



Manufacturer

## **Nabtesco Mobility Assist**

Assistive Products Department, Accessibility Innovations Company, Nabtesco Corporation  
Uozakihamamachi 35, Higashinada-Ku, Kobe, 6580024 Hyogo, Japan  
Tel: +81 (0)78 413 2724, FAX: +81 (0)78 413 2725  
Email : [welfare@nabtesco.com](mailto:welfare@nabtesco.com) / Web: <http://welfare.nabtesco.com>

**Nabtesco Mobility Assist**

TM



# PREMIUM

ALLUX is the world's first microprocessor knee to provide a realistic motion in comparison to a real life knee, using a microprocessor to increase safety and convenience.

The Allux provides a natural movement and secure feel that has never been experienced before. The knee is great for patients with various lifestyles.

"I felt probably pretty similar to what I would feel when I had my leg. When I put it on for the first time, I noticed it was very smooth. And I know a lot of different microprocessor units I tried haven't felt that way. What I felt very smooth when I walked was something that I like."



# Four bar linkage design

The knee has been referred to as a natural knee since the knee joint movement resembles that close to a knee joint. The Four bar linkage design allows smooth transition to swing phase, and with increased toe clearance it helps to reduce the risk of a fall.

# Total phase microprocessor control

The Allux knee recognizes and adapts automatically while in stance and swing. Therefore, the knee joint can provide stumble recovery even in a flexed position. Mechanical control limits the movement since the knee can only give constant movement, but a microprocessor knee allows varied movement which expands flexibility in daily life.

Innovation



## The world's first combined four bar linkage design and total phase microprocessor control

ALLUX offers solutions for patient issues which have not been approached by other manufacturers. There were high demands for a combination of four bar linkage design and microprocessor control from amputees and practitioners. Nabtesco took on the high tech hurdle in order to meet their demands. It took a long time to come to fruition, but we can finally introduce the knee.

### Enhanced function of swing phase More natural gait



Microprocessor controls hydraulic cylinder and provides a smooth swing phase at various walking speeds. Finely tuned response coupled with the four bar linkage allows for a natural gait. The User will feel how the ALLUX can smoothly transition from stance phase to swing phase. ALLUX four bar linkage is designed for ease of flex at initial swing.

### Increased toe clearance Reduced risk of stumbling



Compared to a single axis knee joint, the four bar linkage can shorten the length from knee center to toe during swing phase, so increased toe clearance decreases the risk of stumbling. Increased toe clearance addresses potential stumbling occurrences, which increases safety while providing for a true prosthetic height which will reduce risk of back pain.

### Enhanced safety for stumble recovery



The microprocessor knee is programmed to perceive constant knee position in order to respond to abnormal situations. For instance, if prosthetic side gets stuck on an obstacle during swing phase, the knee can detect abnormal conditions and immediately increase resistance to prevent knee buckling.

### Yielding function for going downstairs and slopes



Yielding function allows patient to go down stairs and slopes step over step smoothly. ALLUX does not require special movement to activate yielding. If your patient already has experience in using yielding, they can easily adjust to yielding with four bar linkage design.



## Safety lock function



The knee locks in a desired position when knee is loaded and kept in that flexed position for a few seconds. This feature allows amputees to load weight on prosthetic side allowing amputee to transfer weight their prosthetic leg and rest their sound leg. This feature can be used for a variety of activities such as a squatting position, carrying a heavy object, and standing for a long period of time in a relaxed position.

## Beneficial for patients with long residual limbs



When in a seated position, the four bar linkage folds under itself allowing for a more natural sitting position. ALLUX can offer increased choice of functional components such as rotator and pin liner system. ALLUX can also be an option for long transfemoral amputees who never had the option to wear a microprocessor knee because of length of their residual limb.

## Remote control allows 5 different modes



There are 5 different modes you can program on the remote control based on patient's needs. If patient enjoys riding bicycle, we can program free resistance mode on one of 5 buttons. If the patient wants to go for a hike and prefers a higher flexion resistance for going down slopes this can also be programmed. This function has ability to expand flexibility in a patient's daily life.

## Average battery life is 4 days. Emergency battery included for security



ALLUX battery life is approximately 4 days(5000 steps per day on prosthetic side). Charge an empty battery in 3 hours. In case of low battery, emergency battery can be used.

## Great flexion angle in a microprocessor knee



Maximum knee flexion angle of 155 degrees is the greatest level of flexion angle in a microprocessor knee category. This wide flexion angle is good for movements such as kneeling, changing shoes etc.

## Specification

Specification	NE-Z4	NE-Z4SH
Type	NE-Z4	NE-Z4SH
Name	ALLUX™	
Proximal connection	Pyramid	Threaded head
Height	11 1/2 in(295 mm )	11 1/3 in(287mm)
Knee weight	3.3 lb (1510g)	3.3 lb (1500g)
Max. flexion	155°	
Weight limit	K3(MOB3):125kg(275lb) K4(MOB4):100kg(220lb)	
Battery	Lithium ion battery	
Battery life	approx. 4 days (5000 steps per day on prosthetic side)	
Supplemental backup battery	Lithium ion battery	
Water resistance	IP42	
Activity level	K2~K4	

\*Specifications are subject to be changed without a prior notice

## Wireless dongle / Programming software

1. Wireless dongle
2. ALLUX™ software

## WEB/ Video

3. ALLUX.info
4. QR code of ALLUX. info

## Suggested L-Codes

- L5613: A/K Polycentric hydraulic swing
- L5856: Microprocessor control stance and swing with sensor
- L5845: Adjustable stance flexion
- L5848: Stance extension dampening adjustable
- L5850: Knee Extension Assist
- L5930: High Activity Knee Frame (K4 only)



1



2



3



4