

riftonTRAM™

K310 Product Manual




Contents


Safety messages and important information	3-4
Recommended use and user and item dimensions	5
Check your order and basic components	6
Initial assembly and directions for use	7
Battery box	8-9
Scale	10
Base frame expansion and body support systems	11
Accessories	
Thigh straps, walking saddle and direction lock	12
Forearm supports	13-14
Operation and transfers	15-18
Battery charger	19
Troubleshooting	20
Technical data	21
Maintenance and cleaning	22
Warranty, materials and user modifications	23

Key for users

Use this key to determine which sections of this product manual apply to you.

 **Technical Users** For professionals who order and set up Rifton products.

 **Home Users** For care-givers who use Rifton products on a regular basis.

 **Maintenance Personnel** For anyone who is responsible for service or re-ordering of Rifton products and parts.

WARNING



- Thoroughly read and understand the information in this product manual before attempting to use this product. If the procedures and instructions in this product manual are not followed, serious injury or death could occur.
- The TRAM may not be appropriate for all clients. The client's therapist or physician should assess the appropriateness and safety of the TRAM for each user. For example:
 - The TRAM must only be used for clients who meet the weight and height limits specified in this manual.
 - Clients will experience some pressure to soft tissues when lifted with the TRAM. It may not be appropriate for individuals with fragile skin.
- The TRAM should be operated only by and under the direct supervision of a qualified caregiver who has reviewed and understands this manual.
- To prevent falls and injuries:
 - Do not use the TRAM on rough or uneven terrain, around swimming pools or near stairways.
 - Stop lifting immediately if the body support system slides up under the armpits while lifting. This may be caused by slippery outer clothing, a client with low muscle tone or a body shape and size that is inappropriate for the TRAM.
 - Lift the client no higher than is necessary to perform the intended transfer.
 - Always retract the base legs when maneuvering the TRAM while it is supporting a client in the seated posture; expand the base only when necessary.
 - When using the TRAM for walking support, the base frame should be expanded to increase sideways stability if required by the condition or stature of a particular client; the caregiver must make this judgment on an individual basis.
 - Never leave a client unattended in the TRAM.
 - Ensure the use of straps and supports at all times. Straps and supports are provided for the safety of the user and must be carefully adjusted for comfort and security.
 - Always ensure that both release tabs on the back belt safety buckle are fully latched before initiating a lift or transfer.
 - For safe use of the TRAM, prior to initiating a transfer, move the origin and destination of the transfer as close to each other as possible. For example: a client who is to be transferred from a wheelchair to a toilet should be wheeled close to the toilet prior to lifting to minimize time spent in transfer. Never use the TRAM for long distance transport of a lifted client.
- Using straps, trays, or supports to restrict a client's movement is considered behavioral restraint. Rifton products are not intended for this use.

WARNING

- This product is intended for indoor use only and must not be used in or around water other than for bathing and shower transfers in accordance with instructions provided.
- To avoid pinching or crushing:
 - Ensure that all hands and feet are clear of the vertical lifting column before activating the up/down switch.
 - Ensure that all hands and feet are clear of the base frame expansion system and the base legs before expanding or retracting the base.
- To prevent head and neck injury, never use the TRAM to lift a client within a vertically confined space such as inside a vehicle; always check that adequate head clearance exists before initiating a lift or transfer.
- Never use a broken or damaged TRAM. Regular maintenance in accordance with this manual is necessary for safe use of the TRAM.

Recommended use

The TRAM is a Class 1 medical device. It is a transfer and mobility device. For transfers it enables a qualified caregiver to lift a client in the seated posture and transfer the client between wheelchairs, chairs, toilets, beds or therapy tables. As a mobility device it helps a caregiver raise a client to a standing position, and then provides support for standing or ambulation.

User and item dimensions

User dimensions – inches (cm)



Key user dimension: Girth

Girth: 22–60 (56–152)

Important: User’s weight and height must not exceed:
maximum height: 76 (193), maximum weight: 350 lbs (160 kg)

Key dimensions – inches (cm)	K310 TRAM	K320 TRAM
TRAM overall length	45 ½ (116)	same
TRAM overall width	27 ½ (70)	same
TRAM overall height	43 ½ min.–58 max. (110–147)	same
TRAM weight	70 lbs (32 kg)	same
Turning diameter	50 (127)	same
Floor to top of base leg	6 ¾ (17.5)	4 ¼ (10.5)
Min. user armpit height (when standing or ambulating)	30 ½ (77)	same
Max. user height (when standing or ambulating)	76 (193)	same
Max. working load – lbs (kg)	350 (160)	same

Check your order

Every TRAM comes with a caregiver push handle, one battery, one battery charger, a Rifton accessories tote and a scale if ordered. All other accessories are retrofittable and can be added later if desired.

Please check that your TRAM has been outfitted as you ordered it. The TRAM requires minor assembly before use. Please follow the instructions included in this manual to ensure that it is assembled and used correctly.

Basic components

Inspection

Check daily for damage or wear to the TRAM.



Initial assembly instructions



The caregiver push handle is removed for shipping and must be attached to the TRAM frame with four bolts:

1. With the Allen wrench found in the accessory carton remove the four bolts (see Figure 7a).
2. Hold the caregiver push handle against the attachment point as shown (see Figure 7b), insert the bolts in the holes, and starting with the top bolts, tighten them snugly with the Allen wrench.
3. Finally, remove the cover on the lower front of the battery box, and insert the electrical jack plug into its receptacle on the actuator control box (see Figure 7c). The release tab on the plug must be facing towards you. Replace the cover.



Figure 7a



Figure 7b

Directions for use



Caregiver push handle

⚠ WARNING To prevent pinching or crushing, ensure that all hands and feet are clear of the vertical lifting column before activating the up/down switch.

The caregiver push handle enables the caregiver to maneuver the TRAM. It includes the up/down switch, located on top of the right hand-grip, through which the caregiver can adjust the height of the body support. Push the rocker switch up to raise the body support, down to lower it. (see Figure 7d).



Figure 7c



Figure 7d

Battery Box

⚠ WARNING To prevent inadvertent operation of the up/down switch when the TRAM is not in use, press the red elliptical battery eject button to disconnect the battery.

The battery box houses the microprocessor and rechargeable battery which power and control the TRAM's electric actuator (see Figure 8a).

To insert the battery, push the red elliptical battery eject/emergency stop button (see Figure 9a) and lift the lid, slide the battery down into the box and close the lid until the latch engages. To remove the battery, push the red elliptical battery eject/emergency stop button and slide battery up and out of the box (see Figure 8b).

NOTICE To prevent long-term battery damage, remove the battery from the battery box and place it in the charger every night, even if the battery level indicator is still green.

Battery level indicator

⚠ CAUTION To prevent injury:

- Charge or change the battery immediately if the battery level light turns red; do not attempt further lifts or transfers with a red light.
- Prior to every use of the TRAM, activate the up/down button to turn on the battery level light, and verify that the light is green. If it is not, change or charge the battery.

The battery level light indicates the charge remaining in the battery. A green light means the charge level is adequate for use, yellow indicates that the battery should be charged soon, and red indicates very low charge (see Figure 8c). An audible beep indicates that the battery is entirely



Figure 8a



Figure 8b



Figure 8c

depleted. A fully charged battery will give approximately 70 complete lift cycles.

To prevent damage to the battery, charge it when the light turns yellow. The indicator light will extinguish 10 minutes after the last activation of the up/down switch. It will turn on again if the up/down switch is used or if a battery is inserted into the battery box.

NOTICE If the battery level becomes critically low, indicated by the battery level light turning red, the microprocessor will disable the up/down switch. However, the emergency lowering button will continue to function.

The emergency lowering button will continue to function even if the battery level has dropped below the threshold for operation of the up/down switch. It overrides all other inputs.

CAUTION To prevent injury, all caregivers should become familiar with the location and operation of the emergency stop button and the emergency lowering button before using the TRAM.

Emergency stop button

To stop the TRAM motor in the event of an emergency, press the elliptical red emergency stop button, located on the front of the battery box. To reset it, close the lid of the battery box (see Figure 9a).

Emergency lowering button

The emergency lowering button (A), located on the front of the battery box, provides a means of lowering the body support if the up/down switch fails.

Press the emergency lowering button to lower the body support as required (see Figure 9b).



Figure 9a



Figure 9b

Scale

The scale has two purposes: it can be used to measure and track a client's weight, and to measure the amount of weight a client is bearing during ambulation.

To use the scale, turn on the display and use the lb/kg button to display either pounds or kilograms. Before approaching the client who will be weighed, attach all the components you will need for this particular client, (leg straps, arm supports, etc.) and then press the ZERO button to zero the scale. Proceed to lift the client. Once a client is completely supported by the TRAM, the client's weight will be displayed (see Figure 10a).

There are two ways to measure weight-bearing during ambulation:

Method 1: Turn on and zero the scale as previously described. Once the client is lifted and in the walking position, the weight displayed is the amount of weight that the TRAM is bearing.

Method 2: Using the thigh supports and the seated transfer procedure, lift the client with the TRAM. With the client's full weight displayed on the scale, press the zero button. Next, re-position the client for ambulation. The weight displayed will now be the amount of weight the client is bearing (ignore the minus sign on the display).

To replace the scale batteries, push outward on the small tab at the rear of the scale housing and lift the battery cover (a small, flat head screwdriver inserted into the slot at the back of the lid may be used to gently pry it up). Insert fresh AA Alkaline batteries; the cells must be oriented as shown by the inscription in each battery receptacle (see Figure 10b).



Figure 10a



Figure 10b

Scale Information

- To obtain an accurate weight, the client must be lifted clear of all weight-bearing surfaces, and the feet or legs must not be in contact with the base frame of the TRAM.
- The scale uses four AA Alkaline batteries. The battery life is approximately 100 hours of continuous use, or approximately 500 weight recordings.
- The scale will automatically turn off if it does not sense a change in weight for more than 10 minutes.
- The scale is accurate to one percent if used correctly.
- Rifton recommends that the scale be calibrated by a qualified technician at three- to five-year intervals, depending on frequency of use. For instructions on service and calibration, please contact Rifton customer service.

Base frame expansion system

⚠ WARNING To avoid injury, ensure that all hands and feet are clear of the expansion handle and the base legs before expanding or retracting the base.

The base frame expansion system adjusts the width of the base frame from 27½"–40" (70 cm–102 cm). It expands so that clients can be lifted from wide chairs and wheelchairs, and retracts for maneuverability, and to enable the TRAM to pass through narrow doorways.

Swing the expansion handle to the right to expand the frame, and to the left to close it (see Figure 11a).

Tip: Disengage direction locks prior to moving the expansion handle.



Figure 11a

Body support system

The TRAM's body support system includes the body support pads, patient hand grips, ring clips, and the safety belt and buckle (see Figure 11b).

The back belt has a dual action safety buckle to prevent accidental release. Press the two release tabs simultaneously to release (see Figure 11c).

The following can also be attached to the body support system, depending on how the TRAM is to be used:

- Thigh straps (see Figure 12a, and pp. 16 and 18 for use)
- Walking saddle (see Figure 12b, and p. 17 for use)
- Forearm supports (see pp. 13 and 14)



Figure 11b



Figure 11c

Accessories

Thigh straps (see Figure 12a)

Thigh straps are used to make seated transfers. Choose either narrow (5") or wide (7"), depending on the needs of your client. Additional straps can be purchased for individual clients.



Figure 12a

Walking saddle

The walking saddle, available in three sizes, is used for sit-to-stand transfers and supported ambulation. It is attached by hooking the rings to the color-coded clips of the body support system. Note that the walking saddle may fit the patient best when the straps are crossed (see Figure 12b).



Figure 12b

Caster direction lock

The direction lock enables the caregiver to prevent one or more of the TRAM's casters from swiveling.

Locking a front caster makes the TRAM easier for a caregiver to maneuver during transfers. Locking a rear caster can stabilize the TRAM when used for ambulation.

To install a direction lock on a caster, insert the prongs of the direction lock into the slot found at the ends of each base leg with the red plunger pull handle up (see Figure 12c). The prongs are fully inserted in the slot when it clicks.

To engage the direction lock, align the caster with the base leg, and push the plunger all the way down between the caster's tires (see Figure 12d). Pull the plunger up to disengage the direction lock.



Figure 12c (Low-base direction lock)



Figure 12d (Standard-base direction lock)

Forearm supports

Forearm supports give extra lifting support and provide positioning support during ambulation for clients who have low muscle tone. Forearm supports adjust in many directions and angles to accommodate different positioning requirements (see Figure 13a).

If forearm supports were purchased initially with the TRAM they will be attached and ready for use. If you purchased forearm supports separately you will need to install mounting brackets onto the body support.

Attaching forearm supports and mounting brackets:

- Remove the plastic hole cover from the body support channel by unscrewing wing knob inside the channel (see Figure 13b). To prevent loss, screw the wing knob back on the threaded stud of the plastic hole cover.
- With the large, lipped end up, install the mounting bracket on the body support channel (see Figure 13c) and securely tighten the attachment knob on the threaded stud, which will now be protruding inside the body support channel (see Figure 13d).



Figure 13a



Figure 13b



Figure 13c



Figure 13d

Adjustments: (see Figure 14a)

Height adjustment:

Press button (A) and slide post to desired position.

Loosen knob (B) to:

- Slide arm pad toward or away from the user.
- Rotate up or down.
- Rotate in or out.
- Move the arm pad backward or forward.

To adjust the handhold:

1. Loosen knob (C).
2. Slide handhold (F) forward or back for different forearm lengths.
3. Rotate the handhold from side to side.

Arm strap (D) and wrist strap (E) secure the client’s arm in the forearm support. The wrist strap prevents the client’s arm from coming out of the forearm support.

If you wish to remove the mounting brackets:

- Unscrew the attachment knob located inside the body support channel (see Figure 14b).
- Remove the forearm support mounting bracket, and to prevent loss, screw the attachment knob back onto the mounting bolt (see Figure 14c).
- Install the oval shaped hole cover (found in accessory carton) by inserting the threaded stud through center hole and tightening the wing knob inside the body support channel (see Figure 14d).



Figure 14a



Figure 14b



Figure 14c



Figure 14d

Operation and transfers

WARNING

To avoid injury, do the following before and during every transfer:

- Move the origin and the destination of the transfer as close to each other as possible.
- Ensure that the body support system is positioned comfortably, correctly and securely, and that the safety buckle is properly engaged.
- Lift the client only high enough to perform the transfer.
- Check that the straps are snug and the body support system does not slide up or cause discomfort.

Aside from weighing and off-weighting (see page 10), the TRAM offers three essential functions: **seated transfers** (ideal for toileting), **sit-to-stand lift** and **gait training**. The following three pages illustrate these functions.

Using thigh straps for a seated transfer:

1. Clip one end of each thigh strap onto the yellow clips at the front of the TRAM's body support system.
2. With the client sitting up and arms raised slightly, position the TRAM's body support system pads around the client's rib cage a few inches below the armpits (see Figure 16a).
3. Secure snugly with the buckle (see Figure 16b).
4. Attach the thigh straps (gray side up) to one of the colored clips along each side of the body support system. For clients with lower tone, choose a clip further back for greater support. Pull the straps snugly, making sure both thigh pads are positioned under the client's thigh and adjusted equally (see Figure 16c).
5. Raise client. Watch closely to make sure the client remains comfortable and does not sag. Move client to transfer location. The TRAM base legs should be retracted for travel. (see Figure 16d).
6. Gently lower client onto seat. Avoid lowering too far so body support system doesn't push down on hips. (The TRAM will automatically stop and beep if it meets resistance.) Unclip the back ring on the thigh straps and pull straps out from under client. Then release back buckle (see Figure 16e).



Figure 16a



Figure 16b



Figure 16c



Figure 16d



Figure 16e

Using walking saddle for sit-to-stand or walking:

1. Position walking saddle under client, either by lifting client using the first four steps on page 16 (see Figure 17a), or by folding saddle, shifting the client to one side and positioning saddle under client one half at a time.
2. Attach walking saddle rings to the colored clips on the body support system (see Figure 17b).
3. For some clients positioning will be improved by crossing the front and rear straps as shown (see Figure 17c).
4. As you raise the client, pull the TRAM gently toward you to mimic the natural sit-to-stand arc. Watch closely to make sure the client is comfortable and well supported throughout the lift (see Figure 17d).
5. Adjust body support system height so client can walk comfortably; body support system should not be positioned too high under the armpits (shorten walking saddle straps as necessary). Check to make sure the saddle is positioned under the client as shown. (see Figure 17e). If desired, use forearm supports for additional support or positioning.



Figure 17a



Figure 17b



Figure 17c



Figure 17d



Figure 17e

Toileting and the TRAM

While caregivers will always find their own best methods for toileting a client, here is one suggested method for clients with some ability to bear weight.

1. Position the client in the TRAM over the toilet seat, leaving enough room to adjust clothing (see Figure 18a).
2. Loosen and remove the supporting thigh straps one at a time so the client's feet are touching the floor and bearing some weight (see Figure 18b).
3. Adjust clothing for toileting (see Figure 18c).
4. Using the up/down switch, lower the client onto the seat. Lock the brakes on the TRAM's front casters (see Figure 18d).

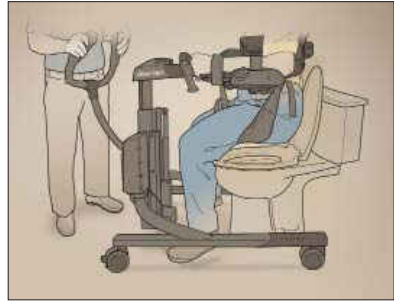


Figure 18a



Figure 18b

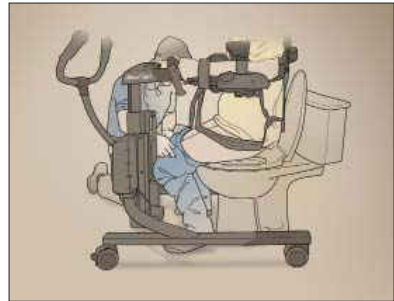


Figure 18c

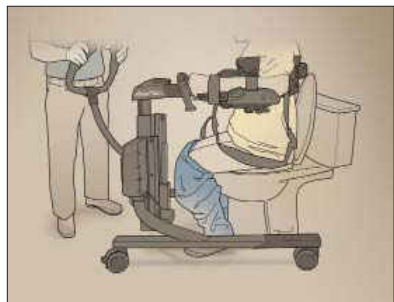


Figure 18d

Battery charger

⚠️ WARNING To prevent shock or electrocution, do not charge batteries in a wet area.

Installation

1. Remove the battery from the charger to access the mounting bracket.
2. Attach the charger to the wall near an outlet, using two screws (A) (see Figure 19a). Two screws are provided with the charger, however, they may not be suitable for every situation.
3. Place battery in charger (see Figure 19b).
4. Plug the charger cord into wall outlet.

Charging

- Charge the battery for 24 hours before first use.
- Recharge battery each night even if battery box light is still green.
- To charge the battery, remove it from the control box and place it onto the wall-mounted charger.
- The charger and indicator light will shut off automatically when charging is complete.
- Charging normally takes approximately six hours.
- During long periods of inactivity or storage, batteries will lose charge. Allowing batteries to deep cycle (become nearly or completely dead) will destroy them. To prevent this, store batteries in charger. If you purchased an extra battery, you may want to consider purchasing a second charger.

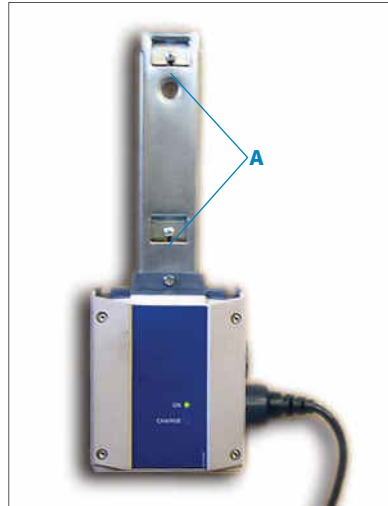


Figure 19a



Figure 19b



Old batteries should be disposed of properly at an appropriate recycling facility.

Troubleshooting

Lift does not go up or down:

1. Make sure the battery box lid is closed (see page 8).
2. Make sure the electrical cables are secure.
3. Check that the light on the battery box is green.
4. Contact Rifton.

Lift beeps when down button is pushed:

For safety, the TRAM's actuator control system continuously monitors the force exerted by the actuator as the body support is lowered, and stops it if an excessive rise in force is detected, such as if the body support pushes down on the client's hips or thighs. The battery box will beep if this happens, and will continue beeping until the down button is released.

This system is sensitive and may occasionally issue a false alert, especially if the TRAM is cold or has been idle for some time. If a false alert such as this occurs, re-engage the down button.

Battery does not charge:

1. Check that the battery contact plate is not damaged or broken.
2. Check that wall charger is plugged securely into the wall socket.
3. Contact Rifton.

Scale does not turn on:

1. Remove batteries and insert again, making sure that each cell is correctly oriented in polarity.
2. Batteries may be dead and need replacing.
3. Contact Rifton.

Any unusual noise:

Contact Rifton.

Technical data

- **Lifting speed:** 1.5" (4 cm) / sec with no load.
- **Battery:** 24V, 2.9 Ah valve-regulated lead-acid gel-type batteries. (Replacement batteries available from Rifton)
- **Battery charger:** Wall-mounted charger, 100 - 240 V AC, max 650 mA.
- **Motor:** 24 V, 6A, permanent magnet motor.
- **Emergency lowering:** Electrical
- **Wheels:** Rear: 100mm dual
Front: 100mm dual with brake.
- **Motor duty cycle:** Two minutes continuous use followed by 18 minutes idle.
- **Turning diameter:** 50" (127 cm)
- **Mass of TRAM:** 70 lbs (32 kg)



Maintenance

This product is designed and tested for an expected life of 5 years when used and maintained in accordance with this manual. At all times, users must ensure that the product remains in a safe and useable condition, including regular maintenance and inspections as specified in the manual.

To prevent structural failure, which may result in serious injury or death:

- Inspect this product and accessories regularly for loose or missing screws, metal fatigue, cracks, broken welds, missing attachments, general instability or other signs of excessive wear.
- Immediately remove this product from use when any condition develops that might make operation unsafe.
- Do not use Rifton components or products for any purpose other than their intended use.
- Replace or repair components or products that are damaged or appear to be unstable.
- Use only Rifton authorized replacement parts. Order information for replacement parts is provided on the back of this product manual.

Cleaning

CAUTION

To minimize risk of infectious disease transmission, clean and disinfect the TRAM between uses by different patients.

NOTICE

To avoid damaging the product:

- Do not use excessive amounts of water when cleaning the TRAM.
- Do not use high-pressure spray or steam cleaning.
- Do not clean the piston rod of the TRAMs electric actuator.

The TRAM and its accessories may be cleaned with broad spectrum, multi-purpose disinfectant sprays and wipes or a solution of up to 10% bleach. Do not use solutions containing perfumes or staining ingredients. The leg straps and walking saddle may be machine washed in cold water and air dried.

Warranty Statement

If a Rifton product breaks or fails in service during the first year, we will replace it free of charge.

Materials

- Steel hardware items (nuts, bolts, screws, etc.) are typically zinc or nickel plated, or stainless steel.
- Upholstery items (pads, support blocks, padded prompts, etc) are typically polyurethane foam with a fire-retardant cover made from expanded polyurethane and tough nylon.
- Frames are typically steel or aluminum tubing, welded together and are finished with powder coated paint. Some frame components may also be stainless steel.
- Straps are typically made of polypropylene or nylon webbing.
- Plastic components are typically injection molded from a variety of industrial resins.

All materials are free of latex, lead and phthalates.

User modifications

⚠️ WARNING To prevent serious injury or death, do not modify or alter Rifton products or components, or use Rifton products or components in conjunction with products from other manufacturers. Rifton does not accept responsibility for any modifications or alterations made to our components or products after they leave our premises. Customers modifying or altering our components or products, or using them in conjunction with products from other manufacturers, do so at their own risk.