

MECHANICAL ADVANTAGE LTD

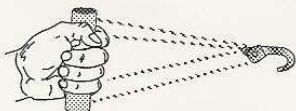
SELF THERAPEUTIC STRETCHING HARNESSES

**HELP
PATIENTS
HELP
THEMSELVES**



Lower Extremity Mobilization

INSTRUCTION MANUAL



MECHANICAL ADVANTAGE LTD
SELF THERAPEUTIC STRETCHING HARNESES

(716) 248-2098

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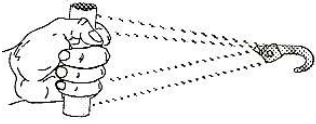
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A Progressive, New Concept In Range-Of-Motion Therapy

Now, self-therapeutic stretching equipment has been developed utilizing pulley systems to assist in the breakdown of scar tissue and increase range-of-motion. These pulleys have been integrated into soft, padded harnesses. Patients using the harnesses are able to rehabilitate, without being totally dependent on others.

Therapists: You will spend less time fatiguing scar tissue. Time-consuming bullwork is delegated to the patient, with you spending quality-time finishing the stretch, if needed.

Patients have control. Muscle guarding is reduced because the patient determines the amount of force being applied and the pace of therapy. This means RESULTS. Patients experience less fear and stress, and greater motivation as they see steady, noticeable gains.

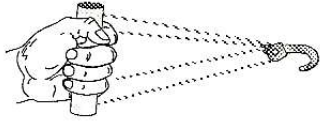
In the hands of determined patients who are supervised by professional therapists, Mechanical Advantage achieves "breakthrough" results over past methods. Whatever your method or philosophy the harness is a valuable new tool which can increase your effectiveness.

I hope you enjoy working with the equipment and all the possibilities it has to offer you and your patients.

Good Health!

Thomas Johnston, President

Mechanical Advantage

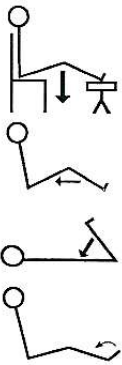


MECHANICAL ADVANTAGE LTD
SELF THERAPEUTIC STRETCHING HARNESES

Introduces:



The Mechanical Advantage Extremity Mobilization System Includes:



KNEE EXTENSION HARNESS

SEATED FLEXION HARNESS

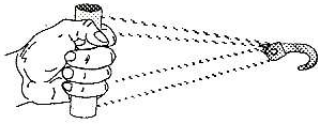
PRONE FLEXION HARNESS

DORSI FLEXION HARNESS



MAXM

- ✓ *Provides Restorative Leverage and Power*
- ✓ *Maintains Long Effortless Stretch*
- ✓ *Puts The Patient In Control*
- ✓ *Greatly Improves Compliance*
- ✓ *Eliminates Guarding and Substitution*
- ✓ *Keeps Patients Motivated*



Suggested Program for Restricted Knee ROM

by Mike Mimken, P.T.

When pts are seen within 1-2 weeks after surgery, generally a limited program with the flexion or extension harness is all that is necessary to regain ROM.

- *I generally begin with a warm-up program that includes an exercise bike. The pt is asked to rock the pedals forward and back within their pain-free ROM. Typically, the pts spend 2-5 minutes on the bike.*
- *Soft tissue mobilization and patella mobilization are typically helpful.*
- *Flexion or extension harness is applied to the knee. The pt is asked to pull for 20-30 seconds to the point of strain, but not pain. This is repeated for 10 reps or 5 minutes. Periodically, goniometer readings are given to the patient for feedback. I generally expect to gain at least 2-5°/session. If the pt is unable to achieve this by pulling to the point of strain I will encourage them to pull to point of tolerance.*
- *After 5 minutes, the pt is started on AROM into the limited ROM using open chain exercises. Normally, the pt will do 2-3 exercises such as straight leg raise, short arc quads and graduated drills for 3 sets of 10 reps for extension. Eccentric and Concentric knee curls in prone and sitting.*
- *Close chain exercise for 15-20 minutes complete the program.*
- *Ice is used following the session.*

When pts have had restricted ROM longer than 4 weeks:

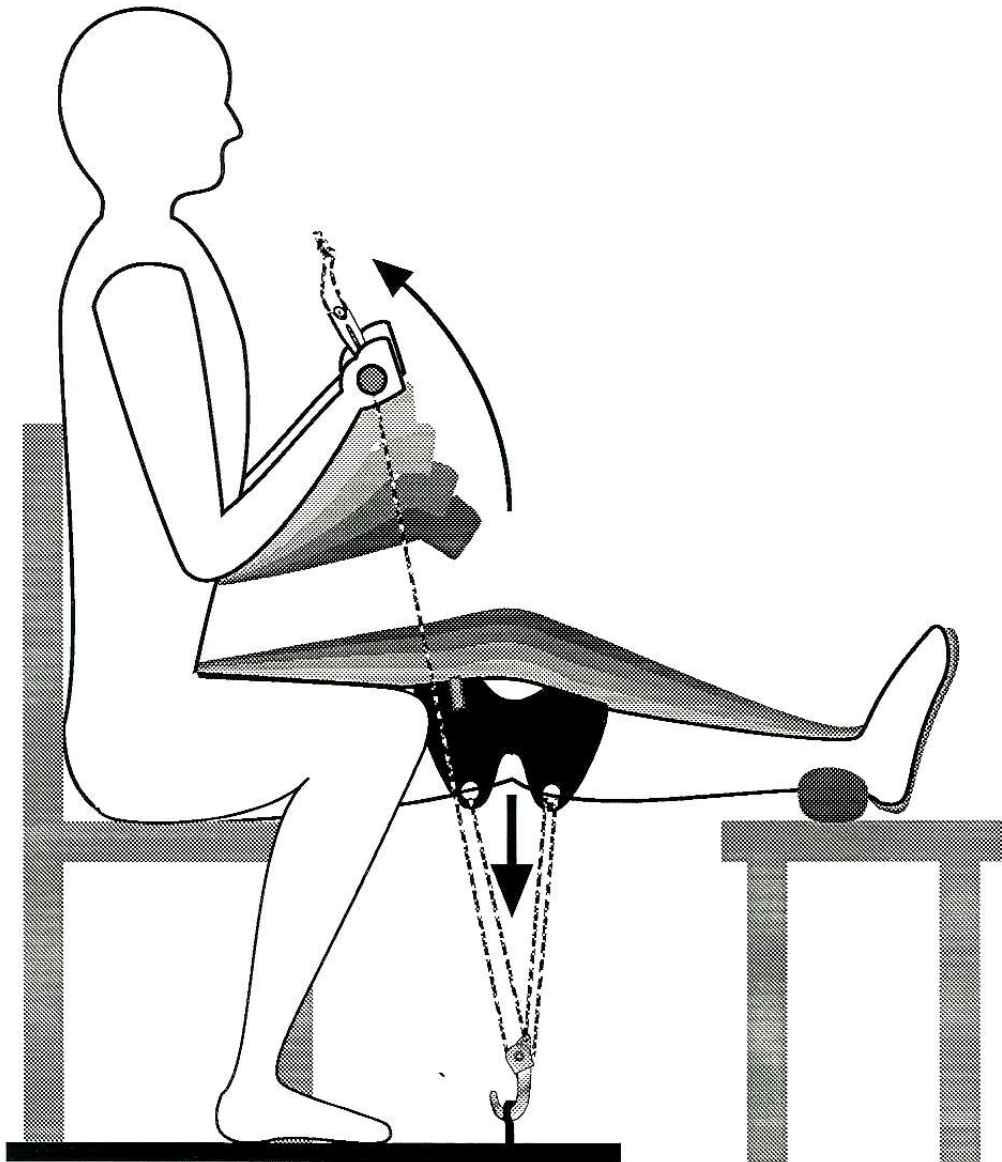
- *Soft tissue and patella mobilization are used to begin treatment.*
- *The extension or flexion harness is applied to the patient. The pt is asked to pull to the point of strain. A moist heat pack is applied over the knee with concentration of the heat given to the most apparently restricted tissue. The harness is locked at this range for 10 minutes.*
- *After 10 minutes, the moist heat is removed and the pt is asked to pull again. My goal is to achieve 2-5° more than the previous visit. The harness is locked at this range and ice is applied for 5 minutes.*
- *After 5 minutes the ice is removed. Typically, 30 seconds of grade I-II joint mobilization is helpful in reducing discomfort.*
- *Patient then moves to the exercycle for 5-10 minutes.*
- *Open chain exercises follow completion of the exercise bike. Generally, 2-3 exercises to increase AROM are utilized.*
- *Closed chain exercises follow the open chain program (6-8 exercises).*
- *For patients who have difficulty tolerating the stretch, I will utilize TENS for pain control during the application of the harness.*
- *For patients with a large lag between active and passive ROM, I will use muscle stimulation following the harness. Biofeedback has also been beneficial with several difficult pts.*

Patients who fail to achieve 2-5° per visit will benefit from home use of the harness for more frequent stretching sessions.

Mike Mimken is Director of Physical Therapy at Wilson Center, 800 Carter Street, Rochester, NY 14621. He has been using Mechanical Advantage Harnesses since their introduction.

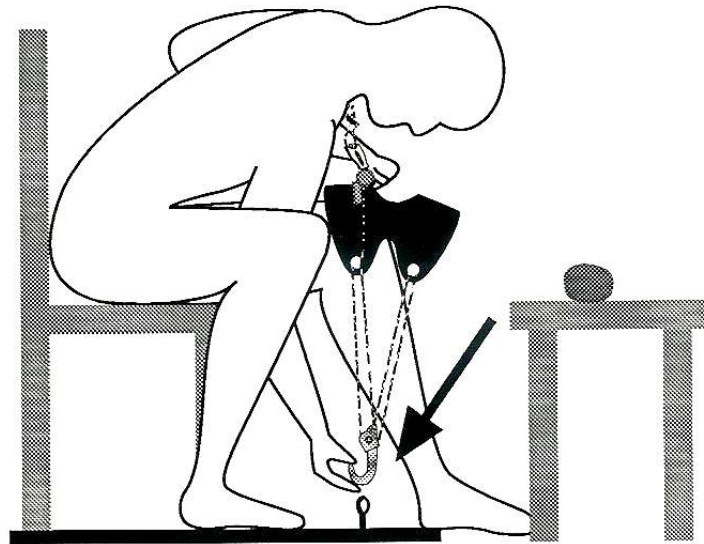
QUICK-VIEW KNEE EXTENSION

ACTIVE ILLUSTRATION:

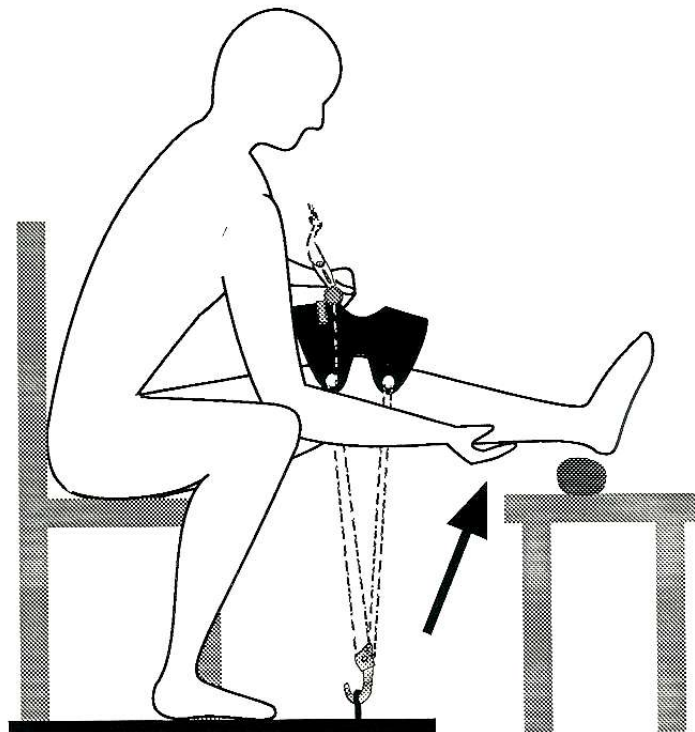


KNEE EXTENSION

STEP 1 HOOK TO PLATFORM

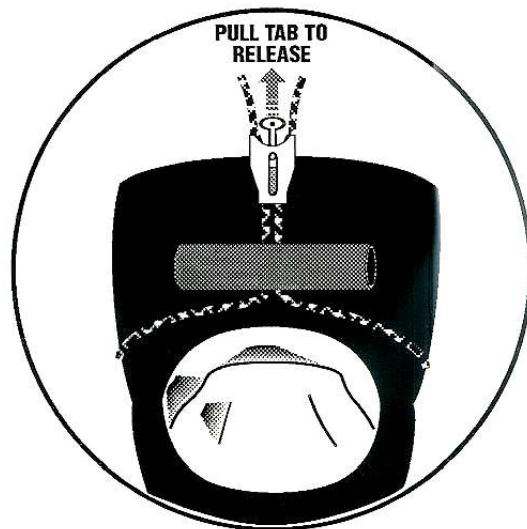
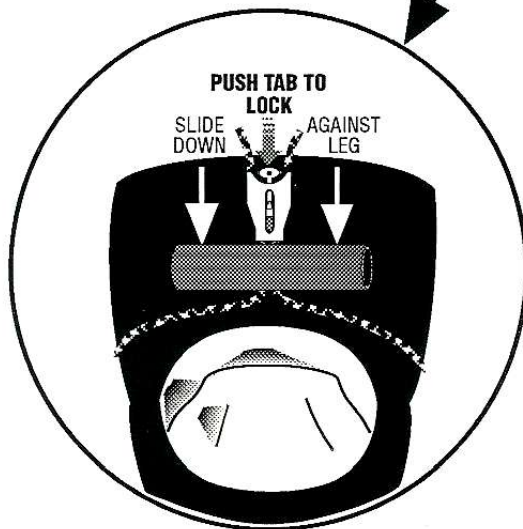
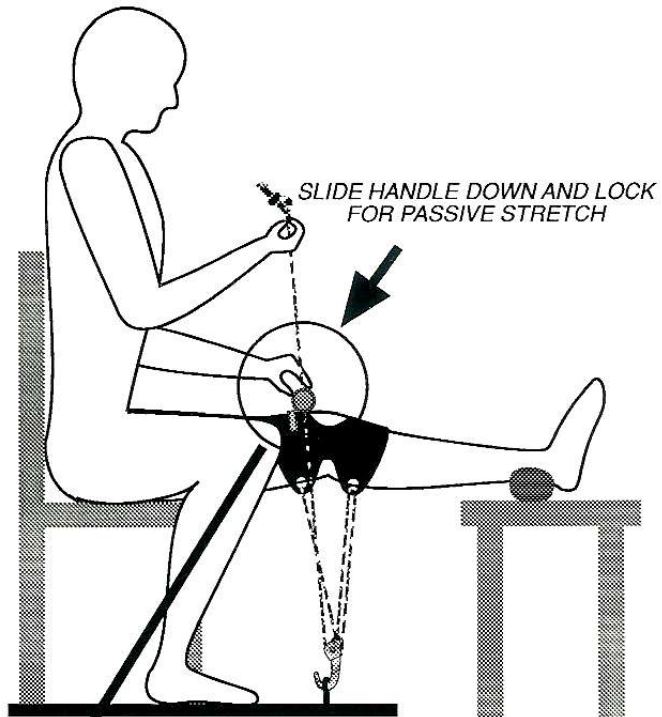


STEP 2 POSITION LEG



KNEE EXTENSION

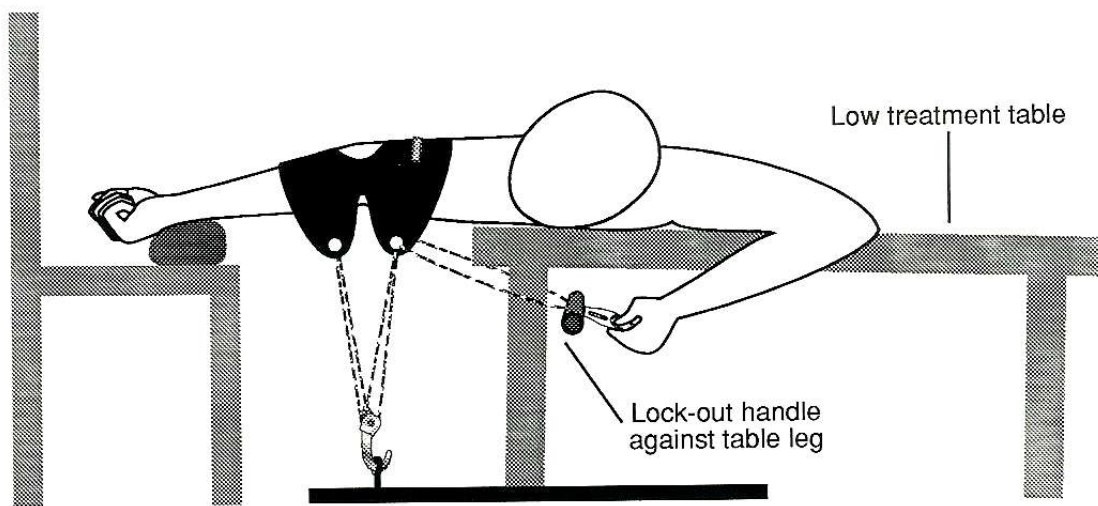
STEP 3 APPLY FORCE



CORD LOCK AND RELEASE

KNEE EXTENSION

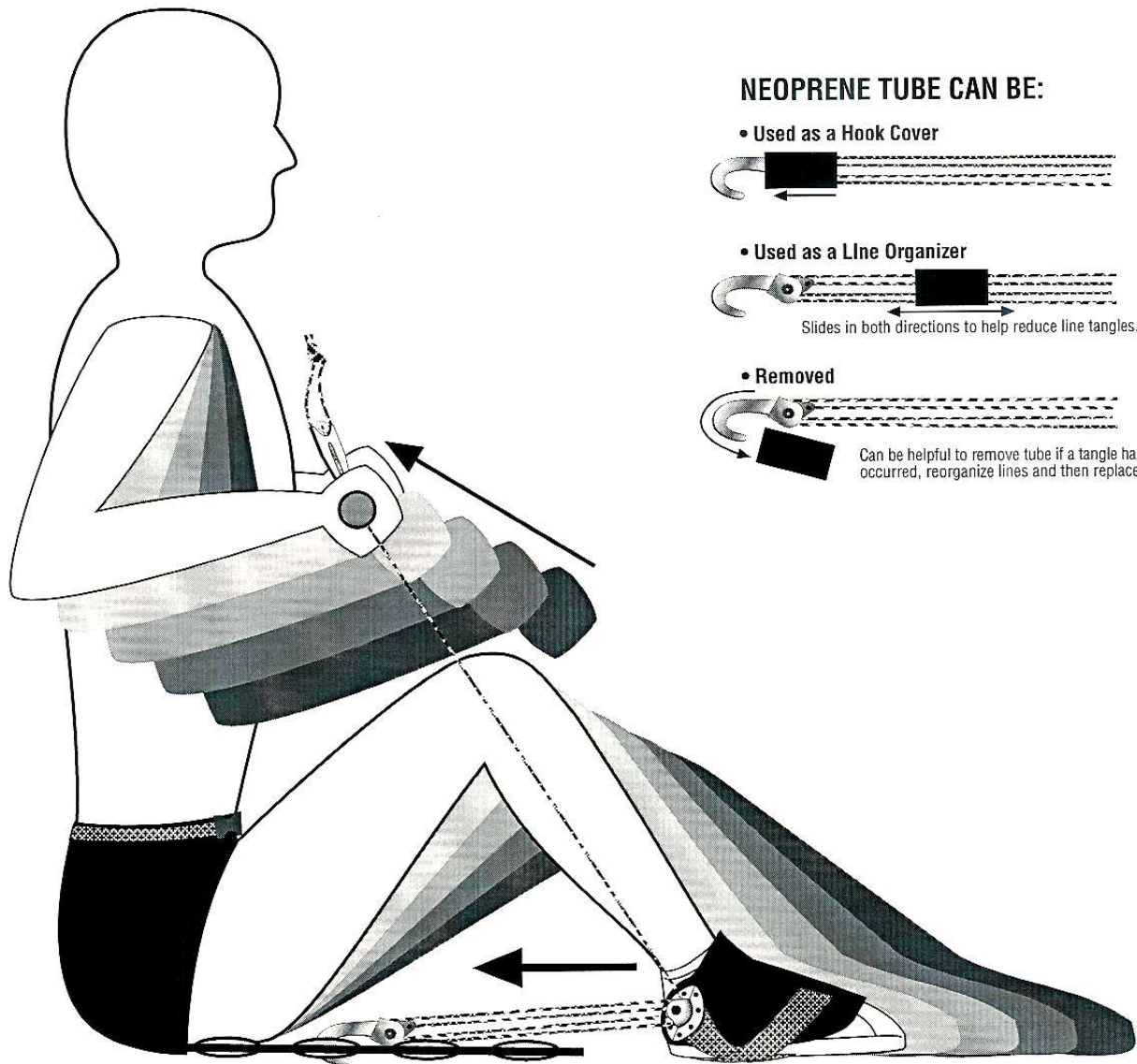
ALTERNATE APPLICATION: ELBOW EXTENSION



QUICK-VIEW FLEX-SEAT

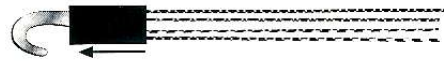
(R-O-M: 30° TO 125° FLEXION)

ACTIVE ILLUSTRATION:



NEOPRENE TUBE CAN BE:

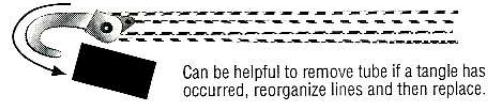
- Used as a Hook Cover



- Used as a Line Organizer



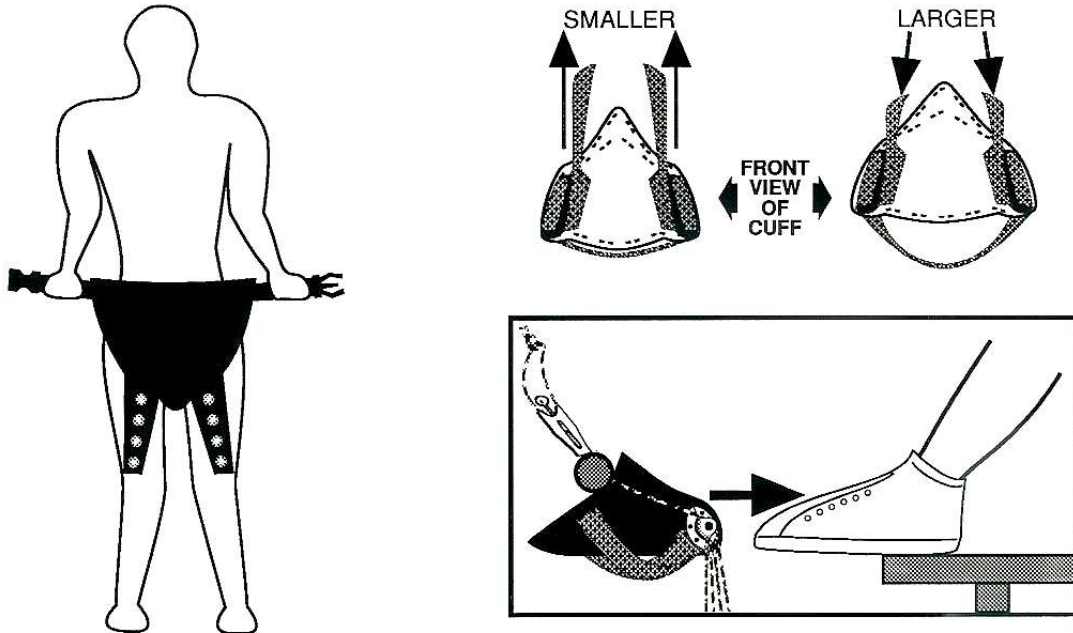
- Removed



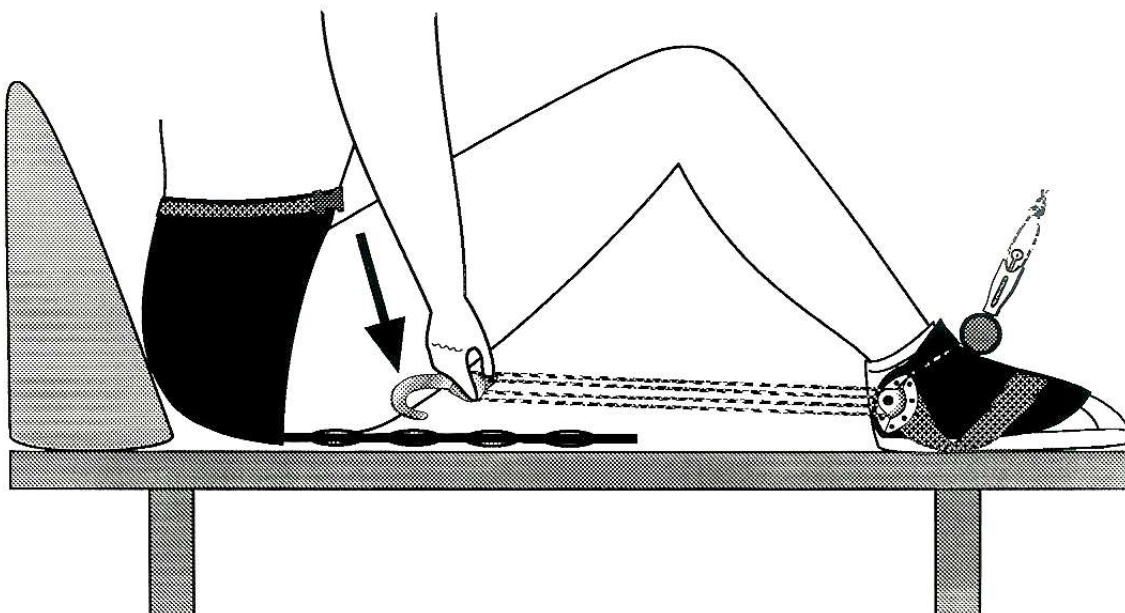
Can be helpful to remove tube if a tangle has occurred, reorganize lines and then replace.

FLEX-SEAT

STEP 1 FIT SEAT AND CUFF

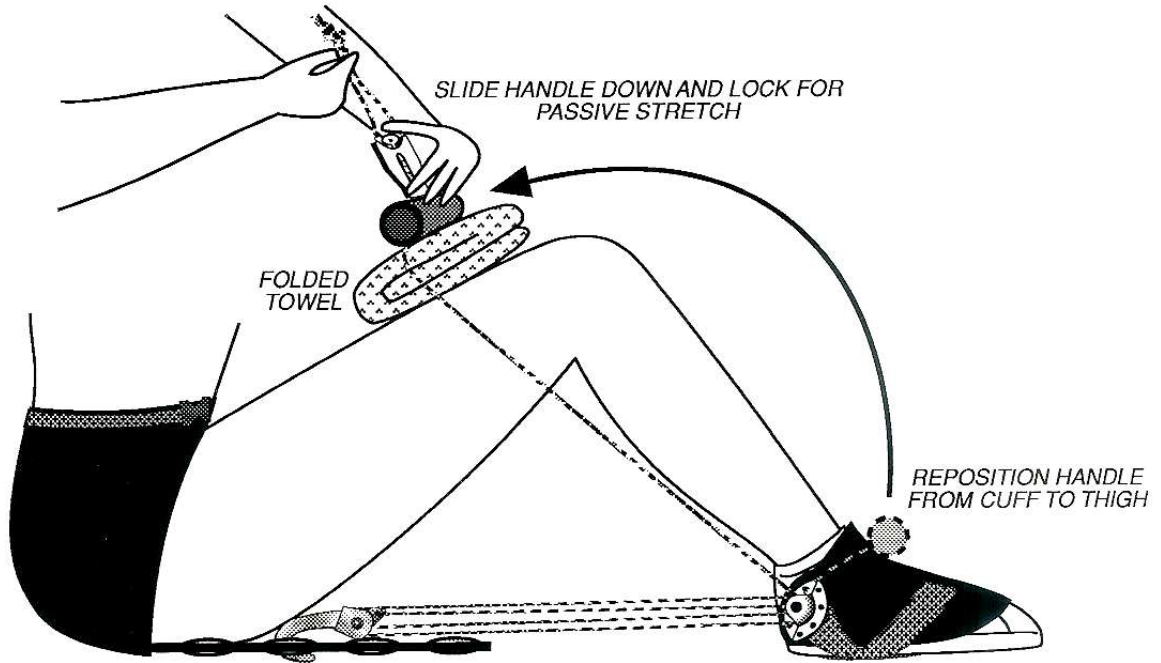


STEP 2 HOOK CUFF TO SEAT

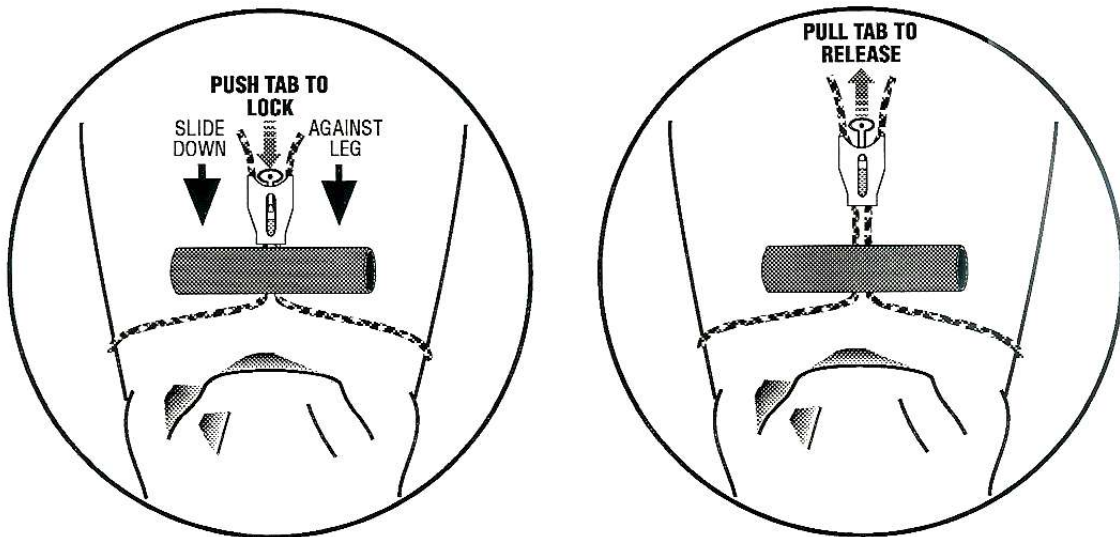


FLEX-SEAT

STEP 3 APPLY FORCE

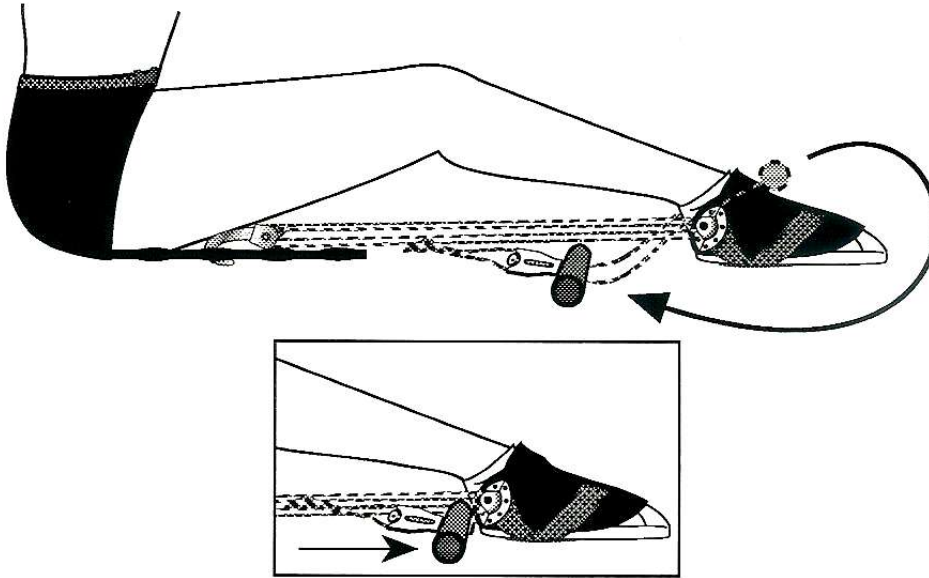


CORD LOCK AND RELEASE

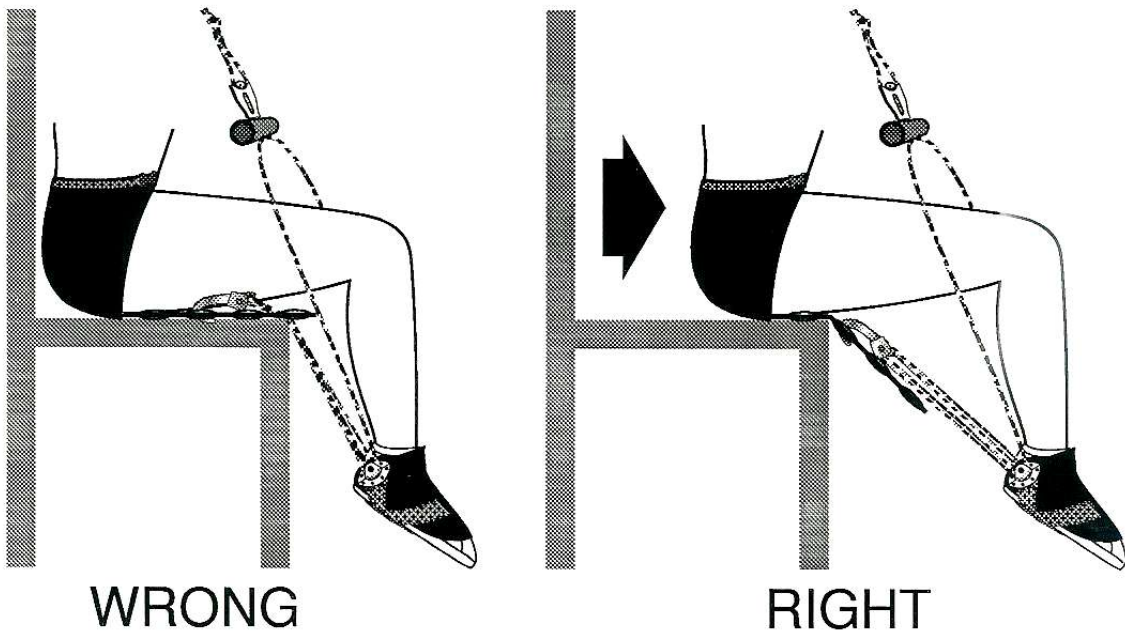


FLEX-SEAT

ALTERNATE METHOD: LOCKING HANDLE BEHIND HEEL



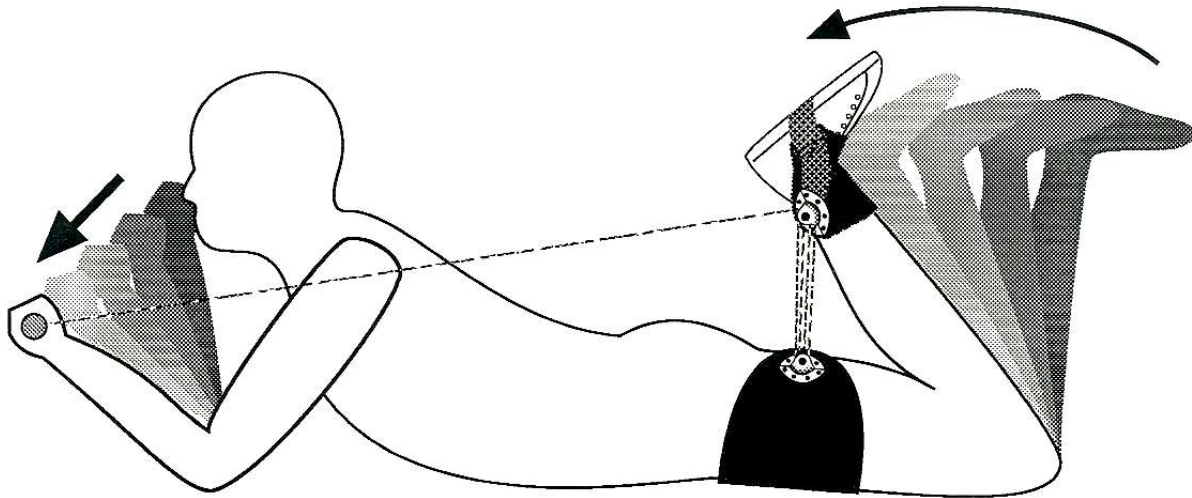
ALTERNATE METHOD: CHAIR FLEXION



QUICK-VIEW PRONE-FLEX

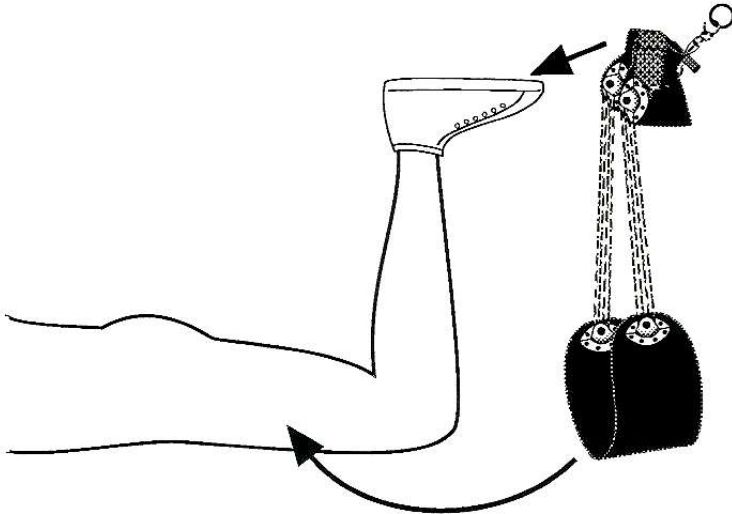
(R-O-M: 90° TO FULL FLEXION)

ACTIVE ILLUSTRATION:



PRONE-FLEX

PATIENT ASSISTED



Therapist fits and positions cuff to patient's foot, positions thigh strap as close to hip as possible—as pictured in Active Illustration.

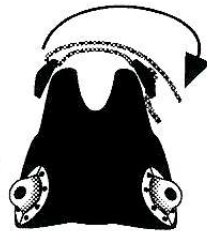
PATIENT ALONE

STEP 1 FIT CUFF AND POSITION THIGH STRAP



Open velcro and position cuff so strap crosses over middle of sole.

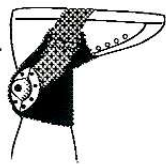
FRONT VIEW OF CUFF (upside down)



Pull strap tight and fasten velcro.

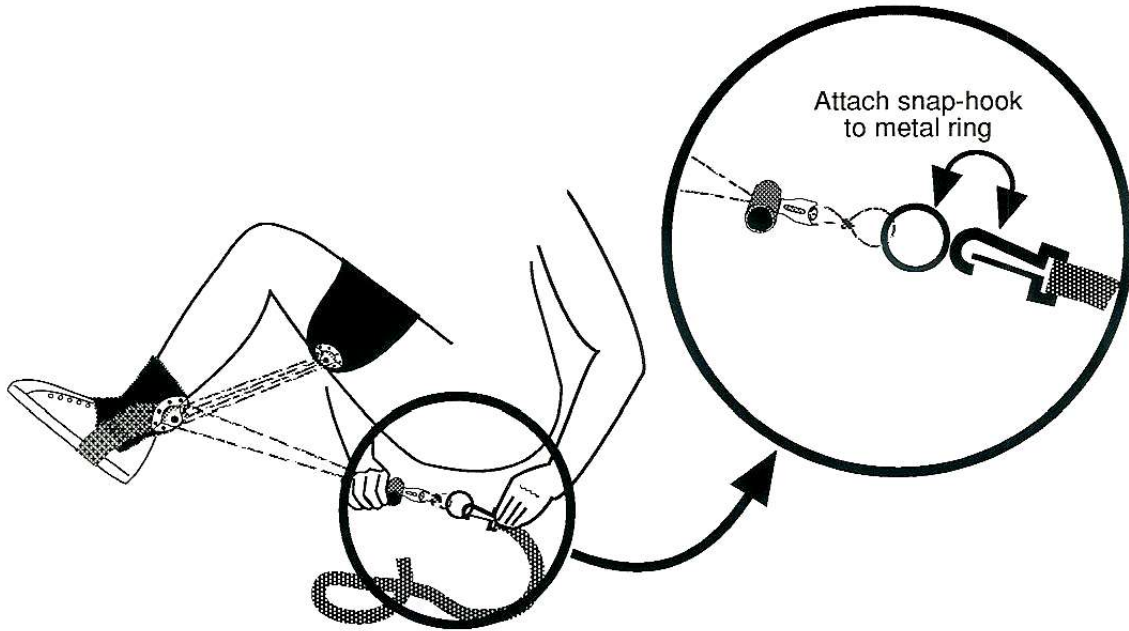


CORRECT PLACEMENT (side view)

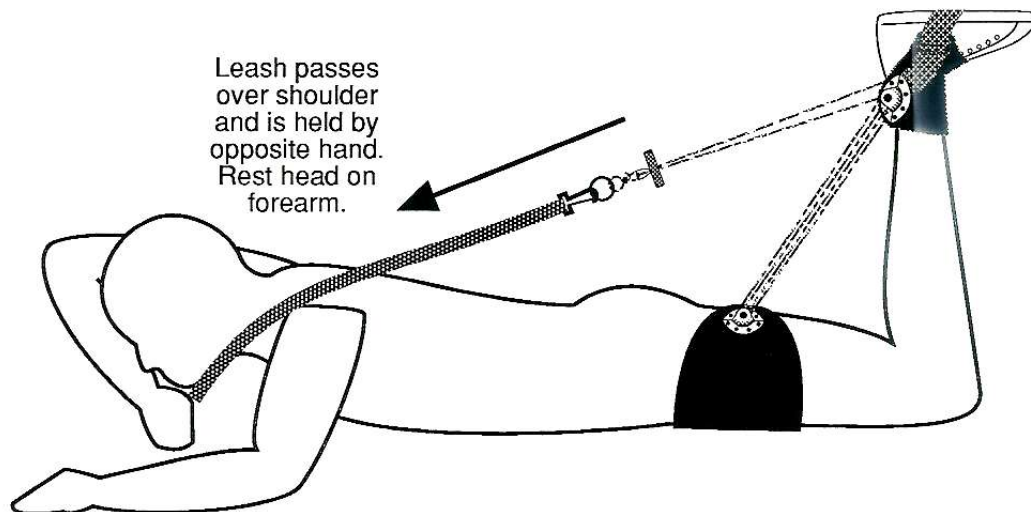


PRONE-FLEX

STEP 2 CONNECT LEASH AND FIRMLY TIGHTEN HARNESS

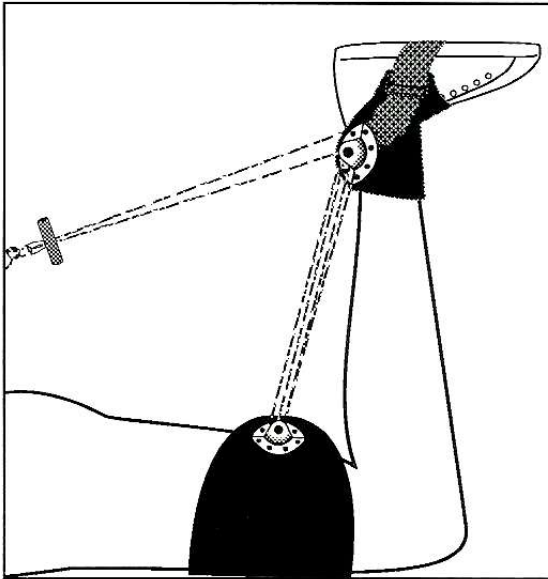


STEP 3 ROLL OVER PRONE, RE-ADJUST THIGH STRAP AND BEGIN

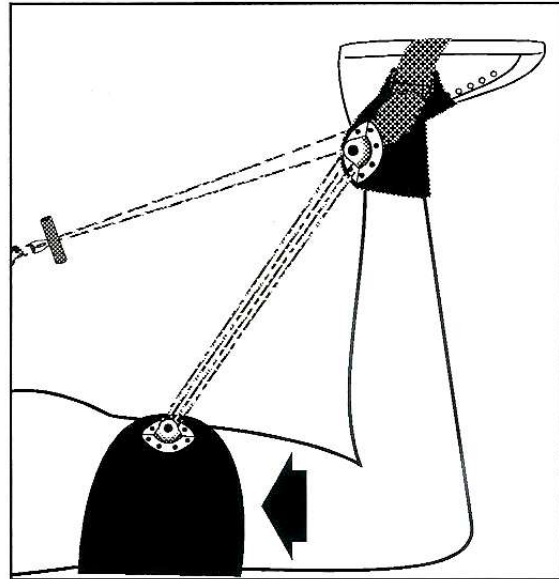


PRONE-FLEX

CORRECT POSITIONING OF THIGH STRAP

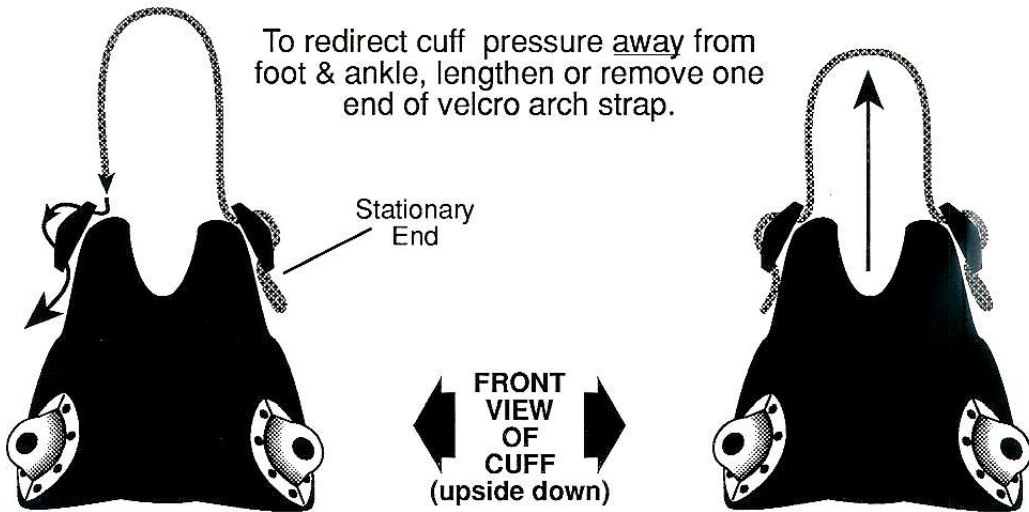


WRONG



RIGHT

ALTERNATE METHOD: LENGTHEN OR REMOVE ARCH STRAP

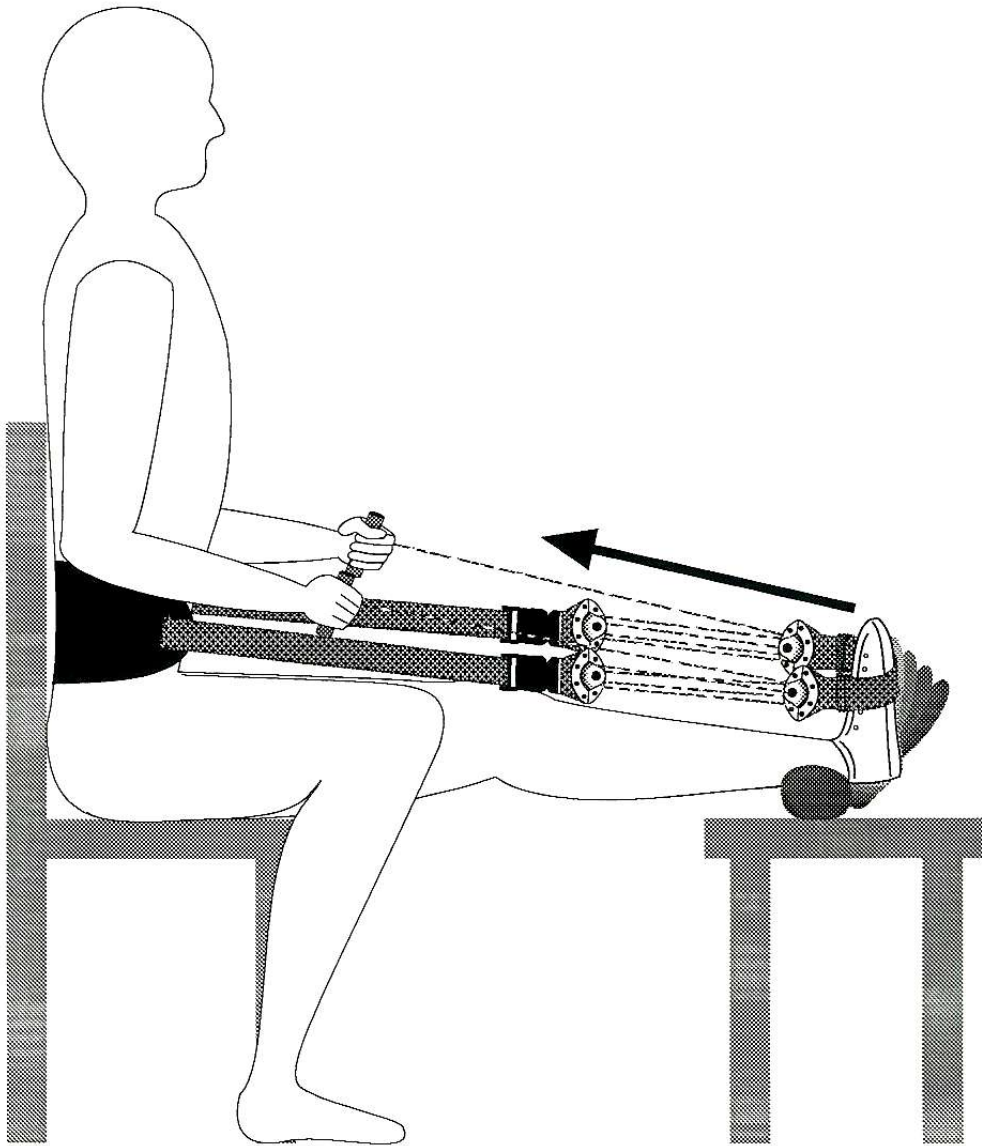


FEED STRAP THROUGH

LENGTHENED STRAP

QUICK-VIEW DORSI-FLEX

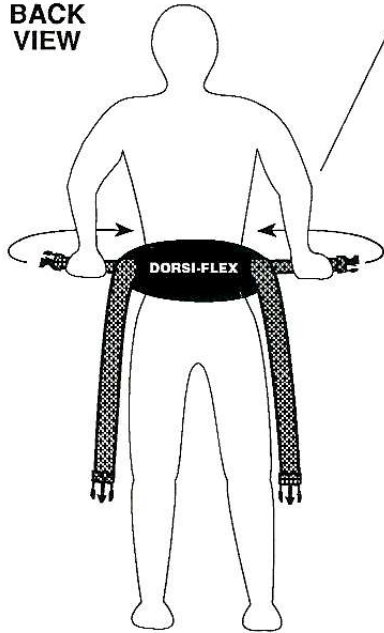
ACTIVE ILLUSTRATION:



DORSI-FLEX

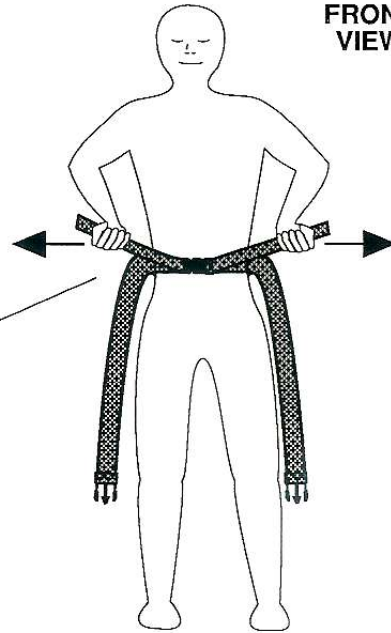
STEP 1 FIT BACK SLING

BACK VIEW



A. Position sling at small of back (lumbar region) and wrap narrow belt halves around to front of body and fasten belt buckle.

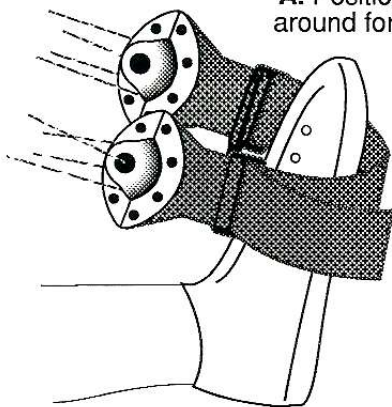
FRONT VIEW



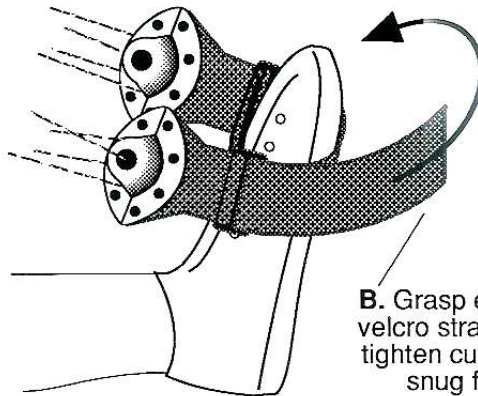
B. Grasp loose ends of belt material (nylon webbing) with each hand and pull away from buckle to tighten back sling to a snug fit.

STEP 2 FIT PULLEY SYSTEM TO FOOT

A. Position cuff around forefoot.

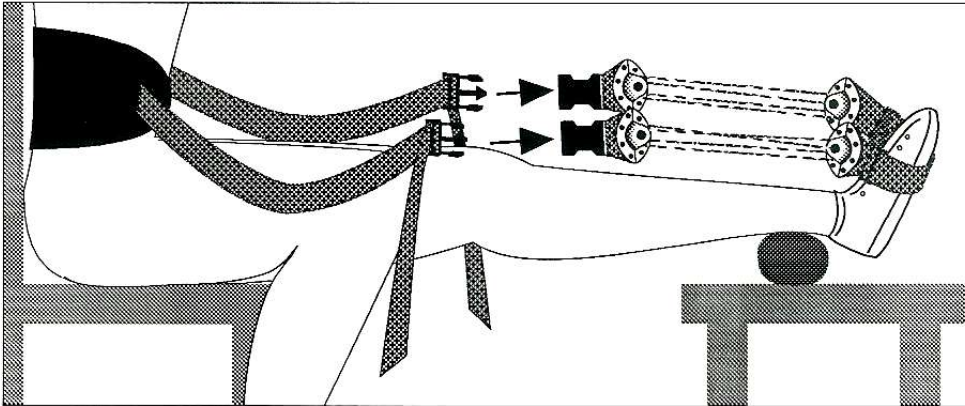


B. Grasp end of velcro strap and tighten cuff to a snug fit.

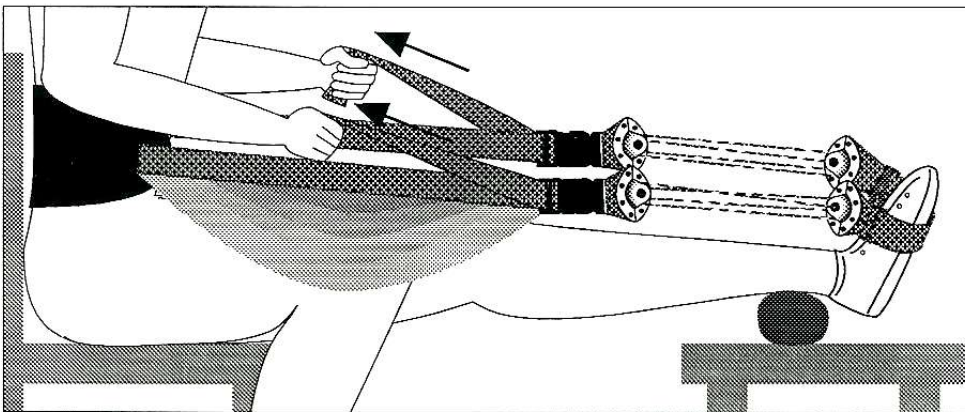


DORSI-FLEX

STEP 3 CONNECT BACK SLING BELTS TO PULLEY SYSTEM



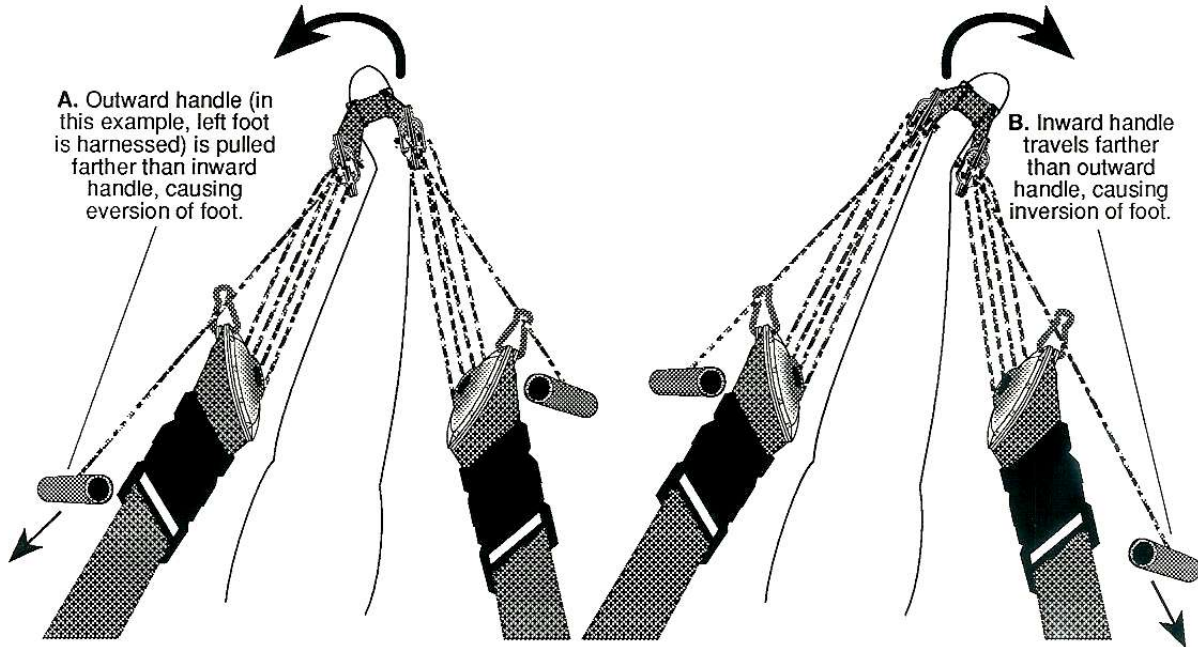
Insert three-pronged (male) buckle halves of back sling belts into pulley system (female) receptacles.



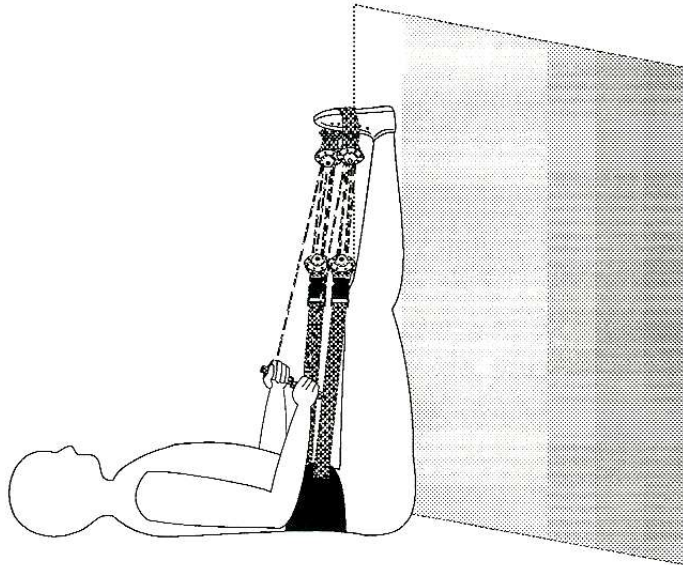
Take up slack in back sling belts by grasping loose ends of belts and pulling toward body.

DORSI-FLEX

EVERSION — INVERSION



SUPINE HAMSTRING STRETCH

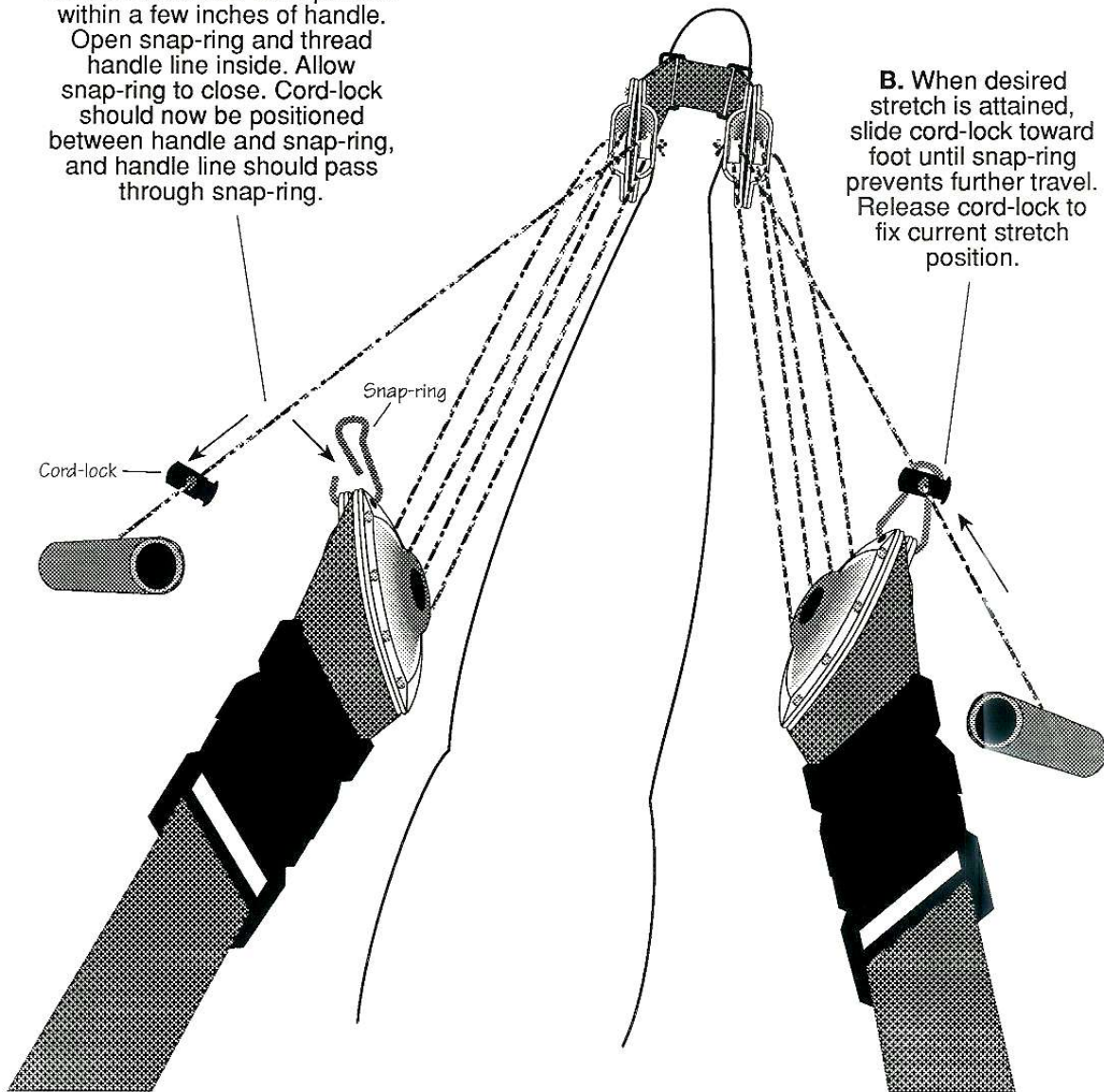


DORSI-FLEX

HANDS-FREE OPTION

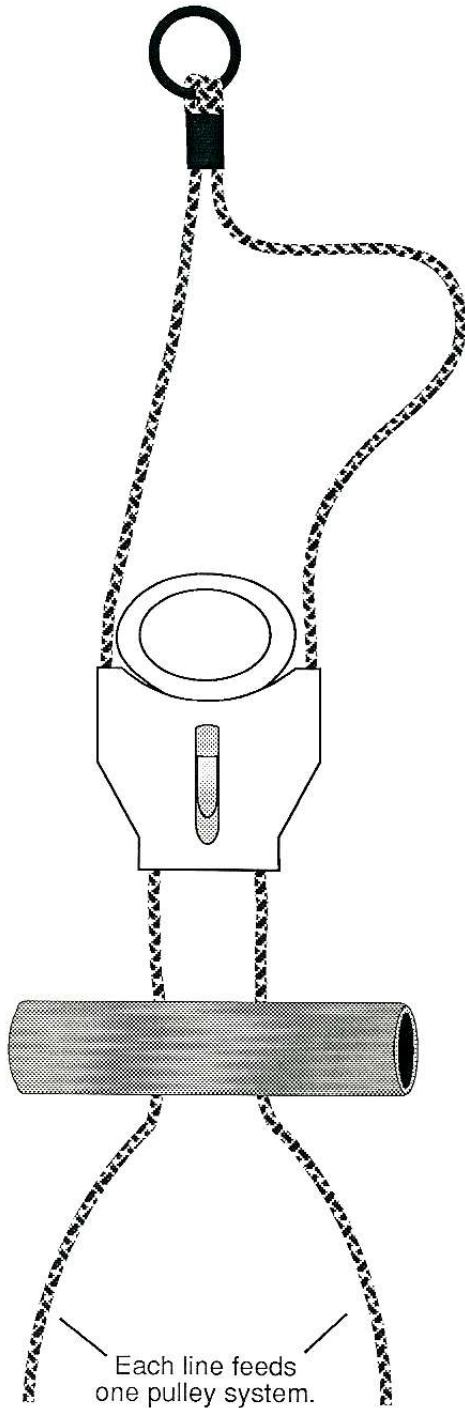
A. Squeeze ends of cord-lock and slide up line toward handle. Release cord-lock to fix position within a few inches of handle. Open snap-ring and thread handle line inside. Allow snap-ring to close. Cord-lock should now be positioned between handle and snap-ring, and handle line should pass through snap-ring.

B. When desired stretch is attained, slide cord-lock toward foot until snap-ring prevents further travel. Release cord-lock to fix current stretch position.

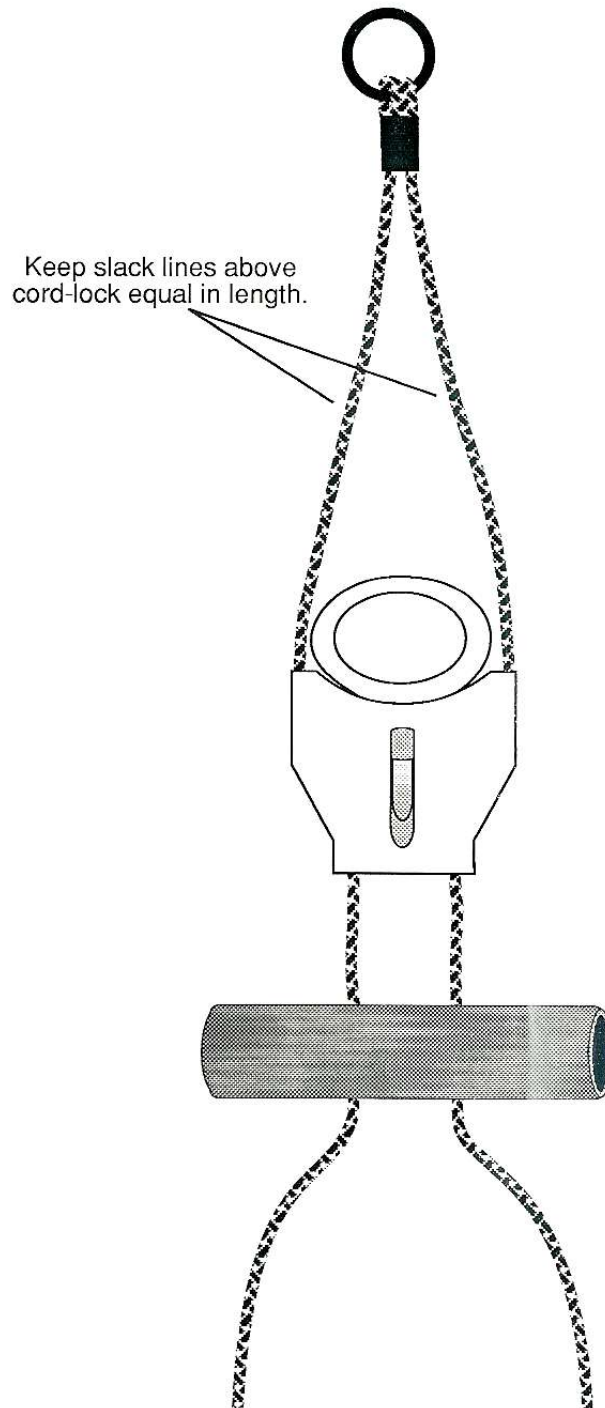


PROPER ALIGNMENT OF PULLEY SYSTEMS

WRONG



RIGHT

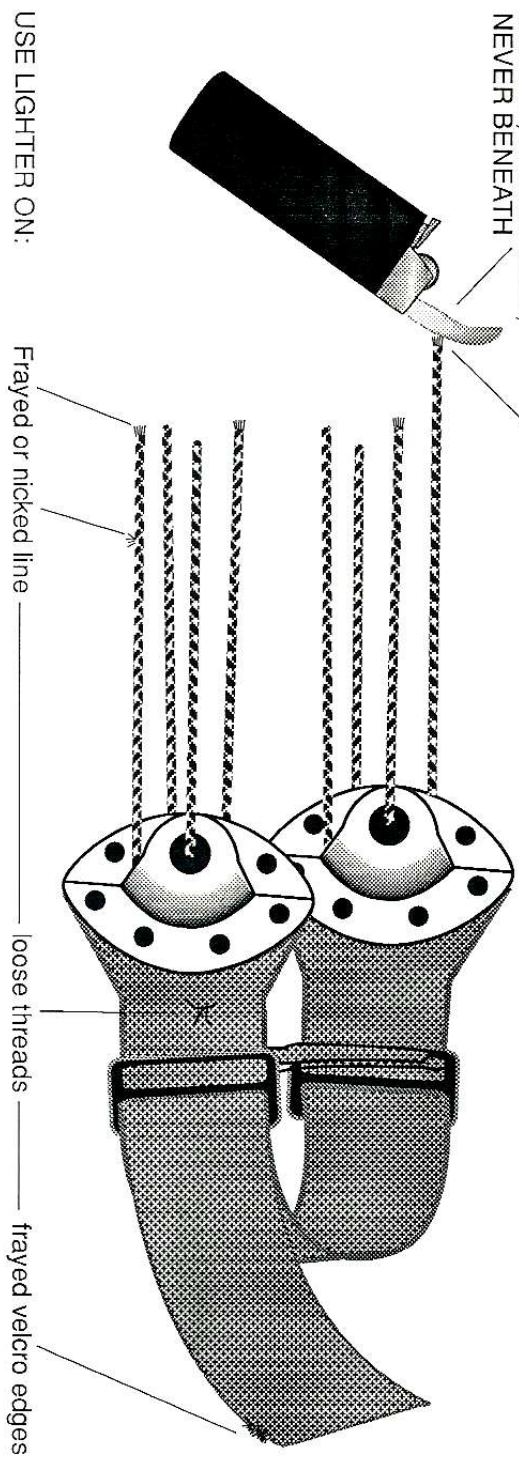


MAINTENANCE

HAND-WASH ONLY — IN LAUNDRY DETERGENT
MELT LOOSE THREADS AND FRAYED AREAS ON LINES, WEBBING & VELCRO

CAUTION: Trim threads to 1/4" before melting, or flare-up of molten material could drip and cause burning of skin.

Always keep flame level with, or above fabric, NEVER BENEATH



DISCLAIMER

USER HEREBY ACKNOWLEDGES THAT THIS EQUIPMENT IS BEING USED UPON THE RECOMMENDATION AND UNDER THE SUPERVISION OF A DOCTOR OR PHYSICAL THERAPIST AND WILL LOOK ONLY TO SUCH PROFESSIONALS FOR GUIDANCE AND ADVICE RELATIVE TO THE USE OF THE EQUIPMENT. USER FURTHER ACKNOWLEDGES THAT MECHANICAL ADVANTAGE, LTD. OR ITS AGENTS ARE NOT PHYSICIANS OR PHYSICAL THERAPISTS AND ARE NOT QUALIFIED TO PRESCRIBE ANY REHABILITATIVE TREATMENT, INCLUDING TREATMENT, WITH THE LEASED EQUIPMENT AND USER IS NOT RELYING UPON ANY ADVICE OR GUIDANCE FROM MECHANICAL ADVANTAGE, LTD. USER FURTHER ACKNOWLEDGES THAT NEITHER MECHANICAL ADVANTAGE, LTD. NOR ITS AGENTS HAVE MADE ANY REPRESENTATIONS OR WARRANTIES RELATIVE TO THE USE, FUNCTION, EFFECTIVENESS, FITNESS FOR PURPOSE OR MERCHANTABILITY OF THE EQUIPMENT, MECHANICAL ADVANTAGE, LTD. HEREBY EXPRESSLY DISCLAIMS ANY SUCH WARRANTIES OR REPRESENTATIONS. USER HEREBY WAIVES ANY CLAIMS OR CAUSES OF ACTION AGAINST MECHANICAL ADVANTAGE, LTD. OR ANY OF ITS AGENTS ARISING OUT OF ANY INJURY TO PERSON OR PROPERTY RESULTING FROM THE USE OF THE EQUIPMENT UNLESS SAID INJURY IS CAUSED BY THE DIRECT NEGLIGENCE OF MECHANICAL ADVANTAGE, LTD.

WARRANTY

Mechanical Advantage, Ltd. warrants Patient-Controlled Mobilization harnesses to be free from defects in workmanship and materials for 90 days after the original date of purchase. This warranty does not include damage caused by accidents, misuse, and normal wear. To obtain warranty service, contact an authorized Mechanical Advantage dealer. Mechanical Advantage, Ltd. dealers only are authorized and responsible for determining the presence of a warranted defect. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.