

“The sooner the joint is moved, the better.”

- R. Salter*

Continuous Passive Motion (CPM) Therapy

Experimental investigations in the 1970s provided the scientific basis for CPM treatment using motor-driven exercise equipment. Positive clinical experience, with this exciting therapeutic modality being well received by surgeons, therapists and patients, accelerated its widespread acceptance. Twenty-five years later, advances in technology and the extension of this form of post-surgical rehabilitation therapy to new indications and protocols demonstrate that CPM still plays an integral and significant role in orthopaedic recovery. For the patient, it is a valuable and well-tolerated method of rapidly restoring lost joint function, mobility and confidence.

It is important to review the key clinical outcomes from Professor Robert Salter's pioneering animal work. He used rabbits with the following pathologies:

- Full thickness cartilage defects
- Acute septic arthritis
- Intra-articular fractures
- Partial thickness tendon lacerations

Rabbits with full thickness cartilage defects were divided into three treatment groups with therapy instituted immediately postoperatively as follows:

- Immobilisation with a cast
- Intermittent active motion (cage activity)
- Continuous passive motion

Conclusions

- The immobilised group showed healing characterised by the formation of fibrous tissue and many joint adhesions.
- The cage activity group showed imperfect healing characterised by a combination of fibrous tissue and poorly differentiated cartilage.
- The CPM group showed healing through formation of new hyaline-like cartilage occurring in one half of the defects within four weeks. CPM did not harm intact, normal living articular cartilage in rabbits.

The benefits of CPM for healing cartilage:

- Enhanced nutrition and metabolic activity
- Accelerated healing of articular tissues
- Regeneration of cartilage

The benefits of CPM for healing tendons:

- Restoration of the tendon's gliding surface
- Greater mean breaking strength of the tendon
- Enhanced intrinsic healing through synovial diffusion
- Prevention of adhesion formation

Because CPM therapy...

- Increases joint mobility and range of motion
- Helps decrease complications such as joint stiffness and adhesions
- Reduces the length of post-operative hospitalisation, and
- Builds patient confidence, well-being and independence

...CPM therapy is cost effective.



*Salter, RB; Simmonds, DF; Malcom, BW; Rumble, EJ; MacMichael, D; Clements, ND. The biological effect of continuous passive motion on the healing of full-thickness defects in articular cartilages. An experimental investigation in the rabbit. J Bone Joint Surg. 1980; 62A: 1231-12151.

Indication for Knee & Hip

- Knee replacement surgery
- Fractures (ie patellar, tibia plateau, femoral)
- Arthrolysis
- Hip surgery, including hip replacement, hip pinning, osteotomy
- Ligament repairs
- Arthroscopic surgery (ie menisectomies, patellectomies)
- Burns, joint sepsis

Indication for Shoulder

- Total shoulder replacement
- Repeated dislocation of the humerus
- Rotator cuff injury
- Upper humerus fractures
- Scapula fractures
- Acromioplasty
- Capsulotomy
- Arthrolysis
- Synovectomy for Rheumatoid Arthritis
- All types of shoulder stiffness



Indication for Elbow

- Intra-articular fractures of the elbow with Open Reduction and Internal Fixation (ORIF)
- Metaphyseal fractures in elbow area with ORIF
- Arthrolysis for post-traumatic stiffness with limitation of elbow joint motion
- Release for extra-articular adhesions
- Prosthetic elbow joint replacement
- Synovectomy of the elbow
- Arthrotomy and drainage of acute septic elbow Joint

Indication for Hand & Wrist

- Flexor and extensor tendon tenolysis
- Aponeurectomies for Dupuytren's disease
- Open reduction and internal fixation of intra-articular diaphyseal, metaphyseal and epiphyseal fractures of the phalanges
- MCP arthrolysis
- Prosthetic replacement of the MCP, PIP and DIP joints
- Rheumatoid/neurological or post-burn for stiffness
- Capsulotomies, arthrolysis and tenolysis for post-traumatic stiffness of MCP, PIP and DIP joints
- Synovectomies

Indication for Ankle

- Passive mobilisation of the following fractures after internal fixation
- Mobilisation of the joints of the foot after operative or conservative treatment of lesions of the:
 - Achilles tendon
 - Lateral collateral ligament
 - Medial collateral ligament
- Surgical lengthening of the achilles tendon for post-traumatic stiffness
- Club foot



A CD-Rom
 "A clinical and Cost Effectiveness Outcomes Analysis"
 Available on simple request.

Knee CPM Machine

Kinetec offers a complete range of apparatus for the lower limb. The below chart will enable you to select the optimal device according to your needs.



Technical Datas:

	Prima Advance	Prima XL	Spectra Essential	Spectra Spectra - DC	Performa
Range of Motion					
Flexion	115°	115°	120°	120°	130°
Extension	-5°	-5°	-10°	-10°	-3°
Hip Flexion	75°	75°	75°	75°	80°
Hip Extension	10°	10°	10°	10°	10°
Foot positioning					
Plantar Flexion	40°	40°	40°	40°	40°
Dorsal Flexion	30°	30°	30°	30°	30°
Abduction/Adduction	-	-	30°	30°	30°
Sizes of the patient					
Maximum weight	130kg	227kg	130kg	130kg	130kg
Patient sizing	145/195cm	145/195cm	145/195cm	145/195cm	112/206cm
Full leg	71/99cm	71/99cm	71/99cm	71/99cm	58/110cm
Tibia 38/53cm	38/53cm	38/53cm	38/53cm	32/60cm	
Femur	33/46cm	33/46cm	33/46cm	33/46cm	26/50cm
Mechanics specifications					
Movement	Semi anatomical	Semi anatomical	Semi anatomical	Semi anatomical	Perfectly anatomical
Free perineal area	-	-	-	-	Yes
Transport Handle	-	-	Yes	Yes	Yes
Remote control Storage	-	-	Yes	Yes	-
Weight	11kg	12kg	12kg	12kg	15kg
Length/Width	95/33	95/33	95/33	95/33	109/33
Carriage width	25cm	32cm	25cm	25cm	25cm
Delivered with Pads	Yes	Yes	Yes	Yes	Yes
Delivered with Comforts Support	Clipsed	Strapped	Clipsed	Clipsed	Strapped
Electronics specifications					
Digital adjustment	-	-	Yes	Yes	Yes
Analog adjustment	Yes	Yes	-	-	-
Tactile adjustment marks	Yes	Yes	-	-	-
Multi Language display	-	-	Yes	Yes	-
Speed (in °/minute)	40° to 145°/min	40° to 145°/min	45° to 155°/min	45° to 155°/min	50° to 220°/min
Warm Up mode	-	-	-	Yes	-
Pain level adjustment (Manual)	-	-	-	Yes	Yes
By Pass mode	-	-	-	Yes	Yes
Program	-	-	-	Yes	-
Timer-	-	-	Yes	Yes	-
Total Time counter	-	-	-	Yes	Yes
Active movement	-	-	-	-	Yes
Pause	-	-	Yes	Yes	Yes
Data Capture (only in DC)					
Patient Report	-	-	-	Yes	-
Programming with computer	-	-	-	Yes	-
Data analysis	-	-	-	Yes	-
Security					
Start/Stop/Reverse	Yes	Yes	Yes	Yes	Yes
Pain level adjustment	Preset	Preset	Preset	Ajustable	Ajustable
Patient lock out adjustment	-	-	Yes	Yes	Yes
Voltage	90 to 260V	90 to 260V	90 to 260V	90 to 260V	90 to 260V
Power	50VA	50VA	50VA	50VA	50VA
Classification	Type B/Class I	Type B/Class I	Type B/Class I	Type B/Class I	Type B/Class I
EMC compatibility	Yes	Yes	Yes	Yes	Yes
CE Registration	Yes	Yes	Yes	Yes	Yes

Kinetec Prima Advance Knee CPM Machine



Simplicity combined with the famous brand name provides effective passive mobilisation of the knee.

- Easy to use
- Tactile Adjustment Marks
- Available with Comfort Plastic Support
- Light
- Compact



Panel of adjustments with protective cover avoiding bad handling.

EASY TO USE

With simple and straightforward movement adjustments (angular limits, speed and patient sizing), the Kinetec Prima Advance is the most intuitive and quick to install device currently available.

It features tactile adjustment marks for patients with sight deficiency.



LIGHT

Only 11 Kg (24 pounds) to facilitate handling, the Kinetec Prima Advance is easy to transport making it ideal for the hospital and private physiotherapy environments.

COMPACT

Only 94 cm (37 inches) in length to facilitate installation into a hospital bed or in the client's home and to aid storage.

RANGE OF MOTION

From **-5° to 115°** of flexion. The Kinetec Prima Advance makes it possible to treat all pathologies of the knee.



Ordering Information

4621008002 Complete apparatus • Pads
 4621008042 Complete apparatus • Clipped Comfort Supports
 46EXTGAR3G 3-Year Warranty Extension
 For detail and accessories see page 10.

Kinetec Spectra Knee CPM Machine



An **unbeatable combination** of good looks and mechanical innovation sets Spectra apart as the Knee CPM of choice.

- **Light**
- **Compact**
- **Feed Back Patient**
- **Digital adjustment.**
- **Available in 3 different versions**

RANGE OF MOTION

From **-10° to 120°** of flexion.

The Kinetec Spectra allows treating all pathologies of the knee.

The **anatomically correct** system increases the comfort of the patient and decreases the points of pressure.

LIGHT

Only 12 Kg (26 pounds). Provided with two handles transport board.

The Kinetec Spectra is very easy to transport for a use in the hospital or in cabinet.

DIGITAL ADJUSTMENT

For all versions of the Kinetec Spectra, the remote control is easy to use and intuitive, that allows a precise and quick adjustment of the movement parameters.

PATIENT FEEDBACK

The large **LCD screen** shows the immediate and the programmed range of motion allowing a patient stimulation.



Kinetec Spectra Essential

Operated by a simplified remote control, allowing the precise adjustment of the basic parameters of the movement:

- Range of Motion
- Speed
- Pause in movement limits, allowing rest or a posture
- Adjusted parameters locking
- Start/Stop and reverse of the movement



Ordering Information

4621006202 Complete apparatus • Pads
 4621006242 Complete apparatus • Clipped Comfort Supports
 46EXTGAR3G 3-Year Warranty Extension
 For detail and accessories see page 10.

Kinetec Spectra

For complete movement and progressive rehabilitation. Besides the basic adjustments featured in the Kinetec Spectra Essential, the Kinetec Spectra enables more advanced movement features:

- Warm Up** The patient reaches gradually the pre-set full ROM
- Modulation** Allows manual setting of the ROM end-point based on patient tolerance. This mode is generally used at the beginning of the session
- ROM By Pass** Used during the session, this mode allows a manual setting based on new patient tolerance, thus offering a real progressive work of the Range of motion
- Force** This security feature allows the patient to reverse, more or less easily, the movement by a simple muscular contraction
- Timer** Control of the session time
- Programme** Allows set-up of 16 customised programmes



Ordering Information

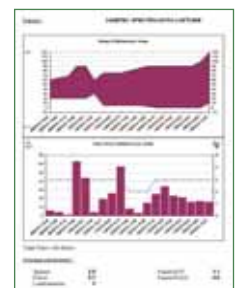
4621006302 Complete apparatus • Pads
 4621006342 Complete apparatus • Clipped Comfort Supports
 46EXTGAR3G 3-Year Warranty Extension
 For detail and accessories see page 10.

Kinetec Spectra DC (Data Capture)



For even more precision. The capture and data processing of movement and the patient. The remote control is identical to the Kinetec Spectra but has a built-in memory which records the rehabilitation sessions of the patients. The unique Kinetec software and its USB interface delivered with the Kinetec Spectra DC allow :

- Management of 16 different patients
- Simplified programming of the 16 programs available with the Kinetec Spectra
- Preparation of the protocols of rehabilitation for each patient
- Precise evaluation of the patient progress throughout treatment
- Edition in graph of patient progress
- Data analysis of the movement: time, range of motion, load, speed
- Quick start up session using pre-programmed parameters and current calendar date



Additional technical data:

- Electrical connection by the USB plug
- Compatible Windows XP & Vista
- Disk space required: 200Mo
- Disc reader
- Printer for patient reports

Ordering Information

4621006402 Complete apparatus • Pads
 4621006442 Complete apparatus • Clipped Comfort Supports
 4610008838 Remote Control for Spectra first version
 4670024709 Soft + USB Connector
 46EXTGAR3G 3-Year Warranty Extension
 For detail and accessories see page 10.



Kinetec Performa Knee CPM Machine

Continuous Passive Motion



The **Ideal choice** of CPM for knee rehabilitation. Anatomical design perfectly matches natural knee movement.

- **Anatomical movement**
- **Adjustable in length from small children to large adults**
- **Active movement**
- **Feed Back Patient**
- **Digital adjustment**



PATIENT SIZING

Can be used for patients up to 2.06m (81 Inch) tall.
Can be used for patients as short as 1.12m (44 Inch).

COMFORT

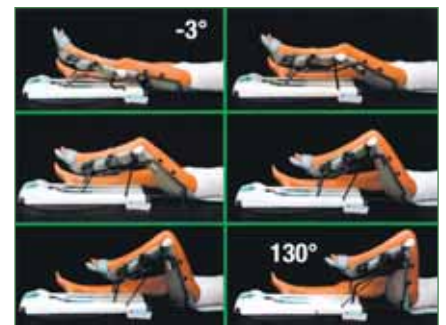
No bar in the perineal area for greater patient comfort and improved compliance.

RANGE OF MOTION

3° of Hyperextension to 130° of Flexion.

ANATOMICALLY DESIGNED

The movement of the machine and the knee are perfectly aligned.



Ordering Information

4621001802 Complete apparatus • Pads
4621001842 Complete apparatus • Comfort Supports
46EXTGAR3G 3-Year Warranty Extension
For detail and accessories see page 10.



Kinetec Prima XL Knee CPM Machine



Simplicity, combined with an extra wide carriage provides effective passive mobilization of the knee.

- **32cm (12½ Inch) wide carriage**
- **227Kg (500pounds) body weight load rating**
- **Easy to use**
- **Tactile Adjustment Marks**



The Kinetec Prima XL is the same design than the Kinetec Prima Advance, having a control panel integrated into the base, making it very easy to use.



Its leg support extended to 32cm compared with 25cm for the other CPM Machine and the reinforcement of its motor enable it to mobilise the legs with extreme dimensions.

Ordering Information

- | | |
|------------|---------------------------------------|
| 4621008102 | Complete apparatus • Pads |
| 4621008142 | Complete apparatus • Comfort Supports |
| 46EXTGAR3G | 3-Year Warranty Extension |
- For detail and accessories see page 10.



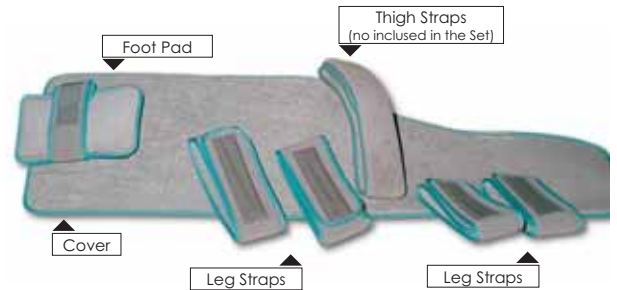
Kinetec Knee CPM Machine Accessories

A • HYGIENIC PADS

Pads for the knee CPM's are very comfortable and easy to attach with hook and loop fasteners. The covers can be autoclaved.

Ordering Information

4650001058	Complete Set for Performa: 3 Covers, 4 Leg Straps, 1 Foot Pad
4650001868	Complete Set for Spectra: 1 Cover, 4 Leg Straps, 1 Foot Pad
4650001553	Complete Set for Spectra: 1 Cover with embroidery, 4 Leg Straps, 1 Foot Pad
4650001149	Straps Set for Performa: 4 Leg Straps, 1 Foot Pad, 1 Thigh Strap
4650001107	4 Leg Straps
4650001165	Covers - Pack of 20
4650001157	Covers - Pack of 5
4650001090	1 Cover
4650001131	Foot Pad (for Performa)
4650001420	Foot Pad (for Spectra)
4650001123	Thigh Strap
4650001826	2 Leg Straps for Prima XL
4650001834	1 Cover for Prima XL



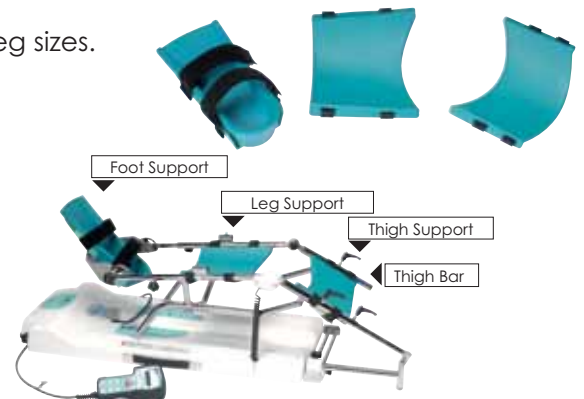
B • COMFORT PLASTIC SUPPORT – WITHOUT CLIPS

Especially designed to provide optimum comfort and hygiene for the patient, the Kinetec Comfort Plastic Supports fit all Kinetec knee CPMs. The Comfort Plastic Supports attach to the knee CPM machine with straps, as shown.

The straps allow the supports to be adjusted to suit a range of leg sizes.

Ordering Information

4670023701	Compleat Set for all Knee CPM: foot, leg and thigh part
4670017655	Compleat Set for for Performa: foot, leg, thigh part and thigh bar
4670023694	Thigh support with straps
4670023686	Tibia support with straps
4670024048	Foot support with straps
4635010561	Straps for foot support
4670016657	Thigh bar for Performa



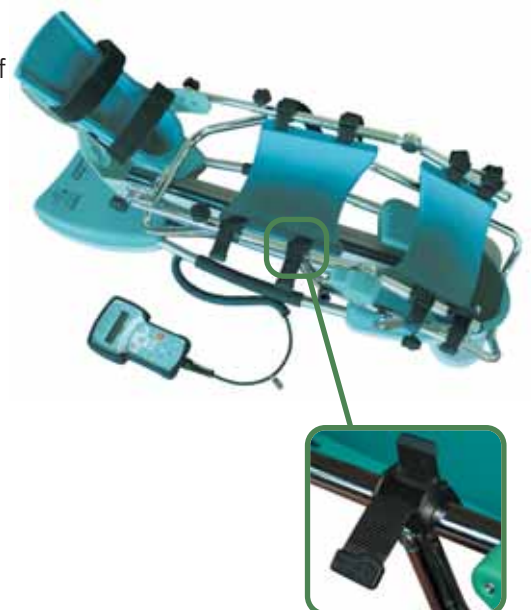
C • COMFORT PLASTIC SUPPORT – WITH CLIPS

The new Comfort Plastic Supports are equipped with clips, directly positioned on the tubes of the tibia and thigh support of the machine, thoses clips are available for all Kinetec Knee machine in new order except the Prima XL due the weight of the leg and the Performa due the paediatric position.

This version of the Comfort plastic support allows an easy and quick adjustment of the patient leg size, even if this one is on the unit.

Ordering Information

4670024345	Compleat Set: foot, leg and thigh part
4670024337	Thigh support with straps
4670024329	Tibia support with straps
4650001876	Strap (unit)
4670024048	Foot support with straps
4635010561	Straps for foot support



Kinetec Knee CPM Machine Accessories

D • PAEDIATRIC FOOT PLATE

Paediatric Foot Plate adaptable on Spectra and Prima Advance. This accessory allows mobilising patients of small size, minimum full leg of 53cm (21 lcnh) compared with 71cm (28 Inch) out of standard.

Ordering Information

4670023777 Paediatric Foot Plate

E • SEAT ADAPTOR

This accessory is adaptable on Spectra and Prima Advance. It can be used in a treatment centre or at home. It allows patients with minimal mobility to be seated without assistance and more important, to remain seated, which is more motivating for physical therapy.

Ordering Information

4670024098 Seat Adaptor

F • Cart

This easy to use cart is designed to transport and store KINETEC CPM knee units and accessories. Streamlined, durable and resistant to commonly used disinfectants.

Ordering Information

4655001053 Trolley for all Knee
4665003297 Cart for Bed use
4665003750 Cart for Bed use- version low base
4665003560 Performa adaptation for Cart for Bed use

G • TRANSPORT BAG

Provides secured storage and transportation of the Kinetec Prima Advance and the Kinetec Spectra.

Ordering Information

4640001844 Transport Bag

H • TRANSPORT BOX

Provides secured storage and transportation of the Kinetec Prima Advance and the Kinetec Spectra.

Ordering Information

4640001927 Transport Box

OPTIONAL DEVICES (not illustrated)

4670015683 Bed Frame Attachment
4670015708 Sliding Stop and Castors (Transport Wheels)
4650000927 Thigh Fastener (Leg Restraint)

