



2/02/25

THOR 9 HAMMER THROW CAGE

Installation, Operation &
Maintenance Manual



PLAY HARD SPORTS EQUIPMENT

13 Alex Fisher Drive
Burleigh Heads, QLD 4220

Table of Contents

Introduction	2
Key features	2
Safety Information for the Installer:	3
Important Safety Information	3
Assembly Precautions	3
Site Specific Precautions:	3
Installation Instructions	4
1.1 Identification of Supplied Items	4
1.2 Footing Details	5
1.3 Assembly Instructions	6
1.4 Rope attachment	8
Instructions to attach ropes:	10
Operation:	11
Maintenance	12
Safety Guidelines (Usage)	12
Certificate of Compliance:	13
Warranty Certificate:	14
Maintenance Checklist	15

Introduction

The most revolutionary throw cage design in 50 years; the Thor 9 hammer throw cage is a World Athletics certified (E-15-0822) cage and the smaller of two hammer cages certified for competition use by World Athletics that Playhard Sports Equipment, Australia, is fabricating. The cage has a three-pole erected structure that is structurally certified by engineers. Three aluminium net support poles hinged on steel spigots and designed to allow minimal impact from implement damage with the outward-facing poles, and can easily be assembled laid down, and raised by a hand-operated winch mounted on a stand. The poles and spigots can be removed leaving flush ground sleeves with caps.

The extension arms on these poles have a rope and pulley system that allows for the easy installation of the ropes. The cage has 3.0m x 9.0m gates with a 7.0m high perimeter and gates pivot 4.2m from the circle center.

The cage has a 100 kph wind rating with the net erected, meaning nets can remain erected in winds up to 100 kph. The nets can be lowered if required by using the rope and pulley system. The net is attached to rails which connect to pole ropes for raising. The ropes are tied off to cleats on each pole. Net retaining ropes from the poles are fed through the net and tied to saddle anchors set into footings. Gates are operated by releasing the gate ropes on each pole, swinging the arm to the appropriate position and tying off the net retaining ropes at the ground anchor. The cage can be raised and lowered with a winch on a stand that attaches to ground anchors.

Key features

1. World Athletics Certified
2. Engineer Certified
3. Wind rating of 100 kph
4. Opening gate height of 9m
5. Greater view for spectators of athletes in action



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Safety Information for the Installer:

Important Safety Information

- **Read the Manual:** Ensure you read this manual in full before beginning assembly or installation.
- **Supervision:** Children should be supervised around the tower location during and after installation.
- **Wear Safety Gear:** Always wear appropriate safety gear during assembly and installation.
- **Avoid Electrical Hazards:** Keep electrical tools away from the goalposts and ensure the work area is dry.

Assembly Precautions

- **Two-Person Job:** Assembly requires at least two people to ensure safety and accuracy.
- **Check Parts:** Verify all parts are present and undamaged before starting assembly.
- **Level Ground:** Assemble on a flat surface to avoid instability.

Site Specific Precautions:

- Before commencing any groundwork, please survey the ground/field for underground electrical, water, or sewage lines and check for overhead electrical lines.
- It is advised that the soil is tested to know its strength. All our towers have been structurally designed to suit 'A', 'S' & 'M' Soils per AS2870. The contractors/installers must notify Play Hard Sports Equipment of any changes to the site specification. All other soil sites would require site-specific footing and slab engineering design.
- The concrete must be of a minimum 20 MPA, with a slump of 80 – 100 mm, and a maximum aggregate of size 20mm.
- Let the concrete set for at least 4 days before commencing further work.

Installation Instructions

A. Identification of Supplied Items

Please refer to the parts lists provided to check if you have received all the items required for the installation of the cage. Contact us immediately if any parts are missing.

Fig: Thor 9 Packaged Item Lists

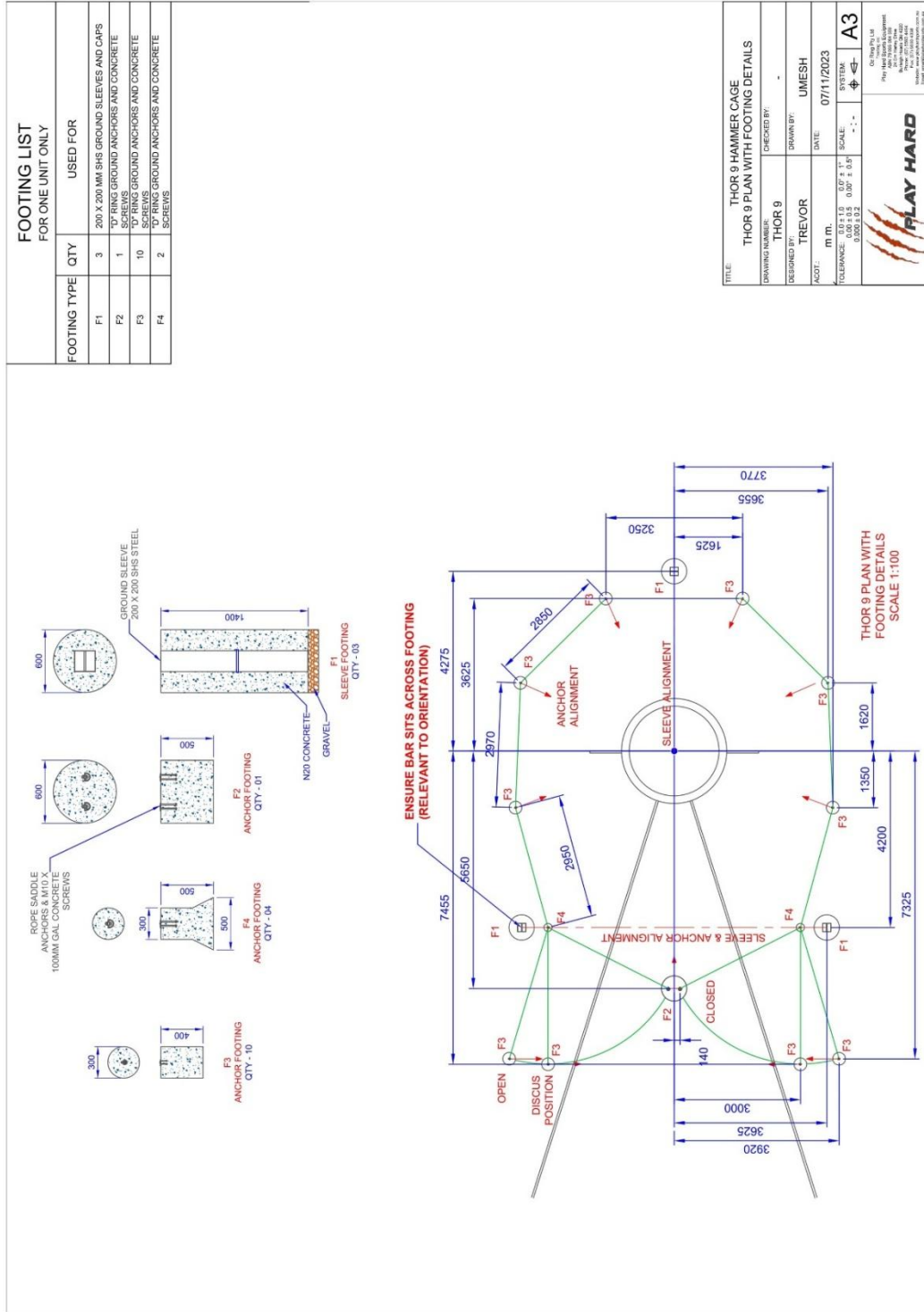
COMPONENT LIST (FOR ONE THOR 9 CAGE)		
QTY	SUB ASSY	ITEM
3	1	GROUND SLEEVE
3	2	SLEEVE SPIGOT
3	3	SLEEVE CAP
3	4	POLE SPIGOT
3	5	BASE POLES
2	6A & 6B	GATE UPPER POLES
2	7A & 7B	GATE ARM
1	08	REAR UPPER POLE
1	8B	REAR CROSS ARM
2	9A & 9B	REAR EXTENSION ARMS
2	10A & 10B	GATE EXTENSION ARMS
1	13A	WINCH FRAME
7	11A-D	NET RAILS
1		BOLT & FITTING KIT
1		ROPE KIT

THOR 9 HAMMER CAGE COMPONENTS LIST	
DRAWING NUMBER	THOR 9
DESIGNED BY	TREVOR
DRAWN BY	UMESH
DATE	23/10/2024
SCALE	1:1
TOLERANCE	0.0 ± 1.0 0.07 ± 1" 0.00 ± 0.5
SYSTEM	A3

B. Footing Details

The details for the footing layout of the Thor 9 Hammer cage system are shown in the image below. Please ensure that you have the required number of footings as listed for the ease of erection of the poles

Fig: Thor 9 Footing Layout Plan



C. Assembly Instructions

1. Place the ground sleeves and the anchors as shown in the footing details and let it set.
2. Once the ground sleeves are set, you can start the assembly of the cage.

A. Insert the hinged spigot into the ground sleeve



B. Place the Pole Spigot on top of the spigot and insert supplied M20 x 280mm hex bolt.



C. Lay the Base Pole, Upper Pole and Extension Arms on the ground and assemble them together; use the bolts already attached to the parts.



D. Slide the base pole into the pole sockets and attach them together with a bolt.



E. Ensure all the required ropes are fed through before the poles are raised. Refer Fig – Rope Assembly drawing for details.



F. Anchor the winch to one of the F4 types of footing. Attach a cable to the top of each pole and shackled it to the winch.



G. Ensure that all the joining pieces are properly bolted and



H. Use the winch to lift the hinged poles. Once the whole pole assembly is in an upright position, ensure the holes at the base of the pole align together and fix them together with M20 x 60 mm Hex Bolt, Nut, and Washer.



D. Rope attachment

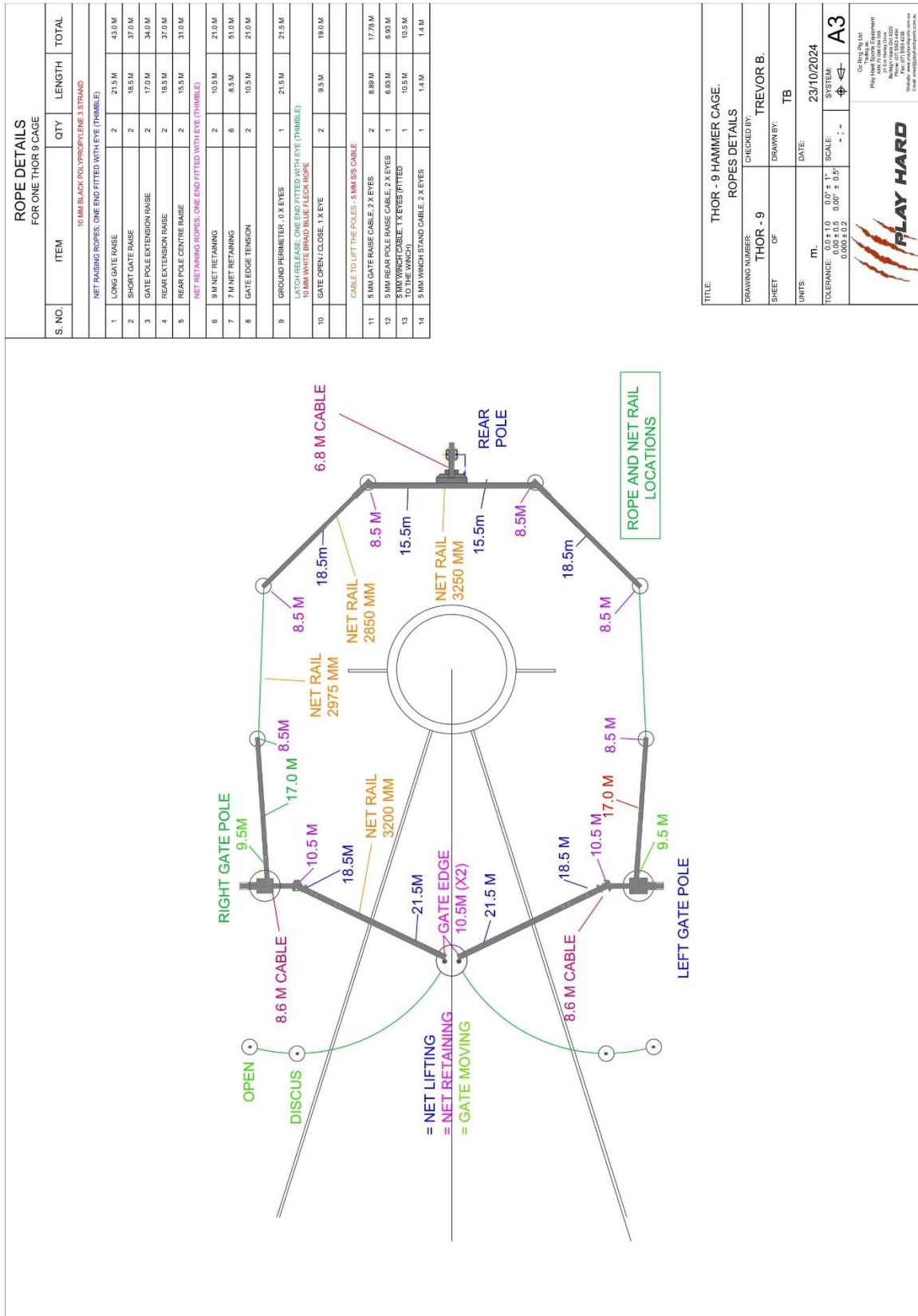


Fig: Rope Details

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E. Instructions to attach ropes:

1. Attach 'D' Shackles to the Net Support Rails (2 per Rails/ one each end).
 - a. 2 x gate rails (3.2m)
 - b. 1x rear rails (3.25m)
 - c. 2 x adjacent to rear rails (2.85m)
 - d. 2 x side rails (2.975m)
2. Join the rear and side rails using a net rail bracket and D shackle as shown in the figure (rope details and rope attachment). Position the rails specifically as mentioned in the figure.
3. Attach one end of the s/s gate raise the cable to the eyebolt and D Shackle at the top end of the upper poles and feed the other end to the winch when erecting the pole assembly. Once used tie -own the rope to the rope cleats on the base poles.
4. Attach white braid blue fleck rope to the M10 'D' Shackles located at the gate arm. The rope should be fed over the bow roller located at the back end of the upper pole.
Note: (Use this rope to rotate the gate arm and position the arm in gate open or gate close position).
5. Attach the eye of the long gate-raising rope to the gate net rails (ensure this end is on the outer end of the gate) and pass it through the nylon rope wheel on the gate arm and then through the double-wheel pulley.
6. Attach the eye of the short gate-raising rope to the gate net rails (ensure this end is on the inner end of the gate) and pass it through the nylon rope wheel on the upper gate pole and then through the double-wheel pulley.
7. Repeat the same process for the rear and side net rail as shown in the figure (rope attachment)
8. Attach a net tensioning rope to each 'D' Shackle on the net support rails. Please weave the rope through the net. Weave every 4th mesh on the net.
9. Once the pole assemblies are erected using the net raising ropes, raise the rail. After the net has been raised tie down the ends of the ropes to the rope cleats on the base poles.
10. Then, use the net tensioning ropes to fix the net in position. Use the Saddle anchors (footing F3) to tie up the ropes.

Operation:

The cage is quick and easy to operate. The gates are adjusted by pulling the colored rope on each gate pole.

1. Unhook the net retaining ropes at the gate ground anchor and swing the gate by pulling the white braid blue fleck rope to either open or close the gate arm.
2. Clip the net into the new position. For right-hand throwers, open the right gate (viewed from the throwing circle) and close the left gate. For left-hand throwers, open the left gate and close the right gate.

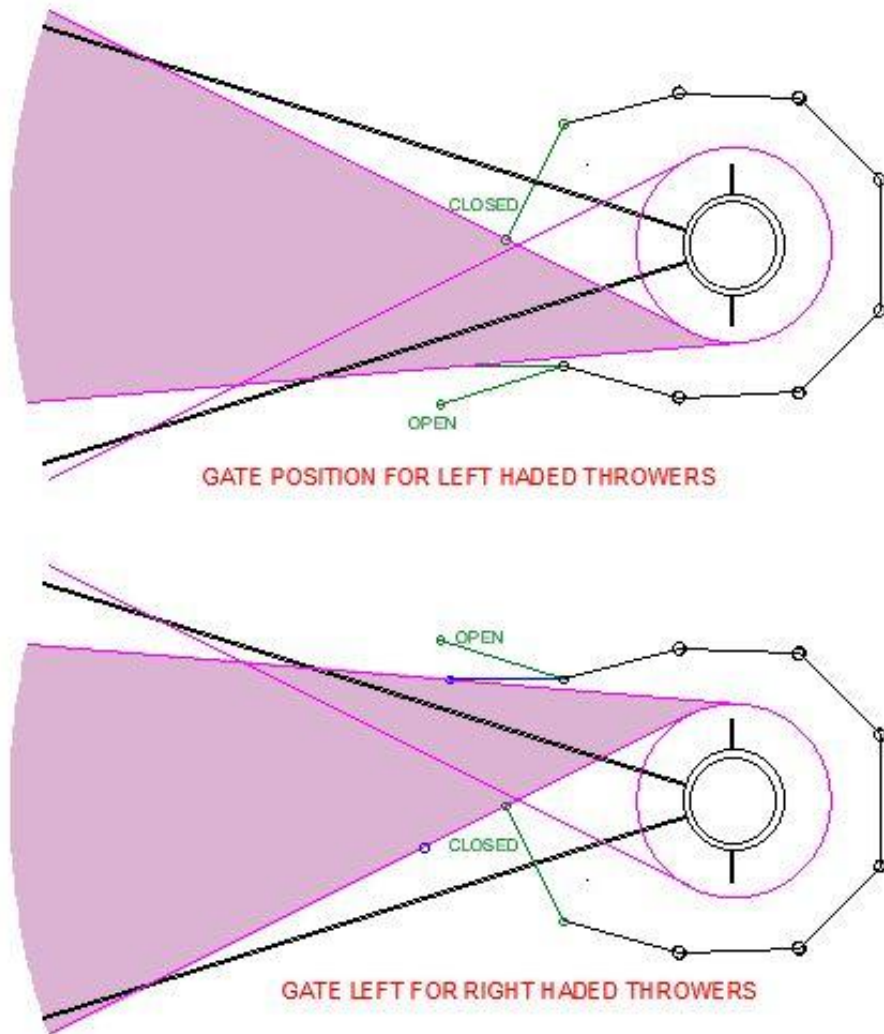


Fig: Gate Positions

3. To lower the net,
 - Untie the net tensioning ropes.
 - Untie the net raise rope and gradually lower the net.

Maintenance

1. The net retaining ropes should always be tensioned to restrict the net from blowing.
2. Do not tie the net back to the poles.
3. Do not tie the gate back to increase the opening.
4. Make sure the gates are set in the correct position.
5. Lower the net if winds are expected to exceed 100 kph.
6. Check the cage for wear and tear before each use.
7. Regularly check the bolts on the ground sleeves. Ensure they have not loosened to prevent movement in the poles. Tighten them regularly.
8. While in operation, spectators should remain well clear of the net and the field of throw to prevent any possible injury.

Safety Guidelines (Usage)

The owner of this equipment is responsible for ensuring all players are aware of these conditions for the safe use and operation of the equipment.

1. **Net:**
 - Ensure the net isn't worn out and properly securely attached to ground anchors to reduce injury risk.
 - Ensure the net is set at the correct height of 10m at the front and 7m at the rear.
2. **Supervision:**
 - Supervise play, especially with younger players, to ensure safety.
 - Prevent players from hanging from the ring or climbing up the posts to prevent serious injury.
3. **Gate Operation:**
 - To operate the gate arms, ensure wind condition is not severe. Once gate position is adjusted, the gates must be properly secured.
4. During visual inspection, if the bolts are loosened or the post or footing is damaged, the basketball system should not be used until they have been repaired.
5. If the wind is expected to go over 100km/hr, lower the nets and the cage should not be used.

Certificate of Compliance:

All our products have been structurally designed and are made using structural-grade steel. All the workmanship is completed following the relevant Australian Standards. Our Products comply with the following Australian Standards.

- | | |
|-----------------------|-------------------------------------------------------------------------------------------------------------|
| 1. AS/NZS 4100:1998 | Steel Structures |
| 2. AS/NZS 1554.1:2014 | Welding of steel structures |
| 3. AS/NZS 1664 | Aluminium structures |
| 4. AS/NZS 1665:2004 | Welding of aluminium structures |
| 5. AS/NZS 1170.0 | Structural design actions – General principles |
| 6. AS/NZS 1170.2 | Structural design actions – Wind actions |
| 7. AS/NZS 2312.1:2017 | Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings |
| 8. AS/NZS 2311:2017 | Guide to the paintings of buildings |
| 9. AS/NZS 4680:2006 | Hot-dip galvanized (Zinc) coatings on fabricated ferrous articles |

The Thor 10 hammer cage is World Athletics certified; certificate no: E-15-0822.
All our products are designed and manufactured here in Australia.



Warranty Certificate:



When you purchase a Play Hard Sports Equipment product you have the peace of mind in knowing that your product is covered by Play Hard Sports Equipment's manufacturer's warranty against faulty workmanship and materials.

The metal components of the product have a 10-year warranty against defective materials and workmanship. The net and ropes have a two-year manufacturer's warranty. The lifespan of the net and ropes are subject to weather conditions, the amount of use, and misuse.

The warranty covers damage or failure of the product during normal intended use. The warranty does not include damage to the product resulting from accident, misuse, improper installation, operation, or unauthorised repair or alteration.

Products manufactured for home use are not guaranteed for use in commercial applications.

If the product should become defective within the warranty period, please get in touch with Play Hard Sports Equipment customer service:

13 Alex Fisher Drive
Burleigh Heads QLD 4220
Ph: (07) 55934494
Fax: (07) 55934338
Email: email@playhardsports.com.au

Maintenance Checklist

To make a warranty claim, maintain a record of the regular maintenance carried out and any defects noticed. While performing maintenance work ensure all the standard conditions are met, if not take necessary action. Non-compliance with the maintenance checklist may void the warranty on the product.

Items	Standard Condition	MAINTENANCE RECORDS									
Net Retaining Poles Tensioned- Yes/No	Yes										
Net Tied to the Poles- Yes/No	No										
Gates In Correct Position- Yes/No	Yes										
Wind Rating 1. Less than 100kph 2. Exceeding 100kph	No Action Required Lower the net										
Bolted Connection	Always tightened										
Sign of any wear and tear – Yes/No	No										
Name: Date:											