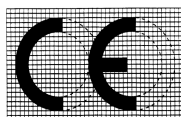


THE PRODUCTION OF THERAPY EQUIPMENT
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THE TECHNICAL INSTRUCTION MANUAL



THE ASSEMBLY DESCRIPTION OF THE UNIVERSAL COLUMN USED IN REHABILITATION EXERCISES



PATENTED PRODUCT

[http:// www.rehabilitacja.ciechocinek.pl](http://www.rehabilitacja.ciechocinek.pl)

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In order to prevent from plagiarism, some specific details concerning technical information have been removed from this version. The full version will be available at the moment of the purchase!

THE UNIVERSAL COLUMN

USED IN REHABILITATION EXERCISES WITH EQUIPEMENT

Product no. PL/DR 010381 the Registration Office P.L.W.MiP.B.

The universal column is used in rehabilitation exercises of children and adults



PRESENT SYMBOL IS PROTECTED

Technical data :

1. The measurement of the disassembled column base 84x60 cm,
2. The measurement of the column after putting out the stabilizer (so called. operational base) 84x135 cm
3. Column total weight 30 kg,
4. The weight of the weights on the base 16,80 kg
5. The maximum operational height 220 cm,
6. The minimum operational height 150 cm,
7. The length of the column beam 60 cm,
8. The length of the crosspiece on the column beam 56 cm,
9. The maximum ballast during the exercises - up to 30 kg.



Due to the specific construction, it is easy to assembly and disassembly the column. Two wheels give the ability to carry it with easiness. When it is disassembled and put in the case, it is easy to transport for longer distance as well.

The results of the tests, made by 22nd Army Spa and Rehabilitation Hospital in Ciechocinek, proved that the universal column is useful in rehabilitation exercises and the rehabilitation of mainly rheumatic and geriatric disorders.

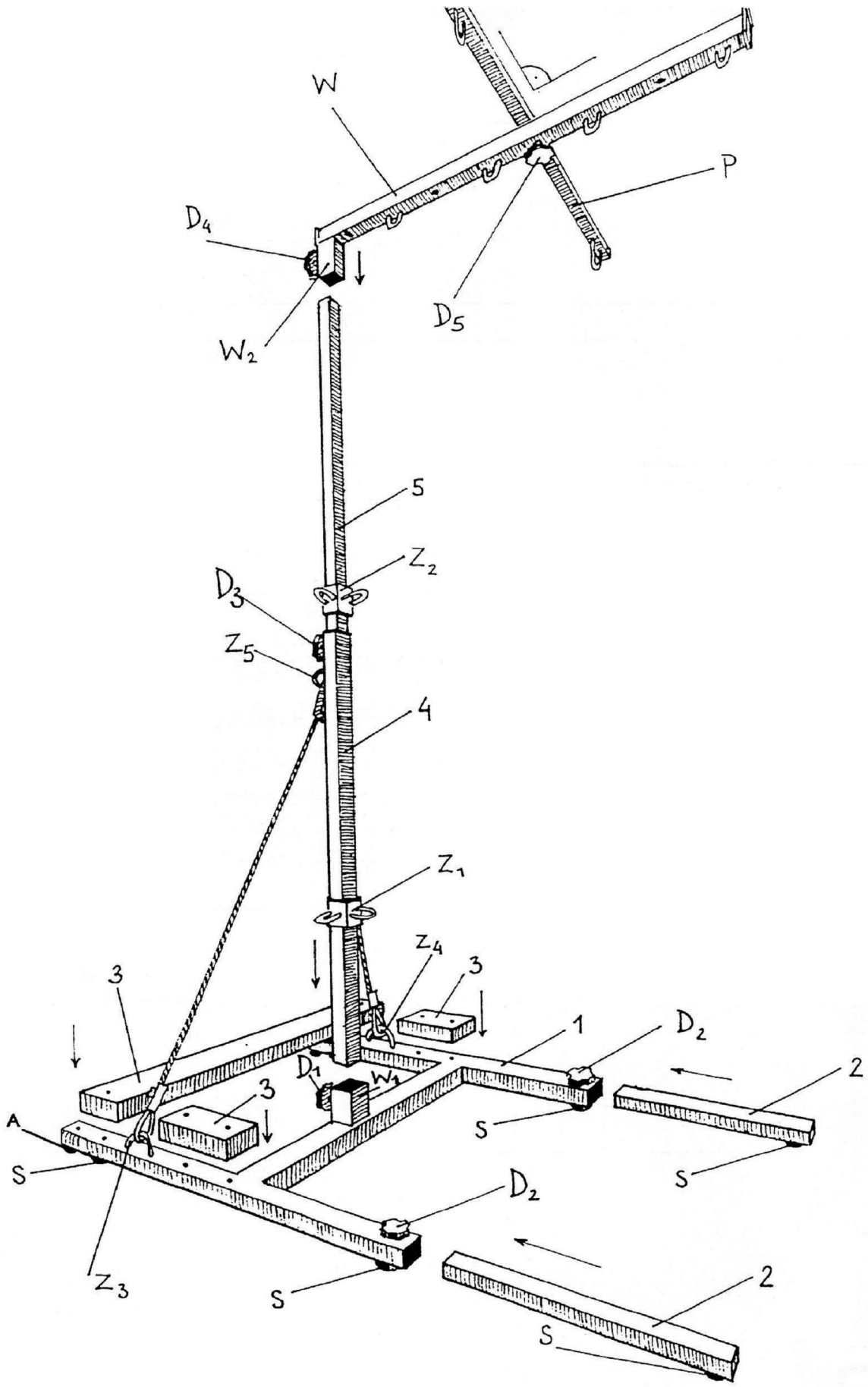
Usage:

- Suspension exercises of upper and lower limbs' muscles.
- Suspension exercises with applied resistance of upper limbs and lower limbs' muscles.
- Suspension exercises of head and neck's muscles.
- (Suspension??) exercises with applied resistance of head and neck's muscles
- (Suspension??) exercises with applied resistance of chosen groups of muscles around upper and lower limbs.
- For self-assisted exercises of upper limbs.

Taking into account column's simplicity of usage, it is a perfect alternative to a bedside rehabilitation device, so called PUR. What is more the column can be used both in inpatient and outpatient care. Most of all, the column is a great choice for the continuation of rehabilitation care at home. Thanks to the simplicity of the construction, the patient is able to exercise while lying on a mattress, couch, blanket or even camp bed.

**CENTER OF MEDICAL TECHNIC IN
WARSHAW**

Opinion of usefulness
No.COTM/122/RL/2002



THE ASSEMBLY OF THE COLUMN

- I. Extensions-stabilizers of the base –2 should be inserted in the base legs gaps –1 and tightly screwed on with knobs –D₂ .
- II. information available after the purchase of the device
- III. information available after the purchase of the device
- IV. information available after the purchase of the device
- V. information available after the purchase of the device
- VI. Pull slot of the rack–W₂ over post–5 and screw tightly on with the knob.–D₄.
- VII. information available after the purchase of the device
- VIII. information available after the purchase of the device
- IX. information available after the purchase of the device
- X. information available after the purchase of the device
- XI. Regulate the level of feet S.

NOTES CONCERNING TECHNICAL INFORMATION, SECURITY AND MAINTENANCE

A. BASIC TECHNICAL INFORMATION

10. The measurement of the assembled column base 84x60 cm,
11. The measurement of the column after putting out the stabilizer (so called. operational base) information available after the purchase of the device,
12. Column total weight 30 kg,
13. The weight of the weights on the base information available after the purchase of the device,
14. The maximum operational height 220 cm,
15. The minimum operational height 150 cm,
16. The length of the column beam 60 cm,
17. The length of the crosspiece on the column beam 56 cm,
18. The maximum ballast during the exercises up to 30 kg.

B. SECURITY DURING EXERCISES

Due to the specific construction, it is easy to assembly and disassembly the column. It is convenient to carry and transport (when disassembled and put in the case fits easily into the car boot). Used in rehabilitation exercises of adults and children (under surveillance) not only for inpatient but also outpatient care. Thanks to the simplicity of the construction, the patient is able to exercise while lying on the mattress, couch, blanket or even camp bed. In order to have unquestionable security during exercises, it is recommended to tightly screw on the stabilizing beams knobs before using the column. What is more, the lines, stabilizing the column beam, should be tightly screwed on as well. It is also important to pull out base stabilizers to the maximum and, at the same time, regulate the height of rubber base legs. Follow the instruction of the exercises precisely and remember not to go beyond the maximal ballast. Once for two, three months, screws fastening the beam of the column should be lubricated with the oil WD-40.

C. MAINTENANCE

Maintenance and cleaning of the device should be performed with easily-accessible cleaning means (the most appropriate is damp cloth soaked in the washing liquid.)

EQUIPEMENT OF THE UNIVERSAL COLUMN USED IN REHABILITATION EXERCISES

1. Suspension for arm or thigh
2. Suspension for forearm or shank
3. Suspension for palm and wrist
4. Suspension for foot and Achilles tendon
5. Suspension for head
6. Suspension for pelvis – small
7. Suspension for pelvis – big
8. Suspension for the chest
9. The two-joint suspension made of cloth
10. The two-joint suspension made of tape
11. The band holding inert hand.
12. The belt used for pelvis traction
13. The belt used for stabilization of loins and chest
14. The belt used for stabilization of thigh
15. Lines for the two-joint suspension for hand or leg
16. Lines for hanging suspension
17. Lines for hanging weights
18. The line for rehabilitation exercises with the hook
19. Lines for U.G.U.L.
20. Lines with one or two pulleys, optionally with a winch
21. The leather boot with the fastening at the front
22. The leather boot with the fastening at the back
23. Rolls and half-rolls used for rehabilitation exercises
24. A weight for hanging
25. Gilson's loop.
26. Nickel-plated, metal ("S") hooks used to hanging lines, suspension.

Exercise Manual

The universal column
used in rehabilitation
exercises

The manufacturer– Jan Wdowicki

The universal column used in rehabilitation exercises enables to do such types of exercises:

- suspension exercises (to alleviate weight);
- suspension exercises with applied resistance;
- exercises with applied resistance and self-assisted exercises for upper limbs

It is guaranteed that the exercised joints' muscles are strengthened, the movement scale is held, the muscles elasticity and resistance are improved.

Can be used in such diseases:

- rheumatic diseases
- neurological diseases
- geriatric diseases
- limbs and spinal degeneration

The column is advisable to be used at home.

Every exercise on the column should be done accordingly to therapist's recommendation.

The exercise should be repeated precisely as recommended or the time of it should be obeyed.

Once for two or three months some adjustments to the exercises should be done.

Exercise manual made by
mgr Marian Gawinecki

Exercise 1.

Suspension exercise of head, neck in frontal position (bending head and neck from one side to the other).

Position: Lying on one's back. Lower limbs straight. Upper limbs down beside the body. The column stands next to the bed or behind the head.

The way of suspension:

Under-headed suspension, enfolding occiput, is connected with the lines hooked over the column beam. (1a).



Picture 1a

Movement:

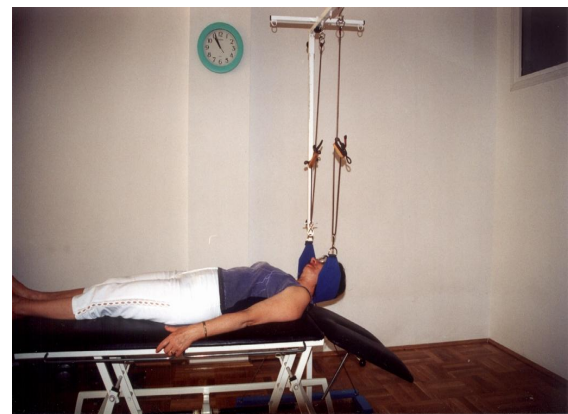
Bow head and neck on one side according to the scheme: turn head left–hold (3-5 seconds.) – straighten. Turn head right– hold (3-5 seconds.) – straighten.

Exercise 2-4 sets, more or less 20 repetitions. (1b).

Caution:

1. the length of the lines must be appropriate to full alleviation of the head weight.
2. during the movement do not bend neck backward
do the exercise slowly accordingly to instructor's directions.

In case of dizziness stop the exercise.



Picture 1b

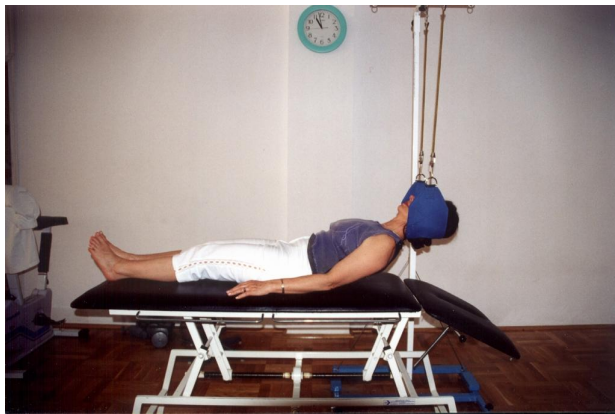
Exercise 2

Exercise with applied resistance of head and neck extensor muscles.

Position. Lying on one's back. Lower limbs straight. Upper limbs down beside the body. The column stands next to the bed or behind the head.

The way of suspension:

Under-headed suspension, enfolding occiput, is connected with rubbers or springs hooked over the column beam. (2a).



Picture 2a

Movement:

Straightening head (in the other direction than the spring resistance). according to the scheme: Straighten neck and head - hold (3-5 seconds), slightly bend the chest forward (Keep head upright)

Exercise 2-4 sets, more or less 20 repetitions. (2b).

Caution :

1. during the movement do not bend neck backward
2. Do the exercise directly to instructor's directions
3. In case of dizziness stop the exercise immediately.



Picture 2b

Exercise 3.

Self-assisted exercise of bending and straightening scapula joint.

Position, Sitting on the chair or stool. The column stands behind the head.

Preparation:

On the column beam, sheer above scapula joints, is hanged set for self-assisted exercises with two pulleys. The patient grab handles and push hands forwards. The length of the lines is regulated. (3).



Picture 3

Movement:

Interchangeably bend and straighten upper limbs in the place of scapula joints.

Caution:

Do the exercise exactly according to instructor's directions

Option II (4)

Position, Preparation as in the former.

Movement:

Abduct and adduct upper limbs interchangeably to the "zero position". (as shown in the picture 4).



Picture 4

Option III (5)

Position, Preparation as in the former.

Movement: Abduct and adduct upper limbs horizontally.

Caution:

The exercise can be modified so that upper limbs are bowed in elbow in such a way that the "breaststroke" is imitated.



Picture 5

Option IV

Position, Preparation as in the former

Movement:

Interchangeable auto-support rotation of inner scapula joints. (6a and 6b).



Picture 6a



Picture 6b

Exercise 4.

Suspension exercise of arm flexor and extensor muscles in the horizontal position.

Position. Sitting on the chair or stool. Upper limbs stay horizontally to the body.

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the palm and the forearm.

The exact place of the line attachment to the suspensions is sheer above scapula joints. (7).

Movement:

Interchangeably bow and straighten upper limbs in the horizontal position.

Caution:

1. Do the exercise exactly according to instructor's directions
2. Only one of the arms can be exercised.



Picture 7

Exercise 5.

Suspension exercise with applied resistance of arm extensor muscles in the horizontal position.

Position, Sitting on the chair or stool. The exercised upper limb is held at a 90 degree angle.

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the palm and the forearm.

The exact place of the line attachment to the suspensions is sheer above scapula joints. (8).

The way of resistance assembly

The wristband or the additional suspension enfolds the other 1/3 part of the arm. It is connected with the line and weights which go through direction pulley, placed on the level of scapula joints.



Picture 8

Movement:

Straightening arm in the horizontal position.

Caution:

1. the column is in front of the person.
2. the resistance and the length of the exercise or the number of repetitions are stated by the instructor.

Exercise 6.

Suspension exercise with applied resistance of arm flexor muscles in the horizontal position. (9).

Position, Sitting on the chair or stool. The exercised upper limb is held at a 90 degree angle.

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the palm and the forearm.

The exact place of the line attachment to the suspensions is sheer above scapula joints.

The way of resistance assembly

The wristband or the additional suspension enfolds the other 1/3 part of the arm. It is connected with the line and weights which go through direction pulley, placed on the level of exercised upper limb.



Picture 9

Movement:

Bowing arm in the horizontal position.

Caution:

1. the column is behind the person.
2. the resistance and the length of the exercise, the number of repetitions and the character of movement are stated by the instructor.

Exercise 7.

Suspension exercise of arm flexor and extensor muscles (10a, 10b).

Position lie on your side with the upper limb you are not going to exercise on the bottom, slightly bent. The exercised upper limb down beside the body. The column is behind the person.



Picture 10a

Movement:

Bow and straighten arm.

Caution:

the length of the exercise and the character of movement are stated by the instructor.

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the forearm, above the elbow, and the palm.

The exact place of the line attachment to the suspensions is sheer above scapula joints.



Picture 10b

Exercise 8.

Suspension exercise with applied resistance of arm flexor muscles (11).

Position: lie on your side with the upper limb you are not going to exercise on the bottom, slightly bent. The exercised upper limb down beside the body. The column is behind the person.



Picture 11

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the forearm, below the elbow, and the palm.

The exact place of the line attachment to the suspensions is sheer above scapula joints.

The way of resistance assembly

The additional suspension enfolds the other 1/3 part of the arm. It is connected with the line and weights which go through direction pulley, placed on the level of exercised upper limb.

Movement:

Bowing arm forwards.

Caution:

the resistance and the lengths of the exercise, the number of repetitions are stated by the instructor.

Exercise 9.

Suspension exercise with applied resistance of arm extensor muscles. (12).

Position lie on your side that you are not going to exercise, lower limbs slightly bent. The exercised upper limb is down beside the body. The column stands next to the bed, in front of the person's face.

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the forearm, below the elbow, and the palm.

The exact place of the line attachment to the suspensions is sheer above scapula joints.



Picture 12

The way of resistance assembly

The additional suspension or the wristband enfolds the other 1/3 part of the arm. It is connected with the line and weights which go through direction pulley, placed on the level of exercised upper limb's scapula joint.

Movement:

Straightening arm backwards.

Caution:

the resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 10.

Suspension exercise of arm muscles of abduction. (13).

Position: lie back, lower limbs straight, the exercised upper limb down beside the body. The column stands next to the bed, from the unexercised side.



Picture 13

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the forearm, below the elbow, and the palm.

The exact place of the line attachment to the suspensions is sheer above scapula joints.

Movement

Abduction of arm

Caution:

The resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 11.

Suspension exercise with applied resistance of arm muscles of abduction. (14).

Position: lie back, lower limbs straight, the exercised upper limb down beside the body. . The column stands next to the bed, from the unexercised side.

The way of suspension:

The suspension enfolds arm in the half of its length, the second, two-joint suspension enfolds the forearm, below the elbow, and the palm.

The exact place of the line attachment to the suspensions is sheer above scapula joints.



Picture 14

The way of resistance assembly

The additional suspension or the wristband enfolds the other 1/3 part of the arm. It is connected with the line and weights which goes through direction pulley, placed on the level of exercised upper limb's scapula joint – in such a way that during the exercise the line do not touch the person's body.

Movement

Abduction of arm

Caution:

The resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 12.

Suspension exercise of lower limbs muscles of abduction and adduction. (15, 16).

The column stands next to the bed, from the unexercised side.

Position: lie back; stabilize the pelvis with the belt lower limbs straight, upper limbs down beside the body. .



Picture 15

Caution:

1. Depending on person's needs only one lower limb can be exercised.
2. The length of the exercise, the number of repetitions and the character of movement are stated by the instructor.

In spite of two-joint suspension a suspension for foot (16) or the leather boot can be used.

The way of suspension:

The suspensions enfold thighs in the half of its length; the second, two-joint suspension enfolds the shank in 1/3 of its length and the foot.

The exact place of the line attachment to the suspensions is sheer above hip joints.

Movement:

Abduction and adduction of lower limbs.



Picture 16

Exercise 13.

Suspension exercise with applied resistance of thigh muscles of abduction. (17).

Position: lie back; stabilize the pelvis with the belt, exercised lower limb in middle position, unexercised lower limb bent, the foot on the bed.



Picture 17

The way of suspension:

The suspension enfolds thigh in the half of its length, the second, two-joint suspension enfolds the shank in 1/3 of its length and the foot.

The exact place of the line attachment to the suspensions is sheer above hip joints.

The way of resistance assembly

The additional suspension enfolds the other 1/3 part of the thigh. It is connected with the line and weights which go through direction pulley, placed on the level of exercised lower limb's knee joint.

Movement:

Abduction of thigh.

Caution:

The resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 14.

Suspension exercise with applied resistance of thigh muscles of adduction. (18).

Position: lie back, stabilize the pelvis with the belt, exercised lower limb straight and abducted, unexercised lower limb in middle position. The column stands next to the bed, from the exercised side.



Picture 18

The way of suspension:

The suspension enfolds thigh in the half of its length, the second, two-joint suspension enfolds the shank in 1/3 of its length and the foot.

The exact place of the line attachment to the suspensions is sheer above hip joints.

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The way of resistance assembly

The additional suspension enfolds the other 1/3 part of the thigh. It is connected with the line and weights which go through direction pulley, placed on the level of exercised lower limb's hip joint.

Movement:

Adduction of thigh – the exercised leg goes above the unexercised leg.

Caution:

The resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 15.

Suspension exercise of thigh flexor muscles

Position: lie on your side (choose side depending on your needs), stabilize the pelvis with the belt, exercised lower limb straighten, unexercised lower limb slightly bend. The column is behind the person. (19).



Picture 19

The way of suspension:

The suspension enfolds thigh in the half of its length, the second, two-joint suspension enfolds the shank in 1/3 of its length and the foot.

The exact place of the line attachment to the suspensions is sheer above hip joints.

Movement:

Bending thigh with straighten knee or bending thigh with the knee being bent at the same time

Caution:

The resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 16.

Suspension exercise with applied resistance of thigh flexor muscles

Position: lie on your side (choose side depending on your needs), stabilize the pelvis with the belt, exercised lower limb straighten, unexercised lower limb slightly bend. The column is behind the person.

The way of suspension:

The suspension enfolds thigh in the half of its length, the second, two-joint suspension enfolds the shank in 1/3 of its length and the foot.

The exact place of the line attachment to the suspensions is sheer above hip joints.



Picture 20

The way of resistance assembly

The additional suspension enfolds the other 1/3 part of the thigh. It is connected with the line and weights which go through direction pulley, placed on the level of exercised lower limb's hip.

Movement:

Bending thigh with straighten knee or bending thigh with the knee being bent at the same time

Caution:

The resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 17.

Suspension exercise with applied resistance of thigh extensor muscles

Position: lie on the side of unexercised limb, stabilize the pelvis with the belt, exercised lower limb straighten. The column is next to the bed, in front of person's face. (21).



Picture 21

The way of suspension:

The suspension enfolds thigh in the half of its length, the second, two-joint suspension (or leather boot) enfolds the shank in 1/3 of its length and the foot. The exact place of the line attachment to the suspensions is sheer above hip joints.

The way of resistance assembly

The additional suspension enfolds the other 1/3 part of the thigh. It is connected with the line and weights which go through direction pulley, placed on the level of exercised lower limb's hip.

Movement:

Straighten thigh with straighten knee

Caution:

The resistance and the length of the exercise, the number of repetitions are stated by the instructor.

Exercise 18.

Suspension exercise of flexor and extensor muscles of knee joint

Position: lie on the side of unexercised limb, stabilize the pelvis with the belt, stabilize exercised lower limb's thigh on the suspension connected with the column by the line. The column is next to the bed, behind person's face. (21).

The way of suspension:

The suspension enfolds thigh in the 1/3 its further part, the second, two-joint suspension (or leather boot) enfolds the shank in 1/3 of its length and the foot.

The exact place of the line attachment to the suspensions is sheer above knee joints.



Picture 22

Movement:

Bending and straighten knee joint.

Caution:

The lengths of the exercise, the number of repetitions are stated by the instructor.

Exercise 19.

Suspension exercise with applied resistance of knee joint extensor muscles.

Position: lie on the side of unexercised limb, stabilize the pelvis with the belt, stabilize exercised lower limb's thigh on the suspension connected with the column by the line. The column is next to the bed, behind person's face. (23 and 24).



Picture 23

The way of suspension:

The suspension enfolds thigh in the 1/3 its further part, leather boot on the foot.

The exact place of the line attachment to the suspensions is sheer above knee joints.

The way of resistance assembly

The line and the weight which goes through direction pulley are attached to the leather boot. It is on the level of exercised lower limb's foot.

Movement:

Straightening knee joint.

Caution:

The lengths of the exercise, the number of repetitions are stated by the instructor.



Picture 24

Exercise 20.

Exercise with applied resistance of knee joint flexor muscles.

Position: lie on your belly, backwards to the column, a pillow under the chest, the column is behind the person, feet behind the bed, stabilize the pelvis with the belt, the column is behind the person; (25).

The line and the weight which goes through direction pulley are attached to the leather boot. It is on the level of exercised lower limb's foot.

The way of preparation:

The leather boot enfolds foot and is connected with weight and line which goes through direction pulley. It is on the level a bit under the level of the bed.

Movement:

Bending knee joint

Caution:

The lengths of the exercise, the number of repetitions are stated by the instructor.



Picture 25

Exercise 21.

Exercise with applied resistance of knee joint extensor muscles.

Position: lie on your belly, (a pillow under the chest) forwards to the column, feet behind the bed, stabilize the pelvis with the belt; the column is behind the person; (26).



Picture 26

The way of preparation:

The leather boot enfolds foot and is connected with weight and line which goes through direction pulley. It is on the level of about 80 cm above the level of the bed.

Movement:

Straightening knee joint.

Caution:

The lengths of the exercise, the number of repetitions are stated by the instructor.