EYOLF

TECHNICAL CLIMBING EQUIPMENT

Pythagoras Offset Tripod

CE
2927

EN 795:2012 Manual

Notified body for EU type examination:
QUINTIN CERTIFICATIONS (2927) - Module B
825 route de Romans
38160 Saint Antoine l'Abbaye - France

Notified body controlling the manufacturing of this PPE, module D:
QUINTIN CERTIFICATIONS (2927) - Module D
825 route de Romans
38160 Saint Antoine l'Abbaye - France

The EU declaration of conformity can be found at:
www.eyolf.ca

The provisions of EN 795:2012 deal with the basic requirements and provisions of Regulation (EU) 2016/425.

Markings and/or symbols

EYOLF: name of the manufacturer

M40 xx Pythagoras: prod. code & name(in which xx can be any suffix)

DOM 01-2023: month and year of manufacturing

Batch Nr: 101xx (example): serial number

Pictogram that advices to read instructions

CE which stands for "Conformité Européenne" ("European Conformity")

2927: Notified Body number that regularly checks the production of this PPE according to module D ((EU) Regulation 2016/425)

EN 795 is the European standard to which the product is certified.

Instructions for use – General information
General requirements for instructions for use, maintenance, periodic examination, repair, marking and packaging as per EN 365:2004 and specific details regarding EN 795:2012 Type B
Keep for future reference.

Thank you for using an Eyolf product. We have done everything possible to ensure that the information provided in this manual is accurate at the time of publication. However, we do not guarantee that this information will remain up to date, as many products and techniques change over time.

The information in the manuals must be understood.
Read the manual and keep it - Keep the user instructions/information accessible as a permanent record on- and off-site. Keep a copy of the manual.

Mountaineering, climbing, caving, working at height and other related activities are inherent dangerous due to outside factors and hidden risks. Not understanding, taking precautions and eliminating these risks can lead to serious injuries and death.
The manufacturer cannot be held liable if the equipment has been abused and/or misused. You are responsible for your own actions and decisions.

Product Statement
The Pythagoras Offset Tripod is an EN 795:2012 Type B certified product for use as a mobile anchor point. When set up above an opening, such as a man-hole leading into a confined space. It can provide easy and safe access. This is its intended purpose and application under this certification. Its limitation is that this product is not a plug and play type of system and requires a good understanding of using it. We strongly advice training, especially for use outside the scope of the EN 795:2012 standard.

This system was mainly made with but not exclusive:
Main components: Aluminium
Webbing: Polyester
Bolts, nuts and/or safety pins: Stainless Steel

Warning

Medical condition
It should be understood that working at height and the use of equipment to do so, involves a certain amount of physical and mental exertion. Certain medical conditions are a definite contra-indication to the safe use of the equipment and working at height.

Training
Training and assessment of competency are essential before use of this product.
Users must be aware of the limitations, precautions and the dangers of misuse.

Risk assessment - rescue plan
A risk assessment and a quick response rescue plan should be in place prior to any activities at height.
Have a suitable rescue plan in place!

Repairs
Do not make any alternations or additions to the product without the manufacturer's prior written consent. Repairs shall only be carried out in accordance with manufacturer's procedures.

Limitations
The equipment has been tested for specific use, do not use the equipment outside its limitations without the consent of the manufacturer.

PPE
PPE stands for Personal Protective Equipment and in case of this product this means it should be used by one person.

Strengths
Strengths quoted are when the product is tested new and are in accordance with the manufacturers test methods or to the appropriate standard. Any weights and measurements are approximate.

Compatibility
When combining products together make sure that they can be safely used together. Some parts of one product might interfere with the strength and/or safety aspects of the other product.
Compatibility needs to be checked prior to use.

Remove from service
It is essential for safety that equipment is withdraw from use immediately should:
1) any doubt arise about its condition for safe use or;
2) it have been used to arrest a fall and not used again until confirmed in writing by a competent person that it is acceptable to do;

Inspections for periodic examinations
An examination should be carried out before the product is put into service.
Periodic examinations should takes place at least once a year, taking into account factors such as legislation, equipment type, frequency of use, and environmental conditions.
A periodic exam should be carried out by a competent person.

A pre-use check by the user may not be applicable if the user is under supervision of a competent person or in the case it is used for emergency use which have been pre-packed or sealed by a competent person.

When carrying out an inspection pay attention to the following items:
Check the label / marking (visible, legible, age)
Check webbing (cuts, burns, wear, chemical marks, crushed, other damage)
Check stitching (cut, worn, coloured or disordered threads)
Check attachment points (deformation, cracks, wear, corrosion, marks)
Check O-ring and connectors (deformation, cracks, wear, corrosion, marks)
Check compatibility of connector
Check condition of protective components

Safety of users depends upon the continued efficiency and durability of the equipment.

Inspection sticker
It is recommended the anchor device is marked with the date of the next or last inspection

Transportation
Keep your tripod secure, either in its own place where it can be stored upright or bag, such as our nylon or vinyl rope and/or equipment bags, during transportation.

Lifespan
This is difficult to estimate but we advise as follows: Do not textile products more than ten years after the date of manufacture. Assuming you have used the correct storage, the working life can vary from a ten-year span to a single use in extreme circumstances (e.g. highly chemical environment, serious fall, etc.). UV light including sunlight will reduce the working life.

Anchoring
The minimum required strength for an anchor point is 12 kN.
Anchorage, either man made or natural, should be assessed by a competent person for its suitability and position.

Do not create slack in the system and avoid any pendulum effect / swing during a fall.

When connecting to an anchor device or structure use a suitable form of connector complying with EN 362, either with a shock absorbers, complying with EN 355, a lanyard, complying with EN 354 or sling and carabiners depending on the situation you are in. Follow the standard EN 795 for anchoring.

Harness Connection Point
In combination with the use of the tripod to lower or raise someone we advice the use the ventral (main) D-ring.

For fall arrest equipment, such as adding an energy absorber to the lanyard the right connection point is the Sternal or Dorsal attachment point, indicated with the letter A on a full body harness complying with EN 361.

The full body harness is the only type of harness suitable for being used in a fall arrest system.

Minimize a fall at all times, check your fall factors and keep the anchor point above its user.

Fall clearance
It is important to keep in mind that the flight path is clear from any obstacles when using a fall arresting system. It is essential for safety to verify the free space required beneath the user at the workplace before each occasion of use, so that, in the case of a fall, there will be no collision with the ground.

Calculating the total fall clearance
The fall clearance is the distance required to safely arrest a fall with an energy absorber. It is the distance from the anchor to the ground.

C=F+D+H+S

Step 1 – calculate the Free Fall (F)
Step 2 – determine from the label how much the shock absorber deploys (D)
Step 3 – determine the stretch of the harness (H)
Step 4 - add a safety factor of 2m (S)
Step 5 - add all figures together to get the clearance (C)

Use in extreme environment
Use of any PPE in extreme environments can be dangerous. It is important to do appropriate testing before the use of our products in environments such as extreme cold or high temperatures (working temperatures are -30 degrees up to 60 degree Celsius), chemicals, dust, sand and other foreign materials, electrical power, grinding and chafing should be avoided, if you have any questions contact us and we can help you determine the effects.
Avoid sharp edges.

Maintenance
Always keep the product clean and dry. Any excess moisture should be removed with a clean, dry cloth and then allowed to dry naturally in a warm room away from direct heat.
4.3 a) Rinse in clean cold water. If still soiled wash in clean warm water (max. 40°C) with a soft detergent (within pH range of 5.5 to 8.5). Rinse properly in clean cold water and if needed to disinfect use a solution of water with alcohol. Do not use bleach!

Follow these instructions; if in doubt about the disinfecting method please contact us for further details.

Lubrication
When lubrication is needed a silicon-based oil can be used. Wipe off any excess and protect any webbing or rope from being sprayed.

Storage
After cleaning, store unpacked in a cool, dry, and dark place away from direct sunlight, as UV will cause damage to the webbing over time, excessive heat sources, sharp edges, vibration or other possible causes of damage. Do not store when wet or in a damp area >70%. If a long shelf life is required it is advisable to store in a moisture proof package, like a polyethylene bag.

Supervision
Under certain circumstances where a person is temporarily using a PPE against falling a competent and/or trained person could supervise the user.

Country of destination
It is essential for the safety of the user that if the product is re-sold outside the original country of destination the reseller shall provide instruction for use, for maintenance, for periodic examination and for repair in the language of the country in which the product is to be used.

One person
The anchor device is only to be used for one person only under normal working conditions.

Maximum Arrest Force - 6kN
When the anchor device is used as part of a fall arrest system, the user shall be equipped with a means of limiting the maximum dynamic forces exerted on the user during the arrest of a fall, to a maximum of 6kN.

Maximum load
The maximum load that could be transmitted in service from the tripod to the structure or ground is 12 kN.

Maximum deflection
Under normal loading (WLL 150 kg - 330 lb) there should not be any deflection with regards to the system.

Lifting and Rigging
The tripod should only be used for personal fall protection equipment and not for lifting equipment

Recycling
All metal part can be recycled when destruction/disposal of the tripod is needed.

For type B anchor devices such as tripods, advice on the need for stability of the anchor device, guidance on how to achieve it and differential adjustments we advice the following in the section below and in the next pages:

Pythagoras Offset Tripod - Portable Anchor System
The Pythagoras Portable Anchor System is a versatile, multi-functional artificial high direction system constructed of aluminum components that can be configured to provide a variety of anchoring solutions.

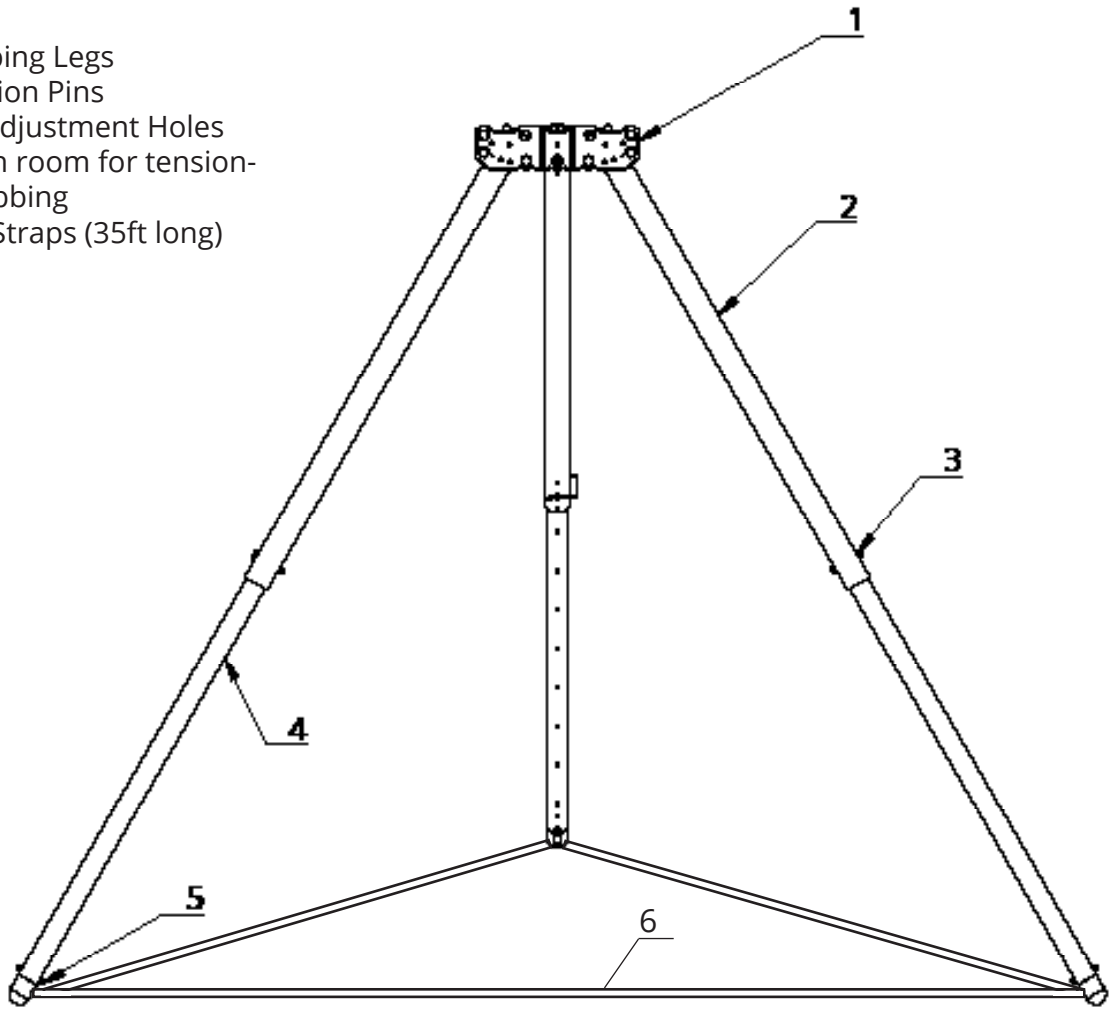
Once the needed configuration is identified, because of the articulating joints, the system can be pre-assembled, transported to required location and immediately deployed. This is beneficial rather than assembling it in a location with limited space or one that exposes users to hazards. In addition, this approach can reduce the set up time and minimizes the risk of losing critical components when in an extreme environment.

NOTE: No matter the configuration, it is critical that users are trained and competent in the deployment of the The Pythagoras Portable Anchor System. Custom training from EYOLF is available based on your needs.

Using the tripod within the EN 795:2012 standard it can be used as stated in the following pages:

Generic Parts List

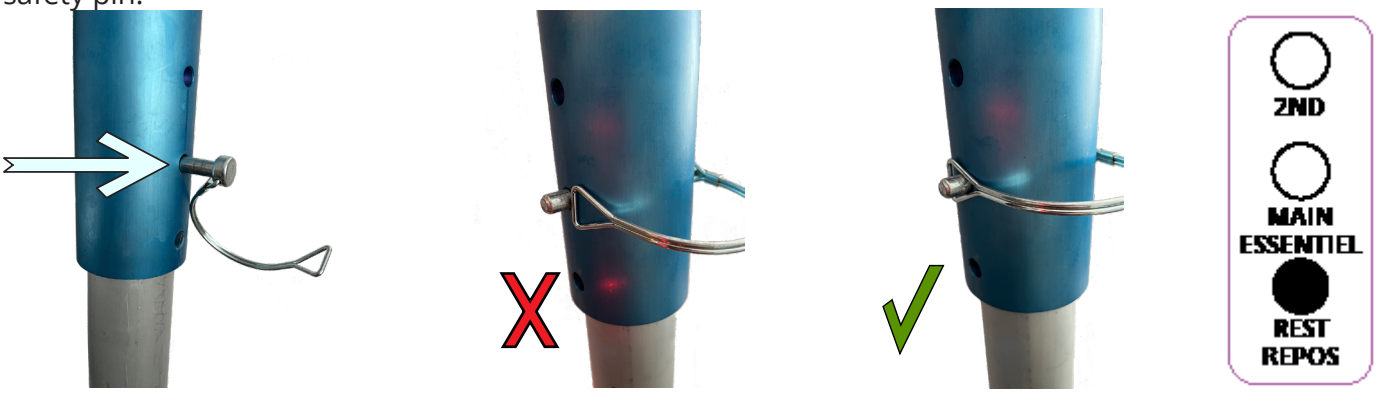
1 - Head
2 - Telescoping Legs
3 - Connection Pins
4 - Height Adjustment Holes
5 - Feet with room for tensioning feet webbing
6 - Hobble Straps (35ft long)



Assembly

Insert the foot into the inner telescoping tubing and secure the foot with the 8mm bolt.

Insert the inner tube into the outer tube and line up the outside tube main hole with the inside tube second hole. Insert the 10mm safety pin in the outside tube in the main hole and close the latch onto the safety pin.



Do this for all three legs of the tripod.
Assemble the head of the tripod by slotting the 4 head pieces together as indicated in the drawing.
Secure the legs into the head by using the top hole of the leg and inserting a 10mm bolt into plate where it is marked “A”.
Use a little bit of anti-seize compound on the bolt before turning the lock nut onto it.

Between the legs and the head align the second hole and insert the bolt. For the “offset” leg see which hole would be desired for your operation and secure it the same way with the provided stainless steel bolt. These bolts can be secured with a Nylon wing nut for easiness of removal.

Use the supplied strap with cam-buckle to secure the legs at the bottom by weaving the strap through the large hole in the feet.

Adding the extended leg
To put the tripod in a more stable position you can add an extra outer tube, using the inner connecting tub between the two outer tubes.

Storage or transportation position
We paid close attention to make it easier to handle the tripod when moving it around or storing it.

Putting it in storage position do the following: Remove the bolts with the wing nuts and straighten the leg pointing down until the holes line up. Insert the bolts back again and place the wing nuts.

If you have an extended outer leg with you, it can be inserted in the middle square hole of the tripod head and secured using the bolt holes above the middle 20mm hole.

When moving around ask help to carry it. Carry it with a min. of two people.

The following is an overview of the holes and their purpose in the head.

Installation start with plate B, use the slots to insert plate C & D. After insert plate A to complete putting the head together.

Note: The smaller 5mm holes are holes we made to help manufacturing. They don't have any other purpose or should be used.

1) The top 20mm holes on all plates are meant to be used for tying back the head in those instances where a back-tie in needed.

2) The side holes on plate A & B are also to be used for tie-backs.

3) The 3 holes on plate A are meant to be used for work positioning. Care of securing the tripod is important as these holes lay outside the footprint of the tripod. Tipping without tie-backs is very possible.

4) The 3 holes on the bottom on plate B are meant to be used for work positioning. These 3 holes are within the foot print, still caution is advice.

5) The 10mm hole is used to secure the leg onto the head using a bolt and lock nut.

6) This hole is used to secure the leg in a straight position. This is to storage or transport.

7) This hole is to secure the leg in a 60degrees angle. The angle of this leg position the tripod sits at when in use.

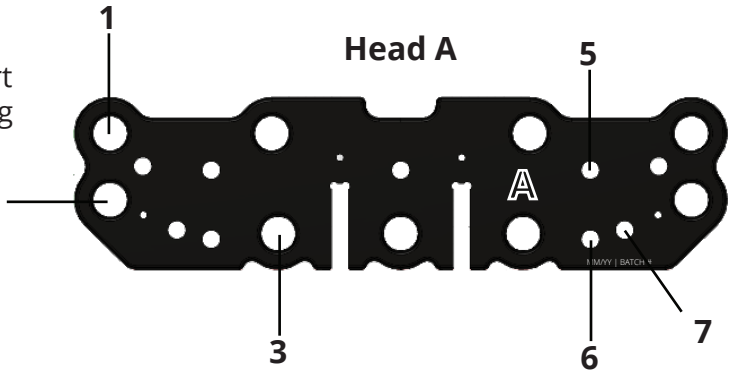
8) This hole is to secure the outer connection tube or to secure the extended leg for storage or transport.

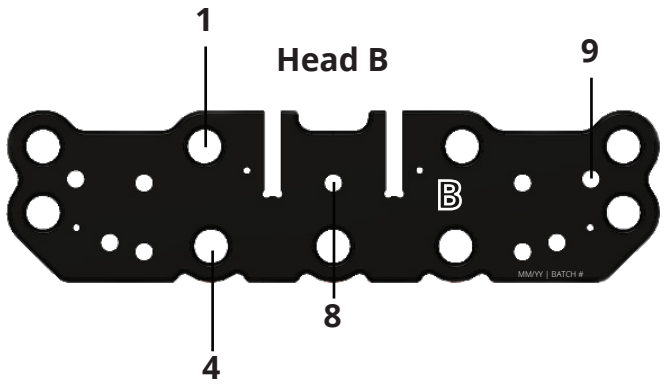
9) The two 10mm outer holes are used to secure plate A & B to each other, if used without plate C & D.

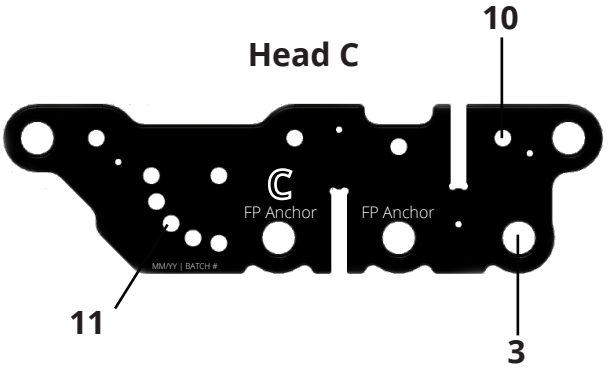
10) The 4 10mm holes on the top of plate C & D are used to secure the pulley blocks.

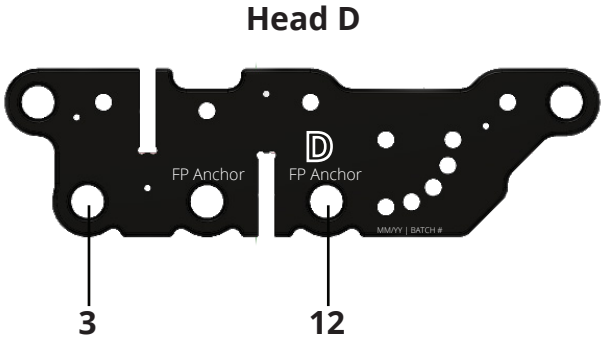
11) The 5x 10mm holes are for different options to secure the third leg in a preferred angle.

12) The holes marked with FP Anchor are to be used for normal use under the EN 795 standard.









Note: The offset tripod can be seen as a A-frame with a third leg therefore the 3rd leg needs special attention to be set back compared to the other two legs when using it as an actual tripod. If you rig it so the a-frame legs are straight the tripod needs to be tight off in all direction to prevent it from tipping.

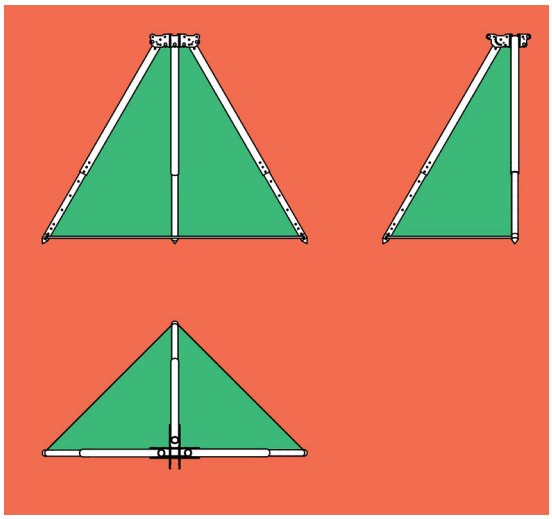
Also it is important to be on stable and even ground. If you not make provisions to be so.

Rigging and vectors (F)
It is important to learn to understand how the Pythagoras can be rigged safely. The best way to learn more about this is to learn about vectors.
Vectors are used in geometry and physics to indicate the direction of a force and how much force is applied.

The Pythagoras becomes dangerous if you don't understand the point of application of a force.
It is important to know where the force is exerted on the tripod. When you push against the top of the tripod, the tripod will tip over.
That is why we are talking about vectors and in case our system it is needed to understand where to add additional rigging so the Pythagoras won't tip over.

As long as you stay within the green area of the Pythagoras with your resulting force you will remain within the safe boundaries in which the vectors don't require a higher level of understanding.

Consult your expert rigger or contact us for additional training needs.



Safety
For those on stand-by do not anchor personal lanyard's or lifelines to the Pythagoras. Use independent anchors.

Tie-off any equipment when working close to an opening or edge in order to prevent it from dropping.

Worry about tipping over the Pythagoras all the time and take action to prevent it. Keep monitoring the system as it is being used.

Work on stable ground and if needed add stabilizers in form of plates to the ground so the Pythagoras feet and legs don't slip or sink.

Always try to use the three legs as a minimum. Install extra rigging when needed or as a precaution.

We already mentioned it but to highlight its importance:
The resulting force when using the tripod should always be within the green shaded area of the tripod, see above drawings. Or in other words the resulting force should be with in the three legs or the tripod.

The resulting force when using the system outside this scope of the manual should be in-line with the legs. If this is not the case, do not use the system.

Think about fall factors and prevent falls at all cost. This means that a belay line should used with this into consideration.

Tie off the feet at all times, using the supplied webbing or if needed a rope and active capture device.

PYTHAGORAS Specific Inspection Points
It is important to constantly monitoring the Pythagoras while being used.
After usage and putting the system back in storage it should be inspected in which the following types of damage or condition need to be looked for:

Is your system clean? Clean your system with luce warm water, use a brush if needed.
Is there any form of corrosion? If so contact us for possible treatment of replacement of the part.
Is there any type of wear?
Are there scratches? If so contact us to see if they can be taken care of or if the part needs to be replaced.
Are there any gouges? If so most likely the part will need to be replaced.
Do the components fit together easily or does it seems to be distorted? If so the system might have been overloaded or twisted. Further investigation should take place before putting it back into service.

Read the manual and keep it
Keep the user instructions/information accessible as a permanent record on- and off-site. Keep a copy of the manual with the product at all times.

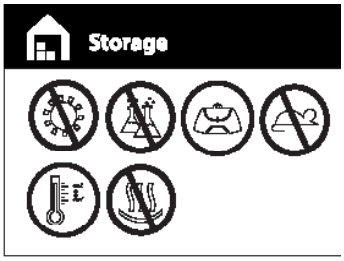
Warranty
Equipment offered by Eyolf Inc. are warranted against factory defects in workmanship and materials for a period of three years from date of installation or use by the owner, provided that this period shall not exceed three years from the date of manufacturing (see label on product). Upon notice in writing, Eyolf Inc. will promptly repair or replace all defective items. Eyolf Inc. reserves the right to elect to have any defective item returned to its plant for inspection before making a repair or replacement. This warranty does not cover equipment damages resulting from abuse, damage in transit, or other damage beyond the control of Eyolf Inc. This warranty applies only to the original purchaser and is only one of applicable to Eyolf products, and is lieu of all other warranties, expressed or implied.

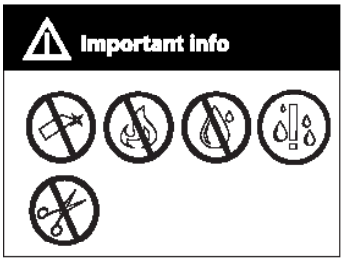
Available kits:

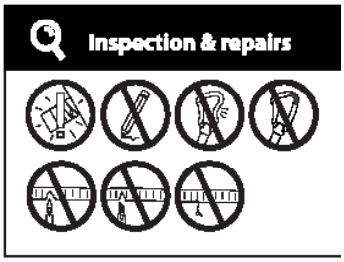
M40 1	Pythagoras Offset Tripod
M40 2	Pythagoras OT w. extension leg

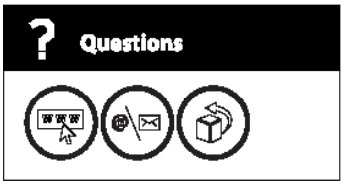
Available components:

M40 IL	Pythagoras - Inner Leg
M40 OL	Pythagoras - Outer Leg
M40 CT	Pythagoras - Inner Connector Tube
M40 RT	Pythagoras - Rigging Tube
M40 RR	Pythagoras - Rig Ring (anchor plate)
M40 AB	Pythagoras - Tripod Head A/B
M40 CD	Pythagoras - Head C/D
M40 SF	Pythagoras - Spike Foot
M40 PF	Pythagoras - Sphere Foot
M40 BF	Pythagoras - Big Foot
M40 SP	Pythagoras - Safety Pins (3x)
M40 RS	Pythagoras - Strap









EYOLF
TAILORED FOR COMPLEX TERRAIN

INSPECTION RECORD

Owner:
Address:

Product:
Model:
Serial #:
DoM:
Date of Purchase:
First use:

Eyolf Inc.
PO Box 418
Fergus On
N1M 3E2 Canada

Tel: +1 519 787 1581
Email: info@eyolf.ca

YEAR 1
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 4
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 7
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 9
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 2
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 5
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 8
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 10
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 3
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

YEAR 6
INSPECTION RECORD
DATE:
RESULT:
DATE NEXT INSPECTION:
INSPECTOR SIGNATURE:

Reason for entry inspection or repair
Defects noted, repairs carried out and other information:

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