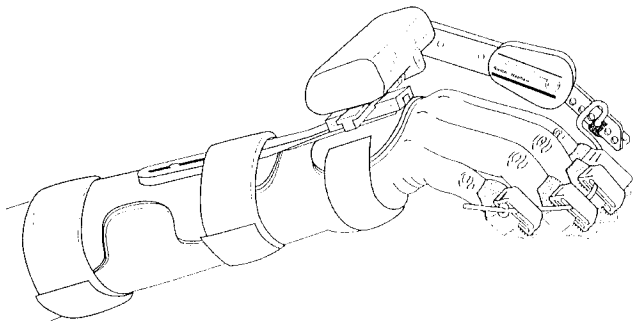
KINETEC 8091 PORTABLE HAND CPM OPERATING MANUAL



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INTRODUCTION

Congratulations on your recent purchase of a KINETEC Model 8091 Portable Hand CPM. You have selected the finest portable hand continuous passive motion (CPM) machine available today.

Every KINETEC CPM machine is covered under our exclusive 24-month warranty. During this warranty period, any defective unit or component will be repaired or replaced free of charge.

The KINETEC Model 8091 CPM system is designed for rehabilitation of the hand. The system can be used to treat adults and most children. This system is not designed to be used on infants or very small children.

Possible Motions

The 8091 system will provide:

1. Full Composite Flexion from 15° hyperextension to a combined 270° flexion of the metacarpal (MP) and interphalangeal (IP) joints. This combined motion is accomplished by mobilizing the MP joint from 15° of hyperextension through approximately 90° of flexion; then mobilizing the proximal interphalangeal (PIP) joint through approximately 110° of flexion, and finally mobilizing the distal interphalangeal (DIP) joint an additional 70° of flexion. See Figure 1.

2. Intrinsic Minus motion of the IP joints, which is accomplished by blocking the MP joint and mobilizing the PIP joint from 0° through 110° and mobilizing the DIP joint from 0° through 70° of flexion. This technique provides a combined 180° of motion to the IP joints. See Figure 2.

3. Intrinsic Plus motion of the MP joint is accomplished by simultaneously blocking the PIP and DIP joints and mobilizing the MP joint from 0° extension to 90° flexion. See Figure 3.

Motions Available From The KINETEC Model 8091 Hand CPM

Figure 1
Full Composite Flexion: No Blocking
ROM -MP - 15° hyperextension
- 90° flexion

-PIP - 0° extension
- 110° flexion

-DIP - 0° extension
- 70° flexion

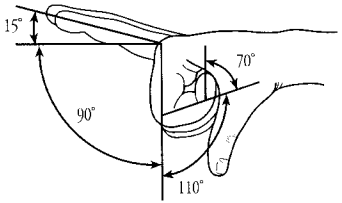


Figure 2
Intrinsic Minus: MP joint is blocked.
ROM -MP - 0° extension
- 0° flexion

-PIP - 0° extension
- 110° flexion

-DIP - 0° extension
- 70° flexion

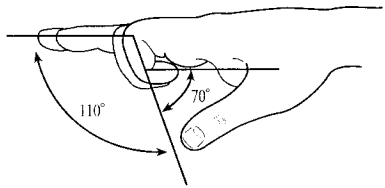
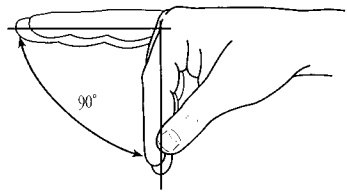


Figure 3
Intrinsic Plus: IP joints are blocked.
ROM -MP - 0° extension
- 90° flexion

-PIP - 0° extension
- 0° flexion

-DIP - 0° extension
- 0° flexion



Description Of System Components

Overview

The system is composed of a thermoplastic splinting system which supports a dorsally mounted motor unit that is controlled by a remote pendant with a digital display. Optional accessories are available that provide specific motions such as intrinsic minus and intrinsic plus.

Drive Bars

The system features a curved drive bar which abducts and adducts the web spaces as the joints are being mobilized. The bars are color-coded for left and right hands. Green bars are right handed and red bars are left handed. Small bars have a single ring etched around the end of the bar. Large bars have two rings etched round the end of the bar. All four bars are provided with each unit.

Power

The unit can be powered by two 9 VDC batteries housed within the hand control or with a wall transformer that converts a 120 vac source to a 9 VDC supply. Battery life will vary dramatically with the electrical load. A very stiff hand will exhaust new batteries within 48 hours. Lesser loads can yield battery lives of up to 10 days. It is recommended that spare batteries be supplied to each patient and they should be encouraged to use the wall transformer whenever possible. Rechargeable batteries can be used, but a separate battery charger unit must be maintained as the hand control is not a charging unit.

Splints

The splints are made from a thermoplastic material that can be heated and remolded if necessary for a custom fit. Splints are available in small, medium, and large sizes. The splint hardware is color-coded for left and right hand applications. Left splints are red and right splints are green.

Splints can be ordered as **Preassembled** units which are ready to use. Each splint can be trimmed for a more precise fit.

Splints can also be ordered as **Preformed** units where the hand and forearm pieces are packaged separately and can be attached to the reusable hardware. This method allows the therapist to mix and match different sized pieces for a specific application. The preforms are available in the same three sizes and each piece comes with the necessary nuts, screws, and hex wrench to assemble the splint.

Splints can also be ordered as **Precut** pieces. These parts have been die-cut but not formed. They are flat and, when placed in hot water (170° Fahrenheit), they become soft and pliable. When removed from the water and as they are cooling, these parts can be custom-fitted to a patient. The completely cooled and fitted parts are then attached to the reusable hardware with the nuts, screws, and hex wrench provided.

Splint Kits are also available. This method is especially convenient in that every item is packaged together for a given size. The parts are then attached to the reusable hardware. Each kit contains a preformed hand piece, forearm piece, straps, screws, nuts, and hex wrench for final assembly. Kits make ordering and inventory management easier.

Finger Attachments

Two methods can be used to attach the patient's fingers to the machine. Each method is used in conjunction with the finger slides which are attached to the drive bar.

1. Finger wraps are a very unique method and are recommended for postop patients or when excessive swelling is present. The finger wraps are universally sized and they can be used over bandages, Coban®, or applied directly to the skin. The wraps have a Velcro™ sensitive area that is used for holding the finger slides. There is also an attachment strap that provides additional hold for really stiff hands.

   Prior to applying the finger wraps, first remove the very thin and clear film which is layered to the back of the finger wrap. This will expose the tacky surface of the finger wrap. This tacky surface helps in preventing the wrap from sliding around on the finger. These wraps can be reused many times by a single patient if adequate care is taken to keep them clean and dirt free. These wraps are designed for single patient use only.

2. Gloves are also available as a means of attaching the patient's fingers to the hand CPM. The gloves currently are sized as small and large and left and right hands. A color-coding scheme has been developed to aid the clinician and business person to quickly identify left hand and right hand components. Left handed gloves are red and right handed gloves are green.

   The glove features an open palm design which is cooler and more comfortable. The fingers of the gloves are made from an elastic material that applies gentle compression which helps reduce edema or swelling. Finger slides are attached to the Velcro sensitive top side of the glove. The slides can be super-glued to the glove if the hand is so stiff that the slides pull loose from the glove.

Hand Control

The 8091 is the first portable hand CPM controlled by a remote digital hand control. Range of motion, speed, pause times, and force can be accurately set and displayed. There is even an internal hour meter for monitoring patient compliance.

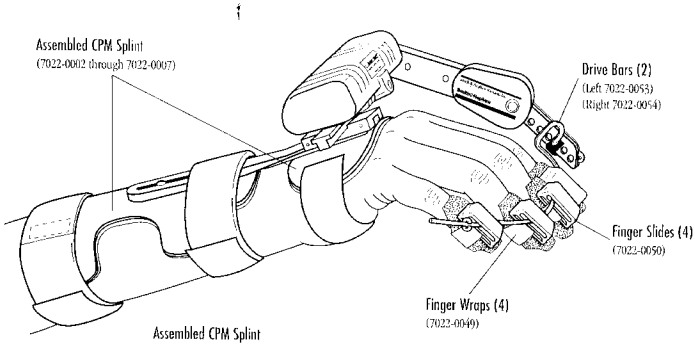
The hand control also houses the two 9 VDC batteries used to power the motor. The battery compartment is accessed through the back of the hand control. The power cable from the wall transformer plugs into the end of the hand control. A patient lock-out switch is also located near the end of the hand control on the bottom side. No parameter changes can be made when this switch is in the locked position. If changes are attempted, the display will indicate "Lock." The hand control is discussed in more detail in the technical section of this manual.

Accessories

The 8091 system utilizes a wide variety of optional accessories that are designed to meet specific clinical applications. These accessories are listed and graphically presented on the KINETEC 8091 Portable Hand CPM Accessories Order Form which is included with the hand CPM unit. Additional order forms are available through your Smith & Nephew Richards sales representative or simply call 1-800-262-3540 and ask for the CPM department.

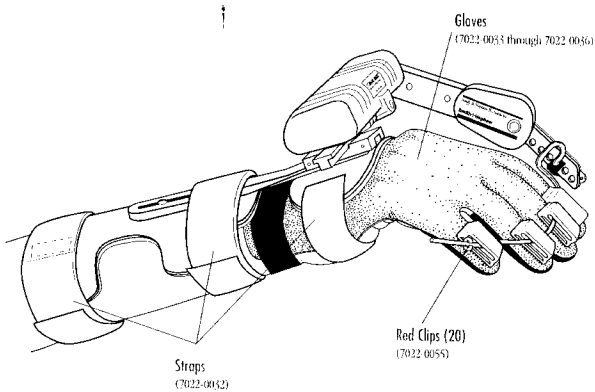
Examples of most accessories are shown on the following pages.

FIGURE 4



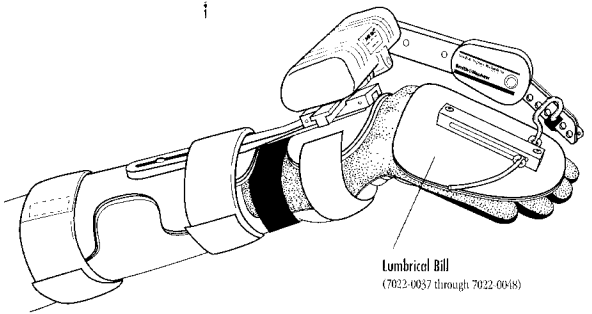
Typical Set-up for Composite Flexion Using Finger Wraps.
(ROM potential is 15° hyperextension to 270° combined flexion.)

FIGURE 5



Typical Set-up for Composite Flexion Using a Glove.
(ROM potential is 15° hyperextension to 270° combined flexion.)

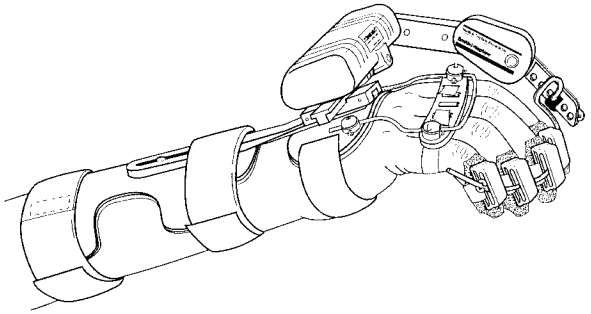
FIGURE 6



Lumbrical Bills are available as Preforms (ready to use) or as Precuts (flat pieces for custom fitting).

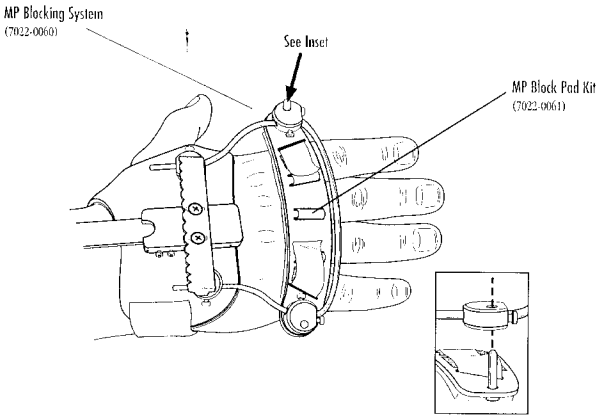
Set-up for Intrinsic Plus Motion Using the Lumbrical Bill.
(MP motion only…0° extension to 90° flexion.)

FIGURE 7



Detail of the MP Blocking System Used for Intrinsic Minus.
(MP Block Pad Kit is disposable…keep the metal block for reuse.)

FIGURE 8

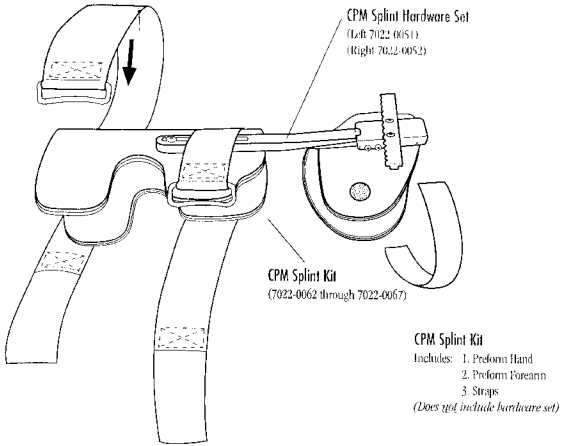


MP Blocking System
Includes: Reusable Frame, Reusable Block and Disposable MP Block Pad Kit.

MP Block Pad Kit
Includes: Padding and Strap..

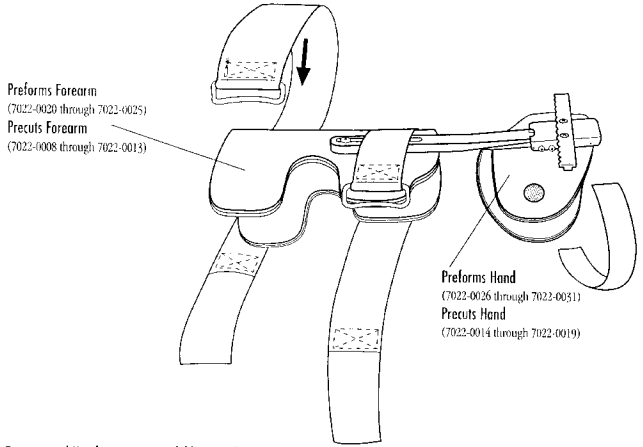
Set-up for Intrinsic Minus Using the MP Blocking System.
(IP motion only…0° extension to 180° flexion.)

FIGURE 9



CPM Splint Detailing the Features of the Splint Kit.

FIGURE 10



Forearm and Hand pieces are available as Preforms (ready to use) or as Precuts (flat pieces for custom fitting).

CPM Splint Detailing the Preform and Precut Components.

TECHNICAL DATA

Weights:

Splint	.50 lbs.
Motor	.87 lbs.
Drive Bar	.05 lbs.
Lumbrical Bill	.16 lbs.
MP Block	.17 lbs.

Weight on Patient's Arm:

Composite Fist Set-up	1.42 lbs.
Intrinsic Plus Set-up	1.58 lbs.
Intrinsic Minus Set-up	1.59 lbs.

Splint Sizing Guide:

Palm Width at MCP:

Small - up to 3"
Medium - 3" to 4"
Large - 4" and up

Power Requirements:

For portable use: Two (2) 9 VDC Batteries
Rechargeable or Disposable.

For stationary use: Wall Transformer
Input - 120 VAC 60 hz
Output - 8 VDC

Range of Motion:

MP 15° hyperextension to 90° flexion
PIP 0° extension to 110° flexion
DIP 0° extension to 70° flexion
Composite ROM -15° extension to 270° flexion
Intrinsic Plus 0° extension to 90° flexion
Intrinsic Minus 0° extension to 180° flexion

Pause Times for Extension and/or Flexion:

Maximum 15 minutes.
Increments: 1" to 10"-1 second
> 10"-5 seconds

Force Reversal Levels (approximate):

Force 1 - 1.2 lbs.
Force 2 - 2.7 lbs.
Force 3 - 4.2 lbs.
Force 4 - 5.6 lbs.
Force 5 - 7.1 lbs.
Force 6 - 8.6 lbs.

Speeds (approximate):

0°-270°-0°
1 - 1 minute 45 seconds
2 - 1 minute 5 seconds
3 - 46 seconds
4 - 37 seconds
5 - 30 seconds

UL Approval Number:

85E2 Medical Equipment E118577.

Hand Control Operation

Cable Connection: Figure 11

Connect the hand control cable to the back of the motor unit by lining up the RED DOTS. This cable plugs straight into the motor unit. DO NOT TRY TO TURN THE CONNECTOR! If this connection is not made properly, the hand control display will indicate "CONNECT."

To disconnect the cable, simply pull the serrated surface on the connection.

Power Supply: Figure 11

The KINETEC 8091 is a type B, class 2 device. Power can be supplied to the unit one of two ways.

1. The external wall transformer which is provided with the unit. This power supply is connected to the top end of the hand control.

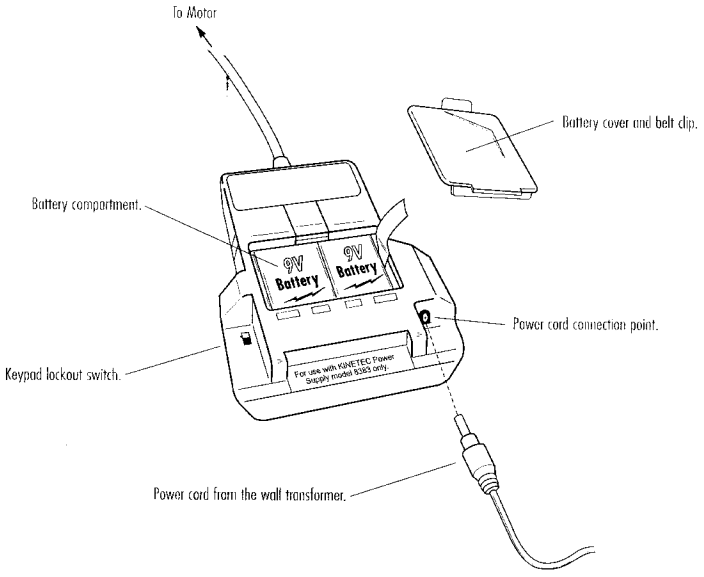
   For replacement power supply, contact Smith & Nephew Richards at 1-800-238-7538.

   Use only Smith & Nephew Richards power supply model 8383.

2. Two (2) 9 VDC batteries which are housed inside the hand control. The battery compartment is accessed through the back of the hand control. Rechargeable or disposable batteries may be used. The hand control is not a charging unit.

The wall transformer will take priority over the batteries as the power source.

FIGURE 11



Rear View of the Hand Control.

Display and Keypad Functions: Figure 12

Display: The operating parameters of the CPM are displayed on LCD display.

Normal Displays: (from left to right)

EXT - Current extension limit setting.

Current status of the machine.
RUN...STOP...PAUSE...etc.

Angle - Current composite angle of the machine.

FLEX - Current flexion limit setting.

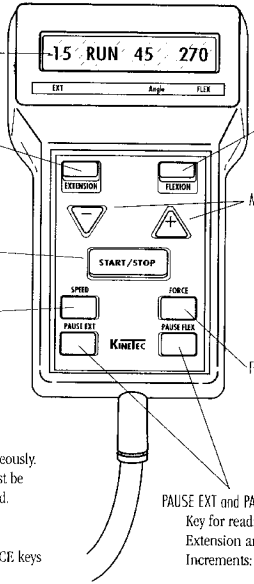
Keypad Functions:

Making Changes: It is easy to make changes to any treatment setting. Push the gray button that is associated with the parameter that you wish to change and make your changes with the black minus and plus buttons. For example, if you wish to change the extension setting, push and release the gray button labeled EXTENSION. Notice that the LCD display for the extension setting will begin to flash. While the numbers are flashing, make your changes with the black minus or plus buttons. Once you have reached the desired setting, remove your finger from the black button. After a few seconds, the numbers will stop flashing and the machine will beep once indicating that the change has been accepted.

There are six different gray buttons that are used to select treatment parameters: EXTENSION, FLEXION, SPEED, FORCE, PAUSE EXT, AND PAUSE FLEX. Refer to Figure 12 for more information about each of these keys.

If the word "LOCK" appears on the display, you will not be able to make changes until the keypad lockout switch has been returned to the unlocked position. See Figure 11 for more information on the lockout switch.

FIGURE 12



LCD Display

Key for selecting EXTENSION limit:
Max: -15°
Min: 265°

START/STOP/REVERSE key.
This key is duplicated on the motor assembly.

SPEED key.
Press to read or select speed setting.
Max: 5 = 30 seconds 0 to 270 to 0
Min: 1 = 2 minutes 0 to 270 to 0

RESET TIME HOURMETER.
Press the gray EXTENSION and FLEXION keys simultaneously.
Press START/STOP to reset the hourmeter. Machine must be stopped and the keypad lockout switch must be unlocked.

TOTAL TIME HOURMETER.
Press the gray EXTENSION, FLEXION, SPEED, and FORCE keys simultaneously.

Key for selecting FLEXION limit.
Max: 270°
Min: -10°

Minus/Plus Keys:
Increase or decrease selected values after a gray function key has been pressed.
Will manually move the machine if held down while machine is stopped. This is the MANUAL mode.
Will BYPASS set ROM values while machine running.

FORCE key.
Press to read or select the force setting for the reverse on load.
Max force: six bars = 8.6 lbs.
Min force: one bar = 1.2 lbs.

PAUSE EXT and PAUSE FLEX keys.
Key for reading or selecting the pause feature at the Extension and/or Flexion limits.
Increments: 1° to 10°-1 second
> 10°-5 seconds

Top View of Hand Control.

Special Features:

Manual Operation: With the machine stopped, press and hold either the black MINUS or PLUS key. The display will change and indicate "MANUAL" and the machine will begin to move. The machine will move as long as the key is held down. This feature is very useful for initial set-ups as you are able to verify through motion the patient's ROM limits. Pressing the FLEXION or EXTENSION button after manually moving the machine will update the ROM setting.

Bypass Operation: With the machine moving, press and hold either the black MINUS or PLUS key. The display will change and indicate "BYPASS." The machine will continue to move past the ROM setting as long as the key is held down. This feature is an excellent way for the patient to test his ability to increase the ROM settings without actually changing the ROM settings. The machine will automatically return to the settings when pressure is released from the black keys. Pressing either the EXTENSION or FLEXION buttons within three seconds will update the ROM settings to the current angle.

Reset Hourmeter: With the machine stopped, press the EXTENSION and FLEXION buttons simultaneously. The display will show the number of hours on the machine since it was last reset. The reading is in hours and tenths of an hour. The time can be reset to zero hours by pressing the START button two times. This hour meter is useful for monitoring patient compliance. You will not be able to reset the hourmeter if the keypad lockout switch is locked.

Total Hourmeter: With the machine stopped, simultaneously press the EXTENSION, FLEXION, SPEED, and FORCE buttons. The display will show the total accumulation of hours on the machine since its date of manufacture. The reading is also in hours and tenths of hours. The time can only be reset at the factory after a motor replacement. This hourmeter is useful for tracking machine hours for routine maintenance schedules.

Splint Assembly And Adjustment Procedures

PREASSEMBLED splints come to you already attached to the color-coded hardware. However, there are a few minor assembly steps to complete before the splint is ready for patient use. See Figure 13.

Step 1: Attach two of the Velcro dots to the handpiece. One is attached to the outside top edge of the handpiece. The second dot is attached to the bottom outside edge of the handpiece. Save the other two Velcro dots included with the splint. We will use them with the glove later on.

Step 2: Attach the three straps to the splint. The longest strap attaches to the forearm piece at the point closest to the elbow. The middle length strap attaches to the forearm piece near the wrist. The narrow elastic strap attaches to the two Velcro dots on the handpiece.

PREFORMED splint components are shipped to you in a plastic bag that also contains all of the necessary hardware to attach the component to the reusable hardware. Be sure that the components you use match the hardware. The hardware is color-coded. Red is for the left hand and green is for the right hand. The splint components have a heat stamped symbol that identifies the size and also which hand it is designed for. The stamp is located on the top of the component.

Example:

S/L is Small/Left
L/L is Large/Left

The screws that are provided with the components are designed to be used with that component only. The screws for the forearm piece are rounded while the handpiece screws are countersunk. DO NOT MIX THESE SCREWS.

To attach the hardware to the molded pieces, begin by pushing the barbed T-nut through the foam side (inside) of the component. There are two T-nuts and two screws per component. Push the screw down through the top of the hardware and the top side of the component and tighten with the hex key that is provided. In order to attach the handpiece, you may have to loosen the small screws on the side of the hardware and slide the serrated bar up or down to expose the hole.

It is acceptable to mix hand and forearm pieces of different sizes to accommodate a sizing difficulty with a patient.

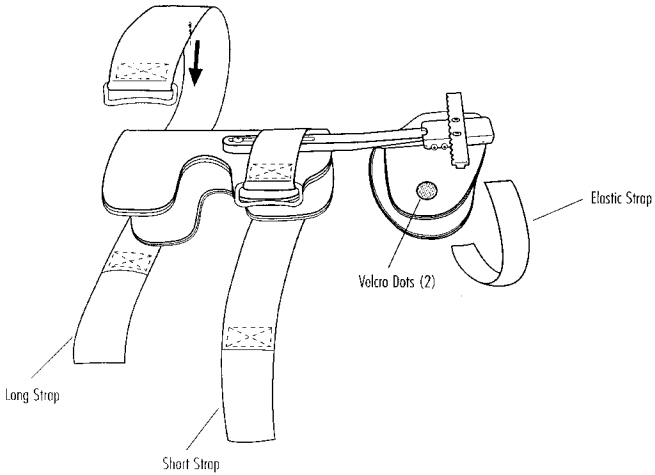
PRECUT components are assembled exactly the same as preformed components, but must first be custom molded to the patient's arm. The flat precut pieces are first heated in warm water (approximately 170° Fahrenheit) until they become soft and pliable. Remove from the water and drape over the arm and work the material into shape as it is cooling. WARNING: BE SURE THAT THE MATERIAL IS NOT HOT BEFORE APPLYING TO THE PATIENT. You will have approximately 3 to 5 minutes of working time before the material sets up. It can be reheated and reworked if needed.

Attach the straps to the assembled splint as before.

Splint Adjustments: Figure 14

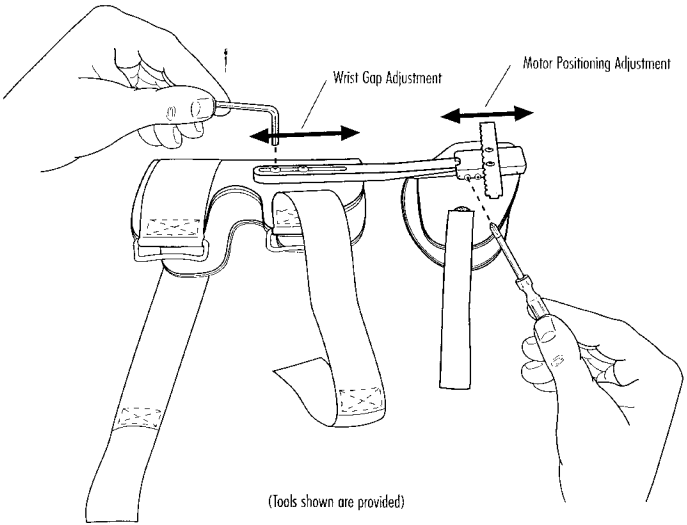
Wrist Gap Adjustment: The splint may need to be adjusted to make the most comfortable fit. It is important that there is enough space between the forearm and handpieces so that there is no pressure applied to the bony areas around the wrist. If more space is required, it is a simple matter to loosen the two screws on the forearm piece and slide the forearm piece away from the handpiece creating a larger gap.

FIGURE 13



Splint Assembly.

FIGURE 14



Splint Adjustments.

Assembly and Use of the Lumbrical Bill (IP BLOCK)

Description: Figures 15, 16, and 17

The lumbrical bill is a very simple device that is very effective when it is necessary to block the movement of the PIP and DIP joints and mobilize only the MP joints.

The lumbrical bill is designed to be used with the glove and to take advantage of the huge amount of Velcro material on the top of the glove.

Lumbrical bills or IP blocks are available as PREFORMS or PRECUTS. Sizes are Small, Medium, and Large in both Left and Right. Both require some assembly prior to use.

Assembly: Begin by inserting the barbed T-nuts through the foam side of the molded component. Align the holes of the plastic slide with the holes on the top of the component and insert the two screws. Tighten the screws with the provided hex key.

Attach the Velcro strips to the underside of the component and trim any excess if you desire. A long Velcro strap is provided to help hold the fingers to the lumbrical bill during extension. Each end of the strap is attached to the top edge of the lumbrical bill by using the Velcro tabs that are provided. The strap runs across the palm of the hand and attaches to the top edge of the bill.

Placement of the Lumbricol Bill: Figure 15

The lumbrical bill is attached to the top of the glove so that the PIP and DIP joints are covered but the MP joints are free to move.

The CPM drive bar should be positioned in the slide so that there is ample space for the bar to travel. The drive bar should be in the middle of the slide at the neutral or zero extension position.

WARNING: BE SURE THAT THE FLEXION SETTING DOES NOT EXCEED 120° PRIOR TO STARTING THE CPM.

The lumbrical bill is especially useful after an MP arthroplasty where some radial deviation of the hand is desired during motion therapy. The bill is most effective in initially moving a very stiff hand prior to beginning composite flexion therapy. It is an easy set-up for the patient to switch back and forth.

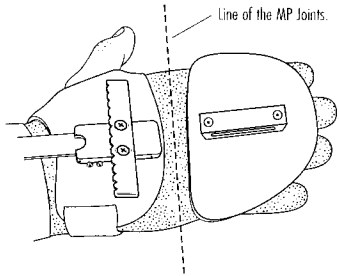


Figure 15 Positioning of the Lumbrical Bill.

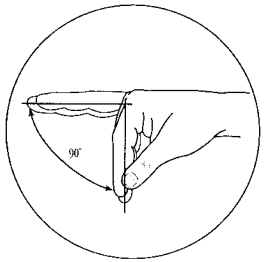
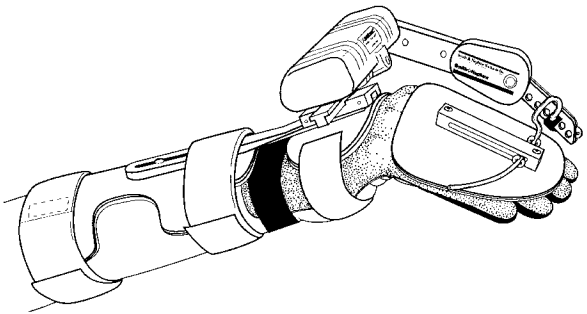


Figure 16 MP Range of Motion.

FIGURE 17



Application of the Lumbrical Bill (IP Block).

Assembly And Use Of The MP BLOCK

Description: Figure 18

The MP block is another simple and useful attachment. It is designed to block the movement of the MP joint while allowing the simultaneous movement of the PIP and DIP joints.

The MP block can be used either with the glove or finger wraps.

The MP Block uses a soft strip of material that is looped around the bottom side of each finger. These loops act as a block that prevents flexing of the MP joint.

The pad is designed for single patient use only. Replacement pads can be reordered in packages of five (7022-0061). The hardware is reusable to reduce costs.

Assembly: Figure 19

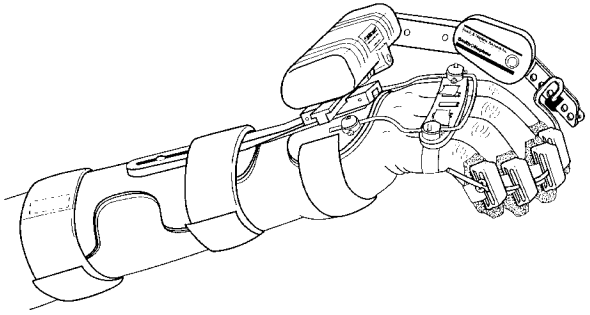
The MP block uses a metal frame outrigger that must first be attached to the top side of the splint handpiece. The attaching blocks are secured through the two holes on the top of the handpiece. Use the screws, T-nuts, and a screwdriver to attach the blocks. It may be necessary to remove the MP block from the frame so that it can be squeezed over the holes. Tighten these two screws very tight.

Placement of the MP Block: Figures 20 and 21

The MP block should be positioned over the top of the proximal phalanges between the MP and PIP joints. The fingers are woven through the loops of the block. It is easier to place the block on the hand and then attach the blocked hand to the frame. Reverse the process for removal.

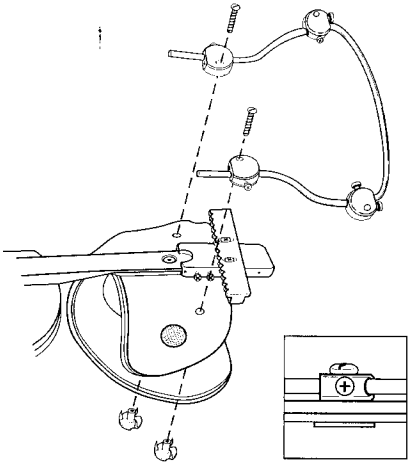
The MP block can be adjusted for more comfort by changing the position of the block within the frame. There are adjustments for length and lateral angle. There are screws on the frame to make these adjustments possible.

FIGURE 18



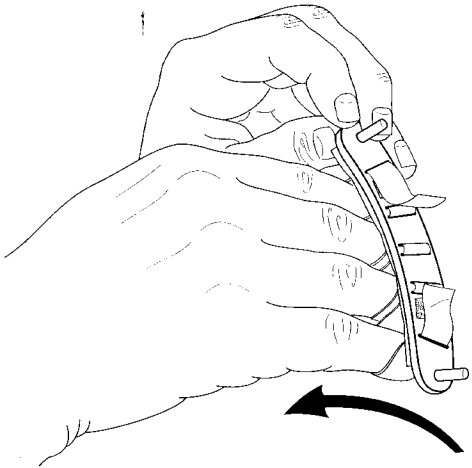
Application of the MP Blocking System (Loop-type).

FIGURE 19



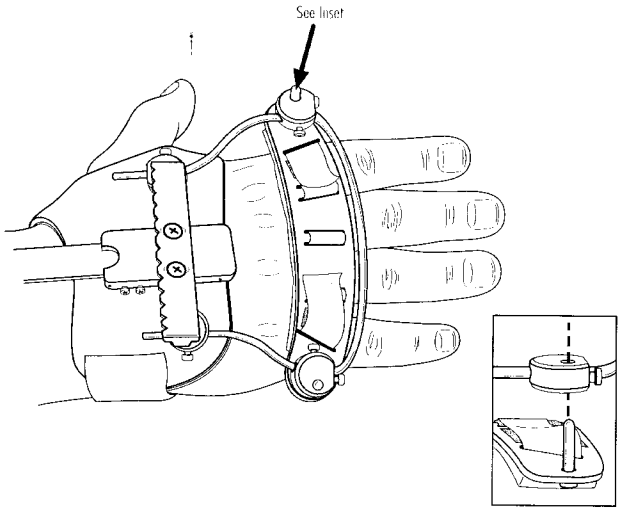
Assembly of the MP Blocking Frame.

FIGURE 20



Attaching the MP Block (note the Velcro adjusting straps).

FIGURE 21



Assembly and Positioning of the MP Block.

Motor Attachment And Positioning

The motor unit is attached to the top of the splint. This position gives the best balance and most comfort to the patient. Always be aware of the position of the motor and try to maintain a good balance if possible. Generally speaking, the motor can be centered for most left hand applications and slightly inside of center for right hand applications. The wider the hand, the further from center the motor will be. See Figure 22.

In addition to the left and right adjustment capability, there is also forward and backward adjustment. Loosen the two screws on the side of the splint hardware underneath the motor and the motor will slide forward or backward. This adjustment is used to position the motor for maximum benefit and will change with different set-ups. See Figures 14 and 23.

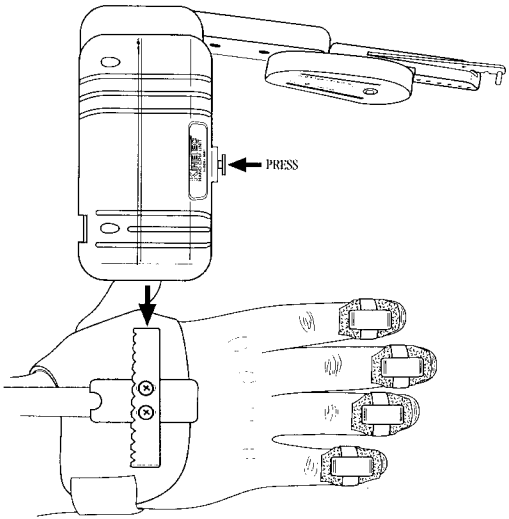
As a general rule, as the motor moves forward toward the fingertips, flexion of the PIP and DIP will increase and MP flexion will decrease. As the motor moves backward away from the fingertips, PIP and DIP flexion will decrease and MP flexion will increase.

Suggested Initial Set-Up Positions:

Intrinsic Minus - Motor forward
Composite Fist - Motor centered
Intrinsic Plus - Motor back

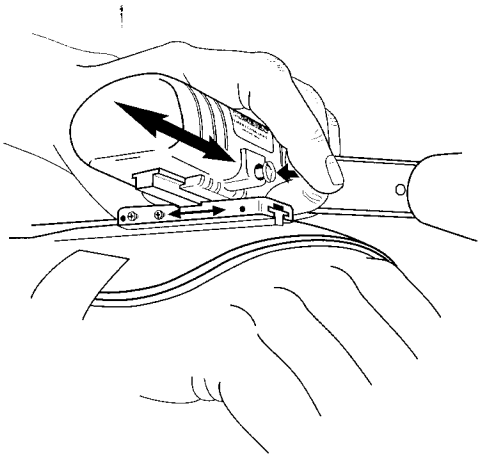
The motor should be adjusted left and right so that the drive arm has clearance around the little finger of the left hand or the index finger of the right. Keep the motor as close to center as possible.

FIGURE 22



Attaching the Motor to the Splint.

FIGURE 23



Motor Positioning Adjustments.

Drive Bar Attachment And Adjustments

Description: Four drive bars are included with your hand CPM system. There are two left hand bars and two right hand bars.

The left hand bars are color-coded red and the right hand bars are color-coded green.

The bars are further identified by size. There is a small bar which has a single ring etched around the end of the bar. The larger bar has two rings etched around the end of the bar. The smaller bar has a slightly tighter radius than the larger bar.

Each bar also has two red clips attached. These clips are useful in keeping the finger slides from sliding off the end of the bar. They may also be used to maintain a certain separation between the finger slides. Additional clips are available in packages of twenty clips.

Attachment to the Drive Arm: Figure 24

The drive bars are attached to the drive arm in one of six different holes. First lift the locking knife blade located on top of the drive arm. Fully insert the drive bar into the appropriate hole on the drive arm and close the locking knife blade. Make sure that the drive bar is fully inserted into the hold. The drive bars are inserted through the top opening of each finger slide. See Figure 25.

Proper Positioning of the Drive Bars

The drive bars should be positioned on the machine so that the radius of the bar follows the end of the finger nails. You may have to change the hole to reach the proper place for a given set-up. The bars are made from stainless steel, but they can be bent to better match the shape of the fingers. Small adjustments may be made by sliding the machine forward or backward instead of changing holes.

When the bars are positioned properly, the fingers of the hand should move easily into and out of flexion. The DIP joints will be the last to flex. If the DIP joints tend to hyperextend during the flexion cycle, then the drive bar is positioned too close to the DIP joint. Reposition the drive bar and try again until the right combination of motor position and hole selection are reached.

FIGURE 24

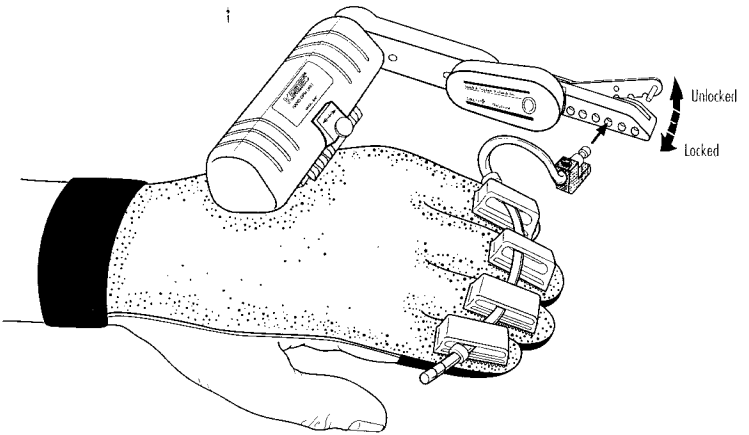
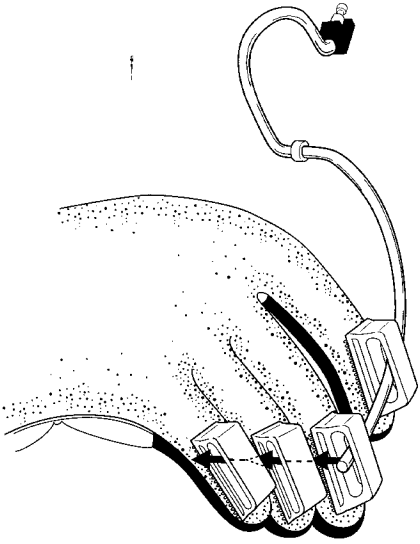


Illustration is shown without the splint for simplicity.

Attaching the Drive Bar to the Drive Arm.

FIGURE 25



Position of the Drive Bar and the Finger Slides.

Use Of The Gloves, Finger Wraps, And Finger Slides

Description: There are currently two methods for attaching the fingers to the machine: neoprene gloves and finger wraps.

Gloves: Figures 26 and 27

The gloves are very easy to use and are especially useful for homecare patients who need to get in and out of the machine several times each day. The gloves are color-coded, red is left hand and green is right. The top exterior of the glove is a Velcro sensitive material that has been laminated to neoprene. The bottom of the fingertips are made from Lycra® which provides compression that helps reduce edema.

The gloves are currently available in two sizes, Small/Medium and Large/Extra Large. The glove has an open palm which is cooler and more comfortable.

The finger slides are attached to the ends of the gloves on top of the fingernails. For stiff hands, you may want to use super glue to attach the slides in stead of relying on the Velcro.

Finger Wraps: Figures 28 and 29

Finger wraps are especially good for immediate postop applications because of their small size and tremendous holding capability.

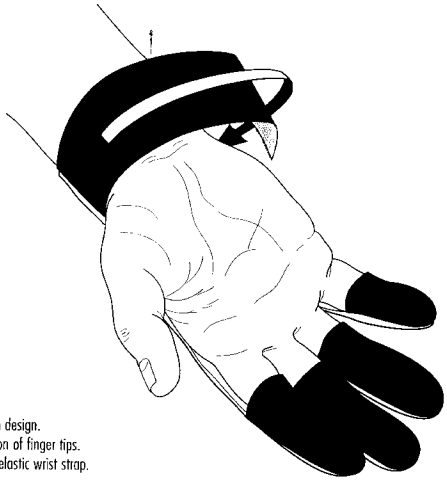
Prior to attaching the finger wraps, you must first remove the thin film from the back of the wrap. This will expose the tacky surface that is responsible for the nonslip feature of the wrap.

The wraps can be reused numerous times with the same patient. Do not expose the uncovered wraps to dusty areas. This will greatly diminish the life of the tacky surface.

The attached strap provides additional hold for the finger slide and should be sufficient for most applications. If more hold is desired, the finger may be wrapped with a thin layer of Coban or clear fingernail polish prior to attaching the wraps.

The gloves and the finger wraps are single patient use items.

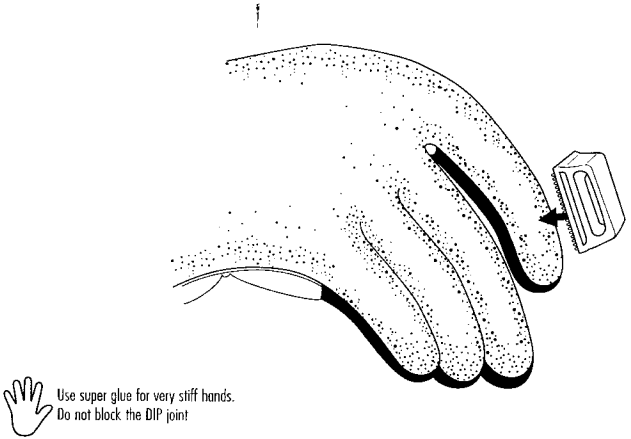
FIGURE 26



Open palm design.
Compression of finger tips.
Moveable elastic wrist strap.

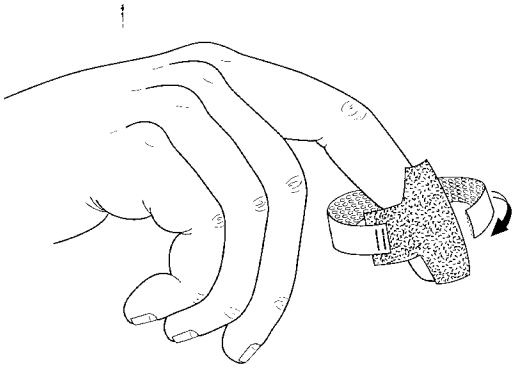
Glove Application.

FIGURE 27



Attaching Finger Slide to the Glove.

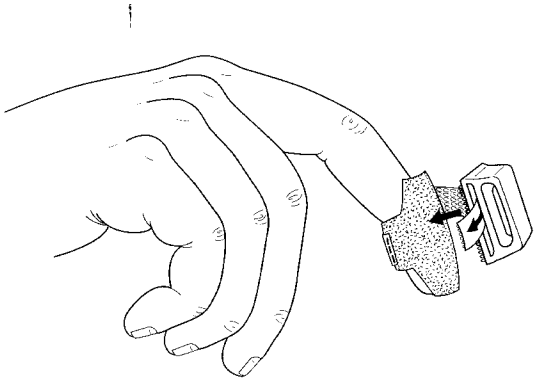
FIGURE 28



Remove thin film on back.
Wrap around finger.
Do not block the DIP

Finger Wrap Attachment.

FIGURE 29



Attach the slide to the wrap.
Loop strap through bottom of slide.
Tighten strap.

Finger Slide Attachment.

HELPING HANDS

Ideas and observations to help you with your CPM work.

1. Practice your technique for best results. Do not be afraid to experiment with different techniques. The system is designed to be very flexible and user friendly.

2. The splint material is a thermoplastic material. Heat it and mold it for a custom fit.

3. Order the splint kits as replacements. Reuse your hardware and save money.

4. Do not try to reuse the gloves. It's not worth the trouble.

5. Glove Technique: Throw away the strap. From the middle of the wrist end of the glove, cut out a 4" long by 1/2" wide piece of material. Attach the two extra Velcro dots from the splint to the top of the hand splint on each side of the hardware. With the glove and splint on the patient's arm, pull the two glove "tails" back and over the top of the handpiece. Secure them on the two dots. This makes a nice tight fit for the glove.

6. Motor forward gives more PIP and DIP motion. Motor back gives more MP motion.

7. Use super glue to hold the finger slides on the glove with stiff hands.

8. For maximum composite flexion, trim the hand splint to expose the proximal palmar crease.

9. Keep the drive bars positioned at the end of the fingernails.

10. For intrinsic minus motion, use the MP block. For intrinsic plus motion, use the lumbrical bill.

If you want to contribute a Helping Hand, please give us a call at 1-800-262-3540 or fax at 1-800-812-4168
You may also write us at:

Smith & Nephew Richards Inc.
CPM Department
2925 Appling Road
Bartlett, TN 38133

We will be happy to add your contribution to our list.

Set-Up Procedures And Checklist

Intrinsic Minus Motion .... ✓

1. Assemble splint. Red is left, green is right. .... ______
2. Attach the MP Blocking System to the splint. .... ______
3. Remove the MP Block and set aside. .... ______
4. Put glove or finger wraps on patient's hand. .... ______
5. Slide MP Block over patient's fingers. .... ______
6. Slip the splint on the patient's arm and adjust to fit. .... ______
7. Attach the MP Block to the MP Blocking Frame. .... ______
8. Attach finger slides to the patient's fingers. .... ______
9. Slide appropriate drive bar through the finger slides. .... ______
10. Attach and position motor. Forward is best. .... ______
11. Measure and attach drive bar to the motor. .... ______
12. Attach hand control. .... ______
13. Check batteries or attach transformer. .... ______
14. Set treatment parameters and begin therapy .... ______

Intrinsic Plus Motion

1. Assemble splint. Red is left, green is right. .... ______
2. Assemble Lumbrical Bill. Check size and left or right. .... ______
3. Put glove on patient. .... ______
4. Slip the splint on the patient's arm and adjust to fit. .... ______
5. Attach the Lumbrical Bill to the glove. .... ______
6. Slide appropriate drive bar through Lumbrical Bill slide. .... ______
7. Attach and position motor. Back is best. .... ______
8. Measure and attach the drive bar to motor. .... ______
9. Attach hand control. .... ______
10. Check batteries or attach transformer. .... ______
11. Set treatment parameters and begin therapy. .... ______