

Mobile Climbing Wall Identification

Product Name: _____

Model: _____

Specialty Items: _____

Serial Number: _____

VIN Number: _____

Date Manufactured: _____

Company Name: _____

Customer Name: _____

Phone Number: _____

Address: _____



*720 West 200 South
Logan, Utah 84321
888-563-0163*

CHANGE OF OWNER/OPERATOR FORM

Original Owner of Wall:

Company Name: _____
Contact name (s): _____
Bill to Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Alt. Phone: _____ Fax: _____

Former Wall Location: _____
City: _____ State: _____ Zip: _____

Date Sold: _____

New Owner/Operator Information:

Company Name: _____
Contact name (s): _____
Bill to Address: _____
City: _____ State: _____ Zip: _____
Phone: _____ Alt. Phone: _____ Fax: _____

Wall Location: _____
City: _____ State: _____ Zip: _____

Wall Information:

CND DAR
Mobile Stationary 24' 32' Other: _____

Serial # _____
VIN # _____
Year: _____

*Please mail or fax to:
Spectrum Sports International
720 West 200 South
Logan, Utah 84321
Attn: Marsha
Fax: (435) 792-3884
888-563-0163 (Toll Free)



ClimbNdangle®/DropARock®
Operations Manual

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Welcome

It is with great pleasure that I congratulate you on your ClimbNdangle® or DropARock® purchase and welcome you to Spectrum Sports International (SSI). We are excited about our products and feel confident that through proper planning, placement and hard work, the ClimbNdangle/DropARock will be a rewarding and profitable purchase. Our philosophy is centered on a commitment to excellence in meeting the needs of our customers, providing a quality product that is safe, exciting and profitable. We encourage you to likewise develop a standard of quality and service that makes you the leader in supplying artificial climbing walls for the amusement, entertainment and special attractions market.

Our part in making our team successful is:

- Commitment to proper, effective and profitable design. Each of our products is stamped by a certified engineer, which means that you can rest assured you have purchased a product that will be safe.
- Manufacturing to “ASTM F-24” safety standards for the amusement industry. Why is this important? Because it demonstrates our commitment to design, operations and most importantly, safety!
- Testing designs before the sale
- Maximum customer throughput generating high profits
- Experience in the industry, from large amusement parks to birthday rental entrepreneurs.
- All manufacturing is done in-house, which provides for exceptional Quality Control.

Your part in building a successful business using Spectrum Sports International products is:

- Commitment to safe operation
- Consistent inspection for proper maintenance
- Effective and active marketing and promotion

We are looking forward to a long and prosperous relationship. Should you have any comments or questions, please do not hesitate in calling.

Sincerely,

Spectrum Sports Team

Copyright© 1996 – 2004 Spectrum Sports International.

Reproduction or translation of any part of this work beyond that permitted by Section 107 or 108 of the 1976 United States Copyright Act without permission of the copyright owner is unlawful. Requests for permission or further information should be addressed to Spectrum Sports International.

Confidentiality Agreement

This manual and the content within this manual are for the exclusive use and operation of the ClimbNdangle and DropARock product, by the owner of the respective product and its authorized personnel and for Spectrum Sports International. This manual is designed to provide accurate and authoritative information in regard to the subject matter covered. This manual may not be reproduced in whole or part in any form or by any means, without the prior written consent of **Spectrum Sports International**.

Confidentiality

This manual contains proprietary information belonging to Spectrum Sports International. It is to be viewed only by persons employed by Spectrum Sports International and/or the ClimbNdangle or DropARock owner and authorized personnel.

Distribution

This manual is not to be distributed to any other persons other than those actively engaged in the operating and/or marketing of the ClimbNdangle/DropARock product and customers serviced by the owner of the ClimbNdangle/DropARock climbing wall.

Disposition

This manual is the property of the ClimbNdangle/DropARock owner and Spectrum Sports International and must be discarded or returned to Spectrum Sports International upon receipt of an updated manual.

Revision

Spectrum Sports International may make periodic additions, deletions and modifications to this manual at any time with out prior notification. These updates will, in the judgment of Spectrum Sports International, add to the quality of services offered.

Notice Of Changes

In the event that revisions are made to this manual, Spectrum Sports International will send the appropriate pages reflecting such changes as are deemed necessary and a revised document will be issued to the individual for replacement. Any pages that are then outdated must be destroyed and discarded.

In the event that replacement pages are sent, Spectrum Sports International will provide a cover letter outlining the revision and the effective date of any procedural changes.

Receipt and Acknowledgment

This Operations Manual is an important document intended to help you become acquainted with the ClimbNdangle/DropARock, Spectrum Sports International and includes guidelines as to safe and recommended operation.

Please read the following statement. Respond to Spectrum Sports International in writing with any questions or if the intent of this document is unclear.

As an owner, I have received and read my copy of the ClimbNdangle or DropARock Spectrum Sports International Operations Manual. I understand that the information outlined in this manual is subject to change at the sole discretion of Spectrum Sports International at any time.

As an owner of the ClimbNdangle/DropARock or authorized representative, it is my responsibility to keep this manual up-to-date with any changes that are made by Spectrum Sports International.. In addition, if there is anything about the product and/or this manual that is unclear or not understood, it is my responsibility to seek clarification and not use the product until the issue is understood.

Unless informed in writing, Spectrum Sports International assumes that the customer understands the ClimbNdangle/DropARock product and that there are no questions regarding the product and/or the contents of this document.

It is the customer's sole responsibility to clarify any question or concern with Spectrum Sports International before use and/or operation.

Training Overview

This manual is an introduction to **the ClimbNdangle/DropARock** and its operation. The purpose of this manual is to provide a compilation of information that will assist you in proper and safe operation.

The philosophy of **Spectrum Sports International** is centered on a commitment to excellence in meeting the needs of its customers and associates by providing them with the enclosed information.

The manual is designed to provide the wall owner with the information, tips, and techniques that will help the owner and employees operate the wall as effectively and safely as possible. This manual is no way a total representation of all facts. Safe operation of this product is the sole responsibility of the wall owner/operator. Good and reasonable judgment must be used when traveling, promoting and/or operating the wall.

Product Overview

ClimbNdangle & DropARock - Welcome to the ClimbNdangle/DropARock product. As the originators and inventors of the Auto-Belay, Spectrum Sports' products are industry leaders in innovation, safety, design and customer satisfaction. Designed for the amusement, entertainment, and recreation industries, Spectrum Sports International products are engineered with safety, customer appeal and customer throughput in mind. Complete with the first redundant Auto-Belay device, the ClimbNdangle/DropARock maximizes profit and safety. Different from other Climbing Walls, the ClimbNdangle and DropARock do not use, what is commonly termed as a belayer (a person who controls the rate of descent of a climber). The reason for this is because of the Auto-Belay devices. With the Auto-Belay devices doing all of the belay work and ensuring safety, the person(s) operating the wall act more like a coach offering encouragement and direction. The ClimbNdangle/DropARock is designed to meet ASTM F-24 standards for the Amusement Industry. In addition, upon request, each unit can be inspected by a third party C.W.I.(Certified Welding Inspector). This means that the ClimbNdangle/DropARock is designed, manufactured, tested, and supported by comprehensive quality assurance and quality control measures to ensure product reliability and safety. The enclosed information is an outline as to the procedures for safe operation and set-up of the product.

What is an Auto-Belay?

The Belay - In order to understand the term Auto-Belay, we must first define the term belayer respective to traditional rock-climbing. The act of belaying can be defined as a procedure of securing a climber by the use of a rope. In recreational sport climbing there are generally two people involved in a climb. A climber, the person climbing the intended surface or structure, and the Belayer, the person who is providing the safety for the climber. The belayer's role is to use two hands on a braking device, which controls the descent of the climber. One of the functions of the belayer is to ensure the rope is stacked carefully to prevent the rope from tangling which would result in the climber dangling. Once the climber asks to come down, it is the function of the belayer to allow the rope to pass through the braking device such that the climber descends at a rate that is not too fast or too slow.

The biggest fears in manually lowering someone as a belayer, is that a belayer could drop the climber out of control, or let the end of the rope pass through the belay device such that the climber falls to the ground. Both of these mistakes have often happened, and to very experienced climbers.

Auto-Belay - Spectrum Sports International is using the term "Auto-Belay" to describe its automated belaying process. Rather than a person acting as the belayer, SSI has developed an air/oil hydraulic system that automatically controls the rate of descent when a climber falls or chooses to come down off the wall. The function of the automated belaying system is to take up the climbing cable as the person climbs. As a climber

climbs the wall, the climber will take weight off of the cable, in which the positive air pressure in the hydraulic system causes the cable to retract or to functionally take up the cable slack. The Auto-Belay system by SSI has developed a system that automates this function. Spectrum Sports' automated system eliminates the need to rely upon a human belayer for every climber, rather; it allows a single person (belayer) to supervise all climbers ensuring safe and proper climbing.

So, with all this said, the Auto-Belay system simply allows a climber to climb the wall without the need of a human belayer. The ClimbNdangle/DropARock, with its Auto-Belay devices, allows for three/four climbers to climb the wall simultaneously with only one person acting as a belaying coach. Whereas in traditional rock climbing, every climber requires a belayer. This simple feature means that when operating a wall for profit, the ClimbNdangle/DropARock generates more profit than a wall requiring human belayers by simply reducing the amount of labor needed to operate the wall.

ClimbNdangle® & DropARock®

The names ClimbNdangle and DropARock are the product names for each products entire system (i.e. Climbing wall and Auto-Belay safety system). The mobile units have been designed to travel down the road in a down/closed fashion. Aerodynamic because of its hallow shape, the mobile units travel relatively easy. As a reminder, please follow any and all rules established by a state or interstate highway system that you would travel in the course of conducting your business or transport of the product. Please abide by all traffic laws and warnings.

There are five styles of mobile units:

- 1) Standard Trailer (single axle & dual axle)
- 2) Folding Trailer (dual axle)
- 3) 32' Mobile 5th Wheel
- 4) 32' Tongue-Pull Folding Trailer
- 5) 32' Tongue-Pull Non-Folding Trailer

“Drop & Go” optional package (steel bracing), which can be added to either standard or folding trailers, which will make it a stationary/mobile combination

Physical Dimensions – The dimensions for both the CND and DAR mobile products are:

ClimbNdangle 24' Mobile

- Width – 8' – 8"
- Travel Height – 8' – 6"
- Length – 28' – 10"
- Standard Trailer when standing vertical – 9' 7" (Width), 28' 10" (Length), 24' 6" (Height)
- Folding Trailer when standing vertical – 9' 7" (Width), 15' 8" (Length), 24' 6" (Height)
- Standard Weight – 3,800 lbs.
- Folding Trailer Weight – 4,000 lbs.

DropARock 24' Mobile

- Travel Width – 7' – 6"
- Travel Height – 9' – 1"
- Travel Length – 28' – 10"
- Standard Trailer when standing vertical – 9' 7" (Width), 28' 10" (Length), 24' 6" (Height)
- Folding Trailer when standing vertical - 9' 7" (Width), 15' 8" (Length), 24' 6" (Height)
- Standard Weight – 4,300 lbs.
- Folding Trailer Weight – 4,800 lbs.

*** When raising a 24' wall, a minimum ceiling height of 26' is required due to the length of the davit at the top of the wall.**

DropARock 32' Folding Mobile

- Travel Width – 7' – 6"
- Travel Height – 9' – 1"
- Travel Length – 38' – 0"
- Folding Trailer when standing vertical - 12' (Width), 20' 11" (Length), 32' 5" (Height)
- Folding Trailer Weight – 7400 lbs.
- 32' Folding Trailer when standing vertical – 10' (Width), 20' 11" (Length), 32' 5" (Height)
- 32' 5th wheel option – 7,000 lbs.
- 32' Tongue Pull/Folding Tongue Trailer – 7400 lbs.

*** When raising a 32' wall, a minimum ceiling height of 34' is required due to the length of the davit at the top of the wall.**

*Spectrum Sports International reserves the right to change any part(s) of described products without prior customer notifications.

24' ClimbNdangle/DropARock folding trailer options:

1. ClimbNdangle/DropARock mobile using the trailer in travel position (straight trailer). The footprint area needed for function, is apx 28' long and 10' wide, with an additional 8' – 8' needed in front of the wall climbing surfaces for belay area (referred to as "safety zone").
2. ClimbNdangle/DropARock mobile using the folding option; the trailer has been hydraulically raised. The footprint is 14' long by 10' wide, with an additional 8' – 8' needed in front of the wall climbing surfaces for safety zone.
3. ClimbNdangle/DropARock mobile with trailer removed. The footprint will be 9' long/deep by 8' wide, with an additional 8' – 8' needed in front of the wall climbing surfaces for safety zone.

24' ClimbNdangle/DropARock non-folding trailer options:

1. ClimbNdangle/DropARock mobile using the trailer in travel position (straight trailer). The footprint area needed for function, is apx 28' long and 10' wide, with an additional 8' – 8' needed in front of the wall climbing surfaces for belay area (referred to as “safety zone”).
2. ClimbNdangle/DropARock mobile with trailer removed. The footprint will be 9' long/deep by 8' wide, with an additional 8' – 8' needed in front of the wall climbing surfaces for safety zone.

Mechanical Engineering Approval – The ClimbNdangle/DropARock have been designed and reviewed by engineers that stand behind the ClimbNdangle/DropARock design. If it is necessary that you receive a copy of the engineering analysis, SSI will provide a copy contingent upon the signing of a “non-disclosure/non-compete agreement”. Please call Spectrum Sports International for details and pricing.

*** CUSTOMER IS RESPONSIBLE FOR FINDING WHAT CURRENT CODES ARE REQUIRED TO OPERATE PRODUCT WITHIN THEIR STATE.**

Required Personnel - The ClimbNdangle/DropARock can be operated with only one person. However, for efficient operations, SSI recommends that at least two people operate the attraction for optimal performance and safety. Spectrum Sports International recommends that one-person act as the climbing coach, supervising any one or all of the climbers and a second person to harness the climber and obtain a parental consent or hold harmless signature. The climbing coach should offer encouragement, entertain the climber and most importantly watch the belay cable to ensure that there is no excess slack in the cable or that the climber does not out climb the Auto-Belay device. The second person in charge of harnessing should ensure the harness is worn correctly.

Hitch and Wiring - To pull the ClimbNdangle standard, single-axle, you will need a 2-inch ball on your vehicle and a female seven - (7) prong-wiring plug (See Appendix F) for wiring. For the DropARock or dual-axle ClimbNdangle, you will need a 2-5/16” ball and a female seven-prong-wiring plug. Remember that your tow hitch must be equipped with an electric trailer brake control. As a note, if you only use your unit for close proximity/cross town type attractions/events, it may be necessary to charge your battery with a 12 V car style battery charger. The ability to raise and lower the wall from the trailer depends upon the battery being fully charged. Short trips will NOT be sufficient to fully charge your battery off the vehicle. Not having a fully charged battery will affect the raising and lowering of the wall. In the event that there is insufficient power to raise/lower the wall, you may need to use jumper cables from a towing vehicle or some type of battery charger. Please note that your receiving “female” electrical connection on your vehicle must terminate as close to the hitch as possible. The “male” pigtail of the trailer is a perfect length for the appropriate turn radius without dragging on the ground. However, if the connection is anywhere other than next to the actual hitch, the pigtail may not be long enough to reach. Refer to Appendix B for Wiring Schematic for the Breakaway Switch.

Setting up the Wall

We highly recommend setting up your wall on a flat surface before your first event, to become familiar with the set up procedure. Remove all shrink-wrap from the factory that is on the Auto-Belay cables inside and at the top of wall. Your wall can be set up on surfaces that have been compacted, blacktop, concrete, established lawns, etc. Do not set up wall if current winds exceed 35mph or a storm is approaching. Make sure the desired location is free from overhead obstacles, utility lines/cables or any other obstacle(s) as the wall is being raised. You need another 18" above the climbing wall to clear the davits as the wall is being raised.

- Check air pressure in all Auto-Belay tanks by looking at pressure gauge (see Auto-Belay Diagram). This should be the first thing to check, it's easier to add air while the wall is horizontal.
- Disconnect trailer from towing vehicle.
- Remove tie down strap from front of wall.
- Pull all belay cables down the front of the wall and attach them to the anchor bolts on the bottom of wall panel, or with one cable down you can climb up the wall and retrieve the other belay cables, one at a time.
- Pull pin and extend jacks out so the holes in trailer and jack arms align. Reinsert pin in hole.
- Pull jackleg pin so the leg drops to the ground. You may have to lift leg up for the holes to align. Reinsert pin.
- Turn the jack handle so it starts to lift the trailer and then go to another jack and repeat until the entire trailer had been raised 4" off the ground. This is to ensure that the metal base of the wall does not drag on surface while being raised. This is the most time consuming procedure but is important so the individual jack is not being side loaded, which will shear the roll pin inside.
- If you have a **non-folding trailer**, the use of the drop jack is necessary to keep the trailer supported as the wall is being raised. You will need shims (pieces of plywood or something similar) beneath the leg of the drop jack.
- If you have a **folding trailer**, you need to remove the bolts on the bottom of the trailer (under the hinged/folding area). Remove any extras that you may have added to the tongue of the trailer before raising the wall. Press the "Trailer/Tongue UP" button on the remote and hold until the tongue is at a 90° angle. Disconnect remote from trailer.
- Level the trailer from front to back and side-to-side, this is important for the base of the wall when it is vertical, if needed, add shims under the base of the wall to stabilize wall on uneven surfaces.
- Remove cover cap from pendant (remote) plug socket, which is located on the driver's rear side of trailer. Carefully insert the yellow pendant (remote) plug end into socket; it will only go on one way. Be careful not to force plug into socket, the pins are small and can break off. Secure plug by threading black ring into plug socket.

- Press the “UP” button and hold it down the entire time as the wall is being raised. If you have to stop while raising the wall, wait until the wall stops moving before you restart. Once again, make sure there is proper clearance for the arc of the wall before raising the wall.
- Release the “UP” when the wall is 90 degrees to the trailer. You can make fine adjustments to the wall but wait until wall stops moving in between adjustments.
- Lower the entire trailer by the use of all the jacks so the base of the wall (steel base, not fiberglass base) is flat against the surface. Remember to rotate from jack to jack so not to put a side load onto jacklegs. The weight of the wall needs to rest on the metal triangle frame on the base of the wall.
- The use of shims might be needed to compensate for irregular surfaces. Shim ONLY the metal frame, not the fiberglass panel. This will greatly add to the stability of the wall.
- While holding onto a belay cable, unlock the carabineer and allow the cable to retract overhead (not letting go of the cable) and then pull it to the ground. This is referred to as “priming” the system to remove any air pockets or bubbles from the hydraulic hoses. Repeat this until you feel constant resistance on the down stroke. This procedure will have to be performed each time the wall is raised to eliminate air from belay cylinders. Repeat this procedure with each of the belay cables. We recommend you climb each of the routes at least once to make sure that each belay cable has constant resistance.

Take Down of the Wall

At the end of an event or use of the wall, please take the following steps to ensure safe and proper takedown of the wall.

- Raise the steel base of the wall off the ground 2 inches using the trailer jacks.
- Connect the remote control to wall.
- Ensure that it is safe to lower the wall, making sure there are no overhead obstructions in the arc path. Press and hold the “Down “ button the entire time the wall is lowering. If you have to stop while lowering the wall, wait until the wall stops moving before you restart.
- You want to release the “Down” button when the wall is firmly on the front catch. After the wall is completely down do not continue to hold the “Down” button, it will cause the lifting cylinder to completely retract pulling the trailer and wall together.
- Attach the tie-down strap from the front of the wall to the front catch and ratchet it tight.
- Lower the trailer, making sure to rotate from jack to jack until the tires are resting on the surface. If you have a non-folding trailer, raise the drop jackleg first, in front of fenders.
- Pull jackleg pin, raise the jackleg to the highest pinhole and insert pin. Continue to fully raise the jackleg to the highest possible position. Stop turning jack handle when you feel resistances.
- Pull jack arm pin and slide in jack towards trailer. Align both holes and insert pin to hold jack during traveling.
- Attach towing vehicle to trailer and insert hitch closure pin and secure hitch.
- When attaching the safety chains to towing vehicle, crisscross them to form an “X”.
- Secure trailer plug.
- As always, make sure to obey all traffic laws and regulations.

Inspections & Preventative Maintenance

Daily Inspections

Please note that these inspections guidelines are a minimum. Please take caution and ensure that any and all working parts and safety related products are thoroughly inspected and that all bolts are secure before use.

- **Cables must be inspected daily.**
Replace cable(s) if one of the following is true.
 1. A single broken wire in any strand any place on the cable
 2. If the cables have been on the ride/wall for 1 year
 3. If there are any twists, frays or kinks
 4. If you have purchased a used wall.
 5. If any of the individual wires in a strand have a flat spot than $\frac{1}{2}$ the diameter of the smallest wire.
- **Inspect the retraction of the cable on each Auto-Belay.**
 1. Mobile walls will need to be vertical
 2. One operator manually extending the cable (rope tied to carabineers) to the top of the wall while a second operator inspects the retraction of the cable to ensure there is no cable slack behind the wall panel.
- **For proper Auto-Belay function make sure that the air pressure 85-90 psi.**
 1. Look at pressure gauge on Auto-Belay tank.
 2. This is the same for a 24' and 32' wall.
- **Inspect oil level.**
 1. Do this when the cable is anchored at the bottom of the wall panel.
 2. Mobile walls will have to be vertical to check oil level.
 3. One quart will fill up 3.5" of the tank.
 4. Use ISO 32 hydraulic oil. Here is a variety of brand names that will help you find this type of oil; Texaco Rando 32, Chevron AW-32, and Mobile DTE-24.
- **Make sure to check the function of each swivel and carabineer.**
 1. Read and understand the Petzl manual for each.
- **Tighten loose handholds.**
- **Breakaway System**
 1. Check battery charge and switch operation before each use. Refer to Dexter Axel Operation & Maintenance Manual (included in Climbing Wall Manual).

Please note that these inspections guidelines are a minimum. Please take caution and ensure that any and all working parts and safety related products are thoroughly inspected and that all bolts are secure before use.

Weekly Inspections (in addition to Daily Inspections)

- ❑ **Maintain a fully charged battery.**
This will greatly depend on the use of the wall in a week's time. A battery charger will be required to do this. Refer to Battery Manual insert included with wall manual.
- ❑ **Tire Pressure**
Check the pressure of all tires including the spare. Inflate to manufactures specifications.
- ❑ **Inspect all pulleys.**
Pulleys on a mobile wall can be inspected while the wall is in the down position, ground level.
- ❑ **Visual inspection**
Visually inspect all structural components; Wall Frame, Davits, Trailer, etc. for damage or cracking.

3 Month Inspection (in addition to Daily and Weekly Inspections)

- ❑ **Grease pivot zerks** (located at the rear of trailer where wall and trailer connect.).
- ❑ **Grease all wheel bearings.**
Refer to Dexter Axle operation and maintenance manual.
- ❑ **Grease hitch ball and trailer hitch.**
- ❑ **Brake adjustment.**
Refer to Dexter Axle operation and maintenance manual.
- ❑ **Wheel nuts and bolts.**
Refer to Dexter Axle operation and maintenance manual.
- ❑ **Tire condition.**
Refer to Dexter Axle operation and maintenance manual.
- ❑ **Oil level in hydraulic power unit.**
 1. With the wall in the down position, oil level should be 2"- 2 ½" from top. Do not over fill. Use ISO 32 hydraulic oil. The following are several ISO 32 oil brand names; Texaco Rando 32, Chevron AW-32 or Mobile DTE-24.
- ❑ **Check all hydraulic hoses**
Check all hoses for external wear, cracks, splits, etc. Call if you have any questions.

Annual Inspection (in addition to Daily, Weekly and Quarterly Inspections)

Replace ALL cables annually.

Replace all bolts and nuts securing all pulleys on wall annually.

Change oil in Auto-Belay's annually.

Re-torque all nuts and bolts on wall annually.

Replace all Quick Links annually on front and back of wall.

Trip Preparation Checklist

1. Check hitch. Is it showing wear? Is it properly lubricated?
2. Fasten safety chains and breakaway switch actuating cable. Make certain the breakaway battery (battery at the rear of trailer) is fully charged.
3. Make sure in-line fuse to battery is okay, not burned.
4. Inspect towing hookup for secure attachment.
5. Do not overload! Stay within your gross vehicle rated capacity.
6. Inflate tires according to manufactures specifications; inspect tires for cuts, excessive wear, ect.
7. Check wheel-mounting nuts/bolts with a torque wrench. Torque, in proper sequence, to levels specified in the Dexter Axle Operation and Maintenance Manual. **Check and re-torque after the first 10 miles, 25 miles and again at 50 miles.** Check periodically thereafter.
8. Make certain brakes are synchronized and functioning properly.
9. Check operation of all lights
10. Check that your trailer is towing in a level position and adjust hitch if required.

Wall Storage (Winterization)

If your wall will not be in service for a period of 30 days or more, we recommend the following procedures to keep your wall free from defects and in optimal operating condition.

- Store cables so Auto-Belay cylinders are retracted at bottom of climbing wall).
- Depressurize (release air pressure) from belay tanks.
- Disconnect battery cables from battery (disconnect ground cable first). Store battery indoors (off the ground).
- Lubricate the T-nuts and handhold bolts with silicone lubrication spray from backside of climbing wall.
- Cover the horn with a plastic bag.
- Remove swivels and carabineers and attach cable to bolt hanger with quick link.
- Store trailer on jacks, not tires.
- Lubricate the trailer plug, hose fittings, power unit and cylinder rod on folding trailers with silicone spray to keep from rusting.
- Store entire trailer under roof or tarp.
- Grease pivot pins, jacks and trailer hitch.
- Refer to Dexter Axle Service Manual for axle and wheel care

If you have any questions or concerns, please call Spectrum Sports International at (435) 792-3883 or toll free (888) 563-0163.

Cleaning and Maintenance

Under no circumstances should any unqualified person(s) service the unit. Any work to the steel frame, fiberglass body, hydraulic Auto-Belay and cabling should be performed by an experienced person in the field of service who is certified, bonded, etc., to perform the work. It is the owners' responsibility to ask for such certification and/or bonding verification. Cleaning of the unit should be similar to an automobile (i.e. car wash with spray washers and mild detergents). For harnesses, please refer to the original manufactures' recommendations. Handhold cleaning is best performed using a "citrus degreaser" (type of detergent) and a sprayer at a local car wash.

ClimbNdangle/DropARock®
**Preventative Maintenance
 Schedule**

Inspection Date: _____

Inspected by: _____

Daily

- Auto-Belay Cable – Check every inch of cable for fraying, if frayed, **replace cable immediately.**
- Auto-Belay Cable Ends – Ensure that there is no broken strands by crimp.
- Auto-Belay Cables are tracking along pulley’s without restriction.
- Ensure there is no cable slack in front or behind the wall.
- Harness Stitching – If stitching is pulling apart, send to Spectrum Sports International for repair or **replace immediately.**
- Air Tank Pressure – Pressure Gauge reading between 85 psi. – 90 psi. for 24’ and 32’ walls.
- Carabineer – If the auto locking Carabineer is not locking positively or sticking open, **replace immediately.**
- Ensure the swivel turns freely. .

Weekly

- Pulley Wear – Inspect pulley’s closely to ensure proper function, replace if worn.
- Hydraulic Hose – Inspect for road damage and proper function. No leaks!
- Tire Pressure – On mobile units, check tire for proper pressure
- Lug nuts – Make sure lug nuts are secured and that they are NOT rusting into place. Rust/corrosion will inhibit a tire change, if necessary. If needed, back off the lug nut and re-secure. You may want to use a rust inhibitor for lubricating and protection purposes.
- Cable Slack – With rope; test the full length to ensure proper Auto-Belay function.

Note: At a minimum, please make copies from this page and use as directed!
 Thank you and have Fun!



Issue Date: 7/18/2003
M & SD-1001

Maintenance and Safety Directive

Reference: Auto-Belay cable and hardware replacement schedule

Introduction:

Due to several unfortunate accidents in the climbing wall industry that have been caused by climbing cables (wire rope) and related hardware issues, Spectrum Sports International is issuing this M&SD, which is to inform owners and operators of their responsibility to maintain cables and hardware for safety reasons. It should be noted that Spectrum Sports International customers have not had a cable/hardware failure to this date. We want it to stay this way. *It should be noted that the issues/accidents have not been a fault of engineering and manufacturing, but have been a result of inadequate inspection and maintenance. It is absolutely necessary to do daily inspections and regular maintenance, so no accidents!*

This Directive is being sent to each jurisdiction so that the jurisdiction inspectors will know the requirements for the inspection of cables and hardware and require that they be replaced per this Directive. This is for all Spectrum Sports International climbing walls, mobile and/or stationary models. It is also being sent to insurance providers so they will know what to expect of their customers.

Background:

Spectrum uses ¼ inch class 6 x 37 cables (wire rope) with a 4500 lb minimum rated static strength. With a 250 lb climber, the safety factor is 18. Quasi-static testing of the each spool of cable has given results of actual strength 4500 lbs to 6500 lbs and Impulse testing has given results of 3900 to 5000 lbs. The pulleys diameter provides a (D/d) of 23 which fall within the Wire Rope Corporation of America listed minimum (D/d) for 6 x 37 rope range of 20-26.

Even though the cable has a good safety factor and is within the accepted ranges, it is continually being flexed under load as it moves around the pulleys. The flexing causes fatigue in the wires that make up the cable. In addition, moisture and dirt are pulled into the cable bundles and center core of the cable. This contamination causes corrosion that reduces the life of the cable. As the cable is used it wears the wires so they become damaged. The fatigue, corrosion and wear make the cable a component that has a limited time life or in other words, the cable only lasts for a limited time. It must be inspected carefully on a regular basis and replaced a minimum annually, whether the cable looks bad or not.

Spectrum has cycle tested the cable and has found that the cable put on SSI products will cycle an average of over 40,000 climbs before any failure occurs. Giving it some safety factor, it should be replaced at 35,000 to 40,000 climbs. If you are doing a lot of climbs, then the cables should be replaced more often than the required 12 calendar months. The cable and hardware should be replaced if the cable ever sees 40,000 climbs. **Safety should be the first consideration!**

It should also be noted that all cable is not manufactured to the same standard. It is not recommended that you run down to the local hardware store and buy whatever ¼ inch cable they carry. Spectrum buys a specific class of cable, tests each lot to assure that the cable meets engineering requirements stated on the cable manufactures Certificate of Conformance and then makes-up the cables to meet engineering requirements.

The ends of the cable are terminated with 2 each F6-Oval 1-1/4 zinc coated Copper swage sleeve connector using the correct swaging crimper and go-no-go gages. A critical inspection point is at the junction of the cable to the swaged sleeve.

The hardware associated with the cable – pulleys, pulley bolts, quick links, swivels, carabineers, bolts, pulley cart bearings, etc –are also subject to fatigue and wear and thus become time life components. Failure to do the inspection and replacement may result in a failure, which in turn results in injury or the death of a customer. **If we don't take care of safety, insurance will become so costly that there will not be climbing walls.**

Action:

Regardless of ownership we have taken steps to inform state inspectors, insurers and/or new or old operator/owners of any of our climbing wall products of the following mandated actions:

1. NEW SPECTRUM POLICY: A warning sticker will be placed upon each new Auto-Belay device that is installed on a wall or sold to a customer stating "IT IS MANDATORY THAT EACH CABLE IS REPLACED WITH A CERTIFIED SPECTRUM SPORTS INTERNATIONALCABLE EVERY 12 CALANDER MONTHS FROM DATE OF PURCHASE. REFER TO YOUR OWNERS MANUAL".
2. MAINTENANCE AND SAFETY DIRECTIVE: M&SD-1001,

Reference: Auto-Belay cable and hardware replacement schedule has been developed and will be sent to all of SSI's customers/Spectrum wall owners along with 3 or 4 each of the warning stickers. The warning sticker shall be attached by the customer to the Auto-Belays in a prominent place as a reminder to wall owners to replace the cables and hardware.

3. REPLACEMENT PARTS: Cables will be serialized starting August 1, 2003 and will have a Serialized Certificate of Conformance accompanying each cable. This means that all cables on all customer owned Spectrum climbing walls will have Serial Number tags by August 1, 2004. Any wall after August 1, 2004 that does not have serialized cables will be in violation of Spectrum Safety requirements and should be taken out of service.
4. WALL OWNERS/OPERATORS SHALL DO ONE OF THE FOLLOWING:
 - a. NO MATTER THE AGE OF THE CABLE: The owner or operator should replace the cable (wire rope) if any of the following conditions are true:
 1. If any of the individual wires in a strand have a flat spot of more than $\frac{1}{2}$ the diameter of the smallest wire.
 2. If there is a single broken wire in any strand.
 3. If there are 40,000 or more climbing cycles on a wall.
 4. If the cables have been on the wall for 12 calendar months.
 5. If there are any twists, frays, or kinks.
 6. If there is any signs of corrosion on strands or individual wires.
 - b. WALLS LESS THAN 12 CALENDAR MONTHS OLD: Inspect the cables and hardware prior to each day's use of the wall. The inspection should include a careful visual inspection of the entire cable and hardware, and a physical inspection by wrapping a rag around the cable and sliding it full length of the cable in both directions to determine if a wire strand is broken. If any single wire strand is broken, the cables should be replaced before further use. **Record the inspection in the walls daily maintenance and safety log.** Change the cable and hardware with Spectrum Certified parts when the wall is 12 calendar months old.
 - c. CABLES HAVE BEEN CHANGED LESS THAN 12 CALENDAR MONTHS AGO: Inspect the cables and hardware prior to each day's use of the wall. The inspection should include a careful visual inspection of the entire cable and a physical inspection by wrapping a rag around the cable and sliding it full length of the cable in both directions to determine if a wire strand is broken. If any single wire strand is broken, the cables should be replaced before further use. **Record the inspection in the walls daily maintenance and safety log.** Change the cable and hardware with Spectrum Certified parts when the wall is 12 calendar months old.
 - d. CABLES HAVE BEEN IN SERVICE FOR 12 OR MORE CALENDAR MONTHS: The wall should be removed from service and the cables and hardware **shall** be replaced with Spectrum certified parts before any further use of the climbing walls. No exceptions! Use of cables and hardware after 12 calendar months is a violation of Spectrum's maintenance and safety standards. No exceptions!

- e. **CABLES THAT HAVE BEEN REPLACED WITH NON-APPROVED CABLE:** The wall should be removed from service and the cables and hardware shall be replaced with Spectrum certified parts before any further use of the climbing wall. No exceptions! Use of cables and
 - f. hardware after 12 calendar months is a violation of Spectrum's maintenance and safety standards. No exceptions!
 - g. **WALLS THAT HAVE CONSISTANT HEAVY USAGE:** If the wall has a lot of usage every day for most of the year, it may go over 40,000 climbs in a year. Also, if the cables are exposed to high humidity (particularly close to a salty environment) they may experience excess corrosion and stress corrosion of the single wire strands. **Any signs of corrosion require that the cables be replaced** with Spectrum certified parts. Safety is the key issue!
5. **REPLACING OF PARTS:** Customers may do their own work on their walls if they have the proper tools and equipment or they may have Spectrum trained and certified service personnel do the replacement and annual inspection. Authorized parts (serialized cables) and service should be ordered from Spectrum's Service Manager:

Kevin Bethers, Service Manager
Spectrum Sports International
1-435-792-3883
Email:
Kevin@spectrumsports.com



Issue Date: 3/18/2004
M & SD-1002

Maintenance and Safety Directive

Reference: Carabiners

Introduction:

PETZL has recently issued a safety bulletin on carabiners. They have outlined the correct use of carabiners for rock climbing, commercial climbing, climbing in gyms, on mobile walls and amusement parks. Petzl's direction should be followed by all climbers. Spectrum Sports International is mandating that the following be done immediately to prevent any possible accidents.

Background:

Original directive was sent by Hank Moon, Technical Information Manager, Petzl America. Portions of the directive are quoted below.

Subject: IMPORTANT SAFETY BULLETIN ON CARABINERS

Please read carefully and take note of the following:

The best method to attach a belay rope to a climbing harness is to tie the rope directly to the harness using a rethreaded figure 8 knot. However, Petzl understands that from a practical perspective, there are times when locking carabiners may be used as a more expedient means of attachment, especially in commercial climbing operations. When locking carabiners are used to attach a belay rope to a climber's seat harness, it is very important to remember that:

- Two (2) locking carabiners must be used with gates opposed and locked; **Never** use a single carabiner to attach a belay rope to a harness.
- This attachment method may be used only for top rope climbing. With no slack in the rope. For lead climbing, the rope must be tied directly to the harness with the rethreaded figure 8 knot as shown on the harness label, and in the technical notice which comes with each harness.

This information is found in Petzl harness and carabiner technical notices. Petzl technical notices are available in pdf format on Petzl's website at www.petzl.com. It is your responsibility to ensure that the technical information that comes with

every Petzl product reaches the user of the product(s). In addition, we ask that you forward the information in this letter to all of your customers who may use locking carabiners to tie into a harness as described above, especially commercial climbing operations such as gyms, mobile walls, and amusement parks.

Thank you for your attention to this matter and please do not hesitate to contact Petzl Customer Sales & Support (877-807-3805) with any questions.

Hank Moon
 Technical Information Manager
 Petzl America

SSI Action:

Regardless of ownership we have taken steps to inform state inspectors and/or new or old operator/owners of any of our climbing wall types of the following mandated actions:

6. **NEW SPECTRUM POLICY:** All stationary or mobile climbing walls using Auto-Belays shall have a Swivel on each belay cable that will accommodate two (2) carabiners. Two (2) locking carabiners shall be used on belay cables with gates opposed and locked into the climbers harness; **Never** use a single carabiner to attach a belay rope or cable to a climbers harness.
7. **MAINTENANCE AND SAFETY DIRECTIVE:** M&SD-1002,
Reference: CARABINERS has been developed and will be sent to all of SSI's customer/Spectrum wall owners.
8. **ADDITIONAL CARABINER:** Carabiners may be obtained from SSI immediately (1-435-792-3883).
9. Spectrum shall notify all wall owners, operators, and governmental agency by this directive.

OWNER/OPERATOR ACTION:

1. **WALL OWNER/OPERATOR SHALL DO THE FOLLOWING:**
Immediately install a second carabiner through the gold end of the swivel with gates opposed {two (2) carabiners on each belay cable} and ensure that both carabiners with gates opposed are hooked into the climber's harness correctly and locked before allowing any person to climb the wall.
2. **SSI recognizes that it may take a little time to comply with this policy since you may not have extra carabiners on hand. By April 30, 2004 all owner/operators shall comply. No wall shall be used after April 30, 2004 without two (2) carabiners at the end of each cable. (call to order carabiners: 1-435-792-3883)**

For service questions contact :

Kevin Bethers, Service Manager

Day-to-Day Operations

Now that the ClimbNdangle/DropARock is set-up and ready for operation and you've performed the appropriate inspections, its time to address the issues of proper climbing.

Equipment - All climbing runs are set up with Petzl auto-locking Carabineers. We strongly recommend the Petzl, M18 auto-locking Carabineers because of the auto-locking mechanism safety feature. In addition, we recommend the Petzl Pandion Harness. This particular harness does not require a double-over requirement for securing the strap that other climbing harnesses require. Not only is the Pandion a safer harness, it is a harness that participants can secure with little help from the climbing coach because the harness is more straightforward and simpler to fasten. For children, we recommend the Petzl Ouistiti (full body) climbing harness. Any of these products can be ordered from Spectrum Sports International for apx. the same cost as any local climbing retail store.

For maximum through-put, we recommend that a second person (harness assistant) other than the climbing/belay coach, make sure the climbing harnesses are tight and secure and are being worn properly. Having several climbers harnessed and ready to go ahead of time will result in maximum utilization of the wall.

Belay Coach & Harness Assistant- The belay/climbing coach is responsible for proper climbing. His/her role is to ensure that the participant understands the rules and double checks the harness and equipment to check for appropriate wear and function. The belay coach is also responsible to make sure that there is NO CABLE SLACK in the climbing line. In addition, the belay coach should be the ONLY non-climbing person in the 8' rappelling area in front of the wall. At Spectrum Sports, we refer to this area as the "Climbing Zone" and its purpose is to provide a safe area whereby a climber can rappel without fear of coming down onto another person. The belay coach has the responsibility to ensure that each climber is safely directed out of the climbing zone and back to the harness area for removal of the harness after his or her completed climb. The belay coach should offer positive words of encouragement to both climbers and spectators. The more fun the belay coach can make the experience for the climber, the more enjoyable the event will be for the participant. Happy customers result in repeat business. The belay coach will be asked questions from the crowd and should try to answer questions without taking their eyes off of the climber. In an effort to assist the belay coach, the harness assistant should try to address all questions, if possible. This will allow the belay/climbing coach to manage the climbers on the wall effectively.

Harness assistant – This person's responsibility is to make sure the harness is being worn correctly for climbing (i.e. small children in a children's harness, a small to large person in the adult large harness, and a large adult in the adult extra large harness). In addition, the harness assistant should recite the rules to the climber such that after the belay coach reviews the rules, each climber will have heard the rules twice. The harness assistant should try to take an active role in answering all questions from the crowd so that the belay coach's attention is with the climbers. The harness assistant should always watch the wall in an effort to assist the climbing/belay coach in proper climbing.

Rules and Safety Tips - First, insure the climbing coach has double-checked the wearing of the harness and has properly instructed the climber on the climbing rules; which are:

1. Climbers stay within the respective climbing route, generally marked with different color handholds. If matching handholds, the four-foot area directly under the belay cable outlines the climbing area.
2. No swinging from side to side.
3. No stepping on the belay cable.
4. No climbing if cable does not retract.
5. Communications with the climbing coach only, no distracting other climbers with idle conversation.
6. When rappelling, keep the kick-off distance to a minimum (apx. 2 – 3 feet from the wall).
7. No climbing with shoes without toes or toe protection (i.e. no sandals, thongs, etc.).
8. DO NOT allow a climber to climb beyond the wall top. A climber should never climb higher than head high to the top of the wall.
9. The weight range for the wall is 40lbs. (or minimum height of 36”) – 250lbs. It is possible for a child weighing less than 40 lbs. to climb the wall as long as the climbing harness is properly fitted and they are 36” in height. In the event a child weighs less than 40 lbs, a climbing rope may need to be attached to the child’s harness to aid in the child being pulled down after the climb since the safety system needs apx 40 lbs of pressure to allow a child’s descent.
10. Do not allow someone to sit and bounce on the belay cable when finished rappelling. Have them rappel onto their feet.

As a note, it may be necessary for the climbing coach to climb the wall to retrieve a child who may be frozen in place, on the wall, afraid to come down after they have climbed to a specific height.

By way of recommendation, as the climber climbs the wall, the belay coach should be interactive by offering positive words of encouragement and possible hand or foothold selection. As a climber rappels after having climbed to the top, make sure the area on the ground is free of any individual who could possibly get in the way of the repelling climber. The distance we recommend is apx. eight (8) feet from the front surface of the climbing wall. The only person who should be in this eight-foot area is the climbing coach. Upon the completion of a climb, the climber must wait for direction from the climbing coach before proceeding to the harness area for removal of the climbing harness. Likewise, the upcoming climber must be advised by either the climbing coach or the second person ensuring proper fitting of the harness before proceeding to climb on the wall. This will ensure that a rappelling climber will not descend onto an upcoming climber. ***As an additional note, although Climbing Helmets are not required, we strongly recommend their use.***

Routing the Wall – For stationary units, this involves climbing the wall to a given area, hanging on the wall, and with the provided handhold wrench, tightening, removing or moving the handholds. For mobile units, the task of handhold adjustment will be with the wall in the down position, using a ladder, and walking along the top of the wall.

Note, be very careful when climbing onto and walking on the wall. Morning dew or rain can cause the wall to be slippery. Lack of caution will cause you to fall.

Entertainment Tips – Never forget that your ClimbNdangle/DropARock is a fun attraction and will draw attention. Use this unique feature to book company picnics, birthday parties, corporate promotion events, special events, public attractions, fairs and festivals, to name a few. Never forget that the wall can be equipped for corporate advertising, generating revenue up and above the charge by the climb revenue. The belay coach should be someone who enjoys people and has a positive rapport with people, making your attraction fun for the entire family. Remember that this wall was not necessarily designed for professional climbers. Route the wall for the intended market – those who have always wanted to give rock climbing a try. The ClimbNdangle/DropARock is a product designed for fun!

Marketing Ideas to Consider

This information is in no way comprehensive. It is a dynamic list that keeps growing. However, for the purpose of brainstorming and generating ideas, the following are marketing considerations.

- Corporate Sponsorship
- Sports Event Marketing
- Fairs
- Parties
- Charity Events
- Graduation Parties
- Tourist Attractions
- Trade Shows
- School Events
- Amusement Park Lease
- Street Festivals
- Radio and Television Station promotions
- Etc.

Make sure to work with your local Chamber of Commerce, Convention Bureaus, Non-profit Organizations and Advertising/Public Relations Firms to ensure your wall is marketed to its fullest.

In addition to marketing your wall in the above manner, remember that SSI has several theme-oriented packages that can be added to the walls, making your wall stand out from other attractions or walls. One of these themed additions is SSI's addition of the SpeedRock™ package, a drag racing theme and timer system. This theme promotes additional revenue through repeat climbers engaged in a competitive challenge.

Conclusion

This guideline has been written to assist in the proper installation and operation of the ClimbNdangle/DropARock. SSI has tried in its best effort to address relative issues; however, there may be additional information learned or situations that occur that we are unaware of at this time. Please, do not hesitate to call with any technical questions, Monday thru Friday 8:00 a.m. to 5:00 p.m. Remember, there may be questions, issues and/or concerns that may arise through the use of this product that are not listed or addressed in this manual, please call Spectrum Sports International and we will provide any additional documentation or diagrams that are needed. It is the responsibility of the owner and/or operator of this product to contact Spectrum Sports International if any questions or concerns arise. As with any amusement device, physical harm can occur and operators and participants must realize that this product is a physical activity and that proper care should be taken to ensure safety. **Please exercise good common sense and good judgment while operating and transporting the ClimbNdangle/DropARock®.**

Warranty

The warranty is established from the date of a signed receipt and acknowledgement along with a signed product warranty (refer to the following page).

Should it be determined that the defect is due to abuse or misuse, any and all warranty rights or responsibilities are void. Spectrum Sports International reserves the right to void warranty service on any modification to product done by customer

Please refer to the following pages for the Limited Warranty Acknowledgement. Warranty will NOT be effective unless registered, by completing this form and mailing to Spectrum Sports International within 15 days of purchase.

LIMITED LIABILITY WARRANTY

Equipment manufactured by Spectrum Sports International, 720 West 200 South, Logan, UT 84321 is warranted free from defect in material and workmanship for a period of 90 days from the date of purchase. Equipment not manufactured by Spectrum Sports International is covered to the extent of warranty provided by the original manufacturer and this warranty does not cover any equipment, new or used, purchased from anyone other than Spectrum Sports International. All replacement parts shall be covered under warranty for a period of 90 days from date of purchase. **SPECTRUM SPORTS INTERNATIONAL MAKES NO OTHER REPRESENTATION OF WARRANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, WITH RESPECT TO THE GOODS SOLD HEREUNDER, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE.**

Spectrum Sports International's sole obligation under this warranty shall be to repair or replace any part or parts which, to Spectrum Sports International's satisfaction, prove to be defective upon prepaid return to Spectrum Sports International, 720 West 200 South, Logan, UT 84321. In such a case, once the necessary repair(s) has/have been made or a replacement part secured, Spectrum Sports International will pay the cost to return the item back to the customer. This obligation does not, however, include labor to install replacement parts, nor does it cover any failure due to accident, abuse, neglect, or use in disregard of instructions furnished by Spectrum Sports International. In no event shall damages for defective goods exceed the purchase price of the goods, and **SPECTRUM SPORTS INTERNATIONAL SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER.**

All claims in regard to the parts or equipment must be made within ten (10) days after Purchaser learns of the facts upon which the claim is based. Authorization must be obtained from Spectrum Sports International prior to returning any equipment, components, or parts. This warranty is voided by failure to comply with these notice requirements.

Production output is dependent on feed stock, input, and many other variables beyond the control of Spectrum Sports International and therefore, Spectrum Sports International makes no guarantees expressed or implied as to production performance.

NOTICE

The warranty on Spectrum Sports International equipment remains valid only when genuine Spectrum Sports International replacement parts are employed. If purchaser defaults in making payment for any parts or equipment, this warranty shall be void and shall not apply to such parts and equipment. No late payment or cure of default in payment shall extend the warranty period provided herein.

Spectrum Sports International is not responsible for damage to any associated instruments, equipment or apparatus nor will Spectrum Sports International be held liable for loss of profit or other special damages for any reason. The Buyer, their employees, agents and successors in interest assume all risks and liabilities for the operation, use and/or misuse of the product(s) described herein and agree to indemnify, hold harmless and defend the seller from any and all claims and actions arising from any cause whatsoever, including sellers negligence for personal injury incurred in connection with the use of said product(s) and any and all damages proximately resulting there from.

CAUTION

Only technically qualified individuals who have fully read and understand the provided instructions should operate the equipment. The equipment should be operated only in accordance with these instructions. The operator should follow all of the warnings and cautions set forth in the manual and the operator should follow and employ all applicable standard laboratory safety procedures.

LIMITATION OF REMEDY

During the period of warranty, Spectrum Sports International, will at its option, either repair or replace defective parts or items. To obtain repair or replacement, call or fax Spectrum Sports International customer service for a return authorization number. Include the following information: name, address, date of purchase, address where the product is currently being used, office phone or mobile phone (if at an event), and your product model and VIN # for mobile products. At your expense, ship or deliver the product to Spectrum Sports International, 720 West 200 South, Logan, Utah 84321. Replaced or repaired items will be shipped back to you at no cost and will be shipped by the same manner as it was received (i.e., overnight, ground, etc.). For items that must be received before the defective part is sent to Spectrum Sports International, it is **REQUIRED** that a valid credit card be charged for the warranty item before Spectrum Sports International will ship. Once Spectrum Sports International receives the defective part; a credit will be issued back to the credit card.

RELEASE OF LIABILITY

I understand and am aware that the use of mobile climbing walls is a hazardous activity. I understand that I am solely responsible for safe operation, daily inspection and maintenance and customer adherence to the rules. I understand that rock climbing involves a risk of injury to any and all parts of my body and the customers who use this product. **I HEREBY AGREE TO FREELY AND EXPRESSLY ASSUME AND ACCEPT ANY AND ALL RISKS OF INJURY OR DEATH TO THE USER OF THIS EQUIPMENT.**

Initials: _____

I will agree that I will release Spectrum Sports International, its manufacturer, its distributors and retailers from any and all responsibility or liability for injuries or damages to the user of the Climbing products I am purchasing, or to any other person. I agree not to make a claim against or sue Spectrum Sports International, its manufacturers, its distributors or retailers for injuries or damages relating to use of the equipment, other than such claims as are allowed by the limited warranty set forth above.

Initials: _____

AGREEMENT

I understand how to operate the climbing product safely. This means that I do understand, but not necessarily limited to, how the Auto-Belay works on the climbing products, how to perform daily safety inspections, the rules, and in general manage crowd and staffing operational issues.

Initials: _____

ACKNOWLEDGEMENT

I have carefully read this limited warranty, limited remedy, and release of liability and fully understand its contents. I am aware that this is a release of liability and a contract between myself and Spectrum Sports International, and its manufacturers, distributors and retailers and I sign it of my own free will.

Serial #: _____

Date: _____

Customer's Name: _____

Customer Business Name: _____

Customer's Signature: _____

Appendix A

The certified engineering documentation is a lengthy document. Any person needing a copy of this document please call Spectrum Sports International and one will be forwarded to you as soon as possible. However, be aware that a confidentiality/non-compete agreement must be signed before this document will be provided.

**For additional information, please contact Spectrum Sports
International
888-563-0163**

Appendix C

The following documentation in this appendix defines the procedures for classifying “Injury and Illness” data related to amusement rides and devices. Should an accident or an illness occur because of participation of the ClimbNdangle/DropARock, please make sure you obtain the suggested information enclosed within this document. Spectrum Sports International highly recommends completing an Incident Report and faxing a copy to our facility for the sole purpose of reviewing incidents that may be related to the manufacturing of our products and to reduce or eliminate similar occurrences.



Standard Guide for the Classification of Amusement Ride and Device Related Injuries and Illnesses¹

This standard is issued under the fixed designation F 1305; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide provides a uniform procedure that should be used when classifying patron injury and illness data related to amusement rides and devices.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Terminology

2.1 Definitions of Terms Specific to This Standard:

2.1.1 *illness*—personal discomfort resulting in treatment including a personal illness, food poisoning, drug abuse, toxic inhalation, insect sting, or other similar occurrence.

2.1.2 *injury*—sustained bodily harm resulting in treatment such as trauma, cuts, bruises, burns, and sprains.

2.1.3 *minor injuries/illnesses*—injuries and illnesses which may or may not require emergency first aid or significant treatment, or both, but cannot be otherwise classified as a serious injury or illness. This category includes incidents where treatment is limited to such things as the dispensation of over-the-counter medication or plastic adhesive strips², cleansing, rest, and other similar duties or assistance.

2.1.4 *serious injuries/illnesses*—a personal injury/illness that results in death, dismemberment, significant disfigurement, permanent loss of the use of a body organ, member, function, or system, a compound fracture, or other significant injury/illness that requires immediate admission and overnight hospitalization and observation by a licensed physician.

3. Significance and Use

3.1 The purpose of this guide is to provide a uniform procedure under which the amusement ride and device industry can organize data related to injuries and illnesses. This classification system may be used to formulate statistical information within the categories provided and will facilitate the analysis of

injury and illness incidents. The classification system may assist owner/operators and manufacturers to review incidents directly related to their amusement rides and devices, and may provide information for alternatives to reduce or eliminate similar occurrences.

4. Recording Recommendations

4.1 The administration of emergency health care service and treatment should be recorded as deemed appropriate by the owner/operator of amusement rides and devices to include the documentation of all first-aid treatment, including minor injuries and illnesses, in a first-aid log. Injuries and illnesses other than minor should be reported on a firstaid incident report in accordance with 4.2.

4.2 *First-Aid Incident Report*—A first-aid incident report should be completed for injuries or illnesses that result in hospital admission or where medical treatment is given, recommended, or may be required at a future date. All injuries or illnesses reported and other than those classified as minor, can be presumed to be in this category.

4.3 Recorded Information:

4.3.1 Information recorded in the first-aid incident report should include but not be limited to the following, where applicable:

4.3.1.1 Date the incident occurred.

4.3.1.2 Name, address, and telephone number of the person to receive emergency health care service or treatment.

4.3.1.3 Age of the person to receive emergency health care service or treatment.

4.3.1.4 Manufacturer's name of the amusement ride or device where or on which the incident occurred.

4.3.1.5 Description of the injury or illness. Physical description of the injury or illness. Description of the events causing and related to the incident.

4.3.1.6 Description of the first-aid service or treatment administered including medications given.

4.3.1.7 Incident classification in accordance with Section 5.

4.3.1.8 Additional information deemed necessary by the owner/operator.


5. Classification of First-Aid Incidents

5.1 When recording an applicable first-aid-related incident the owner/operator of an amusement ride or device should classify the injury or illness in accordance with each of the

¹ This guide is under the jurisdiction of ASTM Committee F-24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.40 on Operations.

Current edition approved April 15, 1994. Published June 1994. Originally published as F 1305-90. Last previous edition F 1305-90.

² Band-Aid brand adhesive strips, a trademark of Johnson and Johnson Products, Inc., New Brunswick, NJ 08093, have been found suitable for this purpose.

 **F 1305**

following categories based on the available reported or observed reliable information, or both:

5.1.1 *Amusement Ride and Device Incidents Classified in Accordance with Injury Qualification and Degree of Injury*—Injury, illness, serious injury/illness, and minor injury/illness as defined in Section 2 should be determined by the owner/operator to best describe the incident circumstances.

5.1.2 *Amusement Ride and Device Incidents Classified in Accordance with Facility Implication:*

5.1.2.1 *Facility-Related Incidents*—Injuries or illnesses that occur on facility premises shall be additionally classified as “Facility Related.”

5.1.2.2 *Not-Facility Related Incidents*—Injuries or illnesses that occur off facility premises shall be additionally classified as “Not Facility Related.”

5.1.3 *Amusement Ride and Device Incidents Classified in Accordance with Facility Location:*

5.1.3.1 *Amusement Ride and Device on Ride Incident*—Injuries or illnesses that actually occur to a person while riding during the operation of the amusement ride or device, including during the start up or shut down procedures, shall be additionally classified as an amusement ride and device “On Ride Incident.”

5.1.3.2 *Loading and Unloading Incidents*—Injuries or illnesses that actually occur to a person while he is within the area designated for loading and unloading of an amusement ride or device that was under the direct control of an amusement ride and device operator or attendant shall be additionally classified as a “Loading and Unloading Incident.”

5.1.3.3 *Queue Line Incident*—Injuries or illnesses that actually occur to a person while in a queue line for an amusement ride or device shall be additionally classified as a “Queue Line Incident.”

5.1.3.4 *Other Incidents*—Injuries or illnesses that occur to a person in a location other than as described in 5.1.3.1, 5.1.3.2, or 5.1.3.3 shall be classified as other than the preceding classifications and should be categorized in accordance with other predetermined descriptions that may be established by the owner/operator.

6. Manufacturer Notification

6.1 The owner/operator of an amusement ride or device shall notify the appropriate manufacturer(s) of an incident that resulted in a serious injury as defined in 2.1.4 within seven days of the occurrence of the incident.

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Appendix D

Trouble Shooting Guide

Always check the obvious things first. Some times it's a simple fix to solve a problem. With wire connections you may have to recrimp the fitting. Please call if your problem is not listed or unable to remedy problem.

SYMPTOMS

REMEDIES

Light(s) not working

- ✓ Check for burned out bulb(s), bulb might be loose in socket.
- ✓ Refer to Owners manual for wiring diagram of trailer and plug.
- ✓ Make sure trailer and towing vehicle plugs are compatible. Call Spectrum for complete trailer wiring diagram.

Brake(s) problem

Refer to Dexter Axle Operation Maintenance Manual for specific remedies.

Hydraulic Power unit not working.

- ✓ Charge battery or use jumper cables to raise wall.
 - ✓ Check remote control connection to trailer.
 - ✓ Check continuity of motor solenoid.
- Call Spectrum for details.

Hydraulic Power unit motor is working but wall will not raise.

- ✓ Remove tie-down strap from front of wall.
- ✓ Check oil level in power unit reservoir tank
- ✓ Check wire connection(s) to valve solenoid(s).
- ✓ If flow control(s) are closed, possible bad flow control(s). Call Spectrum for instructions.
- ✓ Check wiring from remote socket to power unit.
- ✓ Check remote wiring, if loose, call Spectrum for diagram.

Hydraulic Power unit motor is working but wall will not lower.

- ✓ Check wire connection(s) to valve solenoid(s).
- ✓ If flow control(s) are closed, possible bad flow control. Call Spectrum for instructions.
- ✓ Sticking valve spool. Call spectrum for instructions.
- ✓ Check wiring from remote socket to power unit. Call Spectrum for diagram.
- ✓ Check Pendant wiring. Loose wire. Call Spectrum for diagram.

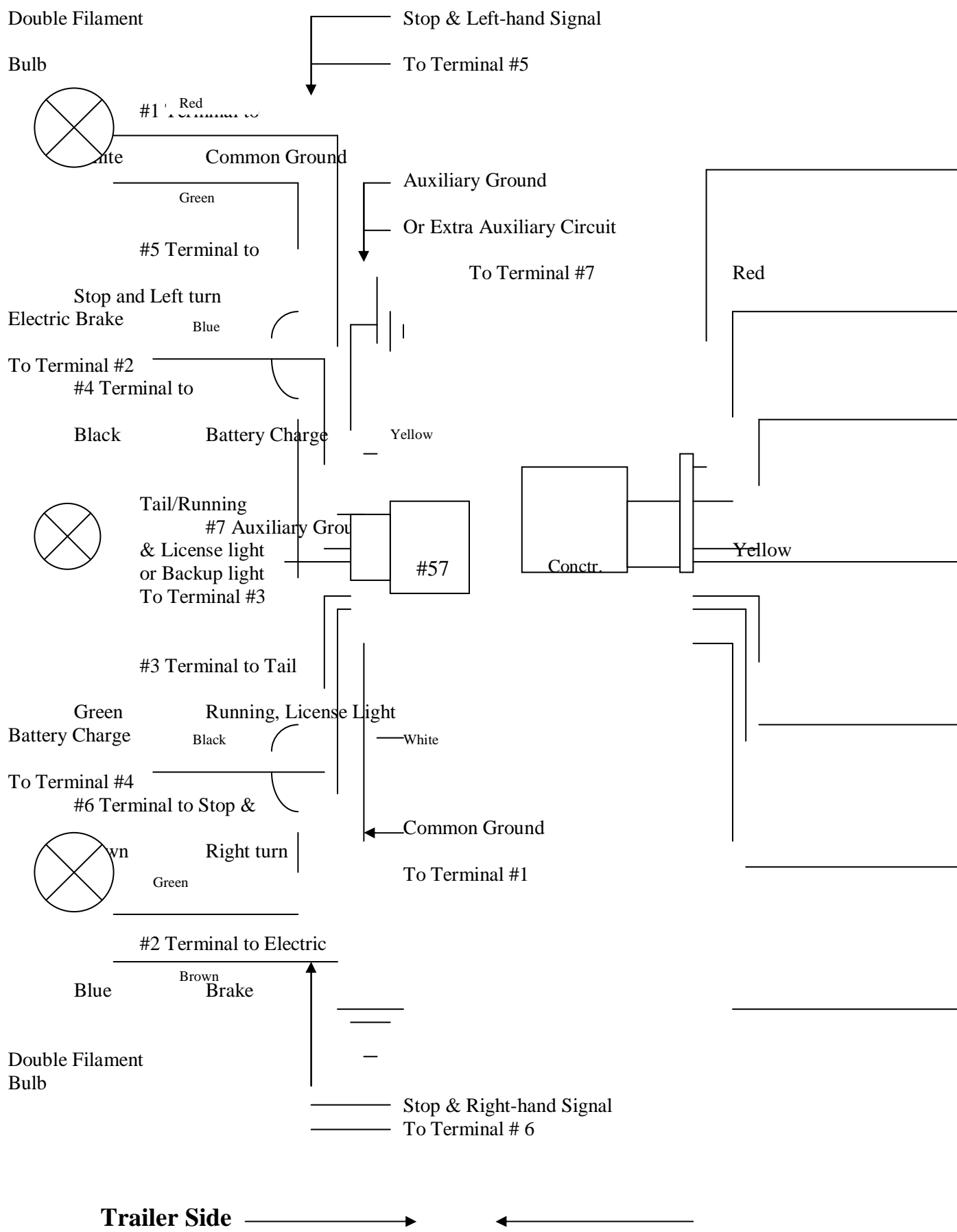
- Horn is not working at all.**
- ✓ Check wire connection at (+) post at battery.
 - ✓ Check all wire connections under horn base.
- Call spectrum for wiring diagram of horn and switches.
- Horn is working but not on one run.**
- ✓ Remove pocket holds and check wire connection at contact block.
 - ✓ Remove contact block and check for debris, ie. Spider nests.
 - ✓ Check continuity of contact block.
- Auto-Belay cable is not retracting when wall is vertical.**
- ✓ Remove all shrink-wrap from cable. Wrapped at spectrum for shipping
 - ✓ Check oil level and air pressure (85-90psi) with cable anchored to hanger at base of wall
- Auto-Belay is very slow descending.**
- ✓ Children will belay slower than adults.
 - ✓ Check valve is partially clogged. Call Spectrum for instructions.
- Jack handle is hard to turn while raising trailer.**
- ✓ Rotate from jack to jack so not put a bind on just one jack.
 - ✓ Check for sheared roll pins inside of jack.
- Identify the problem and call Spectrum for replacement parts.

Should you encounter a problem not listed, please call Spectrum Sports International for technical support at 888-563-0163 or 435-792-3883.

Appendix E

The following form is the Climbdangle®/DropARock® Order form for replacement or accessory needs. Please refer to the attached parts list if ordering a replacement item or with warranty questions.

Wiring Diagram for Bargman 7 and 9 Circuit, 12V Electrical Connectors



Appendix G

Changing an Auto-Belay Cylinder

This procedure is for the current 2001 Auto-Belay design with 4 x 4 tank. Installed on stationary 24' and 32' walls. The mobile procedure would be a little different. Two people are recommended.

TOOLS REQUIRED ARE:

- *TWO ADJUSTABLE WRENCHES CAPABLE TO OPEN TO 1 1/2" OR TWO 1 1/2" AND ONE 1 1/8" OPEN END WRENCHES*
- *AIR CHUCK*
- *7/8" OPEN END WRENCH*
- *9/16" OPEN WRENCH*
- *ISO 32 OIL*
- *RAGS TO ABSORB OIL*

1. Pull cable all the way down to bottom of wall panel to fully retract cylinders (3) to force oil from the cylinder tube.
2. Depressurized the Auto-Belay tank (1) entirely. Depress the center of the schrader valve (17) with a schrader valve air chuck.
3. Use the wrench to remove 1" nut (7) from 1" bolt (7). Remove 1" bolt (7) on bottom pulley bracket. Keep the spacer from between cylinders on 32' Auto-Belays to put it back on later.
4. Use the wrench to remove hose (11) and check valve (20) from cylinder that you are replacing. Loosen hose fitting than check valve (20), repeat this until the check valve is removed. Now it takes two people, one person to hold a CLEAN rag over the check valve (20) to keep oil from escaping. Oil can be replaced afterwards. The second person can do the next steps while the other one holds a rag over check valve.
5. At the top of cylinder (rod end) remove bottom clip from pin so pin can be pulled out. Keep any spacer (21) to reinstall as you put new cylinder on.
6. Cylinder can now be removed.
7. Remove breather (18) from old cylinder and install it on new cylinder.
8. Work backwards from here repeat steps 5 thru 3 to attach new cylinder.
9. Once everything is in place add air the Auto-Belay tank till it reads 80 psi for 24' walls and 90 psi for 32' walls.

10. Purge the air out of cylinders by repeatedly pulling cable down and allow rising by hand until resistance is felt through out the entire down stoke. Now check oil level.

11. If oil has to be added to make oil level in middle of sight gage, repeat step 2. Remove fill plug at top of tank with a 7/8" wrench or a 5/16" Allen wrench. Add oil than tighten fill plug and repeat step 9. Check oil level again. Repeat if necessary to acquire oil level to be in the middle of sight gage.

Appendix H

Cable Replacement Instructions (Both Ends Terminated)

This procedure will work for mobile and stationary walls equipped with the 2001 model Auto-Belay. Spectrum Sports International cannot be held liable for injuries sustained from changing out cable(s). The customer will have to use their better judgment and have the ability to perform this task safely.

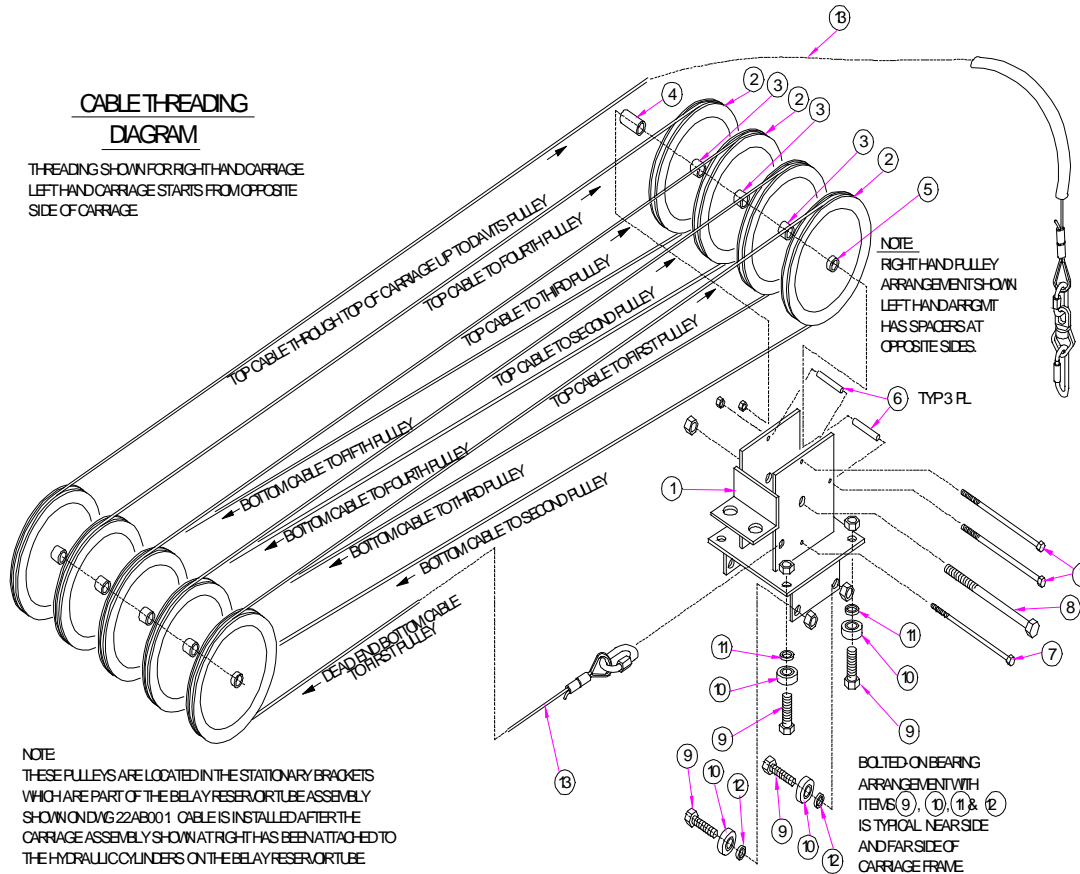
TOOLS REQUIRED ARE:

- Two people are recommended
 - Two 15/16 open-end wrenches or two adjustable wrenches
 - Two 7/16 open-end wrenches
 - Air chuck
 - One 5/8 open-end wrench
 - Replacement Cable
 - 6' ladder if changing one of the middle routes
 - 30-40 minutes per cable change out
1. To change cable(s) on a mobile wall, have the wall lying down onto trailer. For stationary walls, the procedure is the same except the work has to be performed off the ground. You will have to let all of the air pressure out of the Auto-Belay tank. To depressurize the Auto-Belay(s), attach an air chuck onto schrader valve (#17). Pull the cable with the red hose towards the bottom of the climbing wall so the cylinders are compressed completely. This will put the pulley cart (#1) closer to the bottom pulleys.
 2. Make note of which side the cable enters the Auto-Belay pulley cart and the side it terminates to and how the cable is routed from pulley to pulley. Use a piece of tape to mark each side of the pulley cart. Refer closely to assembly diagram.
 3. Use the 5/8 open-end wrenches to open the quick link (#15) so the cable end can be removed. The quick link can remain attached to the pulley cart (#1).
 4. If the cable end does not fit between the pulleys and the top of the Auto-Belay tank, the pulley assemblies have to be disassembled. Start by removing the 1/4" nuts from the 1/4" bolts (#7) with the 7/16 wrench from the pulley cart and the bottom pulley assembly. Keep hardware and spacers (#6) together.

5. Now remove the 5/8" nut from the 5/8" bolt (#8) using 15/16 wrenches or adjustable wrenches, from pulley cart and bottom pulley assembly. Take care not to lose the spacer (#5) and spacers (#4 and #3), while removing all pulleys.
6. Now use the 15/16 wrenches to loosen the 5/8" nut from the 5/8" bolt of the bottom pulley on the davit at the top of the wall, enough to remove cable. The upper pulley on the davit will need to be removed entirely to remove cable. A stepladder may be required if you are replacing a cable on a middle route. Once the top pulley is removed, you can then remove the old cable entirely.
7. When replacing the cable, take extreme care not to kink or pinch cable by pulling on it when there is a loop in the cable.
8. Lay the new cable out on the ground first, to remove loops and have the red hose at the bottom of the wall.
9. Start feeding the end of the cable through the top pulley mount on the davit and then place pulleys grove on cable and finish remounting the pulley. Do the same to the second pulley on the davit. Tighten the 5/8" nuts to 5/8" bolts.
10. Now pull enough cable to reach pulley cart. Make sure the cable doesn't go underneath or behind a steel wall support while doing this.
11. This is where two people are required. Have cable enter the pulley cart, the side that is marked with tape. Pull cable to bottom pulley area, place cable on pulley and start 5/8" bolt thru the side plate. Place the correct spacer (#4) on the 5/8" bolt; put pulley with cable on the bolt. Pull cable towards the pulley cart. Start the 5/8" bolt, place spacer (#5) on bolt, place cable on pulley, place pulley on bolt. Repeat these steps using the correct spacers until cable ends at the quick link. Place and tighten 5/8" nuts onto 5/8" bolts. Replace all 1/4" bolts (#7) and 1/4" nuts and spacers (#6), to keep cable on pulleys. Refer closely to assembly diagram.
12. Make sure you attach terminated cable end onto quick link and tighten quick link with wrench.
13. Reattach carabineer, swivel and quick link to cable with the red hose that is on the outside of the climbing wall. Attach carabineer to wall.
14. You now can repressurize the Auto-Belay to the recommended air pressure. Add air slowly to the Auto-Belay tank so that the cylinders don't rapidly extend and cause the cable to jam in a pulley.

**CABLE THREADING
DIAGRAM**

THREADING SHOWN FOR RIGHT-HAND CARRIAGE
LEFT-HAND CARRIAGE STARTS FROM OPPOSITE
SIDE OF CARRIAGE



**BELAY PULLEY CARRIAGE
ASSEMBLY DIAGRAM**

CABLE SHOWN FOR THREADING PURPOSES ONLY
DO NOT INSTALL UNTIL AFTER THIS CARRIAGE
IS MOUNTED ON THE BELAY RESERVOIR TUBE

BILL OF MATERIAL			
ITEM	QTY	DESCRIPTION	REMARKS
1	1	CARRIAGE PULLEY FRAME	22AB004
2	4	PULLEY 6"φ w/5/8" BEARING	401-22AB-1020
3	3	SPACER 5/8"φ x 1/2" LG	22AB114
4	1	SPACER 5/8"φ x 1.3" LG	22AB115
5	1	SPACER 5/8"φ x 1/4" LG	22AB116
6	3	SPACER 1/4"φ x 5" LG	22AB117
7	3	HEX BOLT 1/4"φ-20NC x 5 1/2" LG GR5 w/NYLOCK NUT	101-250205.55 102-25020NYL5
8	1	HEX BOLT 5/8"φ-11NC x 6" LG GR8 w/NYLOCK NUT	101-625116.0B 102-62511NYL5
9	8	HEX BOLT 5/8"φ-11NC x 2" LG GR5 w/NYLOCK NUT	101-625112.05 102-62511NYL5
10	8	SEALED BALL BEARING 1 5/8" O.D. x 5/8" I.D.	401-22AB-1011
11	4	SPACER 5/8"φ x .115 LG	22AB120
12	4	LOCK WASHER 5/8"φ	103-67500LCK2
13	1	CABLE KIT (24' OR 32')	22AB24C 22AB32C

REV	BY	ISSUE FOR FABRICATION	DATE
0	JR	ISSUE FOR FABRICATION	XXX

UNLESS OTHERWISE SPECIFIED	DRAWN JAR	DATE 10/26/01	 87 E 200 N HURLBUTAH 1st (435)245-3028
DIMENSIONS IN INCHES	CHECKED	DATE	
TOLERANCES	XXX	XX/XX/XX	CLIENT ACTION AMUSEMENTS, INC
FRACTIONS +/- 1/16	APPROVED	DATE	PROJECT CLIMBING WALL AUTOBELAYS
DECIMALS	XXX	XX/XX/XX	
X +/- .030	GENERAL NOTES		TITLE 24/32 AUTOBELAY CARRIAGE EXPLODED ASSEMBLY GENERAL ARRANGEMENT (5x4)
XX +/- .010	1 HOLES XXXXROUND		DRAWING NUMBER 22AB002 SH-T CF 0
XXX +/- .005	2. PAINT COLOR		
ANGLES +/- .12 DEG	3. ALL WELDS UNO		REV
NO. OF FINISH	FLARE V&B BALL FULL FLUSH		
CONTOUR SCALE	SCALE NTS		
DATE	ACTION AMUSEMENTS/AUTO BELAYS		

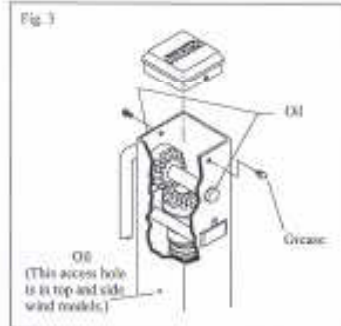
OPERATING INSTRUCTIONS

Rotate the jack handle clockwise to raise, or counter-clockwise to lower the jack.

DROP FOOT OPERATION: Pull the hitch pin, lower or raise drop foot to desired position, return the hitch pin making sure it is fully inserted through both the inner tube and the drop foot tube before using the jack.

MAINTENANCE

The internal gearing and bearings of the jack must be kept lubricated. Using a grease gun, apply automotive grease to the gears (see Fig. 3). Rotate the jack handle to distribute the grease evenly. Lightly grease the inner tube of the jack using the same type of grease. A light weight oil must be applied to the handle unit at both sides of the tube and in the small hole of the outer tube to lubricate the nut and screw assembly. (see Fig. 3)



HOW TO ORDER PARTS

Always replace bent, broken or worn parts before using this product. Use only Fulton Performance Products' parts or parts of equal quality for repair. Replacement parts are available through Fulton Performance Products' Customer Service Department, 715-693-1700. Please specify product model number, name of parts, and part number.

LIMITED WARRANTY

Warranty. Fulton Performance Products, Inc. ("FPP") warrants to the original consumer purchaser ("You") that the product will be free from defects in material and workmanship for a period of three years under normal use and service, ordinary wear and tear excepted. If the product does not comply with this warranty, we will replace the product without charge to You and within a reasonable time or at Fulton's option, refund for purchase price. This warranty is not transferable.

Limitations on the Warranty. The warranty does not cover the following: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation; (d) improper maintenance; (e) a product altered in any manner by anyone other than us.

Obligations of Purchaser. To make a claim, contact us at 50 Industrial Drive, Mosinee, WI, 715 693-1700, identify the product, and follow the instructions that will be provided. Any returned product that is replaced or included becomes the property of Fulton. You will be responsible for shipping costs to us. Please retain your purchase receipt to verify date of purchase. This must be produced to honor warranty claims.

Remedy Limited. Repair or replacement in the purchaser's sole remedy under this warranty on the product, whether express or implied. We shall not be liable for service or labor charges incurred in returning or replacing a product or any incidental or consequential damages of any kind. We expressly disclaim any implied warranty of merchantability or fitness for particular purpose after the three-year warranty period. Some states do not allow the exclusion of incidental or consequential damages or limitation of an implied warranty or the above exclusion and limitation may not apply to you.

Legal Rights. This warranty gives you specific legal rights, and You also may have other rights which vary from state to state. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON ANY PRODUCT SHALL BE LIMITED TO THREE YEARS FROM THE DATE OF RETAIL PURCHASE BY YOU. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to You.

This warranty is governed by the laws of the United States of America and is void where prohibited.

FULTON
Performance Products, Inc.

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802/604-0468 715/693-1700 Fax 715/693-1799
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fulton@fultonperformance.com

F2585

LI-146(0) 02/02

FULTON

Performance Products, Inc.

Magnum Series Square Tube Jack Instruction Sheet

⚠ WARNING ⚠

Read and understand all instructions before installing and using product. NEVER allow anyone not familiar with the operating instructions to use this product.

Read and understand all instructions provided by the manufacturer of the product (s) that this jack will be installed on.

Installation of these Fulton jacks must conform to the following mounting instructions only. Fulton cannot be held liable for improper installation, use, or maintenance of this product.

The swivel foot models must be mounted such that the long part of the footplate is parallel to the trailer tongue (see Fig. 2).

When cranking jack or coupling trailer, secure trailer from rolling.

These jacks are designed for vertical loading. Excessive side forces must be avoided.

Never adjust the drop foot when the jack is under load.

Operator use caution never to position any part of your body under any portion of the jack or the load being supported. Never allow anyone or any bodily parts to be positioned on or under the load being supported. Disregard could cause property damage and/or serious bodily injury.

When manually moving trailer over rough or uneven surfaces, crank to lowest practical position to minimize bending stress on jack.

When using optional footplate or caster, always remove footplate or caster before trailering to maximize ground clearance.

Never exceed maximum rated capacity. These models have a 4000# lift capacity and a 7000# static capacity. When using optional casters, the maximum capacity is limited to the LESSER load rating of the caster or the jack.

When using alternate positions on the drop foot, make certain the hitch pin is fully inserted through both sides of the inner tube and the drop foot tube before using the jack.

These jacks are designed for mounting to square or rectangular trailer tongues only. These jacks are not intended for mounting to trailers with round tongues.

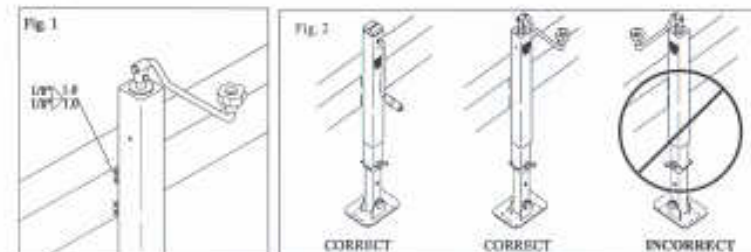
Failure to follow these warnings and instructions may result in property damage and/or serious bodily injury.

MOUNTING INSTRUCTIONS

Before mounting your trailer jack, check for interference from recessed ball mounts, trailer coupler, hitch or hitchplates and/or vehicle bumper. Rotate the jack handle to check that the swing is not obstructed. If the jack is of the swing-away or swivel design, check the unit in both vertical and horizontal positions. When the swing-away jack is in the horizontal or storage position, there should not be any interference from structural members of the trailer or trailer coupler. On all jacks check that proper ground clearance has been achieved and will not contact the towing vehicle when in a tight turn. If the jack is not installed correctly, any interference (steep inclines, angled turns etc.) may cause non-repairable damage to the jack and/or trailer. After installation is complete, check that jack operation has not been impaired in any way.

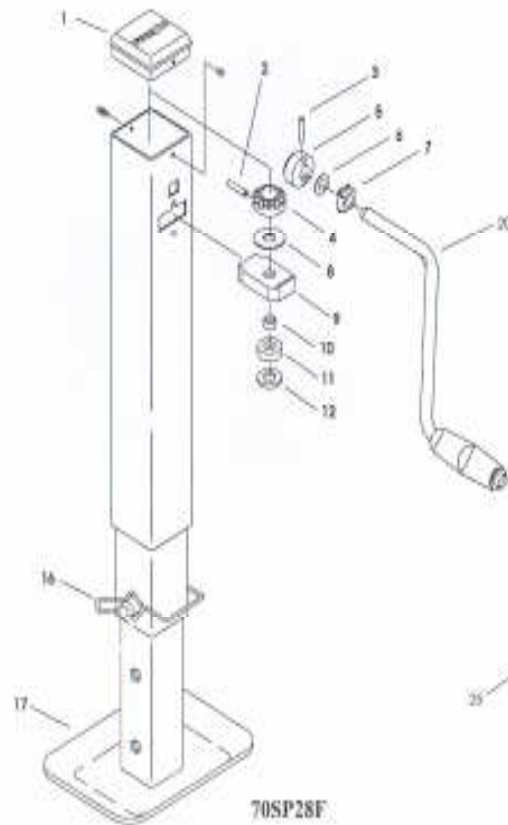
Weld-On Mounting Instructions

- Place the square tube at the desired location as shown in Fig. 1. Weld on both sides in two places each side, using an 1/8" filler, weld 3" long minimum top and bottom. Use No. E6B11 A.WS. welding rod (AC or DC RP) 1/8" dia. Set machine AMPS at 105/115.



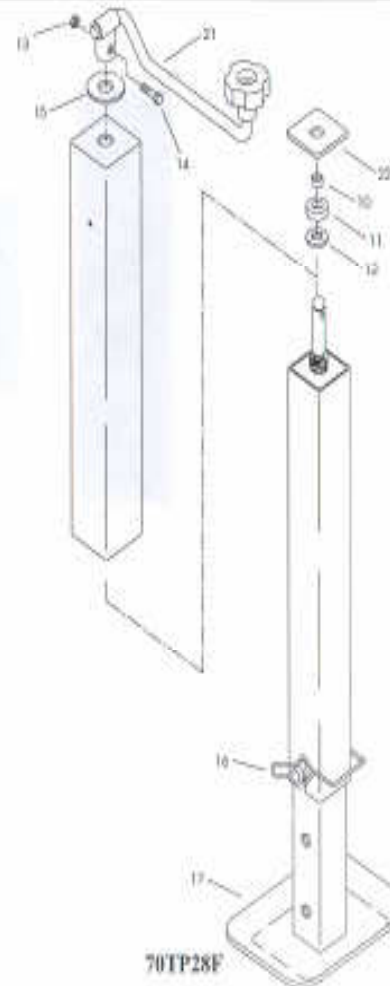
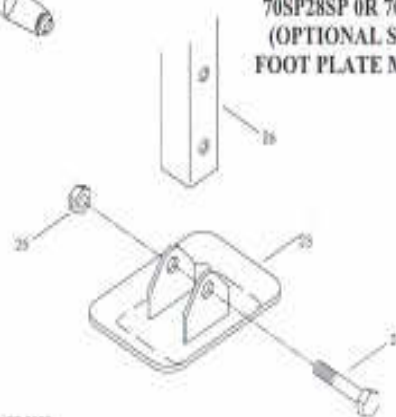
SERVICE PARTS AND ACCESSORIES

ITEM	DESCRIPTION	QTY.	PART #	REPAIR KIT	KIT DESCRIPTION	ITEM	DESCRIPTION	QTY.	PART #	REPAIR KIT	KIT DESCRIPTION
1A	CAP - 2.00 SQUARE, PLASTIC	(1)	09 175 05	09 175 05	CAP - 2.00 SQ. PLASTIC	10	WASHER - AS ID x .75 OD	(1)	09 311 10	103320000	BEARING KIT 7000#
1B	CAP - 2.00 SQUARE, STEEL	(1)	09 175 00	09 175 00	CAP - 2.00 SQ. STEEL	11	BEARING - 7/8 ID x 1.50	(1)	09 270 43		
2	BRUSH PIN - .032 x 1.25	(1)	09 270 01	103330100	SWIVEL GEAR KIT	12	WASHER - AS ID x 1.50 OD	(1)	09 270 42		
3	GROOVE PIN - 3/16 x 1.00	(1)	09 270 02			3	GROOVE PIN - 3/16 x 1.00	(1)	09 270 02	103330400	HANDLE KIT 7000# 3 W
4	GEAR - 1ST, HDK	(1)	09 271 03			4	WASHER - 3/8" ID	(1)	6600		
5	GEAR - 1ST, VBR	(1)	09 271 04			7	BEARING - 20 ID	(1)	09 320 06		
6	WASHER - 3/8" ID	(1)	6600			20	HANDLE ASSEMBLY - SW	(1)	09 321 06		
7	WASHER - 30	(1)	09 320 00			13	NUT - 1/4-20 UNC NYLON RUBBER	(1)	09 270 66	103330400	HANDLE KIT 7000# 1 W
8	WASHER - AS ID x 1.50	(1)	09 270 44			14	CAPSCREW - 1/4 - 20	(1)	322		
9	SUPPORT PLATE RM	(1)	09 341 09	09 341 09	SUPPORT PLATE RM	16	WASHER - AS ID x	(1)	09 270 06		
16	PH LUNCH - AS DA	(1)	09 270 09	09 270 09	PH LUNCH - AS DA	21	HANDLE ASSEMBLY - 1 W	(1)	09 321 06		
17	DROP FOOT TUBE	(1)	09 030 05	09 030 05	DROP FOOT TUBE	22	CAPWASHER - 3.18 30	(1)	09 270 47	09 270 47	CAPWASHER - 3.18 30
23	SWIVEL FOOT WELDMNT	(1)	10 117 01	10 117 01	SWIVEL FOOT						
24	CAPSCREW - 5/8-11 x 3.00	(1)	10 270 07	10 270 07	CAPSCREW - 5/8-11						
25	LOCKWAS - 5/8-11	(1)	83	83	LOCKWAS - 5/8-11						
26	SWIVEL TUBE - PUNCHED	(1)	09 117 04	09 117 04	SWIVEL TUBE - PUNCHED						



70SP28F

70SP28SP OR 70TP28SP
(OPTIONAL SWIVEL
FOOT PLATE MODELS)



70TP28F

FULTON
Performance Products, Inc.

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www.fultonperformance.com
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0-749010200