ARTROMOT[®]

Continuous Passive Motion and Controlled Active Motion Devices



INTRODUCTION

ARTROMOT®

ARTROMOT CPM products are developed and manufactured in Germany by DJO Germany (Ormed GmbH), part of DJO Global. As the market leader in motorized CPM devices, DJO Germany has over 30 years of experience in designing leading edge CPM products. All products are classified MDD IIa and registered according to all current valid standards, for providing maximum safeness in clinical and rental usage.

DJO Global is a leading global developer, manufacturer and distributor of high-quality medical devices that provide solutions for musculoskeletal health, vascular health and pain management. The company's brands address the continuum of patient care from injury prevention to rehabilitation after surgery, injury or degenerative disease.



ARTROMOT: THERAPY WITH MOTORIZED CPM EQUIPMENT

ARTROMOT CPM Devices Get You and Your Patients Going

ARTROMOT devices are primarily used in the post-operative treatment and rehabilitation process following joint surgery, using CPM (continuous, passive motion) therapy.

ARTROMOT CPM devices are available for

- The shoulder
- The knee and hip
- The elbow
- The ankle

Benefits at a Glance

- Prevents motion-limiting adhesion and joint stiffness (arthrofibrosis)
- Promotes healing of articular cartilage, tendons, ligaments and soft tissue
- Improves hematoma/fluid resorption
- Reduces pain
- Improves metabolism
- Reduces length of hospital stay and therapy duration

Recommended Therapy

ARTROMOT CPM devices are normally employed either directly after surgery or in the first post-operative week.

The daily treatment schedule may vary with the injury or condition to be treated:

- 3 to 4 hours (general recommendation)
- Up to 24 hours in the case of articular cartilage surgery or injury

Home Care / Rental Service

ARTROMOT CPM products are used in hospitals as well as in home care for out-patient treatment.

The ARTROMOT CPM devices may be prescribed by orthopaedic surgeons.

In many countries there is also the option of billing patients directly, via rental programs.

CLINICAL STUDIES

Evidence-based therapy

Excerpt from Prof. Kirschner's meta-analysis*.

"Thanks to the overall benefits conferred, CPM must today be used as an essential treatment modality (...) in an inpatient as well as an outpatient setting because clear treatment advantages have been observed (...)."

Excerpt from an open, prospective, randomized clinical multi-center study involving patients with massive rotator cuff rupture:**

"Statistically significant results were obtained, attesting to the superiority of combination therapy comprising CPM and physiotherapy vs patient treatment based only on physiotherapy.

• In the CPM group 90° abduction was achieved much earlier

• Patients in the CPM group were able to resume occupational activities more quickly

CPM therapy markedly reduced pain

• There was no evidence of complications or dangers posed by CPM treatment in the domiciliary setting"

Results: CPM therapy with ARTROMOT

	META-ANALYSIS*	MULTI-CENTER STUDY**
Reduces length of hospital stay and overall therapy duration	*	
Considerably reduces the rate of mobilization under anesthesia	*	
Improves articular cartilage healing	*	
Reduces risk of thrombosis	*	
Improves hematoma/fluid resorption	*	
Reduces pain	*	**
Improves joint functionality	*	**
Reduces length of disability		**

* Results of the meta-analysis, Kirschner, P. (2004): "CPM-Continuous Passive Motion: Behandlung verletzter und operierter Kniegelenke mit Mitteln der passiven Bewegung. Metaanalyse der gegenwärtigen Literatur"

Der Unfallchirurg, Band 107, 4/04

**Results of the open, prospective, randomized clinical multi-center study study centers: Klinik und Poliklinik für Orthopädie der Universität zu Köln: P. Eysel, P. König, J.W.P. Michael; Stiftung Orthopädische Universitätsklinik, Heidelberg: M. Loew, M. Rickert; Klinikum Rechts der Isar, München: A. Imhoff, V. Martinek, S. Braun; DRK Klinikum Westend, Berlin; B. Dreithaler, C. Koch; Arcus Sportklinik, Pforzheim: M. Speck, L. Bös, A. Bidner; Klink am Ring, Köln: S. Preis, F. Windgasse, J. Bernholt, T. Rudolph, N. Bernards; Praxis Dr. Hübscher, Kaufbeuren: Dr. Hübscher

"Effektivität der postoperativen Behandlung mit CPM-Bewegungsschienen in Kombination mit krankengymnastischer Therapie im Vergleich zu ausschließlich krankengymnastischer Therapie bei Patienten mit vollständiger Ruptur der Rotatorenmanschette"

Part Number	Description
80.00.070	ARTROMOT Active-K Therapy Unit
ARTROMOT ACTIV	/E-K patient chip cards
0.0040.210	passive: blue (only CPM functions)
0.0040.211	active: green (only CAM functions)
0.0040.212	protocol: orange (only therapy protocols)
0.0040.213	special: red (all functions)
0.0040.21X-S	Patient chip card set including: patient chip cards upon individual choice (10x) Marker pen for patient chip card (2x) Eraser for patient chip card (2x)
0.0031.006	Marker pen for patient chip card
5001558	Eraser for patient chip card
0.0040.100	Active-K strap set (4 straps)
2.0037.024	Connection cable for muscle stimulator
80.00.056	Transport trolley
80.00.068	Transport trolley (modular)
TK-001	Transport box

TECHNICAL SPECIFICATIONS

Range of Motion Extensi	
Knee	10°/0°/120°
Нір	0°/7°/115°
Features	
Extension/Flexion	ROM adjustment passively (by using the hand controller) or active ROM adjustment (by bending and stretching the leg)
Pauses (Extension and/or Flexion)	1 – 59 s/1 – 59 min
Timer	1 – 59 min/1 – 24h/continuous operation
Warm up protocol	Gradual progression to the maximum set ROM
Speed	5 % - 100 % (separately for passive of active training)
Reverse on load in steps	10 kg – 60 kg, patient safety feature in passive mode
EMS control	For an optimal combination of CPM treatment and electrotherapy
New patient	Activates the default setting for new patients
Therapy documentation	Graphic representation of the overall treatment cycle
Key lock function	0 – 4 in steps, limits the changeable features and prevents accidental changes of the parameter setting
Transport setting	Moves the carriage to the transport position
Set up	For basic adjustments of the device (e.g. language set up, service menu, date/time)

ACTIVE-K FOR THE KNEE AND HIP JOINT



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 the 3 mayor indications (ACL/PCL, Cartilage repair, TEP) enables easiest usage
- 2 year warranty

The Active-K has the capacity to allow clinicians to perform therapeutic strengthening exercises by allowing muscular contractions using the following methods:

- Concentric
 Isokinetic
- Eccentric

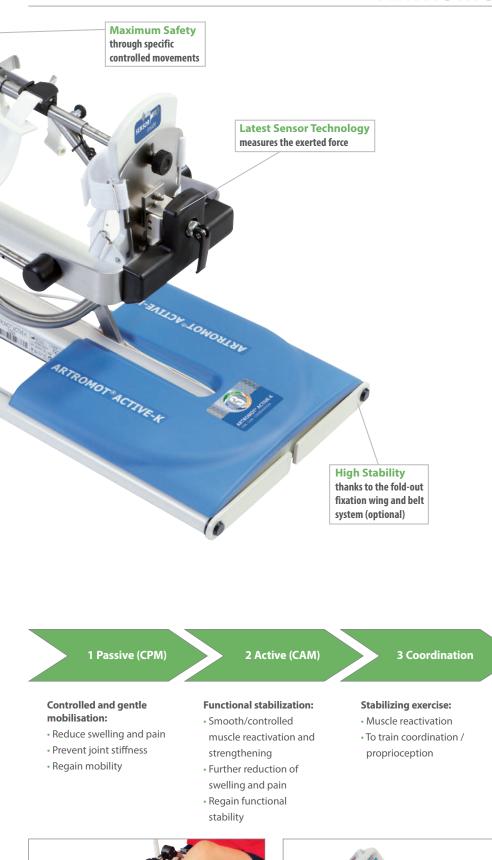
Isometric

- 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

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TECHNICAL SPECIFICATIONS (Continued)

Additional features for active exercising

Force (Extension and/or Flexion)	Separately for each direction: - Concentric / eccentric training - Adjustable forces: from 0 kg (passive) to max. 30 kg
Active Zone	Zone within the set ROM for active training (max. 0° / 0° / 90°)
Coordination features	
Maintain force static/ dynamic	Enables isometric or limited isokinetic training
Find angle active/passive	Increases the perception of the current knee angle position
Free training	Active training against adjusted force resistance over entire possible ROM 10° / 0° / 120°
Adjustable features with	in the therapy protocols
Indication	ACL/PCL, Cartilage, TEP
Extension/Flexion	ROM adjustment passively (by using the hand controller)
Treatment level per indication	1-6, increasing activity rate (level $1 = 100 \%$ passive / level $6 = 1 \%$ passive)
Timer	Duration of a level 20 min – 2 h
Demo	Easy demonstration of a treatment level, to train the patient
Default setting	e.g. language set up, service menu, reverse on load, new patient
Dimensions	
Weight	17 kg
Dimensions*	96 x 38 x max. 57 cm
Suitable for patient height	approx. 135 — 205 cm
max. permanent load on carriage	30 kg
max. patient weight	Approx. 275 kg

* Dimensions are listed as L x W x H

Part Number	Description
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80.00.045	ARTROMOT-K1 Classic
80.00.040	ARTROMOT-K1 Standard
80.00.041	ARTROMOT-K1 Standard with chip card
80.00.042	ARTROMOT-K1 Comfort
80.00.043	ARTROMOT-K1 Comfort with chip card
80.00.055	Transport trolley
80.00.065	Transport trolley (modular)
TK-001	Transport box
0.0034.048	ARTROMOT chip card
2.0037.024	Connection cable "muscle stimulation"

ARTROMOT®-K1

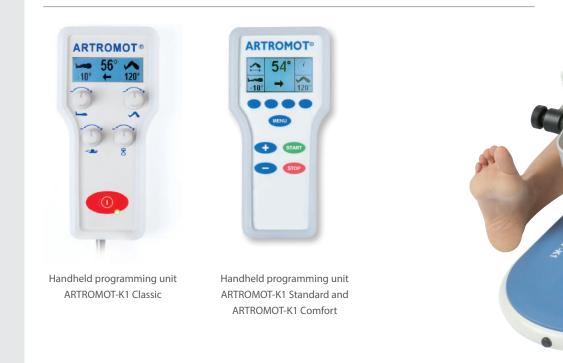
FOR THE KNEE AND HIP JOINT

Making good things great!

- **ARTROMOT-K1** combines the best features of the time-tested ARTROMOT knee machine with state-of-the-art, trend-setting technology
- ARTROMOT-K1 was developed for the demanding use in clinics and home care/rental programs
- Using the **ARTROMOT-K1** is made easy by intuitive operation of the handheld programming unit with self explanatory symbols

INDICATIONS

- Arthrotomy and arthroscopy procedures in combination with synovectomy, arthrolysis
- Treatment following mobilization of joints in anesthetized patients
- Surgical treatment of fractures and pseudoarthrosis
- Exercise-stable osteosynthesis
- Operations on soft tissue in the joint area
- Patellectomy
- Corrective osteotomy
- Meniscectomy
- Total knee/hip replacement
- ACL/PCL reconstruction
- Complex knee surgery
- Articular cartilage surgery, e.g. autologous chondrocyte transplantation (ACT)





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TECHNICAL SPECIFICATIONS

Knee	-10° / 0° / 120°	
Hip	0°/7°/115°	
ARTROMOT-K1 Classic - Fe		
Pauses	0 - 59 s	
(extension and flexion)	1 - 59 min	
Speed	5% - 100 %	
Key lock function	To prevent accidental changes of the parameter settings	
ARTROMOT-K1 Standard - Additional features		
Timer	1 - 59 minutes / 1 - 24 hours / continuous operation	
Pauses (extension and/or flexion)	0 - 59 seconds / 1 - 59 minutes	
Reverse on load in steps	1 - 25 / patient safety feature	
Warm up protocol	Gradual progression to the maximum range of motion	
Total therapy time	Added sum of the therapy sessions	
New patient	Activates the default settings for new patients	
Transport setting	Moves the carriage to the transport position	
Service menu		
ARTROMOT-K1 Comfort -	Additional features	
EROM repeat (extension or flexion)	Exercises are performed at a higher rate in the end range of motion	
Stretching (extension or flexion)	For gradual and smooth increase of the range of motion	
Therapy documentation	Graphic representation of the overall treatment cycle	
EMS control	For an optimal combination of CPM treatment and electrotherapy	
Workout protocol	Combines various functions of the comfort model in one protocol	
Comfort protocol	Warm up in the EROM of extension and flexion	
ARTROMOT-K1 with Chip	Card - Additional features	
Patient chip card	Stores patient-specific therapy parameters	
Dimensions		
Dimensions Weight	11 kg (24.4 lb)	
	11 kg (24.4 lb) 97 x 36 x 23 cm (38.1 x 14.1 x 9.0 in)	
Weight	97 x 36 x 23 cm	
Weight Dimensions Suitable for	97 x 36 x 23 cm (38.1 x 14.1 x 9.0 in)	

Part Number	Description
80.00.023	ARTROMOT-S3
80.00.024	ARTROMOT-S3 Comfort
0.0034.048	ARTROMOT chip card

ARTROMOT®-S3

FOR THE SHOULDER JOINT

The best choice for Shoulder Rehab!

Combining tested features, such as the patient chip card, the easy swift conversion, the anatomically correct motion, with a streamlined design, the **ARTROMOT-S3** is one of the most ergonomically designed CPM devices for the shoulder.

It also features a **handheld programming unit with LCD graphic display**, which has a wide screen with large self-explanatory symbols and an intuitive menu navigation for ease of use.

INDICATIONS

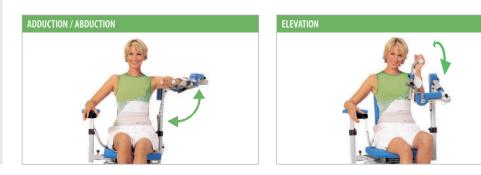
- Arthrotomy and arthroscopy procedures in combination with synovectomy, arthrolysis
- Treatment following mobilization of joints in anesthetized patients
- Surgical treatment of fractures and pseudoarthrosis
- Exercise-stable osteosynthesis
- Endoprosthetic implants
- Surgical treatment of impingement syndrome
- Acromioplasty
- Decompression surgery
- Rotator cuff reconstruction





Handheld programming unit

Patient chip card for storage of therapy data



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INTERNAL / EXTERNAL ROTATION



TECHNICAL SPECIFICATIONS

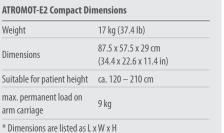
Range of Motion	
Adduction/abduction	0°/30°/175°
Internal/external rotation	90° / 0° / 90°
Elevation	0°/30°/175°
Horizontal adduction abduction (manual)	0°/0°/120°
ARTROMOT-S3 - Features	
Timer	1 - 300 min. / continuous operation
Pauses	0 - 30 seconds
Speed (ABD/ADD)	1 % - 100 %
Reverse on load in Steps (motor A and B separately)	1 - 25 / patient safety feature
Motor control	ON/OFF for isolated motion, ab-/adduction or internal-/ external rotation
Synchronized motors	ON = PNF-like motion pattern OFF = Randomised, asynchronised motion
Total therapy time	Added sum of the therapy sessions
New patient	Activates the default settings for new patients
Transport setting	Moves the motors into the transport position
Patient chip card	Stores patient-specific therapy parameters
Key lock function	Prevents accidental changes of the parameter settings
Service menu	
ARTROMOT-S3 Comfort - /	Additional features
Head rest	For comfortable, optimal patient positioning
Shoulder positioning	Prevents evading movements
Oscillation	Higher rate of motion in the EROM
Stretching (ABD or I-ROT or E-ROT)	Careful and smooth increase of the ROM
ISO ABD ROT protocol	For separate exercising in both directions
Warm-up protocol	Gradual progression to the maximum ROM
Therapy documentation	Graphic presentation of the overall treatment cycle
Dimensions	
Weight	25 kg (55.1 lb)
Dimensions	87.5 x 57.5 x 58 cm (34.4 x 22.6 x 22.8 in)
Transport dimensions	37 x 57.5 x 58 cm (14.5 x 22.6 x 22.8 in)
Suitable for patient height	Approx. 120 – 210 cm
max. permanent load on arm carriage	12 kg

Part Number Description

80.00.031	ARTROMOT-E2 (chair model)
80.00.033	ARTROMOT-E2 compact (pole-mount model)
0.0034.048	ARTROMOT chip card

TECHNICAL SPECIFICATIONS

Range of Motion Extension/flexion $-5^{\circ}/0^{\circ}/140^{\circ}$ Pronation/supination 90°/0°/90° ATROMOT-E2 - Features ON/OFF for isolated motion Motor control extension/flexion or pronation/ supination ON = PNF-like motion pattern OFF = Randomised, Synchronized motors asynchronised motion 1% - 100% Speed 1-59 min/1-24h/continuous Timer operation Pauses 1 – 59 s/ 1 – 59 min Reverse on load in steps 1 - 25/patient safety feature (motor A and B separately) Added sum of the Total therapy time therapy sessions For gradual progression to the Warm up protocol maximum range of motion For storage of the Patient chip card therapy parameters Activates the default settings for New patient new patients For separate exercising in ISO Motion protocol both directions Higher rate of motion **EROM** Repeat (EX/PRO - FLEX/SUP) in the FROM Careful and smooth increase of Stretching (EX - FLEX - PRO - SUP) the range of motion Graphic presentation of the Therapy documentation overall treatment cycle Prevents accidental changes of Key lock function the parameter settings Moves the motors into the Transport setting transport position Service menu ATROMOT-E2 Dimensions Weight 28.7 kg (63.2 lb) 87.5 x 57.5 x 58 cm Dimensions (34.4 x 22.6 x 22.8 in) Suitable for patient height ca. 120 – 210 cm max. permanent load on 9 ka arm carriage max. permanent load on 150 kg chair **ATROMOT-E2 Compact Dimensions** Weight 17 kg (37.4 lb) 87.5 x 57.5 x 29 cm Dimensions (34.4 x 22.6 x 11.4 in)



ARTROMOT®-E2

FOR THE ELBOW JOINT

ARTROMOT®



Efficient CPM therapy for the Elbow!

Indicated in the post-op treatment and rehab process of various elbow and arm conditions, the ATROMOT-E2 offers many useful features, such as the patient chip card, the easy swift conversion, the anatomically correct motion (PNF pattern), and the forearm placement on a carriage with automatic length adjustment and sandwich straps (to prevent muscle contractions).

With its streamlined design, and its handheld programming unit with LCD graphic display (with large self-explanatory symbols and an intuitive menu navigation), the device is highly ergonomic and easy to use.

INDICATIONS

- Arthrotomy and arthroscopy procedures in combination with synovectomy, arthrolysis
- Surgical treatment of fractures and pseudoarthrosis
- Exercise-stable osteosynthesis
- Endoprosthetic implants
- Treatment following mobilization of joints in anesthetized patients
- Reconstructive surgery of biceps tendons
- Operations on soft tissue in the joint area



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ARTROMOT®-SP3 FOR THE ANKLE JOINT

ARTROMOT®



The new dimension in Ankle CPM therapy!

ARTROMOT-SP3 offers anatomically correct motions (PNF pattern).

Using the **ARTROMOT-SP3** is made easy by intuitive operation of the handheld programming unit with self-explanatory symbols.

ARTROMOT-SP3 optimizes ease-of-use through simple mechanical settings and offers easy to disinfect leg support and footrest.

INDICATIONS

- Arthrotomy and arthroscopy procedures in combination with synovectomy, arthrolysis
- Surgical treatment of fractures and pseudoarthrosis
- Exercise-stable osteosynthesis
- Operations on soft tissue in the joint area
- Reconstructive ligament and tendon surgery
- Operations on cartilage lesions
- Achilles tendon reconstruction



NVERSION / EVERSION



ORDERING INFORMATION

Part Number	Description
80.00.035	ARTROMOT-SP3 Standard
80.00.036	ARTROMOT-SP3 Standard Chip
80.00.037	ARTROMOT-SP3 Comfort
80.00.038	ARTROMOT-SP3 Comfort Chip
80.00.056	Transport trolley
80.00.066	Transport Trolley (modular)
0.0034.048	ARTROMOT chip card

TECHNICAL SPECIFICATIONS

Plantar flexion / Dorsal extension	50°/0°/40°
Inversion / Eversion	40°/0°/20°
ARTROMOT-SP3 Standard	- Features
Timer	1 - 59 minutes / 1 - 24 hours / continuous operation
Pauses	0 - 59 seconds
Speed	5 % - 100 %
Reverse on load in Steps (motor A and B separately)	1 - 25 / patient safety feature
Motor control	ON/OFF for isolated motion of motor A and B, plantar flexion/ dorsal extension or inversion/eversion
Synchronized motors	ON = PNF-like motion pattern OFF = Randomised, asynchronised motion
Total therapy time	Added sum of the therapy sessions
New patient	Activates the default settings for new patients
Transport setting	Moves the motors into the transport position
Patient chip card (Optional)	Stores patient-specific therapy parameters
Key lock function	Prevents accidental changes of the parameter settings
Service menu	
ARTROMOT-SP3 Comfort -	Additional features
Stretching modes	For gradual and smooth increase of the range of motion
Therapy documentation	Graphic presentation of the overall treatment cycle
Warm-up protocol	Gradual progression to the maximum range of motion
ISO protocol	For separate exercising in both directions
Dimensions	
Weight	11 Kg (24.4 lb)
Treight	78 x 42 x 39.5 cm
Dimensions	(30.7 x 16.5 x 15.5 in)
Dimensions Suitable for	(30.7 x 16.5 x 15.5 in) Approx. 120 - 210 cm

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