

Surgical Technique



Acumed® is a global leader of innovative orthopaedic and medical solutions.



We are dedicated to developing products, service methods, and approaches that improve patient care.



Acumed® Bone Graft Harvesting System

The Acumed Bone Graft Harvesting System facilitates safe, rapid harvest of morselized autogenous cancellous graft from the iliac crest, distal radius, and distal femur through a small skin incision.

The system is designed to minimize the patient's discomfort and harvest site morbidity. This compact bone graft harvesting system is designed to be easy to use and includes four drill size options, a power adapter fitting, a starting punch, and a removal key.

Indications for Use:

These instruments harvest cancellous bone material from the iliac crest, distal radius, and distal femur and are used in conjunction with another surgical procedure such as bone grafting.

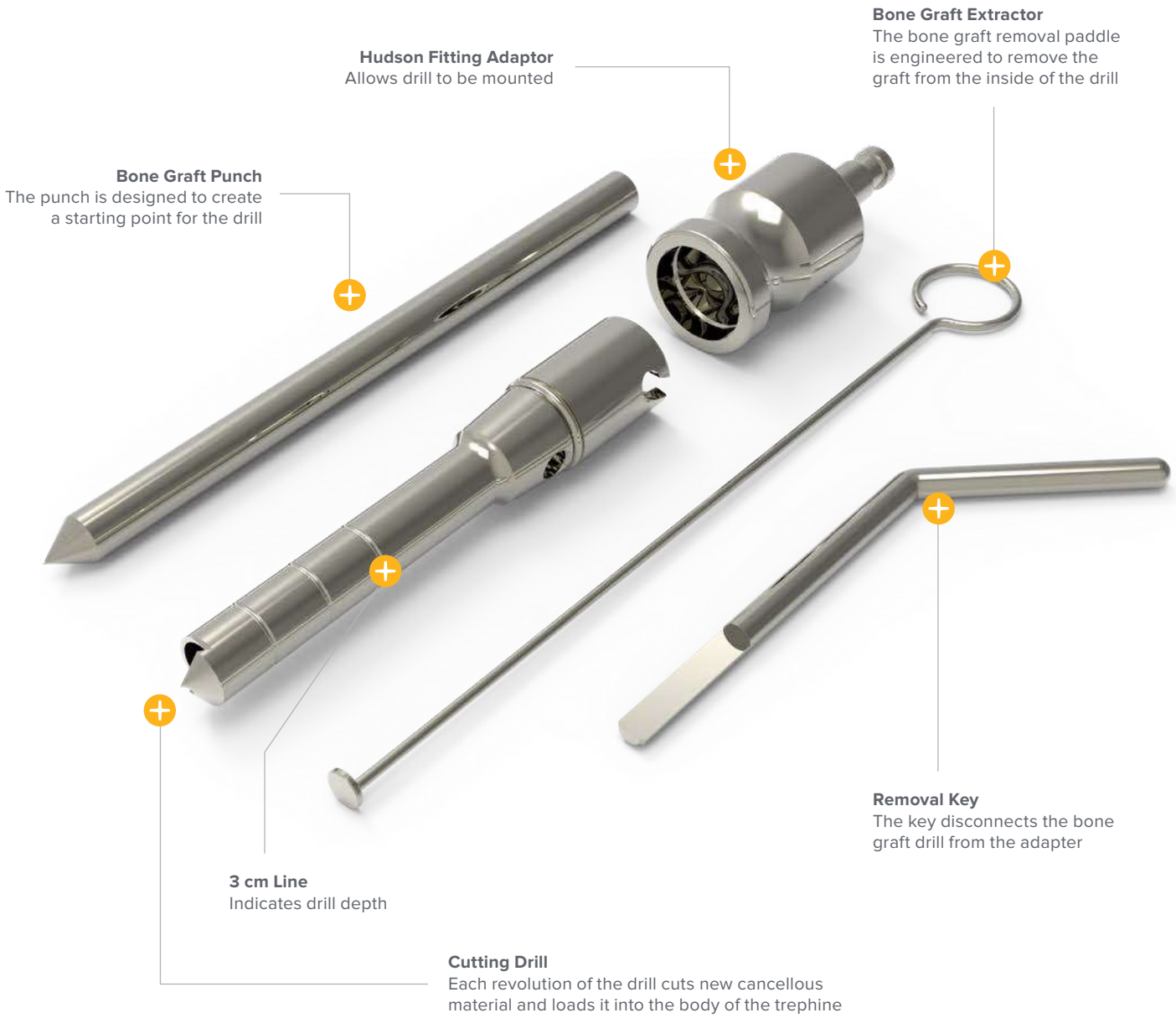
	Definition
Warning	Indicates critical information about a potential serious outcome to the patient or the user.
Caution	Indicates instructions that must be followed in order to ensure the proper use of the device.
Note	Indicates information requiring special attention.

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System Features



6 mm Bone Graft Drill
(BG-8006-S)



8 mm Bone Graft Drill
(BG-8010-S)



10 mm Bone Graft Drill
(BG-8020-S)



12 mm Bone Graft Drill
(BG-8030-S)



Volume	cc (per pass)
6 mm Bone Graft Drill	0.5 cc
8 mm Bone Graft Drill	0.9 cc
10 mm Bone Graft Drill	1.6 cc
12 mm Bone Graft Drill	2.5 cc

Instrument Overview



Hudson Fitting Adaptor
(BG-8040)



Jacobs Chuck Adaptor
(BG-8044)



Graft Removal Paddle Assembly
(BG-8060)



6 mm Graft Removal Paddle Assembly
(BG-8064)



Bone Graft Punch
(BG-8080)



Removal Key
(BG-8050)

Optional Instruments



Bone Graft Ratcheting T-Handle
(BG-8043)



7 mm Bone Graft Drill Assembly
(PL-BG07)

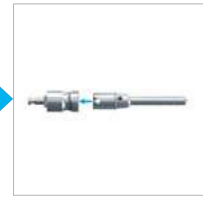
Surgical Technique Overview

Incision

Starting Hole Creation

Drill Tip Assembly

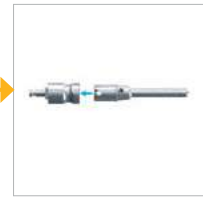
Anterior Ilium
Crest Surgical
Technique

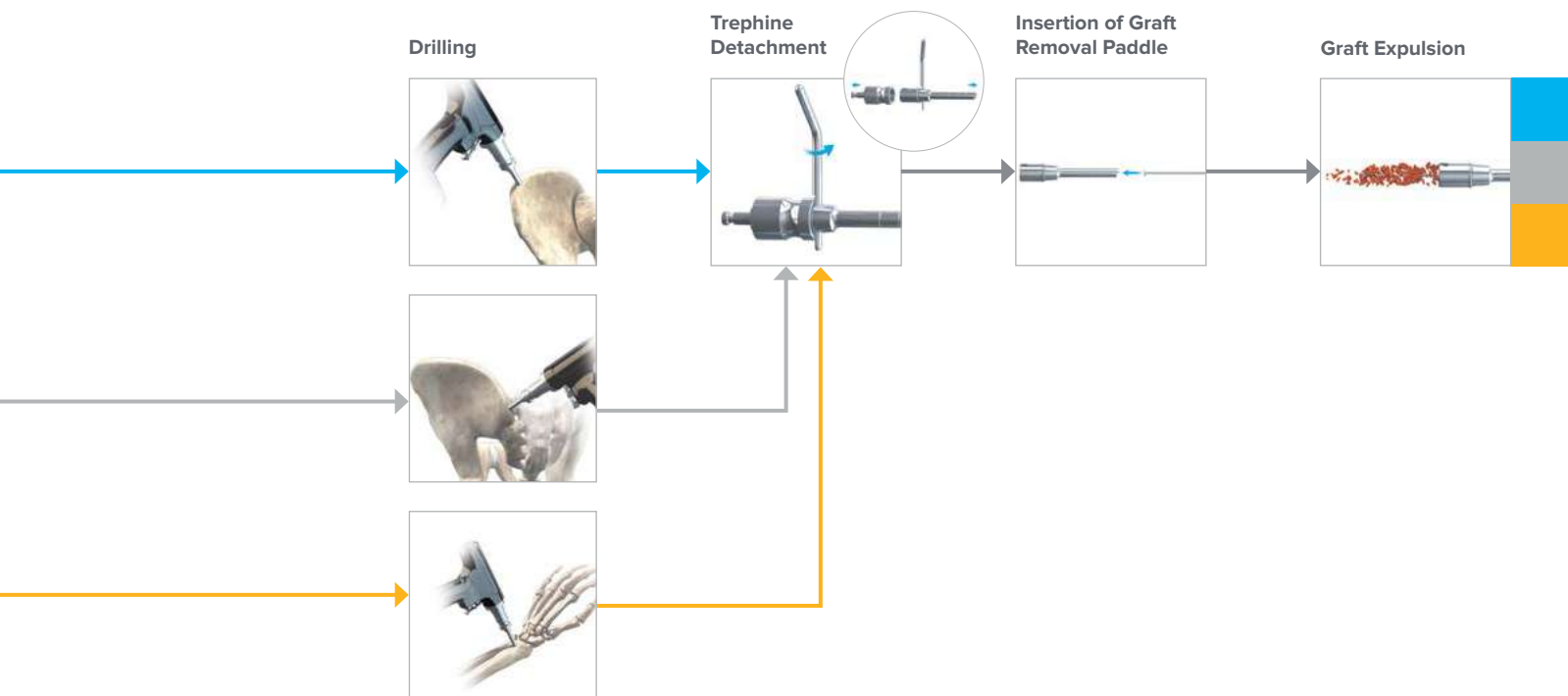


Posterior Ilium
Crest Surgical
Technique



Distal Radius
Surgical Technique





Anterior Ilium Crest Surgical Technique



Figure 1

1 Incision and Dissection

Entry point is through a 2 cm incision located over the iliac crest, at least 3 cm posterior to the anterior superior iliac crest (ASIS). The lateral femoral cutaneous nerve is usually located within the inguinal ligament or within 2 cm dorsolateral to the ASIS in most adults.¹ However, the nerve may take a different course over the crest up to 5 cm dorsolateral to the ASIS.

After incising the skin and subcutaneous layers, sharply incise the white fascial confluence of the gluteal/tensor and abdominal musculature over the iliac crest and the periosteum. Use a periosteal elevator to perform a limited subperiosteal dissection over the crest. Then introduce small Hohmann-type retractors to facilitate exposure and help identify the center of the crest. Use an elevator or retractors to probe the orientation of the ilium, so that the trephine can be accurately directed between the inner and outer tables of the ilium.



Figure 2

2 Instrument Assembly and Harvest Site Preparation

Using the Bone Graft Punch (BG-8080) and a mallet, make a starting hole at the desired entry point (Figure 2). Insert the appropriate size trephine into the Hudson Fitting Adaptor (BG-8040), rotating it clockwise until it locks (figures 3 and 4). Attach this assembly to a drill or the Bone Graft Ratcheting T-Handle (BG-8043).

Note: A Hudson or Jacobs Adaptor will be needed to mount the trephine.

Caution: Ensure that the snap ring is present and not damaged.

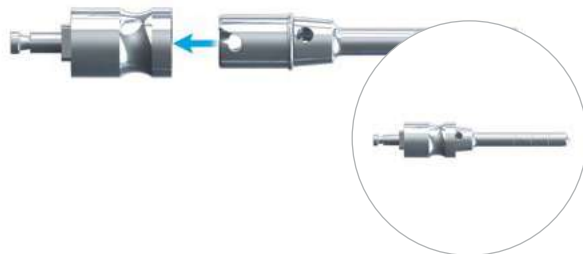


Figure 3

Figure 4



Bone Graft Punch (BG-8080)



Hudson Fitting Adaptor (BG-8040)



Bone Graft Ratcheting T-Handle (BG-8043)

Anterior Ilium Crest Surgical Technique [continued]

3 Harvest Autologous Bone Graft

Beginning at low speed, drill the trephine into the desired entry point until the device fully engages the bone (Figure 5). The morsel size can be varied by the drill speed and rate of insertion. Advance the trephine to the laser-etched ring on the instrument (Figure 6) and then withdraw the instrument from the bone (Figure 7).



Figure 5



Figure 6



Figure 7

Anterior Ilium Crest Surgical Technique [continued]

Figure 8

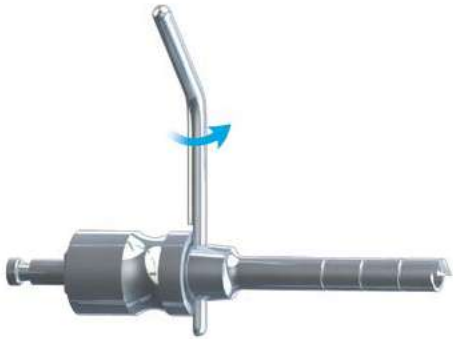
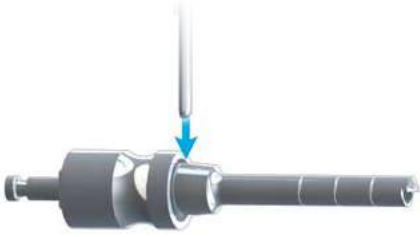


Figure 9



Figure 10



Figure 11

4 Removal of Bone Graft From Harvester

Detach the trephine from the adaptor using the Removal Key (BG-8050), which is inserted through the holes in the trephine and rotated (figures 8 and 9). Use the Graft Removal Paddle Assembly (BG-8060), inserted in the pointed end of the trephine, to expel the graft from the open end of the trephine (figures 10 and 11).

Note: Additional graft may be harvested through the same entrance hole in the iliac crest by redirecting the trephine in a radial pattern from the original hole.

Caution: The 6 mm Graft Removal Paddle Assembly (BG-8064) may be used only with the 6 mm drill (BG-8006-S).

5 Backfill Harvest Site (Optional)

Exposure of bleeding surface from a large void left behind may lead to hematoma. If desired, a bone void filler can be used to backfill the graft harvest site.



Removal Key
(BG-8050)



Graft Removal Paddle
Assembly
(BG-8060)

Posterior Ilium Crest Surgical Technique

1 Incision and Dissection

Entry point is through a midline incision via the subcutaneous plane or from a separate oblique incision. (Figure 1). The dissection should not extend toward the superior cluneal nerves which cross approximately 8 cm superolaterally to the posterior superior iliac spine. Perform a limited subperiosteal dissection to permit entry of the selected Acumed trephine.

Care should be taken not to direct the trephine inferior to the level of the posterior superior iliac spine to prevent inadvertent entry into the greater sciatic notch and injury to the superior gluteal vessels or sciatic nerve. The sacro-iliac joint should also be avoided.

Figure 1



2 Instrument Assembly and Harvest Site Preparation

Using the Bone Graft Punch (BG-8080) and a mallet, make a starting hole at the desired entry point (Figure 2). Insert the appropriate size trephine into the Hudson Fitting Adaptor (BG-8040), rotating it clockwise until it locks (figures 3 and 4). Attach this assembly to a drill or the Bone Graft Ratcheting T-Handle (BG-8043).

Note: A Hudson or Jacobs Adaptor will be needed to mount the trephine.

Caution: Ensure that the snap ring is present and not damaged.

Figure 2



Figure 3

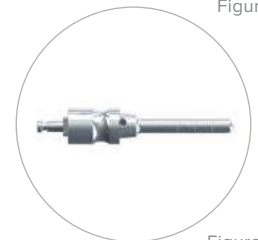


Figure 4



Bone Graft Punch
(BG-8080)



Hudson Fitting Adaptor
(BG-8040)



Bone Graft Ratcheting
T-Handle
(BG-8043)

Posterior Ilium Crest Surgical Technique [continued]

Figure 5



3 Harvest Autologous Bone Graft

Beginning at low speed, drill the trephine into the desired entry point until the device fully engages the bone (Figure 5). The morsel size can be varied by the drill speed and rate of insertion. Advance the trephine to the laser-etched ring on the instrument (Figure 6) and then withdraw the instrument from the bone (Figure 7).

Figure 6

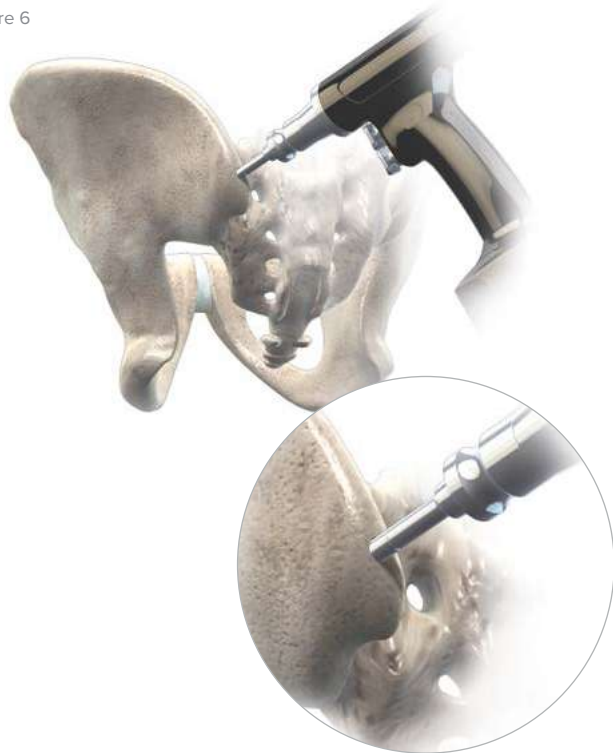


Figure 7

Posterior Ilium Crest Surgical Technique [continued]

4 Removal of Bone Graft From Harvester

Detach the trephine from the adaptor using the Removal Key (BG-8050), which is inserted through the holes in the trephine and rotated (figures 8 and 9). Use the Graft Removal Paddle Assembly (BG-8060), inserted in the pointed end of the trephine, to expel the graft from the open end of the trephine (figures 10 and 11).

Note: Additional graft may be harvested through the same entrance hole in the iliac crest by redirecting the trephine in a radial pattern from the original hole.

Caution: The 6 mm Graft Removal Paddle Assembly (BG-8064) may be used only with the 6 mm drill (BG-8006-S).

Figure 8

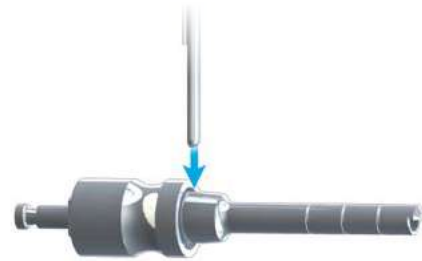


Figure 9

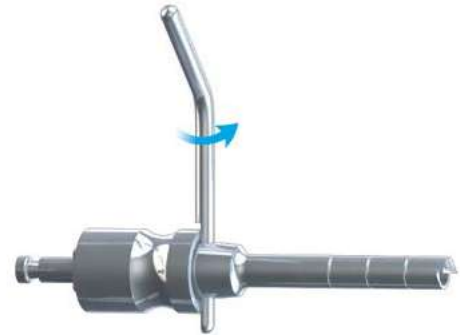


Figure 10



Figure 11

5 Backfill Harvest Site (Optional)

Exposure of bleeding surface from a large void left behind may lead to hematoma. If desired, a bone void filler can be used to backfill the graft harvest site.



Removal Key
(BG-8050)



Graft Removal
Paddle Assembly
(BG-8060)

Distal Radius Surgical Technique

Figure 1



1 Incision and Dissection

A tourniquet is recommended to minimize bleeding. The distal radius may be approached from the dorsal or radial side, depending upon the surgeon's preference.

Entry point is through a 2 cm incision between the second and third dorsal compartment, approximately 1–2 cm proximal to the dorsal lip of the radius (Figure 1). Incise the fascia proximal to the extensor retinaculum. The incision can be extended into the proximal portion of the retinaculum if needed. Retract the extensor carpi radialis brevis and extensor carpi radialis longus tendons to expose the dorsal cortex of the radius.

Figure 2



2 Instrument Assembly and Harvest Site Preparation

Using the Bone Graft Punch (BG-8080) and a mallet, make a starting hole at the desired entry point (Figure 2). Insert the appropriate size trephine into the Hudson Fitting Adaptor (BG-8040), rotating it clockwise until it locks (figures 3 and 4), and attach this assembly to a drill or the Bone Graft Ratcheting T-Handle (BG-8043).

Note: A Hudson or Jacobs Adaptor will be needed to mount the trephine.

Caution: Ensure that the snap ring is present and not damaged.



Figure 4



Figure 3



Bone Graft Punch (BG-8080)



Hudson Fitting Adaptor (BG-8040)



Bone Graft Ratcheting T-Handle (BG-8043)

Distal Radius Surgical Technique [continued]

3 Harvest Autologous Bone Graft

Beginning at low speed, drill the trephine into the desired entry point until the device fully engages the bone (Figure 5). The morsel size can be varied by the drill speed and rate of insertion. Advance the trephine to the laser-etched ring on the instrument (Figure 6) and then withdraw the instrument from the bone (Figure 7).

Figure 5

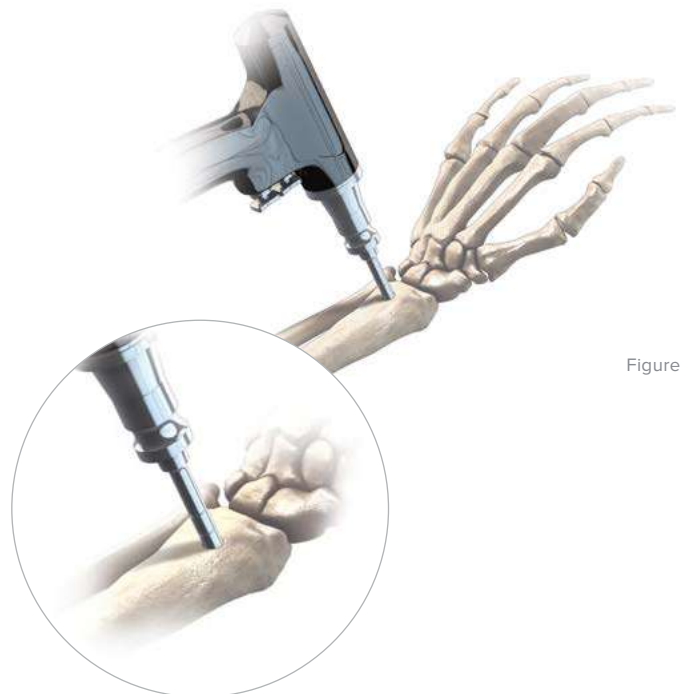
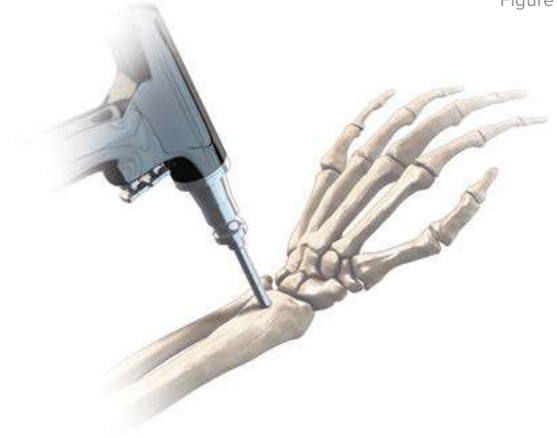
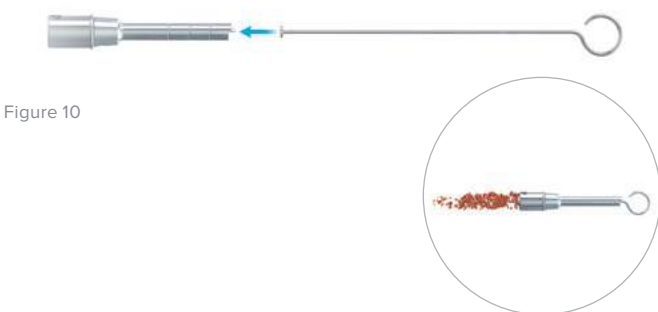
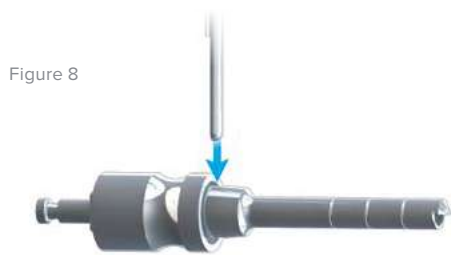


Figure 6

Figure 7

Distal Radius Surgical Technique [continued]



4 Removal of Bone Graft From Harvester

Detach the trephine from the adaptor using the Removal Key (BG-8050), which is inserted through the holes in the trephine and rotated (figures 8 and 9). Use the Graft Removal Paddle Assembly (BG-8060), inserted in the pointed end of the trephine, to expel the graft from the open end of the trephine (figures 10 and 11).

Note: Additional graft may be harvested through the same entrance hole in the distal radius by redirecting the trephine in a radial pattern from the original hole.

Caution: The 6 mm Graft Removal Paddle Assembly (BG-8064) may be used only with the 6 mm drill (BG-8006-S).

5 Backfill Harvest Site (Optional)

Exposure of bleeding surface from a large void left behind may lead to hematoma. If desired, a bone void filler can be used to backfill the graft harvest site.



Removal Key
(BG-8050)



Graft Removal Paddle
Assembly
(BG-8060)

Ordering Information

Components

Instrumentation

Jacobs Chuck Adaptor	BG-8044
Hudson Fitting Adaptor	BG-8040
Removal Key	BG-8050
Bone Graft Punch	BG-8080
Graft Removal Paddle Assembly	BG-8060
6 mm Graft Removal Paddle Assembly	BG-8064

Optional Components

Instrumentation

Bone Graft Ratcheting T-Handle	BG-8043
7 mm Bone Graft Drill Assembly	PL-BG07

Note: To learn more about the full line of Acumed innovative surgical solutions, please contact your authorized Acumed distributor, call 888.627.9957, or visit www.acumed.net.

Sterile

Instrumentation

6 mm Bone Graft Drill	BG-8006-S
8 mm Bone Graft Drill	BG-8010-S
10 mm Bone Graft Drill	BG-8020-S
12 mm Bone Graft Drill	BG-8030-S

References

1. Missiuna PC, Gandhi HS, Farrokhyar F, Harnett BE, Dore EMG, Roberts B. Anatomically safe and minimally invasive transcristal technique for procurement of autogenous cancellous bone graft from the mid-iliac crest. *Can J Surg.* 2011; 54(5):327–332. doi: 10.1503/cjs.028010



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