Shoulder C.P.M Machine

Centura B & W

KINETEC®
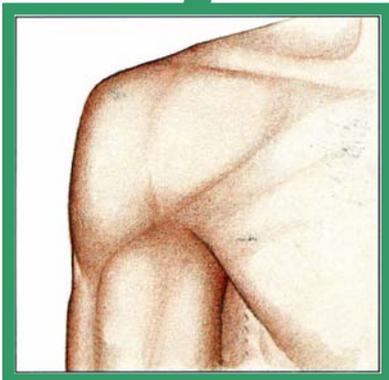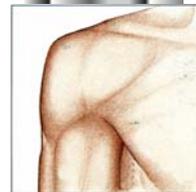
• User manual • SHOULDER

Before use, please read this document.

Kinetec reserves the right to effect technical modifications.

SAFETY RECOMMENDATIONS

• Before use, please read this document.

• The physician defines the protocol and ensures that it is correctly implemented (adjustments, session time and frequency of use).

• We recommend that you lock the hand control when you give it to the patient.

• For optimum safety, always give the hand control to the patient before starting the system.

• Explosion hazard: KINETEC Centura B&W is not designed for use in the presence of flammable anesthetics.

• Check that the electrical socket is in good condition and is suitable for the splint power supply cord. The latter complies with current standards and has a grounding socket. The plug may be connected to any standard socket. The socket must however have a grounded pin. To connect the power supply, only use the original cable supplied with the machine. Check that the cables remain free around the device so that they do not get damaged.

Kinetec reserves the right to effect technical modifications.

Centura B & W

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Definition

The KINETEC Centura B&W is a SHOULDER CONTINUOUS PASSIVE motion device enabling the following movements:

- Flexion / Extension Arm STRAIGHT from 0° to 110°.

- Flexion / Extension Arm FLEXED from 30° to 110°.

Your machine can be used with all bed and wheelchair available on the market.

Indications

- Total shoulder replacement.
- Repeated dislocation of the humerus.
- Rotator cuff injury.
- Upper humerus fractures
- Scapula fractures.
- Acromioplasty.
- Capsulotomy.
- Arthrolysis.
- Synovectomy for Rheumatoid Arthritis.
- All type of shoulder styffness joint.

Clinical Benefits

- Breaks the cycle of trauma, inflammation and the loss of range of motion.
- Prevents joint stiffness.
- Speeds the recovery of post-operative range of motion.
- Maintains the quality of the joint surface.
- Reduces pain and edema.
- Promotes joint cartilage healing.
- Reduces hospitalization time
- Reduces the need for pain medication.
- Provides immediate post-operative continuous passive motion.
- Digital ROM readout on the patient hand control for positive reinforcement.
- Maintains desired positions for stretching and muscular rest.

Contraindications

- Unstable fractures.
- Spastic paralyses.
- Uncontrolled infection.
- The machine is not adapted for patients height more 2m(6'7") or under 1.4m(4'7").

Centura B & W

The KINETEC Centura B&W consists of the following components

1 – Base
2 – Wheels
3 – Sliding motor mount bar (left/right)
4 – Locking knob of the right/left sliding motor mount bar
5 – Locking knob of the up/down sliding housing
6 – Base locking knob
7 – Locking knob of the motor mount assembly
8 – Motor
9 – Shoulder depth sliding lock
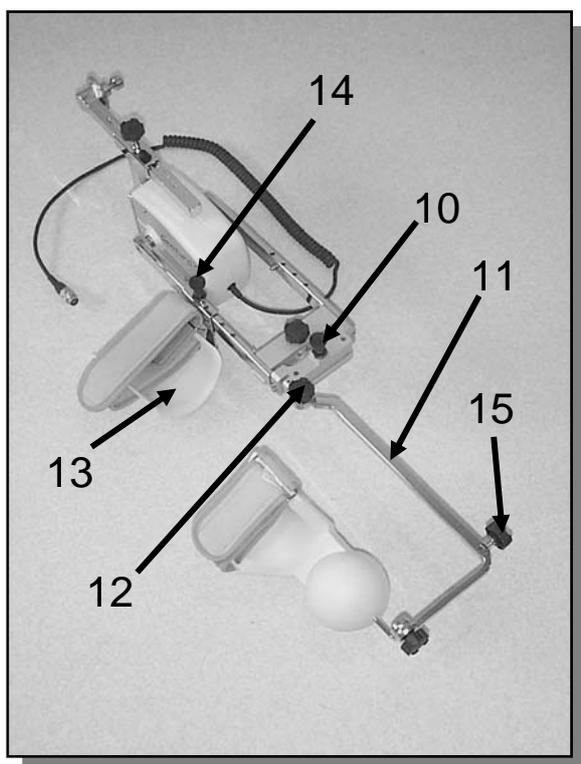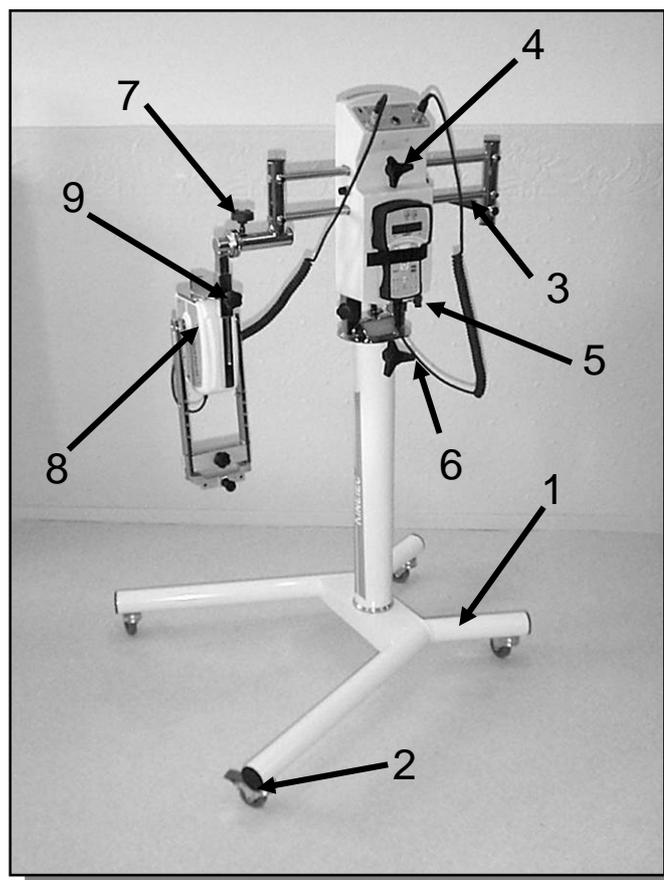
10 – Swiveling splint support lock
11 – Swiveling splint support
12 – Elbow flexion setting lock
13 – Arm splint
14 – Arm splint lock
15 – Forearm length setting lock

16 — Supply cable connector switch
17 — Fuse
18 — ON/OFF switch
19 — Hand control lock switch
20 — Defect or power light
21 — Motor or hand control connectors
22 — Hand control location for transport
23 — Hand control
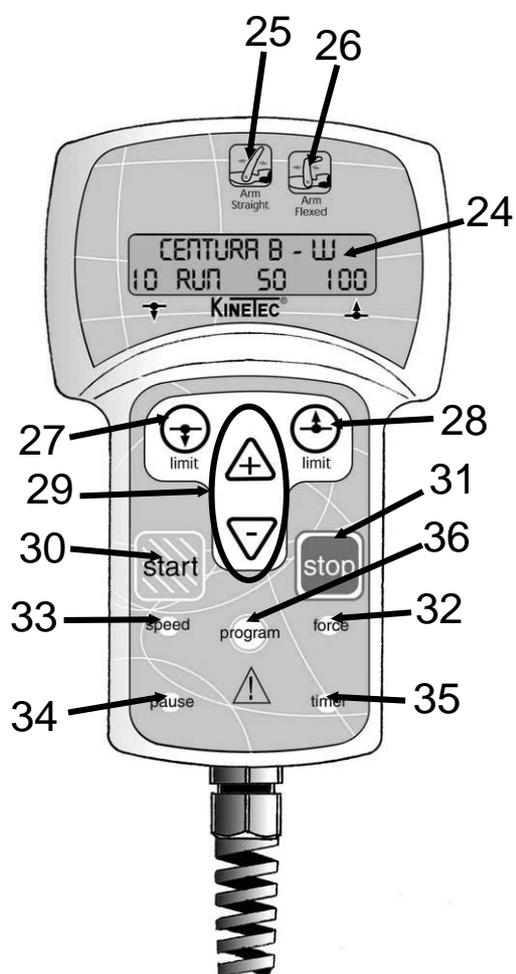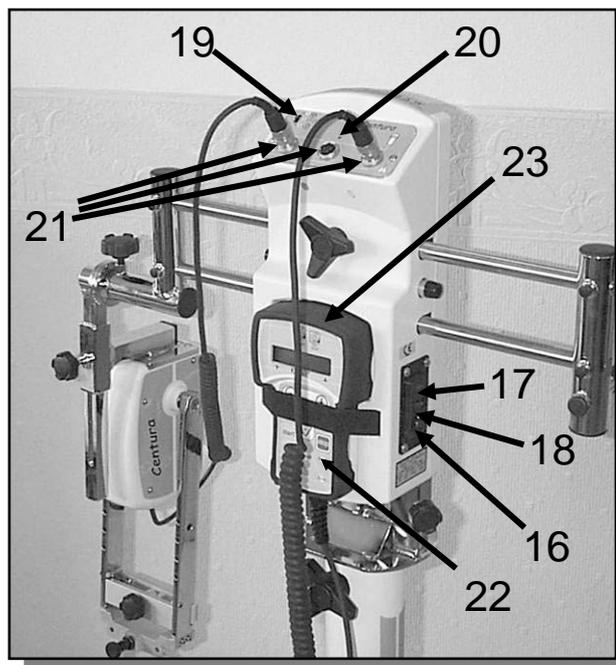
24 — Liquid-crystal display (2 lines of 16 characters)
25 — Arm Straight flexion/extension key
26 — Arm Flexed flexion/extension key
27 — Lower limits setting
28 — Upper limits setting
29 — Increase / decrease keys
30 — START key
31 — STOP key
32 — FORCE key
33 — SPEED key
34 — PAUSE key
35 — TIMER key
36 — PROGRAM access key

Remove all the components from their packaging.

• Position the column (37) onto the base (1). To fit the nut (38) of the column into the hole (39) of the base, tighten the screw (40) with the wrench (41) delivered with the machine.
• Position the housing (42) on the column (37), make sure the joint (43) is positioned on the side of the long bar of the base (1), lock the knob (6).
• Place the motor (8), see page 15 for the correct position.
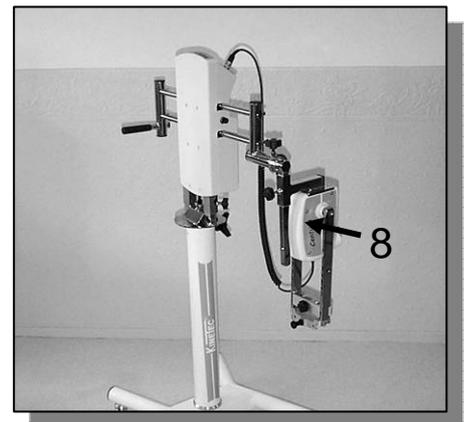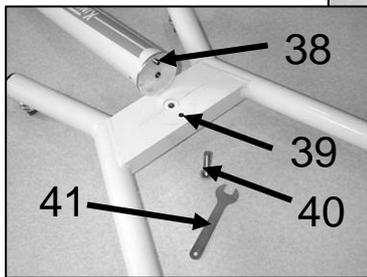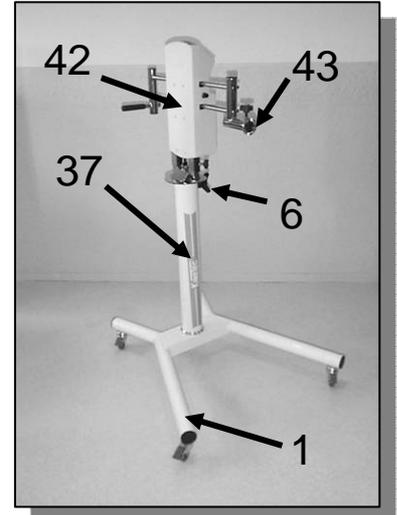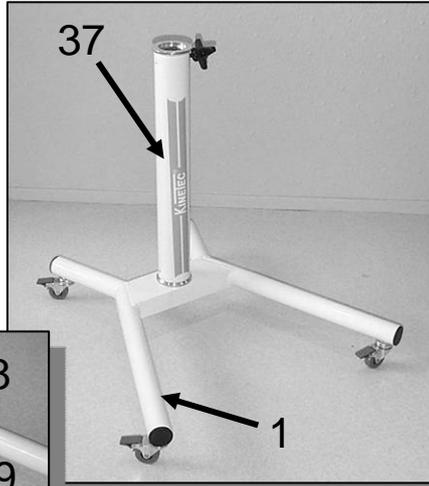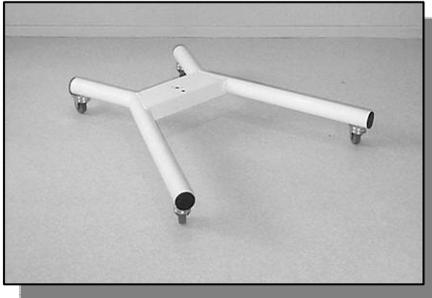
For easy transport, the unit features 4 wheels with brakes and the sliding motor mount bar (44) that also functions as a handle.

You can adjust the height of the handle with knob (5).

The physician defines the protocol and ensures that it is correctly implemented (adjustments, session duration and frequency of use).

The patient must know the start/stop/reverse function on the control handle. Hand control must be accessible to patient at all times. (See page 8).

KINETEC Centura B&W complies with Directive 93/42/CEE.

> **EXPLOSION HAZARD:**
> KINETEC Centura B&W is not designed for use in the presence of flammable anaesthetics.

In case of electromagnetic interference with other devices move the device.

KINETEC Centura B&W is in compliance with standards in force (IEC 601.1.2), electromagnetic compatibility standard for medical devices.

Please, do not touch the moving parts while the unit is running, pinching risk.

Check the well fixation of the knobs (7) and (9) (page 3) before each using.

Electrical connection

KINETEC Centura B&W is a type B class I device.

Before connecting the device to the power supply, check that the mains voltage matches that shown on the identification plate (100-240 V~ 50-60Hz).

Connect the power supply cable (45).

> **IMPORTANT**
> Check that the electrical socket is in good condition and is suitable for the splint power supply cord. The latter complies with current standards and has a grounding socket.
> The plug may be connected to any standard socket.
> The socket must however have a grounded pin.
> To connect the power supply, only use the original cable supplied with the machine.
> Check that the cables remain free around the device so that they do not get damaged.
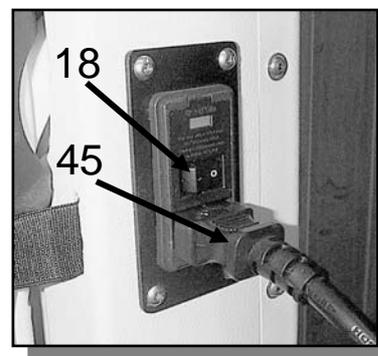
The cables (motor and hand control) can be plugged in any of the connectors

Starting the unit

Switch on (3). The light (20) is ON
While the unit begins an auto diagnostic, the display shows the following


```
   KINETEC              Movement verif.
CENTURA B&W V1.0   ⇨    Please wait
```
```
   Movement verif.      Arm FLEXED
⇨  MOToR : M1       ⇨   50  STOP    0    90
```
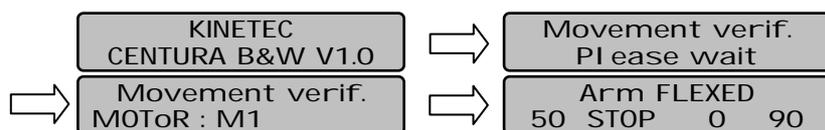
Your KINETEC Centura B&W is ready to be used.

Select your language

Beginning	Keys to press	Display	Remarks
Switch the unit ON		KINETEC CENTURA B&W V1.0 Movement verif. Please wait Movement verif. MOToR : M1 Arm FLEXED 50 STOP 0 90	Check if the hand control is not locked (See page 7).
Press the 2 keys in the same time	speed force	Language ENGLISH	The display indicates the language selected.
To change the language	$\triangle$ or $\triangledown$	Language FRENCH	The English language is selected. English French German Italian Spanish
To validate the new language.	limit	Arm FLEXED 50 STOP 0 90	To exit and confirm the new language, switch OFF and Switch ON the unit.

Locking the hand control setting

The hand control allows the patient to control the machine as appropriate.

The switch (19) has 3 positions:

LOCKED POSITION
The operational settings can be read and the START/STOP/REVERSE function operated.

UNLOCKED POSITION
All adjustments are possible.

HALF-LOCKED POSITION
It is possible to switch the program and modify the upper and lower movement limits. The START/STOP/REVERSE function is always accessible.
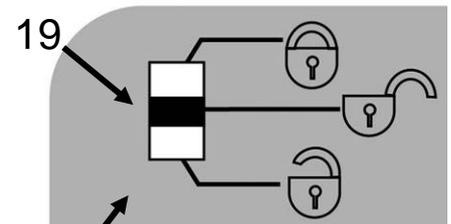
Double locking

Simultaneously press the $\triangle$ and $\triangledown$ keys to lock the hand control.

The display reads LOCK. To unlock the hand control, simultaneously press the same keys. $\triangle$ $\triangledown$
The displays reads UNLOCK.
You can not change the parameters, if you try the display reads: LOCK

> **We recommend that you lock the hand control**
> **when you give it to the patient.**

Comment: The hand control is unlocked when you switch the unit ON/OFF.

START/STOP/REVERSE function

As with all KINETEC systems, KINETEC Centura B&W is equipped with a START/STOP/REVERSE function.
When the unit is running, the display reads RUN

Press the [stop] key of the hand control. The movement stops. The display reads STOP.

Press the [start] key of the hand control. The movement starts in the opposite direction and the display reads RUN.

> **Caution:**
> **For optimum safety, always give the hand control to the patient before starting the system.**

Quick Start

Set up the patient and proceed as below:

Beginning	Keys to press	Display	Remarks
Switch the unit ON		KINETEC Centura B&W V01.0 / Movement verif. Please wait / Arm straight 30 STOP 0 90	Check if the hand control is not locked (See page 7).
To choose the movement	[Arm Flexed] [Arm Straight]	ARM FLEXED 50 STOP 0 90 / Arm straight 30 STOP 0 90	The display shows the new movement selected and the default settings of the upper and lower limits of this movement.
Start the session with the original parameters of the movement (default setting).	[start]	Arm straight 30 STOP 0 90	The value change at the speed of the movement.

Default setting values for each parameter:

|	Arm Straight Flexion/Extension	Arm Flexed Flexion/Extension
• Lower limit	30°	50°
• Upper limit	90°	90°
• Speed	2	2
• Force	6	6
• Extension Pause	0	0
• Flexion Pause	0	0
• Timer	No timer	No timer

Possible values for each parameter:

	Arm Straight Flexion/Extension	Arm Flexed Flexion/Extension
• Lower limit	0° to 105°	30° to 105°
• Upper limit	5° to 110°	35° to 110°
• Speed	1 to 5 (from 45° to 130° per minute)	
• Force	1 to 6	
• Extension Pause	0 to 900 seconds (15minutes)	
• Flexion Pause	0 to 900 seconds (15minutes)	
• Timer	No timer (00H00) to 24H00	

How to adjust the basic parameters of the movement?

Beginning	Keys to press	Display	Remarks
To stop the unit	stop	Arm straight 30 STOP 0 90	Check if the hand control is not locked (See page 7).
To choose the movement	Arm Flexed / Arm Straight	Arm FLEXED 50 STOP 0 90 Arm straight 30 STOP 0 90	The display shows the new movement selected and the default settings of the upper and lower limits of this movement.
To display the extension or flexion limit of the movement	limit or limit	△ Arm straight 30 Ext 0 90 ▽ Arm straight △ 20 FLEX 0 90	The value blinks.
To change the limit if necessary	+ or −	Arm straight ▽ 20 FLEX 0 110	The new value blinks.
To validate the new value, press another key or wait more than 3 seconds.	speed / force / timer	Arm straight ▽ SPEED 2 LOAD _ ▁▃▅██ No timer	While the value blinks press the + or − key to change if necessary.
Or Or to display pause in extension or flexion limit	pause	Arm straight PAUSE HIGH 0 Pause low 0	Successive presses on this key selects the pause at the extension or flexion limit.
To change the pause if necessary	+ or −	Arm straight △ PAUSE low 15	The new pause value blinks.
To validate the new value press another key or wait more than 3 seconds. The display shows the selected mode.		Arm straight ▽ 20 STOP 0 110	The unit is ready to start with the new parameters.

Comments:
• The values shown in the 'Display' column are examples.

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How to modify programs PROGRAM MODE ?

Beginning	Keys to press	Display	Remarks
To switch off the unit			
Press the two keys at the same time and switch the unit ON	⊕ ▽	KINETEC Centura B&W V01.0	Welcome text during 3 seconds.
Then		Program 2 EMPTY	The program number blinks.
To change the program if necessary	⊕ or ▽	Program 10 EMPTY	The new program number blinks.
To choose the movement	Arm Flexed / Arm Straight	Arm FLEXED 50 prg nr10 90 Arm STRAIGHT 30 prg nr10 90	The display shows the new movement selected.
To display the extension or flexion limit of the movement	limit or limit	Arm STRAIGHT 0 prg nr10 90 Arm STRAIGHT 0 prg nr10 90	The value blinks.
To change the limit of movement if necessary	⊕ or ▽	Arm STRAIGHT 0 prg nr10 110	The new value blinks.
To validate the new value, press another key or wait more than 3 seconds	speed force timer pause	Arm STRAIGHT SPEEd: 2 Load : _ ▄ ▄▄█ █ No timer Pause low 0	While the value blinks press the ⊕ or ▽ key to change if necessary.
To record the program 10	program	Arm STRAIGHT Save:+ clear:-	
Then	⊕	Arm STRAIGHT Saving Program 11 EMPTY	The program 10 has been recorded and the display indicates the next program so you can change another program.
OR **To cancel the program**	▽	Arm STRAIGHT clearng Program 11 EMPTY	The program 10 has been cancelled and the display indicates the next program so you can change another program.
To exit program mode, switch OFF and switch ON the unit.	O I	KINETEC Centura b&W V01.0	To use the modified program see page 12.

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Comments:
• When a program has been deleted, the display shows

```
Program      11
      EMPTY
```

Program table:

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timer	timer																
Pause on lower limit	pause																
Pause on upper limit	pause																
Force	force																
Speed	speed																
Upper Limit	limit																
Lower limit	limit																
Movement type	Arm Flexed / Arm Straight																
• N Program number	program	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Centura B & W

Using Programs   program

The KINETEC Centura B&W allows you to store up to 16 programs, including the type of movement, ROM, speed, load, pauses and timer.

The original parameter values of the program are empty.
These values can be modified and recorded at any time (see 'How to enter a program' page 10).

Beginning	Keys to press	Display	Remarks
To Stop the Unit	stop	Arm FLEXED 50 STOP 0 110	Check if the hand control is not locked (See page 7).
To access the program mode	program	ARM STRAIGHT 15 prg nr 8 > 90	The program number blinks.
To change the program if necessary	⊕ or ▽	ARM STRAIGHT 0 prg nr 10 >110	The new program number blinks.
To exit and validate the selected program	start	ARM STRAIGHT 0 STOP 0 110	The current parameters have been recorded in program 3.
To exit without validation of selected program	stop	Arm FLEXED 50 STOP 0 110	Back to the starting parameters.
Start the unit	start	ARM STRAIGHT 0 STOP 0 110	The value change at the speed of the movement.

Reading the values of a program: example SPEED

Beginning	Keys to press	Display	Remarks
To Stop the Unit	stop	ARM STRAIGHT 5 STOP 0 80	Check if the hand control is not locked (See page 7).
To access the program mode	program	ARM STRAIGHT 15 prg nr 8 > 90	The program number blinks.
To change the program if necessary	⊕ or ▽	ARM STRAIGHT 0 prg nr 10 > 110	To change the program if necessary.
To read the speed value	speed	ARM STRAIGHT SPEED : 5	Displays the speed value.
After 5 seconds or after pressing on another key		ARM STRAIGHT 5 STOP 0 80	
To exit and validate the selected program	start	ARM STRAIGHT 0 Stop 0 110	The current parameters have been recorded in program 3.
Start the unit	start	ARM STRAIGHT 0 Stop 20 >110	The value change at the speed of the movement.

Comments:
• The values shown in the 'Display' column are examples. They actually depend on the stored programs.
• The current movement parameters can be changed while using that program but no data will be stored in the original program. See the programming mode (p 10) to modify programs

How to define the upper and lower movement limits?

• At the start of a session

The MANUAL MODE is a way to set within the tolerance of a patient at the beginning of a session.

Set up the patient and proceed as below:

| Beginning	Keys to press	Display	Remarks
Switch the unit ON		KINETEC Centura B&W V01.0 Movement verif Please wait ARM STRAIGHT 0 Stop 20 110	Check if the hand control is not locked (See page 7).
To select the MANUAL MODE for upper limits by continually holding pressure on the key	continuous press (+)	ARM STRAIGHT 0 Manual 65 110	The unit is moving to the upper limit of the movement.
To set the pain level when reached, immediately press	(limit)	ARM STRAIGHT 0 Manual 15 65	The new upper value limit of the movement is recorded.
To select the manual mode for lower limits	continuous press (−)	ARM STRAIGHT 0 Manual 15 65	The unit is moving to the lower limit of the movement
To set the pain level when reached, immediately press	(limit)	ARM STRAIGHT 15 Manual 15 65	The new lower value limit of the movement is recorded.
To start the session with the new movement limits	start	ARM STRAIGHT 15 Run 15 65	The angle display changes with current movement.

• During the session

This function, The BY-PASS MODE is a way to address the pain threshold of a patient during a session.

IMPORTANT: Can be used only when the machine RUN.

| Beginning	Keys to press	Display	Remarks
The unit is running	start	ARM STRAIGHT 15 Run 15 65	Check if the hand control is not locked (See page 7).
To select the BY-PASS MODE	continuous press (+)	ARM STRAIGHT 15 bypass 80 65	The unit exceeds the recorded upper limit.
To set the new pain level when reached, immediately press	(limit)	ARM STRAIGHT 15 bypass 80 80	The new upper value limit of the movement is recorded.
To select the BY-PASS mode for lower limits	continuous press (−)	ARM STRAIGHT 15 bypass 5 80	The unit is moving to the lower limit of the movement.
To set the new pain level when reached, immediately press	(limit)	ARM STRAIGHT 5 bypass 5 80	The new lower value limit of the movement is recorded.
Continue the session with the new movement limits.		ARM STRAIGHT 5 RUN 5 80	The angle display changes with current movement.

Comments:
• The values shown in the 'Display' column are examples.

How to use the pads

KINETEC Centura B&W is delivered with 3 straps:
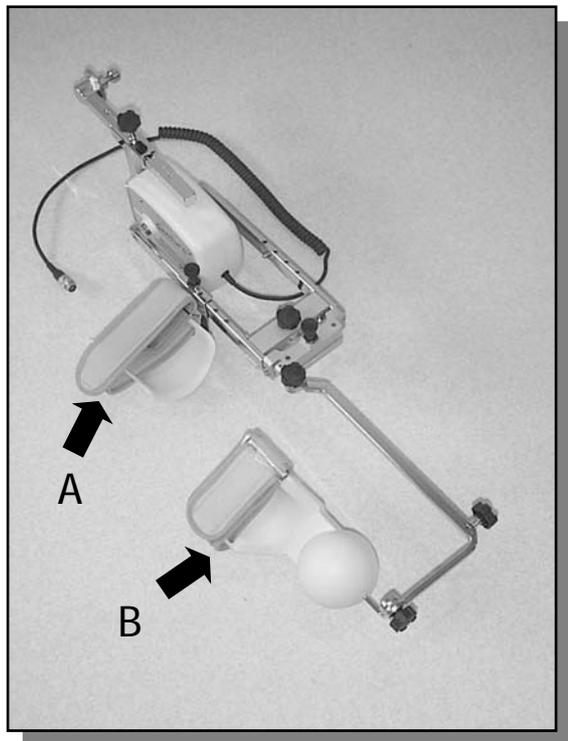
• 1 arm strap (A)

• 2 forearm arm strap (B).

All these straps are used the same way (see pictures).

Do not tighten the straps too much.

For best results, clean or replace the straps after each patient.
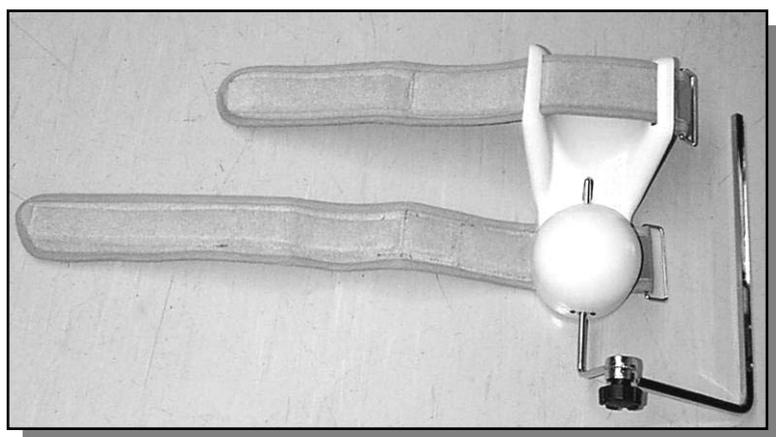
For a left shoulder   *For a right shoulder*
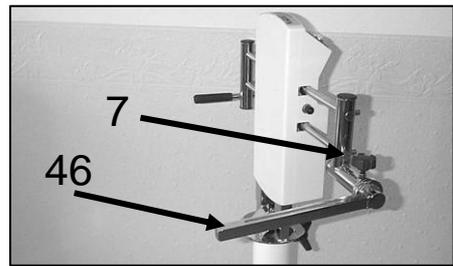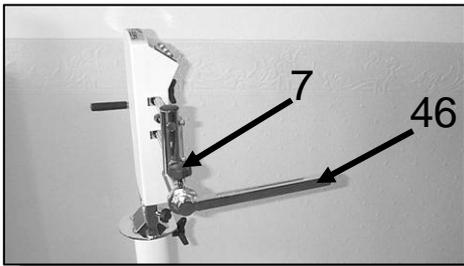
- Position the shoulder depth bar (46).
- Tighten the knob (7).
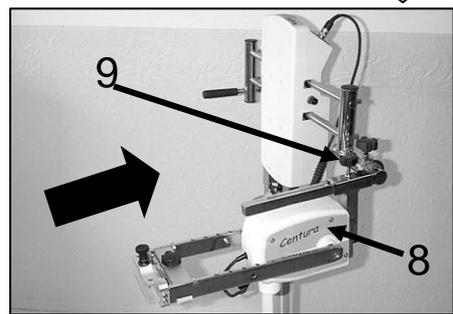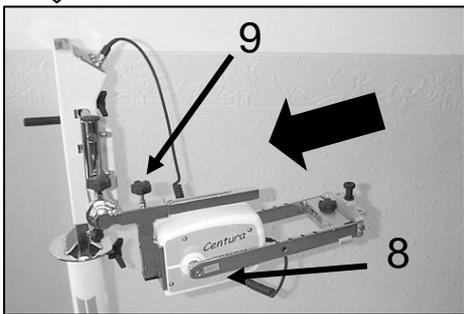
- Position the motor (8).
- Tighten the knob (9).
- Plug the motor.
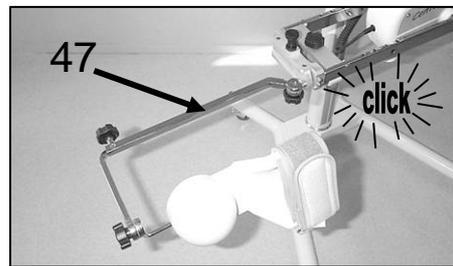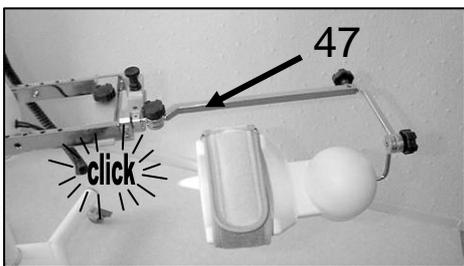
- Use the color code to position the splint (47):
    - Blue for left arm.
    - Red for right arm.
  The assembly is secured when you hear a (click).
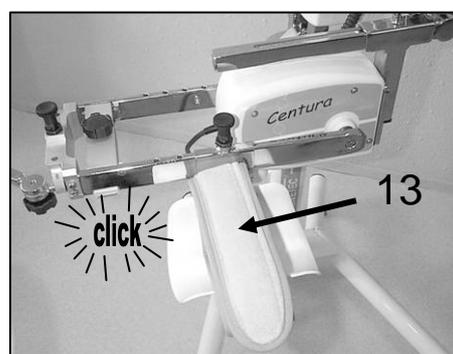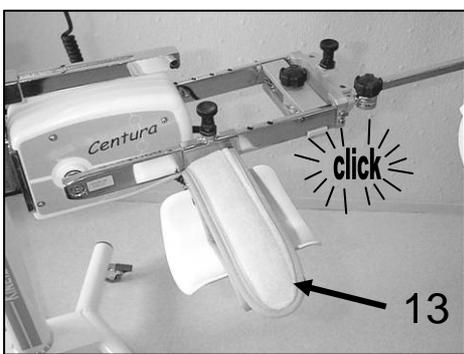
- Position the arm splint (13).
  The assembly is secured when you hear a (click).

Range of motion

- Kinetec Centura B&W provides motion from 0° to 110° of flexion when the arm straight movement is selected.
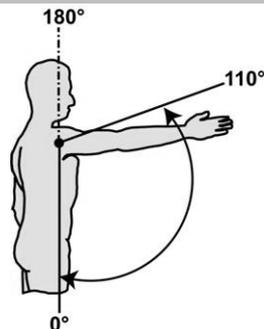
- Kinetec Centura B&W provides motion from 30° to 110° of flexion when the arm flexed movement is selected.
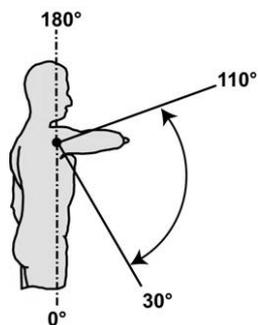
Adjustment of the range of motion

To position the motor mount bar (46) determine the range of motion of the movement and the position of the 0° machine.

Position A: range of motion for use with a wheelchair.
**Position B**: range of motion for use with a bed.

All positions are possible, that allows working more precisely the patient range of motion.

Position A   Position B
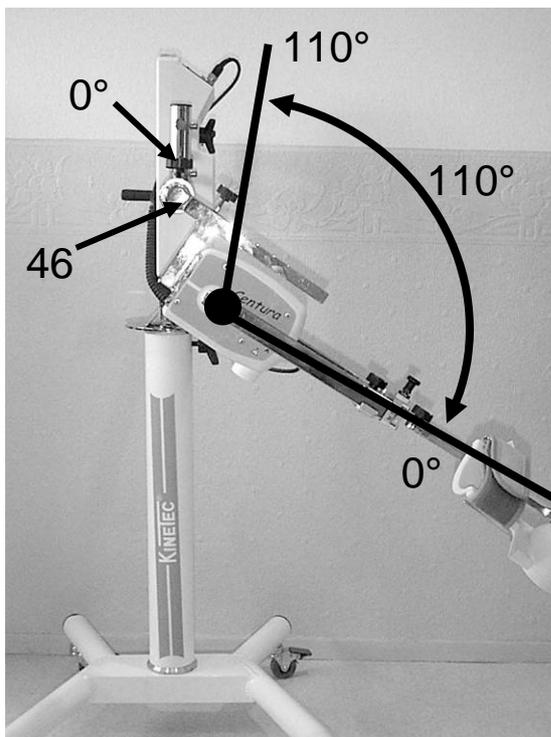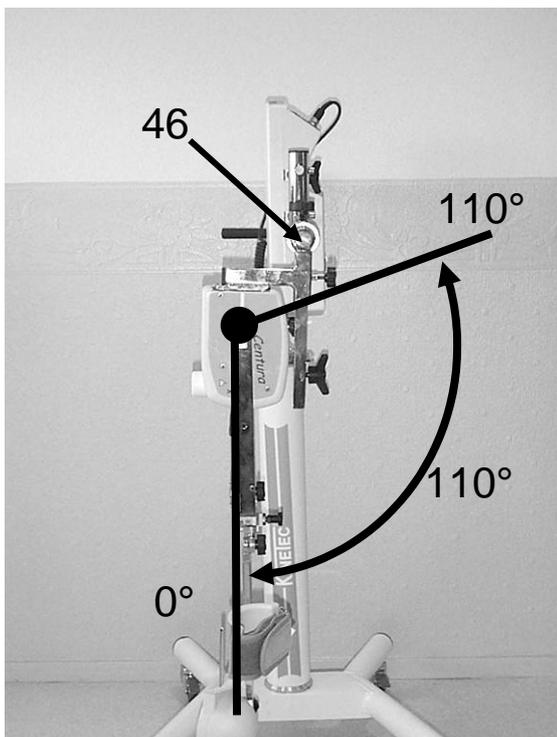
Make sure the straps are clean.
Put the unit in the position that is the most comfortable for the patient.
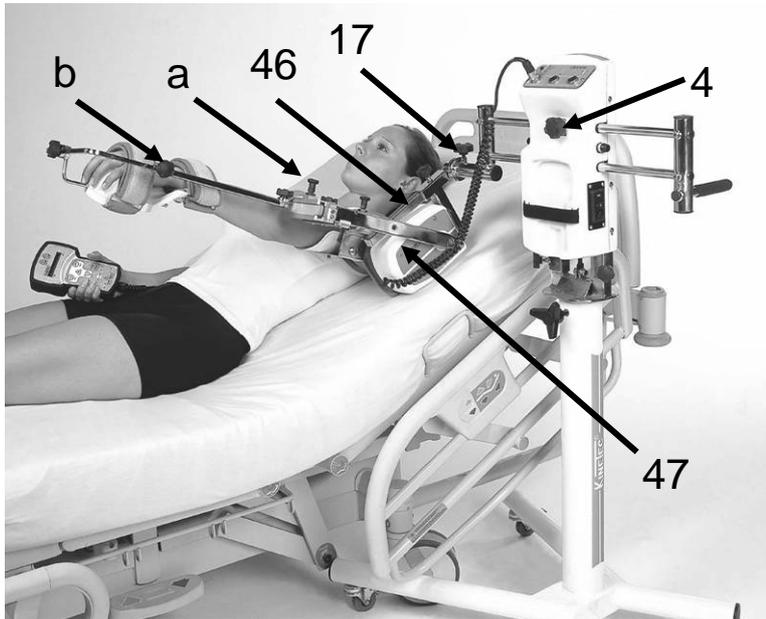
- Position the patient in the bed in a comfortable position and supporting the affected arm.
- Position the Kinetec Centura B&W as close as possible of the bed and lock the wheel brakes.
- Unscrew the knob (17) and adjust the position of the splint (47), make sure the motor mount bar (46) is parallel with the patient's upper body.
- For other positions see page 16.
- Slide the splint (47) toward the patient, use the knob (4) and put the arm in the supports, secure pads.
- Adjust the lengths
    a — arm.
    b — forearm.

Starting the unit

- Choice of the motion:

    - Press [Arm Flexed] or [Arm Straight]   and adjust your parameters (see page 9).

    - or select a program   [program]   (see page 12).

## Patient set up on WHEELCHAIR

Make sure the straps are clean.
Put the unit in the position that is the most comfortable for the patient.
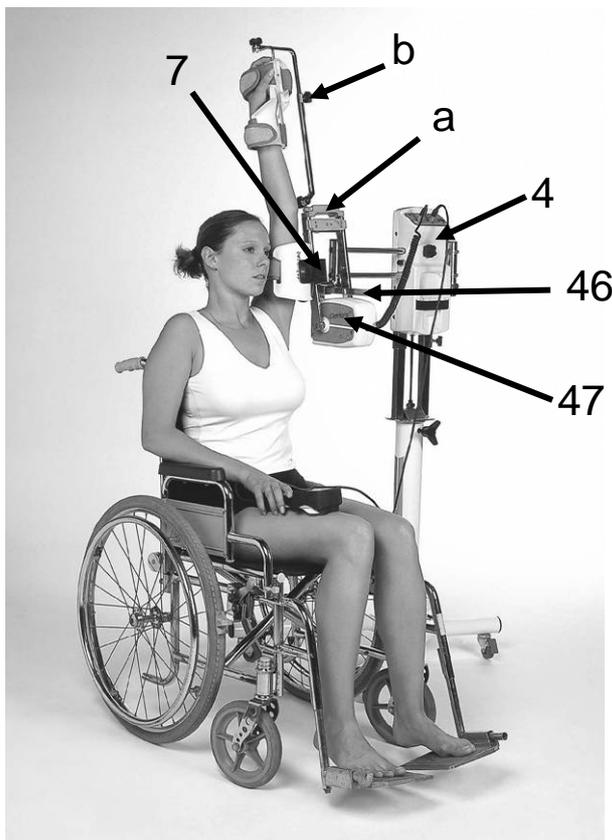
- Position the patient in the wheelchair in a comfortable position and supporting the affected arm.
- Position the Kinetec Centura B&W as close as possible of the wheelchair and lock the wheel brakes.
- Unscrew the knob (17) and adjust the position of the splint (47), make sure the motor mount bar (46) is parallel with the patient's upper body.
- For other positions see page 16.
- Slide the splint (47) toward the patient, use the knob (4) and put the arm in the supports, secure pads.
- Adjust the lengths
  a — arm.
  b — forearm.

Starting the unit

- Choice of the motion:

  - Press [Arm Flexed] or [Arm Straight]   and adjust your parameters (see page 9).

  - or select a program [program]   (see page 12).

Centura B & W

OPTIONS

Recharger

Transport bag

Maintenance

After 2,000 hours of operation, KINETEC Centura B&W requires a few lubrication and maintenance operations (lubrication of the joints and pointer stops).

The need for maintenance is indicated by display of the message SERV. MOTOR when the system is switched on.

Despite that warning, you can continue to use your KINETEC Centura B&W by pressing START, but you should contact your nearest KINETEC technician to have the maintenance operations conducted as soon as possible.

• A motor running time counter is available. Simultaneously press keys ⊕ and ⊕ , the displays shows

```
RESET TIME 924H
Reset: limit low
```
this counter can be resetting by pressing the key ⊕ .

Troubleshooting

A spare parts list and technical catalog are available to you on request from your KINETEC distributor.

If, after connecting the power supply cable to the power supply and switching on KINETEC Centura B&W:

• The display does not indicate any information:
   - Check that the electrical socket is live using another device.
   - Replace the fuse(s) (17) of the connector with fuses of the same type and caliber:
     2 fuses T 750 mA 250V (6.3 x 32) (KINETEC order: 4610007434).
   - If the display still does not indicate any information, contact your nearest KINETEC technician.
• Your KINETEC Centura B&W does not work and the display indicates 50 STOP 25 110,
   Press START again.
   Your KINETEC Centura B&W still does not function: Contact your nearest KINETEC technician.
• Your KINETEC Centura B&W does not function and the display indicates:
       ANGULAR POSI.: angle measurement function failure,
     or NO MOVEMENT: no movement,
     or BAD WAY: motor rotation failure,
     or LOAD MAXI: abnormal consumption,
     or POWER SUPPLY: power failure;
Contact your nearest KINETEC technician if the same message is displayed after having switched the device off, then on, and started it by pressing START.
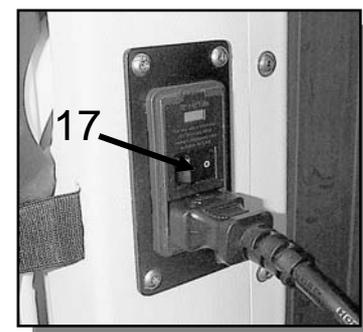
Cleaning

Before conducting any cleaning operation, SWITCH the unit OFF and disconnect the power supply.

Use a DISINFECTANT (PROPANOL/ISOPROPANOL or ALDEHYDE-based solution). Spray the disinfectant on the SURFACES (plastic shells and metal components).

In order to ensure optimal hygiene, you are advised to clean the covers for each new patient. All the consumables enable hazard-free disposal.

Recommendations to obtain a maximum hygiene of the pads:

• Sterilization of the pads (if necessary) : Sterilizer at 134 °C during 18 minutes.

• Disinfection of the pads:
   Washing at 30°C with use of a disinfection solution during the rising cycle.
   Example of product which can be used:
   Solution "Baclinge" at 0.125 % or "Souplanios" at 0,125% from ANIOS Laboratory.
   A complete list of distributors in your country is available on request.

Technical specifications

Product:
Weight: 48 lbs (22 Kg)
Unit dimensions:
  22 x 39 x 30 inches
  56 x 100 x 76 cm
Angular limits: see page 2
Speed: from 45 to 130°/min
Patient sizing:
  from 4'7" to 6'7"
    1,40 to 2m

Electrical:
Power supply: 100-240 V~
Frequency: 50-60 Hz
Power consumption: 50 VA
Device of type B class I
IP 20.
Fuse T 750mA 250V 6.3x32mm
(KINETEC order: 4610007434)

Environment
- Storage/transport conditions:
  Temperature: -40 to 160°F / -40 to 70°C
  Relative humidity: up to 90%
- Operating conditions:
  Room temperature: 50 to 105°F / 10 to 40°C
  Relative humidity: up to 80%+40°C.

Symbols used

Symbol	Description	Symbol	Description
	TYPE B device (protection against electric shocks)		Lower limit
	Caution (consult the accompanying documents)		Upper limit
	STOP (power off)		Arm straight flexion/extension movement
	ON (power on)		Arm flexed flexion/extension movement
start	Start movement		Hand control locked
stop	Stop movement		Hand control unlocked
program	Program access		Hand control half locked
speed	Speed		Switch on LED and defect signal when the LED blinks
timer	Timer	~	Alternative current
force	Force		
pause	Pause		
	Increase		
	Decrease		

Warranty

The KINETEC warranty is strictly limited to the replacement free of charge or repair in the plant of the component or components found to be defective.
KINETEC guarantees its continuous passive motion systems for 1 year against all defects of manufacture from the date of purchase by the consumer.
KINETEC is the only organization able to assess the application of the warranty to its systems.
The warranty will be considered null and void if the device has been used abnormally or under conditions of use other than those indicated in the user's manual.
The warranty will also be considered null and void in the event of deterioration or an accident due to negligence, inappropriate surveillance or inappropriate maintenance, or due to transformation of the equipment or an attempt to repair the equipment.

Centura B & W

Serial number: _____

Purchase date: _____

Date: _____ | Operations done: _____

Technician: _____ | _____

Running time (see page 19): _____ | _____

Exchange parts: _____ | _____

  _____ | _____

Date: _____ | Operations done: _____

Technician: _____ | _____

Running time (see page 19): _____ | _____

Exchange parts: _____ | _____

  _____ | _____

Date: _____ | Operations done: _____

Technician: _____ | _____

Running time (see page 19): _____ | _____

Exchange parts: _____ | _____

  _____ | _____

Centura B & W

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