DePuy Synthes
MITEK SPORTS MEDICINE
COMPANIES OF Johnson & Johnson

COR® Precision Targeting System

Repair of Osteochondral Defects in Canines

SURGICAL TECHNIQUE

EASE OF USE

Intuitive handling and efficiency combined in a completely disposable system

PROTECTS CHONDROCYTE VIABILITY[1,2]

Gentle graft handling with "no-impact transfer" and "low-impact delivery"

IMPROVED ACCURACY*

Reproducible and focused graft harvesting and drilling with a first-of-kind perpendicularity device

*Compared to currently available osteochondral transplant systems which rely solely on visual estimates for graft positioning, instead of instrumentation measuring perpendicular placement.

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INTRODUCTION

The COR Precision Targeting System is designed to surgically treat full thickness femoral articular cartilage lesions via autograft or allograft transplantation. It is a completely disposable, sterile-packed system designed for single-patient use.

COR Precision Targeting may be used in an arthroscopic or an open procedure if access to the defect or donor site is difficult. Generally, the ideal patient for this procedure is one with a focal traumatic lesion, between 1 cm and 2.5 cm in diameter, in weight-bearing regions of the femoral condyle. The COR Precision Targeting System offers surgeons a choice of 4 mm, 6 mm, 8 mm, and 10 mm diameter sizes and variability for graft plug depth.

PLANNING THE PROCEDURE

Chondral defect and donor sites should be inspected, debrided, and measured to determine the number and size of grafts to be harvested. Beginning at the margin of the lesion, a probe or COR Plunger can be used to measure the defect size, determine harvester size(s), and plan graft placement within the lesion. When using more than 1 graft, it is important to maintain 2 mm between the drilled holes to allow for a secure graft press fit.

These factors should be evaluated:

- Perpendicular access to donor cartilage
- Matching donor and recipient site articular cartilage contours

THE RECIPIENT SITE

1

Recipient Site Preparation

The recipient site should be prepared, creating well-defined, vertical articular cartilage margins.

Loose fragments should be debrided with a shaver, arthroscopic knife, or curette.

2

Recipient Site Drilling

Drilling should be done under direct visualization, keeping the drill guide oriented perpendicular to the adjacent articular surface. While maintaining this perpendicularity, introduce the drill bit and drill the recipient site to the desired depth (Figure 1). Depth markings are etched on the drill bit at 5 mm, 8 mm, 10 mm, 12 mm, 15 mm, and 20 mm (Figure 2). Remove drill bit and drill guide. The bone debris collected in the vertical flutes on the drill bit may be used later in the procedure to back-fill the donor site.

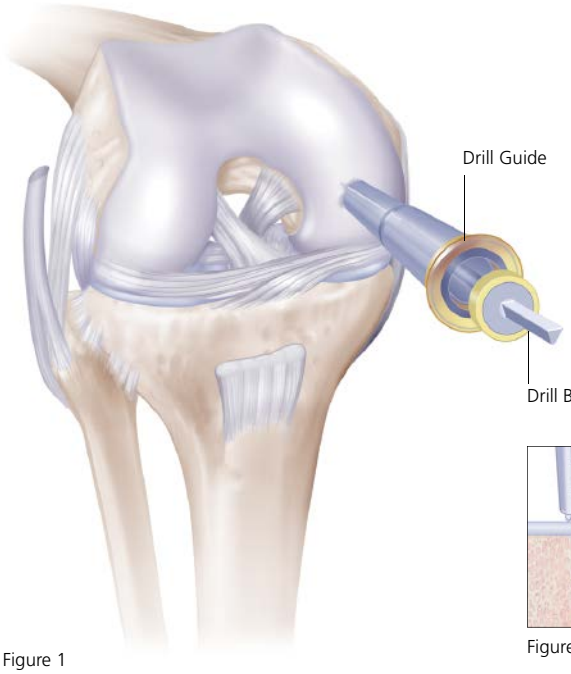


Figure 1

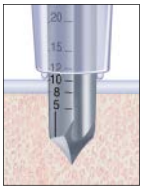


Figure 2

GRAFT HARVESTING WITHOUT PERPENDICULARITY ROD

Graft harvesting may be accomplished with or without the optional perpendicularity rod that is available for 6 mm, 8 mm, and 10 mm COR systems. If harvesting with the Perpendicularity Rod, see page 7.

3

Harvest Donor Site

Position the Harvester Delivery Guide/Cutter assembly on the selected non-weight-bearing surface to harvest a graft (Figures 3, 4a and 4b).

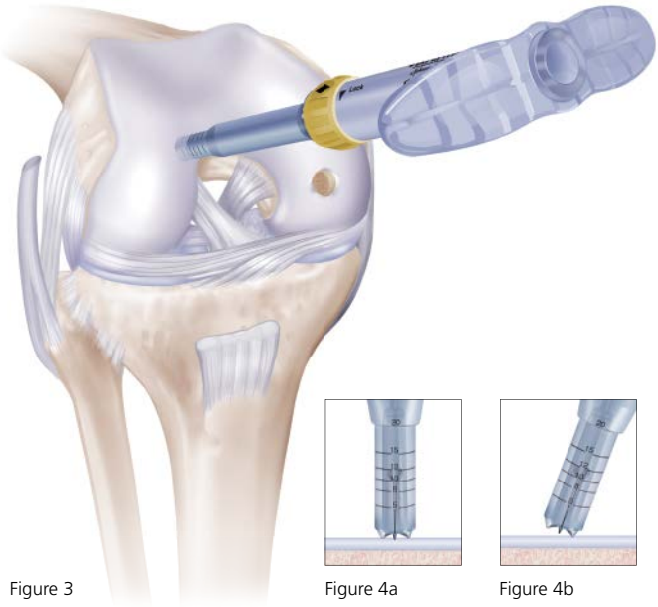


Figure 3

Figure 4a

Figure 4b

While maintaining perpendicularity, use a mallet (A) to tap the Guide/Cutter to the desired depth mark. Depth markings are at 5 mm, 8 mm, 10 mm, 12 mm, 15 mm, and 20 mm (Figure 6). Harvest depth should match the recipient site.

Rotate the T-handle two complete revolutions (B), then withdraw the assembly while gently twisting the T-handle (Figure 5). Bone removed from recipient site may be placed in donor site if desired.

A unique feature of the COR Precision Targeting System is the Cutting Tooth on the harvester blade (Figure 7). The cutting tooth scores the cancellous bone at the distal end of the Cutter, creating a plug whose length matches the depth of the recipient site hole. Precisely matching the graft length to the recipient site helps minimize the resulting impaction forces on the cartilage graft during insertion.

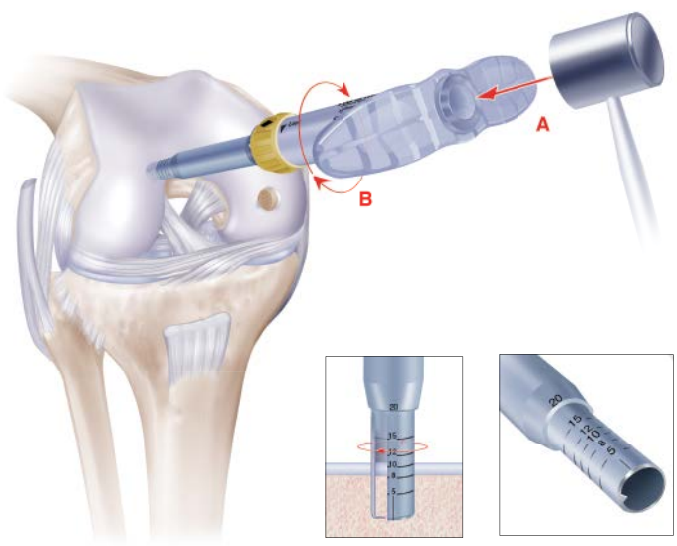


Figure 5

Figure 6

Figure 7

GRAFT DELIVERY

4

Graft Transfer to Harvester/Delivery Guide ("No-impact transfer")

Place Graft Loader on firm surface with open end facing up. Insert the Guide/Cutter into the Graft Loader and push firmly until the Guide/Cutter makes contact with the bottom of the Graft Loader (Figures 8a, 8b and 8c).

Remove the Guide/Cutter from the Graft Loader. Separate the Cutter from the Harvest/Delivery Guide by twisting the locking ring to the unlock position (Figures 9a and 9b).

Inspect the graft for quality, length, and shape. To protect chondrocyte viability, the graft plug should remain within the Harvester/Delivery Guide until it is ready for transplant into the recipient site (Figure 9c).

Figure 8a Figure 8b Figure 8c

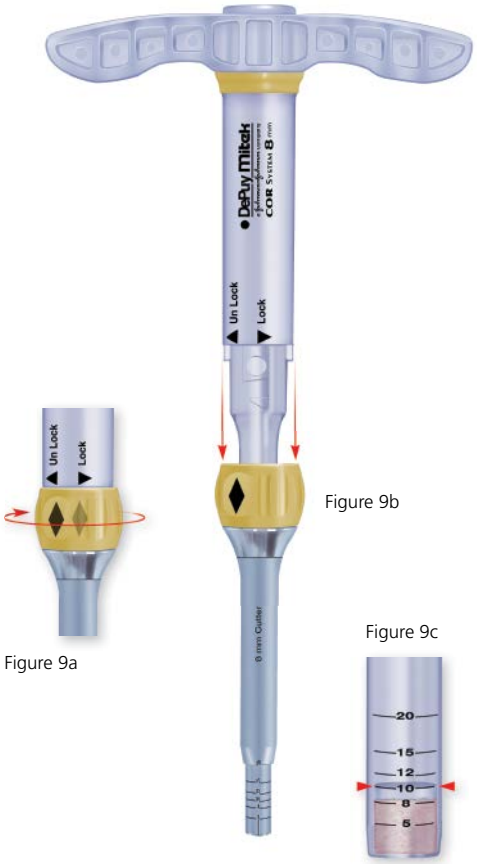


Figure 9a

Figure 9b

Figure 9c

5

Graft Insertion ("Low-impact delivery")

Insert the Plunger into the Harvester/Delivery Guide carefully to avoid premature graft deployment.

Note: Plunger is etched with a "P."

Align the Harvester/Delivery Guide with the recipient site hole and gently tap the Plunger with a mallet until it contacts the T-Handle of the Harvester/Delivery Guide (Figures 10 and 11).

Remove the Harvester/Delivery Guide and evaluate the position of the graft.

The Universal Tamp may be used to fine tune graft height. 8 mm side is recommended for 4 mm and 6 mm grafts and the 12 mm side is recommended for 8 mm and 10 mm grafts (Figure 12).

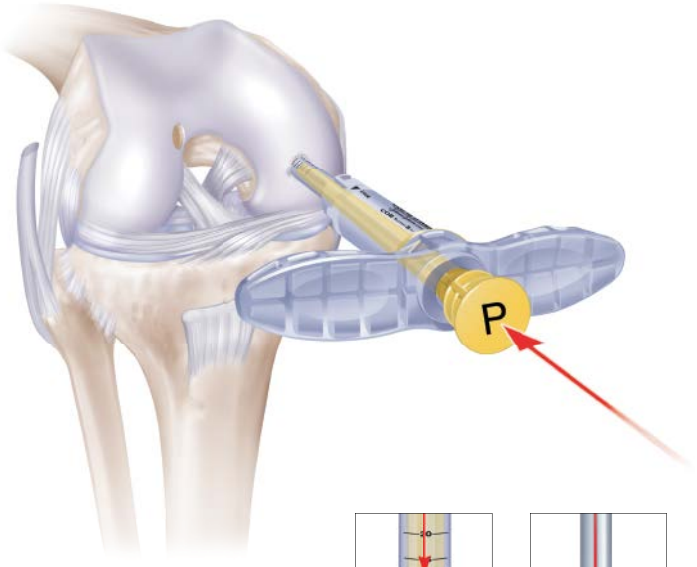


Figure 10

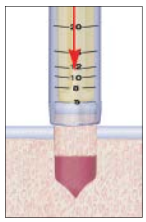


Figure 11

Figure 12

6

Multiple Graft Repair

In some cases, multiple grafts may be needed to repair a full thickness articular cartilage lesion. If additional grafts are required, the Harvester/Delivery Guide and Cutter may be reassembled and the process repeated until the appropriate number of grafts have been taken. It is important to maintain 2 mm between the drilled holes to allow for a secure graft press fit (Figure 13).

Figure 13

GRAFT HARVESTING WITH OPTIONAL PERPENDICULARITY ROD

1

Prepare COR System for Harvesting

The COR Harvester/Delivery Guide comes with the Harvest Cutting Tool preassembled. To prepare the COR System for harvesting, tighten the Perpendicularity Rod and insert it (6, 8, and 10 mm sizes only) into the distal end of the Harvester Delivery Guide/Cutter (Figure 14).

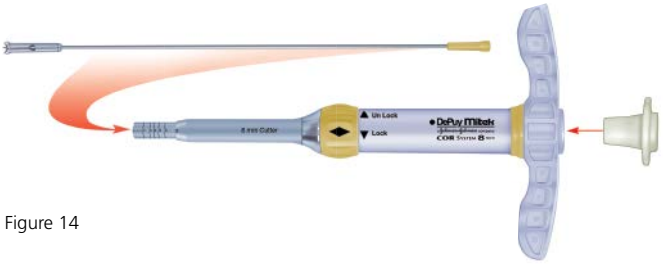


Figure 14

Note: **To tighten the perpendicularity rod, place the distal end against a firm surface and hold stationary. Push downward on the rod to engage and turn it clockwise with downward pressure until tight. Minimize finger pressure in the tip while tightening.**

The Perpendicularity Rod is properly seated when the cutting tooth engages the distal cutout groove on the Perpendicularity Rod (Figures 15a and 15b).

Figure 15a

Figure 15b

Attach the Perpendicularity Rod Cap to the proximal end of the Perpendicularity Rod to create a tight interface with the Perpendicularity Rod and the Guide/Cutter (Figure 16). The Perpendicularity Rod functions as an obturator to minimize soft tissue capture as the assembly is inserted into the knee.

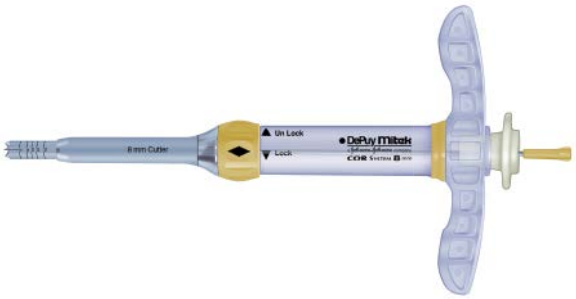


Figure 16

2

Harvest Donor Site

Position the Harvester Delivery Guide/Cutter/ Perpendicularity assembly on the selected non-weight-bearing surface to harvest a graft (Figure 17).

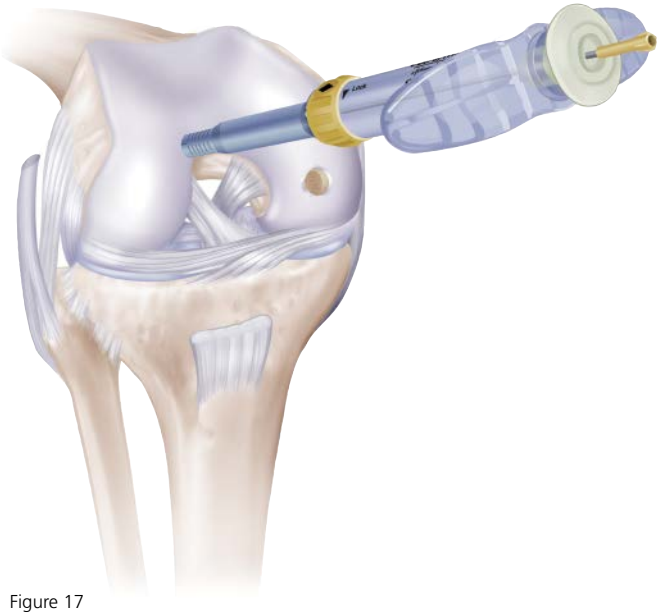


Figure 17

Remove the Perpendicularity Rod Cap and ensure that the Guide/Cutter is perpendicular to the desired graft site by maintaining pressure on the Guide/Cutter while slowly positioning it until the Perpendicularity Rod is centered (Figures 18, 19a, and 19b).

While maintaining the Guide/Cutter position, turn the Perpendicularity Rod counterclockwise (A) until it disengages with an audible click or slight recoil and then remove (B) the Rod (Figure 20). Continue with harvesting the donor site with step 4 (Page 4).

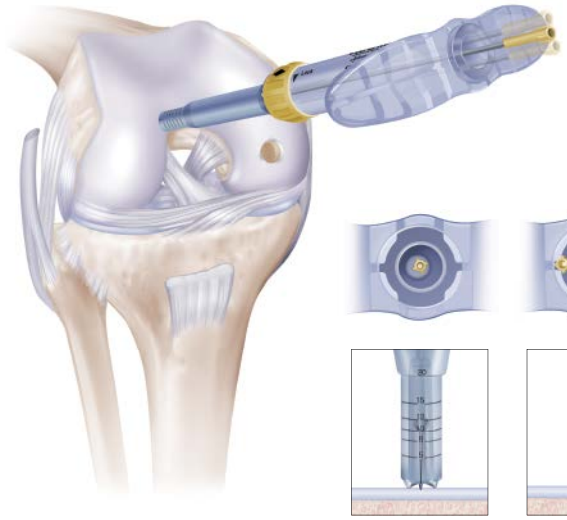


Figure 18

Figure 19a

Figure 19b

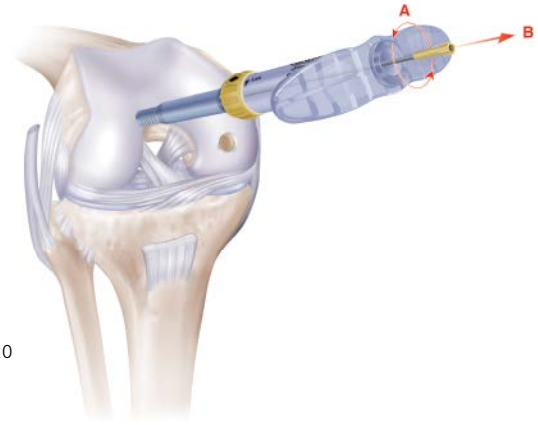
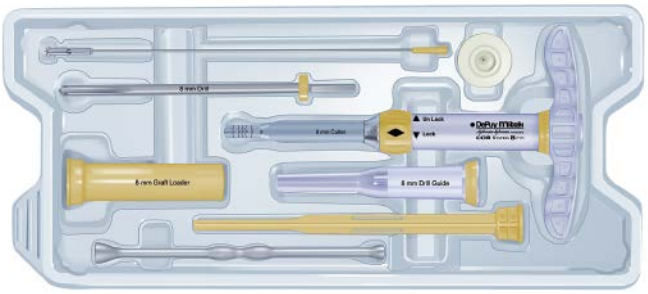


Figure 20

ORDERING INFORMATION

COR Precision Targeting System

252111 COR Disposable Kit, 6 mm w/Perpendicularity
252112 COR Disposable Kit, 8 mm w/Perpendicularity
252113 COR Disposable Kit, 10 mm w/Perpendicularity
252107 COR Disposable Kit, 4 mm
252108 COR Disposable Kit, 6 mm
252109 COR Disposable Kit, 8 mm
252110 COR Disposable Kit, 10 mm



COR Sizing Instruments (Optional/Reusable)

252307 COR Plunger, 4 mm
252313 COR Plunger, 6 mm
252319 COR Plunger, 8 mm

References
1 Borazjani BH, Chen AC, Bae WC, et al. Effect of impact on chondrocyte viability during insertion of human osteochondral grafts. *J Bone Joint Surg.* 2006;88:1934-1943.
2 Barber FA, Herbert MA, McGarry JE, Barber CA. Insertion Force of Articular Cartilage Tranplantation Systems. *J Knee Surg.* 2008; Jul 21(3):200-4.

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WARNING: In the USA, this product has labeling limitations. See package insert for complete information.

CAUTION: USA Law restricts these devices to sale by or on the order of a physician.

To order in the U.S. call, Johnson & Johnson Health Care Systems Inc. Customer Support Services at 800-255-2500.

Not all products are currently available in all markets.

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