

SPECTRUM

SPORTS INTL

X4 AUTO-BUNGEE™

OWNER/OPERATOR'S MANUAL



Attention!

***IMPORTANT SAFETY INFORMATION INSIDE. READ THIS
MANUAL BEFORE SETTING UP AND OPERATING THE X4
AUTO-BUNGEE™.***

Product Registration:

Product Name: X4 Auto-Bungee™

Date Manufactured: _____

Serial Number: _____

Passenger Capacity: 4

Customer Name: _____

Customer Phone: _____

Customer Address: _____

Customer Signature: _____

I have read and understand the Receipt & Acknowledgement, Release of Liability, and Agreement & Acknowledgement in this manual.

Complete this form and mail or fax to:

Spectrum Sports Intl
324 W 2500 N Bldg A
North Logan, UT 84341

Fax: (435) 792-3884

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1. INTRODUCTION

Thank you for purchasing a quality-built Bungee product from Spectrum Sports Intl. We take pride in our products and believe that we build the best products in our industry. Our philosophy is centered on a commitment of excellence in meeting the needs of our customers and providing quality products that are safe, exciting, and profitable. We encourage you to likewise develop a standard of quality and service.

What makes our team successful is:

- ✓ Commitment to a proper, effective, and profitable design.
- ✓ Third Party Engineering on all our products.
- ✓ Manufacturing our products according to the “ASTM F-24” amusement industry safety standards.
- ✓ Testing designs before they are put into use and sold.
- ✓ Maximum customer throughput, generating high profits.
- ✓ Building quality products, which means the ownership costs are lower.
- ✓ Experience and leadership in the industry.
- ✓ In-house assembly on all our products (this provides for exceptional Quality Control).
- ✓ Continued commitment to service after the sale

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

- ☐ Have a commitment to safe operation.
- ☐ Have consistent inspections for needed maintenance.
- ☐ Effectively and actively market and promote the product.
- ☐ Service the product as necessary
- ☐ Use Spectrum Sports Intl certified replacement parts.



Attention!

Always remember to follow all safety guidelines and use caution while operating your product.

Spectrum Sports Intl is a company that has designed the following products: Climb-N-Dangle®, Drop-A-Rock®, Grip-A-Rock®, RidgeLine®, Climb-N-Challenge®, Klime Wallz®, Coconut Tree Climb®, X4 Auto-Bungee family and Mobile Zip Line®. This manual will be used to document the operating procedures and safety warnings associated with the X4 Auto-Bungee™.



Attention!

The guidelines in this manual must be read and understood by ALL X4 Auto-Bungee™ personnel.

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Reproduction or translation of any part of this work, beyond that permitted by Section 107 or 108 of the 1976 U.S. Copyright Act, without permission of the copyright owner is unlawful. Requests for permission or further information should be addressed to Spectrum Sports Intl. Spectrum Sports Intl may make periodic additions, deletions, and modifications to this manual. This manual must be kept up-to-date and should reflect all updates currently in use. Please check www.spectrumsports.com or call toll free (435) 792-3883 for updates and/or safety issues regarding your X4 Auto-Bungee™.

1.1 Receipt & Acknowledgment

This owner/operator's manual is an important document intended to help you become acquainted with the X4 Auto-Bungee™.



Attention!

Please read the following statement and contact Spectrum Sports Intl, in writing, if the intent of this document is unclear or questions arise. YOU SHOULD NOT OPERATE THE PRODUCTS MENTIONED IN THIS MANUAL IF YOU DO NOT FULLY UNDERSTAND HOW TO OPERATE THEM SAFELY!

"As an owner, I have received, and read, my copy of the X4 Auto-Bungee™ Owner's Manual. I understand that the information outlined in this manual is subject to change at the sole discretion of Spectrum Sports Intl at any time. It is further understood that as an owner of the X4 Auto-Bungee™, I have the responsibility to ensure that the correct and latest version of the manual is being used.

As an owner of the X4 Auto-Bungee™ or authorized representative, it is my responsibility to keep this manual up-to-date with any changes that are made by Spectrum Sports Intl. 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 Intl assumes that the customer understands the X4 Auto-Bungee™ product and that there are no questions regarding the product and/or the contents of this document, use of the product, or how to operate this product."

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

1.2 Manual Overview

This manual is an introduction to the X4 Auto-Bungee™ 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 Intl is centered on a commitment to excellence in meeting the needs of its customers and associates by providing them with the enclosed information.

This manual is designed to provide the product owner with the information, tips, and techniques that will help the owner and employees operate the X4 Auto-Bungee™ as effectively and safely as possible. This manual is in no way a total representation of all facts related to the product or equipment. Safe operation of this product is the sole responsibility of the owner/operator. Good and reasonable judgment must be used when traveling, promoting, and/or operating the product.

1.2.1 Revisions

Spectrum Sports Intl may make periodic additions, deletions, and modifications to this manual. These updates will, in the judgment of Spectrum Sports Intl, add to the quality of services offered. This manual must be kept up-to-date and should reflect all updates currently in use.



Attention!

Please check the following website for updates and/or safety issues regarding your X4 Auto-Bungee™ www.spectrumsports.com.

1.2.2 Warning Signs

The following warning signs will appear throughout this manual:

Table 1. Warning Signs

SYMBOL	WARNING NAME	DESCRIPTION
	Attention	This icon and font will be used to draw attention to important tips or setup procedures.
	Warning	This icon, and font, will be used to draw attention to important safety warnings.



Attention!

Spectrum Sports Intl will not warranty or stand behind any X4 Auto-Bungee™ system, that we have manufactured, that does not use genuine and/or authorized replacement parts and/or cables. Any work and/or services that are performed on any Spectrum Sports Intl X4 Auto-Bungee™ systems that are not performed by an authorized Spectrum Sports Intl employee, voids all claims to any manufacturer's liability.

Read and understand this manual before installing and/or operating the product.



Warning!

Climbing and/or failing to comply with the information in this manual may result in serious injury or death.

1.3 Product Overview

Congratulations on your purchase of the X4 Auto-Bungee™. This bungee trampoline unit was designed to provide superior value and longevity. Spectrum Sports Intl is known as an industry leader for its innovation, safety, design, and customer satisfaction. Spectrum Sports Intl designs its products for the amusement, entertainment, climbing, and recreation industries. Products are engineered with safety, customer appeal, and customer through-put in mind. The X4 Auto-Bungee™ is designed and manufactured according to the ASTM F24 standard for amusement devices. All products have been stamped by an independent 3rd party engineering firm.

NOTE: For full ASTM F24 compliance, it is the owner's responsibility to adhere to specific practices.

1.4 Accident Reporting

Spectrum Sports Intl requires that all accidents are reported within 48 hrs from the time of the accident. Reports should include the following information:

- Name of the injured
- Place of the accident
- The station the accident occurred on
- A description of the accident
- A description of the proposed product failure (if any)
- The employee's name

- Daily inspection report/checklist
- Date the employee was trained on the use of the product

More information may be required at a later date.

Email or fax a report to: sales@spectrumsports.com or 435-792-3884.

1.5 Certifications / Standards

Spectrum Sports Intl has the following certifications and meets/exceeds the following industry standards:



1.5.1 ASTM Requirements for Owner/Operator Responsibilities

"Owner/operators of amusement rides or devices shall have an inspection program consistent with the inspections outlined in Practice F 853 & Practice F 770. Inspection documents deemed appropriate by the owner/operator to be maintained in the ride file shall be filed in accordance with the procedures outlined in Practice F 770 and Practice F 853. The owner/operator of an amusement ride or device shall promptly notify the manufacturer of an incident, failure, or malfunction which, in his judgment, seriously affects the continued proper operation of the ride or device and is information of which the manufacturer should be aware."

(Ref: ASTM International Standards on Amusement Rides and Devices: 7th Edition, Sections: 5.2.1-5.2.3)

1.5.2 Engineering Approval

Our products have been designed and reviewed by 3rd party engineers that stand behind the product design. If it is necessary that you receive a copy of the engineering analysis, Spectrum Sports Intl will provide a copy contingent upon the signing of a "non-disclosure/non-compete agreement" and a small fee.

Please call Spectrum Sports Intl for details.



Attention!

The customer is responsible for finding what current codes are required to operate each Spectrum Sports Intl product within their state.

2. PRODUCT SETUP

This section of the manual will provide you with a 13-step process for setting up the X4 Auto-Bungee™ product. The 13 steps for setup can be seen below.

1. Locate a safe setup area.
2. Remove the trailer from the vehicle.
3. Remove the 8 aluminum poles.
4. Stabilize the trailer.
5. Remove the tongue of the trailer.
6. Fit the aluminum poles.
7. Attach the guy-cables.
8. Attach the rigging (ropes, bungees, etc.)
9. Raise the aluminum poles.
10. Connect the guy-cables to the frame.
11. Attach the banners.
12. Inflate the jump pods.
13. Position the fencing (if fencing is required in your jurisdiction).

2.1 Identify a Safe Operating Area

Complete the following steps to identify a safe operating area:

1. You will need a 20'L x 20'W x 22'H area.
2. Consider allocating extra space for fencing and a queue line.
3. Operate on level and dry ground.
 - a. Grass, gravel, dirt, asphalt, and concrete are acceptable.
4. Verify that the area is free of overhead power lines.
5. Do not operate in adverse weather conditions.
 - a. No winds over 30mph.
 - b. No lightning.

2.2 Disconnect the Trailer From the Tow Vehicle

Complete the following steps to remove the trailer from the towing vehicle:

1. Unplug the flat 4-pin electrical plug.
2. Unhook the safety chains.
3. Remove the trailer coupler pin and slide it to the open position.
4. Turn the handle on the front jack until the coupler is free of the ball hitch.
5. Pull the vehicle away from the trailer.

2.3 Remove the 8 Aluminum Poles

Complete the following steps to remove the 8 aluminum poles

1. Remove the elastic pole strap holding the pole in place. (Figure 1)
2. Remove each individual pole and set aside for now. (Figure 2)



Figure 1. Removing the Elastic Pole Straps



Figure 2. Removing the Aluminum Poles

2.4 Stabilize & Level the trailer

Stabilize and level the trailer with the 4 corner jacks.

1. Pull out the jack extension tube and pin into place. (Figure 3)
2. Rotate the jack into the vertical position. (Figure 4)
3. Turn the jack handle to lower the jack leg and foot until it touches the ground.
4. Repeat on the other 3 jacks.
5. Adjust each jack so that the foot is snug against the ground, but not lifting the trailer to the extent that the wheels come off the ground. Use the jacks to level the trailer.

***NOTE:** The jack on the tongue of the trailer is not used to stabilize the unit and will likely not be touching the ground once all the other jacks are extended to the point that they stabilize the trailer.



Figure 3. Slide the Jack Extension Tube Out



Figure 4. Jack Rotated into Place.

2.5 Remove the Tongue of the Trailer

Remove the electrical plug and pin holding the tongue to the frame. Remove the tongue and set aside or under the trailer (Figure 5)

NOTE: On some models the axle can also be removed for situations where the unit will stay in one location for long periods of time.



Figure 5. Set Trailer Tongue Aside

2.6 Fit the Aluminum Poles into Position



Warning!

Always use caution when handling moving parts and obey all instructions carefully.

There are 4 aluminum poles, each divided into 2 sections. 4 lower sections and 4 upper sections. Each section is universal with the other upper or lower sections. Fit the Aluminum Poles by:

1. Pinning the 4 lower sections into place (Figure 6-8)
2. Insert the upper section of the pole into the coupler of the lower section. (Figure 9)
3. Insert and tighten bolts (Figure 9-10)



Figure 6. Insert Lower Section of Aluminum Pole

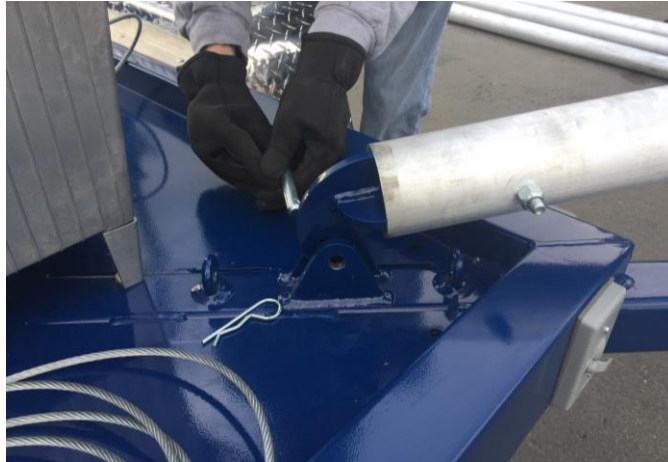


Figure 7. Pinning the Lower Section



Figure 8. Lower Section Pinned into Place



Figure 9. Upper Section Slides into Sleeve of Lower Section



Figure 10. Tighten Bolts to Secure Upper Section

2.7 Connect Guy Cables to Poles

Attach the guy-cables to the poles.

1. There are two sizes of guy-cable for the X4 Auto-Bungee. They should be separated into two piles, long and short.
2. Also, each cable has an end with a turnbuckle. Attach the NON-TURNBUCKLE end to the poles.
3. Attach the short cables to the center of the pole. (Figure 11)
4. Attach the long cables to the top of the pole. (Figure 12)
5. Ensure that all quick links are tight. (Figure 13)



Figure 11. Attach Short Guy-Cables to Middle Section



Figure 12. Attach Long Guy-Cables to the Top of the Pole

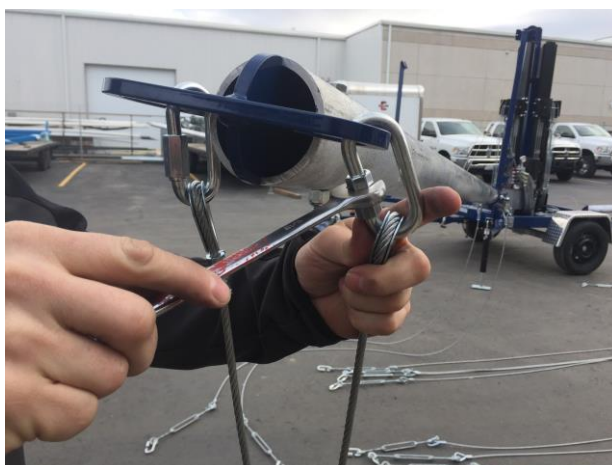


Figure 13. Tighten Quick Links

2.8 Attach the Rigging

Attach all the rigging before lifting the poles into place.

1. Attach the tension rope to the top of the poles, via a quick link and pulley. (Figure 13)
2. Make sure to tighten the quick links as you go. (Figure 13)
3. Attach the tension rope to the Auto-Bungee Cable in the center of each route with a pulley. Make sure to tighten the quick link. (Figure 14-16)
4. Using a carabiner, attach the bungees to either end of the tension rope. (Figure 17)
5. Attach a carabiner and swivel to the end of the passenger side of the bungees. (Figure 18)
6. Attach the rider lanyard and carabiner to the swivel. (Figure 19)
7. Repeat for each side of each station.

***NOTE:** Each side of each jump station will have a minimum of 2 small bungees, 2 medium bungees, and 2 heavy bungees.*



Figure 14. Attach Rope, Quick Link, and Pulley to Pole.

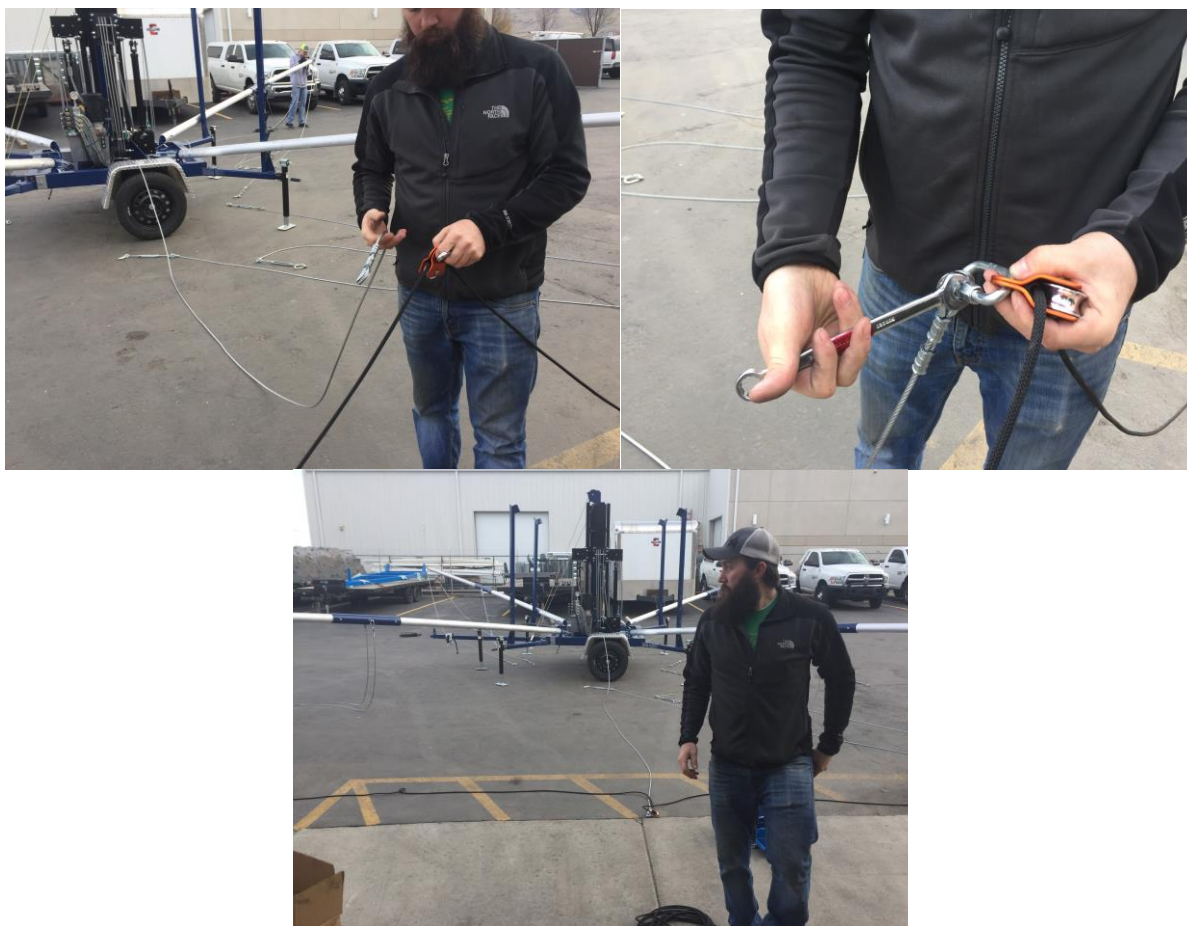


Figure 15-17. Attach the Tension Rope to the Auto-Bungee Cable



Figure 18. Attach Bungees to the Tension Rope



Figure 19. Attach Carabiner and Swivel to the Bungees



Figure 20. Use a Girth-Hitch to Attach the Lanyard to the Swivel

2.9 Raise the Aluminum Poles

Once all the rigging is in place, you are ready to lift the poles into position. (Figure 20)

1. Pin the hand winch onto the extension tube of the pole you intend to lift. (Figure 21-22)
2. Route the winch rope over the removable directional pulley above the Auto-Bungees.
3. Attach the winch rope to the lift point on the pole. (Figure 24)
4. Use the winch to pull the pole up into place and rest it on the pole coupler. (Figure 25 & Figure 26)
5. Attach the pole using the clamp and 2 bolts. Tighten the bolts with tools. (Figure 27)
6. Repeat for each pole

***NOTE:** The poles can also be lifted into place, by hand, with 2 people.



Figure 21. Rigging in Place



Figure 22-23. Pinning the Hand Winch



Figure 24. Winch Rope Routed Over the Removable Directional Pulley



Figure 25. Connecting the Winch Rope to the Lift Point on the Pole



Figure 26. Lifting the Pole Into Place



Figure 27. Putting the Pole Into Place and Clamping



Figure 28. Tighten the Bolts to Secure the Pole.



Figure 29. Lifting the Pole by Hand

2.10 Connect the Guy-Cables to the Frame

Once all the poles are in place you can connect the guy cables to the frame. Make sure to connect the short cables to the innermost mounting bracket and the long cables to the outermost bracket. They should cross each other in the pattern shown in Figure 29.

1. Attach each loose end according to the layout. (Figure 29 & 30)
2. Tighten all of the quick links
3. Hand-tighten all of the turnbuckles until all of the cables have the same consistent tension.

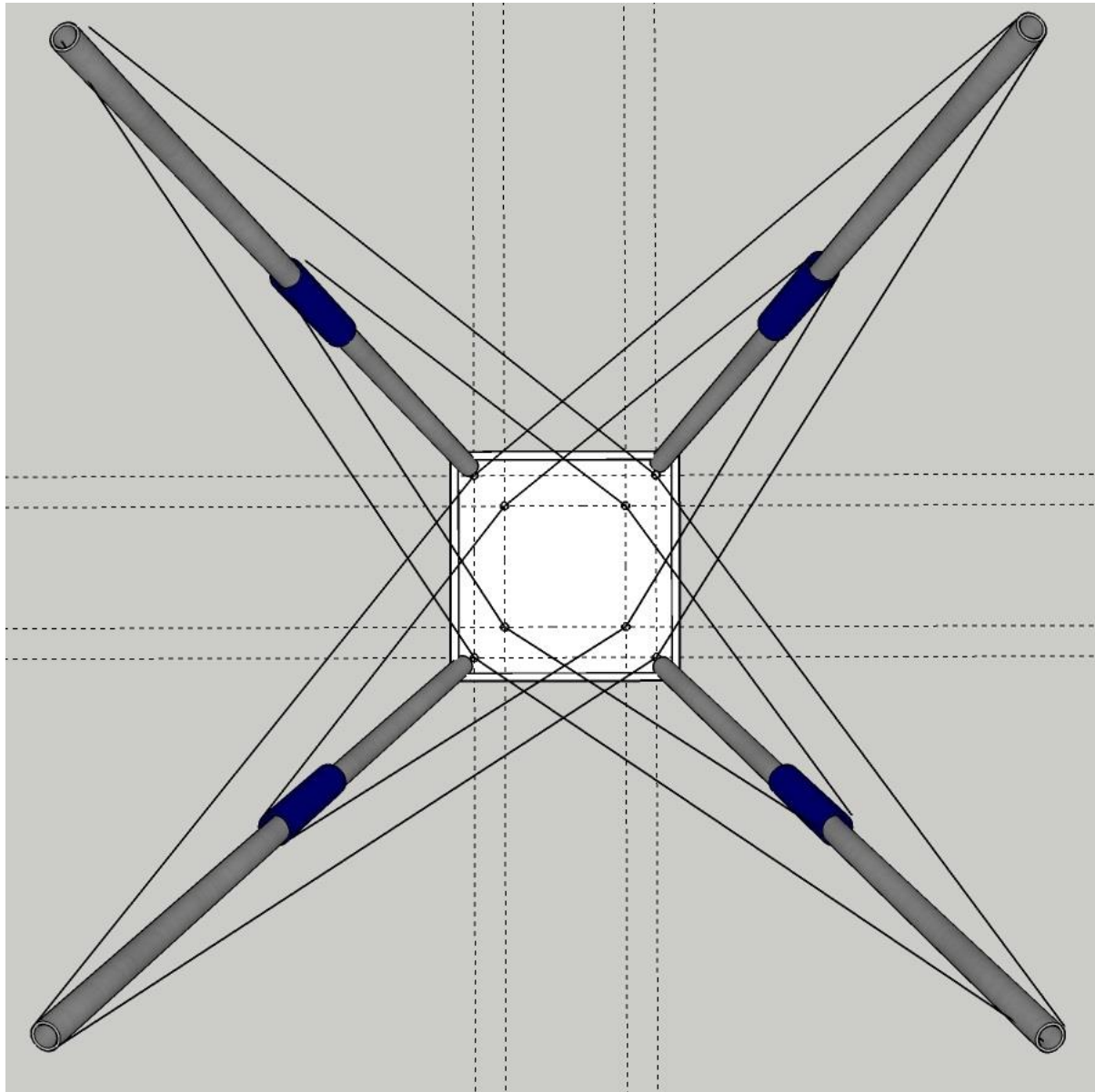


Figure 30. Guy-Cable layout

Note: Pole placement exaggerated for better perspective



Figure 31. Guy-Cable attachment



Figure 32. Tighten Quick Links and Tension Turnbuckles.

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2.11 Attach the Banners

Banners must be used at all times. They communicate important rules and warnings. Attach the banners with ball bungees to the triangle between the jump pole and the jack extension tube.

2.12 Inflate the Jump Pods

Complete the following steps to inflate the jump pods:

1. Inflate the jump pods according to the manufacturer's recommendations.
2. A 110-volt blower is included for inflating jump pods.
3. Center the jump pods directly under each station.

2.13 Trampoline Option

Complete the following steps for the trampoline:

1. Install the springs properly and cover them with the provided pads.
2. Make sure that the trampolines are on level ground.
3. Center the trampolines directly under each station.

2.14 Position the Fencing

Spectrum Sports Intl does not require that fencing is used with this ride. However, many regulatory districts may have this requirement. Operators are asked to comply where applicable. Fencing should be placed far enough from the jumping area to not present a hazard to the jumper.

3. INSPECTIONS

This section of the manual will provide you with guidelines and checklists for daily, monthly, and annual inspections. This section will also provide you with guidelines for other product-related inspections.



Warning!

Inspections of the X4 Auto-Bungee™ and Auto-Bungee® must occur on a daily, monthly, and annual basis to ensure continued safe operation. These guidelines are a minimum. Take caution to ensure that any and all working parts and safety related products are thoroughly inspected and that all bolts and pins are secure before use.



Attention!

All of the information in this chapter of the manual must be understood and implemented. All of the inspections listed in this section must be performed within the time frames specified by this manual.

3.1 Inspection Checklists

3.1.1 Quick Reference Checklist

Table 2. Quick-Reference Checklist

QUICK REFERENCE FOR INSPECTIONS			
INSPECTION ITEM	DAILY	MONTHLY	ANNUAL
Trailer Pre-Trip	✓		
Onsite Operating Conditions	✓		
Rigging	✓		
Hardware	✓		
Auto-Bungee®	✓		
Jump Pods or Trampolines	✓		
Bungee Cords	✓		
Visually Inspect Aluminum Poles		✓	
Frame Inspection		✓	
Clean Trailer		✓	
Grease Pivots & Jacks		✓	
Repack the Wheel Bearings			✓
Replace the Auto-Bungee® Cables			✓

3.1.2 Daily Inspections Checklist

Table 3. Daily Inspections Checklist

X4 AUTO-BUNGEE™™ DAILY INSPECTIONS CHECKLIST	
Operator:	
Date:	
TRAILER PRE-TRIP	
	Inspect the hitch and locking pin to ensure that it is in working order and engaged.
	Ensure that the trailer plug is inserted and DOT lighting (brakes, blinkers, and running lights) are working.
	Check the lug nuts to ensure that they are properly torqued.
	Check the air pressure in each tire (see tire for recommended pressure).
	Confirm that all cargo, including poles, jump pods, fencing, and other are secured for transit.
ONSITE OPERATING CONDITIONS	
	Level and dry ground, free of overhead obstructions, winds under 30 mph, & no lightning.
RIGGING	
	Aluminum poles are strapped into place.
	Inspect aluminum poles for cracks, bends, or other deformations.
	Removable pulleys are aligned correctly and connecting quick links are securely locked.
	Inspect ropes for core or sheath damage; knots have a minimum of 2" tail (replace them if needed).
	Inspect bungees for tears, excessive weather checking, and other damage (replace them if needed).
	Inspect lanyards for excess fraying or undone stitches (replace them if needed).
	Inspect harnesses for excess fraying or undone stitches (replace them if needed).
HARDWARE	
	Inspect pulleys for damage, deformation, and ensure they spin freely.
	Inspect carabiners for grooving and rust. Ensure that the gate snaps shut and locks automatically.

	Inspect swivels for grooving and rust. The joint should pivot smoothly with little vertical play.
AUTO-BUNGEE®	
	Visually inspect cable according to the parameters found in the Owner's Manual.
JUMP PODS	
	Ground is free of debris that may damage the jump pods.
	Inspect the jump surface for wear (rips, tears, runs) and replace them, if needed.
	Confirm that jump pods are fully inflated.
TRAMPOLINE	
	Trampoline is assembled per manufacturer specifications.
	Set up on a flat level ground.
	Spring pads are installed.
HARNESSES	
	All buckles are working properly.
	No visual rips or tears, no torn stitching.
HYDRAULICS	
	Check the Jump Pump™ hydraulic fluid level and operating PSI
	Inspect area around pump and hoses for leaks

3.1.3 Monthly Inspections Checklist

Table 4. Monthly Inspections Checklist

X4 AUTO-BUNGEE™ MONTHLY INSPECTIONS CHECKLIST	
Operator:	
Date:	
	Complete the Daily Inspections Checklist.
INSPECT THE 12v HYDRAULIC LIFT SYSTEM	
	Visually Inspect for oil leaks around the rams, hoses, and fittings.
FRAME INSPECTION	
	Visually inspect all structural components and welds for damage, deflection, or cracking.
CLEAN THE TRAILER	
	Use a mild detergent and pressure washer. DO NOT use high pressure on the hydraulic rams, hoses, fittings, tank, power switch, or battery areas.
GREASE THE TRAILER	
	Grease the zerks found on all five jacks.

3.1.4 Annual Inspections Checklist

Table 5. Annual Inspections Checklist

X4 AUTO-BUNGEE™ ANNUAL INSPECTIONS CHECKLIST	
Operator:	
Date:	
	Complete the Daily Inspections Checklist.
	Complete the Monthly Inspections Checklist.
GREASE THE WHEEL BEARINGS	
	Repack the wheel bearings with grease.
REPLACE THE FOLLOWING PARTS	
	Steel cable on each Auto-Bungee® device.
	Any other parts, as deemed necessary by inspection. When in doubt, change it out.

3.2 Rope Inspections



Warning!

Please read this before using any fiber rope. The improper use of rope is DANGEROUS. Fiber rope will fail if it is worn, damaged, abused, overloaded, or improperly maintained. ROPE FAILURE CAN CAUSE SERIOUS INJURY OR DEATH!

NOTE: There are many standards and guidelines for the use of rope in specific applications. If you have any questions or concerns, please contact:

***Cordage Institute
994 Old Eagle School Road
St. 1019,
Wayne, PA 19087-1866
Tel: 610-971-4854
Fax: 610-971-4859
Email: info@ropecord.com***

Follow these rules to safely use and take care of the ropes:

- The USER is responsible for determining the suitability of a rope for specific applications.
- KNOW the working load limit (WLL) of your rope (get the WLL from a manufacturer or supervisor).
- DO NOT exceed the WLL or shock load.
- ONLY USE rope that is in good condition (no cuts or pulled strands).
- DO NOT stand within the recoil (snapback) area.
- DO NOT use over rough surfaces without chaff protection.
- USE sheaves with a minimum of 8 times the rope diameter.
- DO NOT bend the rope around unprotected, sharp corners.



Make sure your rope size is adequate for the job. **DON'T USE TOO SMALL A ROPE.** A table of specifications is available from your dealer, distributor, or the manufacturer.



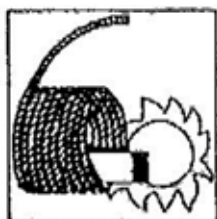
Keep rope clean. Don't drag rope over ground or other rough gritty surfaces. This allows abrasive particles to work into the rope and damage fibers.



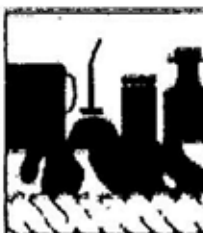
Uncoil rope properly. Lay coil flat with Inside end of rope nearest the deck. Loosen lashings and covering. Reach down through center of coil and pull rope up through from inside the coil.



Prevent kinks, which cause permanent damage and weakening of the rope. If rope is continually twisted in one direction, as over a winch, counteract by throwing in twist in opposite direction.



Dry rope before storing. Manila ropes mildew and decay if stored wet; a cool, dry room with free air circulation provides the best storage. Do not store in direct sunlight.



Protect rope from chemicals such as acids, alkalis, oils, paints and other agents not chemically neutral.



Reverse rope ends regularly, particularly when used in tackle. This permits even wearing and assures longer useful life.



Avoid sudden strains. Shock loading, as jerking, may cause failure of a rope normally strong enough to handle the load. When using tackle or slings, apply a steady, even pull to get full strength from rope.

CAUTION: Heat can seriously affect the strength of synthetic ropes. The temperature at which a 50% strength loss can occur are:

Polypropylene: 200 F	Nylon: 300 F	Polyester: 350 F
Kevlar/Technora: 400 F	Dyneema/Spectra: 150 F	

Figure 33. Additional Rope Inspections

3.2.1 Wire Rope Inspection Comparison

A wire rope inspection criteria comparison can be seen in the table below:

Table 6. Wire Rope Inspection Comparison

INSPECTION CRITERIA REQUIRING ROPE REPLACEMENT	ASME/B30.5C CRANES	WIRE ROPE USERS GUIDE, 3 RD EDITION
Length of Wire Rope Service	No specifications given.	No specifications given.
Abrasion	1/3 diameter worn on any wire (see below).	1/3 diameter worn on any wire, see specific governing code.
Rope Stretch	No specifications given.	When the rate of stretch increases after initial break-in period.
Reduction in Rope Diameter	1/48" on cables 1/4" diameter.	When accompanied with significant rope stretch; otherwise not specific.
Corrosion	Not specified.	If accompanied by metal pitting; if rust exists.
Kinks, Twists, Crushing	Any – replace wire rope.	Any – replace unless cable is repairable.
“Bird Caging”	Any defect – replace unless defect can be removed.	Any defect – replace unless defect can be removed.
Heat/Electrical	Any – replace wire rope.	If wires are fused or discolored.
Broken Strands	Rotation resistant ropes: 2 wires in 6 rope diameters – and 4 wires in 30 rope diameters. New criteria: 4 broken wires in one lay-length and 2 broken wires within 1 strand within 1 lay-length.	See specific code.
Damaged End Attachments	If non-repairable, replace wire rope.	See specific code.
Non-destructive	Not specified	Not specified.

The ASME/B30.5 inspection criterion is very specific on the visual inspections required. The code is specifically designed to allow an inspector to accurately infer the status of the wire rope core from a thorough inspection of the wire ropes broken wires in a strand, abrasion of the wires in the strands, and the change in the diameter of the overall rope. The inspection criterion requires a thorough visual inspection of the rope.

The number of broken strands is a key aspect of the ASME code. Due to the primary role it plays in determining the integrity of the rope core, a summary of the ASME code allowable broken strands can be seen in the table below.

Table 7. Allowable Broken Strands by ASME Code

ASME STANDARD	EQUIPMENT CONNECTION	NUMBER OF BROKEN WIRES IN RUNNING ROPES		NUMBER OF BROKEN WIRES IN STANDING ROPES	
		IN ONE		IN ONE	
		ROPE LAY	STRAND	ROPE LAY	STRAND
ASME/B30.2	Overhead & Gantry Cranes	12**	4	Not Specified	
ASME/B30.4	Portal, Tower, & Pillar Cranes	6**	3	3	2
ASME/B30.5	Crawler, Locomotive & Truck Cranes: Retirement criteria based on number of broken wires rev B. Rotation Resistant Rope found in length of rope equal to 6x rope diameter – 2 broken wires maximum; and 30x rope diameter – 4 broken wires maximum.				
ASME/B30.5	Running Rope	6**	3	3	2
ASME/B30.6	Derricks	6**	3	3	2
ASME/B30.7	Base Mounted Drum Hoists	6**	3	3	2
ASME/B30.8	Floating Cranes & Derricks	6**	3	3	2
ASME/B30.16	Overhead Hoists	12**	4	Not Specified	
ANSI/A10.4	Personnel Hoists	6**	3	2**	2
ANSI/A10.5	Material Hoists	6**	Not Specified		

****Also remove for 1 valley break**

3.3 Cable Inspections

A rigorous inspection routine is not only recommended but required. Proper inspection will eliminate the chance of using a wire rope beyond its useful life. The inspection routine that is listed is the procedure that should be followed rigorously. This inspection method is visual and adheres to the applicable standards published in the United States.

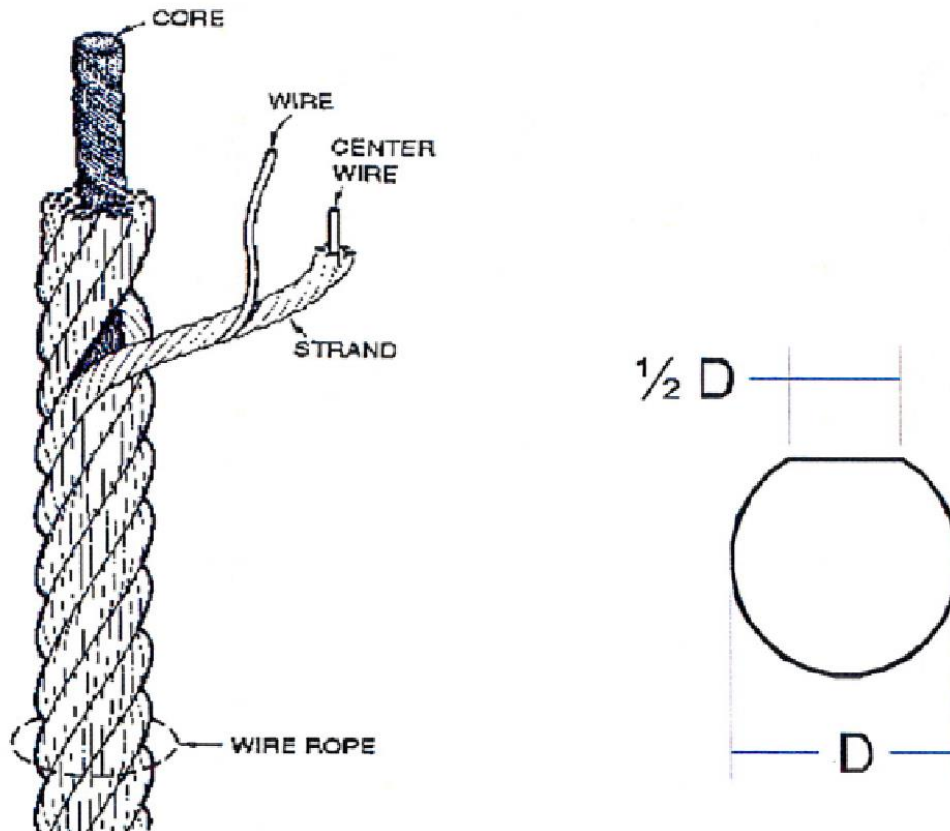


Figure 34. Single Wire Inspection Criteria

3.3.1 Replacing the Cable

Replace the cable if any of the following conditions are true (refer to the previous figure):

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 as shown in the figure above.
2. If there is a single broken wire in any strand.
3. If there are 50,000 or more cycles on the route.
4. If the cables have been on a X4 Auto-Bungee™ for 1 year (12 months).
5. If there are any twists, kinks, flat spots, or bird-caging.

Wire Rope Inspection Criteria, recommended by various agencies, manufacturers, and governing agencies in the United States, have published guidelines pertaining to wire rope use, maintenance, inspection, and general specifications. Most wire rope manufacturers have additional guidelines for the use, maintenance, and inspection of their cables. These guidelines and codes set precedence for the industry standard methods of wire rope use, maintenance, and inspection. Deviation from these recommendations would be viewed as questionable by the most experienced engineers in the industry.

To justify the inspection method recommended by Spectrum Sports Intl, the most noted codes and guidelines have been obtained and read by SAE Inc. engineers. The codes obtained by SAE Inc. engineers include:

- ASME (American Society of Mechanical Engineers) International Publication.

ASME/B30.5c – Mobile and Locomotive Cranes, 1998, ISBN#: 0791822753

This code is a revision of the ASME/ANSI B30.5-1989. It applies specifically to applications similar to the Space Shot™ ride.

- Wire Rope Technical Board

Wire Rope User's Manual, Third Edition, 1993

This test gives a summary compilation of the recommended practices for wire rope use in general applications.

- OSHA Wire Rope Excerpts – General Standards, Vol. 37, Number 202, Oct. 1972.

This general standard is a compilation of the ASME/ANSI standards that exist now as the SME/B30.XX series. These are the forerunner to current standards.

- Leeschen Wire Rope Company – “Wire rope Inspection”, Report #107.

This report gives guidelines to the inspection methods appropriate to identify wire rope damage.

Each of these codes specifies, in general, the same criteria for the inspection of wire ropes. Additional ASME codes specify inspection criteria for additional applications including, but not limited to, personnel hoists (elevators), overhead cranes, material hoists, etc. The ASME code governing *Mobile and Locomotive Cranes* is very stringent. It is the most stringent code that has any applicability to the Auto-Belay. The highlights of the inspection guidelines/codes listed above are included in the next table of this document to set a comparison reference for Spectrum Sports Intl guidelines.

Note: The inspection procedures outlined in the referenced codes are all *visual inspections*.

3.3.2 Cable Replacement Options

The following cable replacement options are available:

- **On-Site Service:** Spectrum Sports Intl has offered the option of On-Site Service for over a decade. Our service truck is fully equipped and circles the entire country twice each year. The On-Site Service option may include cable replacement, parts replacement, inspections, and any other maintenance needs pertaining to the customer's request.

To be put on the On-Site Service schedule: fill out and submit a service request form at www.spectrumsports.com or call (435)792-3883.

- **Self-Installation:** Customers who wish to install cables on their own product have the option of ordering certified cable, with both ends crimped, straight from our facility.

3.4 Non-Destructive Examination (NDE) Inspection Policy

Spectrum Sports Intl hires third-party engineering firms to complete finite analysis reviews of products to prescreen designs for possible fatigue points. Based on this information the engineer might recommend “visual inspection” of certain structural components. Where applicable, these visual inspection points will be called out in the “Inspections” section of this product owners/operators manual.



Attention!

The documented daily, weekly, quarterly, and annual inspections must be completed to ensure safe operations of all products.

X4 Auto-Bungee™ and Auto-Bungee® stickers can be seen on the following two pages. These stickers will be followed by the Safety Warning and Rules signs associated with the X4 Auto-Bungee™ and Auto-Bungee®.

3.5 X4 Auto-Bungee Stickers

Be aware of the location of these stickers and follow their instructions:

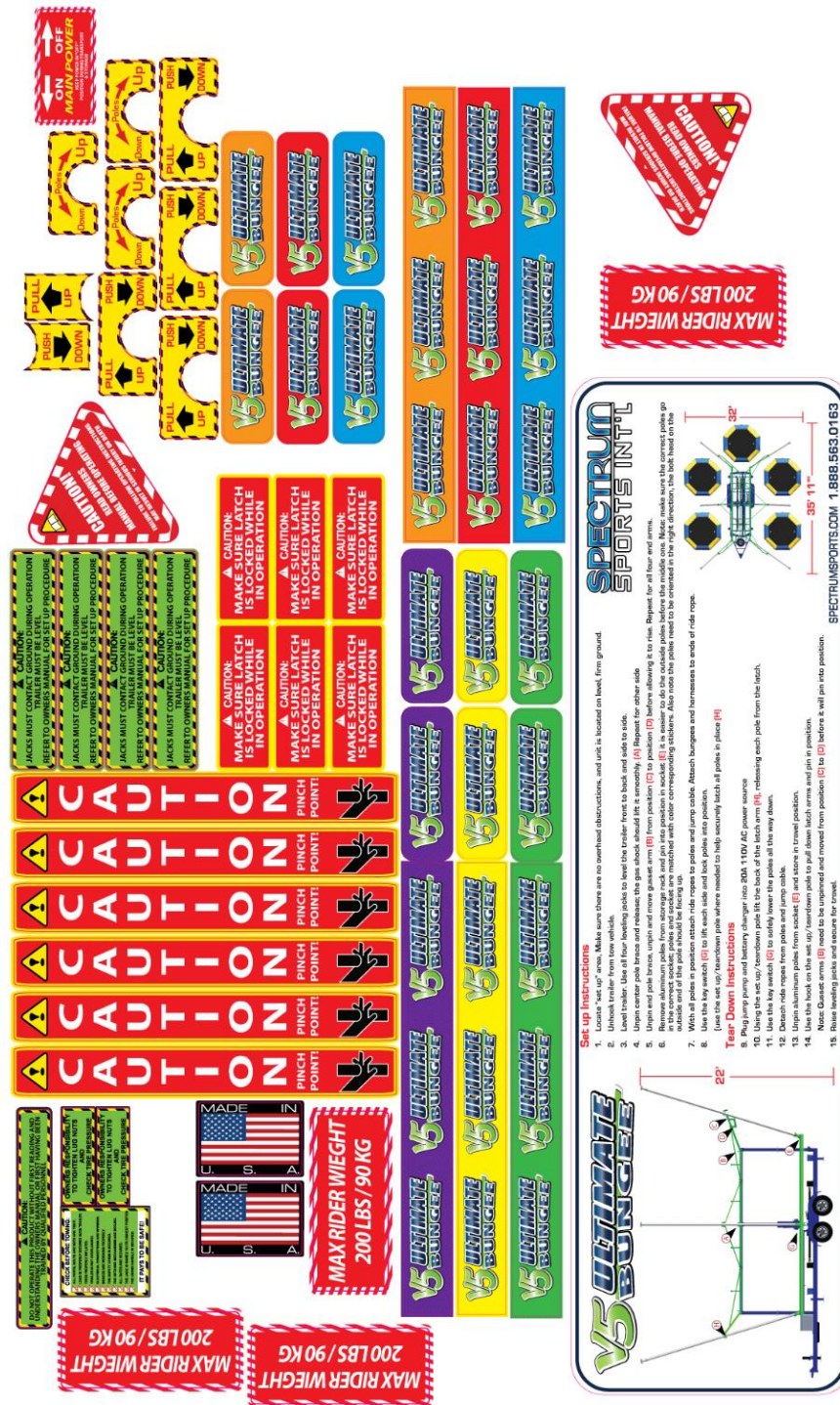


Figure 35. X4 Auto-Bungee™ Stickers

SPECTRUM SPORTS INTL

324 W 2500 N Bldg A | North Logan, UT 84341 | 888-563-0163

3.6 Auto-Bungee® Stickers



Figure 36. Auto-Bungee® Stickers

3.7 Warning & Safety Signs



Figure 37. Safety Warning



Figure 38. Rules Sign

4. OPERATIONS

Two operators are needed to set up the X4 Auto-Bungee™. Only one operator is required to safely operate the attraction, but it might be useful to have 2 operators during busy hours.

Operator - The role of the operator is as follows:

- Knows and understands how to safely **transport** the X4 Auto-Bungee™.
- Knows and understands how to **setup** the X4 Auto-Bungee™.
- Knows and understands how to **inspect** the Auto-Bungee® Safety System and X4 Auto-Bungee™.
- Knows and understands how to **take-down** the X4 Auto-Bungee™.
- Keeps the queue line and harness area in order.
- Collects any tokens, tickets, or money for the X4 Auto-Bungee™ ride.
- Verbally explains to the jumpers the items on the Warning and Rules signs.
- Harnesses the jumpers.
- Connects jumpers to the bungees and gives any final instructions.
- Controls the cycle time of jumpers.
- Ensures that the Auto-Bungee® Safety System is properly retracting the bungee assembly with each user.

4.1 Rider Restrictions

The following rider restrictions apply to the X4 Auto-Bungee™:

- The jumper must weigh between 40 lbs. – 200 lbs. (18kg – 91kg).
- Minimum height for a jumper is 40" tall.
- Minimum age for jumper is 6 years old.
- One jumper allowed per station.
- Long hair must be secured.
- Riders cannot be under the influence of any substance.
- Riders must be able to follow all verbal instructions from the operators.
- Riders are prohibited if they have health problems such as head, neck, back, or limb injuries; a heart condition; or are pregnant.
- Riders must have sufficient limbs to properly wear full-body harness.
 - The Fusion TR-300-S/M-Red (size small, standard padding) and TR-700-M/L-Blue (size medium, deluxe padding) are supplied as OEM equipment. Other sizes may be purchased in either standard or deluxe series (TR-300 or 700) by the operator if deemed necessary.
 - In the **State of California**, the Fusion TR-300-FB (full-body) harness must be used. The attraction is supplied with S/M and M/L sizes. XS and XL may be purchased by the operator if deemed necessary.

4.2 Ride Cycle

The following ride cycle applies to the X4 Auto-Bungee™:

1. Jumper enters the queue line.
2. Any tokens, tickets, or money are collected, if applicable.
3. Jump Master verbally explains the Warning and Rules Sign.
4. Jumper confirms that they understand the Warning and Rules Sign.
5. Jumper is harnessed as follows:
 - a. 22" – 30" waist: Small Kids Harness
 - b. 30" – 40" waist: Large Adult Harness
6. Jumper climbs onto the jump pod.
7. A bungee assembly is connected to each side loops on the jumper's harness.
 - a. Adjust bungees on each side to equal half the rider's weight plus approximately 20%.
 - b. Use equal amounts of bungees on each side.
 - c. **Always use at least 2 bungees on each side!**

Table 8. Jumper Weight and the Associated Bands per Side

Jumpers Weight (lbs)	Bands per side		
	10 lb./Small	20 lb./Medium	40 lb./Large
40	2	1	-
50	-	2	-
60	1	-	1
70	2	-	1
80	-	1	1
90	1	1	1
100	2	1	1
110	-	-	2
120	1	-	2
130	2	-	2
140		1	2
150	1	1	2
160	2	1	2
170	-	2	2
180	1	2	2
190	2	2	2
200	2	2	2

(Bungee colors and associated resistance weigh can vary from Mfg to Mfg).

This chart is a starting point/guideline for you to use. Bungee cords can vary on their weight ratings, color, and materials. It is your responsibility to understand how your bungee system operates and how it jumps. Experience is gained through operations. Remember that you are ultimately responsible for the jumper's safety. Always err on the side of caution and always double check your systems/cords/safety before and after each jumper. Always use a minimum of 2 cords per side. NEVER USE ONLY ONE CORD PER SIDE. NO EXECPTIONS!

You may experience getting a longer life out of some bungee cords and a shorter than expected life out of other cords. Their life span is unpredictable. Our experience is UV rays/sun and heat shorten the life of bungee cords. Some last longer than others. Keeping them in a cool dark place is the most recommended form for storage. Bungee cords are not a warrantied part/item. They are considered a “consumable” and you should budget for annual use. Plan ahead and be prepared.

NOTE: More fit jumpers will benefit from more bungees.

8. Operator steps off the jump pod to allow the jumper to begin their cycle.
9. Operator engages the Auto-Bungee® by flipping the switch lever upwards.
10. Jumper continues until they are tired or out of time.
11. Warn jumper before lowering them. No more flips!
12. Operator disengages the Auto-Bungee® by flipping the switch lever down.
 - a. Jumper automatically lowers to the jump pod.
13. Operator removes the bungee assemblies from each side of the harness.
14. Instruct jumper to carefully step or slide off the jump pod.
15. **Operator must warn participant that jumping off the pod to the ground may cause injury!**
16. Operator removes the harness.
17. Jumper exits the ride area.

4.3 Emergency Evacuation Plan

In the event that a jumper becomes stranded in an elevated position, the following emergency evacuation plan is to be implemented:

1. Clear all other jumpers from the area.
2. Move the jump pod or trampoline out of the way and place a two-sided ladder under the stranded jumper. A bystander may be utilized to stabilize the ladder.
3. Ascend one side of the ladder and assist the stranded jumper with footing position and stability.
4. Once the stranded jumper is stabilized and has good foot placement and hand placement, disconnect the jumper from the bungees.
5. Allow the jumper to down climb the ladder. For small children an assistant may be necessary to help the child down the ladder.
6. Close the station until a remedy may be found.

5. TAKE-DOWN

The steps for take-down are listed below:

1. Deflate the inflatable jump pods or disassemble the trampolines (if necessary).
2. Remove the banners.
3. Dismantle the fencing, if it is used.
4. Detach guy cables.
5. Lower the poles.
6. Remove the rigging.
7. Disassemble the aluminum poles.
8. Return the trailer tongue to travel position.
9. Return the stabilizing jacks to travel position.
10. Rack the Aluminum poles for travel.

5.1 Dismantle the Inflatable Jump Pods

Complete the following steps to dismantle the inflatable jump pods:

1. Deflate and store the inflatable jump pods according to the manufacturer's recommendations.
2. Never store wet!

5.2 Remove the Banners

Use caution when removing the top connection points.

5.3 Dismantle the Fencing

If fencing was used, set it to the side to leave clearance for the aluminum poles when they are lowered.

5.4 Detach Guy-Cables

Reverse the steps found in 2.10.

1. Loosen all turn-buckles but leave them attached to the cables.
2. Loosen all quick links and detach from the trailer.
3. Close quick link nuts so that they do not fall off cables while in storage.

5.5 Lower the Poles

With the guy-cables removed from the trailer you can now reverse the steps of 2.9 and lower the aluminum poles.

1. Attach the hand winch rope to the middle section of the pole, and snug the rope so that the rope has tension but is not lifting the pole.
2. Loosen and remove the 2 bolts and plate that holds each pole to the frame.
3. Use the winch to lift the pole from its position.
4. Move the pole to the side far enough to lower it. Then lower it with the winch.
5. Repeat on all stations.

***NOTE:** This step can also be done by hand if necessary (two people are suggested).

5.6 Remove the Rigging

In most situations it makes sense to keep the rigging from each jump station together to facilitate quicker setup for the next event (e.g. keep the rope, carabiners, bungees, swivel, and lanyard connected). Store in a dry location.

5.7 Disassemble the Aluminum Poles

Take the aluminum poles apart and set aside.

5.8 Return the Trailer Tongue to Travel Position

Once the tongue is reinserted into the tube, make sure the pin is in place and the wire harness is re-attached. (Figure 37) Also ensure that the jack is vertical and ready to support the load of the trailer.



Figure 39. Trailer Tongue Connection

5.9 Return the Stabilizing Jacks to the Travel Position

Return the jacks to the travel position by:

1. Release the pressure from the stabilizing jacks and transfer it back to the wheels and tongue jack.
2. Rotate the jacks to the horizontal position and pin in place. You may also elect to remove them entirely for transport and storage.
3. Slide extension tubes back into the frame and pin into place.

5.10 Rack the Aluminum Poles

With the jack extension tubes out of the way, you can now safely rack the aluminum poles. Be sure to lock the poles in place using the elastic loops.



Figure 40. Aluminum Poles Racked for Transport

6. TRANSPORTATION

This section of the manual will provide you with pre-trip and transportation instructions. The transportation dimensions for the X4 Auto-Bungee™ are as follows:

- **Length:** 12'6"
- **Height:** 9'6"
- **Width:** 6'
- **Weight:** 1,800 lbs.

6.1 Pre-Trip Inspection

Complete the following items before transporting the vehicle:

- ☐ Ensure tires are properly inflated.
- ☐ Torque lug nuts to 100 ft. lbs.
- ☐ In-line fuses 20-amp min.
- ☐ Make sure the hitch pin on the coupler is securely locked.
- ☐ Safely strap down all trailer cargo: trampolines, bongos, blowers, fencing, etc.
- ☐ Ensure all jacks are in travel position with proper pins in place.
- ☐ Adjust mirrors so trailer is seen clearly.
- ☐ Ensure that the brakes work properly on the tow vehicle.
- ☐ Test to make sure that all lights are working properly on both the tow vehicle and the trailer.
- ☐ Walk around the trailer and vehicle, look for any items that may be out of place.

6.2 Connect to the Tow Vehicle

Follow the guidelines in this section to connect the trailer to the tow vehicle.



Attention!

Be sure that you have the appropriate ball on the tow vehicles hitch prior to connecting the tow vehicle to the X4 Auto-Bungee™.

The X4 Auto-Bungee™ trailer is designed to be towed level with the ground. An adjustable or drop hitch may be required depending on the height of your tow vehicle.

- Confirm that your tow vehicle is rated for the combined trailer and cargo weight.
- Confirm that you have the appropriate 2" ball hitch on the tow vehicle.

The following steps are to be followed each time the trailer is connected to a tow vehicle:

1. Remove the pin from the trailer coupler and slide it to the open position.
2. Back the tow vehicle until the ball hitch is directly under the trailer coupler.
3. Use the jack on the trailer tongue to lower the coupler onto the ball hitch.

4. Slide the coupler into the closed position and secure with the locking pin.
5. Connect both safety chains to the tow vehicle. Cross the chains and twist to adjust height if necessary.
6. Connect the electrical plug from the trailer to the tow vehicle.



Attention!

Walk around the perimeter. Inspect for any items that may have been left out, and double-check that the trailer cargo is secure before towing.

6.3 Transporting the X4 Auto-Bungee™

It is your responsibility to practice safe driving skills while pulling the X4 Auto-Bungee™. Be sure to do the following while towing an X4 Auto-Bungee™:

1. Do not exceed 65 MPH while towing.
2. Do not transport in snow, ice, heavy rain, or if winds exceed 40 MPH.
3. Obey all traffic rules, laws, and speed limits.
4. No texting while towing any Spectrum Sports Intl product.
5. Make wide sweeping turns.
6. Allow plenty of room for braking.
7. Be aware of the trailer height, width, and length.
8. Plan ahead! Allow plenty of time to get to the event/location.

7. MAINTENANCE

Spectrum Sports Intl will give no warranty or be liable for any of its products, components, or safety systems that do not use genuine and/or authorized replacement parts. Any modifications, alterations, misuse, work, or service that is performed on your Spectrum Sports Intl X4 Auto-Bungee™ that is not performed by an authorized Spectrum Sports Intl employee voids any and all claims to any manufacturer's liability.

Maintenance must be performed according to the following schedule – no exceptions.

7.1 Maintenance Schedule

Complete all of the items in the following maintenance schedules.

7.1.1 Monthly Maintenance Schedule

Complete the following monthly maintenance items:

- Grease the jacks. Perform earlier if jacks become difficult to crank.
- The jump pump has a hydraulic oil filter that is equipped with a gauge indicating when it needs to be replaced. Replace it if needed.
- Inspect the frame welds and assemblies and contact Spectrum Sports Intl if you see any damage that needs addressed.

7.1.2 Annual Maintenance Schedule

Items on this list are required to be replaced with Certified OEM Spectrum Sports Intl replacement parts. Spectrum Sports Intl is not responsible for any product that has been altered or modified in any way, including the use of non-certified replacement parts. Failure to follow this annual replacement schedule may result in serious injury and or death for which Spectrum Sports Intl will not be liable.

- Replace all Auto-Bungee® cables.
- Check the axle bearings and grease as needed.

7.1.3 Maintaining Wear Items

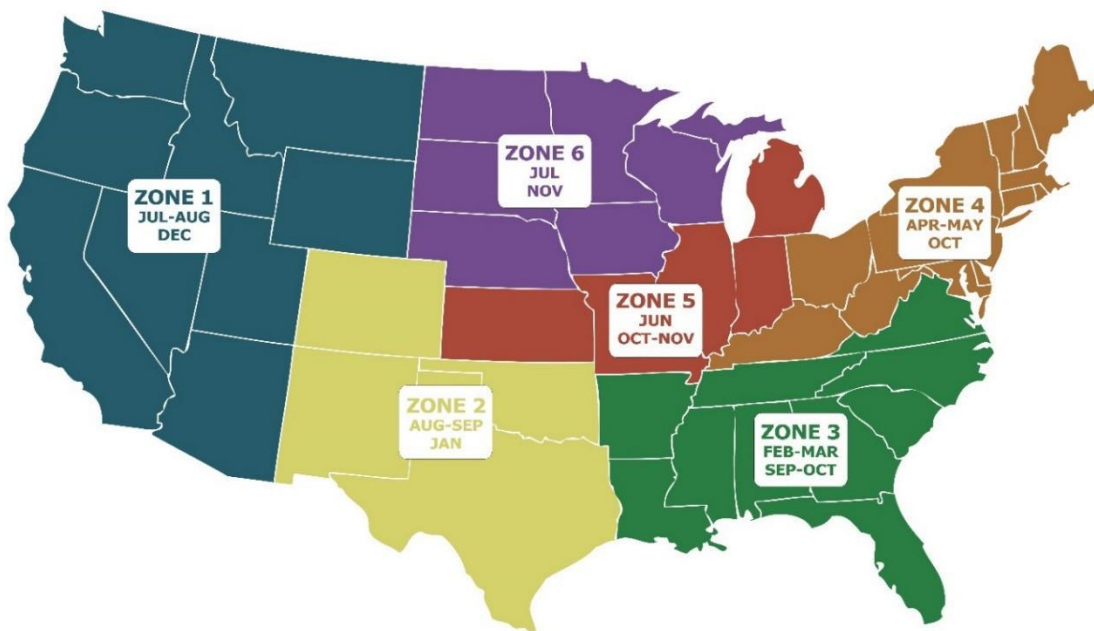
The following components are wear items. It is up to the operator to monitor and determine when it is time for replacement based on the following guidelines. When in doubt, change it out!

- **Bungees:** Inspect for tears, excessive weather checking, or other damage.
- **Carabiners:** Replace if the auto-locking sleeve on the gate no longer snaps closed on its own. Surface rust, pitting, or wear grooves would also suggest the need for replacement.
- **Quick-Link:** Replace if the screw gate will no longer close. Surface rust, pitting, or wear grooves would also suggest the need for replacement.
- **Pulleys:** Inspect the v-groove for wear and ensure that pulleys roll smoothly on bearings.
- **Auto-Bungee® Cylinders:** Replace when you see excessive oil leakage (visible on every stroke).
- **Lanyards:** Replace when you see fraying or stitching coming loose.
- **Guy Cables & Turnbuckles:** Replace if inspection parameters reveal problems or if any surface rust or pitting appear. Guy cables must be used for safe operations!
- **Aluminum Poles:** Inspect for cracks, bends, or deformations.
- **Harnesses:** Inspect for fraying or undone stitches.

7.2 Service Options

The following service options are available:

- **On-Site Service:** Spectrum Sports Intl has offered the option of On-Site Service for over a decade. Our service truck travels the U.S. twice each year and is fully equipped. Service that aligns with the truck's schedule can be offered at a very competitive rate. The service offered may include cable replacement, parts replacement, inspection, and any other maintenance needs pertaining to the customers' request. To be added to the On-Site Service schedule, visit our website at www.spectrumports.com to complete and submit the request form, or call (435) 792-3883.
- **Self-Installation:** Customers who wish to do their own maintenance have the option of ordering certified OEM parts directly from Spectrum Sports Intl. The customer then assumes all liability for the work, but the part is still covered by the manufacturer's warranty provided it is installed and used properly.
- **3rd Party Service:** Spectrum Sports Intl does not train, nor authorize, 3rd party vendors to service its products. If any 3rd party purports to be an authorized Spectrum Sports Intl servicer, please report it to us immediately.



7.3 Cleaning

We recommend that you clean your X4 Auto-Bungee™ frequently. Use a spray nozzle and mild detergents, and hand-dry thoroughly before storing.

We recommend using a furniture polish without natural oils to help keep steel parts clean and polished. This type of product leaves a light layer of wax on the steel to protect it and refreshes the finish. This process also provides an opportunity to look at the welds and inspect the product.



Attention!

Use caution if you use a pressure washer to clean. DO NOT point the nozzle directly at the Auto-Bungee®, lift pump, pivot points, grease points, electrical switches, or powder coat paint finish. You may damage the product.

Do not use any mineral spirits, acids, or other harmful chemical products on your X4 Auto-Bungee™.

7.4 Product Storage (Winterization)

If your X4 Auto-Bungee™ will not be in service for a period of 30 days or more, we recommend the following storage procedures.

- Clean and properly store the inflatable jump pods. Make sure they are dry.
- Keep all safety gear in a dry location.
- If possible store entire product under roof or tarp.

If you have any questions or concerns, please call Spectrum Sports Intl at (435) 792-3883, or email us at service@spectrumsports.com.

8. WARRANTY

The warranty set forth below represents the manufacturer's sole warranty and is in lieu of any other expressed or implied warranties or obligations of Spectrum Sports Intl, its distributors, resellers/retailers, or employees. This warranty is null and void if other than genuine parts are used, or if any modifications are made without the express written permission of the manufacturer. This warranty only applies to the original purchaser and is contingent upon the owner/operator using and maintaining the product in accordance with this manual.

Limited Product Warranty

The X4 Auto-Bungee™ by Spectrum Sports Intl is warrantied free from defect in material and workmanship for a period of 90 days from the date of purchase.

Additionally, the steel trailer and frame are warrantied for one year on welds and structure (does not include powder coat or any frame damage due to improper setup or damage due to misuse).

Equipment not manufactured by Spectrum Sports Intl (harnesses, lanyards, pulleys, etc.) is covered to the extent of the warranty provided by the original manufacturer.

Limitation of Remedy

Spectrum Sports Intl reserves the right to determine if a product is under warranty. Spectrum Sports Intl may elect at their discretion to use fabricators, distributors, and/or service agents local to customer to determine cause and/or repair of the particular part.

Spectrum Sports Intl's sole obligation under this warranty shall be to repair or replace any part or parts which, to their satisfaction, prove to be defective upon inspection. This obligation does not include labor to install replacement parts.

All claims in regards to the parts or equipment must be made within the warranty period.

To obtain repair or replacement parts, call **(435) 792-3883** or email **service@spectrumsports.com** for a **return authorization number**. Include the following information:

- Company name
- Contact name
- Office phone and/or mobile phone
- Ship-to address
- Date of purchase
- Product model
- Serial number

At your expense, ship or deliver the product or part to:

Spectrum Sports Intl
324 W 2500 N Bldg A
North Logan, Utah 84341

Replaced or repaired items will be shipped back to you at no cost and will be shipped in the same manner as they were received (i.e. overnight, 2nd day, ground, LTL freight, etc.).

For replacement parts that must be shipped to the customer before the original part is received back by Spectrum Sports Intl, it is REQUIRED that a valid credit card be charged for the replacement part before Spectrum Sports Intl will ship. Once Spectrum Sports Intl receives the original part, and if it deems that it is covered by warranty, a credit will be issued back to the credit card.

Spectrum Sports Intl is in no way responsible for lost revenue or income while product is not in operation due to warranty or any other problems due to installation and/or operations.

Warranty is only extended to the original owner.

Wear parts are not included under this warranty.

Should it be determined that the defect is due to abuse or misuse, any and all warranty rights or responsibilities are void.

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.

The warranty on Spectrum Sports Intl equipment remains valid only when genuine OEM Spectrum Sports Intl replacement parts are employed. Spectrum Sports Intl reserves the right to void warranty on any customer-modified parts. Furthermore, the customer will indemnify and hold Spectrum Sports Intl harmless from any damage or injury caused, including damage to the reputation, name, and good will of Spectrum Sports Intl.

If anyone other than a Spectrum Sports Intl authorized service technicians perform work or modify/repair any part of the product, it will VOID any warranty claim and will indemnify Spectrum Sports Intl from any liability.

The following items are considered to be the responsibility of the customer, and therefore, are not included under the terms of the warranty:

- Normal maintenance/routine service.
- Normal placement of service terms.
- Replacements required because of abuse, misuse, or incorrect operation of equipment by the installer or operator.
- Normal deterioration due to use and exposure.
- Strict adherence to this manual and the instructions herein or those provided by Spectrum Sports Intl and its service technicians is also a condition of warranty.

THIS WARRANTY IS EXPRESSLY IN LIEU OF OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS HEREBY EXPRESSLY EXCLUDED.

Waiver & Release From Liability

NOTICE: BY ACCEPTING YOUR X4 AUTO-BUNGEE™ YOU ARE ACKNOWLEDGING THAT YOU HAVE READ, UNDERSTOOD AND ACCEPTED THE TERMS AND CONDITIONS STATED IN THIS MANUAL. YOU FURTHER ACKNOWLEDGE AND AGREE THAT YOU ARE WAIVING YOUR RIGHTS TO SUE OR BRING A COURT ACTION TO RECOVER COMPENSATION OR OBTAIN ANY OTHER REMEDY FOR ANY INJURY TO YOURSELF OR YOUR PROPERTY.

This Release, Waiver and Assumption of Risk ("Agreement") entered into by and between the owner/operator, on behalf of his/her/its heirs, legal representatives, personal representatives, attorneys, affiliates, administrators, successors and assigns ("Releasor") and in favor of KBG International, Inc. a Utah corporation doing business as Spectrum Sports Intl, its past, present and future officers, directors, stockholders, attorneys, agents, servants, representatives, employees, subsidiaries, affiliates, partners, insurers, predecessors and successors in interest, indemnitors, assigns and other related or affiliated entities or persons ("Releasee"), desires to operate a X4 Auto-Bungee™ and any other recreational activities associated therewith (the "Activities"). In consideration for Spectrum Sports Intl providing maintenance or service to my equipment or permitting me to purchase and/or otherwise operate and engage in these Activities, I have agreed to execute this Acknowledgment, Waiver & Release and further, more particularly, agree as follows:

ACKNOWLEDGEMENT: I acknowledge and am thoroughly aware that there are significant inherent risks and hazards associated with the Activities and all other outdoor recreational activities or being a spectator of these Activities. **I FULLY ACKNOWLEDGE AND UNDERSTAND THAT PARTICIPATION IN THESE ACTIVITIES CONTAINS INHERENT RISKS THAT MAY BE UNKNOWN OR UNANTICIPATED THAT MAY RESULT IN PHYSICAL OR EMOTIONAL INJURY INCLUDING BUT NOT LIMITED TO PARALYSIS, PERMANENT INJURY OR DEATH AND DAMAGE TO PROPERTY OR TO OTHER THIRD PARTIES.**

I further acknowledge that the nature and extent of the risks and hazards inherent in the Activities and my pursuit of these activities include or operating equipment associated with the Activities, but are not limited to:

1. Severe bodily injury or death resulting from the Activities and equipment utilized in connection with the Activities;
2. Severe bodily injury or death resulting from equipment failure and/or malfunction of my own or others' equipment, including, but not limited to, failures of ropes, slings, climbing harnesses, bolts, bolt hangers, fixed anchor points;
3. Severe bodily injury or death resulting from falling climbers/participants or falling or dropped items, including, but not limited to, ropes, climbing hardware or other debris;
4. Severe bodily injury or death from improperly placed or faulty climbing protection, improperly tied knots, improperly buckled harnesses, or improper rope/cable, belay, rope/cable ascending or rope/cable descending techniques;
5. Severe bodily injury or death resulting from operator or participants own negligence or the negligence of others including other climbers, operators, participants, spectators or users;
6. Severe bodily injury or death resulting from personal physical and mental limitations, including, but not limited to, fatigue, chill and/or dizziness, personal strength, coordination, sense of balance, which may diminish reaction time and increase risks of accident and ability to follow or give directions while climbing, lifting, spotting or being a spectator;
7. Severe bodily injury or death resulting from hazardous terrain or adverse weather conditions, including wind, rain, snow, hail or sleet;
8. Severe bodily injury or death resulting from not following proper and customary personal safety procedures including procedures outlined in the owner's manual for the equipment

9. Severe bodily injury or death resulting from not having qualified personnel maintain or service the equipment and/or not properly inspecting the equipment in accordance with the owner's manual.

I acknowledge that the above list of severe bodily injuries, dangers, hazards, and risks are described by way of example only, and are not inclusive of all possible risks associated with the Activities, and that other unknown and unanticipated risks may result in bodily injury, illness or death. **I VOLUNTARILY ASSUME ALL SUCH RISKS WITH FULL KNOWLEDGE AND APPRECIATION OF THE DANGERS AND RISKS INVOLVED.**

RELEASE ASSUMPTION OF RISK AND RESPONSIBILITY: In consideration of my being allowed to participate and operate the equipment to conduct the Activities, and in recognition of the inherent risks of the Activities, I knowingly and intentionally agree on behalf of myself, my/our heirs, representatives, successors, officers, directors, stockholders, employees, executors, administrators, assigns, and anyone claiming interest through me, or on my behalf hereby **KNOWINGLY, INTENTIONALLY, AND VOLUNTARILY, RELEASE, WAIVE, DISCHARGE, HOLD HARMLESS AND AGREE NOT TO SUE** Releasees in or from any and all actions, suits, claims damages and liability **(INCLUDING ATTORNEY FEES OR COSTS)** or demands, obligations and/or causes of action of any nature whatsoever which I/we or, my heirs, representatives, successors, officers, directors, stockholders, employees, executors, customers, participants, administrators, assigns, and anyone claiming interest through me or my customers/participants may have against Releasees on account of any personal injury, property damage, death or accident of any kind arising out of or in any way connected with my operation of any equipment or anyone's participation in the Activities. I agree to indemnify and hold harmless Releasees from any and all liabilities or claims made by other individuals or entities as a result of my operation of or participation in the Activities. This release shall be effective even though said loss, damage, injury, paralysis, loss, or death results or has resulted from negligence, wrongful acts, omissions, breach of warranty or strict tort liability of Releasees (whether as the manufacturer or servicer of the equipment).

I further certify, acknowledge and agree on behalf of myself (or the company listed above) that I am physically and mentally capable of participating in these Activities;

I assume responsibility for and voluntarily assume the risks for any personal injury, death and related expenses involved with these Activities;

I assume responsibility for damage to my/our person or property or the person or property of participants in the Activities;

I agree to indemnify and hold harmless Releasees for any and all claims, as well as all fees and costs. I further agree to indemnify and hold harmless Releasees for any and all claims for products they did not manufacture, maintain or service.

I also understand that Spectrum Sports Intl is not responsible for claims or allegations regarding any product manufactured or produced by other parties or entities.

I certify that I have adequate insurance to cover any injury or damage I may cause or suffer while operating or participating, or else I agree to bear the costs of such injury or damage to myself or my customers.

I further agree to name Spectrum Sports Intl as an additional insured party on my liability insurance policy with limits of not less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate.

Agreement & Acknowledgement

I have fully *read* the provided Operation and Owner's Manual and *understand* how to safely set up, inspect, operate, take-down, transport, maintain, and manage crowd and staffing issues for the X4 Auto-Bungee™ by Spectrum Sports Intl. I agree to operate only in accordance with these instructions and follow all of the warnings and cautions set forth in the manual.

I have carefully read the Limited Product Warranty, Limitation of Remedy, and Release of Liability and fully understand its contents. **I am aware that this is a release of liability and a contract** between me, Spectrum Sports Intl and its manufacturers, distributors, retailers, and employees.

If I do not understand the contents of this manual or warranty, or if I do not willfully accept the personal liability in the operation of the X4 Auto-Bungee™, I will immediately notify Spectrum Sports Intl in writing. I also acknowledge that I will not operate the said products until I do so.

APPENDICES

APPENDIX A. PARTS ORDER FORM

COMPANY:				SHIP TO:			
CONTACT:							
PHONE:							
EMAIL:				DATE/TIME TAKEN TO SHOP:			
Payment: Credit Card / PO# / Warranty / Wire / Net 30				DATE ORDER NEEDS TO SHIP:			
Shipping: Ground / 2-Day / 3-Day / Overnight / DHL				DATE ORDER IS COMPLETED:			
Part #	BUNGEEES, HARNESSSES, & ROPE			Part #	TRAILER PARTS		
	Item Description	Price	Qty		Item Description	Price	Qty
BC-1006	*Bungee Cords-Single Station Set	\$175		EL-1029	Battery (12v Deep Cycle)	\$155	
BC-1004	*Bungee Cords-V4 Full Trailer Set	\$690		EL-1019	Battery Box w/ Lid	\$26	
BC-1005	*Bungee Cords-V5 Full Trailer Set	\$862		EL-1048	7-Pin Trailer Harness	\$56	
BC-1009	Bungee Cord 10 lb	\$16		EL-1038	7-Pin Junction Box	\$21	
BC-1002	Bungee Cord 20 lb	\$16		HA-1154	Gas Shock for support arm	\$102	
BC-1001	Bungee Cord 30 lb	\$18		HA-1102	Clevis Rod End for Gas Shock	\$16	
HLR-1012	Bungee Harness S/M (Red)	\$215					
HLR-1013	Bungee Harness M/L (Blue)	\$250					
CALIFORNIA CUSTOMERS NEED CA FULL BODY HARNESS. DO NOT sell them the regular harness.							
HLR-1009	CA Full Body Bungee Harness S/M	\$300		Part #	MISC PARTS		
HLR-1008	CA Full Body Bungee Harness M/L	\$300			Item Description	Price	Qty
HLR-1016	12" Tether	\$25		PA-1094	Bongo	\$1,150	
PA-1096	Single Pulley	\$42		PA-1097	Bongo Blower	\$155	
PA-1012	Carabiner (3 Auto-Locking) (Gold)	\$27		ME-1001	Aluminum Bungee Pole	\$464	
HA-1183	Quicklink	\$6		HA-1138	Pole Pins (1/2" x 5") & R-clip	\$9	
PA-1058	Swivel	\$60		HA-1156	Bungee Latch Spring	\$2	
SSI-1046	V4/5 Ride Rope (Side Station)	\$70		PA-1016	Collar (For Bungee Pole Latch Pin)	\$31	
Rope Length		FOR SHOP ONLY		FP-0836	Bungee Pole Latch Pin	\$12	
SSI-1047	V5 Ride Rope (Rear Station)	\$70		BSG-1051	Rules Sign for Bungee	\$30	
Rope Length		FOR SHOP ONLY		BSG-1028	Safety/Warning Sign	\$30	
SSI-1068	X4 Bungee Ride Rope (37')	\$70		Part #	AUTO-BUNGEE PARTS		
SSI-1072	X1 Ride Rope	\$70			Item Description	Price	Qty
Rope Length		FOR SHOP ONLY		HY-1033	Auto-Bungee Cylinder 2"x24"	\$330	
Part #	NEED MORE INFO FROM CUSTOMER			HY-1069	Breather Cap & Elbow	\$15	
	Item Description	Price	Qty	HY-1024	Pressure Gauge	\$31	
HY-1032	2X8 Hydraulic Cylinder	\$217		HY-1045	Oil Eye	\$11	
JC-1020	Swivel Jack	\$93		PA-1011	6" Pulley	\$23	
HY-1041	Dual Valve, .5 Gal Lift Pump	\$1,906		SSI-1026	Cable Guide Roller	\$6	
HY-1040	Solenoid	\$64		PA-1003	Pulley Cart Bearing	\$9	
				HA-1031	2.5" Pulley Bolt	\$4	
				HA-1038	7" Pulley Bolt	\$9	
				HA-1050	Nylock Nut	\$2	
				Steel Cable	Steel Cable (verify year of bungee)	\$165	
				CABLE SIZE		FOR SHOP ONLY	

*Single Station Set (4 of each color)
 *V4 Full Trailer Set (16 of each color)
 *V5 Full Trailer Set (20 of each color)

SPECTRUM
SPORTS INTL

Pulled By:	Spool #
Serial Numbers:	
Box Weight:	

Figure 41. Parts Order Form

SPECTRUM SPORTS INTL

324 W 2500 N Bldg A | North Logan, UT 84341 | 888-563-0163

APPENDIX B. ACCIDENT REPORTING



Designation: F 1305 – 94

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.

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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.

The American Society for Testing and Materials takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

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Figure 42. ASTM Accident Reporting Form

APPENDIX C. WIRING

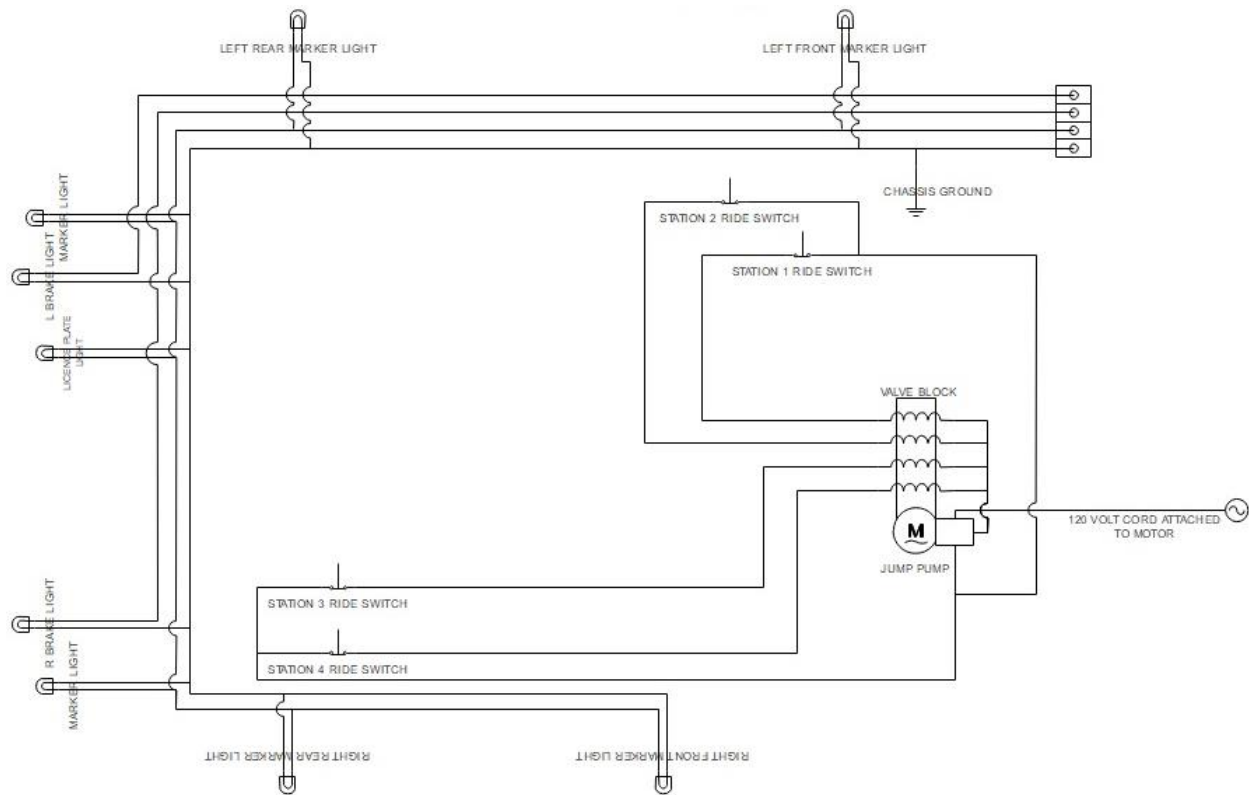


Figure 43. Trailer Wiring Diagram