

*INSTALLATION MANUAL*

# TREADWALL, Model PE



ROTATING AND STATIONARY WALL SYSTEMS

**Brewer's Ledge Inc**

CLIMBING MADE SIMPLE

Brewer's Ledge Inc. • 34 Brookley Road • Boston MA 02130 • 800-707-9616 • [www.treadwall.com](http://www.treadwall.com)

Version 11 – 04-17-07



# TREADWALL® PE Install Manual

The manual is arranged as a check list. As you go through we encourage you to check off the steps.

The Treadwall is a large, but not complicated machine. None of the steps in this manual are particularly difficult, but it is important to follow all of the steps carefully.

The order of assembly is important at certain points, so read each page. A video accompanies this manual, A play-through before you start is highly recommended.



## ***Requirements:***

Treadwall installation is a full day's work for two people. The installers should have mechanical aptitude and some experience with mechanical assembly.

Two Stepladders eight foot and sturdy are required. If you don't have them, rent them!

## ***Other tools:***

VSR Electric drill with bits (and extension cord if it is not cordless)

#2 Phillips bit

Combination wrench set - particularly the sizes 3/8", 9/16", 3/4".

Socket wrench set - particularly the sizes 3/8", 9/16", 3/4".

Hammer

8" crescent wrench

Screwdrivers

Tape measure

Work gloves

Allen wrench set

Pair of pliers with nippers

2 carpenter's aprons

Knife

Eye protection

Vice-grip pliers

Small jar or tube of Vaseline

Silicone spray lube

Hand cleaner

Spray cleaner and rags

Carpenter's apron (to hold small parts and tools)



## Setup and unpacking:

**Set up a neat and organized workspace.** It makes the whole job more pleasant and contributes to safety. Remove the packing materials from the work area – you will be working with ladders.

You should have some sort of table-high surface to put tools and small parts on where they will be easy to find and out of the way. In addition you will need a long space out of the way where you can lay out all the long parts.

The panels go on last, so put them to one side until needed.

- ❑ **Remove wrapping** from large parts being careful not to damage the surfaces. Take small parts out and unwrap them. Don't unwrap the rock holds until the end.
- ❑ **Check the parts against the list**, and look them over for shipping damage. ***You must make damage claims within 10 days of delivery.***



**Many of the nuts, bolts and washers are shipped attached to the appropriate parts.** The bolts, nuts, and washers are in the proper orientation and order and should be kept the same way during assembly.

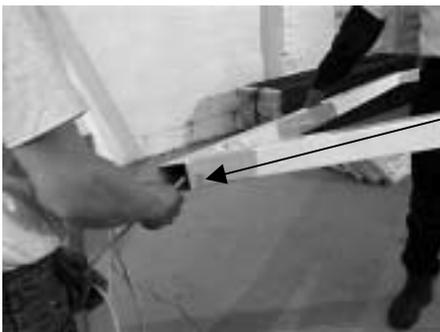
## Frames:

The side frames are in two parts - top and bottom. Each bottom section has angled joints that slide into the top section.

**Make sure the frame-parts are lined up right way around** Don't assemble the frames wrong-way around. They're hard to take apart! Top and bottom sections each have 5/8" holes (for horizontal braces) on the rear leg. Find these holes and make sure they are on the same leg – at the back of the frame – when you assemble.



- ❑ **The lower frame with a wire is the right lower frame.** String the wire from the lower frame through the top section. Make sure you don't pinch the wires while assembling.



- ❑ **Assemble each frame.** Put together the rear joint first. *Make sure the rear joint is completely together before trying to put together the front joint.*



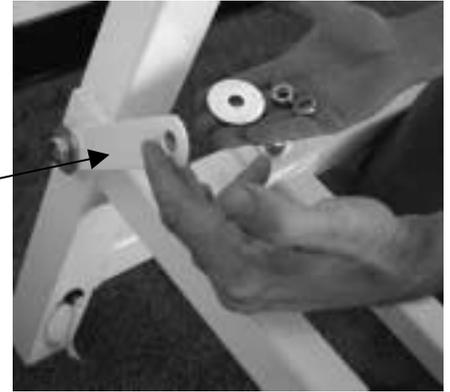
Definition

*Horizontal braces:* long rectangular tubing with L-shaped fittings welded to each end.

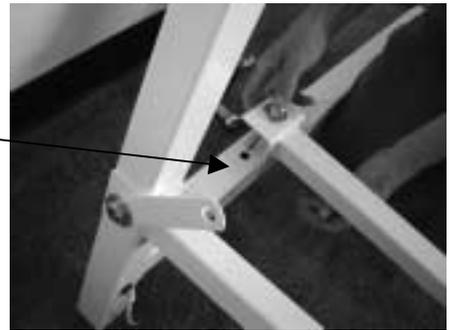
Definition

*X-braces:* long and short flat strips with holes in the ends.

- ❑ **Attach a horizontal brace to the right frame** on the back near the bottom. Attach a short x-brace on the outside as shown. The large washer, lockwasher and nut go on the inside.

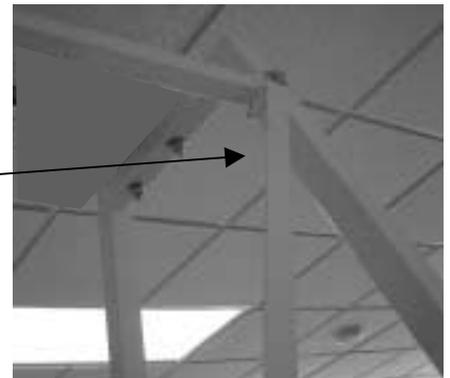


- ❑ **Attach another horizontal brace to the bottom member of the right frame.**



- ❑ **Attach the left frame** the same way to the other end of these horizontals.

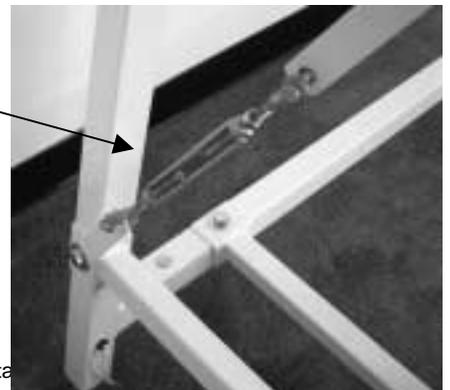
- ❑ **Bolt on the upper horizontal.** Attach a long x-brace to this horizontal at each end as shown.



- ❑ **Turn out the two largest turnbuckles** (with jaw-style ends) so that they are almost at their maximum length.

- ❑ **Attach a turnbuckle** at each side of the Treadwall, connecting the ends of each cross-brace together.

- ❑ **Tighten the turnbuckles** evenly and firmly so that they are about the same length. You will adjust them later to align the machine.





### **Main Shaft:**

The main shaft has four bearings and three sprockets.

← The end with two sprockets goes to the right.



← □ **Raise the shaft to top of the frames.** Position the ladders slightly in front of the frames as shown. Line up the holes and place the mounting bolts with washers.

□ **Tighten the bearing-bolts** down firmly to the frame tops.



### **Preparing Channels and Control Panel:**

Definition

The *channels* are largest pieces of the Treadwall. They are marked right and left.

Definition

The *control panel* contains the hydraulic pump and control machinery that runs the braking system.

**Take a moment to look at the pump assembly** - the heart of the Treadwall.

The pump is attached to an oil reservoir and a simple circuit with two valves. The rotary valve with a knob is the flow control. This controls the speed of descent of the wall by controlling the flow of oil from the pump. The other valve has an electric coil. This is a solenoid valve that closes when the photoelectric sensors are blocked by the climber's feet. When this valve is closed, the oil cannot flow, and the Treadwall stops.

□ Find the right channel and **Lay the right channel down** on two chairs with the smooth side facing up.



← □ **Attach the control panel to the channel.** Remove the four bolts that hold the pump to the control panel. Also remove the nut and washers from the "fifth bolt" that is right below the pump and take the large washer off the pump shaft. Place the control panel on the channel as shown and use the four mounting bolts to attach through the slots. Each bolt must have a flat washer to slide against the channel and a lock washer to hold it tight. See the tightening instructions below.

- ❑ **Put the “fifth bolt”** through the hole in the channel and replace the washers and nut.
- ❑ **Push the panel assembly** towards the top of the channel until it is at the top of the mounting slots and tighten the mounting bolts.



**Important: Do not over-tighten the mounting bolts.**

The torque specification is 3 foot-pounds, but most torque wrenches don't measure in this range. The five bolts should be tight enough to compress the lockwashers fully plus a little more - firm but not tight. The long tensioning bolt must be able to push the pump down for future adjustment of the drive chain.



***Mounting the Channels:***

- ❑ **Hook the right channel onto the shaft** just inside of the square bearing. This channel with the control panel attached is quite heavy - a two person job. One person on the ground holds the channel in place while the ladder person bolts it onto the bearing. *Only install the bottom rear bolt in the bearing at this time and leave the nut loose.*
- ❑ **Install the left channel on the other end of the shaft.** *Again, only install the bottom rear bolt.*



***Drive Chain***

The *drive chain* connects the pump with the main shaft.

- ❑ **Install the sprocket onto the pump shaft** and tighten the setscrews securely. The hub side of the sprocket goes on first – outside of sprocket flush with the end of the shaft.
- ❑ **Install the large fender washer** over the sprocket to safeguard the sprocket if the setscrews become loose.
- ❑ **Install the #40 drive chain** between the pump and the sprocket on the upper shaft. The chain stays loose for now.





**Bottom shaft, Back-guard, Channel X-bracing:**

Definition

*Bottom shaft:* a 1" diameter shaft with two large sprockets. One sprocket is fixed and the other is loose.

*Back-guard:* a long flat piece with wing ends.

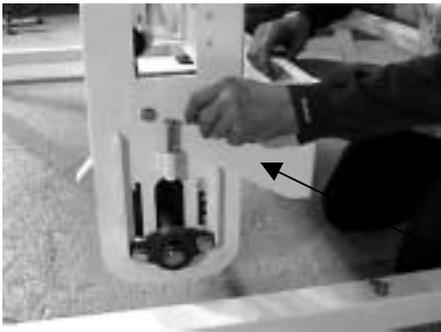
Definition

*X-Bracing:* 5/16" rod with a turnbuckle at one end.

Definition

- **Place the shaft** into the two bearings at the bottom of the channels, loose sprocket to the right. Slide the bearings all the way on - up to the stop-collars.
- **Tighten the bearing setscrews**, but leave the bearing bolts loose so that the bearings can slide up and down in the slots

Make sure the setscrews are fully retracted before trying to insert the shaft. Also, if the shaft doesn't go in easily, unbolt the bearings from the channels and slip them onto the shaft. It's often easier and faster in the long run.



The back-guard attaches between the channels at the back near the bottom. It is shipped bolted together to the spacer bar. The back-guard mounting bolts are temporary. You will replace them with longer bolts that hold on the photocell and reflector brackets later.

Note the ends of the back-guard. The straight edge goes up. The angled edge goes down.

- **Bolt the back-guard** temporarily onto the two channels with 3/8" bolts. You will replace these bolts with the photocell bolts later.



The *x-bracing* goes between the two channels - *turnbuckles* at the bottom.

- **Attach the x-bracing** to the shackles in the channels. Tighten the turnbuckles evenly so that they are the same length and make them finger tight. Tighten the locknuts on the turnbuckles and fasten a piece of tie-wire through the shackle and turnbuckle body to keep them from loosening up.

**Adjuster pipe:**

Definition

*Adjuster-pipe:* a long pipe with a chrome sliding ring at one end.

- **Slide the adjuster-pipe** into the channels from the side on which you want the adjuster wheel to be mounted. Usually it is mounted on the right, but space sometimes requires it to be on the left.  
*The x-braces go to either side of the adjuster-pipe.*



If there is an obstruction on the side where you are slipping in the pipe, you will have to move the assembly around for clearance.

## Adjuster Cables:

The *adjuster cables* wrap around the pipe and attach to the frame. There is a bend in the cable, which is not in the middle – there is a short end and a long end.

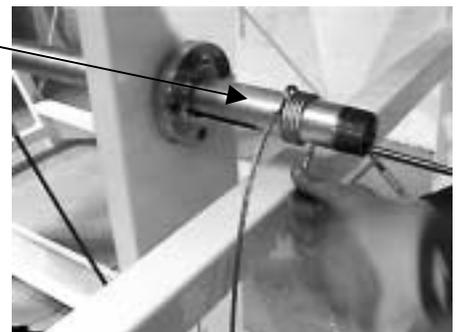
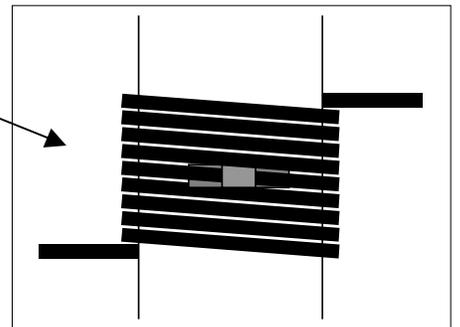
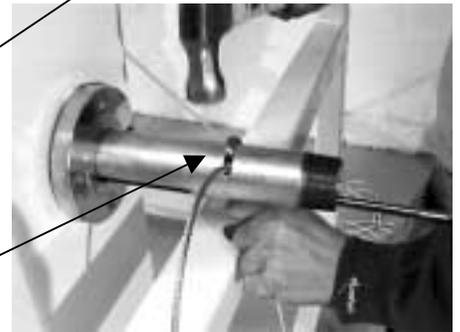
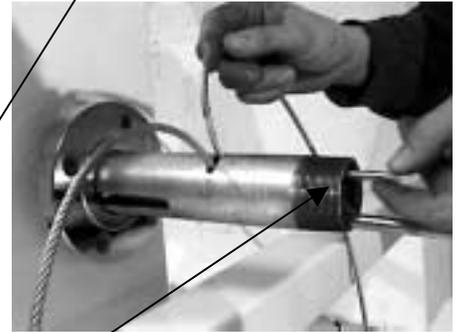
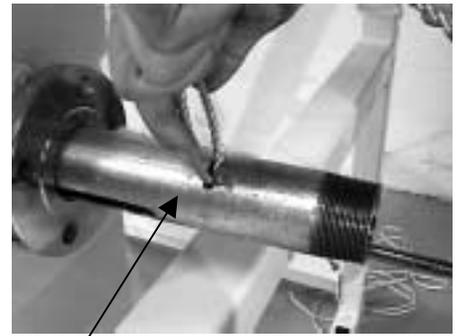
Wrapping the adjuster cables is a bit confusing the first time, but if you follow these instructions to the letter it should go smoothly.

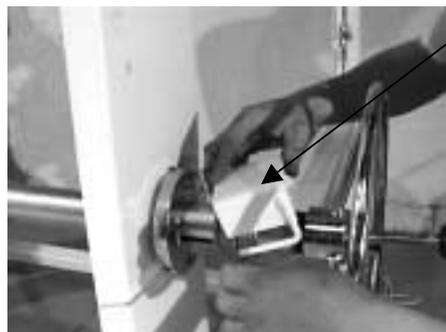
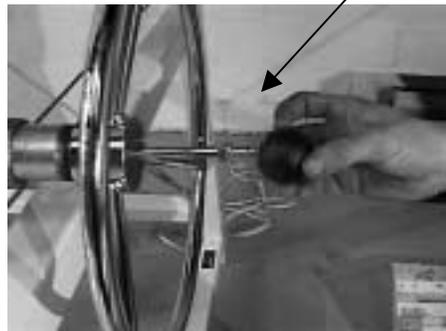
- ❑ **Find the following parts** (in hardware box):
  - 1) hook-ended turnbuckles (2)
  - 2) cables (2)
  - 3) ¼ x 3" bolts (2)
  - 4) Clevis pins (2)
  - 5) Cotter pin
  - 6) Split ring
- ❑ **Turn out one turnbuckle** (with hook-hook ends) to its full extension and hang the it on the upper loop at the back of the right frame.
- ❑ **Take one cable and push the bend into the small slot** at the right end of the pipe. *The short end of the cable should be going towards the back of the machine.* (After winding, this end of the cable will pass under the pipe and attach to the front of the machine.)
- ❑ **Push the 1/4"x3" bolt into the end of the pipe** and through the loop of cable inside the pipe to secure the cable. The bolt will stay there by friction.
- ❑ **Pull the cable up** to remove the slack and **spread the cable out** over the ends of the slot.
- ❑ **Hammer the cable down** where it comes out of the slot to flatten it against the pipe.
- ❑ **Lock the pipe** from turning (push the chrome ring onto the welded stud) before winding the cables.

**This diagram** shows the direction of the wind as you look down on the cable. *It looks the same from both sides of the machine.*

While winding, make sure that the cables form nice neat coils on the pipe.

- ❑ **Wind the short end first.** *On the right side of the machine:* as you wind the short end the coils will be coming toward you. *On the left side of the machine:* as you wind the short end, the coils will be moving away from you.





- ❑ After 4 1/2 winds, **attach the loop to the frame** with the clevis pin and cotter pin. On the side with the wheel (usually the right side) use a split ring instead of the cotter, and position the ring on the outside of the frame. This ring is for the instruction panel.
- ❑ **Wind the long end** of the cable while keeping tension so that it will not loosen. Slip the cable through the large loop at the back of the frame and hook it to the turnbuckle. It will be obvious when you have the right number of turns.
- ❑ **Tighten the turnbuckle** to take out as much slack as possible. Use the hammer to tap down the cable around the pipe and work the cable into nice neat coils.
- ❑ **Repeat** these steps for the left side.
- ❑ **Push the wheel** over the threaded rod and screw it onto the pipe. Lock the pipe (with the chrome ring on the stud) and *tighten the wheel hard*.
- ❑ **screw a nut, a lockwasher and the round plastic knob** onto the lock-rod. Tighten up the locknut.
- ❑ **Turn the wheel** to move the channels back and forth several times to make sure the cables are working properly and tighten both turnbuckles.
- ❑ **Stretch the cables:** Lock the wall all the way forward and strike down hard on the exposed cables with a length of 2x4. Lock the wall all the way back, and repeat this process. This will stretch the cables about 1" in length.
- ❑ **Tighten the turnbuckles** one more time. *Tighten the turnbuckles as hard as you can by hand*. Don't use a tool to over tighten the turnbuckles or the cables may fray at the rear frame-loop.
- ❑ **Put on the cable-guards.** These little channels with hooks ride on top of the cable coils and keep out fingers. Hook it onto the front section of cable first. Then, loosen up the turnbuckle a few turns (hold the cable-coils with you fingers to keep them from unwinding) and work the back end of the cable under the other hook.
- ❑ Check that the coils are still even and **re-tighten the turnbuckle**.

The cables will stretch. Check them regularly for the first two weeks and monthly afterwards. Keep them tight. If you lube the cables with silicone spray they will last much longer and stretch to their final length faster.

## Counter-timer, spacer bar, photocells:

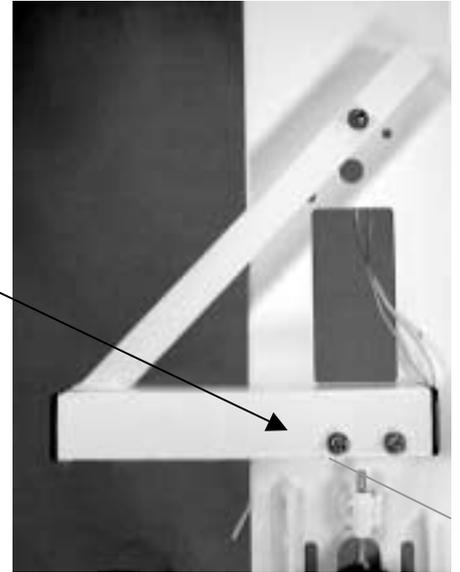
### Definition

*Spacer-bar*: a piece of 1 1/2" square tubing with a threaded hole at one end and a stud at the other (It is shipped bolted to the back-guard).

- ❑ **Bolt the spacer-bar between the two channels** about one foot above the adjuster pipe. Use the lowest of the three small holes. *The stud-end goes on the left side – the short bolt attaches the right end.* The x-braces go on either side of the bar.
- ❑ **Mount the counter timer onto the stud.** See instructions at the end of this manual for wiring the counter-timer.

Photocell and reflector brackets project out from the bottoms of the channels – photocell on the right and reflectors on the left.

- ❑ **Bolt the photocells** to the right channel. Remove the temporary rear-guard bolts and sandwich the end of the rear guard between the photocells and the channel.
- ❑ **Run the wires** through the rectangular access hole just above the bracket and up the inside of the channel, through the wire clips until they reach the spacer bar.
- ❑ **Attach the reflector bracket** to the left channel with the reflectors facing the photocells.



### Wiring:

- ❑ **Frame wire – at top of right frame:** Push wires through rubber-grommet hole in right channel and down through wire clips to the spacer-bar.
- ❑ **Connect frame-wire to photocell-wires** (two sets of bullet-connectors).
- ❑ **Push two longer wires** (marked “switch” and “valve”) through slot at bottom of control panel and connect to switch and solenoid-valve.
- ❑ **Attach the wires at the bottom of the frame to the transformer.** Extra cord is in the frame if needed. Excess should be coiled at the top of the frame and pushed into the leg.
- ❑ **Wrap the gray cord** around the spacer bar, running it across the Treadwall to the left channel and out through the hole at the counter-timer. ***Turn to page 15 for further wiring instructions.***
- ❑ **Plug in the transformer.** When you block either of the photocells, you should hear a faint click inside the photocell bracket. **Align them as detailed on page 15. *IMPORTANT: The transformer is designed for use with 110 volt 60 or 50 cycle AC current. It supplies 12 volts DC at 1.5 amps to the Treadwall. Users with different supply voltages must use conversion transformers or other means to provide the proper voltage.***
- ❑ **Attach wires to the spacer bar with ties** – leave no loose cord to catch moving parts.



### ***The Main Chains:***

Protect floor under Treadwall from grease and wear gloves.

Remove one chain from the box. One person should hold the coil on edge and unwind it while the other raises the chain over the shaft.



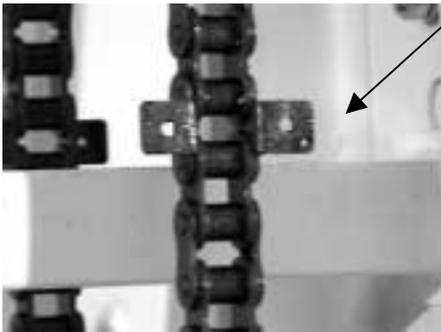
- ❑ **Lift one chain** up to the main shaft and drape it over the shaft next to one of the sprockets. *Make sure the mounting tabs are facing out.* move the chain around the shaft until the two ends are equal at the bottom.

- ❑ **Lift the chain** onto the sprocket.

- ❑ **Repeat** for other chain.

- ❑ **Synchronize the chains** so that the tabs with holes are directly across from each other. If you don't do this, the Treadwall will not work!

Line up one of the chain tabs with the horizontal spacer bar. Check that the other chain is also lined up with the other end of the spacer bar. If the tabs don't line up, *adjust the chains until they are synchronized.*



- ❑ **Place the chains around the sprockets** of the lower shaft and put on the master links.

- ❑ **Tighten the bearing mounting-bolts.** Only tighten these bolts enough to flatten the lockwashers so that future adjustments can be made without loosening the bolts

### ***The shroud and proximity switch:***

*Shroud:* a large part with "Treadwall" printed on it in big letters. It goes between the two channels at the top of the machine.

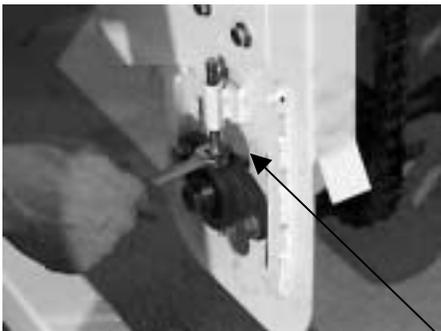
Definition

- ❑ **Preparation: Line up the holes at the top of the channels with the holes in the large square bearings.** This can be done at the bottom of the channels by adjusting the push-down bolts above the lower-shaft bearings.

When you adjust these bolts against the lower-shaft bearings, the channels are lifted until the holes at the top line up.

One person adjusts the push-down bolts while a person on a ladder tests the holes at the top with a bolt.

The shroud is awkward to lift, and lining up these holes will make mounting it a lot easier.



The shroud mounts at the top of the Treadwall, and the printed surface will be vertical.

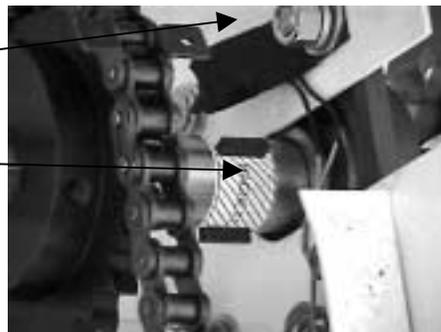
- ❑ Place the ladders as shown, and lift the shroud to the top of the channels. →
- ❑ Bolt it onto the top bearing holes with 1/2" bolts.



Definition

*Proximity switch:* A bracket with a black wire, shipped with the magnets and counter-timer in the parts box.

- ❑ **Attach the proximity switch** inside the top of the left channel using the top rear bolt of the large square bearing. →
- ❑ **Place the 3 magnets** on the shaft. The magnets stick to the shaft by magnetic attraction. Adjust the magnets until the center of the magnets pass under the proximity switch with a 1/8" gap. →
- ❑ **Bring the wire** down the inside of the channel through the clips and out through the hole near the counter-timer. Plug in the wire. **See page 15 for details.**
- ❑ **Turn the shaft** by pulling down the chains a few times to test the Counter-timer. It should register one foot each time two magnets pass the switch.



**Panels:**

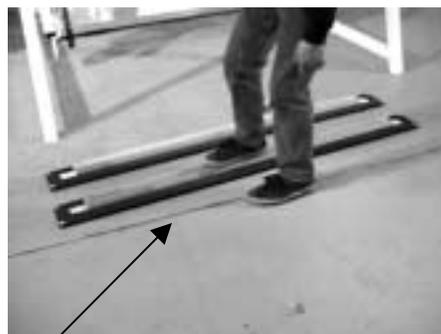
Putting on the *panels* is tedious but goes better if you are organized. Check the chains again to make certain that they are still synchronized. (If you find that the chains are not synchronized when the panels are partly on, call us. We have a quick fix.)

*Tools:*

A VSR battery-operated drill with an adjustable clutch and a #2 Phillips bit.

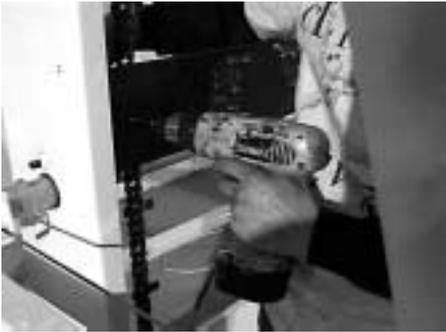
A 3/8" wrench – either a small socket or combination wrench.

- ❑ **Install a reinforcing channel** ("stiffy") onto the back of each panel before bolting to the chains. The stiffy slips into the holes when properly aligned. If the stiffy is a tight fit, you can place the panel face down on the floor and step on the stiffy to push it into place.
- ❑ **Attach the stiffy.** On the front of the panel there is one hole near the middle of the that does not have a flat 'island' around it. There is a bag of short round-head bolts in the hardware box. Screw one of these bolts through this special hole to hold on the stiffy.





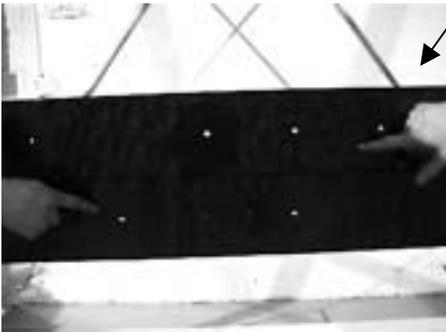
- ❑ **Slip the first panels into the front of the channels** and bolt to the chains.  
The nuts go to the rear. Make the bolts firm, but not tight enough to sink the heads into the panels. If you are using a cordless drill, use a very low setting on the clutch. On a DeWalt drill, we use a setting of 3.



- ❑ **Align the sprocket.** After the first panel is installed, rotate it around by pulling the chains down until the panel has made one complete rotation. This will align the sliding sprocket on the lower shaft. You may have to tap the sprocket into alignment with a hammer.



- ❑ **Alternate the panels.** The holes are not symmetrical, and every-other panel should be turned over so that the holes alternate from side to side.



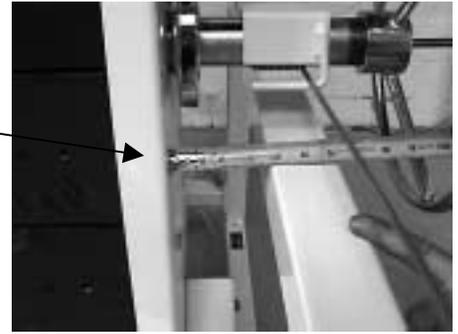
As you progress, and the panels are moving up the back of the machine, it takes a lot of effort to push them down. This is normal. You will need to hold the panels in front to keep them from sliding up.

- ❑ **Use short pieces (12" or so) of 2x3 lumber to jam the wall.** Simply slip them between panels at the bottom of the wall on each side. As the panels try to ride up, the block will hold them in place.

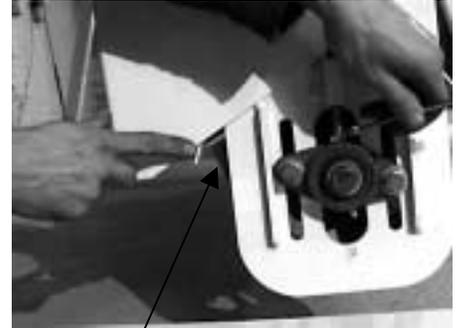


- ❑ **Bolt on the panels** until there are only three left.

- ❑ **Measure the distance** between the frame and the side of the right channel. This space should be 3 1/2". *Adjust the rear turnbuckles to make this space 3-1/2"*. These turnbuckles should be quite tight when you finish. If this spacing is wrong, it may be difficult to lock the chrome ring onto the stud.



- ❑ **Install the last three panels** by slipping them in from the bottom. Run the panels around until the gap is at the bottom front. Slip the panels in one at a time and install the bolts. Use the side openings at the channel bottom to access the nuts for tightening. Double check the orientation of each panel. *Be careful not to pinch yourself.*



Before installing the last panel, double-check to make sure everything is right inside. We usually wait until the holds are on so we can test the machine.

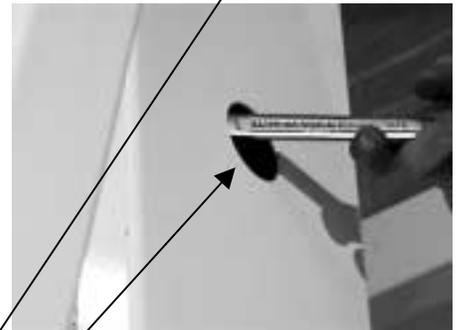
The last panel is somewhat awkward - be patient. Put the bolts and nuts in with the panel at the bottom or carefully rotate the panel upward until you can reach the nuts through the access hole.

**Very important – Adjust the chains!**

The main chains are adjusted with the long push-down bolts at the bottom of each channel. These bolts push down the lower-shaft bearings, thus tightening the chains. If they are too tight, the wall will operate sluggishly, especially for lightweight climbers. As the wall rotates, the panels come around the bottom and re-enter the channel in the back. If the chains are too loose, the panels will catch on the flange where they re-enter the channel and become damaged.

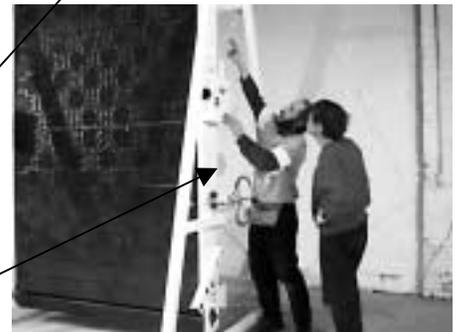


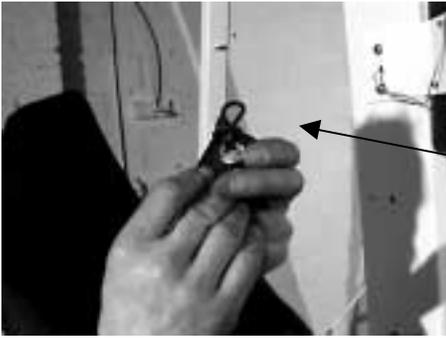
- ❑ **Adjust the chains.** As you tighten the push-down bolts, watch where the panels re-enter the channel. Adjust until the panels clear the end of the flange by about 1/2". On a new machine the chains can be adjusted a bit firmer, since they will stretch, but don't overdo it.



The drive chain is tightened by the push-down bolt at the top of the control panel. This chain should also not be too tight. As you tighten this chain, you can feel the slack through the round access hole above the control panel.

- ❑ **Tighten the drive chain just enough to take out the slack.** If you over-tighten this chain, you can loosen it again by loosening the push-down bolt and prying on the chain with a large wrench through the access hole.
- ❑ **Make sure that someone at the facility knows how to make the chain adjustments.** Emphasize that all the chains will stretch during the first week of use and have to be re-adjusted.





### **Side Covers, Mat, Holds and Post Pads:**

- ❑ **Mount the side covers on the frame hooks.** Use wire ties for the top grommets – leave them quite loose. Use o-rings for the bottoms. Push an o-ring into each grommet and loop it back through itself.
- ❑ **Place the mat** between the frames and attach the loops around the front legs of the frame. The short folded section goes to the rear.



The standard Treadwall hold set has 40 holds.

- ❑ **Unpack all the holds** and lay them out on the mat in front of the machine.
- ❑ **Match the holds with hold-bolts.** The bolt should project at least 3/4" from the back of the hold. Sometimes a few of the larger holds need longer bolts.
- ❑ **Bolt the holds** firmly onto the panels.



Start with one color and bolt one hold onto each 4th panel. Distribute them evenly from side to side as you go along. Repeat for each color. This will give one hold for each panel.

Each hold has a positive edge. Generally speaking, these positive edges should face up so that the climb will not be too intimidating, but put a few on as side-grips or under-clings to add interest. Once the holds are on you can fine-tune it by rotating holds and moving a few around.

Each color of holds can be a separate climbing route. Or you can combine colors to make a route. You will find that some routes are much easier than others

**Very important - Don't allow larger holds to overlap onto the next panel.** The holds supplied with the Treadwall are designed so that they will not overlap, but other holds may be larger. Also, holds must not stick out more than 2 1/2" from surface of wall.



- ❑ **Attach the two post pads** under the cables on either side of the machine.
- ❑ **Use 5 cable ties for each pad.** position the ratchets at the bottom of the pad and space them evenly for appearance.



Cleaning up the machine completes the Treadwall installation.

## Treadwall Wiring – Counter-Timer and Photocell Alignment

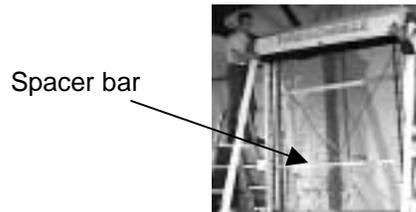
**IMPORTANT:** The transformer is designed for use with 110 volt 60 or 50 cycle AC current. It supplies 12 volts DC at 1.5 amps to the Treadwall. Users with different supply voltages must use conversion transformers or other means to provide the proper voltage.

### COUNTER-TIMER WIRING

The timer-counter installs onto the side of the left channel using the stud at the end of the spacer-bar.

There are three wires that connect to the timer-counter:

- 1) Power supply: This is the gray cord that is part of the photocell assembly wiring. After attaching the photocell wires to the hydraulic assembly, lead the gray wire across the spacer-bar to the left channel and out the hole in the channel.



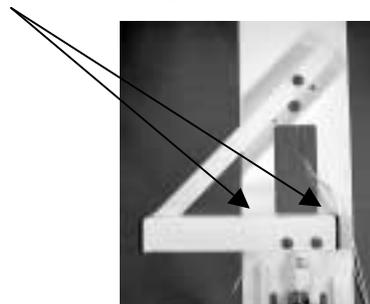
- 2) Heart monitor: Attach the heart rate receiver to the top-middle of the spacer-bar using the foam-tape that is pre-attached to the receiver. Note the orientation – this is important for proper pickup of the signal. Run the wire over to the left channel and out the same hole.
- 3) Proximity sensor and magnets: See page 11 for proximity sensor instructions. The wire runs down the left channel in pre-installed clips and out the same hole as the other two wires.

Plug the wires into the appropriate jacks.

When the timer-counter is bolted on and wired, pull any excess wire back into the inside of the Treadwall, bundle it up, and tie it to the spacer-bar with wire ties. Make sure there are no loops of wire that could catch on moving parts.

### PHOTOCELL ALIGNMENT

You may find that when you put to switch onto “Autostop” that the wall is locked up and will not release, even when there is nothing blocking the photocells. This is usually because the photocells are out of alignment and not pointing directly at the reflectors on the other side of the Treadwall. Loosen the two long mounting bolts on the lower part of the photocell bracket and push or pull it into line until it works properly. Then slip cardboard shims between the photocell bracket and the channel either in the front or back to keep it in alignment when you re-tighten the bolts.



### PHOTOCELL TEST:

When the alignment is correct, the wall will lock up when you block either one of the reflectors by putting your hand directly in front of the reflector itself. *It is important to do this test.* If the alignment is a little off, you may have to block both reflectors to make the brake work.

### ***Instruction Card:***

A laminated instruction card with a ball chain is included with the Treadwall. Hang it from the right frame on the cable attachment pin. This pin uses a split ring instead of a cotter pin, and the instruction card hangs from this ring.

### ***Purging the Hydraulic System:***

Sometimes when the Treadwall is first assembled, the control system runs a bit rough and noisy - almost a grinding sound - and the wall doesn't descend smoothly. This is due to air in the system that foams into the oil and causes cavitation in the pump. To purge the air, put the wall at the steepest angle, set the control valve at the fastest setting, and pull the wall around steadily and slowly for about 15 seconds. Let the wall sit for about 5 - 10 minutes, and do it again. If you do this about 3 times, the air will percolate up into the reservoir where it belongs, and the wall will run smoothly.

### ***Climbing tips:***

- ◆ Some people like to climb fast and some climb slowly.
- ◆ Fast climbing provides a quick pump, and - at easy angles - an excellent aerobic workout.
- ◆ Slow climbing promotes fluid motion, balance, flexibility, and - at harder angles - a great upper-body workout.
- ◆ The photoelectric braking system in the Treadwall insures that the wall will always stop before the climber reaches the bottom of the wall.
- ◆ Some climbers like the wall to operate continuously without the photocell-brake stopping the wall. A switch on the control panel allows you to put the Treadwall into this mode. Continuous operation is particularly good for aerobic climbing.
- ◆ Climbing is most comfortable when the speed of descent is matched to the climbing speed, so that the wall rarely stops. Adjust the speed dial as you climb to a comfortable level.

### ***Why is climbing on the Treadwall one of the world's best forms of exercise?***

- ◆ Climbing is a true whole-body exercise. Climbing naturally works out almost every muscle in the body.
- ◆ Climbing is non repetitive. Many forms of exercise work out the same muscles over and over, but not climbing.
- ◆ Climbing is progressive. Anyone can climb, but the more you climb, the better you get - even if you climb for years and years.
- ◆ Treadwall Climbing promotes balance, stretching, flexibility, upper-body strength and aerobic conditioning. No other form of exercise is so versatile.
- ◆ Climbing is fun and engages the mind.
- ◆ There are no age limits and very few physical handicaps preclude climbing on the Treadwall.

**The last word:**

## NOBODY LIKES GOING BACK!

Treadwalls get installed in the darndest places, sometimes hundreds of miles from where installers call home. Making that long trip across the panhandle and down through the wastelands to fix some stupid little problem is a project to avoid, even if you have a keen appreciation for déjà-vue.

Its the little things that count - at least that's what we have found. Those little tiresome details have a tendency to sneak around to your backside and take a big bite. Here are some things that have shown up on the whack-your-head-and-say-duh screen:



Masterlink or Monsterlink?

Every masterlink has three parts. What if you leave off the plate with two holes? What if the spring clip isn't put on right? It can get pretty ugly!



Sprocketa-sprocketa!

Didn't tighten the setscrews on the pump sprocket? Forgot to bolt the big security fender-washer onto the end of the shaft? Better hope that nobody over 30 lb. wants to climb the Treadwall.



Why are my cables all frayed?

Oops – someone forgot to tell you to keep the cables tight. Stretch them! (page 8). Make sure someone knows: *Tighten those turnbuckles every day for the first week!!! And show them how to adjust all the chains too!!!*



What the hell is a Climbometer?

Time? Distance? Heart rate? Whatever. It ain't gonna work if the sensor and magnets aren't adjusted right. And treat that reed-switch sensor with respect! And make sure the wires are out of harm's way.



Bolts and nuts are falling down 🎵 falling down 🎵 falling down 🎵 and for some reason the shroud only has one bolt on the right side!

Yes – it's actually happened. Loss of concentration is my guess – or maybe glue sniffing. *Check everything before putting on panels.*



Mommy! Mommy! What's that thing sticking out of the Treadwall?

Well technically, it a piece of 5/16 hot rolled round, threaded at one end. But now it's a chunk of twisted scrap metal that's gonna be nasty to replace – and all because someone forgot to lock down that internal turnbuckle. With a cable tie or wire twisted through the eye and the body of the turnbuckle it can't happen.



Chain-chain-chain 🎵 chains that fool 🎵.

Chains too tight? Works great for Ralph but Alice can't budge it. Too loose? Could be worse. Take out all the slack, but don't over-tighten. Check them one last time before leaving, and *make sure someone knows how and when to adjust them!!!*



Sometime she stop, sometime she don't! Photocells aligned give stellar performance.

Photocells askew are left in the dark. Take the time to do the test on page 15 and make sure they are right.