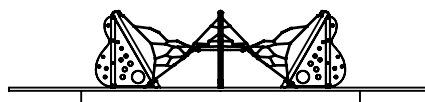


# Levigator 4

## Installation Instructions

Rubber Surface

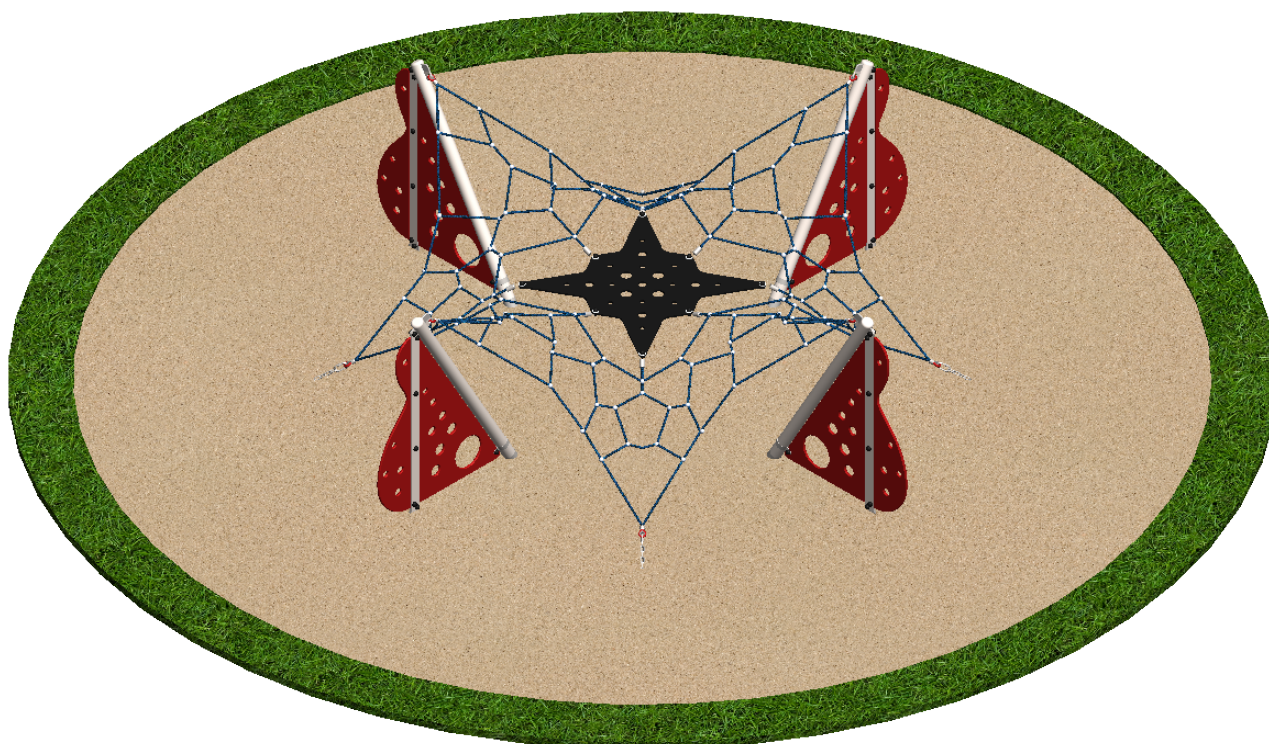


design  
make  
play  
**SutcliffePlay**

## Product overview

The Levigator 4 has been designed to be used by children from 3 years of age, and has been manufactured to exceed the European playground standards EN1176-1:2008 and EN1176-11:2014.

The following installation instructions should be adhered to in order that the equipment functions in a safe manner.



## Special Points of interest

Fabric Reinforced Rubber Belting  
16mm Steel wire reinforced braided nylon rope  
One piece hydraulically pressed aluminium joints  
Legs 15mm Fahr Industries CNC Cut Plastic Insert  
Foundation Stainless Steel Feet  
10mm SS Rigging Screw with 6mm Shortlink Chain

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• BAUART  
GEPRÜFT  
• TYPE  
APPROVED



## Space requirements & Safety Clearances

The requirements for space and safety clearances are extracted from the following standards BS-EN1176-1

BS-EN1176-1  
BS-EN1176-1

Section 4.2.8  
Section 4.2.8.2.3

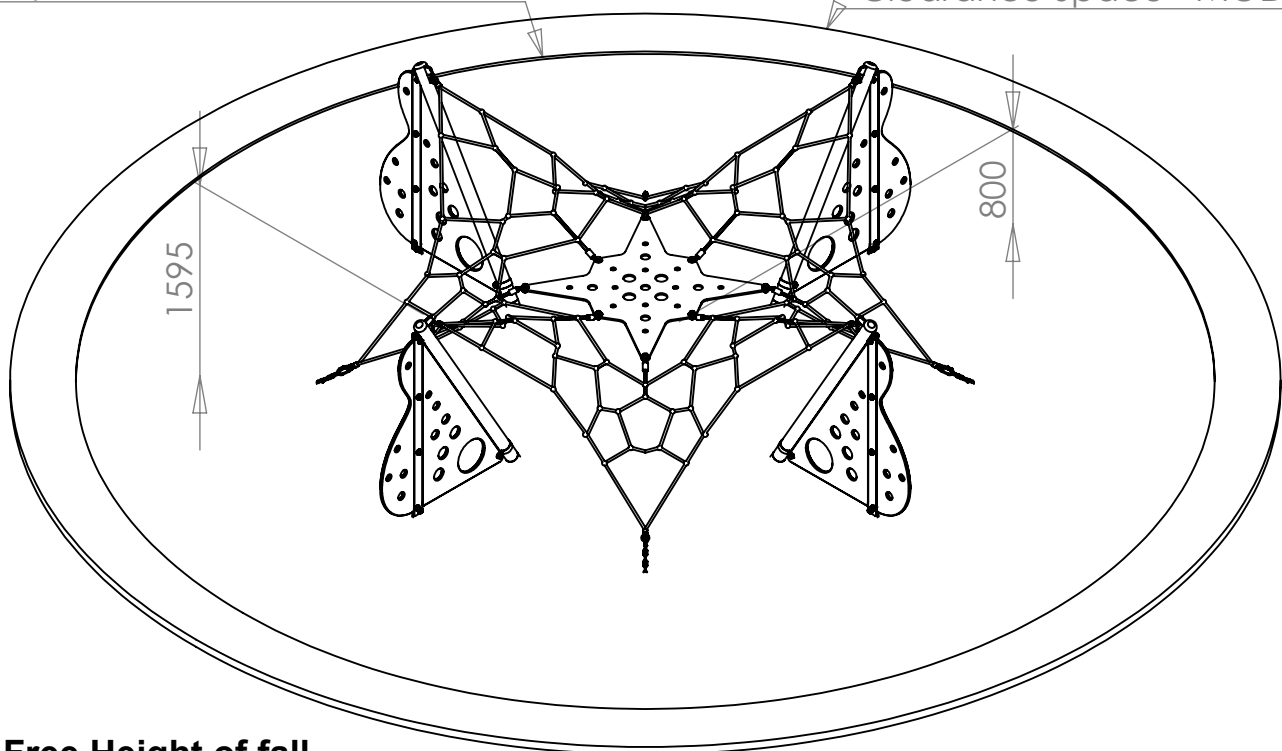
**Zones**  
**Free space**

The equipment should be situated to allow 2.0m free space from the edge of the product at ground level. This translates into a 8.4m Diameter Circle.

*Finished assembly showing the recommended safety zones.*

Safety Surface <MOD-DIAM>7530

Clearance Space <MOD-DIAM>8400



## Free Height of fall

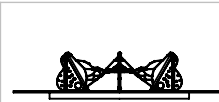
The maximum height at which a child can stand, and fall unimpeded, is 1.595m this is considered to be the free height of fall according to BS-EN 1176 part 11 section 4.3. And therefore a suitable 7.53 metre, circle, Rubber safety surface as shown above, is needed. See table below for recommended Surface Types and Depths:

Material a)	Description (mm)	Minimum depth (mm) b)	Critical fall height (mm)
Turf/Topsoil			≤ 1000
Bark	20 - 80 grain size	200	< 2000
		300	< 3000
Woodchip	5 - 30 grain size	300	≤ 2000
		200	≤ 3000
Sand c)	0,2 - 2 grain size	200	< 2000
		300	< 3000
gravel c)	2 - 8 grain size	200	≤ 2000
		300	≤ 3000
Other materials and other depths	As tested to HIC (see EN 1177/EN 1176-2)		Critical fall height as tested

a) Materials properly prepared for use in children's playgrounds

b) For loose particulate material, add 100mm to the minimum depth to compensate for displacement

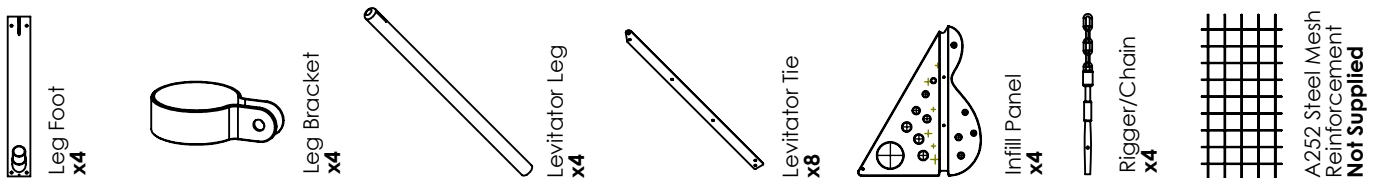
c) No silty or clay particles, grain size can be identified by use of a sieve test



## Installation instructions

The **Levigator 4** is delivered in two sections

1. The Reinforced Rubber Centre and Rope Net.
2. The dismantled corner legs & ground chain/rigger with fixings for easy assembly



*Only section 2. is required at this point so the first piece should be left wrapped and stored safely until the groundwork's have been completed and the concrete been given sufficient time to cure.*

## Foundation requirements

### General

The Levigator Net has been designed to allow a rubber safety surface to be placed below the net, the surface thickness should be based on the CFH of 1595mm.

It is recommended the area is prepared accordingly prior to commencing installation of the net.

### Equipment & Tools

The following equipment is recommended to assist in the accurate installation of the foundation feet.

- 1) Laser Level
- 2) 20m Measuring Tape
- 3) JCB Excavator
- 4) Set Timber
- 5) Manual Tools: Spade, Sledge Hammer, Claw Hammer & Nails
- 6) A252 Steel Reinforcement Mesh

It is recommended that you have a minimum of three people to lift and assemble the Levigator.

### Time Management

Day One:

- 1) Set out the Area
- 2) Accurately Position and Excavate Holes
- 3) Secure for concreting
- 4) Press Reinforcement Mesh Into the top of fresh concrete.

Day Two:

- 1) Concrete Foundations

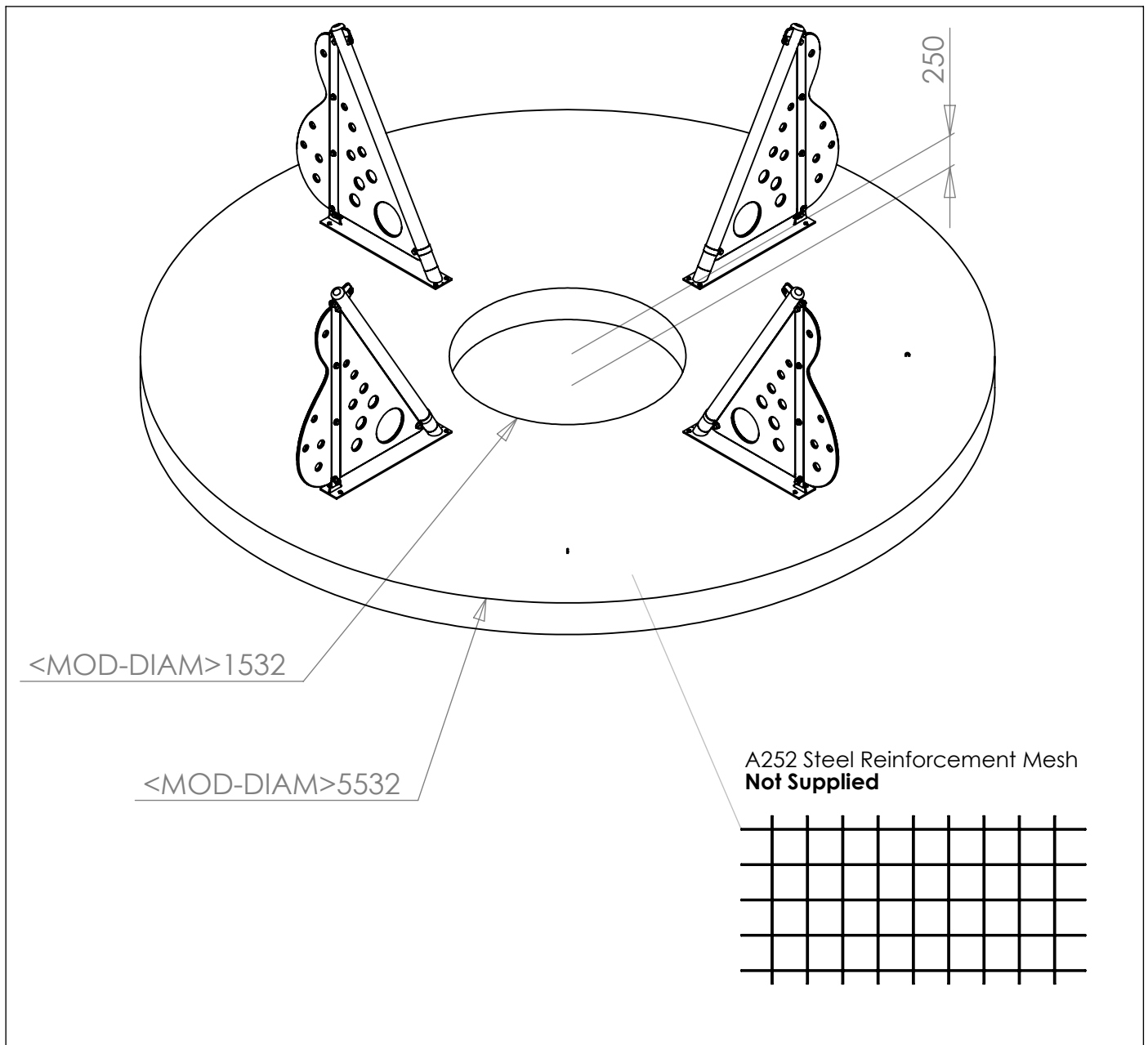
Day Three\*:

- 1) Set out Levigator Feet Positions.
- 2) Bolt feet into concrete foundations.
- 3) Laying of rubber safety surface material

Day Four:

- 1) Assemble Leg Assemblies
- 2) Insert keys in legs and loosely attach rigging screws.
- 3) Attach the Rubber Membrane to the disc end fittings on the net.
- 4) Go around tensioning the rigging screws until rubber lies flat.

**\*The foundation should be left for approximately seven days to achieve maximum strength prior to assembling the remaining elements.**



## Foundation Procedure

### Setting Out

A ring shaped hole matching the size shown above, will be excavated to create the solid concrete foundations in which the legs are fixed to and the chain will be dropped in. The concrete foundations must remain level.

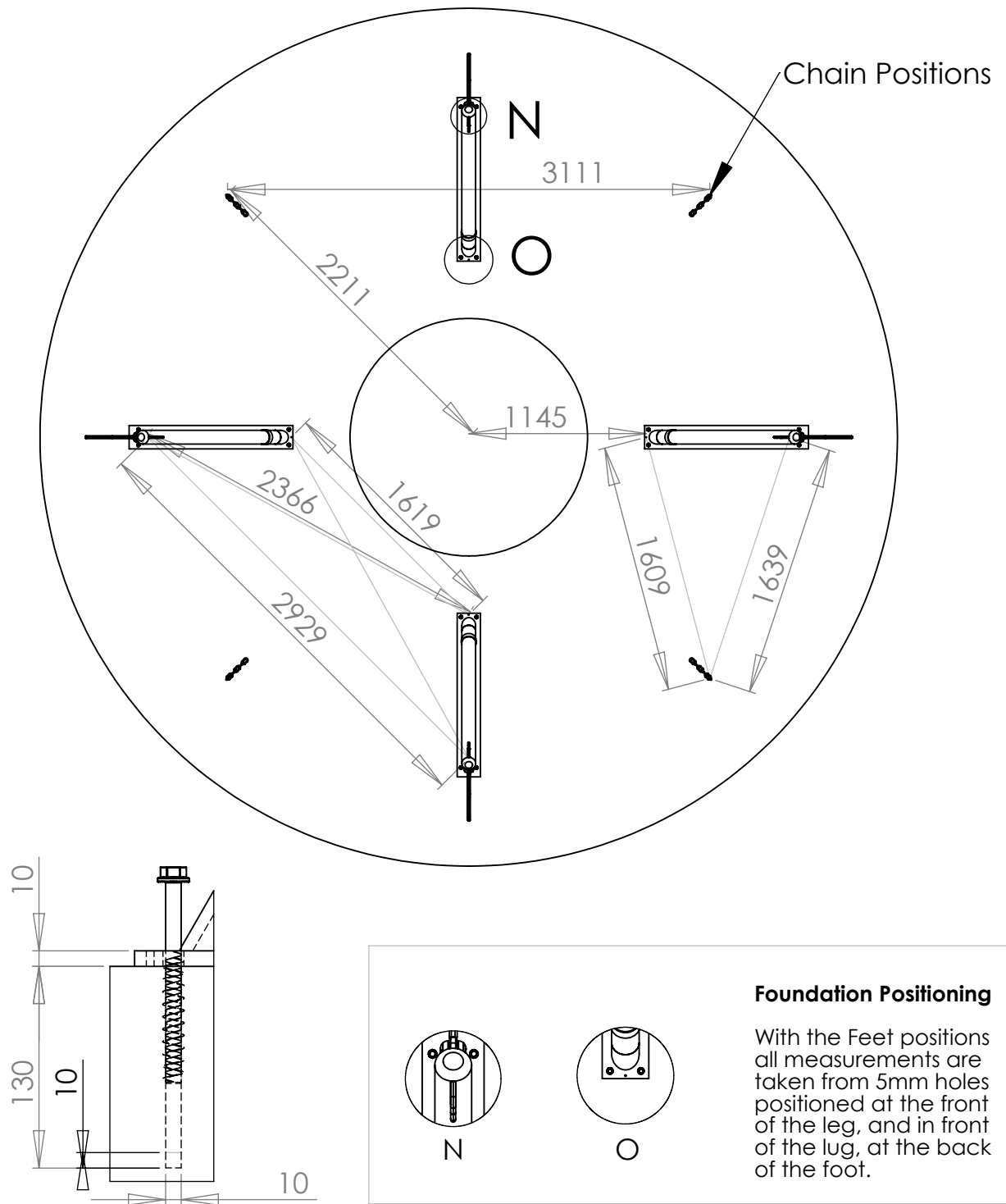
Once the correct position of the ring has been marked prior to excavation, the use of a datum peg is highly recommended in order to easily relocate the exact foundation position.

## Excavation & Foundation Positioning

### Procedure

In loose ground, it may be necessary to use timber framework (or shuttering) to prevent soil falling into the hole. It will also prevent an unnecessary excess volume of concrete being used. Concrete to be in 30/N mm<sup>2</sup> mix. Total volume required: 5.55 cubic metre. It is important to ensure that the concrete blocks are level. Whilst the concrete is wet drop the chain into the four corner positions shown on the next page.

\*A sheet of A252 mesh reinforcement should be pressed into the top of the fresh concrete, to cover the entire surface ensuring at least 50mm cover.



## Excavation & Foundation Positioning

### Procedure

Once the concrete has cured the feet can be attached to the concrete blocks. Measure and layout the feet using the measurements above. These will position around the already place ground chain points.

Bore 10mm holes, 130mm deep for the feet to be bolted directly ontop of the concrete surface using the Hilti Bolts supplied (See lower right image).





## Assembly Instructions

1) With the Feet and Foundations now fixed in place you can start to assemble the four legs. Place each of the Levitator legs (2) into the feet (5).

For plastic insert (4):

**Basic Panel:** Skip to Stage 2.

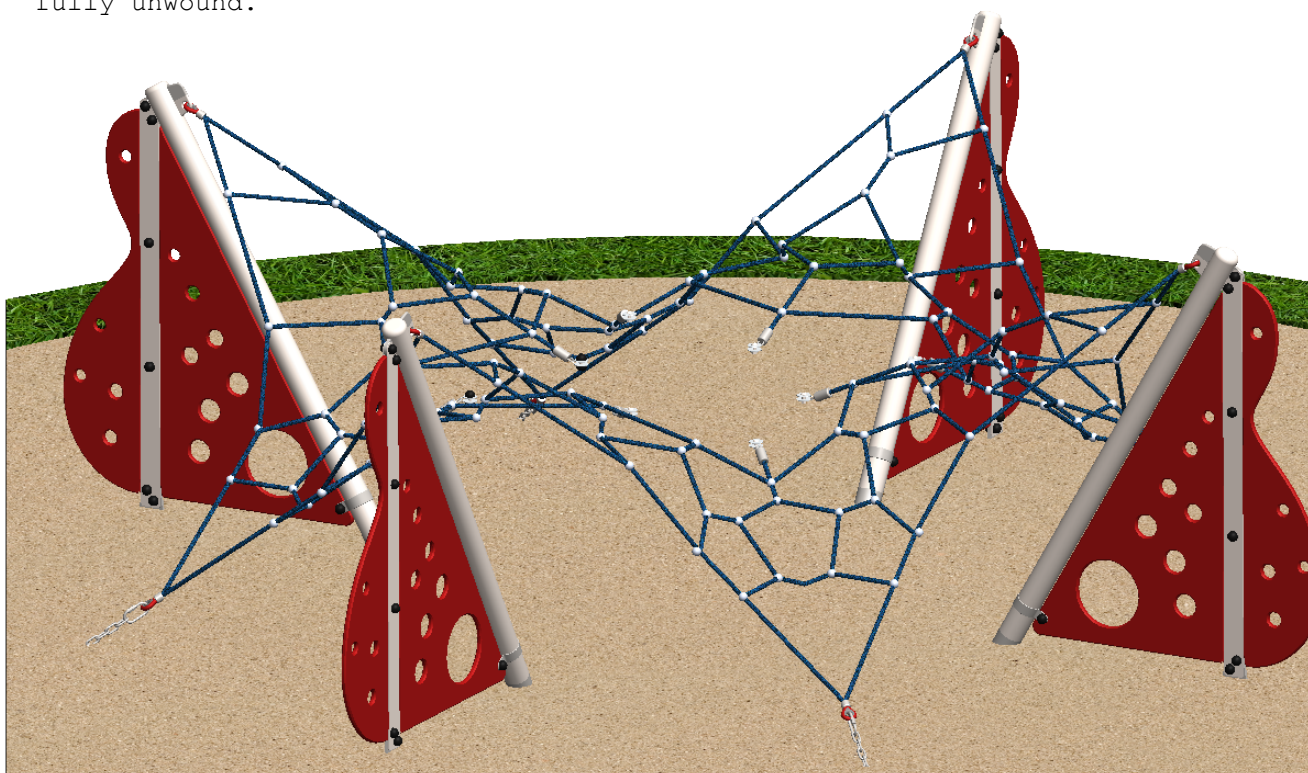
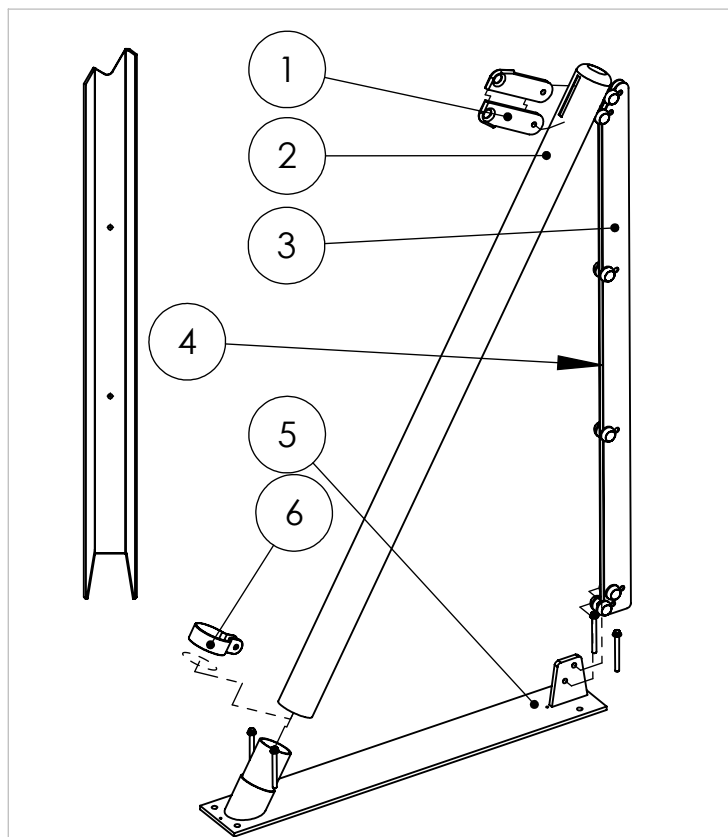
**Full Panel:** Slide the bracket (6) over the leg (2) before advancing any further.

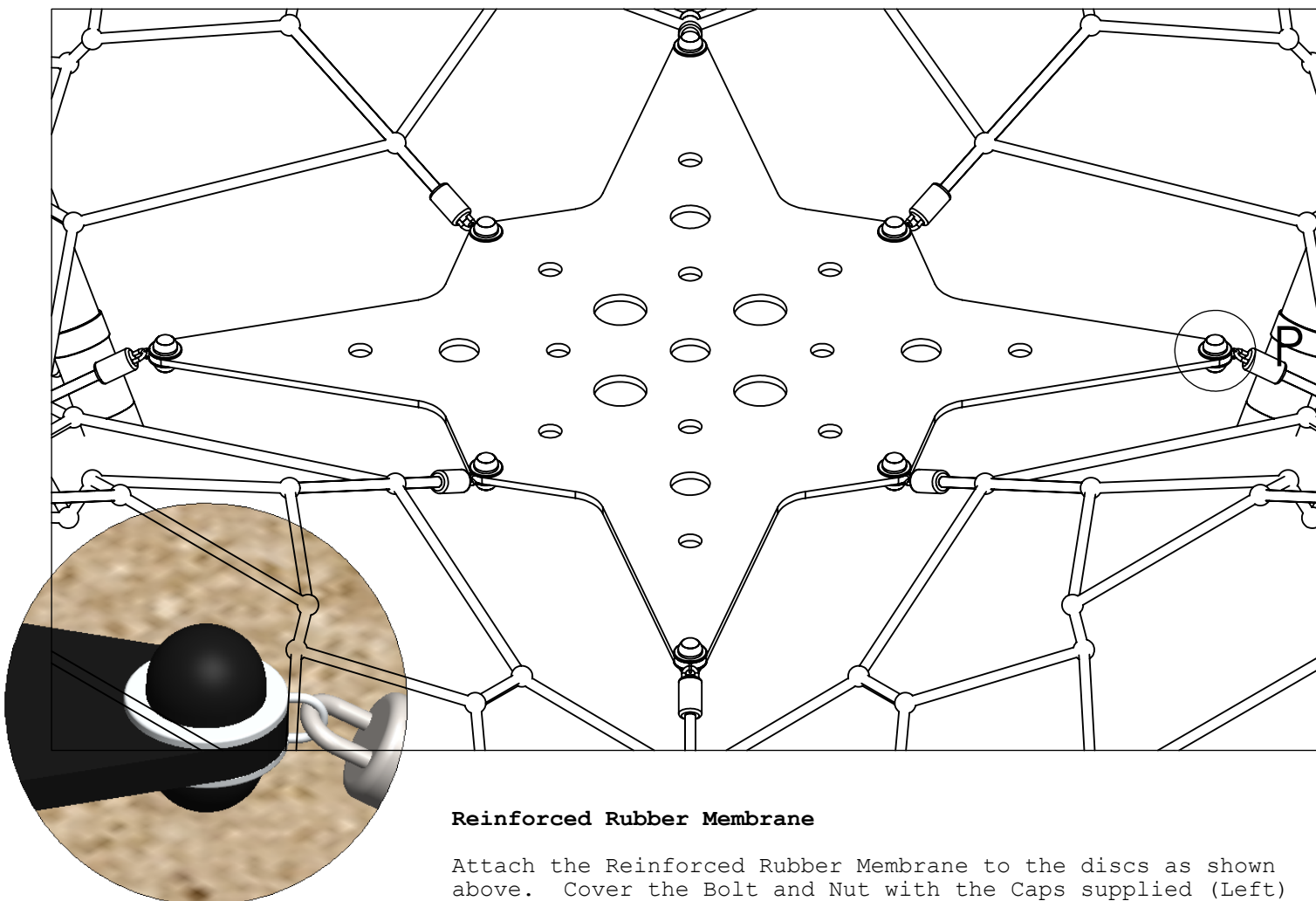
2) You can now unwrap the rubber membrane and net assembly and lie in the correct orientation.

The rope netting and reinforced rubber membrane need to be unattached before connecting the net to the legs.

Work your way around matching the numbered keys (1) with the correct legs, bolting each key in place with the ties (3), plastic inserts (4) and bolt covers.

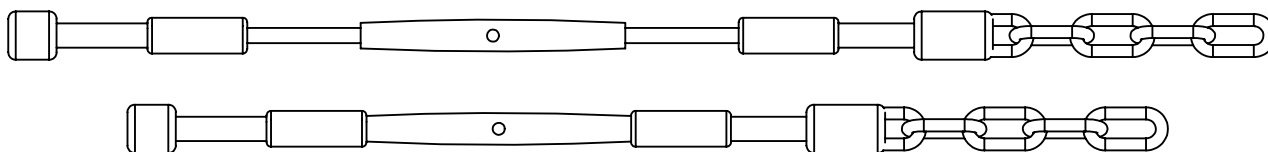
After assembling the legs and rope structure you can now go around attaching the rigging screws loosely to the bolts on the chain and on the net. For now, keep the rigging screws fully unwound.





### Reinforced Rubber Membrane

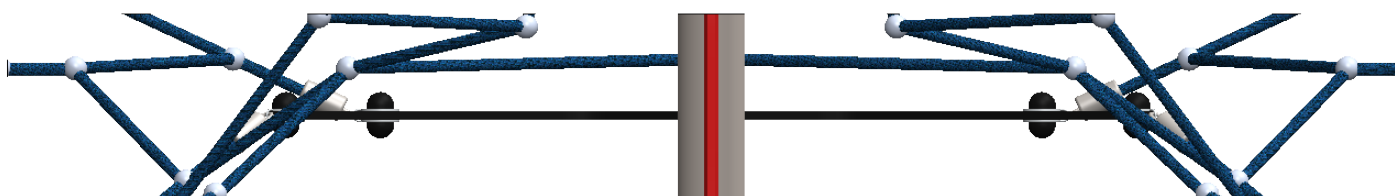
Attach the Reinforced Rubber Membrane to the discs as shown above. Cover the Bolt and Nut with the Caps supplied (Left) When the nut is tightened, this will close the disc and grip onto the rubber.

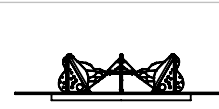


### Tighten the Net

**4)** Once the net is fully assembled you can now tension the net. Use a pole in the 8mm hole to wind up the rigging screw 3/4 of the way. Lock with lock nuts to secure the rigging screw. The rubber will straighten up when your net is wound up.

The net will need to be tensioned by fully winding up the rigging screws at a later date. (See maintenance for more)





## Maintenance & Inspection

### General

The **Levigator 4** should be inspected and maintained in accordance with the recommendations as detailed in BS-EN 1176 part 7: Guidance on installation, inspection, maintenance and operation for playground equipment.

If any part of the equipment is found to be unsafe during an inspection and that part cannot be repaired or replaced immediately, the equipment unit or part(s) concerned should be secured against use. This may involve immobilisation or removal from site.

**Important note:** The frequency of inspection will vary with the type of equipment or materials used and other factors, e.g. heavy use, levels of vandalism, coastal location, air pollution, age of equipment etc.

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### Routine Visual Inspection

A routine visual inspection enables the identification of obvious hazards that can result from vandalism, use or weather conditions, e.g. broken parts.

A daily routine visual inspection is recommended especially for playground equipment that has heavy use and/or is subject to vandalism and should include the inspection of the following as a minimum:

1. General equipment and surface cleanliness
2. Equipment ground clearances are maintained
3. Foundations not exposed, loose in the ground or cracked
4. Parts not missing or damaged
5. Surface finishes not damaged, rusting or deteriorating
6. Connections and bolts are secure and tight
7. Bearings are free running
8. Safety surface (if installed) not compacted, damaged or contaminate

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### Retention the Rope

Periodic checks on tension will help assist in the durability of the product.

After initial tension is complete, the net will stretch approximately 1% over the first two weeks of use. Following this initial period, the net needs to be fully retension by following the original instructions - Tighten the Net.

It is recommended that subsequent checks on tension should be carried out at monthly intervals and adjusted as required.

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**This item is not manufactured by Sutcliffe Play and as such our Sutcliffe Play warranty does not apply. The warranty is as stated by the original manufacturer and subject to following the recommended usage and maintenance guidelines.**