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*Together in Motion™*

# Active-K

CPM • CAM • Coordination



## INTRODUCTION

The Active-K is a motorized physiotherapy unit that delivers a unique mix of rehabilitation therapies through a single device. Combining the benefits of CPM (Continuous Passive Motion), CAM therapy (Controlled Active Motion) and the onboard protocols, the patient is able to regain coordination and reduce proprioceptive deficit.

Using the Active-K allows patients to regain painless mobility of hip and knee joints at an early post-operative stage and stimulates the healing process. Additionally, the active component of the therapy unit is intended to enhance proprioception and functional stability (strength) as mentioned at an early stage and thus improve coordination following joint surgery.

### FEATURES

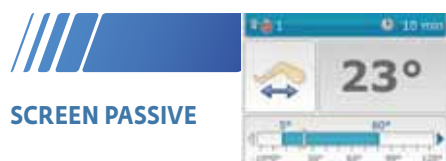
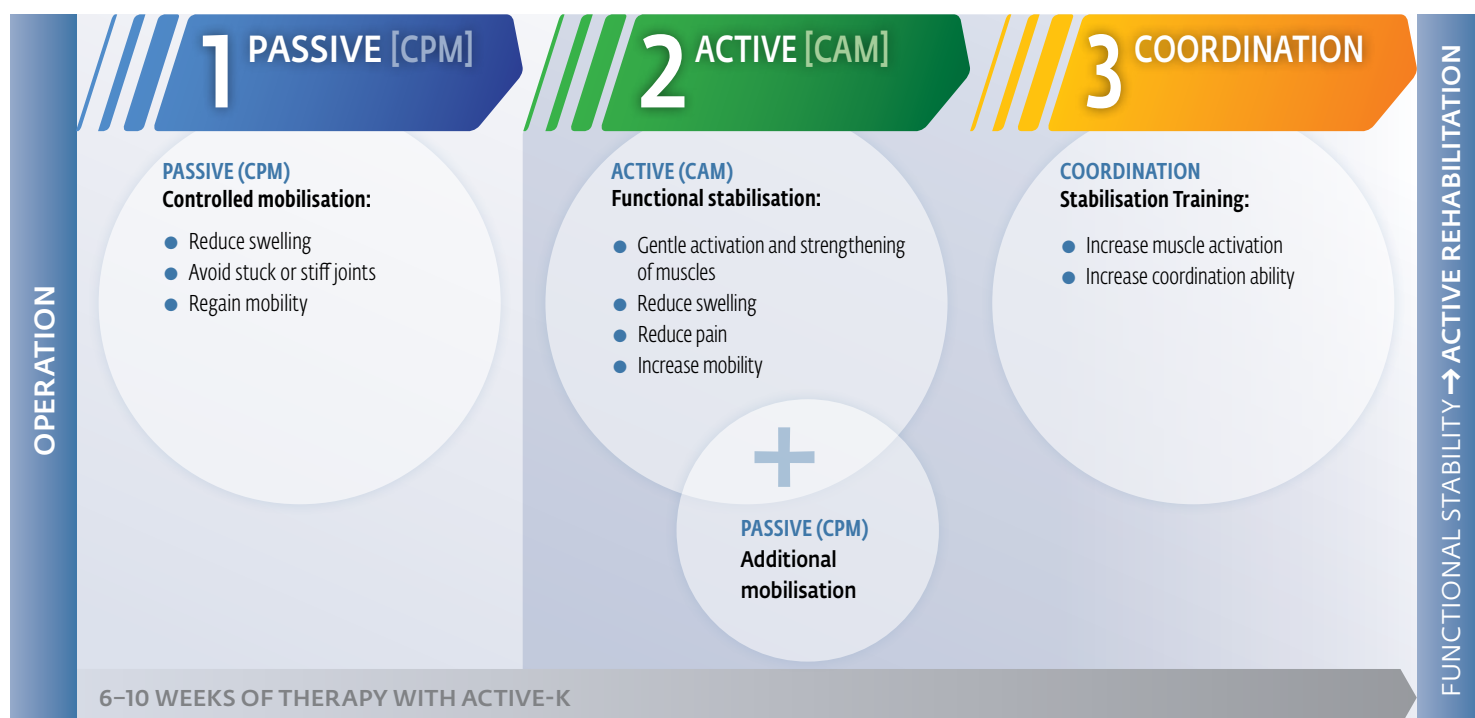
- Lightweight (17 kg) robust design, able to withstand +/-30 kg of force
- Designed to ensure anatomically correct movements are maintained
- Can be secured to a treatment table or bed using the fold-out stabilization supports and/or optional straps
- Integral footplate sensor enables exercise forces to be measured
- Computer controlled motor for CAM and coordination therapies
- Fully adjustable to suit different patient sizes and heights
- Advanced, interactive hand controller incorporating a full color LED screen for instant patient feedback
- Controller features an easy to use icon based menu system
- Patient Chip Card for storage of therapy data
- A range of pre-programmed protocols for specific indications
- 2 year warranty

### Additional Therapeutic Benefits for Patients

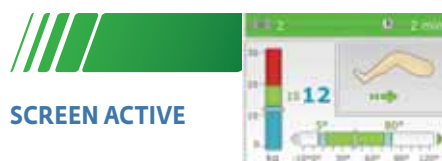
- Enhancement of joint metabolism
- Prevention of joint stiffness
- Promotion and regeneration of cartilage and damaged ligaments
- Faster hematoma / re-absorption
- Improved blood & lymph circulation
- Prophylaxis for thrombus and embolism syndromes
- Bridging the gap from Passive motion to Active training with resistive therapy during rehabilitation
- Expedites coordination & sensory perception following surgery



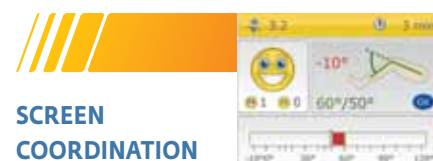
## THREE THERAPEUTIC SYSTEMS IN A SINGLE DEVICE



SCREEN PASSIVE



SCREEN ACTIVE



SCREEN COORDINATION

**Continuous passive motion (CPM)** of the operated joint within the set motion parameters for extension and flexion

**Active (CAM)** concentric and/or eccentric training for the patient. Adjustable values:

- Extent of motion
- Range of active training (maximum 0° to 90°)
- Concentric/eccentric training (separate for each direction of motion)
- Amount of load from 0 kg (passive) to a maximum of 30 kg (separate for each direction of motion)

Interactive feedback is given to the patient via the display and an LED indicator on the device's rotational axis

Different **coordination programs** are available, which have developed based on existing physiotherapy protocols (such as the angle reproduction test) and which provide a game play element to increase the user's motivation

The Chattanooga™ Active-K physiotherapy unit is an important supplemental adjunct to medical and therapeutic usage in hospitals, clinics, general practices and rental services. Physician, physical therapist and patient alike benefit from this new, improved quality in post-operative care.

The Active-K has the capacity to allow clinicians to perform therapeutic strengthening exercises by allowing muscular contractions using the following methods, depending upon the stage of rehabilitation:

- Concentric
- Eccentric
- Isokinetic
- Isometric

Clinical evidence suggests each one of these different methods of muscular contractions has a specific functionality in strengthening different aspects of the muscles.



## ACTIVE-K CPM, CAM & COORDINATION

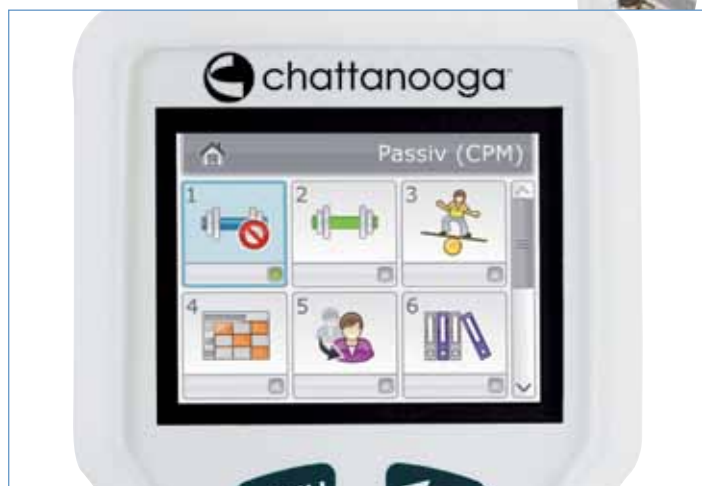
Active-K is a true world innovation: As the only motorised motion device on the market, it combines 3 therapy approaches: CPM, CAM and coordination.

### Maximum Stabilisation

means leg is securely  
guided from foot to thigh

### Intuitive User Design

with interactive hand  
controller display





**Maximum Safety**  
through specific controlled movements

**Latest Sensor Technology**  
measures the exerted force

**SENSOR**  
inside

**High Stability**

thanks to the fold-out  
fixation wing and belt  
system (optional)

## COMPREHENSIVE REHABILITATION

Active-K offers special programs for regaining coordination abilities for comprehensive and effective motion therapy. These have been developed from existing physiotherapy treatment protocols.

### MAINTAIN FORCE



#### to increase coordination ability:

- The patient must hold a randomly generated load in or against the current direction of movement at regular intervals
- The load must be held for 4 seconds

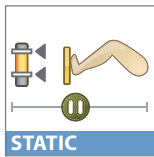
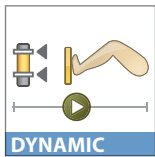
#### Maintain force statically:

- The patient must hold the required load for 4 seconds
- The device doesn't move during this time – it is static

#### Maintain force dynamically:

- The patient must hold the required load for 4 seconds
- The motion device is actively moved during this time – it is dynamic

### FINDING THE ANGLE



#### to increase awareness of the current knee angle position:

- Based on the angle reproduction test
- The patient must push the OK button when they reach different, pre-set knee angles

#### Finding the angle passively:

- The patient is asked about an angle after three motion cycles between extension and flexion
- Patient has three cycles to establish the position and confirm with the OK button

#### Finding the angle actively:

- Equivalent to the program "finding the angle passively", only in active mode
- The patient must bend and stretch their knee

### MONITORING



#### through feed-back:

- Deviations within the 10° tolerance range are considered successful – positive feedback on the display
- Deviations outside the 10° tolerance range are considered unsuccessful – negative feedback on the display

### FREE TRAINING



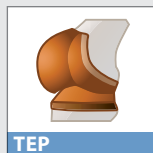
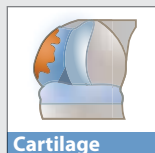
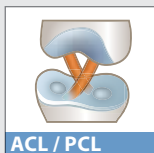
#### Additional functions for active training:

without angle limitation, but against or with a set load.

- Display shows the active setting for the extent of motion
- Positive feedback is given when a larger angle is achieved in extension or flexion

## APPROPRIATE TREATMENT AT THE TOUCH OF A BUTTON

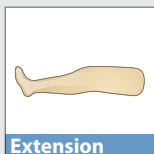
### 1. SELECT PROGRAM



Pre-programmed treatment processes provide ease of use:

- Each therapy program comprises 6 levels
- Each level corresponds to about one week of therapy
- Each level lasts 40 minutes
- Program runs automatically with increasing activity rate (level 1 = 100% passive, level 6 = 1% passive)
- from level 3 and 4 the extent of motion is automatically set

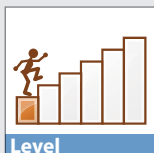
### 2. ADJUST ROM



Pre-set therapy program for the most common indications:

- Cruciate ligament rupture
- Cartilage damage
- Prostheses implants

### 3. SELECT TREATMENT LEVEL



With its pre-installed therapy programs, Active-K enables treatment to be given in different operating modes and functions – all at the touch of a button!

## TECHNICAL DATA



RANGE OF MOTION		
EXTENSION/FLEXION "KNEE"	10° / 0° / 120°	
EXTENSION/FLEXION "HIP"	0° / 7° / 115°	
FUNCTIONS		
"PASSIVE" MODE	Configurable settings: set extension/flexion as passive or active, therapy time, speed, reverse-on-load (safety/spasm switch), warm-up programme, pause extension and/or flexion, muscle stimulation	
"ACTIVE" MODE	Adjustable loads, extension or flexion always separate:	
	0 kg	Passive mode in flexion/extension direction
	1 – 30 kg	Set the load the patient has to actively push so that the device extends or flexes.
	-1 – -30 kg	Set the load the patient has to actively pull so that the device extends or flexes.
	Configurable settings: set extension/flexion as passive or active, therapy time, speed, reverse-on-load (safety/spasm switch), warm-up programme, pause extension and/or flexion, load extension, load flexion, active zone (max. 0° / 0° / 90°)	
"COORDINATION" MODE	Five different programmes for increasing coordination skills are available in Coordination mode.	
	Maintain load statically / dynamically	Configurable settings: Set extension/flexion as passive or active, treatment time, speed, reverse-on-load (safety/spasm switch), warm up program, pause extension and/or flexion, extension load range, flexion load range, active zone (max. 0° / 0° / 90°)
	Find angle active / passive	Configurable settings: Set extension/flexion as passive or active, treatment time, speed (passive), reverse-on-load (safety/spasm switch, passive), warm-up programme, active load extension, load flexion (active)
	Free training	Configurable settings: Treatment time, load extension, load flexion
SPECIAL FUNCTIONS		
TREATMENT PLANS	Available for the three most common indications.	
	For rehabilitation after: - a cruciate ligament rupture - cartilage damage - prosthesis implant Each treatment plan has 6 stages progressively developing from passive to active and coordination. The treatment time is 40 minutes per use (stage). Configurable settings for each treatment plan: Range of passive extension/flexion, level 1 to 6	
KEY LOCK	Prevents treatment parameters being accidentally adjusted	
THERAPY DOCUMENTATION	Records overall treatment progress	
NEW PATIENTS	Default settings for new patients	
PATIENT CHIP CARD	For saving individual treatment parameters	
SETTINGS MENU	Enables special settings such as language choice, transport setting	
DIMENSIONS		
PATIENT HEIGHT	Approx. 135 to 205 cm	
PRODUCT DIMENSIONS (L/W/H)	96 x 38 x max. 57 cm	
SHIPPING DIMENSIONS (L/W/H)	106 x 42.5 x 420 cm	
WEIGHT		
MOTION DEVICE	17 kg	
HAND CONTROL	0.5 kg	
SHIPPING WEIGHT (INCL. ACCESSORIES)	23.5 kg	
PART NUMBERS		
CHATTANOOGA™ ACTIVE-K	80.00.072	
CHATTANOOGA™ ACTIVE-K BELT SET (4 BELTS)	0.0040.100	
PATIENT CHIP CARD CHATTANOOGA™ ACTIVE-K	2.0040.175	
MARKER PEN FOR PATIENT CHIP CARD	0.0031.006	
"MUSCLE STIMULATION" CONNECTION CABLE	2.0037.024	
TRANSPORT TROLLEY	80.00.056	
TRANSPORT CONTAINER	TK-001	