

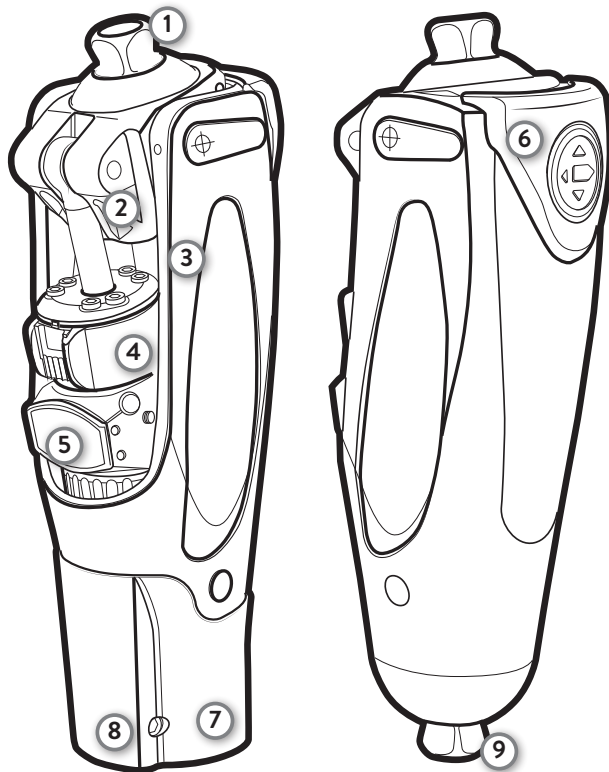


COLLEGE PARK  
**CAPITAL**  
*hydraulic knee*



**college park**  
TECHNOLOGY *for the* HUMAN RACE

*technical instructions*



## KEY COMPONENTS

### Both Models

1. Pyramid (Proximal Attachment)
2. Upper Assembly
3. Knee Frame
4. Mode Adjustment Switch
5. Hydraulic Adjustment Cover
6. Knee Pad

### 300 Model

7. 34 mm Pylon Receiver (Distal Attachment)
8. 4 mm Clamp Screw (Torque 10 N-m)

### 350 Model

9. Pyramid (Distal Attachment)

## PACKAGE CONTENTS

(1) Capital Knee

## TOOLS RECOMMENDED

(1) 4 mm Hex Key

(1) 2.5 mm Hex Key

*This diagram is to help familiarize you with the unique parts of the Capital Knee. These parts are referenced in the instructions and used when speaking with a technical service representative.*

## PRODUCT DESCRIPTION

The Capital Knee is constructed with an integrated pyramid (proximal) and 34 mm pylon receiver or pyramid (distal).

## INTENDED USE

The Capital Knee, intended for transfemoral amputees, is a prosthetic device designed to restore some function of an anatomical knee joint.



### INDICATIONS:

- Lower limb amputations above the knee

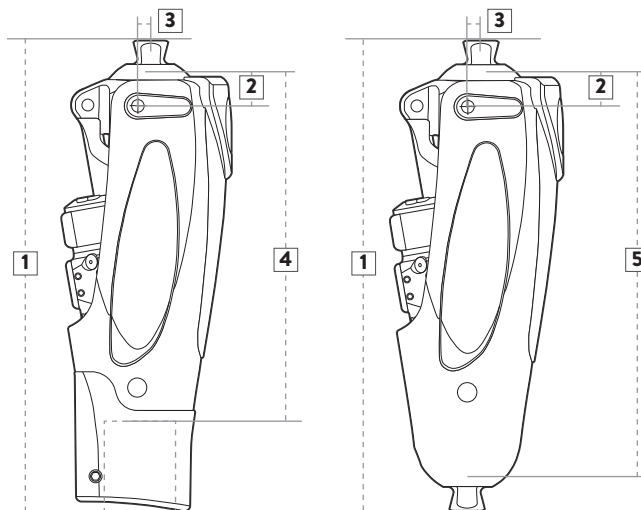


### CONTRAINDICATIONS:

- None known

## TECHNICAL SPECIFICATIONS

Material	Aluminum
Joint Type	Single-Axis
Flexion	130°
Build Height	1.7 cm (0.67 in)
Assembly Weight	980 g (34 mm Pylon Receiver) 990 g (Pyramid)
Patient Weight Limit	150 kg (330 lbs)
Warranty	3 years
Torque (Clamp Screw)	10 N·m (7.4 ft-lbs)

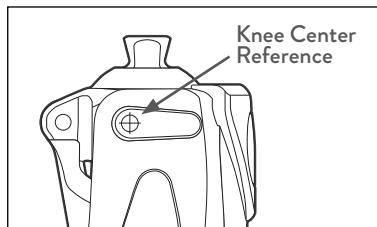


## BUILD HEIGHT

1	Overall height	9.00 in (230 mm)
2	Dome to knee center	0.67 in (17 mm)
3	Distance from knee center to pyramid center	0.26 in (7 mm)
4	Dome to tube end contact (CHKA J300)	6.80 in (173 mm)
5	Proximal dome to distal dome (CHKA J350)	7.73 in (196 mm)

## BENCH ALIGNMENT (TKA)

1. Determine the heel height
2. Determine the socket flexion
3. The alignment reference line bisects through the knee center



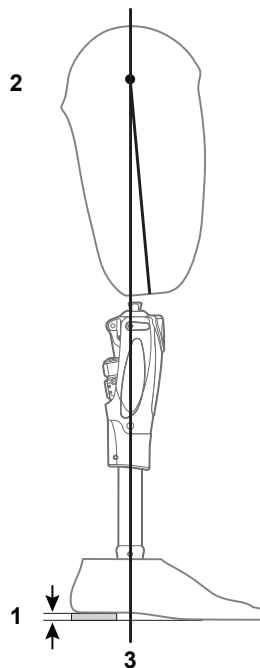
## STATIC ALIGNMENT

With the alignment reference line through the knee center, plantarflex or dorsiflex the foot until the load line is balanced between 1/3 heel and 2/3 toe lever.

## KNEE ALIGNMENT

More Stable = slide the knee posterior

More Dynamic = slide the knee anterior

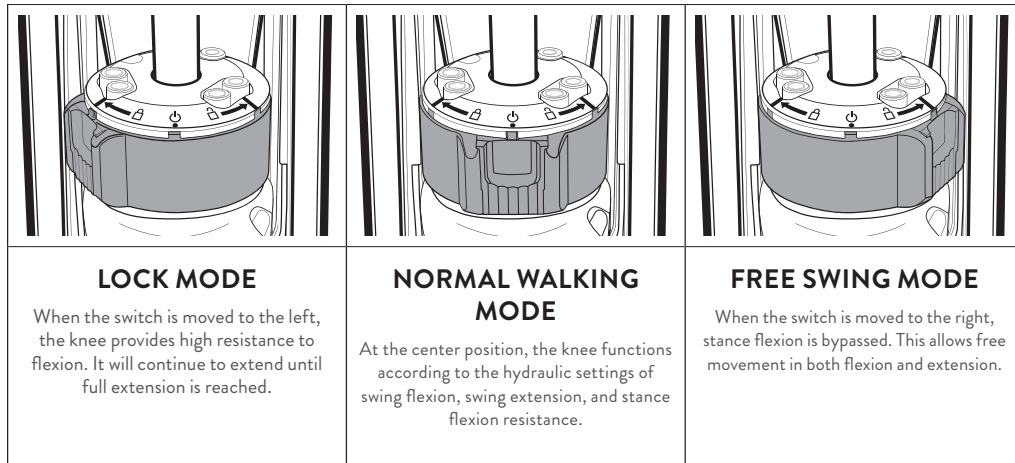


Note: If the load line is too far anterior to knee center, it may become too difficult to initiate knee flexion.  
If the load line is too far posterior to knee center, it may cause premature knee flexion.

## ADJUSTMENTS

### 3-MODE FUNCTION

The Capital Knee has three functional modes that can be adjusted by the end user. To change the mode, press down on the mode switch lock, then rotate the switch to the left, center, or right position. When lined up, the lock will click in place.



**Caution:** To prevent sudden collapse, users should use caution when applying weight to the knee during free swing mode.

## ACCESSING HYDRAULIC ADJUSTMENTS

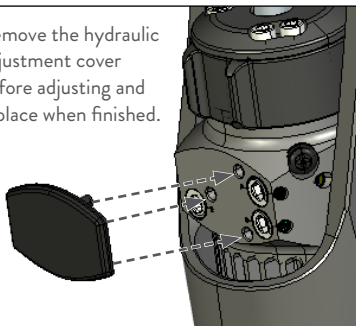


Note: Hydraulic valve adjustments can be made using a 4mm Allen wrench.



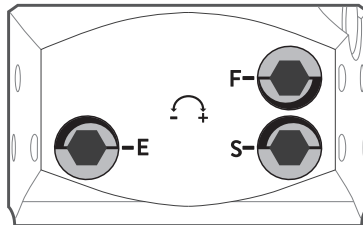
Note: The full range of valve adjustment is 180°  
The effect of a dynamic adjustment can be felt with as little as 1/8 - 1/4 turn.

Remove the hydraulic adjustment cover before adjusting and replace when finished.



### FACTORY SETTINGS

Extension  
Resistance  
(Minimum)



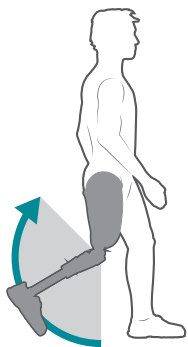
Flexion  
Resistance  
(Minimum)

Stance  
Resistance  
(Maximum)

## SWING PHASE

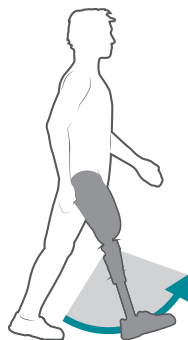
**Factory setting = both screws at minimum resistance**

Begin by adjusting the flexion resistance, or heel rise. Then adjust the extension resistance to control terminal impact.



### **FLEXION RESISTANCE**

Controls how quickly the knee goes into flexion upon off-loading of the prosthesis. Increasing resistance will reduce how quickly the knee flexes after toe-off. Decreasing resistance will increase how quickly the knee flexes after toe-off. This adjustment can be used to limit heel rise.



### **EXTENSION RESISTANCE**

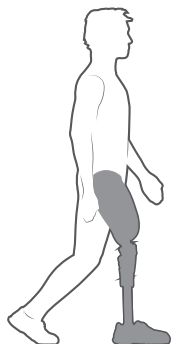
Controls how the knee moves through extension during swing. Increasing resistance will allow the knee to extend more slowly. Decreasing resistance will allow the knee to extend more quickly. This adjustment is most effective for reducing terminal impact.



Caution: Flexion and extension must be possible at all settings.



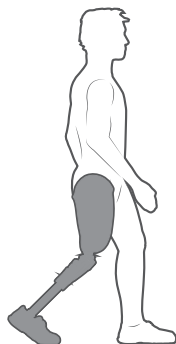
## STANCE PHASE



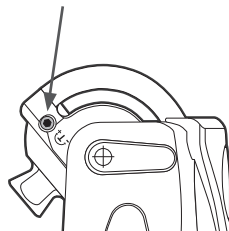
### STANCE FLEXION RESISTANCE

*Factory setting = screw is at maximum resistance  
(most resistance to stance yielding)*

Controls flexion of the knee during stance phase of gait. Decreasing resistance will allow the knee to flex more quickly. Increasing resistance will allow the knee to flex more slowly. This adjustment is most effective for controlling “stumble recovery”, resistance from stand-to-sit, and stair-ramp descent.



*Trigger Sensitivity Screw*



### STANCE TRIGGER SENSITIVITY

*Factory setting = screw is at most sensitive  
(easiest to trigger stance flexion)*

This sets the amount of toe load required to trigger release into flexion. If the knee goes into flexion too easily at higher walking speeds, this adjustment may need to be increased.

## DYNAMIC ADJUSTMENTS



For dynamic adjustments, have your patient begin ambulating at a comfortable cadence to fine-tune the flexion and extension resistance.

After the initial settings are established, it is important for the patient to demonstrate walking at variable speeds and on uneven surfaces (ramps, stairs, etc.) in order to fully adjust the knee. Perform a stand-to-sit action to adjust stance flexion resistance (yielding).

### SWING PHASE



#### 1. Flexion Resistance

If heel rise is excessive, increase the flexion resistance by turning the adjustment screw clockwise. If heel rise is insufficient to clear the toe, reduce the flexion resistance by turning the adjustment screw counterclockwise.

SYMPTOM	DESIRED RESULT	SCREW ADJUSTMENT	
Flexion too fast or excessive heel rise	Increase Resistance	Turn <b>F</b> clockwise	
Flexion too slow or heel rise not sufficient	Decrease Resistance	Turn <b>F</b> counterclockwise	

#### 2. Extension Resistance



If the knee moves through extension too quickly, increase the extension resistance by turning the adjustment screw clockwise. If the patient is waiting for the knee to reach full extension due to the knee moving too slowly, decrease extension resistance by turning the adjustment screw counterclockwise.

SYMPTOM	DESIRED RESULT	SCREW ADJUSTMENT	
Extension too fast or impact too abrupt	Increase Resistance	Turn <b>E</b> clockwise	
Extension too slow or not sufficient	Decrease Resistance	Turn <b>E</b> counterclockwise	

## STANCE PHASE



### 1. *Stance Flexion Resistance*

Stance flexion resistance can be evaluated during “stand-to-sit” or descending stairs or ramps. Increase or decrease stance flexion so that the patient can feel appropriate resistance to flexion of the knee during these activities.

SYMPTOM	DESIRED RESULT	SCREW ADJUSTMENT	
Not enough flexion resistance	Increase Stance Flexion	Turn <b>S</b> clockwise	
Too much flexion resistance	Decrease Stance Flexion	Turn <b>S</b> counterclockwise	

### 2. *Stance Trigger Sensitivity*

Stance trigger sensitivity can be evaluated during ambulation. Increase or decrease the sensitivity so that the patient can trigger swing flexion appropriately.

SYMPTOM	DESIRED RESULT	SCREW ADJUSTMENT	
Swing flexion triggered prematurely	Increase Trigger Sensitivity	Turn <b>T</b> clockwise	
Swing Flexion difficult to trigger	Decrease Trigger Sensitivity	Turn <b>T</b> counterclockwise	

## ENVIRONMENTAL CONDITIONS

Operating Temperature: -1 - 38° C (30 - 100° F)

## USE IN WATER

The Capital Knee has been approved for use in fresh water.

- The knee should be switched into lock mode when using it in or near water.
- Use caution when walking on wet surfaces.
- After the knee encounters moisture, wipe it dry using a lint-free cloth.

 **WARNING**

- Flexion and extension must be possible at all settings.
- Avoid pinching hazards! Do not place fingers near the flexing area of the knee.
- Patient concerns about the function should be reported to the prosthetist immediately, including but not limited to noise, sudden loss of function, etc.
- Do not disassemble the knee. Contact College Park to arrange a repair or replacement.
- Do not expose this product to corrosive materials, saltwater, or pH extremes.
- Contaminants such as dirt and the use of lubricants or powder may affect the function of the knee and lead to failure.
- Do not use compressed air to clean the knee as it can push dirt inside of the knee.

Failure to follow these technical instructions or use of this product outside the scope of its Limited Warranty may result in injury to the patient or damage to the product.

## WARRANTY INSPECTION AND MAINTENANCE INFORMATION

College Park recommends that you schedule your patients for check-ups per the warranty inspection schedule below.

*High patient weight or activity level may require more frequent inspections. We recommend you visually inspect the following applicable parts for excessive wear and fatigue at each warranty inspection.*

- Knee Assembly, Hydraulic Cylinder, Knee Pad

***Warranty inspection schedule for the Capital:*** Six months, then annually.

## TECHNICAL ASSISTANCE / EMERGENCY SERVICE 24-7-365

College Park's regular office hours are Monday through Friday, 8:30 am – 5:30 pm (EST).

After hours, an emergency Technical Service number is available to contact a College Park representative.

### LIABILITY

The manufacturer is not liable for damage caused by component combinations that were not authorized by the manufacturer

#### CAUTION

College Park products and components are designed and tested according to the applicable official standards or an in-house defined standard when no official standard applies. Compatibility and compliance with these standards are achieved only when College Park products are used with other recommended College Park components. This product has been designed and tested based on single patient usage. This device should NOT be used by multiple patients.

#### CAUTION

If any problems occur with the use of this product, immediately contact your medical professional. The prosthetist and/or patient should report any serious incident\* that has occurred in relation to the device to College Park Industries, Inc. and the competent authority of the Member State in which the prosthetist and/or patient is established.

\*'Serious incident' is defined as any incident that directly or indirectly led, may have led, or might lead to any of the following; (a) the death of a patient, user, or other person, (b) the temporary or permanent serious deterioration of a patient's, user's, or other person's state of health, (c) a serious public health threat.





**Capital:**

COMPONENTES DE ÓRTESES E PRÓTESES EXTERNAS

ANVISA Registro : 80117580371

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**MADE IN THE USA**

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