BUCKINGHAM MFG.
ERGOVATION™ "Y" Style Retro Fit Harness (REH2 & REH4) Assembly Instructions

- These Buckingham "Y" style upper retro harnesses can only be used with Ergovation™ series arborist saddles / sit harnesses equipped with the SRT attachment as indicated below. See SRT instructions for SRT attachment to an arborist saddle.
- Buckingham retro fit harnesses must be properly coupled to a compatible ASTM F887 rated arborist saddle with ANSI Z359.12 compatible connectors.
- PN REH2 is designed to be used with the PN 16906 series arborist saddles.
- PN REH4 is designed to be used with the PN 17905 series arborist saddles.
- Arborist saddles are sold separately.
- Hardware / material colors may vary from that shown below.

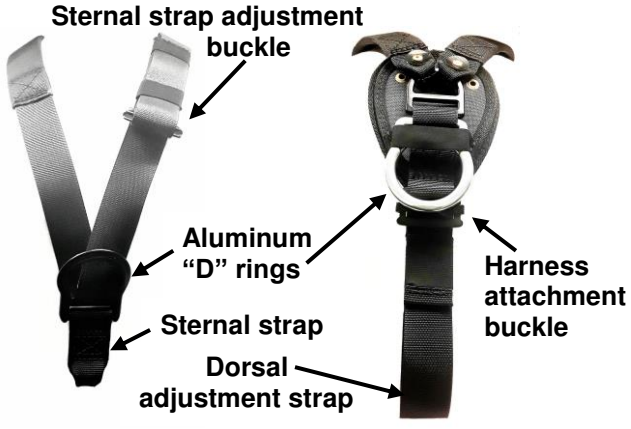
Out of Package Assembly

"Y" Style Upper Assembly comes as shown.

Fig. 1

REH2

REH4



- PN REH2 is supplied with two C417 carabiners (PN 223608).
- PN REH4 is supplied with one A337ANSI carabiner (PN 223691).
- PN REH2 is designed to be used by a person with a maximum weight of 310 lbs. when fully equipped.
- PN REH4 is designed to be used by a person with a maximum weight of 350 lbs. when fully equipped and only when used with a compatibly rated arborist saddle.
- Harness attachment methods for PN REH 2 & REH4 are the same.

Note
- Attachment of PN REH2 to a compatible arborist saddle is shown through the remainder of this document.

- All Buckingham Ergovation arborist saddles manufactured and dated after 5/2009 have been designed and are compatible for attachment with either of the three Ergovation Retro Fit harnesses (product numbers REH1, REH2 or REH4). All Buckingham Ergovation saddles manufactured and dated prior to 5/2009 **must not** be used with a retrofit harness.

Option A – Dorsal strap attachment

(Web attachment method)

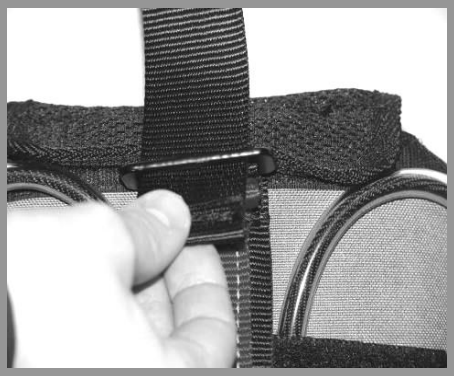
Step 1

Begin with dorsal assembly on rear of saddle / sit-harness.

First locate the rear attachment buckle for retro harness on the rear of the Ergovation™ series saddle / sit-harness

Note: This is 1 of 2 ways to attach the "Y" style retrofit harness to the Ergovation saddle ™. This method would be for someone who requires a dorsal attachment for a majority of their work or as their primary attachment for harness fall protection i.e. fall arresting lanyard.

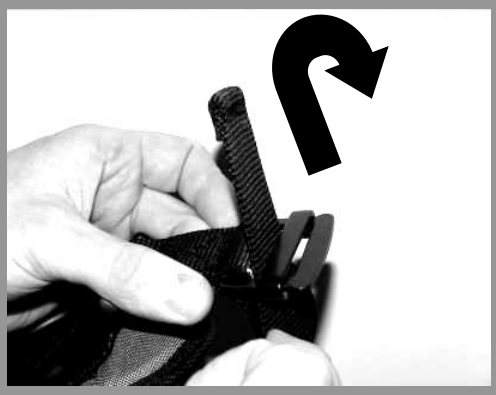
Step 2



Slide webbing of dorsal adjustment strap of "Y" style upper assembly, through the Retro Harness Rear Attachment Buckle of Ergovation™ saddle / sit-harness, as shown above.

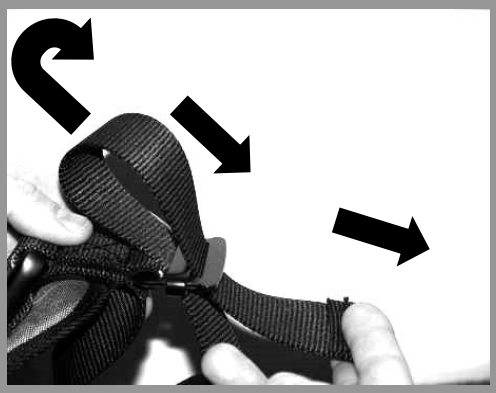
Note:
Once webbing is slid through the Retro Harness Rear Attachment Buckle, slide webbing up through elastic webbing keeper to keep webbing tidy, as shown above.

Step 3



Next thread the webbing through the left side slot from the underside of the Harness Attachment Buckle.

Notice the sliding bar of the friction *buckle is slid to the right to allow easy threading.*



Finally thread webbing over the slide bar and down through the right side slot of the Harness Attachment Buckle, as pictured above.

Warning: Make sure Harness Attachment Buckle is threaded properly as this is a critical attachment (load bearing connection) !!

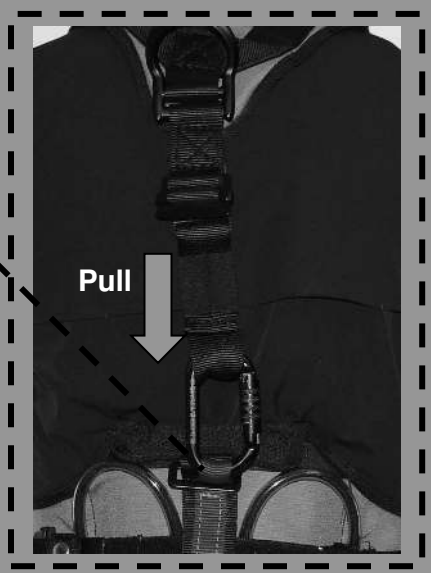
Ensure webbing will not slip through buckle prior to proceeding.

Option B - Dorsal strap attachment

(Carabiner attachment method)

PN REH2 only supplied with carabiner

Note: 2ND. connection method - for an individual who will periodically remove the "Y" style retro upper harness.

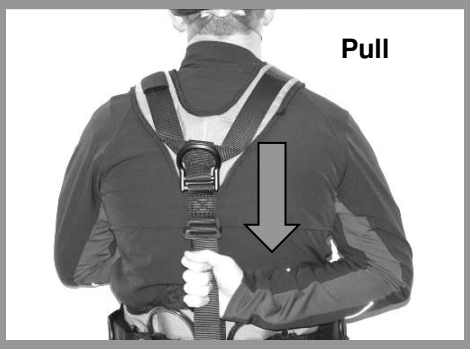


To attach the Retro Harness to the Ergovation™ saddle using a carabiner, insert the carabiner through the red web loop of the saddle tailpiece instead of threading web through the Retro Harness Attachment Buckle. The carabiner must connect to the rear red web loop of the Ergovation™ saddle tailpiece as shown left. Buckingham requires using a triple action ANSI Z359.12 rated locking carabiner with a 3600 lb. rated gate for this connection

Warning : Make sure carabiner is properly oriented on dorsal attachment of saddle and harness!!

Dorsal "D" ring should be placed between shoulder blades for proper fit on either setup. To adjust, simply pull down on strap exiting Retro Harness Attachment Buckle.

Step 4 – Dorsal “D” ring adjustment



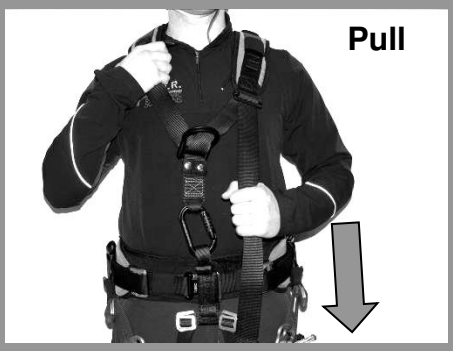
Dorsal “D” ring should be placed between shoulder blades for proper fit on either setup. To adjust simply pull down on strap exiting harness attachment buckle as pictured above.

Step 5 – Sternal strap attachment & adjustment

Connect “Y” style upper retro harness to SRT attachment on Ergovation™ saddle / sit harness using only an approved carabiner. Buckingham requires using a triple action ANSI Z359.12 rated locking carabiner with a 3600 lb. rated gate for this connection.

Step 6

To adjust “Y” upper retro harness pull down on sternal strap until light pressure is felt on the shoulders as pictured above.



Step 7

Once the “Y” upper retro harness is properly adjusted, secure loose webbing via the webbing keepers above the adjustment buckle on the left shoulder side of the harness.

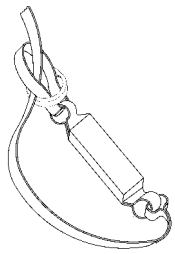
Step 8

Final Assembly of the “Y” style upper retro harness, pictured with Ergovation™ saddle / sit harness with Omega suspension and Ergovation™ SRT attachment.

Instructions / Warnings
REH2 & REH4 – "Y" Style Retro Harness

Manufacturer's instructions shall be provided to the user of this product. If additional copy is needed, contact Buckingham Mfg. Co. Read carefully, understand and heed these and all instructions, warnings and cautions before using this equipment. Failure to do so could result in your serious injury or death. Employer – instruct employee as to the proper use, warnings and cautions before use of this equipment.

Buckingham retro harnesses used with arborist saddles are intended as personal protection equipment for use by properly trained professionals only. Each piece of equipment is important in its function and design and in its relationship to all other components. Energy absorbing lanyards should be considered as a part of a personal fall arrest system used in conjunction with a harness. The energy absorber (pack end) must always be attached to the fall arrest attachment device included on the users equipment. Cover of energy absorber should not be removed and will not have any effect on the shock absorbing feature. Harnesses must be worn so the fall arrest attachment is centered in back near shoulder blade level. It is recommended that:



- A connecting device and fall arrest attachment manufactured with a web loop be attached with a hitch (See detail), or carabiner.
- If using a locking snap hook to a web loop fall arrest attachment the web loop must be protected by an integral wear piece to enhance visual inspection.
- All Web loop fall arrest attachments must be inspected before each use. The inspection should include, but not be limited to, inspecting for: webbing cuts, kinks, abrasions, burns, excessive swelling, excessive wear, discoloration, charring, broken fibers, loose stitching and chemical or physical exposures.
  Note: The use of a locking snaphook to a web loop fall arrest attachment without an integral wear piece is acceptable in emergency situations (i.e. rescue, evacuation, etc.) Attachment of a locking snap hook to a web loop fall arrest attachment with no wear piece can cause premature wear of the webbing and stitching. This degradation can cause the web loop layers to separate and be incapable of supporting your weight. Therefore the web loop fall arrest attachment must be inspected before use. Additionally, connections used to attach to the fall arrest attachment must have a minimum gate rating of 3600 lbf. and meet ANSI Z359.12 requirements.

OSHA requires that impact force in a fall <u>not</u> exceed an 1800 lbf. limit with a harness. Proper use of a harness with an energy absorbing lanyard will allow compliance with these limits when properly assembled.

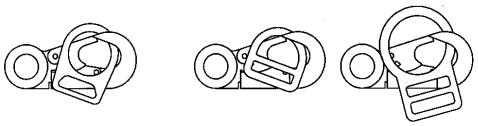
Selection of products should be such that they aid the worker in the performance of his job and particular work situation. Be certain this equipment is suitable for the intended use and work environment. It should only be used as personal protection equipment If suitability for intended use is questionable, always consult your Supervisor, Safety Director or contact Buckingham Mfg. at (607) 773-2400 or 1-800-937-2825.

No fall protection system can guarantee that you will not sustain injuries should a fall occur. Therefore, lanyards should be kept as short as possible to minimize free fall distance. OSHA specifies that maximum length of lanyard shall provide for a fall of no greater than six (6) feet. In addition other factors such as harness stretch not to exceed 18", D-ring / connector length, settling of the user's body, lanyard length, including energy absorber extension and all other contributing elements should be such that the user can not fall a distance that will allow contact with any lower level. The lanyard attachment point on the user should be in the middle of the back near shoulder blade level. Do not lengthen a lanyard by tying or knotting to another lanyard or connecting a snap to a snap. Lanyards should not be shortened by knotting rope or webbing as this can reduce the strength by 50% or more. NOTE: The hitch detailed above is not considered a knot.

Do not alter your harness or any safety product in any way. If your harness does not fit properly, replace it with one of the correct size. Wear your harness snug but not tight.

Unless the snap hook is a locking type with minimum gate rating of 3600 lbf., meets ANSI Z359.12 requirements, and designed for the following connections, snap hooks shall not be engaged:

- directly to webbing, rope or wire rope
- to each other - they are not intended to be used that way and could twist apart
- to a D-ring to which another snap hook or other connector is attached.
- to a horizontal lifeline
- to any object which is incompatibly shaped or dimensioned in relation to the snap hook such that the connected object could depress the snap hook keeper a sufficient amount to cause it to release. (See Illustration)



Incompatibly Dimensioned

Incompatibly Shaped

Thorough employee training in the selection and proper use of personal protection equipment is imperative.

CAUTION

- User maximum weight rating of product when fully equipped and used with compatibly rated Arborist saddle:
  REH2: 310 lbs.
  REH4: 350 lbs.
- Fall protection equipment, (i.e. fall arrest, work positioning belts, retrieval, suspension etc.) should not be resold or provided to others for re-use after use by original user as assurance cannot be granted that a used product meets criteria of applicable standards and is safe for use to a subsequent user.
- Only Buckingham Mfg. Co. or those people authorized in writing by Buckingham Mfg. Co. may make repairs to this equipment.
- Equipment subjected to impact loading must be immediately removed from service, destroyed and discarded.
- In the event of a fall, the employer must have a rescue plan and the means to implement it.
- Attach only locking connecting devices meeting standards / regulations for intended use for fall arrest, positioning and suspension to rear fall arrest D-ring on harness and fall arrest anchor point, saddle / belt D-rings and attachment points.
- Only positioning connecting devices should be attached to side D-rings, as side D-rings are not intended for fall arrest.
- Do not connect any tools, accessory loops / snaps, etc. to the positioning D-rings. D-rings are for attachment of connecting device locking snap hooks only.
- For units with Work Position Web Loop(s): Buckingham recommends attachment only to carabiner. Buckingham Mfg. does not recommend attachment of a metal connector, other than a carabiner, to a web loop fall arrest attachment unless the web loop is protected by an integral wear piece, the connector meets the requirements of ANSI Z359.12 (3600 lbf. rated gate), the snap hook lock mechanism cannot inadvertently be depressed, and the web loop fall arrest attachment point is inspected prior to each use. Attachment of a metal connector, such as a locking snap hook, to a web loop fall arrest attachment with no wear piece can cause premature wear of the webbing and stitching. This degradation can cause the web loop layers to separate and be incapable of supporting your weight.
- If connecting to a personal fall arrest system by attaching directly through the web loop of an energy absorber carefully inspect the inside of the web loop for cuts, abrasions, broken strands, or excessive wear.
- Fall arrest anchor points must support a minimum of 5000 lbf. per attached worker and be independent of worker support.

- For fall arrest, always keep anchor point above rear fall arrest attachment. If climbing above anchor point, attach to a new anchor point higher up. When anchor point to allow for connection above the fall arrest attachment device is not available, lanyard positioning must be such that free fall will be limited to a maximum of 6 feet and there will be no contact with a lower level.
- Never use an energy absorbing lanyard for positioning. Unit can open and extend which could result in a fall.
- Always attach the energy absorbing lanyard to the rear fall arrest attachment device included on the users equipment.
- Always visually check that: 1) each snap hook / carabiner freely engages D-ring or anchor point, 2) keeper / gate is completely closed with each use. **Never** rely solely on the feel or sound of a snap hook / carabiner engaging.
- Make sure each snap hook / carabiner is positioned so that its keeper / gate is **never** load bearing.
- Never use combinations of components or sub systems, or both, which may affect or interfere with the safe function of each other.
- Ensure there is no pressure on the snap hook locking mechanism sufficient to depress it as this will, due to its length, render it incompatible with currently designed rings and make it very susceptible to rollout.
- Never disable locking keeper / gate on snap hook / carabiner, punch holes in or alter a connecting device in any way.
- Avoid contact of this equipment with sharp edges, abrasive surfaces, high temperature surfaces, welding, or other heat sources, electrical hazards or moving machinery. When not in use, store to prevent exposure to the elements as well as over exposure to sunlight (U.V. degradation).
- Avoid contact of this equipment with chemicals that may damage the material. If in doubt, contact Buckingham Mfg. Co.
- This equipment is for personal use only, not towing or hoisting.
- **Never** work without independent fall arrest protection if there is danger of a fall.
- Always visually check that all buckles and snap hooks or carabiners are properly closed before use.
- Product covered under these instructions / warnings should not be resold / redistributed or re-used after use by original user.

INSPECTION

Inspection should occur prior to each use of the harness by the user and at a minimum of once a year by a competent person. Carefully inspect the harness for indications of wear, deterioration or impact loading. The inspection should include, but not be limited to, inspecting for:

- product with all leather strength components. If found, immediately cease use, discard and replace as product does not meet existing standards.
- webbing cuts, kinks, abrasions, burns, excessive swelling, excessive wear, discoloration, cracks, charring, broken fibers, loose stitching, chemical or physical exposures and buckle holes in strap are not damaged.
- loose, bent or pulled rivets, bent grommets, and broken, cut or burned threads.
- nicks, cracks, distortion, excessive wear or corrosion of hardware (buckle, "D"-ring, etc.).

NOTES: If any evidence of wear, deterioration or impact loading as outlined is observed, immediately cease use, destroy the product and replace it with new equipment. Should any unusual conditions not outlined above be observed, or you have reasonable doubt about a particular condition, remove the equipment from service and notify your Supervisor, Safety Director or contact Buckingham Mfg. for clarification. Failure to carefully and completely inspect your equipment could result in serious injury or death.

Maintenance

- Proper maintenance and storage of your equipment will prolong its useful life and contribute toward its performance.
- Nylon and polyester webbing should be cleaned with water and mild soap (a dish washing soap that removes grease (i.e. Dawn)) and be allowed to dry thoroughly without using excessive heat.

Rust on Harness Hardware (hardware styles may vary)

If through regular product inspection you note rust on hardware, the severity of the rust will determine whether the harness is deemed usable or unacceptable and recommended for removal from service. Below are examples of hardware rust exposure deemed acceptable for keeping the harness in service or unacceptable and recommended to cease use.

Slight/Moderate (Acceptable): White Scale / Oxidation and Surface Rust

Single Slot

Slight

2 Slot

Slight

QC buckle

Moderate

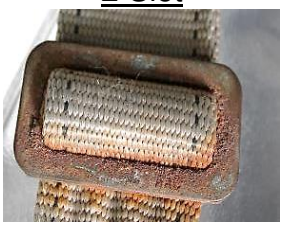
Buckingham recommends cleaning hardware in this condition using an ultrafine Scotch Brite scouring pad (3M part number 14049 available at distributors such as Grainger), cut to approximately a 1" x 1" square, and with WD-40 Multi-Use Product or Hilco Lube lubricant cleaner (also available at retail distributors such as Grainger), scrub the areas that exhibit rust in a back and forth motion until all surface rust has been removed.

Severe (Unacceptable): Pitting / Excessive Red Rust

Single Slot

Severe

2 Slot



Severe

QC buckle

Severe

Note: Hardware in this condition is recommended for removal from service.

Dee rings are not shown above but shall follow the same Rust on Harness Hardware criteria as shown above

Please contact your Buckingham Customer Service Representative at 800-937-2825 should you have any questions as to condition of the hardware or your product.

Storage: Storage areas should be clean, dry and free of exposure to corrosive elements, fumes, etc. To aid in protecting the hardware from rusting, it is recommended that the hardware be treated with WD-40 Multi-Use Product or Hilco Lube lubricant cleaner at regular intervals.

NOTE: Ensure proper fit / size of product before use. This product **cannot** be returned unless it is in new / unused condition.

BUCKINGHAM MFG. COMPANY, INC.
1-800-937-2825
www.buckinghammfg.com