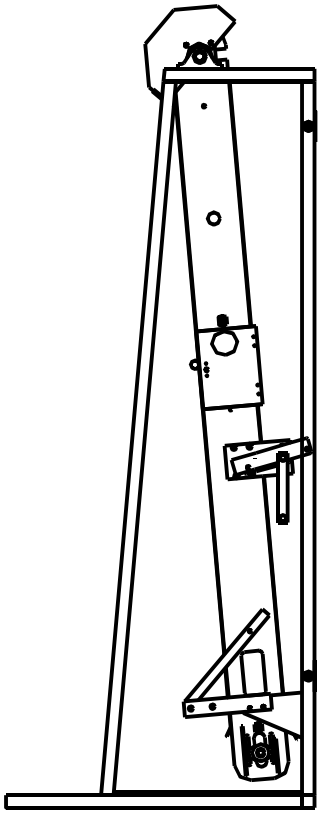
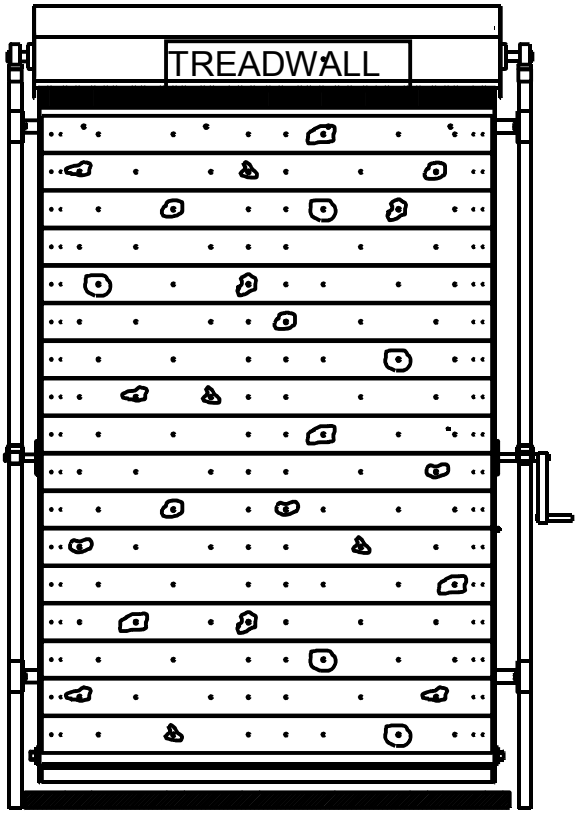
INSTALLATION MANUAL

TREADWALL. Model PE

Wall Mount





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

TREADWALL MAINTENANCE

Treadwall® maintenance is easy and requires only lubrication and attention to a number of adjustments relating to the alignment of the wall.

The most important maintenance of the Treadwall occurs during the first month of operation when the chains and cables are stretching to their final length. It is very important to keep the angle-adjuster cables tight during this break-in period so that the winds remain even and do not overlap. Also the drive chain and panel chains must be tightened after 2-3 weeks of use. Instructions for these adjustments are found inside of the control panel cover. This card is re-printed below:

THE CRUCIAL FIRST MONTH:

Following these instructions for adjustment during the break-in period is very important to the health of your Treadwall. These simple adjustments assure that stretching chains and cables will not result in damage to the machine. After the first month, maintenance requirements are very low.

After the initial break-in period, follow the schedule below.

MAINTENANCE ITEM	SERVICE INTERVAL (MONTHS)		
	2	6	12
Cable tension	X		
Drive chain tension		X	
Main chain tension		X	
Lube channels			X
Clean holds	X		

TREADWALL MAINTENANCE

Drive Chain Adjustment:
The drive chain connects the pump in this panel to the top shaft. Over time, the chain will stretch and need adjustment.

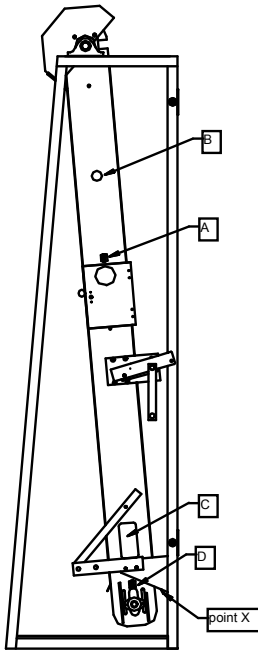
- Use the long push-down bolt (A) to push down the pump and panel. This will tighten the chain. As you adjust the chain you can feel the amount of slack through the round access hole (B). Adjust slowly and just take out the excess slack. Do not over-tighten or the Treadwall will operate sluggishly.
- If you over-tighten the chain by mistake, loosen the push-down bolt (A) and pry the chain through the access hole (B) with a large screwdriver or wrench to loosen it up.

Interior Turnbuckles:
The turnbuckles inside the wall (C) keep it from swaying from side to side. They should be wired closed and should not loosen up in normal use.

- If they become loose, make them finger tight (no more) and wire them closed.

Main Chains:

- The wall panels hang from heavy-duty chains inside of the wall.
- These chains should be sprayed with chain lube every six months. Spray through the access holes as an assistant moves the wall around.



- The main chains occasionally need re-adjusting as they stretch. If the wall hangs up, check at "point x". If the main chains are loose, the panels will jam trying to enter the channel at this point.
- To tighten the chains, loosen the bearing mounting bolts slightly and use the chain tension adjusters (D) to push down the adjustable bearings at the bottom of the channels. Just a turn or two should be enough to take out the slack. If you tighten them too much, the wall will operate sluggishly. When the chains are adjusted properly, the panels should clear the flange at 'point x' with about 1/2" of clearance.

TOUCH-UP PAINT:

Treadwall panels are painted with a high-quality enamel paint that is very dark gray. A mixture of 50% battleship gray and 50% black will give a good match for touch-up purposes. The white frame color can be matched with automotive touch up paint: Toyota #3226.

CLEANING HOLDS.

Clean holds make a big difference in the climbing experience. As the Treadwall is used, the climbing holds get contaminated with dirt and grime and eventually become slick and greasy to the touch and unpleasant to climb on.

When you look at dirty holds, you may think that they need replacing, but really all they need is a good cleaning. If you take them off and run them through a dishwasher for a couple of cycles or just scrub them off in a sink with a brush and soap, you will be amazed at how much better they look and feel.

You don't need to clean them all at once. If you just take off the 10 dirtiest holds every month or so and give them a good washing, you can rotate them around and keep them in good shape.

TROUBLESHOOTING GUIDE -- TREADWALL® Model PE FITNESS CLIMBER		
Problem	*Cause*	*Solution*
Wall is sluggish: lighter weights will not pull wall down.	Chains too tight. Channels need lubrication Ends of panels rubbing channels	See Service Sheet #10. See Service Sheet #38. See Service Sheet #20.
Wall sticks occasionally. (Backing-up momentarily frees wall).	Chains too loose	See Service Sheet #10.
Pump makes excessive noise	Low hydraulic oil.	Add oil to Pump Assembly. Open panel, remove pipe cap, and inspect: oil should be about 1" from top. Use 30 wt. non-detergent oil. Rotate motor as filled to remove air pockets. Cover fill opening with rag as rotating to prevent spills. Leave 1" air pocket. Total capacity of system: 1 pint.
Wall makes excessive noise	Chains too loose.	See Service Sheet #10.
Wall sways side-to-side.	Internal x-bracing too loose.	Tighten Internal x-bracing. Do not over-tighten. Tighten until just firm. When you have completed this adjustment, make sure locknuts on the turnbuckles are very tight and wire the turnbuckles so that they cannot loosen up.
Hold rotates.	Hold bolts not sufficiently tightened.	Re-check hold bolts; re-tighten if necessary.
Wall too far to one side (Angle adjuster is hard to engage or disengage) disengage).	Main (external) X-bracing needs re-adjustment.	See Service Sheet #2.
Wall doesn't release unless it is unplugged or control-panel switch is turned off.	Photoelectric problem	See Service Sheet #40

INDEX OF SERVICE SHEETS

Treadwall® Climbing Simulators -- Model PE

The Treadwall is a very easily maintained machine. Occasional adjustments, lubrication and cleaning of the holds are generally all that is required.

The following service sheets cover most issues that could arise. If there is a situation that is not covered by these sheets, feel free to call Brewer,s Ledge for assistance.

Index of Service Sheets

Treadwall® Service Sheet #1:

Panel removal

The Treadwall wall panels are bolted to a set of chains. These two chains form a continuous loop around the top and bottom axles. Each panel is attached by two bolts at the ends to flanges mounted on the chains.

Tools needed:

1/8" Allen wrench,

3/8" box end or open end wrench, needle nosed pliers.

Panel hardware:

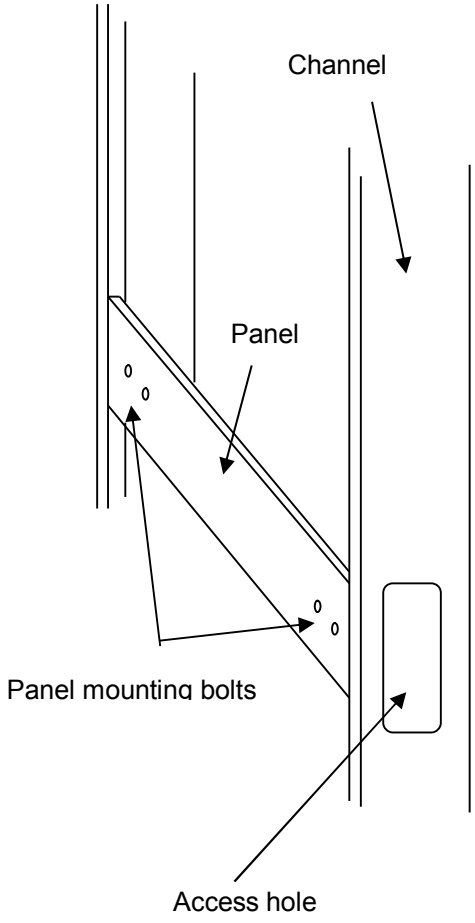
10-32 x 1 1/2" socket-head, flat-head bolts.

10-32 nylon locknuts.

Removing a panel is simple and requires about 15 minutes effort. NOTE: Before choosing a panel to remove, examine the bolts - during installation the holes for the Allen keys may have become slightly distorted. Choose a panel with non-distorted holes (i.e.. the Allen wrench slips into the 4 bolts easily).

Rotate wall so that desired panel is in front of the rectangular opening. Remove four panel bolts and their locknuts by using the opening to access the back. Rotate the wall downward and allow the panel to drop out at bottom. Multiple panels can be removed in a similar manner. Rotate the wall to give the desired height, and perform what ever service is necessary. Replace panels by inserting panel at bottom and rotating upward until it is in front of rectangular opening. Replace all four bolts. Bolts should be snug but not overly tight.

MAKE SURE TO ORIENT PANELS SO THAT PANEL BARS AND HOLD-MOUNTING HOLES ALTERNATE!!



Adjustment of chain tension

MAIN CHAINS

The main chains that suspend the panels on the Treadwall will stretch in the course of the first few months of use. If they are not adjusted, the panels will be loose as they move around the bottom and up the back, and they will jam as they attempt to enter the channel in the back (see diagram). Symptom: Machine jams up and will not go forward. Reversing the wall slightly frees it but it jams up again.

The chain tension is adjusted by moving down the bearing on the bottom of each channel. There is a push-down bolt (E) above each bearing that will move it down (see diagram).

It is usually not necessary to loosen the mounting bolts on the bearings to use the tension adjuster, but if they are excessively tight, loosen them slightly.

Turn the push-down bolt with a wrench to adjust the bearing down. Do not overtighten the chains. You just want to take out the excessive slack.

As you tighten the chain, watch point x where the panel is re-entering the channel at the back of the Treadwall. The panel should pass the end of the flange at point x with a clearance of about ½"

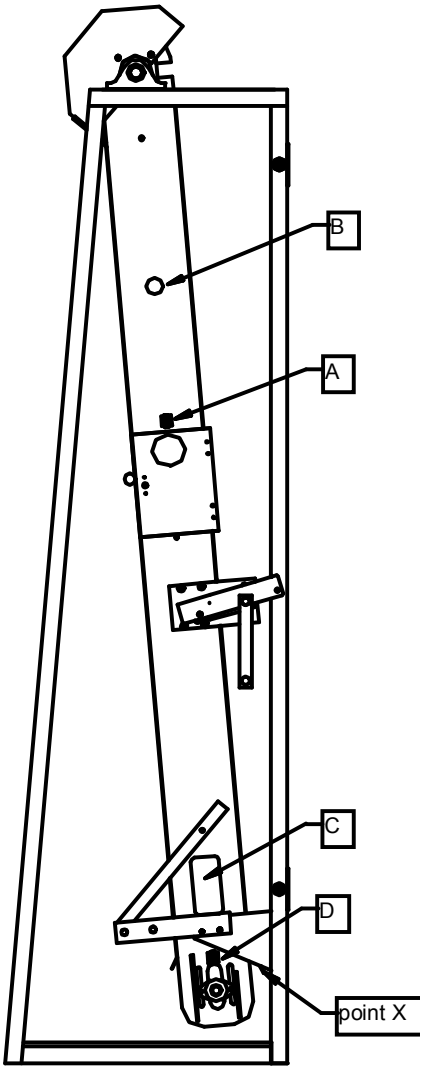
Usually a turn or two of the push-down bolt is plenty. Adjust both sides.

DRIVE CHAIN

There is a smaller drive chain that connects between the control pump and the main shaft at the top of the machine.

This chain is adjusted with a similar push-down bolt at the top of the control panel (A). You can feel the slack in the drive chain through the access hole (B) above the control panel. Do not overtighten this chain – just take out the excess slack and leave a little looseness in it.

If you make it too tight by mistake, you can loosen it by slacking off the push-down bolt and prying the chain with a large wrench or screwdriver through the access hole.



Treadwall® Service Sheet #18

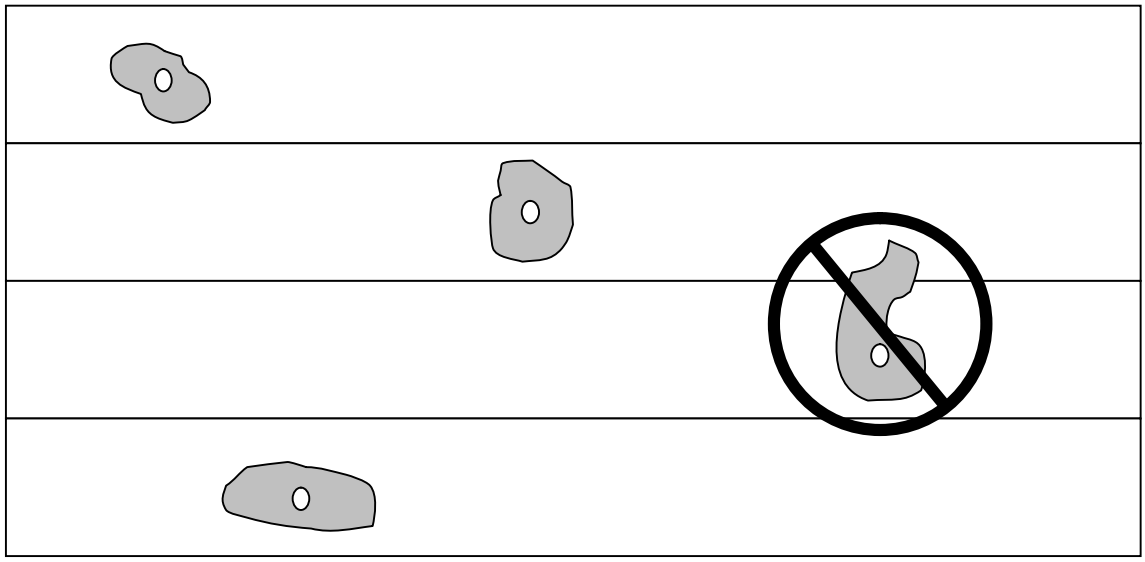
Hold placement

It is very important when placing holds on the Treadwall that the holds do not overlap the space between two panels. A hold that overlaps two panels will restrict the machine from rotating as the panel moves around the bottom or top of the Treadwall. In an extreme case, the force can cause a hold or panel to break.

The holds provided with the Treadwall are designed so that overlap is not possible, but sometimes users put other holds on that are larger and have the potential to overlap.

If the Treadwall suddenly locks up and will not rotate, check the bottom and top of the wall, front and back, to make sure that a hold has not rotated and overlapped two panels.

Lockup can also be caused by loose chains. See bulletin #10.



Treadwall® Service Sheet #20

Correction of stiff operation

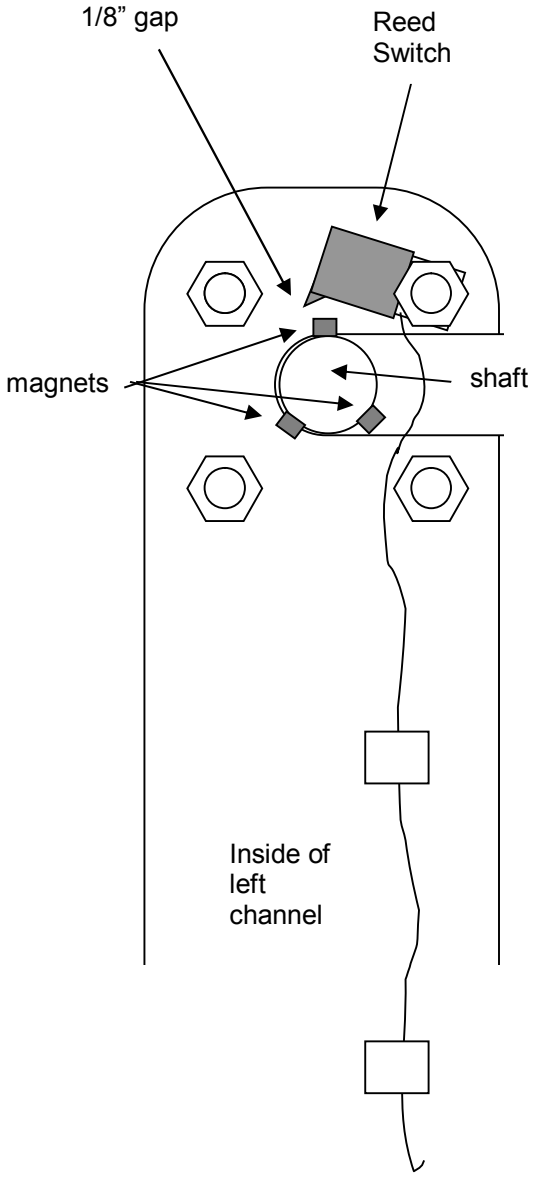
In a properly working Treadwall, a body weight of approximately 60-70 lb.. will operate the wall consistently. If the operation is stiff or sluggish and will not operate at the minimum weight, there are several areas that may be responsible.

The two basic reasons for sluggish operation are friction of the panels in the channels and chains that are too tight.

Symptom	Cause	Fix
Wall jams tight and won't move but it will back up and sometimes move forward before jamming again.	The panels are catching on the back of the channels as they try to enter the back channel slot at the bottom - caused by chains that are too loose.	The chains that suspend the panels are tightened at the bottom of the two channels. Loosen the bearing bolts and use the long bolt to take out the slack. Do not over-tighten! If the chains are too tight, it will cause excessive resistance. Just take out the slack. (see sheet #10)
Wall shows resistance intermittently at the same place during each rotation of the panels.	One or more panels are binding in the channels.	Examine to see if all the panels are loose and free to move.
	The ends of the panels are rubbing against the channels (especially at the top) Check at tht top rear of the machine to see if there is clearance between the panel ends and the channels at each end of the panels.	Center the panels between the channels: Loosen the set-screws on both the upper channel bearings and slide the channels (lever or hammer and wood block) back and forth to center them. Re-tighten.
	Bottom of channels too close together.	Loosen lower bearing set-screws and spread channels. Reset shaft collars on shaft inside channels so that they are against the inside of the bearings.
	X-bracing inside channels too tight. X-braces should just take up slack and not be tight.	Loosen turnbuckles through access holes. Check spacing of bottoms of channels , When all adjustments are correct, re-tighten the turnbuckle locknuts.
General friction – chains adjusted correctly and no rubbing of ends of panels.	Channels need grease	Grease channels with spray grease (see sheet #38)

Treadwall® Service Sheet #35

Replacing and adjusting the counter switch



he counter switch is a proximity reed switch that is activated by magnets at the top of the left channel. It can be accessed brom the back of the machine at the top through the opening between two panels where they come over the top.

Before replacing a reed switch, make sure the old one is adjusted properly and check it again. The three magnets should be placed on the shaft so that the center of the magnets pass under the reed switch with about a 1/8" gap. The magnets have two flat surfaces. Make sure that they are oriented so that one flat surface is against the shaft and the other flat surface faces the reed switch.

The reed switch protrudes slightly from one corner of the bracket. Note in the diagram which bolt is is mounted on. If you mount it on the wrong bolt, the switch may not be facing the magnets.

If the original cord is not defective and you have a crimping tool you can cut the cords and connect the new switch to the old cord with butt-connectors. To check the old cord, cut and strip the wires near the old switch and short them out to see if the counter responds. The counter should register one foot for every two times you short out the wires.

To replace the switch and cord, it is necessary to remove one panel (see bulletin #1) so that you can access the cord inside the wall and clip the new cord into the plastic clips.

Your Reed Switch may be on either the front upper bolt or the rear upper bolt, depending on the model. All current models have the switch mounted as on the right, on the rear bolt. This improves access. Replacement switches will be set up for rear mounting, and you may simply redirect the existing wires to handle the change.

Treadwall® Service Sheet #38

Lubricating the channels

Lubricating the channels on your Treadwall will make it move freely and operate with a minimum of weight. This procedure should be carried out every 6 months.

Time: 10 minutes.

*Staff needed:*One person.

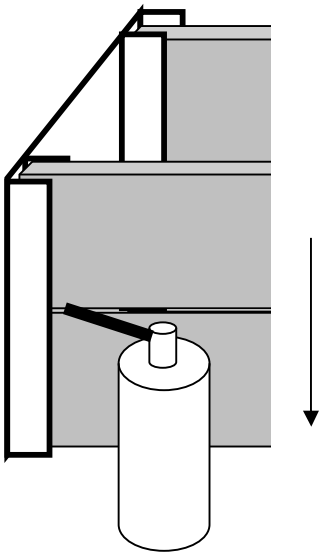
Tools needed: A can of spray white lithium grease or heavy duty spray silicone (with red nozzle extender)

The Procedure:

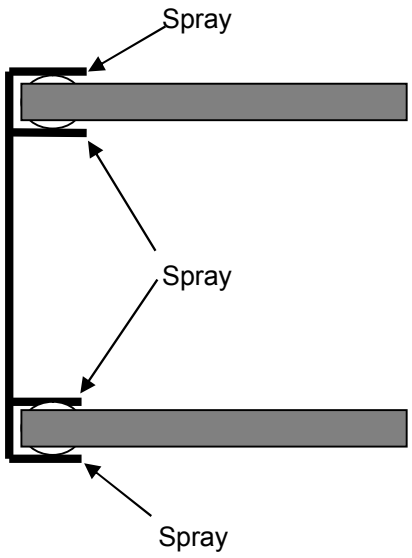
For interior machines, we recommend white lithium spray grease (available at any auto or hardware store). For exterior machines or trailer mounted Treadwalls, we recommend heavy duty spray silicone which is more resistant to accumulation of dirt and contaminants. Silicone May also be used for interior machines (it is a little cleaner to use) but it requires more frequent application.

Using your choice of lubricants with the red nozzle attached, start at the top left front and spray into the gap between the climbing panel and the channel flange. To Lubricate the inner flange, stick the nozzle between two panels and apply spray lubricant into the channel as you move the wall down, coating the inside metal surface (see diagrams below) where the white nylon buttons slide. Do the right side next, also making sure to coat both the front and back surfaces.

Repeat this procedure for the Rear Side of the Treadwall.



Move wall down while spraying rear flange



View of channel from the top

Treadwall® Service Sheet #40

Photoelectrics.

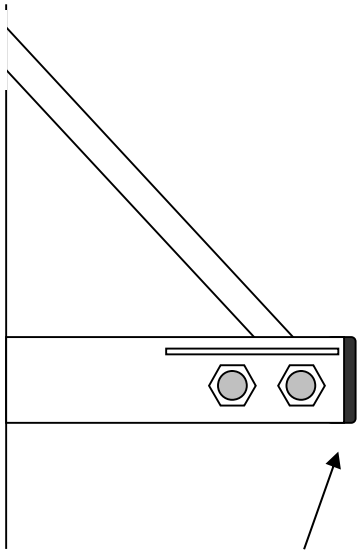
The photoelectric units on the Model PE Treadwall operate by retro-reflection. The units send an invisible light beam across the wall to a reflector. When the beam is broken, the wall locks up. If the wall will not lock up, or is locked up and will not release unless the transformer is unplugged from the wall, there may be a problem with the photoelectrics.

Testing:

As each photocell is covered, you should hear a faint click. The photocells also have pilot lights. Take off the black plastic cap on the front of the photocell bracket. When you peer into the housing, you can see the two photocells inside. Each photocell has a red pilot light that glows when the beam is unbroken. If the pilot lights are facing away from you, bend a strip of paper to slip in behind the photocell so that you can see the reflected glow.

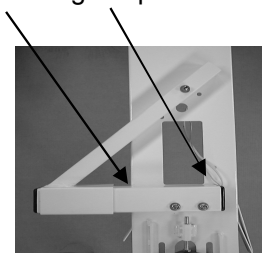
If both of the pilot lights are glowing, and they go out when you break the beam with your hand, the photocells are working correctly. If neither photocell glows, there probably is a power problem--check the transformer to make sure it is plugged into a working outlet. There could also be a misalignment problem if the entire channel has become twisted so that the photocells are not facing the reflectors properly.

If one of the cells is not glowing, first check to make sure that the mirror and photocell are clean. If it still does not work, check it with a small mirror. Hold the mirror about 3-4" from the front of the photocell so that you reflect the beam directly back into the cell. When you line the mirror up correctly, the pilot light should glow.



Remove this cap to look at photocells

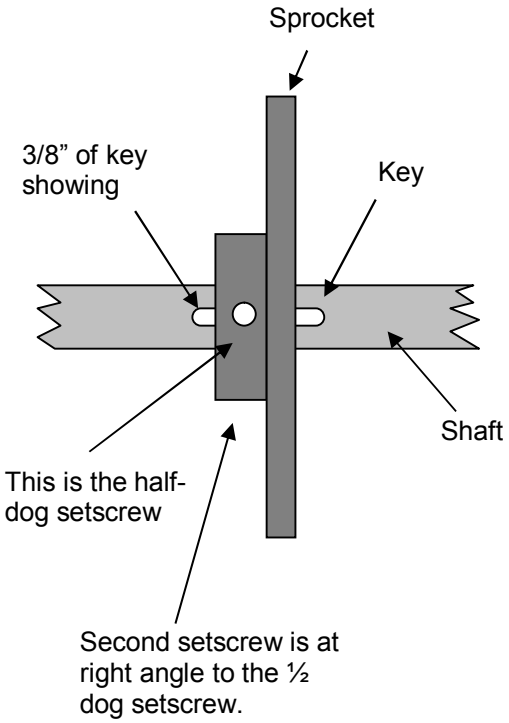
Symptom	***Possible problem***	***Action***
Wall will not lock up--pilot lights not glowing	Lack of power to photocells	Check transformer--is it plugged in? Check connection at bottom of frame where wires plug into transformer wires. Check all outside wires to see if they are damaged or broken.
Wall will not lock up--pilot lights glowing	Bad connection to valve coil. Bad switch in control panel. Bad valve-coil or stuck valve.	Open control panel and check connection to valve coil and switch. Short out switch in control panel with paperclip- see if wall locks up when photocells are blocked. With voltmeter (12 volts) or automotive wiring tester, check voltage at valve-coil in control panel. When photocells are blocked there should be 12 volts between the two connections on the valve-coil. If the voltage is there, and the wall will not lock, there is a bad valve-coil or the valve itself is stuck open. If you suspect the coil, remove the mounting nut from the coil and take it off the valve while the current is flowing. If the coil is good, you will feel fairly

		strong magnetic attraction between the coil and valve.
Wall is locked up and will not release- It releases when wall is unplugged or control panel switch is turned off.	Dirty photocell or mirror Misaligned photocell. 	Clean mirrors and photocells. Usually this is due to misaligned photocells. The photocells send out an invisible beam across the face of the Treadwall to the reflectors on the other side. If they are not pointed directly at the reflectors, the system won't work right. 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.
Wall is locked up and will not release- It will not release when wall is unplugged or control panel switch is turned off.	Probably not a photocell problem Chains loose Channels or panels misaligned Solenoid-valve is stuck closed. Speed-control valve is stuck closed.	See Service Sheet #10 See Service Sheet #41 If all other causes are eliminated, remove the solenoid-valve from the manifold and see if the wall rotates. Have a good container handy to catch the oil. If the valve is stuck, you can usually loosen it up by blowing it out with compressed air. Replace the oil with new #30 non-detergent motor oil (the oil level should be about 1" down from the top of the reservoir after the wall has been in use for a few minutes.) Remove the speed-control valve from the manifold. Have a rag handy to plug up the hole. Hold the rag in the hole and gently rotate the wall to see if it turns. If this valve is stuck, it can usually be released by holding it in your hand and tapping it's side with a small hammer or blowing it out with compressed air. Replace the oil.

Treadwall Service Sheet #41 Alignment of panels and channels.

Occasionally either the panels or channels become misaligned on a Treadwall, causing the ends panels to rub against the channels. Usually, the panels have a clearance of ¼" or so at each end, so that when you look at the top of the machine from the back, you will see a gap between the ends of the panels and the channels at each side. If either the channels or the panels shift to one side, the panels will rub against the channel at one end and cause the Treadwall to operate very sluggishly.

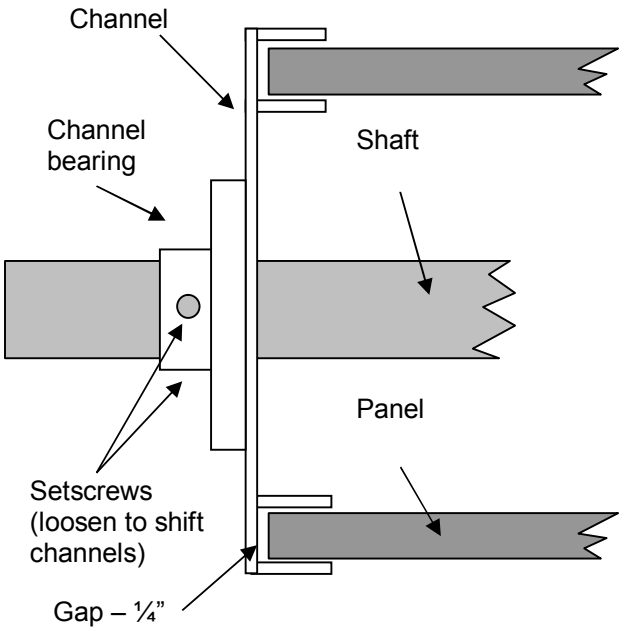
If you find that the panels are rubbing at one end, the first step is to determine whether the channels have slipped over or whether the panels themselves have moved sideways. At the top of the machine from the back, look through the gap between the panels to view the main shaft and sprockets. The sprocket on the right (as viewed from the back) is held in place by two setscrews and the sprocket on the left is free to float back and forth. The picture shows the fixed sprocket.



Notice where there should be 3/8" of key showing. If this measures differently, it means that the sprocket and the panels have shifted. If this has happened, you should also see other evidence (wear marks etc.) showing where it has shifted across the shaft. The setscrew that goes against the key is a "half dog" sewscrew, meaning that it has a special end that fits into a recess in the key to keep it from slipping. In order for the sprocket to shift, this setscrew has to completely back out of the recess which is quite unlikely but does occasionally happen. To re-align this sprocket:

1. Remove two panels at the top of the machine. Make sure that you will be able to get at both the sprocket setscrews.
2. Remove the half-dog setscrew completely and loosen the other setscrew
3. Use a short length of 2x4 and a large hammer to move the sprocket back into alignment. Use a flashlight to peer into the setscrew hole until you see that the hole is lined up with the recess in the shaft key.
4. Replace the ½ dog setscrew using loctite and tighten the other setscrew against the shaft.

If the sprocket has not shifted, then the channels have become loose and shifted over. To re-align the channels, loosen the two setscrews on both channel bearings (the large square bearings at the top of each channel – see second illustration) and use a short length of 2x4 and a hammer to move the channels along th shaft until there is an equal gap between the channels and the ends of the climbing panels. Because the channels are connected together by the top shroud and at other places, they must be both shifted as one unit. Re-tighten the setscrews firmly.



View from top (many parts not shown for the sake of clarity).

TREADWALL® LIMITED WARRANTY - Commercial

1. WHO IS COVERED?

The original purchaser of any model Treadwall ("Original Purchaser") may only enforce this warranty.

2. ORIGINAL PURCHASER OBLIGATIONS

a. The Original Purchaser assumes full responsibility that this Treadwall purchased meets the specifications, capacity and other requirements of the Customer.

b. The Original Purchaser assumes full responsibility for the condition and effectiveness of the operating environment in which the Treadwall is to function including spatial considerations.

3. HOW LONG IS THE WARRANTY?

According to the following schedule, Brewer's Ledge Inc. warrants to the Original Purchaser of its Treadwall that under normal maintenance the Treadwall will be free from any defect in materials or workmanship.

Structural Steel Frames and Welds:

Ten years - parts and labor and freight.

All other components except cords, floor mats and vinyl products:

One year - parts, labor, and freight.

Cords, sidecovers, floor mats:

Ninety days - parts, labor, and freight.

4. WHEN DOES THE WARRANTY BEGIN?

Warranty begins from date of delivery to Original Purchaser or date of installation in the case of factory assembly. In the case of either Demonstration or Trial Agreement and related purchase, the warranty begins from the date of the original delivery.

5. WHAT IS NOT COVERED

a. Normal wear and tear is excluded from this warranty. No warranty shall be provided in the event the Treadwall is modified by original purchaser, for parts not approved by Brewer's Ledge Inc., or for warranty-related service other than by personnel authorized by Brewer's Ledge Inc.

b. Damage incurred by negligence during movement, assembly, or breakdown of the Treadwall by the Original Purchaser or personnel contracted by the Original Purchaser is excluded from this warranty. The sale of special tools and instructional materials to the Original Purchaser and any training of the Original Purchaser's staff by Brewer's Ledge Inc. related to the movement, assembly and break-down of the Treadwall does not imply any warranty against Original Purchaser negligence and does not void this exclusion. Brewer's Ledge Inc. reserves the sole right to determine the origin of damage as related to this provision.

6. LIMITATION OF DAMAGES AND IMPLIED WARRANTIES

a. Except as provided herein, Brewer's Ledge Inc. makes no express warranties; implied warranty of merchantability or fitness for a particular purpose is limited in its duration to the duration of the written limited warranties set forth herein.

b. In no case shall Brewer's Ledge be liable for any special, incidental, or consequential damages based on breach of warranty, breach of contract, negligence or any other legal theory. Such damages include but are not limited to, loss of profits, loss of use of the equipment or any associated equipment, the cost of capital, the cost of substitute equipment, facilities or services, downtime, the claims of third parties, including customers, and injury to property.

This limitation does not apply to claims for personal injury where such limitation would be a violation of the applicable law. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

7. TERMS OF WARRANTY

The terms and conditions of this warranty are applicable as between Brewer's Ledge and Original Purchaser to the sale of Treadwall equipment to Original Purchaser.

8. STATE LAW RIGHTS

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state.