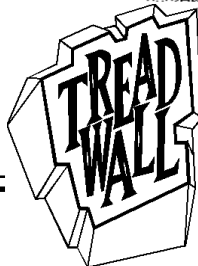
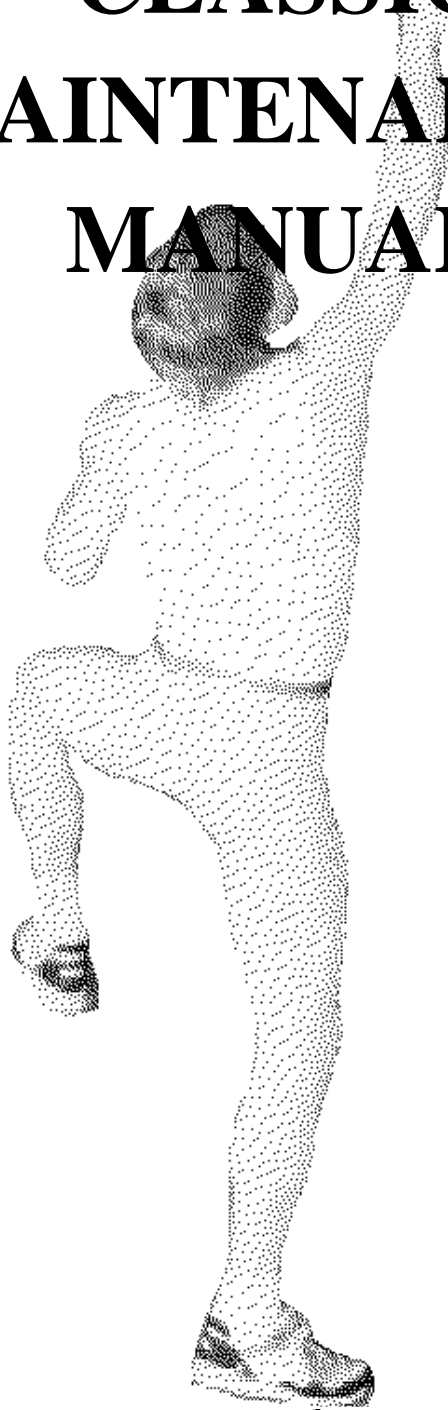


# TREADWALL CLASSIC MAINTENANCE MANUAL



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If you have any questions, please do not hesitate to call 8:30-5 E.S.T.

1-800-707-9616.



# DESCRIPTION OF THE TREADWALL CLASSIC

(Manufactured from late 1989 till early 1994)

The TREADWALL CLASSIC fitness climber consists of a series of 24 metal frames with attached panels, 1 ft. x 6 ft., connected together by hinges into a continuous loop. It is distinguished from other Treadwalls by a control line that comes up from the floor and 12" wide panels.

Holds that simulate natural rock are attached to the panels and can be removed and re-attached in different patterns. The loop of panel frames are draped over a pair of tires attached to an automotive differential assembly, so that from the front aspect, they form a continuous wall surface approximately 8 ft. high.

The hinges at the ends of the panels have extended hinge-pins, and 2" dia. wheels are pivoted on these pins. These wheels roll down long channels on either side of the machine that effectively hold the panels into a flat climbing surface.

The channels are pivoted from top of the machine, and a cable-winch mechanism connected to them makes it possible to change the vertical angle of the wall and thus the difficulty of the climbing.

As the panels move around the bottom and up the back there is a tendency for them to sway and vibrate. To control this motion, a pivoting back-channel is connected to the bottom of the left channel by way of a guide plate that provides a smooth transition between the two channels.

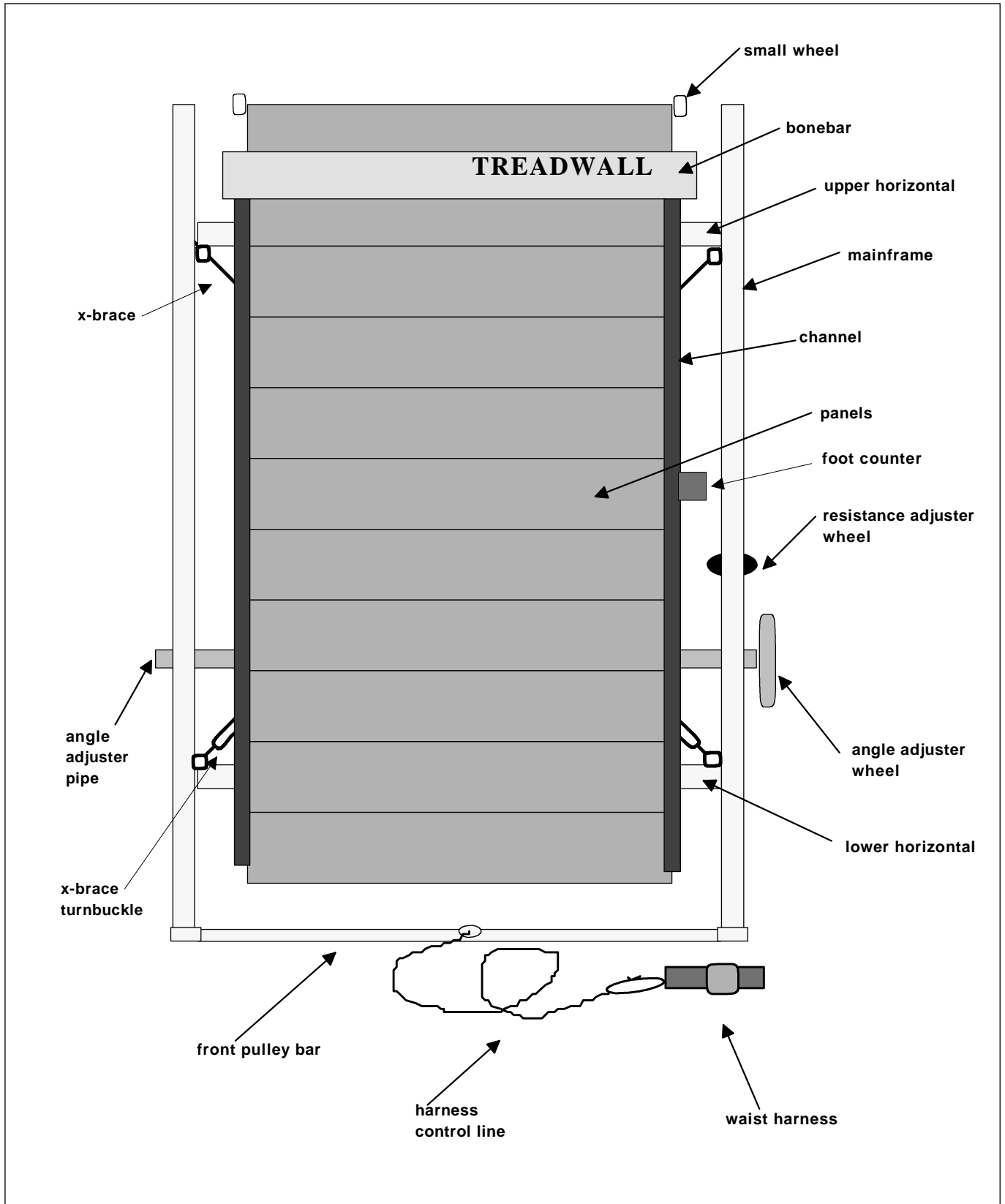
During operation, the wall is pulled down by the weight of the climber. To regulate the speed of descent, a hydraulic braking mechanism is employed. A hydraulic pump is attached to the differential mechanism, and while the wall is in motion it pumps oil around a simple circuit with a valve. If the valve is open, the pump is free to rotate, and the wall descends. When the valve is closed, the oil can no longer flow and the pump and wall are locked up. A harness and cord attached to the climber are connected to the valve through a series of weights and levers so that as the climber ascends, the valve opens and frees the wall to move down. If the climber stops climbing, the valve closes and stops the wall from descending any further. An adjustable loop on the harness is set by the climber to regulate the stopping point of the wall.

To adjust the wall to the weight of the climber, an adjustable resistance control limits the degree to which the valve can open. When properly adjusted by the climber, the wall will descend at a quiet even pace and stop smoothly when it locks up.

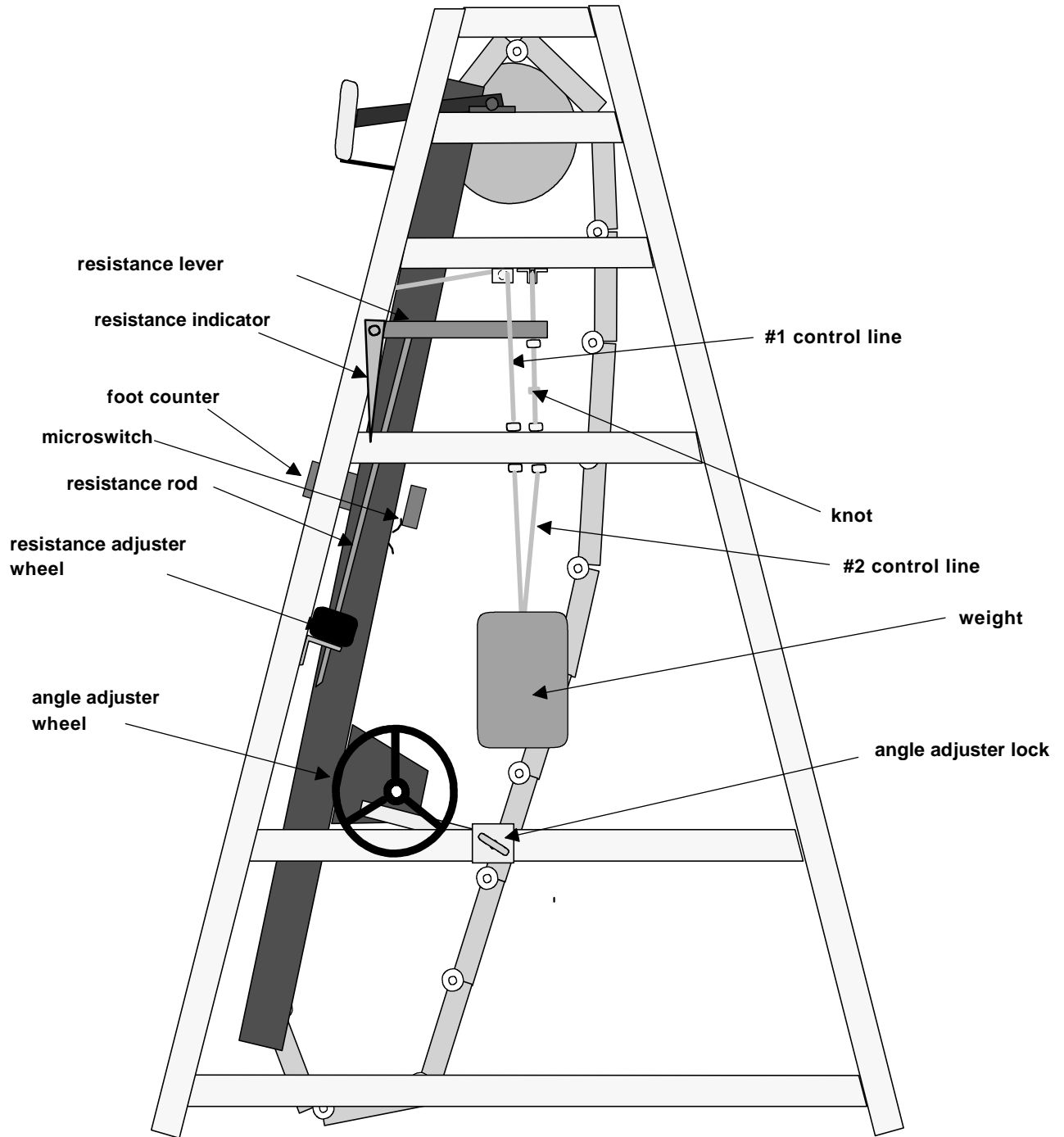
## PHYSICAL SPECIFICATIONS:

1. Height: 12 ft 3in
2. Width: 9 ft (including space for adjusting angle)
3. Depth: 6ft 6in
4. Depth with mat 11ft
5. Weight (appx) 1850 lbs

# FRONT VIEW - TREADWALL CLASSIC

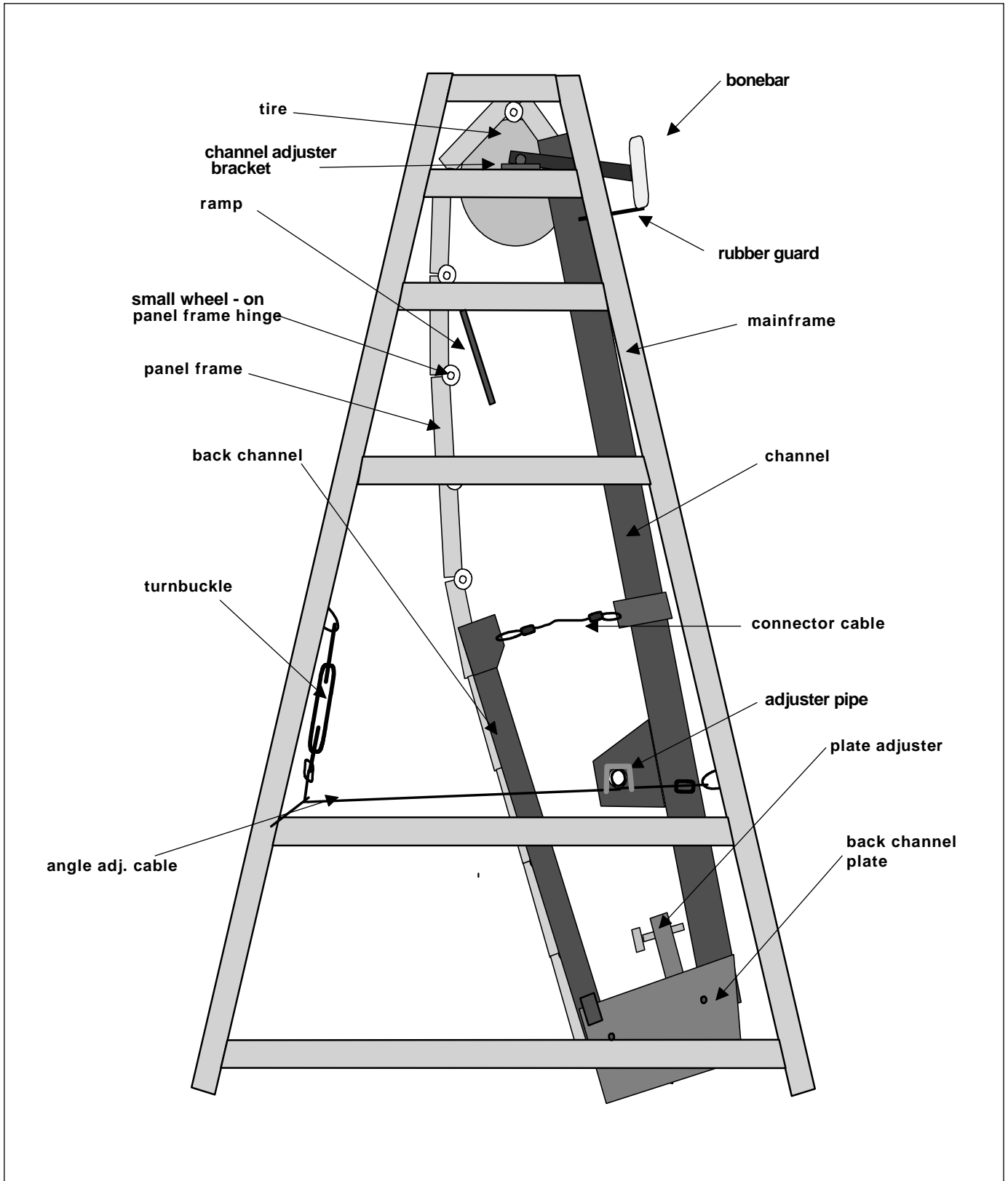


# RIGHT SIDE VIEW - TREADWALL CLASSIC



For angle adjuster cable, see left side view.

# LEFT SIDE VIEW - TREADWALL CLASSIC



# TREADWALL CLASSIC BRAKING SYSTEM

## How the Treadwall works

**Fig. 1** shows the right side frame of a Treadwall Classic.

**Line #1** is the harness line which emerges from the upper part of the frame and goes through a pulley and through two grommets in the frame cross-member. It is tied to the large weight (a metal plate).

**Also tied** to the large weight is line #2 that travels up through the frame, through the resistance lever, and over a pulley that directs it to the inside of the machine where it is attached to the valve arm.

**The knot** in line 2 is very important. The knot limits the downward travel of the large weight, and limits the upward travel of line #2 when it the knot contacts the resistance lever.

**The resistance control** is important to adjust the Treadwall to the climber's weight. The resistance lever pivots and is controlled by the resistance rod that runs down parallel to the frame and is threaded into the resistance wheel. When the wheel is turned it pushes the rod up and causes the resistance lever to move up and down. The higher the lever is pushed up, the more the knot in line #2 is able to move up, and the wall has less resistance during operation.

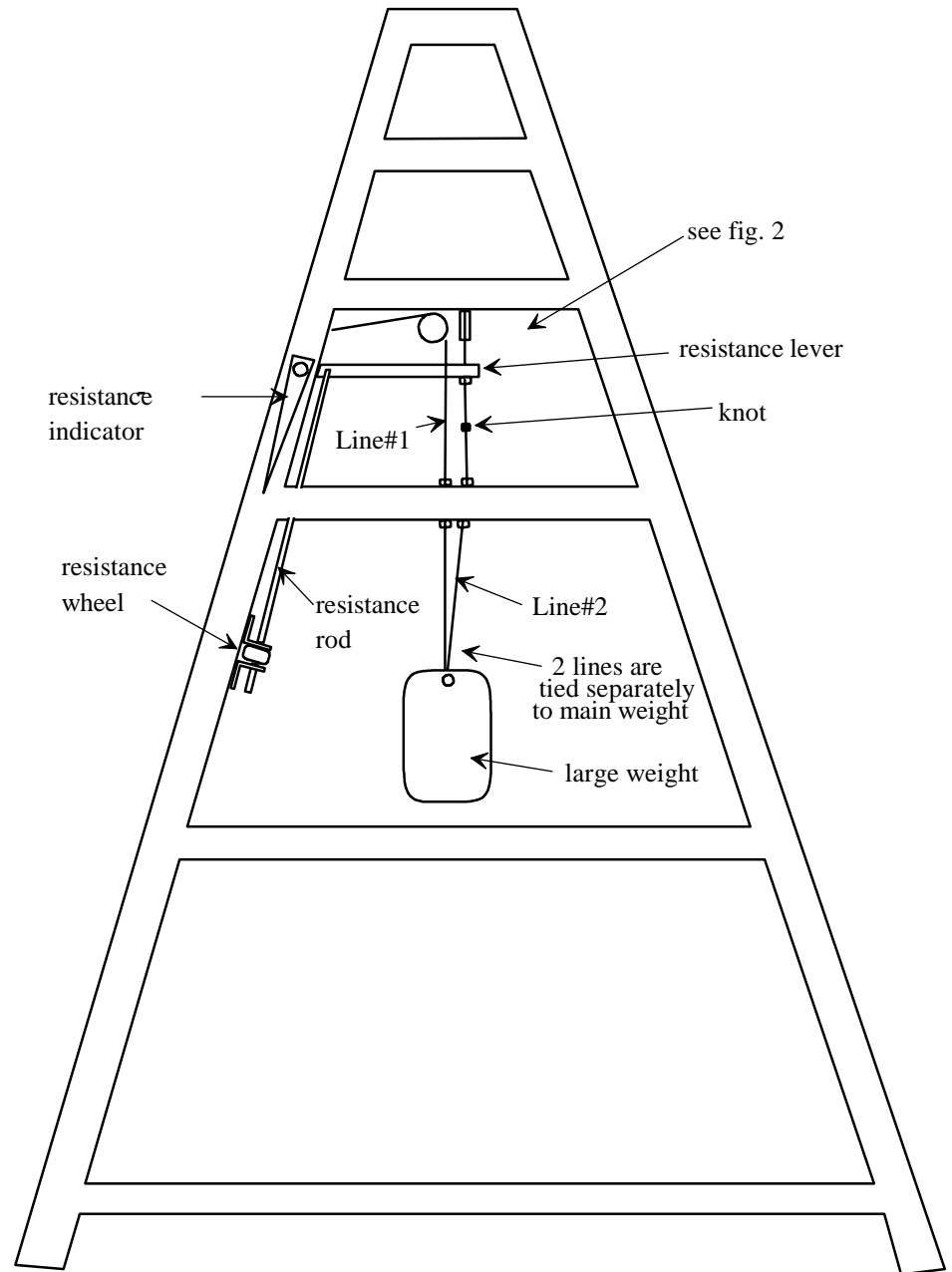
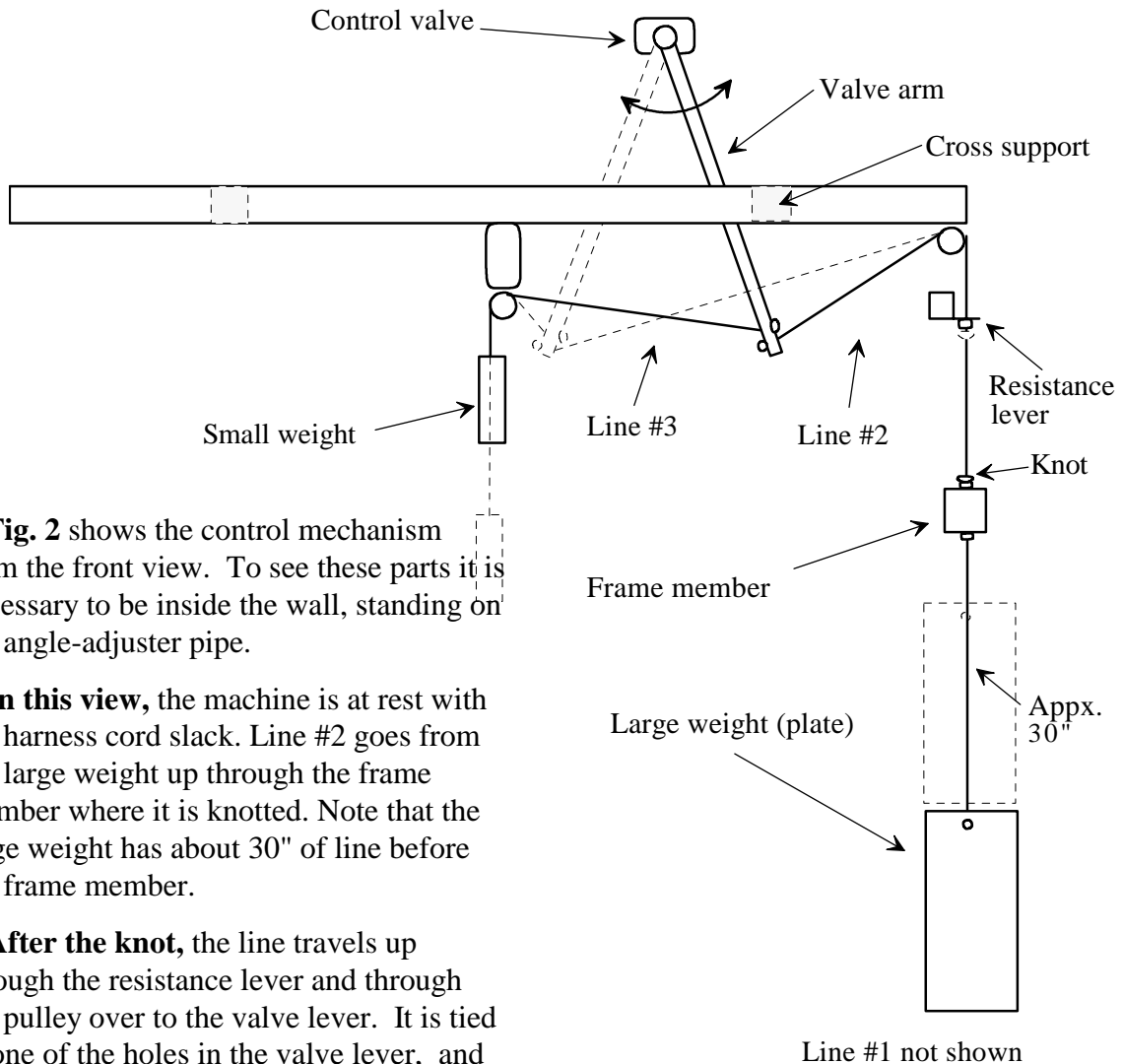


Fig. 1



**Fig. 2** shows the control mechanism from the front view. To see these parts it is necessary to be inside the wall, standing on the angle-adjuster pipe.

**In this view**, the machine is at rest with the harness cord slack. Line #2 goes from the large weight up through the frame member where it is knotted. Note that the large weight has about 30" of line before the frame member.

**After the knot**, the line travels up through the resistance lever and through the pulley over to the valve lever. It is tied to one of the holes in the valve lever, and the knot is adjusted until the lever almost touches the cross support as shown.

**Line #3** goes from the other hole in the valve lever through the pulley in the center of the machine to the small weight that pulls the valve open when the large weight is lifted. The small weight should rest about 2" below the pulley.

**When the harness line is pulled**, it lifts the large weight, and the small weight is free pull the valve arm to the left. This opens the valve, which releases hydraulic pressure and allows the wall to rotate under body weight. As the wall descends, the large weight drops, pulling the valve arm back to the right. This closes the valve and the wall locks up until the climber makes another move.

**The amount that the valve lever swings** is controlled by the resistance lever. The knot in line #2 contacts the lever and prevents the valve arm from swinging further, thus introducing a set resistance into the hydraulic system.

**Fig. 2**



# MAINTENANCE

## Regular Maintenance

<b>Monthly</b>	Cables: Cables should be kept tight. New cables should be checked daily for the first week and monthly thereafter for tightness. Tighten the turnbuckles when needed.
	Small wheels: Check small wheels every month for end play (in and out looseness). They should turn freely but not have end play. Tighten the axle bolts with a socket wrench (7/16") and open end wrench if they are loose.
	Harness line: Check condition of harness line periodically. If it shows signs of wear and excessive fraying replace it <u>before it breaks</u> .
	Cable guards: Check cable guards for wear every month. Replace if necessary.
	Lubrication: Lubricate the threads of the resistance rod and adjuster wheel with spray grease every month.
<b>6 month intervals</b>	Lubrication: Lubricate the hinges and small wheels every 6 months. To do this procedure, take off right hand large side cover and tie off the harness control line so that the wall rotates freely. Climb into the interior of the machine and stand on the angle-adjuster pipe. Facing the front of the machine it is easy to rotate the wall with one foot. Lubricate all hinges and wheel axles with white lithium spray grease (available from auto-parts store).
	X-brace turnbuckles: Check for looseness and tighten if necessary every 6 months.
	Back channel plate: Check clearance on plate adjuster bolt. Adjust to 3/8" clearance every 6 months. Also, check the two mounting nuts that attach the plate to the channels. They should be firm enough to keep the plate in alignment with the channels, but still allow the plate to swivel.

## Long Term Maintenance Issues

- Hinges:** On the early TREADWALL Classics, there is a tendency for the panel frame hinges to fatigue and crack after extended use. In addition, any obstruction in the path of the small wheels (loose wheels, loose back-channel plate, channel mis-alignment, etc.) can cause breakage of the hinges as well as bent wheel axles. In the case of hinge breakage, there is a recommended method of welding and reinforcing that is outlined in the appendix of this manual. After repair and reinforcing of hinges, it is important to check the channels and path of the small wheels for any irregularities and obstructions and tighten any loose wheels so that further damage does not occur.
- Back channel plate:** The back channel plate swivels on two studs, and over the course of hard usage it tends to cut into the studs. An upgrade-return of this part is available (see upgrades) which minimizes this problem.

# TROUBLESHOOTING GUIDE

General basic tests:

1. Pull up on the harness line and observe the main weight and the valve arm inside the wall. The main weight should raise and the valve arm should swing towards the left as outlined on pages 5 and 6. Make sure that the resistance lever is set to a middle position (not all the way up or down which can jam line #2).
2. Check the path of the small wheels on both sides of the machine. Check small wheels for bent axles, loose nuts, and bent washers. Look for wheels that may be jammed in the back channel.

PROBLEM	CAUSE	FIX
Wall creeps when it is supposed to be locked.	Brake line #2 out of adjustment (angle of valve arm)	Adjust line #2 (see "braking system"). Valve arm should be adjusted so that it almost touches the cross-support when the machine is at rest (fig.2, pg.6).
Wall will not release.	Broken or misadjusted line.	Use diagram to check and adjust lines.
Resistance is erratic.	Resistance lever is being pulled up by the knot in line #2.	The resistance lever may not be heavy enough to hold the knot down. Install auxiliary weight upgrade (see Upgrades, pg.11).
Excessive fraying of line where it comes through the mat.	Small pulley is worn	Replace small pulley in the bar under the mat. Replace harness line ( <u>before</u> it breaks).
Wall has excessive friction - doesn't turn properly	Wheels not tracking properly in channels	Make sure all wheels are following channels correctly. Check for bent axles and damaged hinges. Replace any damaged parts.
Excessive noise	Loose wheels	Adjust wheels for end-play. The wheels are held on by self-locking nuts (1/4 x 20). If these nuts are worn, they may need replacing in order to stay in adjustment.
	Damaged hinges	See appendix for instructions on hinge welding and reinforcing.
	Machine operating too fast	Use resistance control to match pace to climber. Running machine too fast is noisy and causes premature wear.
	Back channel plate out of adjustment	Adjust back channel plate adjustment bolt. Check plate-mounting bolts for looseness.

Erratic speed control	Speed regulator lever is being lifted during operation in an erratic fashion.	Install auxiliary spring upgrade (see "Upgrades", pg.11)
Valve leaks oil	Gland nut needs adjustment	Remove valve lever, loosen small Allen screw that locks gland nut, tighten gland nut , re-set Allen screw and put valve lever back on (see appendix - "Gland nut adjustment").
Hydraulic pump noisy - erratic braking	Low oil in hydraulic system.	Fill oil reservoir to within 1" of top. To access reservoir, remove removable panel and rotate empty frame to top of machine (see appendix "removable panel").
Machine operates very sluggishly - wall is out of alignment - one side lower.	Flat tire	Inflate tire. Many service stations have a portable air tank that you can borrow. Tires operate from 10 to 35 psi. If tire has a leak, it will be necessary to take it off to have it repaired. Brewer's Ledge will supply a kit and instructions that make this an easy job.
Wall is locked - will not descend	Resistance lever is set too low or too high creating friction in the line	Set resistance lever to middle position
	One of the control lines has slipped off its pulley and jammed	reset line on pulley

# INSTALLATION ADJUSTMENTS

**In the course of installation the following adjustments are made to the TREADWALL.**

1. **X-bracing turnbuckles** (see front view). The x-bracing in the rear of the machine are the primary support for the frame. The turnbuckles are adjusted to make the frame parallel to the channels and then tightened firmly. These braces should be checked for looseness a couple of times after installation and re-tightened if necessary. A locknut on the turnbuckle should prevent any further loosening.
2. **Channel hangers** (see left side view). The channel are hung from the frame on hangers that have slotted bases. This allows the channels to be adjusted front-to-back so that the small wheels will enter them properly. When viewed from the top, the wheels should enter just touching the rear of the channel. Once set, this adjustment will not have to be changed.
3. **Resistance indicator** (see right side view). The pointer that indicates resistance is set at a right angle to the resistance lever and tightened securely with the setscrew. Users of the TREADWALL should be fully instructed as to how to set the resistance. In some cases, users have attempted to set the resistance by forcing the indicator, thus putting it out of alignment. If this happens, it is necessary to re-align and re-tighten it.
4. **Back channel plate** (see left side view). The back channel plate adjuster prevents the back channel from riding up too far by limiting the swiveling of the plate. The bolt should be adjusted for a 3/8" gap between the bolt and the main channel. This adjustment should be checked periodically
5. **Cable turnbuckles** (see left side view). The angle adjuster cable turnbuckles should be kept tight. This should be checked every day for the first week of operation and periodically thereafter. If these are not kept tight, the coils of the cable can overlap, causing damage to the cable.
6. **Valve lines.** There is a special section in this manual concerning the valve cord adjustments.
7. **Flanges** (see appendix). Flanges on the channels and back channel are bent out to allow free entry to the small wheels. This should be checked with the appendix section "Flanges" to be sure that it is properly done.

# UPGRADES

## ***Upgrades:***

Check your Treadwall for these upgrades. If you don't have them, contact Brewer's Ledge.

1. Auxiliary spring (see right side view). In some cases, the resistance control lever has a tendency to ride up while the machine is in operation. This causes irregular speed control. The auxiliary spring attaches to the resistance lever and promotes a more even operation. This free upgrade is recommended for all TREADWALL classics. Contact Brewer's ledge for details.
2. Back channel plate (see left side view). The original-equipment back channel plate which swivels on studs has a tendency to cut into the studs and wear them. A trade-in upgrade of this part is available from Brewer's Ledge and is highly recommended. Contact us for details.
3. Connector cable and ramp (see left side view). The connector cable and ramp reduce noise in the TREADWALL and minimize wear on the back channel and plate. This upgrade was sent to all TREADWALL Classic owners. If it is not installed, contact Brewer's Ledge.
4. Weight (see right side view). On early Classics, the main weight was a rectangular bar of steel. This had a tendency to twist around and tangle the cords. A later development was a steel plate-weight that was held from twisting by the side cover on the right side. If your machine doesn't have a plate-style weight, please contact Brewer's Ledge.

## ***Optional upgrades:***

1. Cable guards. Cable guards are an important safety device. Their design was changed several times. On TREADWALL Classics, the cables were wound around the pipe like the threads on a right-hand thread screw (fig.1). The cables operate somewhat quieter and last longer if they are wrapped with a left-hand thread (fig. 2). If the cables are in good condition, they can be re-wrapped, but new cable guards must be installed. If the old cables are frayed, it is best to install new cables and guards. Contact Brewer's ledge for details.

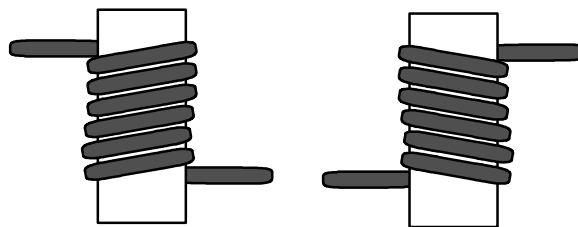


fig. 1

fig. 2

2. "Climbometer" Electronic data panel: The small footage counter can be replaced with an electronic data panel that measures elapsed time, footage and calories burned.
3. Holds: Additional holds, available from Brewer's Ledge, can add variety and enhance the versatility of the Treadwall.

# ASSEMBLY AND DISASSEMBLY

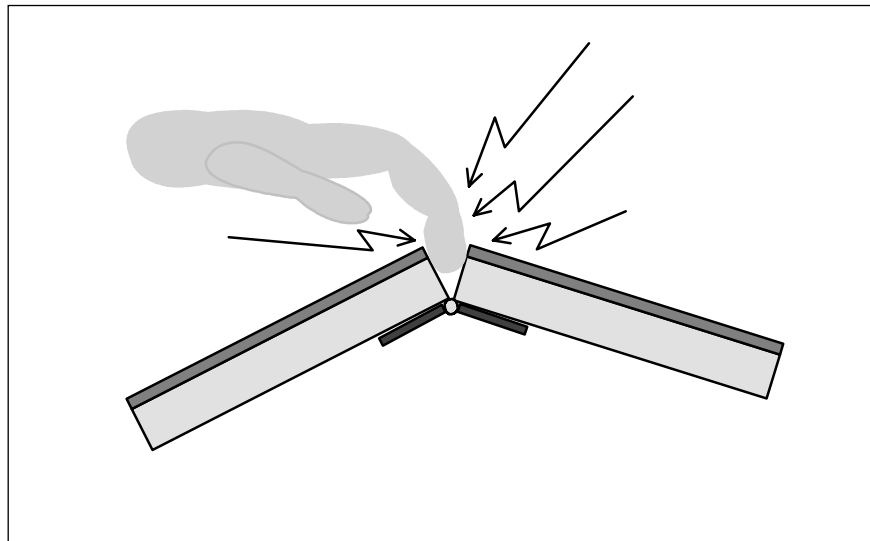
Assembly and/or disassembly of the TREADWALL Classic is a task that requires at least two people who are mechanically inclined.

It takes about 4 hours to disassemble and 5 hours to assemble the Classic, and winches are needed. These winches, along with a detailed video showing the assembly procedure are available from Brewer's Ledge for a rental fee of \$50 (30 day rental) with a refundable deposit of \$200.

If you plan to disassemble or assemble a TREADWALL Classic, please get in touch with us at least one month in advance so that we can arrange to have one of these kits available and provide any further assistance you may need.

## WARNING:

Use extreme caution to avoid pinching fingers and hands while handling the panel frame units during assembly and moving of the Classic Treadwall.



# ***APPENDIX***

- 1. REMOVABLE PANEL***
- 2. REMOVAL OF BACK CHANNEL PLATE***
- 3. REPLACEMENT OF HARNESS LINE***
- 4. CABLE REPLACEMENT***
- 5. VALVE GLAND-NUT ADJUSTMENT***
- 6. HINGE WELDING INSTRUCTIONS.***
- 7. FLANGES***
- 8. CABLE AND RAMP UPGRADE***

## REMOVABLE PANEL

One of the panels on the TREADWALL Classic is removable. It is necessary to take off this panel for certain maintenance functions, particularly to work on the hydraulic braking unit. The panel can be distinguished from the others because it lacks texture - it is a plain flat panel.

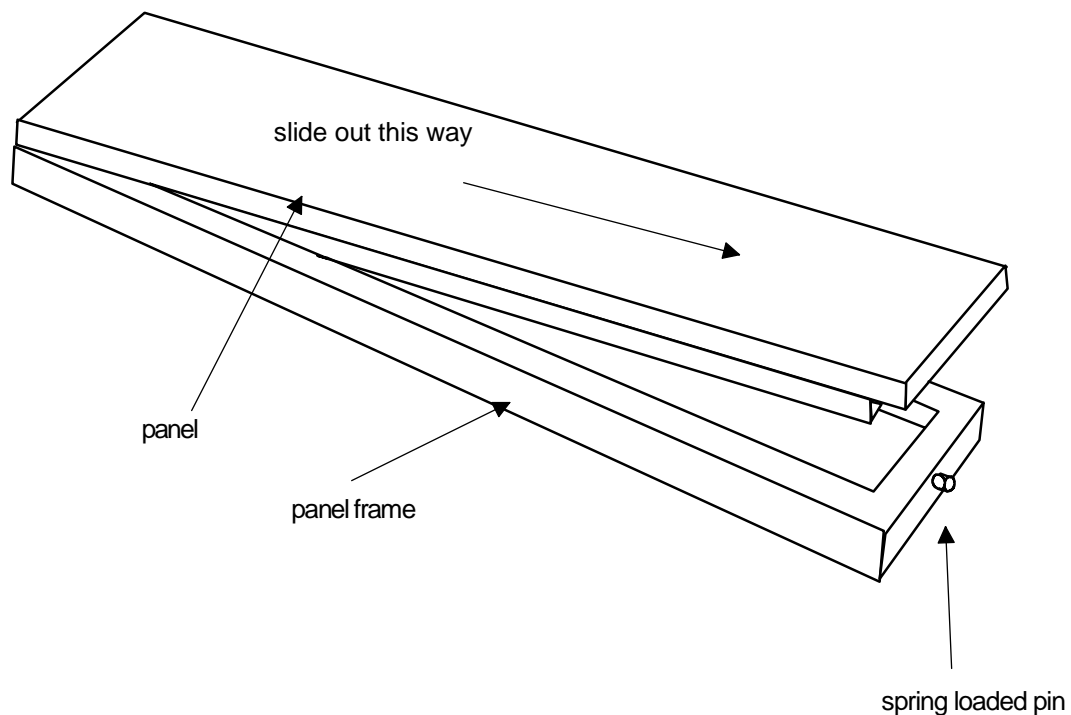
The removable panel is held into its frame by two 1/2" diameter pins at either end of its steel frame. The pin at the right end is spring loaded, and when it is withdrawn, the panel is released.

Bring the wall around so that the removable panel is at the back and about 5 ft. up. With a pair of vice-grips, grab the spring-loaded pin and pull it outward until the panel is released.

*Do not release the panel any farther back than necessary to slide it off of the other pin. If you torque it too far back it can damage the panel.*

Slide the panel towards you and it will come free.

To replace the panel, reverse the above procedure - slide the panel onto the fixed pin and pull the spring-pin out until the panel can re-seat into the frame. Make sure the spring-pin goes all the way back in.



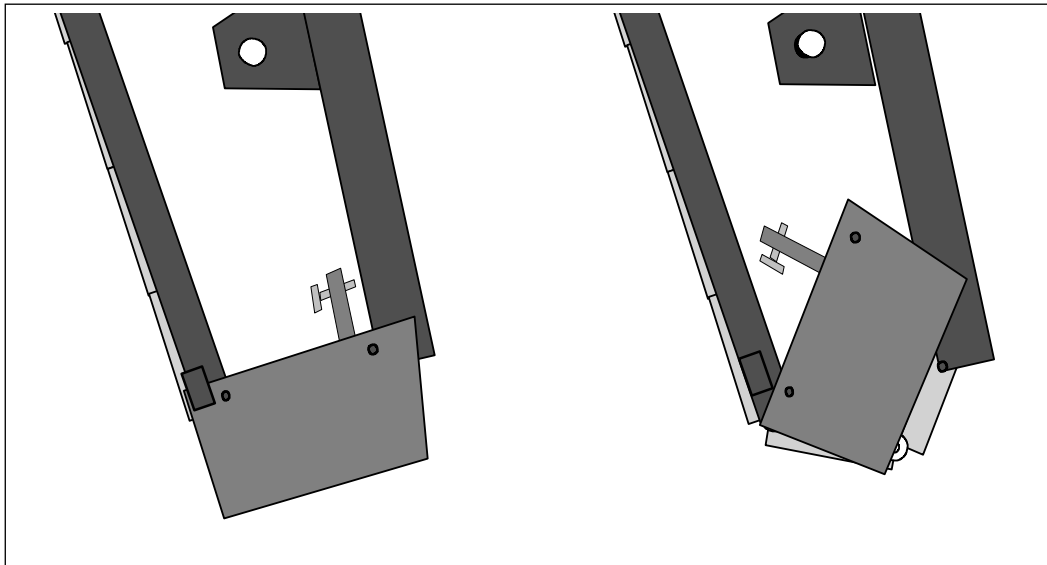


## REMOVAL OF BACK-CHANNEL PLATE

The back-channel plate (see left side view) is held on by studs on the main channel and back channel. On the back channel it is held in alignment under a welded tab. It is important that the plate is held closely to the back channel by this tab. To remove the plate, remove the two 3/8" locknuts on the studs and pull the plate off the stud on *the main channel*. Then rotate the plate upward until it clears the welded tab and pull it off of the back channel.

If the back-channel itself is to be removed, it will be necessary to remove two or three of the small white wheels right above it to get it off. Once the wheels are removed, the back channel will slide up and off.

To re-install the back channel plate reverse the above procedure. Slip it onto the back-channel stud, rotate it downward so that it slips under the welded tab, and slip it onto the main channel stud, making sure all the small white wheels are *under the circular track* on the back of the plate.



# REPLACEMENT OF HARNESS LINE - Treadwall Classic

The long line that runs between the harness and the main weight through the frame of the Treadwall (line #1) is a high quality braided dacron line that should last for years under normal circumstances. Eventually, however, it will become frayed and need replacement.

The easiest and fastest way to change the line is to use the old line to pull the new line through the frame - it takes about five minutes. It is important therefore to keep track of the old line and replace it before it breaks, and be careful not to lose one of the ends while working on it. For tools you will need a cigarette lighter, a glass of water and a knife or pair of scissors.

Cut the end of the old line off at the harness end so that there is a clean cut and do the same for one end of the replacement line.

Use the lighter to heat the two ends of the cords until they melt (fig. 1) and while they are still melted, press them together (fig. 2) so that they weld to each other. There will be a lump where they are joined, so while the plastic is still soft (after about 8 seconds), wet your fingers and squish the joint to make it small enough to go through the line guide where the cord enters the Treadwall. Tug on the joint after it has cooled to make sure it is strong.

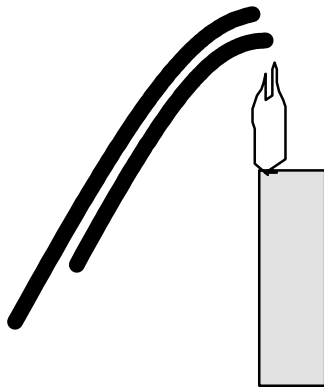


fig. 1

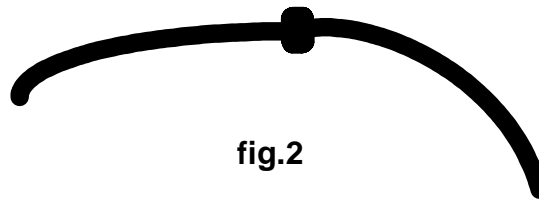


fig.2

Now it will be a simple matter to pull the new cord through the frame with the old cord. If the joint doesn't pull easily through the first line guide, don't force it and risk breaking the weld! Pull it back and start over.

Once the new cord is pulled through the frame, untie the old cord from the main weight and attach the new one. Use a bowline knot to attach the line to the main weight and tie a separate figure-eight knot in the loose end to make sure it won't come untied. At the harness end, pull one excess slack out of the line. Tie the harness ring securely onto the line four feet from where it comes out of the mat.

If the original cord has been pulled through for some reason, the job is a bit more involved. For tools you will need a Phillips screwdriver, and Allen wrench set, and perhaps a length of two-by-four lumber.

First, remove the mat and take off the plastic guide on the center of the front pulley bar. Next, remove the regulator lever which is two-thirds of the way up the machine. You will have to take off the resistance

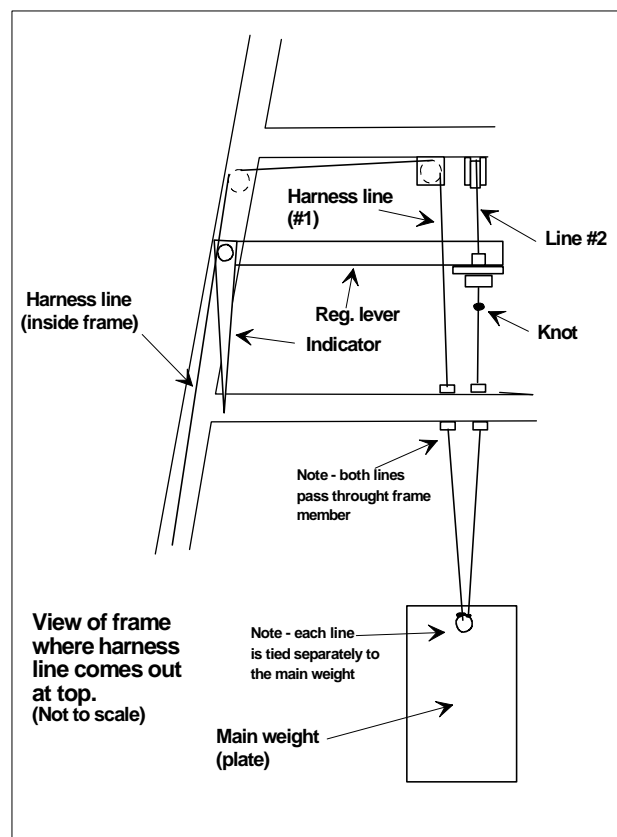
pointer with an Allen wrench and then pull out the regulator lever. It is not necessary to take it all the way off - just pull it far enough out so that the shaft will not interfere with the line as you feed it down the leg. If you don't do this step, however, the shaft will make it impossible to get the cord down inside the frame. Finally, remove the three plastic plugs from the holes at the bottom of the right front leg of the machine.

Feed the new cord into the large hole just above the top pulley in the frame. Make sure it goes around the back of the pulley and down. It will be possible to keep feeding the cord until it reaches the bottom of the leg. *Just above the bottom pulley there are two guide bars. Make sure the cord goes between them.*

At this point work the cord around the outside of the bottom pulley and use the screwdriver to push it into the front pulley bar.

If the pulley-bar has slots in the top, use the screwdriver to push the line until it reaches the center and goes under the small pulley. Use the screwdriver or a wire hook to pull the line up. If the pulley-bar has no slots, use a length of two-by-four to pry up the bottom of the frame so that the pulley bar can be removed and threaded. When the line is in place, replace the plastic line guide.

Replace the regulator lever, resistance indicator and mat, and tie the new cord as explained in the first section.



Lines:

Line #1 (harness line) = 25 ft (7.6 m.); Line #2 (from large weight to valve arm) = 8 ft. (2.5m.); Line #3 (valve arm to small weight) = 3 ft. (1 m.) Dacron, 5/32" dia. Heavy sheath

# REPLACING CABLES

## 1. Tools needed:

Ball peen hammer

A small box wrench with closed end. (Exact size not important.)

## 2. Procedure (Same on both sides):

### Removing...

1. Lock wall in a position so hole in Adjuster Pipe faces up (Note how cable dips into hole near the center of the windings and is locked in place with a bolt inside pipe.)
2. Lift side cover.
3. Remove chrome Adjuster wheel (right side) and plastic cap (left side) from the end of Adjuster Pipe. The wheel simply unscrews from the pipe. To remove it, engage the lock and turn the wheel hard to the left.
4. Loosen and disassemble turnbuckle. Slip the end of the cable through the guide loop.
5. Remove Cable Guard.
6. Using the closed end of a wrench, reach into Adjuster Pipe end and pull out bolt that holds cable to pipe.
7. Remove shackle from front loop, and cable will come free.

### Installing...

1. New cable is pre-bent at a certain spot. Push this bend into Adjuster Pipe hole so that end with shackle leads to back of machine. (After winding, the cable will leave pipe at bottom as in fig. 1.)
2. Re-insert bolt to catch the loop of cable inside pipe.
3. Pull up on cable to take-up all cable slack around the bolt that is inside pipe.
4. Hammer down cable on both sides where it exits the hole. No need to pound cable excessively; this is just to put a bend in cable so it will exit hole and lay nicely around pipe.
5. Wrap the shackle end around pipe so as to follow a left hand thread as shown in fig. 1. **Important:** *On earlier Treadwalls, the cables were wound as a right hand thread. Even if only one cable is being replaced, both*

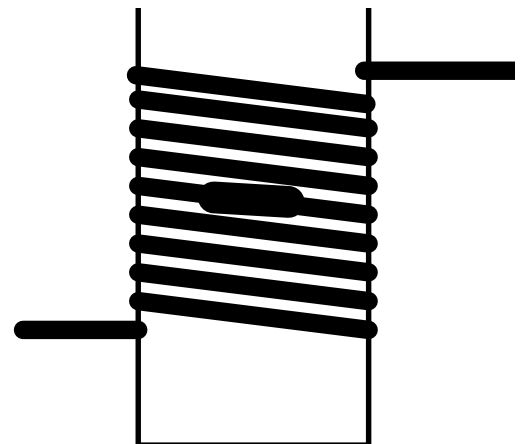


fig. 1

*cables must be wound the same way. Check the other cable and rewind it if it is not like fig. 1. Also, both cable guards will have to be replaced in this case to accommodate the new winding.*

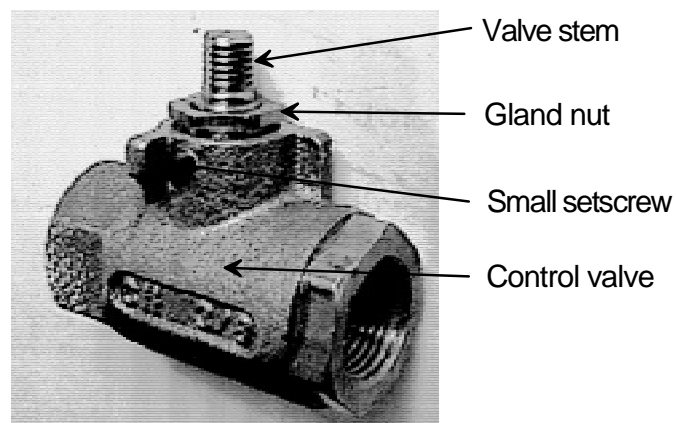
6. The number of wraps will be clear from the length of the cable: the shackle and turnbuckle will only reach when the correct number of turns is on the pipe.
7. Put on shackle.
8. Wrap turnbuckle end and lead up through corner loop at back of unit.
9. Hook turnbuckle and tighten. *Make sure wraps of cable on pipe are evenly wound and tight together as you tighten turnbuckle.*
10. Re-install chrome Adjuster wheel and by swinging wall front and back, *stretch* new cable. Re-tighten turnbuckle.
11. *Repeat* above step *at least a dozen times* to stretch cable, tightening turnbuckle to take up slack.
12. Keep turnbuckle tight - do not be afraid to tighten turnbuckle with new cable.
13. When cable is stretched, it is time to install the cable guard. Slip the cable guard over the windings so that one hook is engaged with the back end of the cable. Loosen the turnbuckle a few turns. Now hold the windings at the bottom of the pipe to keep them from loosening, and with your other hand remove the shackle from the front loop. Continue to hold the windings in place while you work the front end of the cable under the other hook. Re-attach the shackle and tighten the turnbuckle. This process is easier than it sounds as long as you don't let go of the windings. You might want to have someone help with the shackle.
14. *Make sure cable wrappings inside the guard are still tight together when you are finished* - this may involve using the hammer and wrench to tap the windings back together after you have begun to re-tighten turnbuckle.
15. Swing wall front and back to make sure all is working and look for windings that are spread apart.
16. Once more, tighten turnbuckles to remove any slack.
17. Tighten locking nut on turnbuckle.

**\*\*\*\*\*PLEASE re-tighten cables *each* day for the first 4 days to ensure proper working.\*\*\*\*\***

## **VALVE ADJUSTMENT and HYDRAULIC OIL FILL**

The brake-control valve on the Treadwall sometimes needs adjustment after the initial break-in period. If there is any oil leakage from the stem of this valve, the gland nut must be tightened.

1. The valve is accessible from the top of the TREADWALL when the removable panel is taken out and the open frame is rotated to the top of the machine.
2. With a 9/16" wrench, remove the long lever from the control valve. Note the orientation of the lever before removing. Don't untie the strings - just let the lever dangle.
3. Refer to fig. 2 and locate the small setscrew and gland nut on the control valve. The small setscrew (1/16" Allen wrench) keeps the gland nut from loosening during operation of the Treadwall.
4. Loosen the small setscrew approximately 1 turn.
5. Tighten the gland nut with a 9/16" combination wrench or socket. It will only need to be tightened a fraction of a turn. Tighten firmly but do not over-tighten.
6. Re-tighten the small setscrew. Do not over-tighten.
7. Replace the control lever arm onto the valve. Be extremely careful when replacing the valve-stem nut - it is very easy to cross-thread. Tighten this nut firmly
8. Run the machine and check for leaks.
9. If the pump makes unusual noises and operates erratically, you may need to add oil. Remove the filler cap at the top of the pump unit and check the level. When removing the cap, use two wrenches to make sure that the reservoir does not turn and loosen. The oil should come to about 1" from the top. If the level is low, add 30 weight non-detergent motor oil (available at auto-parts store - used in small four-cycle lawnmowers etc.) While adding oil, run the machine around a bit to get out any air bubbles. It is not necessary to make the filler cap too tight - just tighten it firmly.
10. When the machine is operating smoothly, replace the removable panel and side-covers.



*Fig. 2 Valve (detail)*

# WELDING PANEL HINGES.

## Background description:

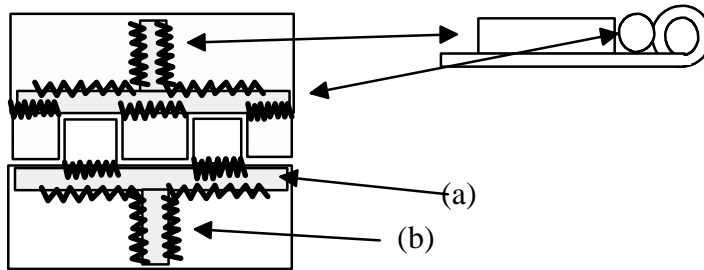
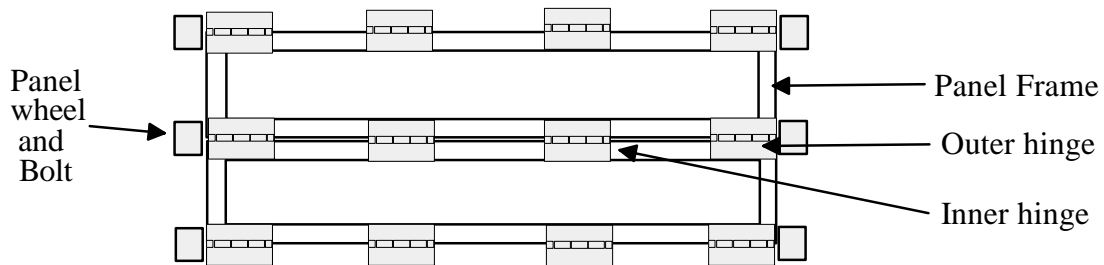
The "Classic" Treadwall units produced in 1990-early 1993 were designed with 1'x6' panels in a rotating belt, connected by four hinges between each panel. The hinges are attached to a 1 1/4" square frame around the back of each panel.

These hinges are prone to failure, and require welded support tabs.

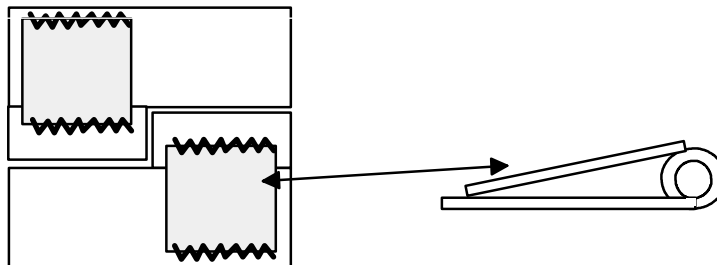
The following is a description of the upgrade work and guidelines for contract welders doing this work in the field.

## Hinges and panel types:

Over the period discussed, a number of different hinge combinations were tried. Depending on the type of hinge, a slightly different approach to the welding should be taken.



Five knuckle hinges:  
Use 1/4" rod to brace as shown



Flag hinges (1/4" or 5/16"):  
Use tabs to brace each knuckle.  
Tabs: 12 ga. sheet steel, 1" square.

**Page two. Hinge Service .**

SPECIFICATIONS FOR DIFFERENT HINGES						
Hinge Type	Metal	Size hinge	Pins	Tab size	Common Name	Sample Manufacturers
Five Knuckle Hinges	0.09 Steel	3"x3" pr.	1/4" (.250)	3/8"rod or 3" by 7/8" flat	"Welders Butt hinge"	Lawrence Mfr. L-8082 riveted; L-8042 loose
Flag-type	0.09 Steel	1.5"x1.5" ea. flag.	1/4" (.250)	1" x 1" flat stock.	Slip or flag hinges	Braun Manu. Chicago, IL #FLJ134848CL 312-276-6502
Flag type (Heavy)	0.12 Steel	1.5"x1.5" ea. flag.	5/16" (.312)	1" x 1" flat stock.	Slip or flag hinges	Braun Manu. Chicago, IL

BOLT AND HARDWARE SIZES				
SIZE	OUTER HINGE	INNER HINGE	NUTS	LG. WASHER
1/4"	1/4" x 4 1/2" Grd. 5 or above	1/4" x 3 1/2" Grd. 5 or above	1/4 x 20 nylon locknuts	1/4" x 2" Fender washer
5/16"	5/16" x 4 1/2" Grd. 5 or above	5/16" x 3 1/2" Grd. 5 or above	5/16 x 20 nylon locknuts	5/16" x 2" Fender washer

**Tools recommended:**

- Portable MIG (110v) and accessories (incl. fireproof cloth)
- Grinder, and heavy duty wire wheel (knotted wire)
- 7/16 nut driver and 7/16" wrenches
- Tabs, extra hinges, axle bolts, washers and nuts(1/4-20).
- (2) 3+" C-clamps

**Procedure:**

1. Remove sidecovers. Tie off brake line for wall to rotate freely.
2. Working inside wall, remove nuts from hinge to be welded. Wire brush painted area to be welded.
3. Weld hinges. Use "C" clamps if necessary. to close gap.
4. Test wall rotation.
5. Replace locknuts previously removed with new locknuts.
6. Check wheel tightness: White wheels should spin freely without excessive side play.
7. Spray bare area with gray primer. Allow to dry.
8. Spray grease on all hinges.
9. Release brake. Test wall (either yourself or staff person climb.)
10. Check adjustment on Bottom Plate .

**Technical Support:**

9-5 weekdays, E.S.T.: Brewer's Ledge Inc. 1-(800)-707-9616  
 After hours and weekends: Conant Brewer (617)-524-8334  
 24 hour fax line: (617)-983-5261.

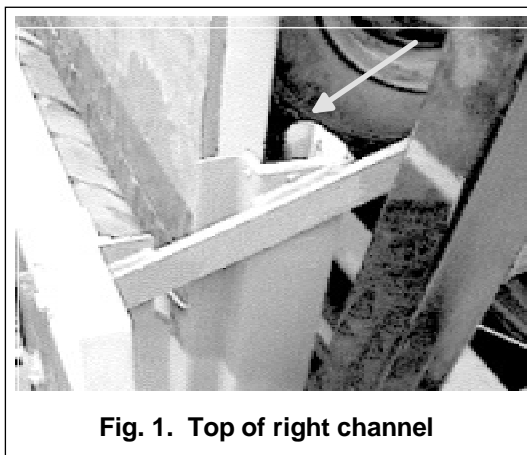


# CHANNEL FLANGES

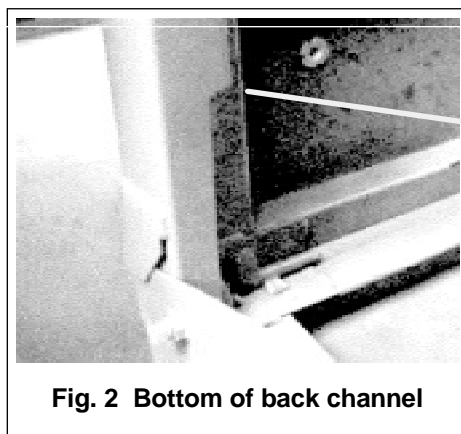
It is important for the smooth running of TREADWALL Classic that the wheels enter the channels without obstruction. If the ends of the channel flanges are not properly prepared, the wheels can catch and in extreme cases, the axles will bend and hinges can break. Check A quick visual check will show whether the flanges are properly bent out.

Fig. 1 shows the top of the right main channel from above. Both channels are bent the same. Note how the flange is bent out at the end. If the flange needs to be bent out, use a large crescent wrench.

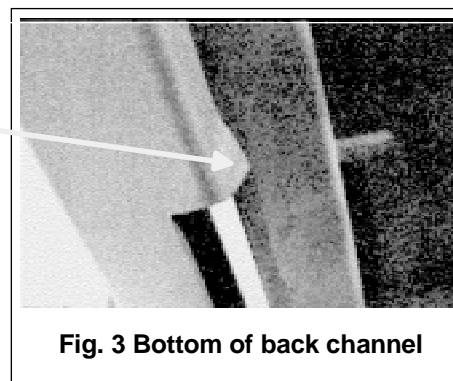
Fig. 2 and fig. 3 show the bottom of the back channel. The flange is on the inside of the channel as shown in fig. 2. This flange can also be bent out with a crescent wrench, and should be done after the channel is installed.



**Fig. 1. Top of right channel**



**Fig. 2 Bottom of back channel**



**Fig. 3 Bottom of back channel**

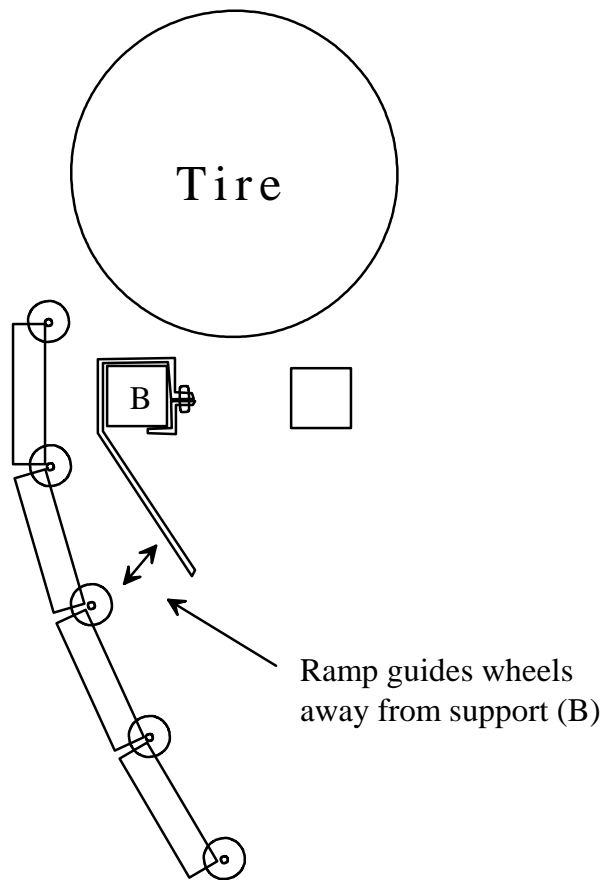
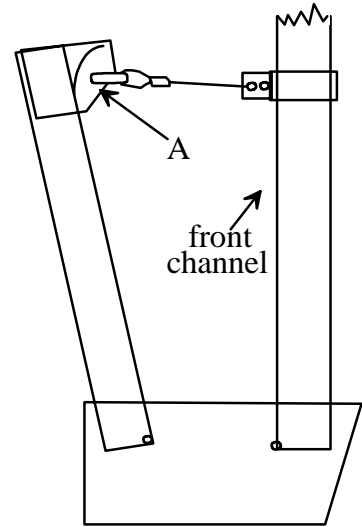
# STABILIZER CABLE AND WHEEL RAMP UPGRADE

The cable and ramp upgrade helps to stabilize the rear wall of the Treadwall and quiet the operation of the machine.

**IMPORTANT: Do not install the cable without the ramp.**

## Stabilizer cable:

Take the lower covers off the right hand end of the machine. Drill a 5/16" hole in the back channel at point A and attach the cable shackle. Clamp the other end of the cable to the front channel using the special clamp attached to the cable.



## Wheel ramp:

On the same side of the machine near the top locate the rear transmission support labeled B in the drawing. The ramp clamps onto this support as shown. The ramp must be lined up with the small white wheels so that as they pass the transmission support they will be guided back and away and will not hit it.