

PENTAGON®

Five Function Knee Orthosis

Single Posterior Joint

The Pentagon® Orthosis is a posterior fitting, single-jointed upright ROM knee orthosis that provides a patient-friendly alternative to the traditional bulky double upright hinged knee configurations.



Product#: **Adult- 1150 Pediatric- 1050**

Coding  **help** **L1843: PDAC** *verified code*

We do not use PVC-based plastics, nor Latex in any products, which can pose risks to both medical professionals and patients.

- Primarily designed for sagittal plane motion control
- No concern for bony prominence or contralateral pressure
- Adjustable medial and lateral femoral and tibial stabilizing panels

- Ideal for contracture, fracture, motor and sensory management
- No contouring of upright necessary with single joint design
- Calf and thigh segments dynamically shorten and lengthen with patient's extremity to eliminate tissue sheering while maintaining joint alignment



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Pentagon® Orthosis Application Instructions

The PENTAGON® Orthosis is a posterior fitting single jointed ROM knee orthosis.

A. Sizing –

The PENTAGON® Orthosis comes in two sizes, Adult (#1150) measures 23” in maximum length and the Pediatric (#1050), measures 18.5” in maximum length.

B. Application -

- 1) Apply the orthosis by first unfastening the 3 Velcro® straps on the thigh and on the calf sections. Next, open up fully (see figure 1).
- 2) Place the PENTAGON® Orthosis so that the posterior aluminum upright is centered over the back of your leg and the chrome nut for the ROM setting is placed inline with the center of the knee when viewing it from the side (see figure 2 arrow and line).



Figure 1



Figure 2

- 3) Once properly positioned, secure calf cuff and thigh cuff Velcro® closures (see figure 3 and 4). Trim away any excess material on thigh and tibial liner as needed.



Figure 3



Figure 4

- 4) At this point in the fitting process the (2) femoral and (2) tibial plastic stabilizers – (1) medial and (1) lateral (see figure 5) can be repositioned or trimmed to match the dimensions of the patient's leg if necessary. Be sure to smooth all sharp edges after trimming.



Figure 5

- 5) Next, begin fastening the individual straps. Start with the strap at the top of the calf section (see figure 6). Proceed with fastening the additional straps by following the sequence as indicated, finishing with the top strap on the thigh (see figure 7).



Figure 6



Figure 7

6) Figure 8 shows proper alignment and positioning of the PENTAGON® Orthosis on the patients leg with the areas above and below the knee cap trimmed to meet the patients comfort and functional needs.



Figure 8

B. General information –

A notice to the user and/or patient that any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

Any number of the straps can be eliminated to meet your patient's needs. In general it is recommended to leave the straps closest to the knee and at each end of the orthosis to provide adequate stability.

- 1) Wear the brace as instructed by your health care professional. Make sure to follow all specific instructions provided to you regarding weight bearing activities.
- 2) If the brace is being used for contracture management and you have not received guidelines pertaining to wearing the brace, it is recommended to follow these general wearing guidelines.
- 3) Liners and straps can be removed and machine or hand washed when they become soiled. Make sure they are rinsed well and air dried before reapplying correctly to the frame of the brace. Additional sets of liners can be obtained through your health care professional, by calling us at 1-800-837-3888 or by email at info@AnatomicalConceptsInc.com
- 4) Be sure to report to your health care professional any irritation to your skin that arises from wearing the brace.

ACI's orthoses are designed and engineered as prefabricated products to be trimmed, bent, or otherwise modified by a licensed health professional or expert, such as, but not only limited to an orthotist, podiatrist, or prosthetist, for custom fitting to the patient.

OUR WARRANTY IS IMMEDIATELY VOID IN ITS ENTIRETY IF THE PRODUCT IS NOT CUSTOM-FITTED BY A LICENSED MEDICAL PROFESSIONAL TRAINED TO FIT ORTHOTIC DEVICES AS DESCRIBED AND ILLUSTRATED IN ACI'S INSTRUCTIONS.

The PENTAGON®
Five Function Knee Orthosis
Instructions

1. Free Motion:

Function: Allows for free knee range of motion from 0° (Fully Extended) to 110° (Flexion). The Pentagon® Orthosis is shipped in the Free Motion position.

2. Variable Range of Motion:

Function: Allows for independent limitation of both Flexion and Extension of the device.

Flexion Stop Adjustment: From the Free Motion position or with the Extension stop already set, the Flexion stop can be set by flexing the joint to the required degree corresponding to the red ROM indicator. Then with the enclosed wrench turn the chrome nut on the right side of the brace clockwise until tightened. (See Figure 1) To return the device back to the Free Motion position, reverse the previous procedure.



Figure 1

Extension Stop Adjustment: From the Free Motion position or with the Flexion stop already set, the Extension stop can be set by extending the joint to the required degree corresponding to the red ROM indicator. Then with the enclosed wrench turn the chrome nut on the left side of the brace clockwise until tightened. (See Figure 2) To return the device back to the Free Motion position, reverse the previous procedure.



Figure 2

3. Fixed Motion Lock:

Function: Sets both the Flexion and Extension limitations into one fixed position.

Adjustment: From the Free Motion position flex or extend the joint to the desired position corresponding to the red ROM indicator. Then turn both chrome nuts clockwise until tightened. This will lock the joint in the desired position eliminating any Flexion or Extension motion beyond the set position. (See Figure 3) To return the device back to the Free Motion position, reverse the previous procedure.

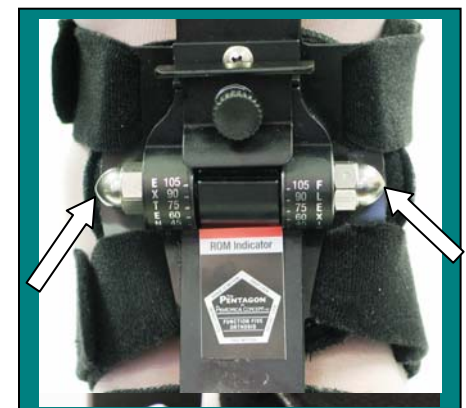


Figure 3

4. Drop Lock:

Function: Locks the unit in a Fully Extended position.

Adjustment: There are two mechanisms for this adjustment, the center knob (A) and the slide lever (B). (See Figure 4) From the Free Motion position and with the joint fully extended, turn the center knob counterclockwise until it stops. The slide lever will then engage (lock) by dropping down. Please note: Drop Lock function is engaged only when joint is fully extended.



Figure 4

To temporarily disengage (unlock) the Drop Lock function and restore the Free Motion function, lift slide lever upward while flexing joint slightly. Push and hold center knob inward, then release slide lever. (See Figure 5) This convenient feature allows a standing patient to quickly be seated. Then by simply lifting and releasing the slide lever again, or by fully extending the joint, the Drop Lock function will again be re-engaged.

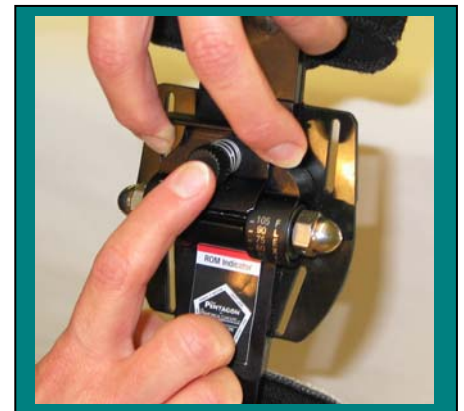


Figure 5

To permanently disengage (unlock) the Drop Lock function, and restore the Free Motion setting, lift slide lever upward. Push and hold center knob inward, then release slide lever. Then turn knob clockwise until it fully stops. (See Figure 6) This will lock the slide lever above the Drop Lock mechanism allowing the Free Motion function.



Figure 6

5. Ratchet Lock:

Function: Stops Flexion while allowing for unlimited Extension to 0°.

Adjustment: There are two mechanisms for this adjustment, the center knob (A) and the slide lever (B) (see figure 6) From the Free Motion position and the joint flexed, turn the center knob counterclockwise until it fully stops. Then as the joint is extended, the slide lever will drop down preventing flexion; however it will continue to allow active or passive extension. In doing so it allows extension but prevents flexion. It does this repeatedly until full extension is achieved. (See Figure 7)

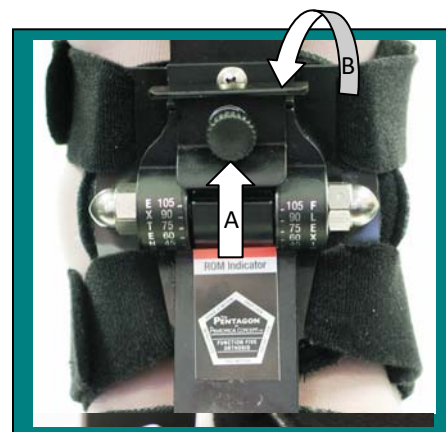


Figure 7

To temporarily disengage (unlock) the Ratchet Lock function, and restore the Free Motion function, lift slide lever upward while flexing joint slightly. Push and hold center knob inward, then release slide lever. (See Figure 8) This convenient feature allows a standing patient to quickly be seated. Then by simply lifting and releasing the slide lever again, or by fully extending the joint, the Ratchet function will again be re-engaged.



Figure 8

To permanently disengage (unlock) the Ratchet Lock function, and restore the Free Motion setting, lift slide lever upward. Push and hold center knob inward, then release slide lever. Then turn center knob clockwise until it fully stops. (See Figure 9) This will lock the slide lever above the Ratchet mechanism allowing the Free Motion function.



Figure 9

PENTAGON® Orthosis Strap Modification Instructions

The PENTAGON® Orthosis has been designed with removable Velcro® tabs on the end of each strap to provide a quick and simple method of shortening each strap when necessary. Follow these instructions to assure that the Velcro® fastening system is reattached properly and provides adequate stability after the straps have been shortened.

- 1) Pull away longest (inside) end of Velcro® tab (see figure 1). Then proceed to remove shortest (outside) end of Velcro® tab (see figure 2).



Figure 1



Figure 2

- 2) Use scissors to cut strap to desired length (see figure 3). Then reattach long end of Velcro® tab on the inside portion of the strap (see figure 4).



- 2) Finish reattaching Velcro® tab by folding short end over the end of the strap and reattaching the hook side of the Velcro® to the outside of the strap (see figure 5).



Figure 5

- 3) After strap has been shortened and secured properly it should look like the photo in figure 6.



Figure 6