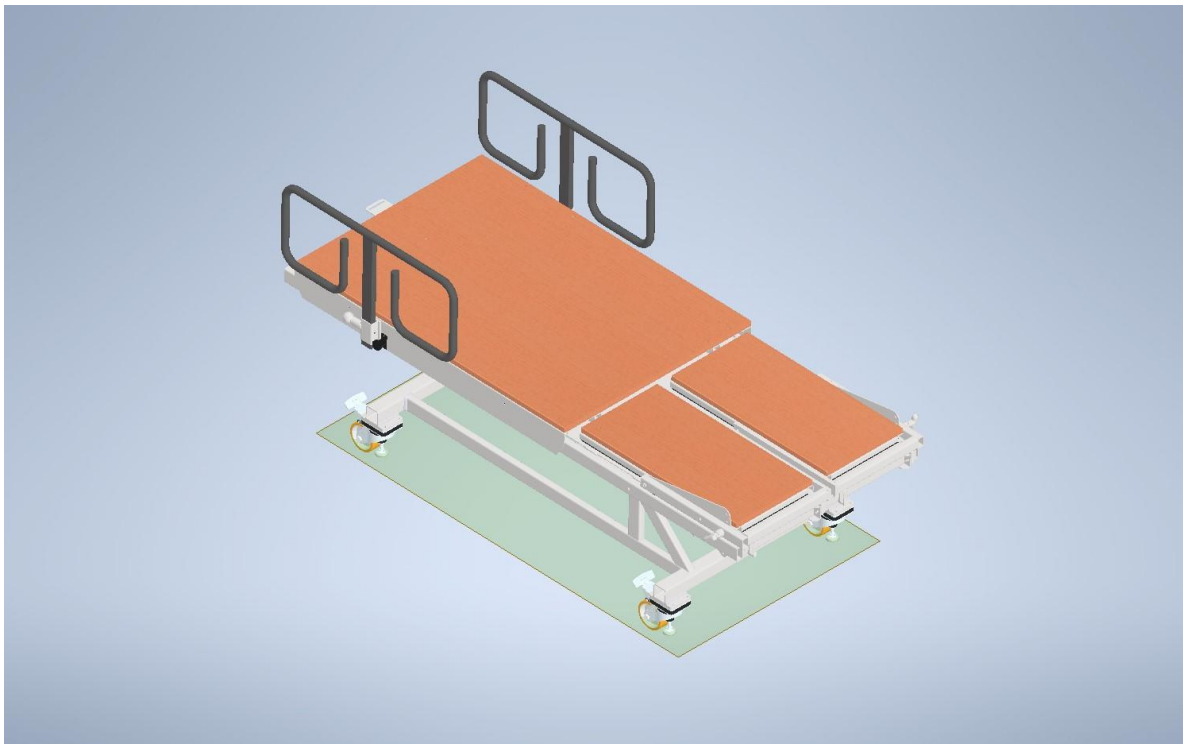
THE MAT TABLE

GENERATION 4

MULTIPLE APPLICATIONS TREATMENT TABLE



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Foreword

Congratulations on your purchase of The Multiple Applications Treatment Table/the MAT.

This manual has been written for the operators of the MAT. It contains general instructions for operation, precautionary instructions, and maintenance recommendations. In order to obtain maximal life and efficiency from your MAT and to assist in proper operation of the table, read and understand this manual thoroughly.

Before administering any treatment to the patient, you should become acquainted with the operating procedures, as well as indications, contraindications, precautions, and warnings.

General Description and Function

The table is rated with a 500-pound lift capacity.

The MAT Table, Multiple Applications Treatment Table is interchangeably referred to as the MAT in this manual. The MAT is a treatment table with multiple exercise functions and tilt table function. This table has five functions in one product. First, it is an excellent treatment and manipulation table. Second, it's a lower extremity exercise machine. Third, it's a versatile traction table. Fourth there is an open chain arm exercise option with the provided pulley system. Lastly this table is a 45-degree tilt table or negative 15-degree inversion table. These functions will be discussed in detail in the following paragraphs.

The size and lift capacity of the MAT Table allows for patients weighing up to 500 pounds to transfer on and off the table without fear of falling. Optional handrails are provided and attached to either or both sides of the rigid frame. Handrails improve patient safety and sense of security while transferring and exercising on the MAT. Because the MAT transitions easily from a treatment table to an exercise table without transferring off the table, the risk of injury to patient or therapist is significantly decreased. For example, the MAT allows the patient to remain on the treatment table while the therapist converts the table to a partial incline squat machine. Decreasing the number of transfers on and off exercise equipment decreases patient fall risk, level of physical guarding required by the therapist and number of pieces of equipment required to be cleaned during or after the treatment session. The multiple functions of this one piece of equipment positively impacts patient outcomes and therapist productivity.

The MAT table has two separate actuators for positive and negative tilt. The combined force generated by the two actuators is three thousand pounds. A patient is able to transfer easily on and off the table at varied inclinations. The MAT has been specifically designed for compatibility with mechanical lift devices. This compatibility with mechanical lift devices allows safe transfers and improved physical therapy treatments for bariatric patients, deconditioned patients, and severely debilitated patients. The MAT is rated with a 500-pound lift capacity. Once the patient is safely on the table, the therapist is able to unlock and elevate the table, allowing the patient to complete closed chain lower

extremity therapeutic exercises. This inclination includes all components of the top table, or “sled” and includes the rigid frame. The patient will be able to complete partial incline squats as the slide glides downward and upward, with the patient's body weight as resistance. At any time, in level or elevated positions, the locking mechanism on the MAT may be engaged for the safety of the patient.

Structure of the Product

The vinyl top of the The Multiple Applications Treatment Table/the MAT has two main components. The body support and the foot plates. The body support is a platform that rolls/slides 26 inches when the table is unlocked. Starting from the neutral position, the body support glides 21 inches toward the foot of the table and 5 inches past neutral to provide traction.

The two foot plates have a soft top when the table is used in a flat position. When the foot plates are flipped up they have a steel surface for easy cleaning. The foot plates can flip up from the flat treatment table position to 90 degrees which provides the platform for partial incline squats. When the foot plates are flipped up to 90 degrees they will lock in place. The foot plates have a top and a bottom. When the table is flat the top of the foot component is padded.

The entire top portion of the table will go from level to head elevated 45 degrees or head down 15 degrees. This variable inclination allows the patient’s body weight to be the resistance to multiple types of exercise.

The table is approximately 34 inches wide and 6 feet 4 inches long. The body component or “sled” is 45 inches long and slides on a steel frame. The sliding mechanism of the body component is achieved with the use of wheels sliding on a steel frame which is stationary. The adjustable foot components, or footplates, are each roughly 27 inches long.

This adjustability enables the table to be used as a progressive resistant squat and multifunction exercise device. The individual foot plates pivot to allow ankle stretching. The ankle attachment straps allow the therapist to secure the patient's foot in place and safely adjust the individual foot plates as needed to varied degrees of plantarflexion and dorsiflexion. The foot plates are free moving or lockable in varied degrees for ankle range of motion.

Treatment and Manipulation Table Functions:

The fact that this table also inclines head up and head down helps facilitate better mobilizations and manipulations. The head support created by the padded inner sides of foot plates comfortably keeps the patient's head and spine in neutral while the patient is in the prone position.

Partial Incline Squat Exercise Function

This is the most unique aspect of the MAT table, as the patient is not required to transfer from the MAT to a separate piece of equipment following or during therapeutic exercises completed on a typical treatment table. The patient is able to remain on the MAT while the therapist adjusts the footplates and incline of the table. This enables lower extremity closed chain exercise to be done easily and safely. Based on the degree of incline, squats may be done with 1% to 88% of the patient's body weight (refer to the provided weight bearing chart). The manner in which the foot plates can provide dorsiflexion or plantarflexion in an individually fixed or movable way is unique to this product. The use of an inclinometer allows for monitoring of weight-bearing status. This is very important when patients have weight-bearing restrictions due to fractures or injury. The ease of which patients can get on and off the table combined with the adjustable level of difficulty in which exercises are completed makes the MAT very versatile. A weight bearing chart is provided to enable the clinician to document weight applied to the patient.

Traction Function

Traction is achieved in 2 ways. First, the patient can do self-traction with the use of the pulley systems, traction belts provided and with using the gentle tilt of the table. The pull of gravity due to the inverted table, creates a gentle traction even when no force is applied to the spine by the patient. Significant gravity induced traction will occur without an electric motor due to the 15-degree of negative incline. Second, manual traction may be done on the table utilizing the therapist applying force directly to the patient. The advantage to the MAT is that the helpful incline of the table produces traction. This helps the therapist work more efficiently and with less effort than when using traditional tables. The combination of positive and negative tilt with the split sliding body component is a unique aspect of the traction component of this table.

Pulley Function

This equipment has attachable pulleys to do variable arm exercises resisted by the patient’s body weight or the weight of the sliding body component. The pulleys are attached at the head of the rigid frame and to the sliding body component. See pictures and the explanation for the setup of the pulley system in section, Pulley System Setup. Raising the inclination of the table will increase the resistance of arm exercises with the use of the pulley system. In part, this system is currently used in multiple exercise platforms. This product has unique features that others do not. The patient can sit on the body component or come to the table from a standing position or sitting in a wheelchair to use the pulley. The multiple ways to use the pulley system is unique and far more versatile than other products offered at this time. These variable ways to use the pulleys allow anyone from Olympic Athlete to a severely restricted wheelchair-bound patient to use the pulley system.

Tilt Table Function

The fifth function of this product is as a tilt or inversion table. Traditionally tilt tables simply lift the patient from supine to standing while strapped in. The benefits of this product as a tilt table is after passively tilting the patient you can start lower extremity exercises without moving the patient to a different table. The advantage of this product is the fact that you don't have to have additional products in storage to provide the additional functions that the MAT offers. The knee strap is provided to ensure patient safety in case of loss of consciousness.

WARNING

Failure to read and follow the safety instructions in this manual may result in serious injury or death. Hazards include falling, overexertion, strained muscles, pinched fingers or pulled hair. Changes or modifications to The MAT may void the warranty and may violate U.S. Federal Communications Commission (FCC) Rules.

This product is designed and intended for commercial use. Clinicians should inform patients of and monitor their adherence to all safety precautions. Use only as instructed. Do not permit anyone to stand on the MAT. Children should only use The MAT when closely attended and supervised by an adult. Do not leave children or patients unattended on the MAT.

Before starting this or any exercise program, consult your Physician or Physical Therapist. Certain exercise programs or types of equipment may not be appropriate for all people. Do not overexert with this or any exercise program. If any pain or tightness in the chest is experienced, or an irregular heartbeat, shortness of breath, or faintness, nausea, or dizziness, stop exercising immediately and consult your Physician or Physical Therapist before resuming any exercise program.

Keep fingers, loose clothing, and hair away from moving parts. Wear appropriate exercise attire and tie long hair back. Inspect The MAT before each use to ensure proper operation. Check all parts for wear before each use. Do not use The MAT if it is not completely assembled or has been damaged in any manner. See important precautions on the following two pages for more details.

The MAT is rated at a maximum user weight capacity of 500 lbs. One person only on the MAT when in motion. The patient center of mass should be in the middle of the table when using the actuators.

Use only accessory items recommended by the manufacturer. Only use accessories in the manner specified by the manufacturer.

The control box converts from 110 volts to 29 volts. The 29V low voltage class 2 output to the actuators is not a shock hazard. The power unit is double insulated. It is safe for hospital use with 2 prong plug due to being double insulated and converting to the low voltage of 29V. The end user actuator voltage is 24 volts and not subject to UL certification due to the low voltage output.

MAT Table Contraindications

Contraindications for the exercise function:

*Patient with complete lower extremity paralysis

*Patient has not been medically cleared by a physician to mobilize

*Bilateral lower extremities have a non-weight bearing restriction.

IMPORTANT PRECAUTIONS

The MAT/Multiple Applications Treatment Table is an electrically powered device and basic precautions should be followed:

1) This product is to be used by a medical professional or under the supervision of a medical professional.
2) It is the responsibility of the equipment owner to assure operators of the MAT are aware of all warnings and precautions.
3) Assure the patient understands simple commands.
4) Close supervision is necessary when this equipment is used by, on or near children, or cognitively compromised, disabled or injured persons.
5) Do not allow more than one person on this device when in motion.
6) When moving the table to alternate locations, the foot plates MUST be in the lowered/treatment table position. The table may be moved by pushing on the rails or the frame of the table. Make sure the cord is safely off the ground.
7) Monitor the patient for signs of overexertion. Patients are to inform the medical professional of any discomfort.
8) Use only as instructed. Do not permit anyone to stand on this device. Do not permit anyone to be under the device when plugged in.
9) Do not leave patients unattended on this device.

10) Assure the table sliding mechanism/”sled” is LOCKED when the patient transfers on or off the MAT table.

11) Make sure all wheels are locked when the table is in use.

12) Patients must wear appropriate exercise attire and tie long hair back. Patients must keep their fingers, hair, and loose clothing away from all moving parts. Never use the MAT with bare feet.

13) To ensure safe functionality, this device must be inspected by a medical professional before every use.

14) The maximum load capacity on this device is 500 lbs.

15) Manufacturer provided accessories must be used on this device.

16) This device is intended for indoor use only.

17) Should orthostatic hypertension be a suspected condition of the patient, use the provided padded knee safety belt during tilt table use.

18) Never insert any objects into openings or moving spaces of the MAT.

19) Always unplug the cord before performing maintenance. Servicing, other than the procedures in this manual, should be performed by an authorized service representative only.

20) Do not saturate bolts with caustic cleaners. Wipe the MAT table down at the end of the day with water to remove chemicals, extending the life of the vinyl.

21) Ensure the area is free of obstacles before actuating the table. It is important to make sure objects are not under the table before you incline the MAT.

22) The MAT table should not be moved into different rooms while a person is on the table.

23) Unplug the MAT when not in use or use a properly functioning surge suppressor.

24) Keep the power cord away from any heated surfaces.

Product Specifications Gen 4 Mat

LENGTH:	**HEIGHT:**	**WIDTH…..**34”
Level….. 75”	**Level…..** 24”	**WEIGHT…..** 289lbs
In Use….. 95”	**In Use…..** 65”	**MAX. USER WEIGHT…..**500lbs

Before You Begin Exercise

Before, during and after exercise, consider implementing the following:

* Patient should be cleared by physician for mobilization
* Monitor vital signs closely (i.e., heart rate, oxygen saturation, blood pressure, and respiratory pattern).
* Monitor rate of perceived exertion and watch for outward signs of distress
* Be constantly aware of correct patient alignment.
* If a patient has IV’s or a mechanical ventilator be sure to closely monitor tubing.

Starting the Exercise

1) Check vitals to ensure the patient is able to safely exercise.
2) Assuring the moving table top/sled is locked, have the patient transfer to the MAT.
3) Unlock the sled brakes/horizontal with the table less than 10 degrees inclined. The horizontal brakes will bind if unlocked at higher inclines with a patient on the table.
4) Position the patient so that the patient's feet are on the foot plates and adjust flexion stop for desired knee flexion.
5) Strap the patient's feet to the foot plates or use bolsters (optional).
6) Explain to the patient how to perform a slow, controlled squat and have the patient demonstrate the exercise.
7) Using the UP Arrow button on the hand controller, incline the patient to an appropriate angle in order to perform a series of slow, controlled squats.
8) Instruct the patient to begin the exercise.
9) Continuously monitor the patient for signs of distress and allow appropriate rest periods. If distress or discomfort occurs, discontinue the treatment, and take the appropriate actions.

Stopping the Exercise

1) Have the patient straighten knees.
2) Shorten flexion strap at head of table.
3) Lower table below 5 degrees.
4) Have the patient remove feet from foot plates.
5) Slide the body component/sled to neutral position and apply the horizontal brake.
6) Bring one foot plate at a time down carefully, avoiding contact with the patient's legs (optional for patients with poor sitting balance).
7) Patient may safely transfer off the table.

Maintenance Recommendations

With every use of the MAT Table briefly visually inspect the table for deficits, cord fraying, and objects in the mechanical moving parts.

At the end of the day wipe the MAT table with water only to prolong the life of the vinyl and protect patients from possible allergic reactions from buildup of caustic cleaners.

Once every week, actuate the table to its highest and lowest settings to ensure that the two actuators are moving in sync.

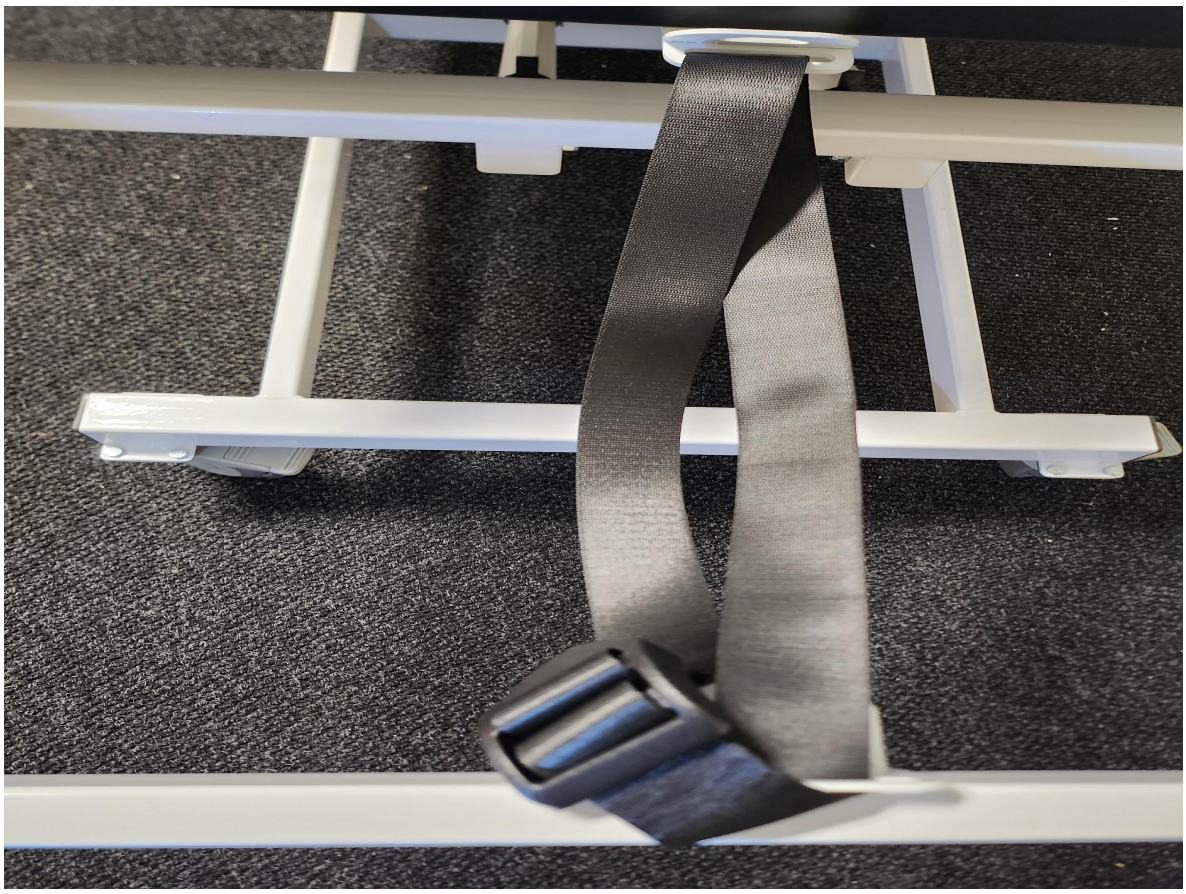
Once every month, check all screws around the foot plates to ensure they have not loosened. Fully actuate the table both as high and as low to ensure the table is operating properly.

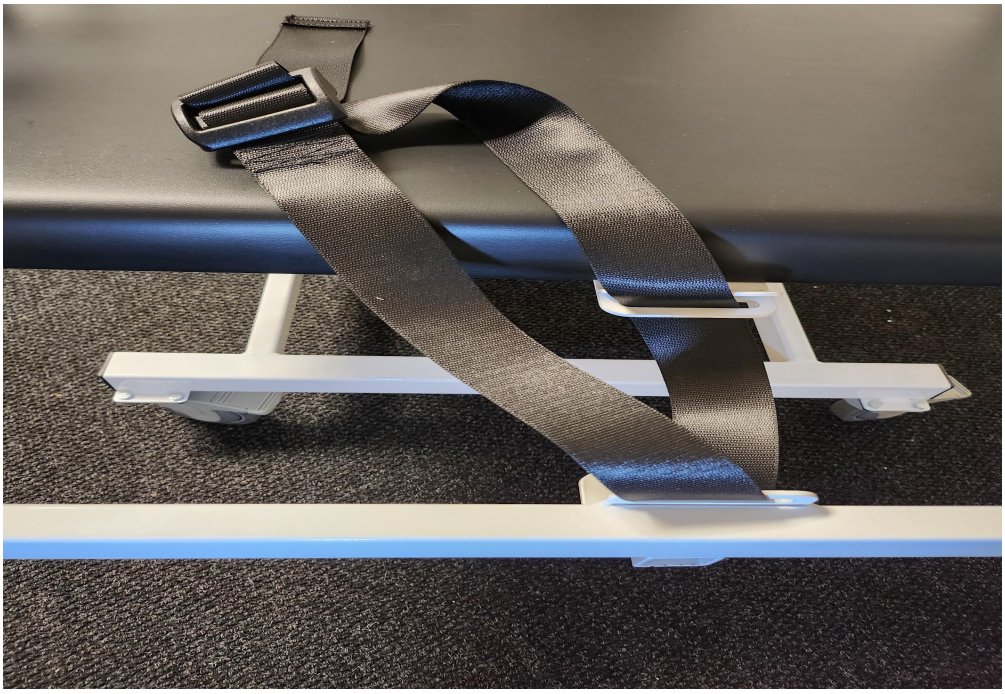
Once every year, lubricate both actuators with a light Industrial actuator oil. Inspect all the bolts throughout the table for tightness and good integrity. Ensure that the 4 casters all break adequately. Ensure that cables and straps are free from tears or deficits. Ensure the brakes operate in all positions on the sliding body mechanism. Ensure that the electrical cord is free from deficits and in good functional order.

How to Use the Straps

The most important strap, which should remain affixed to the table at all times, is the flexion stop strap. The flexion stop strap is located at the head of the table, attached to what is referred to as the “sled”. This strap is in place for the safety of your patient as it controls the movement of the sled/available end range knee flexion.

1) **Flexion stop strap use for partial incline squats:** you can adjust the inclination of the table and the length of the flexion stop strap while the patient is on the table completing incline squats. Simply tighten the strap to reduce the amount of knee flexion, loosen/elongate the strap for increased knee flexion during the squats.
2) **Flexion stop strap during tilt table function:** tighten the strap as much as possible while the patient is supine, knees fully extended and feet flat on the footplates. The flexion stop strap should be in the shortest position possible during tilt table activities. The knee strap may be used in conjunction with flexion stop strap during tilt table activities (see page 16).





Knee Strap Placement For Tilt Table Activities

The knee strap may be used with the MAT tilt table activities. This strap is to be utilized with patients you suspect may pass out, and/or their knees may “buckle” during tilt table activities. **The knee strap is always used in conjunction with the flexion stop strap (**see page 14), as the flexion stop strap is key to patient safety while your patient is in an inclined position.

To use the knee flexion strap, place the strap over the lower legs, just distal to knees. Loop and velcro each side to the metal handles located on the sides of the table. Adjust the fit accordingly by loosening or pulling/tightening the strap ends (patient with knee strap in place pictured on next page).

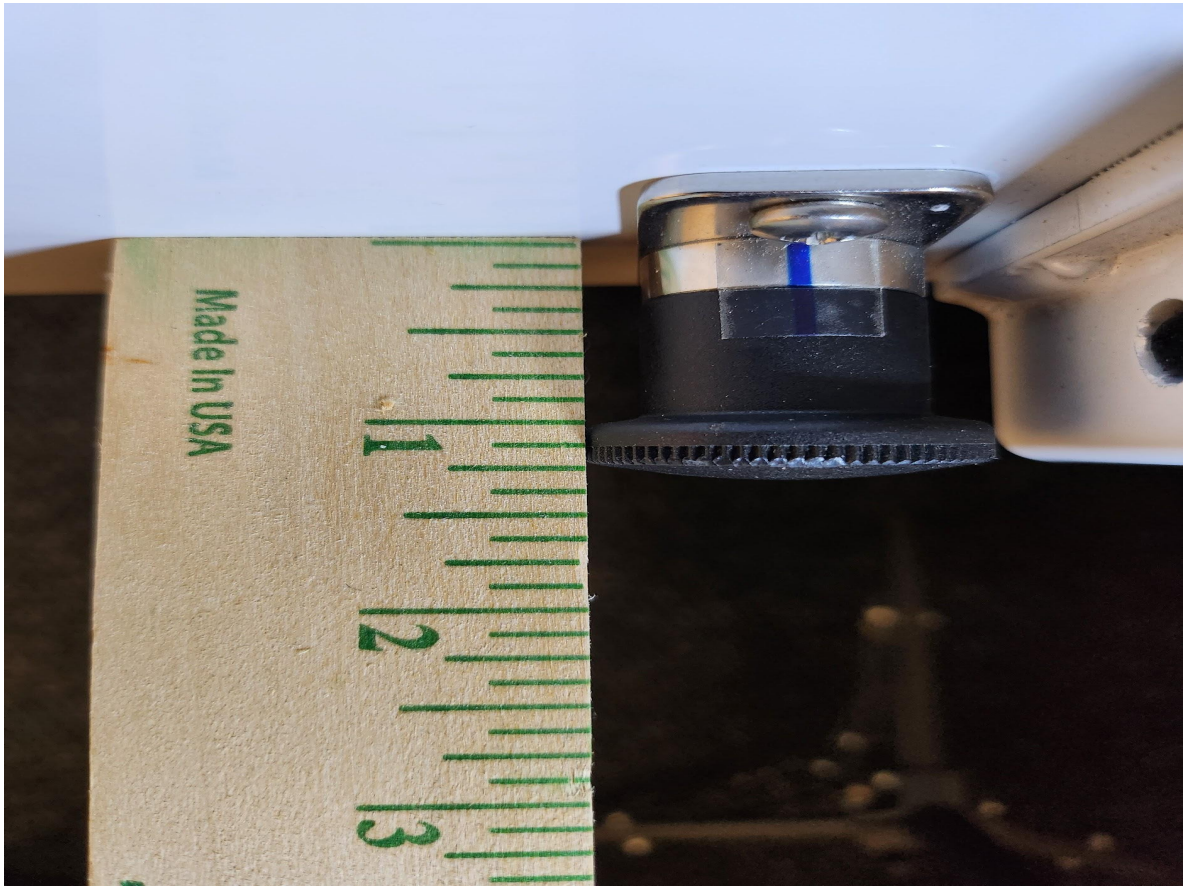
Tilt table setup with knee strap in place and flexion stop shortened to prevent sled from moving should the patient pass out.

Horizontal Brakes

The horizontal brakes are primarily used when patients are transferring on and off the table. The horizontal brakes work best when the table incline is less than 10 degrees.

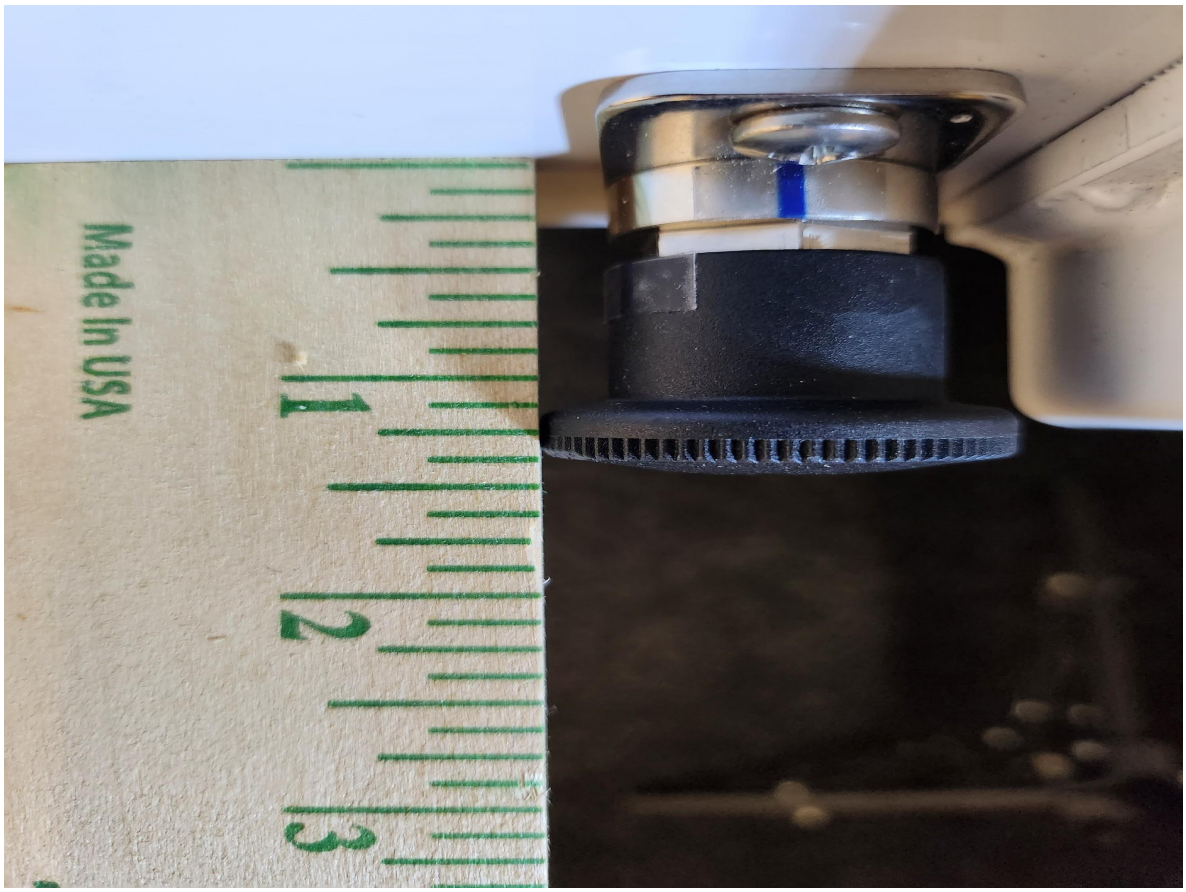
With standing or tilt table activities while the table is inclined 10 degrees or more **be sure to use the flexion stop in its most shortened position** instead of the horizontal brakes.

For activities or bed mobility under 10 degrees it is only necessary to use one horizontal break on either side of the table.

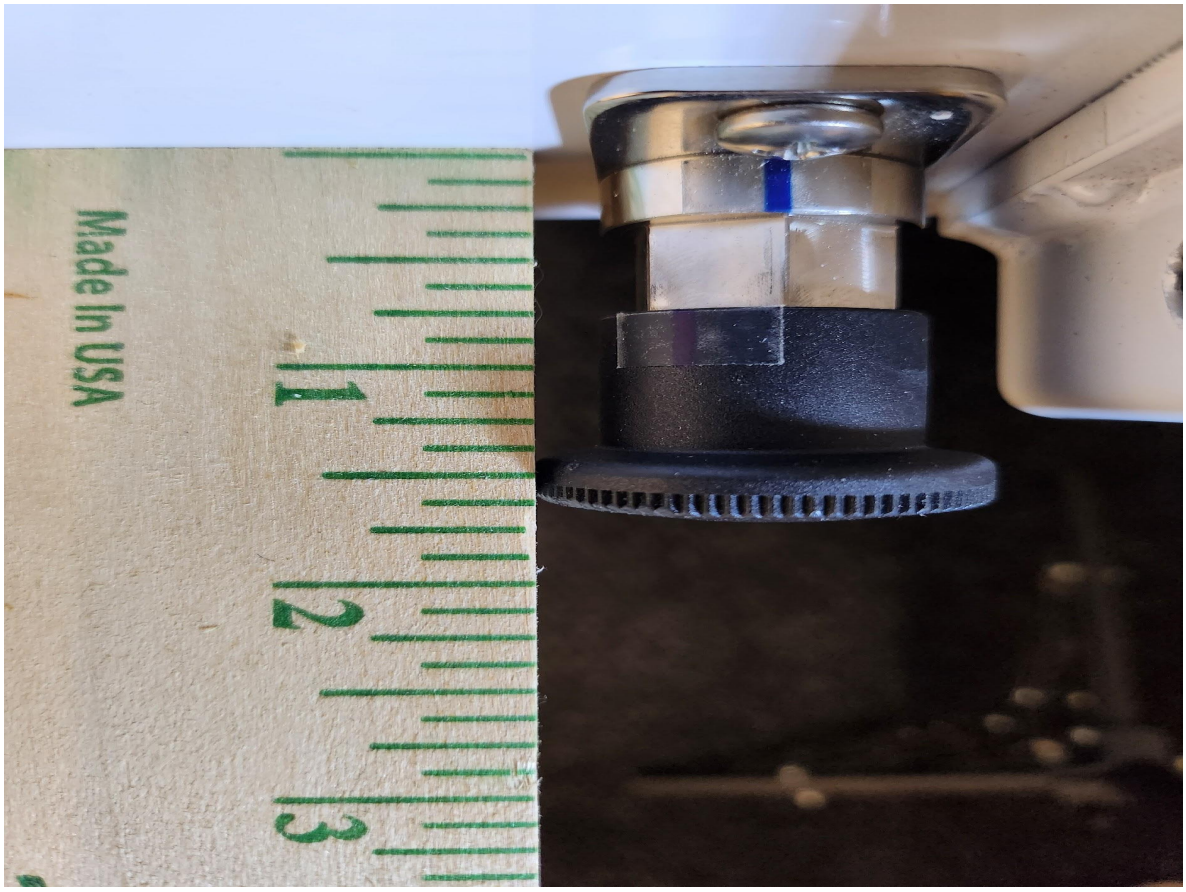


Pictured above, the horizontal break is locked when the knob is in its most shortened position.

The horizontal break is ready to lock when it is slightly elongated as the picture below shows. As the table slides the brake will insert itself into the next available horizontal brake groove. The horizontal brake grooves are placed every 3 inches apart.



In the picture below, the horizontal break is off/fully elongated, allowing the body component to freely slide for exercises such as partial incline squats.



Single Leg Squat Setup

The single leg holder inserts at the base of the sliding body component/sled. There is an insert on both the left and the right. Once the leg holder is in place, the weight of the leg will secure the holder in place. Note: it is normal for the leg holder to “wobble” slightly before the patient’s leg is in place on the leg holder.

Lower the foot plate for single leg squats. It is okay if the lowered foot plate touches the floor (as pictured on page 22) with higher inclinations. Be sure to allow enough room for the lowered footplate when adjusting for single leg squats.

When the footplate is lowered to the ground avoid placing the bracket on the floor as the bracket may bend causing the table to require maintenance. Placing the bracket alongside the t-handle will ensure it does not touch the ground when completing single leg squats.

(note the bracket alongside the t-handle to ensure it does not touch the ground)

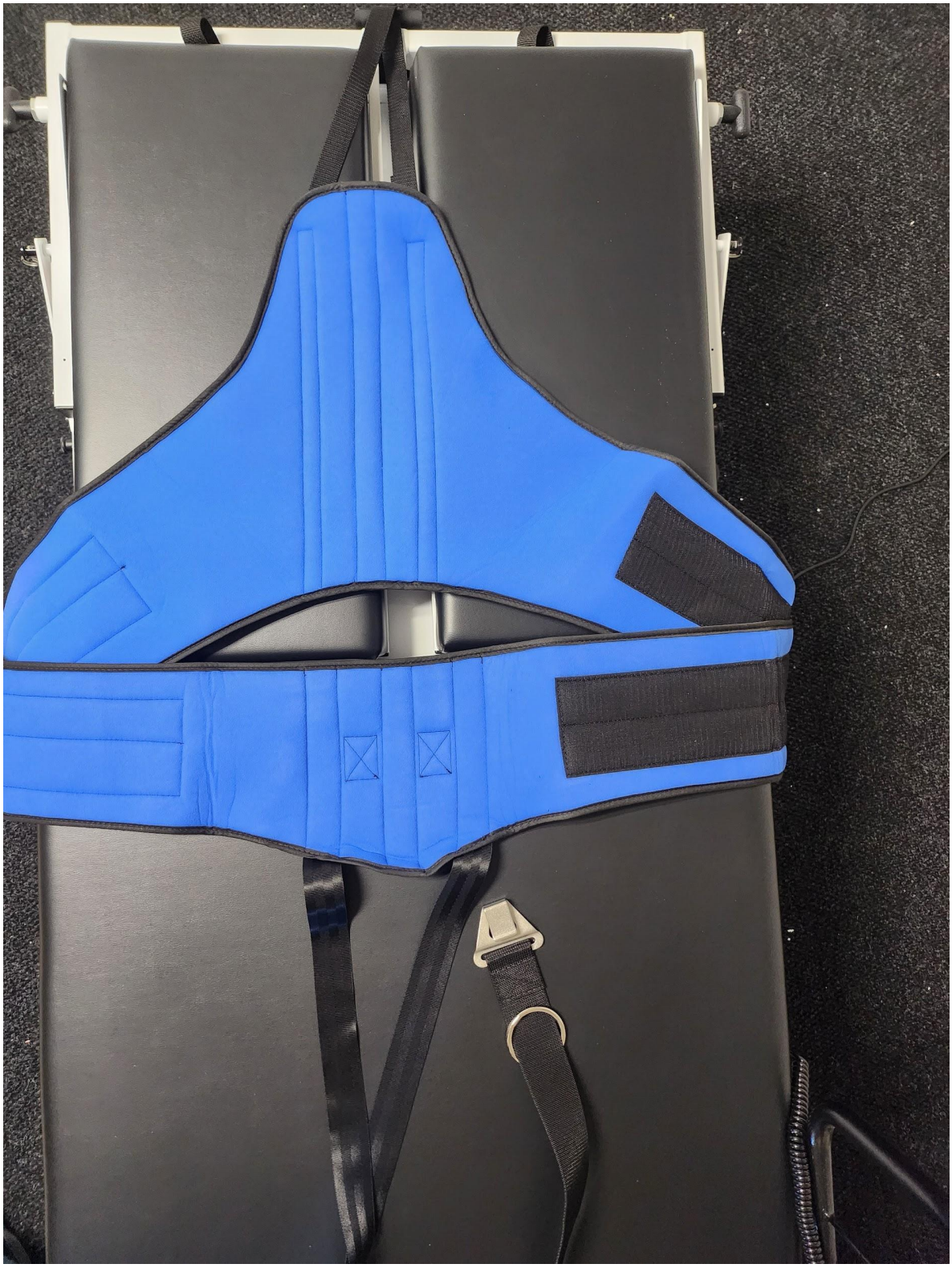
Pulley System Setup

The pulley system inserts at the head of the table. There is a knob underneath the head of the table to tighten up the pulley system to the desired length. The lower end of the pulley attaches to the sliding body mechanism. The top attaches to whatever accessory you wish to use for your pulley exercises. When attaching the lower pulley make sure to attach it to the top ring. When using the pulleys, you must convert the table into exercise mode and loosen the flexion strap to your desired amount of pulley length.

Traction set up with pulley system for therapist assisted lumbar traction or patient assisted lumbar traction.

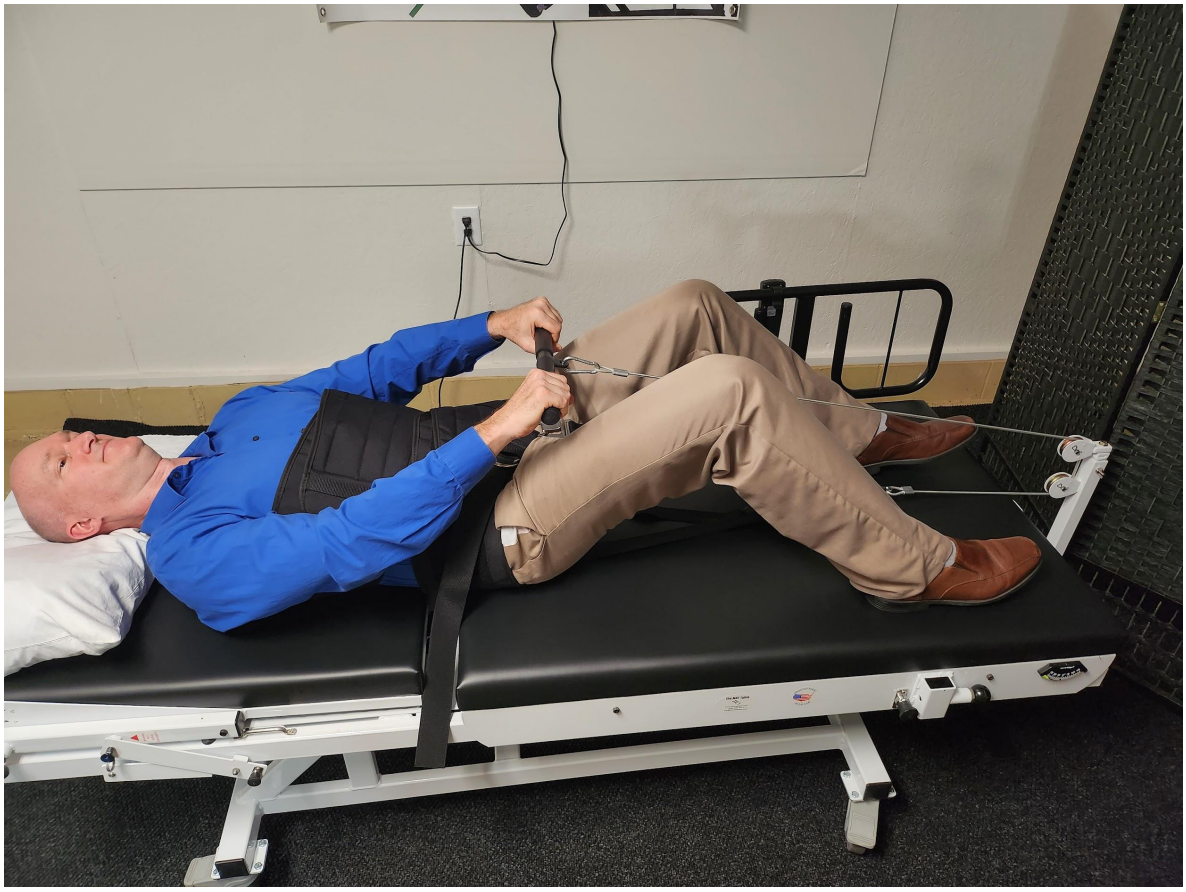
Lumbar Traction Setup without the pulley system. The patient first gets on the table with the horizontal brake on. Strap the patient into the thoracic and Lumbar straps (this is the same with every lumbar traction setup). Pull on the lumbar strap to take the tension out of the strap setup. Unlock the table and apply manual lumbar traction. It is suggested that you adjust the horizontal brake to engage in the next brake slot, so that when it moves into traction, the brake automatically applies. When traction is done, the patient can get off the table easily without it sliding.

Traction belt set up before the patient gets on the table. L5 should be at the split of the two traction belts.



Lumbar Traction Setup Using the Pulleys

In this picture with the patient doing their own self-traction, the same setup is used for therapy assisted traction using the pulley system. With therapy assisted traction, the therapist pulls on the high end of the pulley applying the traction to the patient to tolerance.

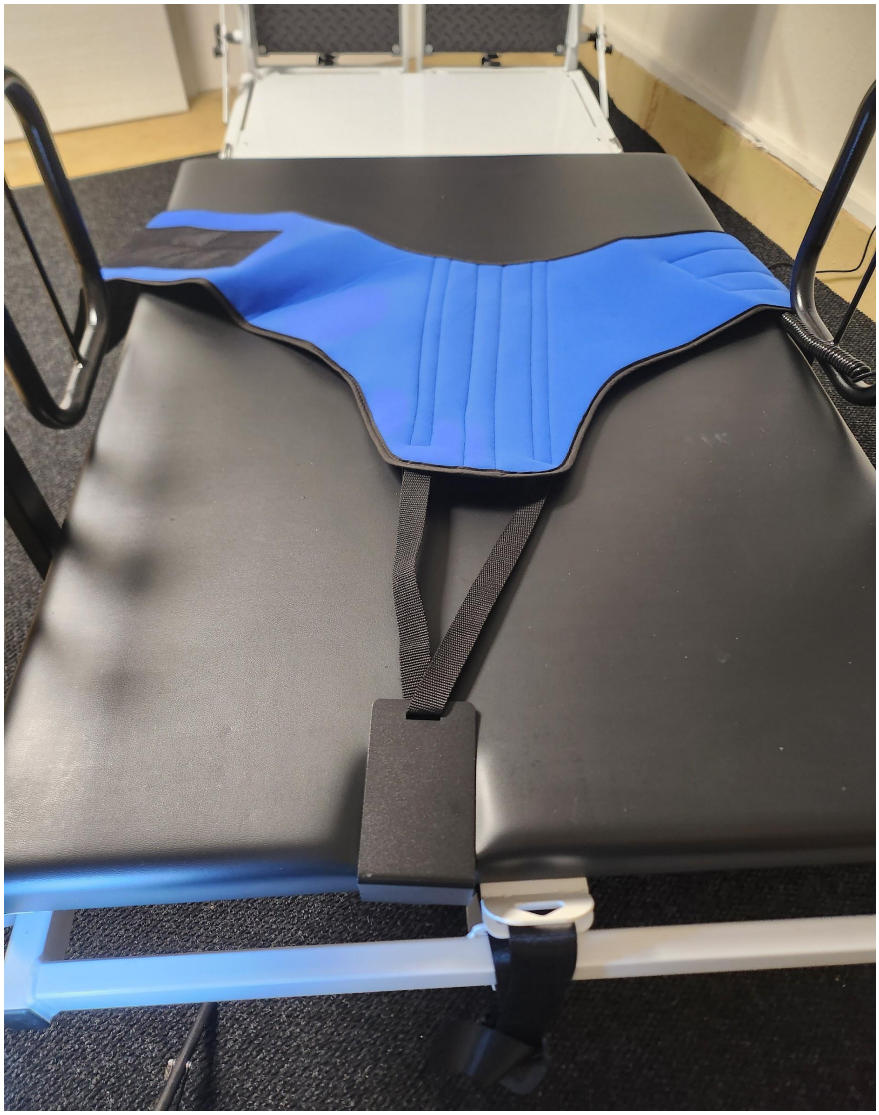


How to Adjust or Set Up a Thoracic Belt Strap

The loose end of the strap exits with the plastic teeth in contact with the strap.

Alternate Thoracic Belt Setup

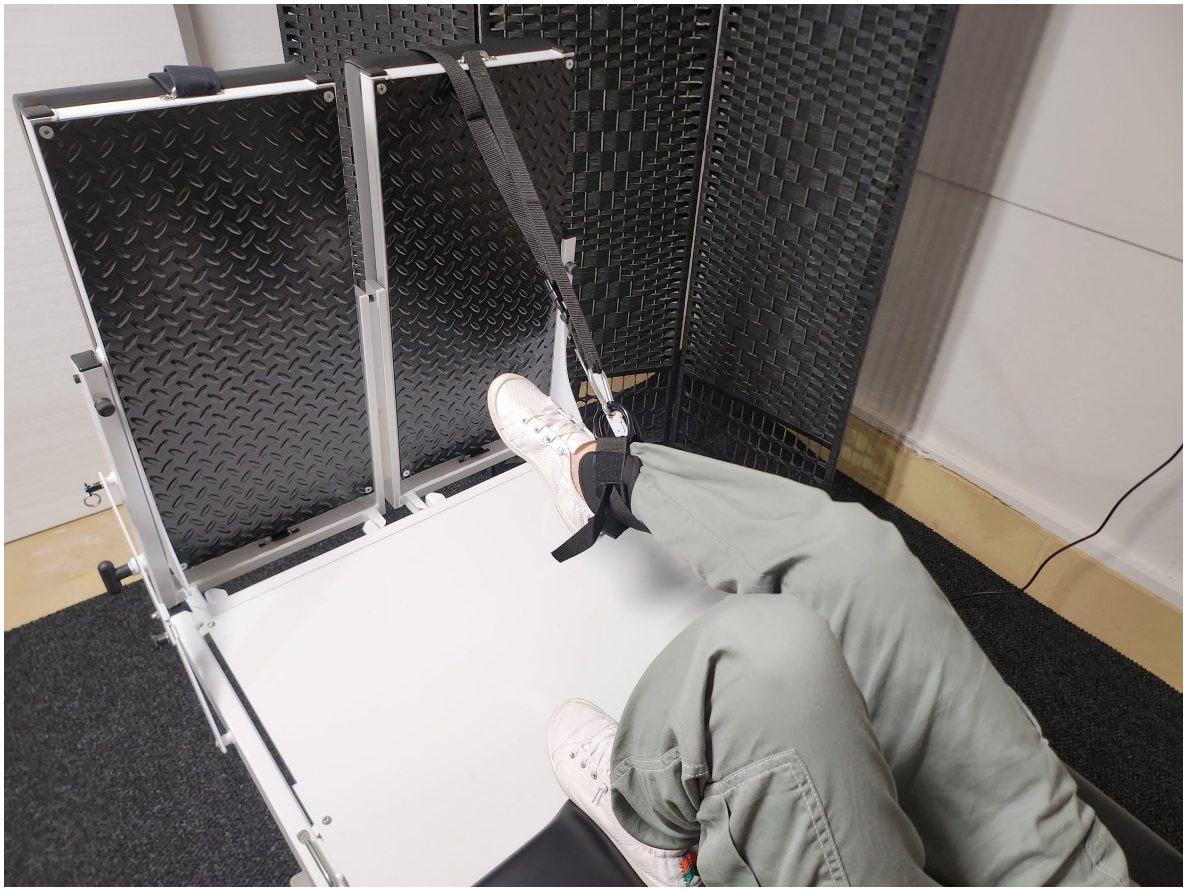
This thoracic belt placement prevents the patient from sliding downward while doing squats. This is an optional setup if you have a lighter patient who may slide down the sled/sliding body component during incline exercises. Simply hook the thoracic belt to the table end, as pictured below. (Please note: when using the MAT for lumbar traction refer to page 27 of this manual as belt set-up is on the opposite end of the table, with the foot plates down).



Optional Ankle Straps

Optional ankle straps hold feet in place with exercise or tilt table function. The strap inserts through the stainless-steel attachment on top of the foot plate while the table is in exercise mode. The strap is used to hold the foot in the desired location for patients who have weak hip flexors. The strap can be left on when you convert the MAT table back from exercise mode to table mode. The straps can be used with bolsters or without bolsters, whichever works best for the specific needs of the patient. A gait belt may be used as an alternative to the ankle straps.

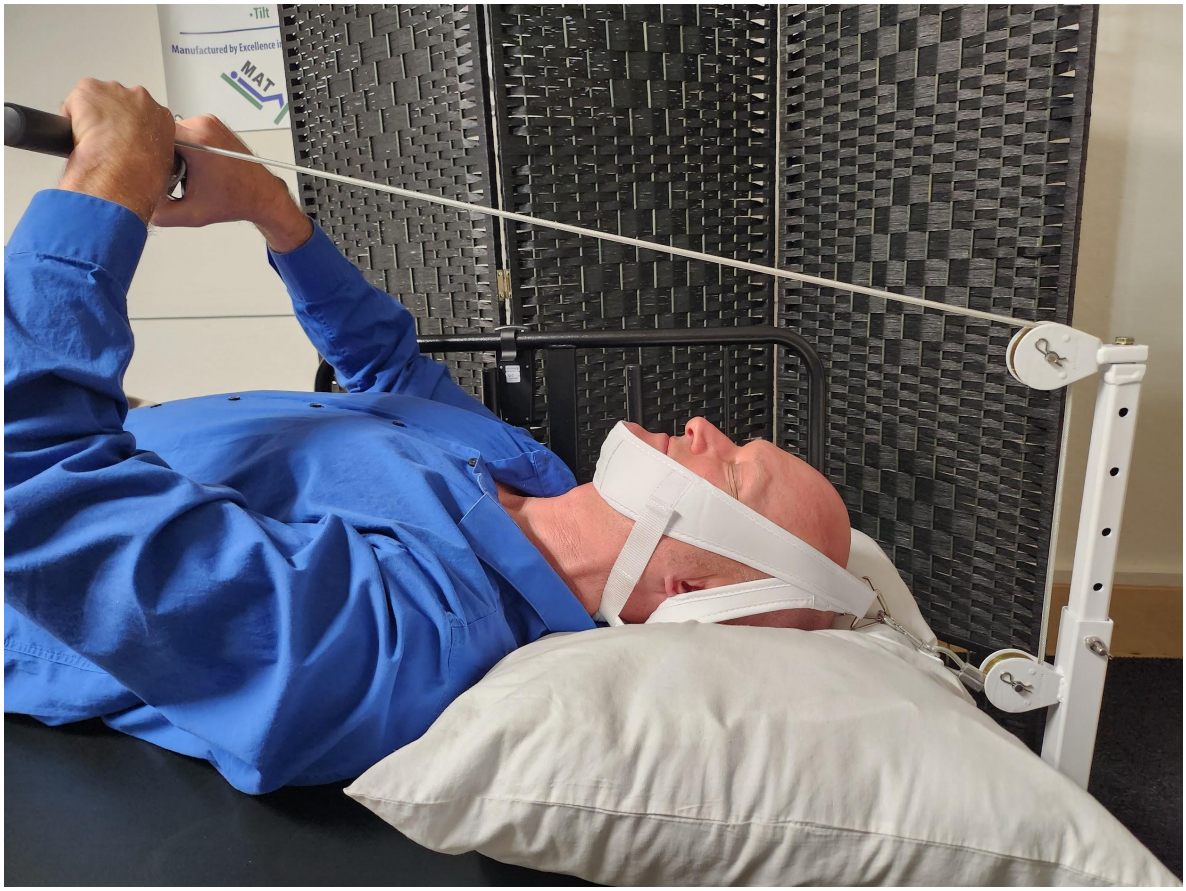
Pictured below is an alternate use for the ankle strap. This set up allows for hamstring isolation while the patient is in supine. The table is inverted and the body support portion of the table is unlocked.



Cervical Traction Setup

For self cervical traction setup and for therapist assisted traction, the therapist or patient uses the pulley to apply traction. (See page 33 for patient set up of self cervical traction to tolerance).

In this example the patient provides their own neck traction to tolerance. The pulley system should be adjusted to its maximum length for cervical and lumbar traction.



Resistance Using MAT Table Pulley System

Angle of Incline	No Rails	One Rail	Both Rails
2°	2 lb	2 lb	3 lb
5°	5 lb	5 lb	6 lb
10°	8 lb	9 lb	10 lb
15°	12 lb	13 lb	15 lb
20°	16 lb	18 lb	20 lb
25°	18 lb	20 lb	24 lb
30°	21 lb	24 lb	29 lb
35°	24 lb	28 lb	33 lb
40°	29 lb	33 lb	38 lb
45°	36 lb	39 lb	42 lb

This table represents average resistance. With faster pulling speeds and momentum associated with dynamic exercise, a 40% variability can occur while in motion. With both rails in place the average resistance (in lbs) is equal to the angle of inclination.

MAT Table Extremity Weight Bearing Chart

Angle of Incline	Bodyweight in lbs												
	100	120	140	160	180	200	225	250	275	300	350	400	500
1	2	3	3	3	4	4	5	5	5	6	7	8	9
2	5	6	6	7	8	8	9	10	11	12	14	15	19
3	7	8	9	10	12	13	14	15	16	18	20	23	28
4	10	11	13	14	15	17	18	20	22	24	27	31	38
5	12	14	16	17	19	21	23	25	27	30	34	38	47
6	15	17	19	21	23	25	28	30	33	36	41	46	56
7	17	19	22	24	27	29	32	35	38	41	48	54	66
8	19	22	25	28	31	33	37	40	44	47	54	61	75
9	22	25	28	31	34	38	41	45	49	53	61	69	84
10	24	28	31	35	38	42	46	50	55	59	68	76	94
11	27	31	34	38	42	46	51	55	60	65	74	84	103
12	29	33	37	42	46	50	55	60	65	71	81	91	112
13	31	36	40	45	49	54	60	65	71	76	88	99	121
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20	48	55	62	68	75	82	91	99	108	116	133	150	185
21	50	57	65	72	79	86	95	104	113	122	140	158	194
22	52	60	67	75	82	90	99	109	118	127	146	165	202
23	55	63	70	78	86	94	104	113	123	133	152	172	211
24	57	65	73	81	89	98	108	118	128	138	159	179	220
25	59	68	76	85	93	101	112	123	133	144	165	186	228
26	61	70	79	88	96	105	116	127	138	149	171	193	237
27	64	73	82	91	100	109	120	132	143	154	177	200	245
28	66	75	85	94	103	113	124	136	148	160	183	207	254
29	68	78	87	97	107	116	128	141	153	165	189	213	262
30	70	80	90	100	110	120	133	145	158	170	195	220	270
31	72	82	93	103	113	124	136	149	162	175	201	227	278
32	74	85	95	106	117	127	140	154	167	180	207	233	286
33	76	87	98	109	120	131	144	158	172	185	212	240	294
34	78	89	101	112	123	134	148	162	176	190	218	246	302
35	80	92	103	115	126	138	152	166	181	195	224	252	310
36	82	94	106	118	129	141	156	170	185	200	229	259	317
37	84	96	108	120	132	144	159	175	190	205	235	265	325
38	86	99	111	123	135	148	163	179	194	209	240	271	332
39	88	101	113	126	138	151	167	183	198	214	245	277	340
40	90	103	116	129	141	154	170	186	202	219	251	283	347
41	92	105	118	131	144	157	174	190	207	223	256	289	354
42	94	107	120	134	147	161	177	194	211	228	261	294	361
43	95	109	123	136	150	164	181	198	215	232	266	300	368
44	97	111	125	139	153	167	184	201	219	236	271	306	375
45	99	113	127	141	156	170	187	205	223	240	276	311	382