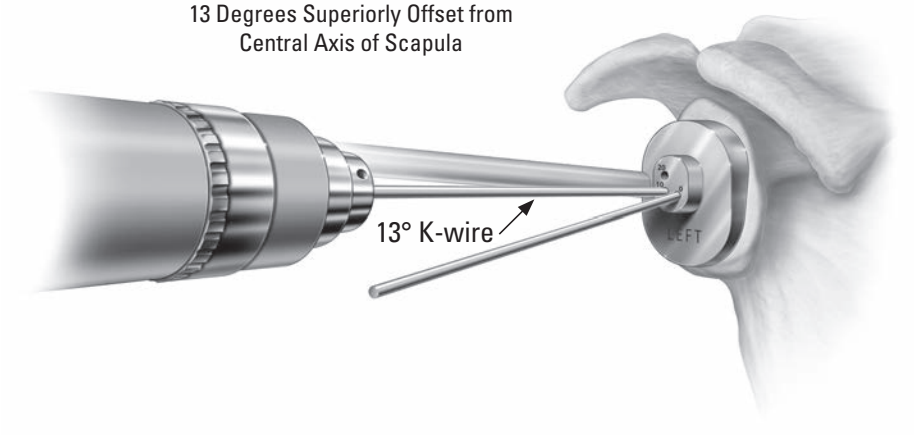
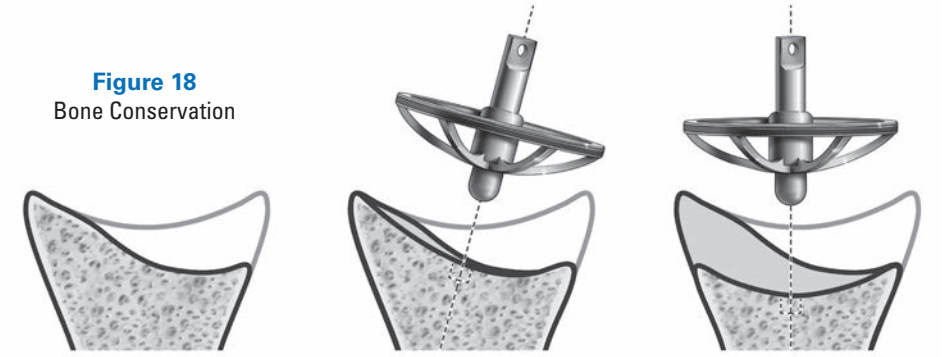


Figure 18
Bone Conservation



Glenoid Defect

Off-Axis Reaming with
Augmented Implant

Eccentric Reaming

Insert the 13 degree K-wire 13 degrees superiorly off-axis from the zero-degree K-wire using the **Superior/Posterior K-wire Alignment Guide** to establish the glenoid reaming axis *(Figure 17)*.

Remove the K-wire and Alignment Guide.

Note: *Off-axis reaming removes less bone than would occur ordinarily during eccentric reaming to correct the same defect (i.e. reaming down the high side). For example, compare the bone removed between off-axis reaming and eccentric reaming of a defect (Figure 18).*

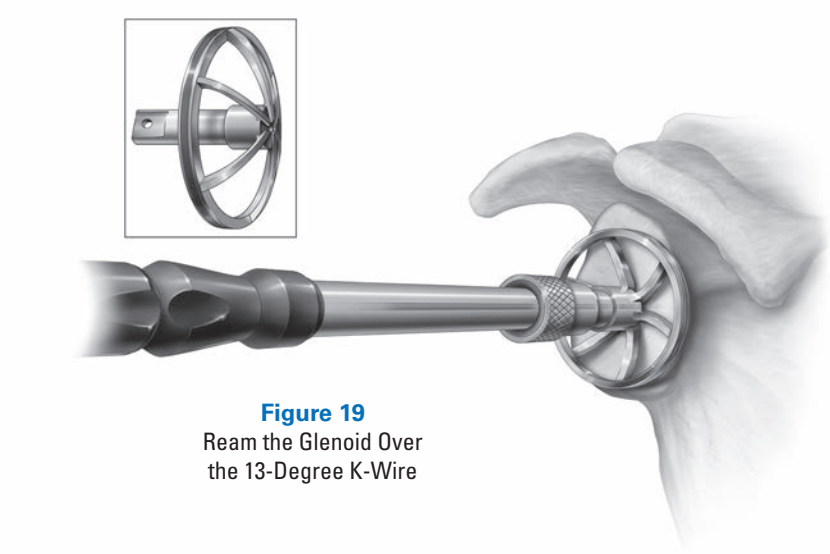


Figure 19
Ream the Glenoid Over the 13-Degree K-Wire

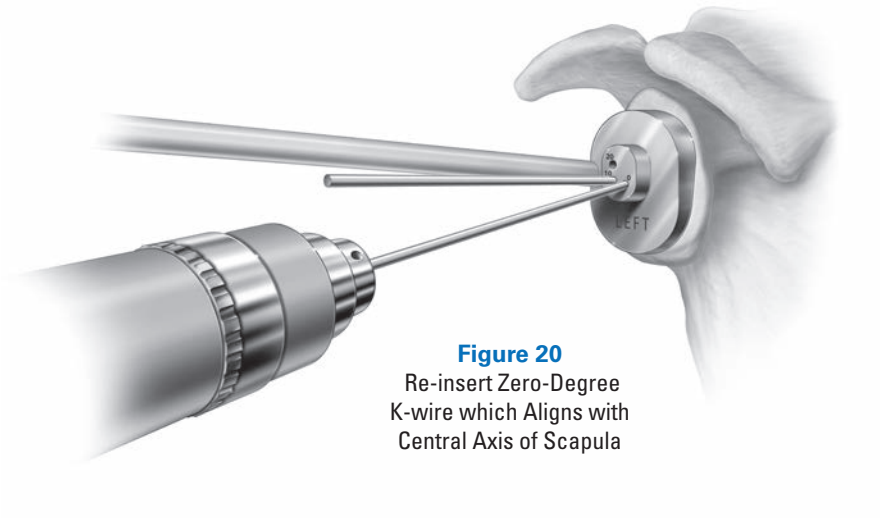


Figure 20
Re-insert Zero-Degree K-wire which Aligns with Central Axis of Scapula

Ream the glenoid over the 13-degree K-wire using the appropriately sized cannulated reamer *(Figure 19)*.

After reaming, re-insert the zero-degree K-wire to re-establish the axis of drilling the Superior/Posterior Glenoid Plate cage. Remove the 13-degree K-wire and Superior/Posterior Augment K-wire Alignment Guide *(Figure 20)*.

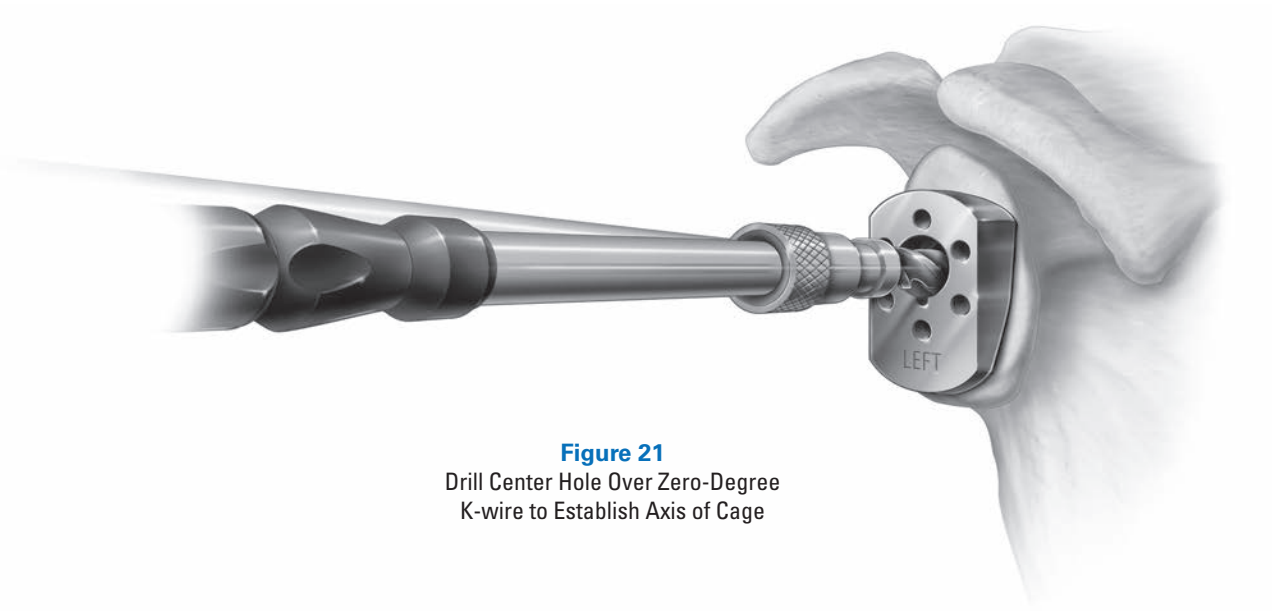


Figure 21
Drill Center Hole Over Zero-Degree K-wire to Establish Axis of Cage

Drill the hole for the Superior/Posterior Augment Glenoid Plate cage over the central axis of the scapula using the reverse shoulder **Superior/Posterior Drill Guide and the Extended Cage Drill** (321-15-38) *(Figure 21).*

Implant the Superior/Posterior Augment Glenoid Plate and continue with existing **Primary/Reverse Operative Technique (Lit#718-01-30).**

Note: *Avoid applying a bending force to the pilot tip reamer or using the reamer to retract the humeral head as this may cause fracture of the 2mm K-wire or pilot tip.*

Refer to 718-01-30 Equinoxe Legacy primary/reverse and 00-0000121 Ergo primary/reverse operative techniques for detailed surgical technique and implant/instrument listings.

EQUINOXE IMPLANTS*

Catalog No.	Part Description	
320-02-38 320-02-42	38mm Expanded Glenosphere, +4mm lateral offset 42mm Expanded Glenosphere, +4mm lateral offset	
320-15-01	Standard Glenoid Plate	
320-15-02	Superior Augment Glenoid Plate, 10 Degrees	
320-15-03 320-15-04	Posterior Augment Glenoid Plate, Eight Degrees, Left Posterior Augment Glenoid Plate, Eight Degrees, Right	
320-15-06	Extended Cage Glenoid Plate, +10mm	
320-15-07 320-15-08	Superior/Posterior Augment Reverse Glenoid Plate, Left Superior/Posterior Augment Reverse Glenoid Plate, Right	

**Special Order*
Not all devices shown are available in every market.

EQUINOXE INSTRUMENTS*

Catalog No.	Part Description
321-04-38	38mm Expanded Glenosphere Trial
321-04-42	42mm Expanded Glenosphere Trial
321-15-38	Extended Cage Drill
321-17-20	RS Superior Augment Glenoid K-wire Alignment Guide, Left
321-17-21	RS Superior Augment Glenoid K-wire Alignment Guide, Right
321-17-22	RS Posterior Augment Glenoid K-wire Alignment Guide, Left
321-17-23	RS Posterior Augment Glenoid K-wire Alignment Guide, Right
321-17-24	Superior/Posterior Augment Glenoid K-wire Alignment Guide, Left
321-17-25	Superior/Posterior Augment Glenoid K-wire Alignment Guide, Right
321-17-30	RS Superior Augment Glenoid Plate Drill Guide, Left
321-17-31	RS Superior Augment Glenoid Plate Drill Guide, Right
321-17-32	RS Posterior Augment Glenoid Plate Drill, Left
321-17-33	RS Posterior Augment Glenoid Plate Drill, Right
321-17-34	Superior/Posterior Augment Glenoid Plate Drill Guide, Left
321-17-35	Superior/Posterior Augment Glenoid Plate Drill Guide, Right
315-35-00	0.079 K-wire

**Special Order*
Not all devices shown are available in every market.

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For additional device information, refer to the Exactech Shoulder System–Instructions for Use for information including, but not limited to, a device description, indications, contraindications, precautions and warnings. For further product information, please contact Customer Service, Exactech, Inc., 2320 NW 66th Court, Gainesville, Florida 32653-1630, USA. (352) 377-1140, (800) 392-2832 or FAX (352) 378-2617.

Exactech, as the manufacturer of this device, does not practice medicine, and is not responsible for recommending the appropriate surgical technique for use on a particular patient. Because this information does not purport to constitute any diagnostic or therapeutic statement with regard to any individual medical case, each patient must be examined and advised individually, and this document does not replace the need for such examination and/or advice in whole or in part. These guidelines are intended to be solely informational and each surgeon must evaluate the appropriateness of these guidelines based on his or her personal medical training and experience. Prior to use of this system, the surgeon should refer to the product package insert for information including, but not limited to, comprehensive warnings, precautions, indications for use, contraindications and adverse effects.

CE 2797 CE Mark is not valid unless there is a CE Mark on the product label.

EC REP BLUE ORTHO SAS,
6 Allée de Bethléem
38610 Gières – France

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EXACTECH, INC.
2320 NW 66TH COURT
GAINESVILLE, FL 32653 USA

+1 352.377.1140
+1 800.EXACTECH
+1 352.378.2617 (FAX)
www.exac.com