

Manual ECO Series

Accessory line for small to mid-sized projectors

Manual Version 1.2

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ECO Link



ECO Pauline



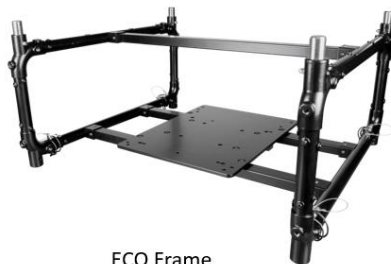
ECO Shift



ECO CB
+
ECO Quick Hang S



ECO CLP50



ECO Frame



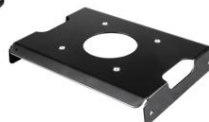
ECO Plate



ECO CLP2550SET



ECO ABD



ECO ABP



ECO Quick Hang S



ECO Quick Hang M



This manual is subject to change without further notice. The latest manual version can be found online at www.exactsolutions.de or by contacting us directly.



These installation instructions must always be handed out to the persons that carries out the installation.

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1. Preamble

The ECO Series products have been developed and manufactured with the highest care and attention. However, improper handling can cause a risk for safety and / or damage. Read these instructions carefully before handling and installing the products so that you can safely set-up and use the products. In the following pages, you will find all the information needed for a safe and fast installation.

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1.1 Tools required

The tools required are:

- 5 and 6 mm Allen key to tighten the M6 and M8 Screws



Figure 1 Allen key (hex key)

- 10mm hexagon wrench key to secure the M6 nuts of the ECO CLP2550SET
- 19mm hexagon wrench key to secure the M12 nuts of the ECO CLP2550SET



Figure 2 hexagon wrench key

- Universal torque ratchet with 5 and 6 mm Allen key bit



Figure 3 Universal torque ratchet

2. Safety instructions



These installation instructions must always be handed over to the person who is carrying out the installation.

Read these instructions carefully before installing the system.

2.1 Warnings



The ECO Series products is intended for use by fully qualified, trained and competent persons to provide safe and secure installation and adjustment of projectors setups.



Warning: Handling only by instructed, qualified and authorised person with a minimum age 18 years and of sound mind.



For indoor usage only

For indoor usage only! Use the ECO Series products only in a closed environment (conference rooms, theatres, convention halls, etc.) where there is no wind, moisture, excessive heat, salty air etc.



Make sure that only the designated projectors are installed with the products of ECO Series! Do not try to use it with other products because serious accidents can occur!



Do not remove or replace any parts of the ECO Series products on your own.

Contact the manufacturer or service partner in case of damage or loss.

Removing or replacing parts by non-certified companies or people might result in serious accidents and death.



Make sure to use appropriate secondary safety material such as steel ropes and shackles wherever necessary. For all mounting material using the clamp (CLP50) a secondary safety solution is mandatory.

Definition of qualified persons:

Trained/Qualified person

A person can be considered as trained/qualified when it has been thoroughly informed and/or trained about the assigned task and the possible dangers that can occur in case of improper behaviour and / or not observing precisely the installation instructions.

Qualified/Specialised person

A person can be considered qualified or specialised when, based on specialised training, knowledge and experience, it can assess the work assigned and recognise possible dangers.

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Only use the ECO Series products and its components for its intended use.

- If this product is used for something else than its intended use, serious accidents and death may result. See chapter 4.1 Intended use

Installation work should only be carried out by a qualified technician.

- If this product is not installed correctly, serious accidents and death may result.

Do not use the products of the ECO Series products series outdoor.

- These products are made only for indoor usage. If the products are mounted outdoor, there are many influences like wind or rain that can have an effect on the stability of the whole system.
- This can cause property damage, serious accidents and death.

A visual inspection must be done prior to every installation, in which the system is involved. The inspection must be performed by a qualified person.

- All parts of the ECO Series products must be inspected in detail prior to any usage
- Only if the product and all its components are in a flawless condition, it is safe to use the system.
- Using an ECO Series product which has damages or missing parts can cause serious accidents and death.
- For further details, see chapter 10. System maintenance and inspection (Re-examination)

Only use projectors that are specified by the manufacturer to be used with the ECO Series products. When mounting the projector into the frame or on the plate, use all screws and washers that are specified by the manufacturer. Make sure to tighten the screws safely, with the provided torque information

- It is mandatory to use all screws and safety washers that the manufacturer defines to mount the projector. Use only the ones that are clearly specified.
- For a safe installation the screws must be tightened with the provided torque
- Using the wrong screws or washers is highly dangerous. Tightening the screw with a too low torque can cause the screw to loosen itself. Tightening the screw with a too high torque might cause structural damage to the screw or the thread inside the projector. Not using the safety washers enables the screw to loosen itself.
- Ignoring these instructions can cause the parts or the whole system to fall down and with this can cause death, serious injuries or product damage.

Do not install the ECO Series products or the projector while people are present under the mounting zone during the installation process.

- When installing the projector, make sure no one is in the area underneath the installation zone. Otherwise, this will be a risk for all people underneath, that could cause serious injuries and death.

Do not place the ECO FRAME on top of unstable surfaces.

- If the frame or multiple frames are placed on the top of a surface, which is sloped or unstable, it /they may fall down or tip over and injury or damage could result. Make sure that the surface can support the overall weight of the frames including projectors and lens plus the weight of all additional equipment as well as other potential systems. The maximum weight of one system consisting of projector, lens and ECO FRAME is approx. 40 kg (88.18 lbs)¹. A stack of up to three systems will result in a weight of approx. 120 kg (264.55 lbs)
- Using the product on unstable surfaces can cause serious accidents and death

Make sure that the structure from which you hang up to two ECO FRAMEs including projectors is capable of carrying the overall weight of approx. 80 kg (176,37 lbs) plus the weight of all additional equipment as well as other potential systems. Do not hang the frame from unstable or inappropriate structures. The same conditions apply if the projectors with ECO Series products are fixed directly to a ceiling. Please ensure that the ceiling is capable of supporting the entire weight.

- Prior to any installation, you must do a visual inspection to make sure that the system is in a good condition. For more information, please refer to chapter 10. System maintenance and inspection (Re-examination)
- If the frame is hung/fixed on an unstable structure/ceiling, the entire system can fall and injuries may occur. Make sure that the construction/ceiling can support a total weight of up to 80 kg (176.37 lbs) plus the weight of all additional equipment as well as other potential systems. The above-named weight of 80 kg (176.37 lbs) represents the maximum weight of two systems (projector, lens, ECO FRAME).
- Ignoring this might cause significant damage to the product and serious accidents or death may result

¹ Maximum projector weight approx. 30 kg, heaviest lens approx. 4 kg, ECO FRAME 6 kg

Make sure to use only the ECO Series products to mount (hanging) the ECO FRAMES

- Do not use other accessories than the ones recommended and approved. Otherwise, using insufficient accessories may lead to serious injuries, death and property damage

Make sure to not exceed max. weight loads for ceiling mounting.

- For suspended installations, use only designated hanging accessories. Please refer to the corresponding instructions for the accessories used. Do not overload these accessories and make sure the overall weight is within working specifications of the accessories.
- Overloading the accessories and other equipment can cause serious accidents or fatalities.
- Ensure that the ceiling structure can support the entire weight of the system.
- Use the appropriate anchors to fix the ECO Series products to the ceiling. Undersized anchors can cause the system to fall and may result in serious accidents or fatalities.

Do not stack or hang more projector frames under each other than allowed by the manufacturer

- Do not exceed the maximum number of stacked or hung units as this may cause the whole system or parts of it to fall down
- Refer to chapter 5.7 ECO Series load limits matrix.
- Ignoring this might cause significant damage to the product and serious accidents or death may result

When stacking multiple frames, it is mandatory to use all four spring clips connectors and insert them correct and completely

- If less than four spring clips connectors are used, or if they are not inserted correctly or completely, it is not safe to use the system. See chapter 6.2.1 Stacking frames
- The system is statically designed in such a way, that all spring clips connectors must be used correctly. Otherwise, parts or the whole system might fall down. This can cause serious accidents and death as well as property damage.

When using the adjustment features of the ECO Series products, never apply significant force.

- When using the adjustment features never apply force. All adjustments shall work smoothly and do not require significant force.

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- If significant force is necessary, the cause may be a faulty part or the end of the adjustment range has been reached.
- Ignoring this, might cause significant damage to the product and serious accidents may result

The main purpose of the ECO Series products is to be use for fix installation. Nevertheless, when the products are used for events, always secure them to the rigging truss with rigging slings with steel cable insert and shackles (two sets of rigging sling and shackle are mandatory). Instead of rigging slings with steel cable insert, you can also use steel cables.

- In case of using the ECO Series products for events, they must always be secured with two appropriate rigging slings or steel cables and shackles so that in case of a malfunction they don't fall more than 10 cm. It is mandatory to use two sets of rigging slings or steel cables and shackles to avoid too much dynamic forces as well as the projector swinging. Please consult the local laws or regulations regarding the additional safety of hanging equipment.
- It is important to use correct rigging slings with cable inserts or steel cables and shackles that are capable to resist the high dynamic forces.
- The rigging slings or steel cables and shackles act as a secondary safety element and it is mandatory to use them. Not using them or using the wrong products might cause serious accidents and death.

Service work shall only be done by qualified personnel that is authorized by the manufacturer. Furthermore, only original spare parts shall be used.

- Unauthorized personnel shall never do service work on the products, as service work requires special training and knowledge
- Spare parts must always be original ones, provided by the manufacturer
- Not observing these rules on service work ends with immediate effect the responsibility of the manufacturer and, where applicable, warranty is irrecoverably lost. The product is no longer safe to use. This may cause serious accidents or death and property damage.

2.2 Caution

Before installing the projector into the ECO Frame or ECO Plate, please read the projector's user manual.

- The ECO Frame or ECO Plate with the projector inside must be installed only in an environment that is recommended by the projector manufacturer.
- If this product is not installed correctly, serious accidents may result.

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Minimum of two persons are recommended to install the projector with the ECO Series products. Additional Lifting accessories might be necessary.

- Regarding the overall weight of all necessary installation devices, make sure to handle those with care and use tools for lifting.

Periodic inspections are mandatory

- Depending on local laws and regulations owners / users must do periodic inspections of the frame and all components. In case of German regulations this must be done and documented once a year by a qualified and authorised person.

Do not place unsecured accessories like tools or electrical devices (converter, video player etc) on top of the ECO Series products.

- These devices may fall down and causes serious accidents or even death to people who are situated near the installation.
- The additional weight of every device added to the system must be considered. Contact the manufacturer for any questions.

The ECO Series products are designed for a static, non-moving, installation.

- The ECO Series products and the installed projector shall not be mechanically or electro mechanically moved around for example for show purposes.

Use only gentle cleaning agents to avoid damage

- Cleaning may be done with a soft cloth and a little bit of warm, slightly soapy water
- Do not use any oil, acid etc. on the frame or its components. This may damage the products.

Incorrect disposal is a risk to humans and nature

- Disposal must be done in accordance with local laws and regulations. Contact the manufacturer in case of any questions.

2.4 Risk Situations

Risk of injury due to the possibility of falling objects during the assembly or disassembly of the ECO Series products

- Protection objective: Avoid injury from falling parts.
- Wear appropriate safety shoes, gloves and helmet.
- Make sure the area beneath the installation site of the ECO Series products is clear, and no persons are present during the installation.

Risk of hitting the head with the ECO Serie products during the set-up process.

- Protection objective: Avoid injury from hitting the head.
- Wear a helmet.

Incorrect installation may lead to certain parts of the ECO Series products or the entire installation that was made with the ECO Series products to fall.

- Protection objective: Prevent personal injury and property damage.
- Double check the ECO Series products components and its installation.
- Read the ECO Series products manual carefully.
- When installing a projector with the ECO Series products, use only components from the ECO Series or those explicitly approved by the manufacturer. Do not use any other unauthorized products.

Insufficient load capacity of the supporting structure may lead to certain parts of the ECO Series products or the entire installation that was made with the ECO Series products to fall.

- Protection objective: Prevent personal injury and property damage.
- Provide adequate dimensioning of the supporting structure. The supporting structure must be able to support the combined weight of all the equipment attached to it.
- Ensure correct installation of the supporting structure.
- Ensure that the ceiling structure can support the entire weight of the system. The ceiling structure must be able to support the combined weight of all the equipment attached to it.
- Use the appropriate anchors to fix the ECO Series products to the ceiling. Undersized anchors can cause the system to fall and may result in serious accidents or fatalities.

Usage of unsafe ladders/steps/scaffolding may lead to serious personal injuries

- Protection objective: prevent personal injury by using only safe ladders/steps/scaffolding.
- Use only appropriate and safe equipment
- Always follow the documentation of the manufacturer of the provided ladders/steps/scaffolding
- Use personal safety equipment if necessary

Use of unsuitable fasteners

- Protection objective: prevent personal injury of property damage by using unsuitable fasteners

- The use of unsuitable fasteners can lead to malfunctions, equipment damage or personal injury. These fasteners can be, for example, screws or dowels.
- The person/persons who is/are setting up the ECO-Series-Product. Persons surrounding the area where the system is installed, persons who are walking/situated next to the installed products.
- Use only recommended fasteners and accessories

Using non approved accessories

- Protection objective: prevent personal injury or property damage by using non approved accessories.
- Using other accessories than the ones recommended by the manufacturer. The approved accessories can be found in the User Manual of the ECO-Series-Product.
- The person/persons who is/are setting up the ECO-Series-Product. Persons surrounding the area where the system is installed.
- Use only approved accessories.

Injuries by falling objects that are not securely attached

- Protection objective: Preventing external parts from falling down and with this preventing personal injury or product damage.
- Placing or attaching external equipment such as tools, electrical devices etc. to the ECO-Series-Product that are not securely fixed. Those parts might fall down.
- The person/persons who is/are setting up the ECO-Series-Product. Persons surrounding the area where the system is installed, persons who are walking/situated next to the installed products.
- Do not put external devices to the system

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Injuries produced by caught limbs during setup, adjustment and dismantle

- Protection objective: Prevent personal injury by using safety gloves.
- During setup, adjustment and dismantle always watch your hands and fingers on connection-points while working with the ECO Series products. Always be focused on the construction and do not act hectic.
- The pictures below show the areas of the ECO Series products that can cause injuries during setup if fingers are placed in these areas while the user is distracted.

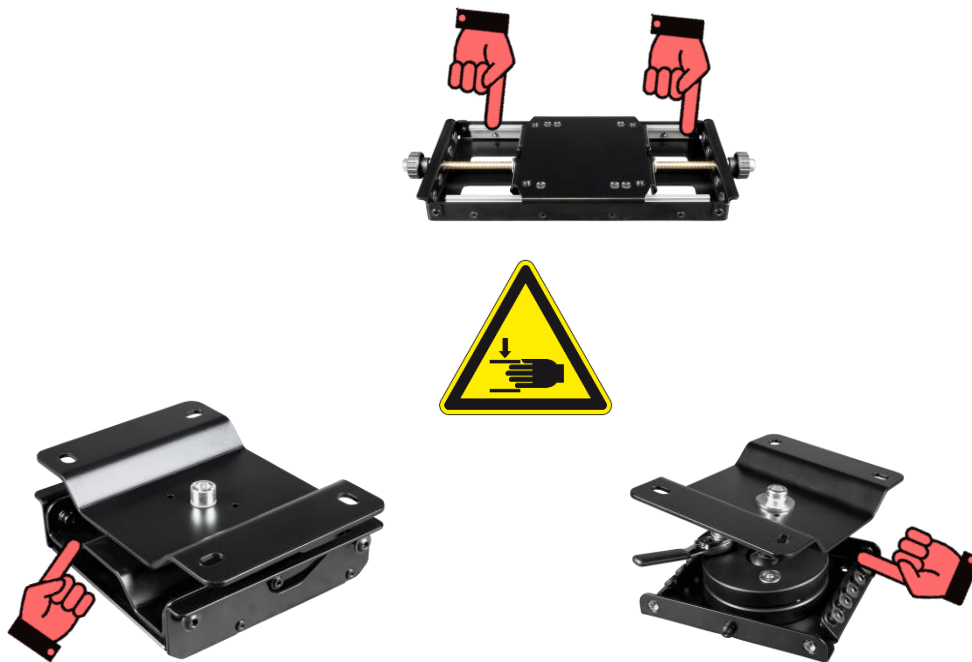


Figure 4 From top left ECO SHIFT, ECO CB + ECO QUICK HANG S, ECO LINK CB

3. Scope of delivery



Note: Please check the delivery for completeness and damage immediately after you receive the shipment. Please contact your vendor in case of missing or damaged parts.

As a reference check the drawings of each component of the ECO Series products that you purchased to see if all parts are complete. Additionally, you will find tables listing parts that come with each product.

4. Description of the product

4.1 Intended use



The products of ECO Series are designed and intended for installation, protection and easy handling of professional projectors. The ECO-FRAME is guarding highly expensive devices during handling and offers various mounting points. The ECO-PLATE offers only mounting points. Optional accessories which are part of the ECO Series can be attached to the FRAME or PLATE for example to hang it from a truss or ceiling. The products of the ECO series are intended for use by fully qualified, trained and competent persons to provide safe and secure transportation, installation and adjustment of projectors. All parts of the ECO Series, as well as the projectors that can be installed, are made only for indoor usage.

4.2 Specifications

The specifications are listed in the following sections where handling and installation of each product is described. Dimensions can be found in the product drawings as well as weight information.

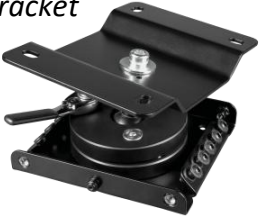


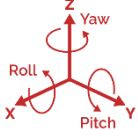

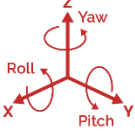
5. Product overview

5.1 Frames and Plates



Name, article number and image	Description
<p data-bbox="220 1160 746 1267"><i>ECO Frame</i> ECO-FRAME-x (with x defining projector type)</p> 	<p data-bbox="769 1160 1390 1384">The ECO Frame is the centerpiece of the ECO Series and it is compatible with all the ECO Series products. There are different frames available for different projector models. Product weight: refer to the specific drawing Weight load limit: 34 kg / 74,95 lbs</p> <p data-bbox="769 1435 1385 1503">See chapter 5.5 Compatible Projectors for ECO Series products.</p>
<p data-bbox="220 1550 746 1657"><i>ECO Plate</i> ECO-PLATE-x (with x defining projector type)</p> 	<p data-bbox="769 1550 1390 1697">The ECO Plate is the other centrepiece of the ECO Series and is intended for use in installations where an ECO Frame is not necessary. Product weight: 2,1 kg / 4.63 lbs Weight load limit: 34 kg / 74,95 lbs</p> <p data-bbox="769 1823 1385 1890">See chapter 5.5 Compatible Projectors for ECO Series products.</p>

5.2 Truss and ceiling brackets

For weight load limits see 5.7 ECO Series load limits matrix.

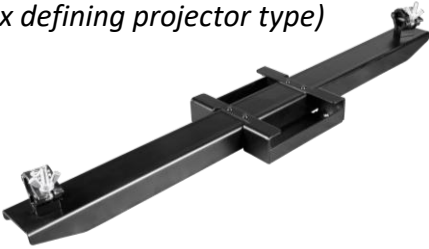

Name, article number and image	Description
<p><i>ECO Link - Ceiling Bracket</i> ECO-LINK-CB</p> 	<p>The ECO Link – Ceiling Bracket features a ball joint, allowing a projector to be installed at a maximum angle of 25 degrees.</p> <p>Product weight: 3,0 kg / 6.61 lbs</p> <p>This Ceiling Bracket version can be fastened directly onto a flat ceiling surface.</p>
<p><i>ECO Link – Clamp 50</i> ECO-LINK-CLP50</p> 	<p>The ECO Link – Clamp 50 features a ball joint, allowing a projector to be installed at a maximum angle of 25 degrees.</p> <p>Product weight: 3,0 kg / 6.61 lbs</p> <p>The Clamp 50 version can be hung on a truss with 50 mm round pipes.</p>
<p><i>ECO Pauline - Ceiling Bracket</i> ECO-PAULINE-CB</p>  	<p>The ECO Pauline – Ceiling Bracket is a product from the ECO Series that allows fine adjustment of the projector by $\pm 22^\circ$ on the pitch and roll axes and $\pm 25^\circ$ on the yaw axis.</p> <p>Product weight: 2,1 kg / 4.63 lbs</p> <p>The Ceiling Bracket version can be fastened directly onto a flat ceiling surface.</p>
<p><i>ECO Pauline – Clamp 50</i> ECO-PAULINE-CLP50</p>  	<p>The ECO Pauline – Clamp 50 is a product from the ECO Series that allows fine adjustment of the projector by $\pm 22^\circ$ on the pitch and roll axes and $\pm 25^\circ$ on the yaw axis.</p> <p>Product weight: 2,1 kg / 4.63 lbs</p> <p>The Clamp 50 version can be hung on a truss with 50 mm round pipes.</p>

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<p><i>ECO Ceiling Bracket with Quick Hang S</i> ECO-CB+ECO-QH-S</p> 	<p>The ECO Ceiling Bracket includes an ECO Quick Hang S. With the ECO-CB, the projector can be rotated 360° around Z Axis. The Ceiling Bracket version can be fastened directly onto a flat ceiling surface.</p> <p>Product weight: 3,2 kg / 7.05 lbs</p>
<p><i>ECO Clamp 50</i> ECO-CLP50</p> 	<p>The ECO Clamp 50 allows a projector to be hang directly on a 50 mm truss The ECO Clamp 50 can be attached to the ECO Frame or to the ECO Plate.</p> <p>Product weight: 1,3 kg / 2.87 lbs</p>

5.3 Frame Accessories

For weight load limits see 5.7 ECO Series load limits matrix.




Name, article number and image	Description
<p><i>ECO Adapter Bracket Face Down</i> ECO-ABD-x (with x defining projector type)</p> 	<p>The ECO Adapter Bracket Face Down allows the ECO Frame to be hung directly in a face-down orientation.</p> <p>Product weight: 2,8 kg / 6.17 lbs</p> <p>See chapter 5.5 Compatible Projectors for ECO Series products.</p>
<p><i>ECO Adapter Bracket Portrait</i> ECO-ABP-x (with x defining projector type)</p> 	<p>The ECO Adapter Bracket Portrait allows the ECO Frame to be hung directly in a portrait orientation.</p> <p>Product weight: 1,4 kg / 3.09 lbs</p> <p>See chapter 5.5 Compatible Projectors for ECO Series products.</p>

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<p><i>ECO Clamp Set 25 mm to 50 mm</i> ECO-CLP2550SET</p> 	<p>The ECO Clamp Set 25 mm to 50 mm allows the ECO Frame to be hung directly on a truss in landscape, portrait, or face-down orientation.</p> <p>Product weight: 1,0 kg / 2.20 lbs</p>
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5.4 Various accessories

For weight load limits see 5.7 ECO Series load limits matrix.

<p><i>ECO Shift</i> ECO-SHIFT</p> 	<p>The ECO Shift allows a projector to be shifted ± 60 mm in two directions. The ECO Shift can be attached to the ECO Frame or to the ECO Plate.</p> <p>Product weight: 1,8 kg / 3.97 lbs</p>
<p><i>ECO Quick Hang S</i> ECO-QH-S</p> 	<p>The ECO Quick Hang-S allows the projector to be hung quickly with certain smaller ECO Series products.</p> <p>Product weight: 0,9 kg / 1.98 lbs</p>
<p><i>ECO Quick Hang M</i> ECO-QH-M</p> 	<p>The ECO Quick Hang-M allows the projector to be hung quickly with ECO Series products.</p> <p>Product weight: 1,8 kg / 3.97 lbs</p> <p>Compatible with:</p> <ul style="list-style-type: none"> • ECO Shift • ECO Pauline



Note: Please read the chapter 2. Safety instructions, carefully before attaching anything to the ceiling. Accidents may occur.

5.5 Compatible Projectors for ECO Series products

Projector	ECO Frame	ECO Plate	ECO Adapter Bracket Down	ECO Adapter Portrait
PANASONIC RQ7 Series	ECO-FRAME-EP1.0	ECO-PLATE-EP2.0	ECO-ABD-EP1.0	ECO-ABP-EP1.0
EPSON EB-PU1xxx Series	ECO-FRAME-EP1.0	ECO-PLATE-EP2.0	ECO-ABD-EP1.0	ECO-ABP-EP1.0
EB-PU2010 Series	ECO-FRAME-EP1.0	ECO-PLATE-EP2.0	ECO-ABD-EP1.0	ECO-ABP-EP1.0
FUJI Z6k/8k Series	ECO-FRAME-EP1.0	ECO-PLATE-EP2.0	ECO-ABD-EP1.0	ECO-ABP-EP1.0
BARCO I600 Series	ECO-FRAME-B1.0	ECO-PLATE-EP2.0	ECO-ABD-EP1.0	ECO-ABP-B1.0
FUJI ZUH6000 ²		ECO-PLATE-EP2.0		
EPSON Lx9x Series	ECO-FRAME-E1.0		ECO-ABD-E1.0	ECO-ABP-E1.0

Table 1 Compatible Projectors



This is an excerpt of compatible Projectors. Please contact us for more information.

² Since the lens can be rotated to project to the rear, the image will interfere with the frame's vertical pipe, and the pipe will obstruct the projection.

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5.6 ECO Series compatibility matrix

For a better overview of the compatibility within the ECO Series, one can check the table below.

	ECO Frame	ECO Plate	ECO Link	ECO Pauline	ECO Shift	ECO CB + ECO Quick Hang S	ECO CLP 50	ECO-CLP2550SET	ECO ABD	ECO ABP	ECO Quick Hang S	ECO Quick Hang M
ECO Frame			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ECO Plate			✓	✓	✓	✓	✓				✓	✓
ECO Link	✓	✓			✓				✓	✓	✓	
ECO Pauline	✓	✓			✓				✓	✓		✓
ECO Shift	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
ECO CB + ECO Quick Hang S	✓	✓			✓				✓	✓		
ECO CLP 50	✓	✓			✓				✓	✓	✓	
ECO CLP2550SET	✓											
ECO ABD	✓		✓	✓	✓	✓	✓				✓	✓
ECO ABP	✓		✓	✓	✓	✓	✓				✓	✓
ECO Quick Hang S	✓	✓	✓		✓		✓		✓	✓		
ECO Quick Hang M	✓	✓		✓	✓				✓	✓		

Table 2 Compatibility matrix



In case of unclarities, please don't hesitate to contact your vendor.

5.7 ECO Series load limits matrix.



The ECO Frame and the ECO Plate have a load limit of 34 kg (74.96 lbs). Do not exceed this limit, as it may lead to accidents. Considering a weight of 6kg for the ECO Frame, it results in a weight of 40 kg.

For the load limits matrix, please refer to the table below:

	ECO Link	ECO Pauline	ECO Shift	ECO CB + ECO Quick Hang S	ECO CLP 50	ECO-CLP2550SET	ECO ABD	ECO ABP	ECO Quick Hang S	ECO Quick Hang M
ECO Frame	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)
ECO Frame Landscape double stack	80 Kg (176.37 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	80 Kg (176.37 lbs)	80 Kg (176.37 lbs)			40 Kg (88.18 lbs)	40 Kg (88.18 lbs)
ECO Plate	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)	40 Kg (88.18 lbs)				40 Kg (88.18 lbs)	40 Kg (88.18 lbs)

Table 3 Load limit matrix

Here are some examples on how to read above table:

- An ECO Link can carry 40kg if using one ECO Frame or 80 kg when using a stack of two ECO Frames. When using just the ECO Plate the max weight is 40 kg
- An ECO Shift can carry 40kg if using one ECO Frame but still only 40 kg when using a stack of two ECO Frames. When using just the ECO Plate the max weight is as well 40 kg
- ECO ABD can only be used with one frame and can carry a max weight of 40 kg



Combinations that are not listed in the table above are not allowed. Please contact your vendor for further details.

6. Description and installation of frames and plates

The frames and plates attach to the projector itself. They provide standardized mounting points to which further ECO Series products can be mounted.

6.1 Safe usage on Schnorr safety washers and screws

We are using Schnorr safety washers to secure screws and prevent them from loosening. It is essential that those safety washers and screws are used correctly. As an introduction to the following chapters, we will guide you how to use them correctly.



Do not forget to use all of the specified Schnorr Washers as they are preventing the screws to loosen themselves!



Make sure you tighten all of the screws with the correct torque.



The torque value had been provided by the projector manufacturer



The orientation of the Schnorr safety washers is important and it is mandatory to install them in the correct orientation. See below Figure 4 and Figure 5.

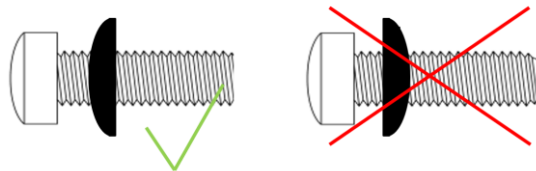


Figure 5 Orientation of Schnorr safety washer

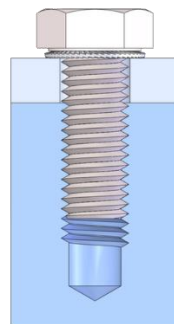


Figure 6 Schnorr safety washer correct orientation (Picture by Schnorr)

6.2 ECO Frame



If the ECO Frame is delivered dismantled, please consult the “ECO Frame assembly instructions” to find out how to assemble it. It will be shipped with the product.

What’s in the box?

Option 1	Option 2	Option 3
ECO-FRAME-EP1.0	ECO-FRAME-B1.0	ECO-FRAME-E1.0
ECO Series Manual	ECO Series Manual	ECO Series Manual
ECO Frame assembly instructions	ECO Frame assembly instructions	ECO Frame assembly instructions
ECO Series General Warnings	ECO Series General Warnings	ECO Series General Warnings
5 x M8x16 ISO7380 5 x Ø8 Schnorr washers	5 x M8x16 ISO7380 5 x Ø8 Schnorr washers	5 x M4x12 ISO7380 5 x Ø4 Schnorr washers
6 x M6x16 ISO7380 6 x Ø6 Schnorr washers	6 x M6x16 ISO7380 6 x Ø6 Schnorr washers	

Table 4 Frame models



Make sure that only the designated projectors are installed into this frame! Do not try to use it with other projectors because serious accidents can occur!



If you have ordered a Frame that is not listed in above table, make sure to use the correct screws and washer. We will provide the necessary information in another way. If any questions come up, please contact us.

Step 1: Place the frame upside down on a suitable flat surface.

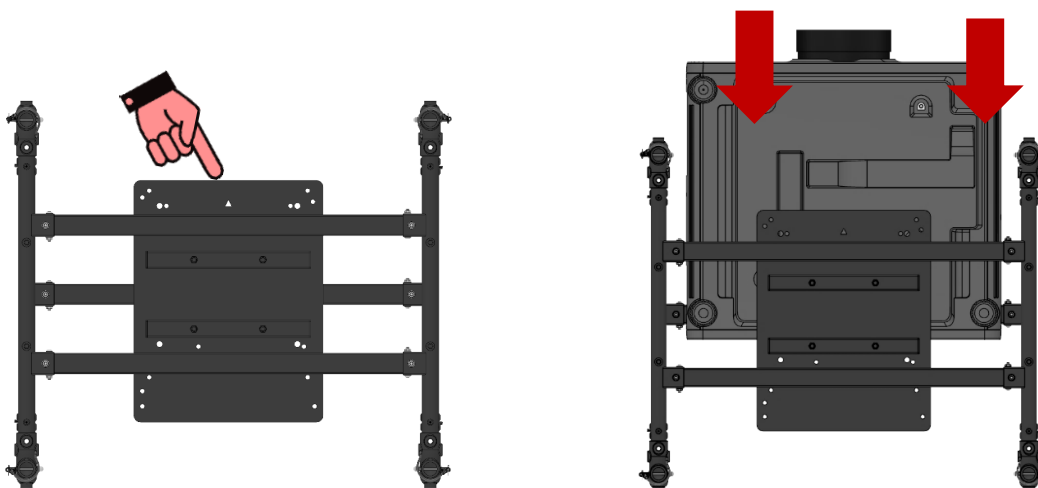


Figure 7 Mounting the projector into the frame

Step 2: Insert the projector into the frame from either the front or back side. Ensure that the projector is in the correct orientation so that its front and back positioning is accurate when placed inside the frame. The projector's lens must be at the front of the frame, which is identified by the triangle cutout (see pointing hand in Figure 10Figure 7).

Next, align the threaded holes on the bottom of the projector with the corresponding mounting holes on the frame plate.



The ECO Frame is compatible with a variety of projectors. Please check the exemplary drawing below in Figure 8 to see which mounting holes correspond to the projector being installed in the frame. Contact us if your projector is not listed.

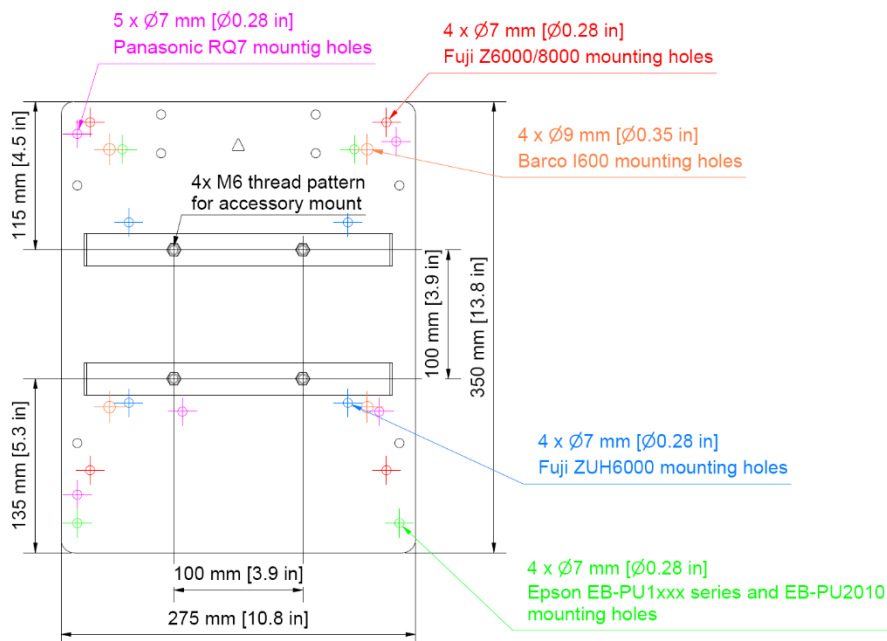


Figure 8 Exemplary projectors mounting holes for various projectors with the ECO Frame EP1.0

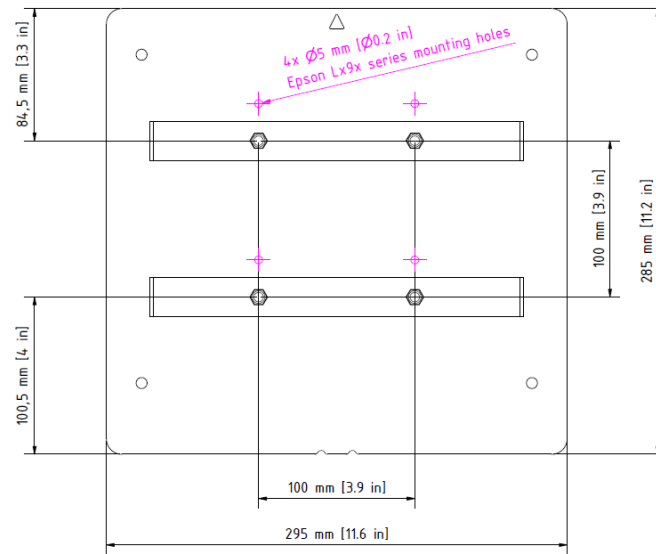


Figure 9 Mounting holes for ECO Frame E1.0

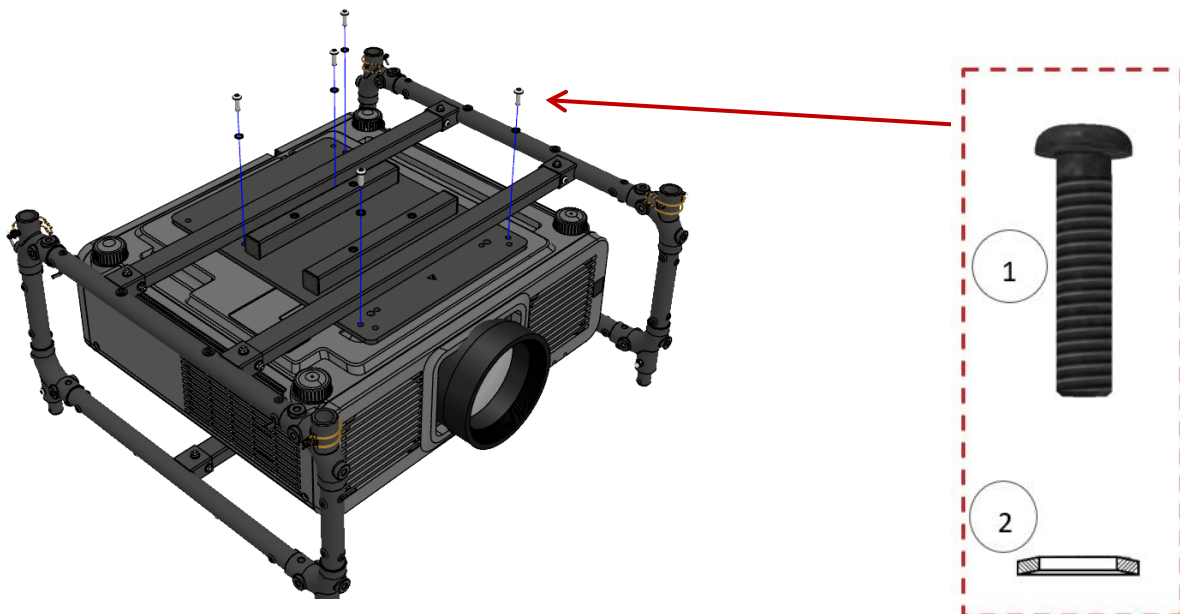


Figure 10 Securely tighten all screws

Step 3: Place the specific **Schnorr washers (2)** over each corresponding hole. Then, secure the specific **ISO 7380 screws (1)** into each hole with the specified torque. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole on the projector surface.

Please make sure to use only the designated screw holes when installing the projector. To

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determine the correct screws and washers combination, as well as the required torque, please consult the table below.

Projector	ECO Frame	Screws	Washers	Torque
PANASONIC RQ7 Series	ECO-FRAME-EP1.0	5 x M6x16 ISO7380	5 x Ø6 Schnorr washers	4 Nm
EPSON EB-PU1xxx Series	ECO-FRAME-EP1.0	4 x M6x16 ISO7380	4 x Ø6 Schnorr washers	4 Nm
EB-PU2010 Series	ECO-FRAME-EP1.0	4 x M6x16 ISO7380	4 x Ø6 Schnorr washers	4 Nm
FUJI Z6k/8k Series	ECO-FRAME-EP1.0	4 x M6x16 ISO7380	4 x Ø6 Schnorr washers	4 Nm
BARCO I600 Series	ECO-FRAME-B1.0	4 x M8x16 ISO7380	4 x Ø8 Schnorr washers	5,8 Nm
FUJI ZUH6000 ³				
EPSON Lx9x Series	ECO-FRAME-E1.0	4 x M4x12 ISO7380	4 x Ø4 Schnorr washers	2,5 Nm

Table 5 Projector model, screws, washer and torque



If you have ordered a special frame that is not listed in above table, make sure to use the correct screws and washer. If any questions come up, please contact us.



Always make sure the screws you use are long enough to securely fasten the projector. In any doubt contact us or your vendor.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor.

³ Since the lens can be rotated to project to the rear, the image will interfere with the frame's vertical pipe, and the pipe will obstruct the projection.

6.2.1 Stacking frames

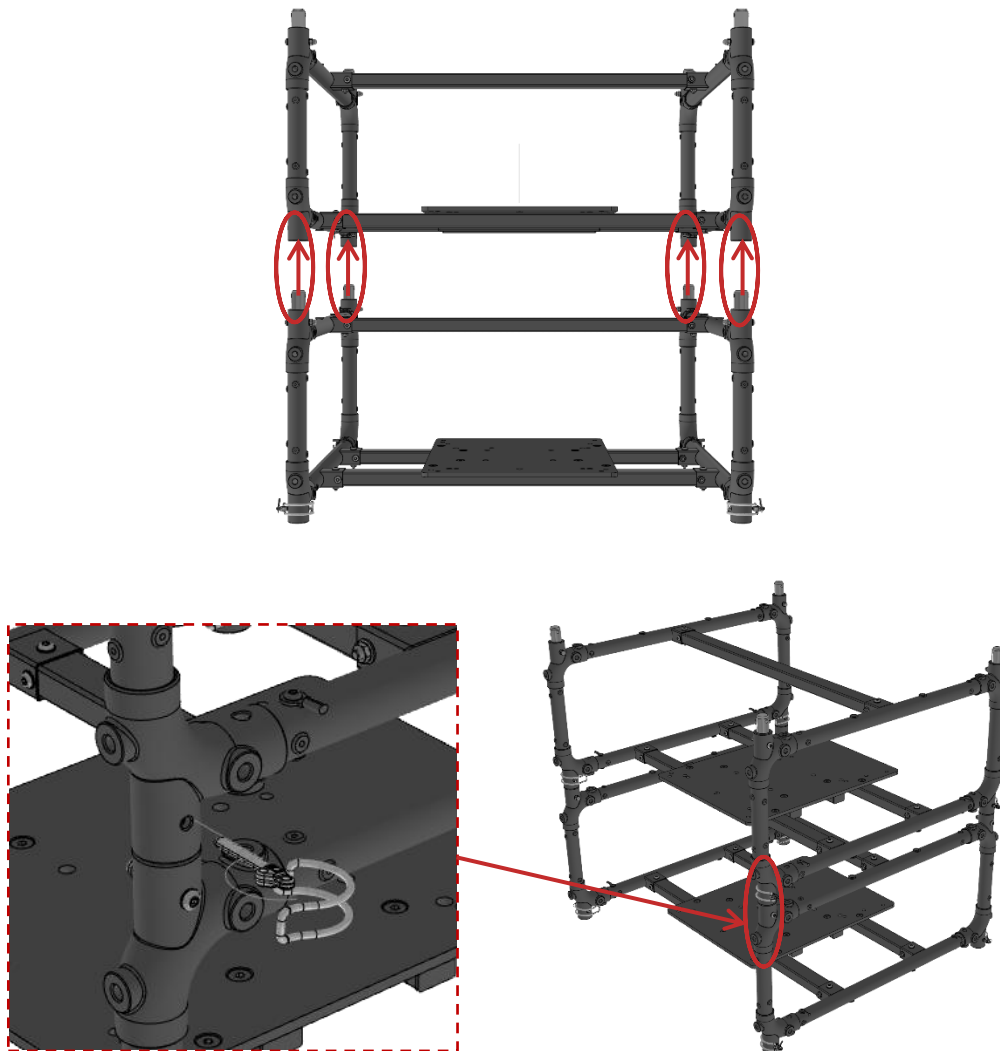


Figure 11 ECO Frame stacking

Step 1: Place the upper frame with mounted projector on top of the lower frame with mounted projector. Make sure the four male bolts enter into the correspondent female bolts. To secure, insert the spring clips through the holes in the female bolts. Always make sure that the spring clips are locked after being inserted. See also Figure 12 illustrating a properly closed spring clip.

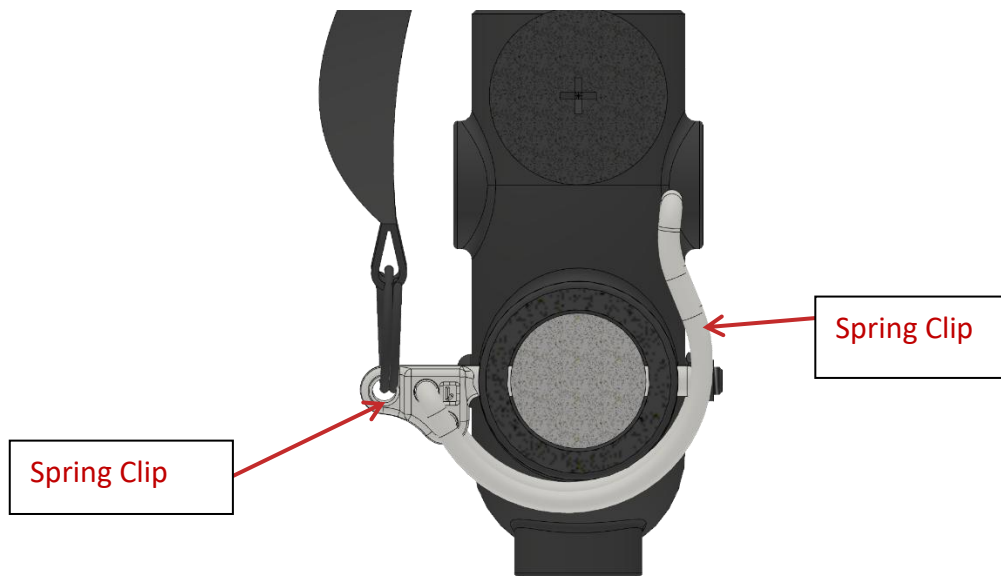


Figure 12 Crosssection view of properly closed spring clip



Because the spring of the spring clip is strong, please be careful not to clamp your fingers between the spring ring and the female bolts.

6.3 ECO Plate

What's in the box?

Option 1
ECO-PLATE-EP2.0
ECO Series General Warnings
6 x M6x16 ISO7380
6 x Ø6 Schnorr washers
5 x M8x16 ISO7380
5 x Ø8 Schnorr washers

Table 6 ECO Plate models and including parts



Make sure that only the designated projectors are installed on this plate! Do not try to use it with other projectors because serious accidents can occur! See Table 7 to see which screws and washer are suitable for which projector. Contact us if your projector is not listed.



If you have ordered a special Plate that is not listed in above table, make sure to use the correct screws and washer. If any questions come up, please contact us.

Step 1: Place the projector upside down on a suitable flat surface. Ensure that the surface is clean to prevent any damage or scratches to the projector.

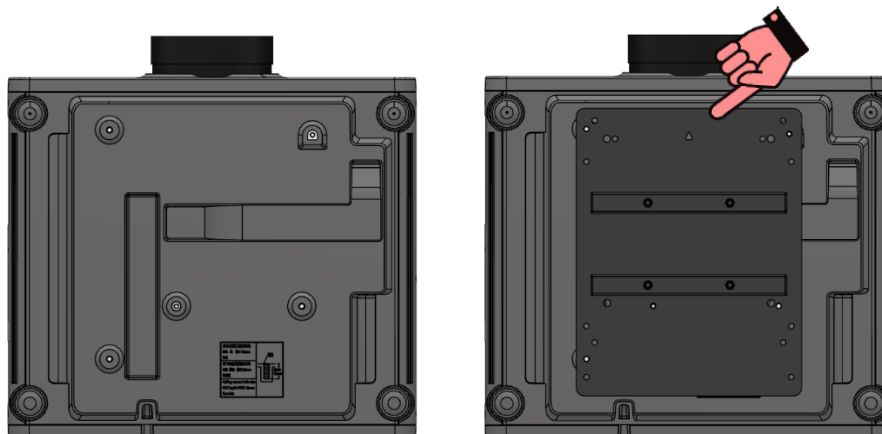


Figure 13 Mounting the ECO Plate on the projector

Step 2: Place the ECO Plate on the projector. Ensure that the ECO Plate is correctly oriented so that its front and back positioning aligns properly with the projector. The projector's lens must be at the front of the ECO Plate, which is identified by the triangle cutout (see pointing hand in the figure above).

Align the threaded holes on the bottom of the projector with the corresponding mounting holes on the ECO Plate.



The ECO Plate is compatible with a variety of projectors. Please check the drawing in Figure 14 to see which mounting holes correspond to the projector being installed in the frame. Contact us if your projector is not listed.

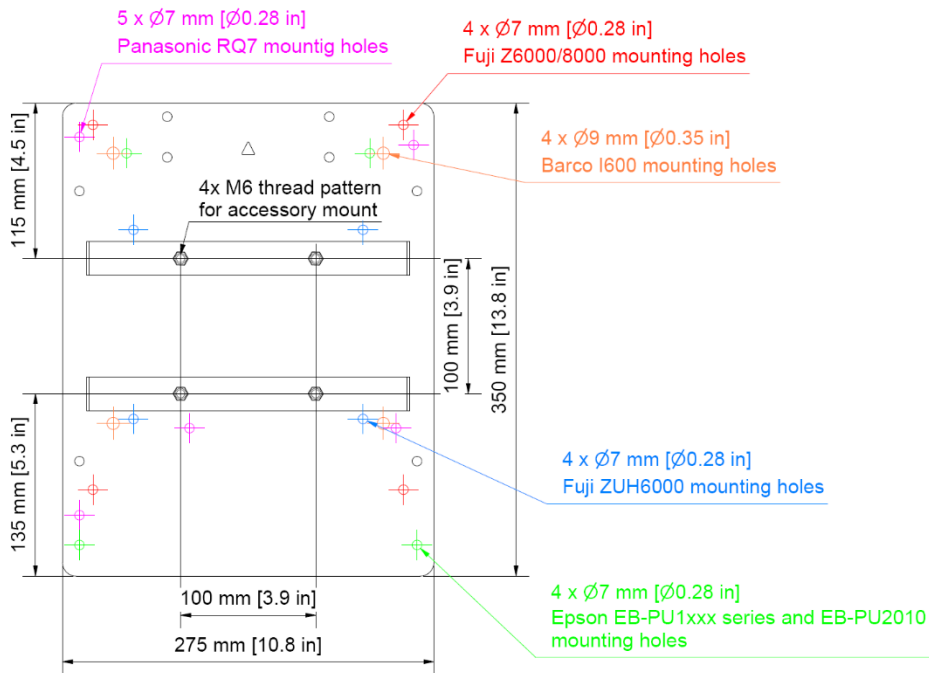


Figure 14 Projectors mounting holes

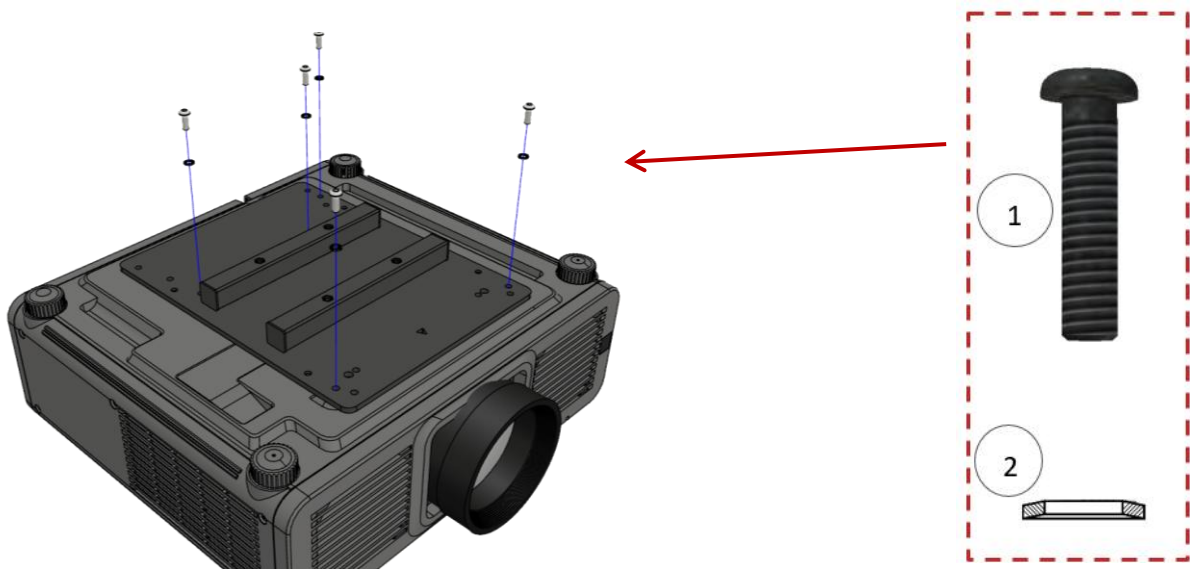


Figure 15 Securely tighten all screws

Step 3: Place the $\varnothing 6$ or $\varnothing 8$ Schnorr washers (2) over each corresponding hole. Secure the M6 or M8 \times 16 ISO 7380 screws (1) into each hole with the specified torque. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole on the projector surface.

Please make sure to use only the designated screw holes when installing the projector. To determine the correct screws and washers combination, as well as the required torque, please consult the table below.

Projector	ECO Plate	Screws	Washers	Torque
PANASONIC RQ7 Serie	ECO-PLATE-EP2.0 ECO-PLATE-EP1.1 (EOL)	5 x M6x16 ISO7380	5 x $\varnothing 6$ Schnorr washers	4 Nm
EPSON EB-PU1xxx Serie	ECO-PLATE-EP2.0 ECO-PLATE-EP1.1 (EOL)	4 x M6x16 ISO7380	4 x $\varnothing 6$ Schnorr washers	4 Nm
EB-PU2010 Serie	ECO-PLATE-EP2.0 ECO-PLATE-EP1.1 (EOL)	4 x M6x16 ISO7380	4 x $\varnothing 6$ Schnorr washers	4 Nm
FUJI Z6k/8k Serie	ECO-PLATE-EP2.0 ECO-PLATE-EP1.1 (EOL)	4 x M6x16 ISO7380	4 x $\varnothing 6$ Schnorr washers	4 Nm
BARCO I600 Serie	ECO-PLATE-EP2.0	4 x M8x16 ISO7380	4 x $\varnothing 8$ Schnorr washers	5,8 Nm
FUJI ZUH6000	ECO-PLATE-EP2.0	4 x M6x16 ISO7380	4 x $\varnothing 6$ Schnorr washers	4 \pm 0,5 Nm

Table 7 Projectors, plates, screws, washers and torque



If you have ordered a special plate that is not listed in above table, make sure to use the correct screws and washer. If any questions come up, please contact us.

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Always make sure the screws you use are long enough to securely fasten the projector. In any doubt contact us or your vendor.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor.

7. Description and installation of truss and ceiling brackets

In the following you will find some general mounting advices that apply to all ECO Series products.



Always install truss brackets with a clamp in a vertical hanging position! Do not tilt the clamp! Figure 16 shows this exemplary with an ECO-LINK and an ECO-FRAME but is important for all truss mounts of ECO Series!

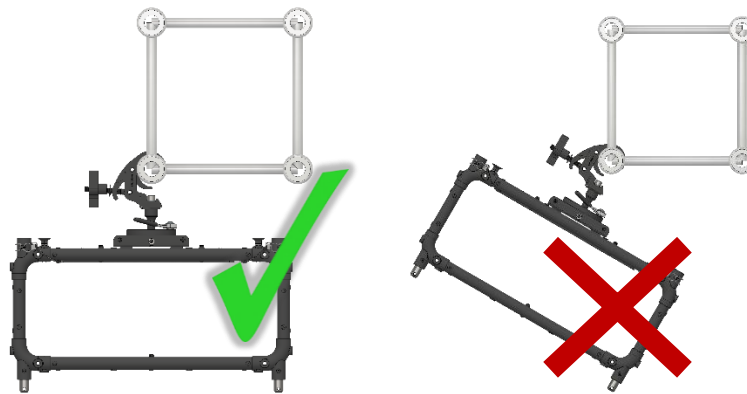


Figure 16 Only installation in vertical hanging position



Clamps need to be attached firmly, but not so firmly as to damage a pipe or truss tube.



Insufficient load capacity of the supporting structure may lead to certain parts or the entire system to fall down.

The following chapter will provide further details on truss and ceiling brackets.

Manual ECO Series products

7.1 ECO Link

The ECO LINK is available in two options:

- ECO-LINK-CLP50 connects compatible ECO products to an onsite 50 mm truss or pipe
- ECO-LINK-CB connects compatible ECO products to an onsite ceiling.

The centre part of both options is identical, only the top part is different. In general ECO Link works with a ball joint that can be fixed using a ratchet.

What's in the box?

Option 1	Option 2
ECO-LINK-CLP50	ECO-LINK-CB
ECO Series General Warnings	ECO Series General Warnings
5 x M6x16 self-locking screws	5 x M6x16 self-locking screws

Table 8 ECO LINK models and including parts



Make sure that only compatible ECO products are installed with the ECO Link! Do not attempt to use it with other ECO products that are not listed in the table below, because serious accidents can occur!

Compatible with:




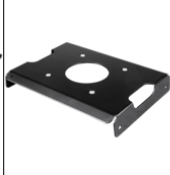


ECO Frame	ECO Plate	ECO ABD	ECO ABP	ECO Quick Hang S	ECO Shift
					

Figure 17 ECO LINK compatible products



In the following illustrations, the ECO-LINK-CLP50 is shown, but the information are the same for the ECO-LINK-CB.

The maximum angle that can be reached with the ECO-Link is $\alpha = 25^\circ$.

Manual ECO Series products



Do not hang a load greater than the allowed limit, as this may cause accidents and damage the ECO Link. For more information regarding the permissible loads, please refer to Chapter 5.7 ECO Series load limits matrix..

Please follow the next steps to see how to correctly install the ECO Link.

Step 1: Remove four of the five **M6x16 self-locking screws** from their parking position, see red circle in Figure 18.

Step 2: Fix the four **M6x16 self-locking screws** with a torque of 11 Nm to secure the ECO Link to the compatible ECO Series product (see Figure 18). Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole. See Figure 17 in regards of compatible products to which you can fix the EVO Link.



If you are using Quick Hang S with ECO LINK, please refer also to chapter 9.2 ECO Quick Hang S.

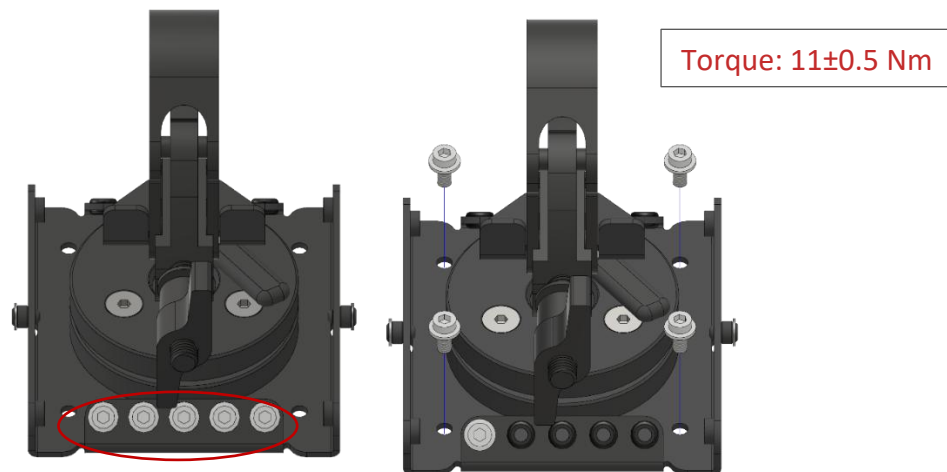


Figure 18 Securing the ECO Link



Make sure you tighten all of the four screws with the correct torque of 11 Nm

Step 3: Before hanging the ECO LINK CLP on a truss or securing the ECO LINK CB to a ceiling, make sure that the ball joint moves easily. This will make adjusting the desired angle much easier.

Step 4: Mount the ECO Link CLP50 with the truss clamp to your onsite structure. Make sure to securely fasten the clamp so that it is properly closed. If you are installing ECO Link CB to an onsite ceiling, make sure to use appropriate mounting material such as screws and

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dowels that are capable to carry the overall weight and are suitable for your onsite ceiling material. Make sure to use all four screw holes to fix it to the ceiling.



Make sure to use appropriate secondary safety material such as steel ropes and shackles wherever necessary. For all mounting material using the clamp (CLP50) a secondary safety solution is mandatory.

Step 4: Once the desired angle is reached, use the ratchet wrench to gently tighten the ball joint. If you need to adjust the angle later, you can loosen the ball joint using the wrench.

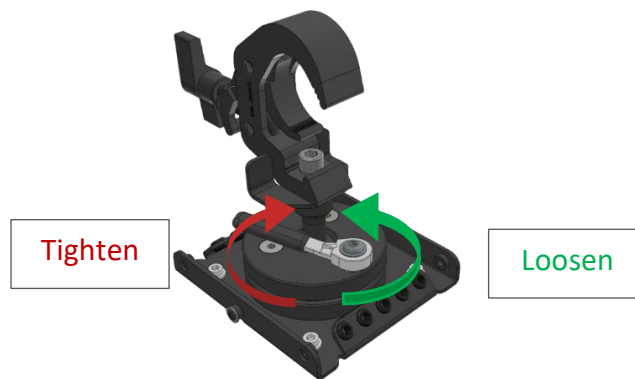


Figure 19 Tightening the ball joint



Depending on the angle and the position of the centre of gravity (COG) of the projector, even if the ball joint of the ECO Link is properly tightened, the projector may slide. To prevent this, it is highly recommended to secure the back of the projector to the truss or ceiling with a steel rope or similar device.



Figure 20 Setup example: ECO-LINK-CLP50 and ECO Frame



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor. Make sure that your onsite structure is capable to carry the overall weight.

7.2 ECO Pauline

The ECO Pauline is available in two options:

- ECO-Pauline-CLP50 connects compatible ECO products to an onsite 50 mm truss or pipe
- ECO-Pauline-CB connects compatible ECO products to an onsite ceiling.

The centre part of both options is identical, only the top part is different. In general ECO Pauline is a mounting system that allows precise adjustments by rotating around all three axes.

What's in the box?

Option 1	Option 2
ECO-Pauline-CLP50	ECO-Pauline-CB
ECO Series General Warnings	ECO Series General Warnings
5 x M6x16 self-locking screws	5 x M6x16 self-locking screws

Table 9 ECO Pauline models and including parts



Make sure that only compatible ECO products are installed with the ECO Pauline! Do not attempt to use it with other ECO products that are not listed in the table below, because serious accidents can occur!

Compatible with:

ECO Frame	ECO Plate	ECO ABD	ECO ABP	ECO Quick Hang M	ECO Shift

Figure 21 ECO Pauline compatible products



In the following illustrations, the ECO-PAULINE-CLP50 is shown, but the information are the same for the ECO-PAULINE-CB.

Manual ECO Series products

Please follow the next steps to see how to correctly install the ECO Pauline:

Step 1: Fix the four **M6x16 self-locking screws** with a torque of 11 Nm to secure the ECO Pauline to the compatible ECO Series product. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.

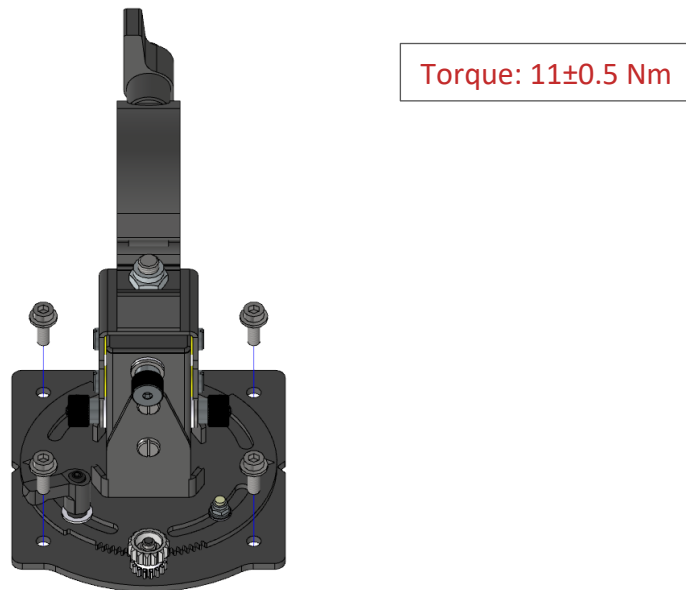


Figure 22 Securing the ECO Pauline



Make sure you tighten all of the four screws with the correct torque of 11 Nm



If you are using Quick Hang M with ECO Pauline, please refer also to chapter 9.2 ECO Quick Hang S.

Step 2: Mount the ECO Pauline CLP50 with the truss clamp to your onsite structure. Make sure to securely fasten the clamp so that it is properly closed. If you are installing ECO Pauline CB to an onsite ceiling, make sure to use appropriate mounting material such as screws and dowels that are capable to carry the overall weight and are suitable for your onsite ceiling material. Make sure to use all four screw holes to fix it to the ceiling.

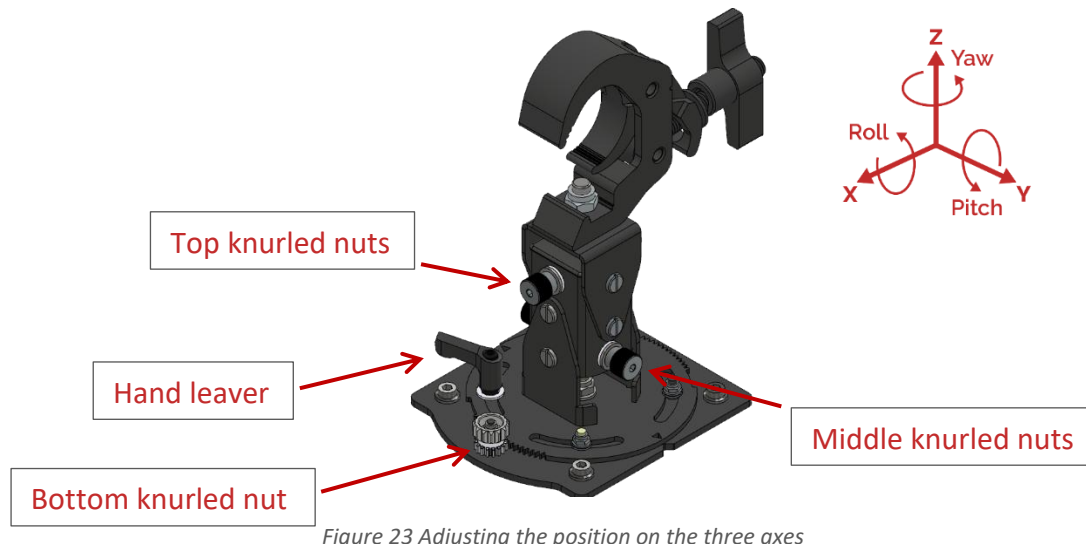


Make sure to use appropriate secondary safety material such as steel ropes and shackles wherever necessary. For all mounting material using the clamp (CLP50) a secondary safety solution is mandatory.

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Step 3: To fine adjust the angle on the Roll, Yaw, and Pitch axes, use one of the knurled nuts as shown below in Figure 23:

- The top knurled nuts for Roll adjustment: $\pm 22^\circ$
- The middle-knurled nuts for Pitch adjustment: $\pm 22^\circ$
- The bottom knurled nut for Yaw adjustment: $\pm 25^\circ$



Step 3: Once the desired position the Yaw axis is reached, use the hand lever to fix it.

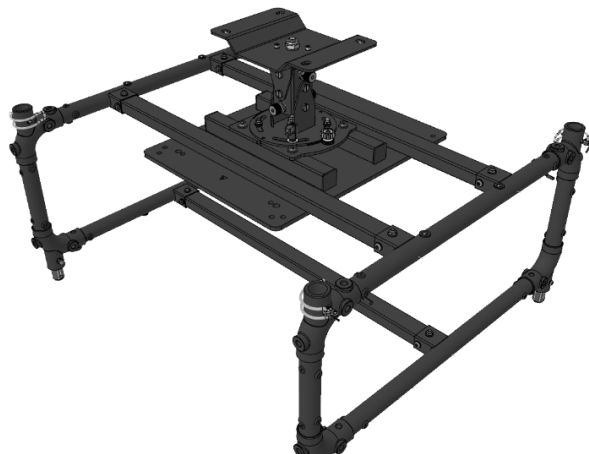


Figure 24 Setup example ECO-PAULINE-CB with ECO Frame



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor. Make sure that your onsite structure is capable to carry the overall weight.

7.3 ECO Ceiling Bracket with Quick Hang S

The ECO Ceiling Bracket (ECO-CB) comes by default with the Quick Hang S (ECO-QH-S). ECO-CB is a comparable simple mount that connects compatible ECO products to an onsite ceiling.

What's in the box?

ECO-CB
ECO-QH-S
ECO Series General Warnings
5 x M6x16 self-locking screws

Table 10 ECO Ceiling Bracket model and including parts



Make sure that only compatible ECO products are installed with the ECO Ceiling Bracket with Quick Hang S! Do not attempt to use it with other ECO products that are not listed in the table below, because serious accidents can occur!

Compatible with:

ECO Frame	ECO Plate	ECO ABD	ECO ABP	ECO Shift
				

Figure 25 ECO Ceiling Bracket compatibility

Please follow the next steps to see how to correctly install the ECO Ceiling Bracket with Quick Hang S:

Step 1: Mount the ECO CB to an onsite ceiling and make sure to use appropriate mounting material such as screws and dowels that are capable to carry the overall weight and are suitable for your onsite ceiling material. Make sure to use all four screw holes to fix it to the ceiling.



Make sure to use appropriate secondary safety material such as steel ropes and shackles wherever necessary.

Step 2: If not already mounted, mount the ECO Quick Hang S onto your chosen ECO Series compatible product. (For details on how to do this, please see 9.2 ECO Quick Hang S)

Manual ECO Series products

Step 3: Slide the ECO Quick Hang S from below into the ECO Ceiling Bracket, so that its two side pins slide into and lock within the two cutouts, as shown in the pictures combined in Figure 26 Mounting the ECO-QH-S with the ECO-CB.

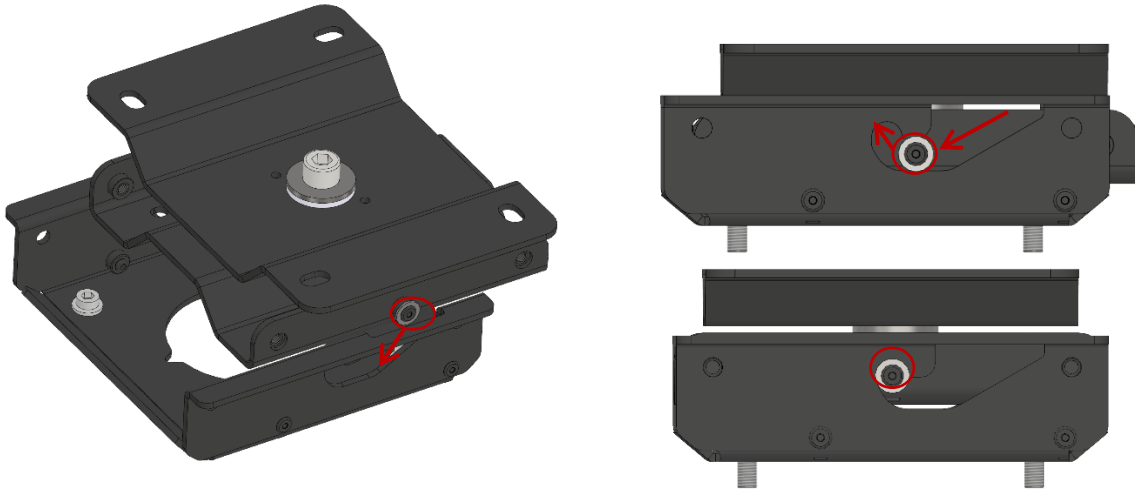


Figure 26 Mounting the ECO-QH-S with the ECO-CB

Step 4: Secure the four **M6x16 self-locking screws** with a torque of 11 Nm to attach the ECO Quick Hang S to the ECO Ceiling Bracket. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.

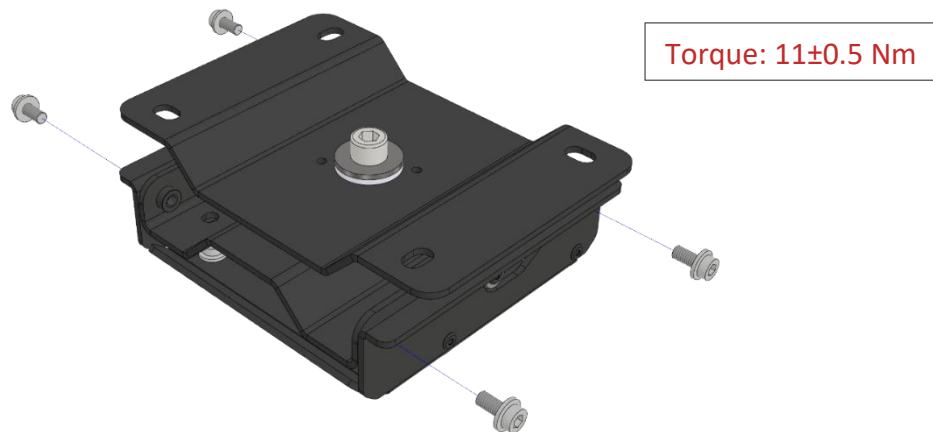


Figure 27 Securing the ECO-QH-S to the ECO-CB



Make sure you tighten all of the four screws with the correct torque of 11 Nm

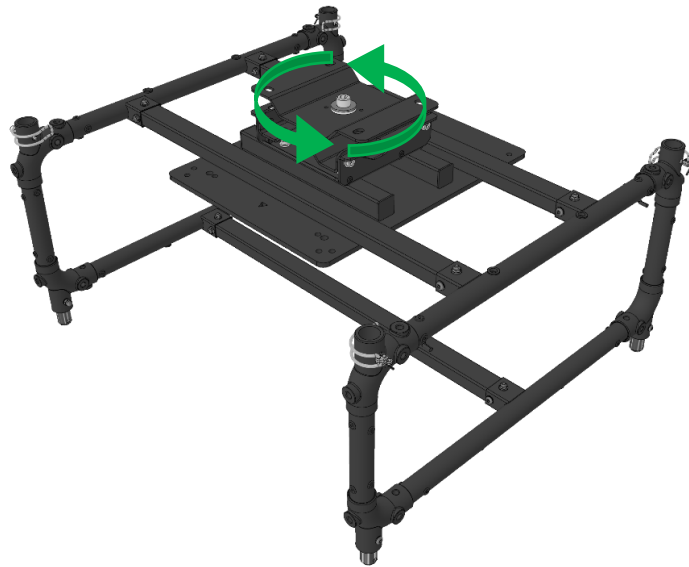


Figure 28 Setup example ECO Frame and ECO-CB+ECO-QH-S



Once the ECO-CB+ECO-QH-S are attached to the ceiling, the unit can be rotated 360 degrees until the desired projection direction is achieved.



To find out how to install the chosen ECO Series product with the ECO-CB+ECO-QH-S, please refer to the corresponding product chapter.



It is possible, but not recommended, to install the ECO-CB without the ECO-QH-S. Due to the compact size of the ECO-CB, accessing the mounting holes can be difficult—especially once the ECO-CB is already attached to the ceiling.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor. Make sure that your onsite structure is capable to carry the overall weight.

7.4 ECO Clamp 50

The ECO Clamp 50 (ECO-CLP50) is a comparable simple mount that connects compatible ECO products to an onsite 50mm truss or pipe.

What's in the box?

ECO-CLP50
ECO Series General Warnings
5 x M6x16 self-locking screws

Table 11 ECO Clamp 50 model and including parts



Make sure that only compatible ECO products are installed with the ECO Clamp 50! Do not attempt to use it with other ECO products that are not listed in the table below, because serious accidents can occur!







ECO Frame	ECO Plate	ECO ABD	ECO ABP	ECO Quick Hang S	ECO Shift
					

Figure 29 ECO Clamp 50 compatibility

Please follow the next steps to see how to correctly install the ECO Clamp 50:

Step 1: Use the four **M6x16 self-locking screws** with a torque of 11 Nm to secure the ECO Clamp 50 to the compatible ECO Series product. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.



Make sure you tighten all of the four screws with the correct torque of 11 Nm

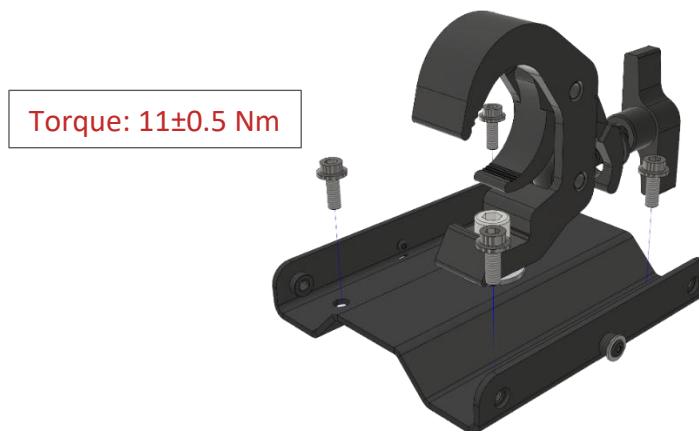


Figure 30 Securing the ECO-CLP50

Manual ECO Series products

Step 2: Mount the ECO CLP50 with the truss clamp to your onsite structure. Make sure to securely fasten the clamp so that it is properly closed. I



Make sure to use appropriate secondary safety material such as steel ropes and shackles wherever necessary. For all mounting material using the clamp (CLP50) a secondary safety solution is mandatory.

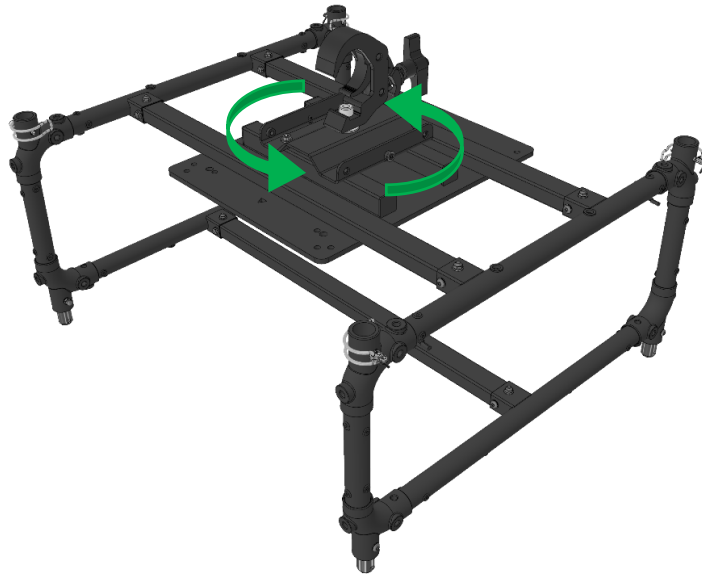


Figure 31 Setup example ECO Frame and ECO-CLP50



Once the ECO-CLP50 is attached to a truss, the unit can be rotated 360 degrees until the desired projection direction is achieved.



To find out how to install the chosen ECO Series product with the ECO-CLP50 please refer to the corresponding product chapter.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor. Make sure that your onsite structure is capable to carry the overall weight.

8. Description and installation of frame accessories

The following chapter provides further information on frame related accessories. Those products can only be used in combination with an ECO Frame.

8.1 ECO Adapter Bracket Face Down

The Adapter Bracket Face Down (ECO-ABD) is made to install an ECO Frame so that the projector lens points down to the floor. Figure 35 at the end of the chapter shows an exemplary installation.

What's in the box?

ECO-ABD-x (with x defining projector type)
ECO Series General Warnings

Table 12 ECO Adapter Bracket Face Down model and including parts



Make sure that only compatible ECO products are installed with the ECO Adapter Bracket Face Down! Do not attempt to use it with other ECO products that are not listed in the table below, because serious accidents can occur!

ECO Frame	ECO Link	ECO Pauline	ECO Shift	ECO CB + ECO Quick Hang S	ECO CLP 50	ECO Quick Hang S	ECO Quick Hang M
							

Figure 32 ECO Adapter Bracket Face Down compatibility

Please follow the next steps to see how to correctly install the ECO-ABD-x:

Step 1: Make sure that the two M6 nuts inside the square pipe are loosened, so you can easily move both 25 mm clamp forward or backward.

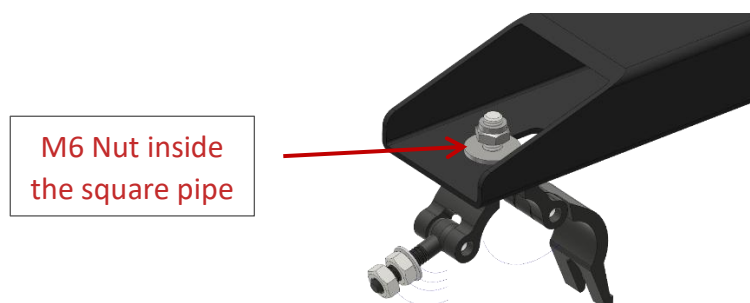


Figure 33 Adjusting the 25 mm clamp of the ECO-ABD-x

Step 2: Position the clamps on the vertical pipes on the backside of the ECO frame and close them. Firmly tighten, but not overtighten, the first **M6 nut** on both clamps using the **10 mm spanner** to secure the clamp. Tighten the second nut on both clamps using the same **10 mm spanner** on top of the first nut to secure the first nut from loosening.

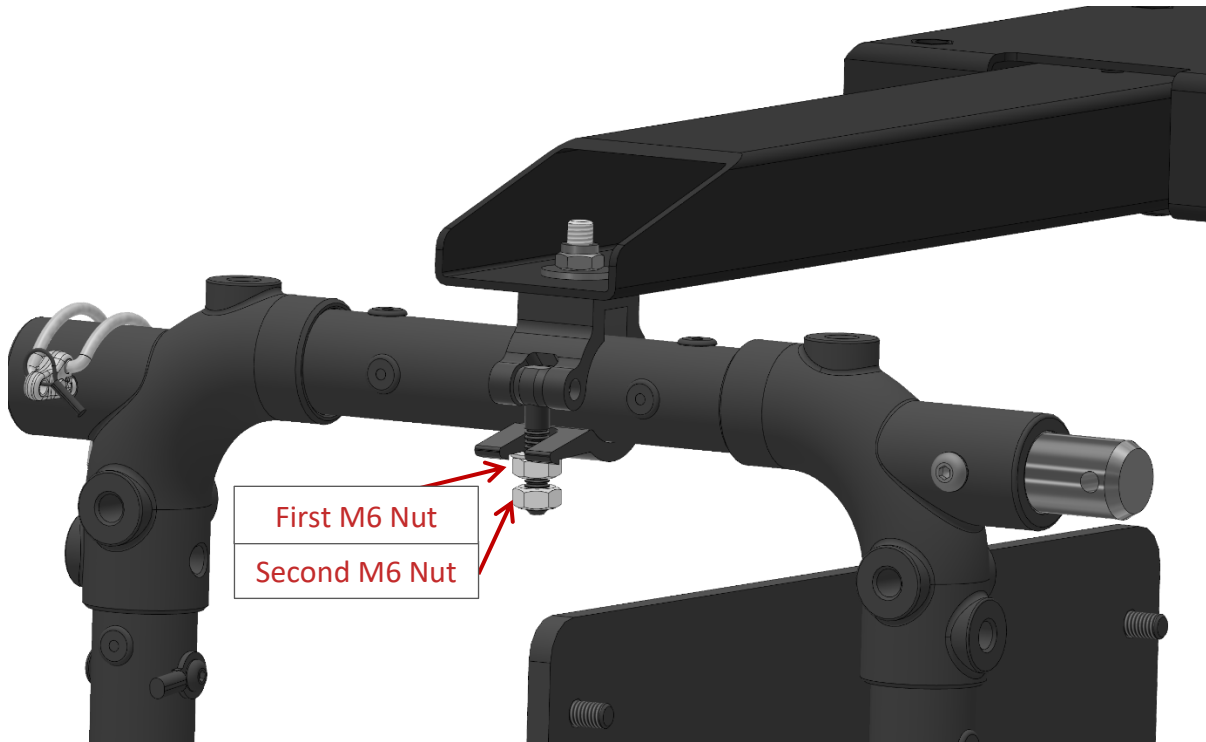


Figure 34 Tighten the nuts on the clamps

Step 3: Securely tighten the two M6 nuts which fix the two clamp to the rectangular pipe (see Figure 33)

Step 4: After all clamps are correctly positioned and closed the load of the frame can be applied to the clamps and ceiling or truss mounting brackets can be mounted to the Adapter Bracket Face Down.



Before applying the load of the frame to the clamps, check all connections are safe and correct.



Over tightening the nuts may deform the trussing / tube to which it is attached and by this damage those parts. Furthermore, the clamp itself can also be damaged by applying to much torque while tightening the nuts.



Figure 35 Setup example ECO Frame with ECO-ABD-EP1.0 and ECO-CLP50



To find out how to install the chosen ECO Series product with the ECO-ABD-x please refer to the corresponding product chapter.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor. Make sure that your onsite structure is capable to carry the overall weight.

8.2 ECO Adapter Bracket Portrait

The Adapter Bracket Portrait (ECO-ABP) is made to install an ECO Frame so that the image is in portrait orientation. Figure 39 at the end of the chapter shows an exemplary installation.

What's in the box?

ECO-ABP-x (with x defining projector type)
ECO Series General Warnings
5 x M6x16 self-locking screws

Table 13 ECO Adapter Bracket Portrait model and including parts



Make sure that only compatible ECO products are installed with the ECO Adapter Bracket Portrait! Do not attempt to use it with other ECO products that are not listed in the table below, because serious accidents can occur!

ECO Frame	ECO Link	ECO Pauline	ECO Shift	ECO CB + ECO Quick Hang S	ECO CLP 50	ECO Quick Hang S	ECO Quick Hang M

Figure 36 ECO Adapter Bracket Portrait compatibility

Please follow the next steps to see how to correctly install the ECO-ABP-x

Step 1: Position the ECO-ABP-x on the side of the ECO-FRAME-x so that the four mounting holes align with the M6 threaded holes on the frame as can be seen in Figure 37.

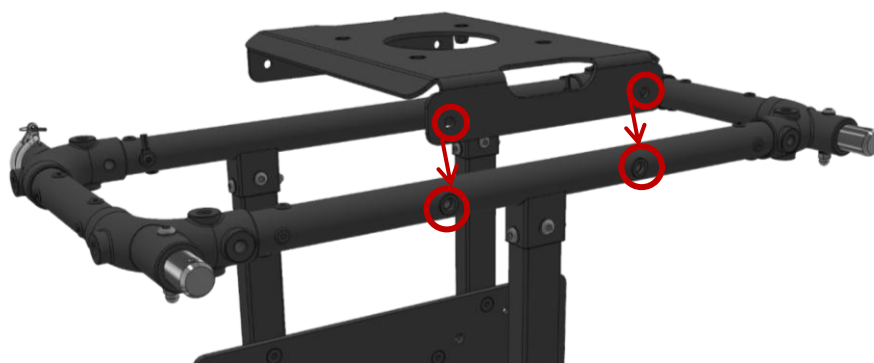


Figure 37 Positioning the ECO-ABP-EP1.0 over the ECO-FRAME-EP1.0

Step 2: Use the four **M6x16 self-locking screws** with a torque of 11 Nm to secure the ECO-ABP-x to the compatible ECO-FRAME-x. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.

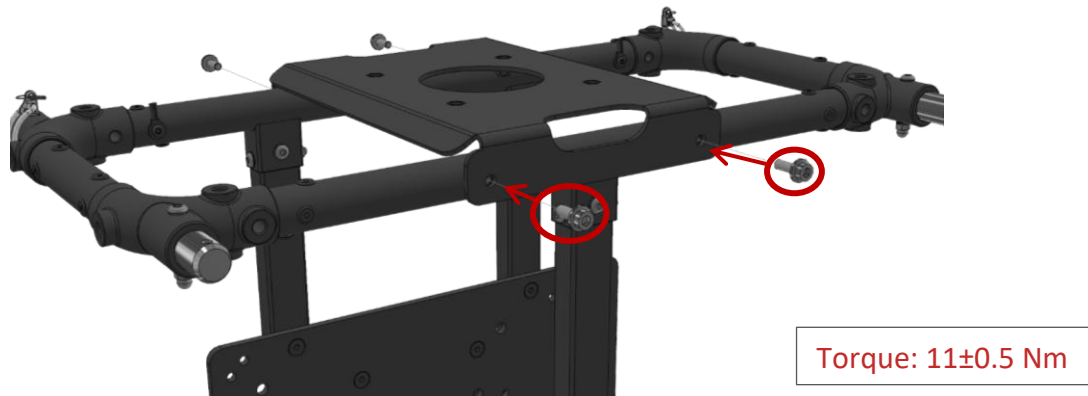


Figure 38 Securing the ECO-ABP-EP1.0 to the ECO-FRAME-EP1.0



Make sure you tighten all of the four screws with the correct torque of 11 Nm.

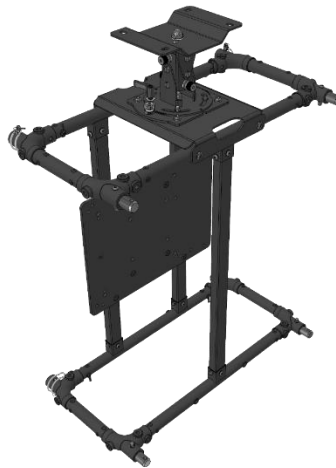


Figure 39 Setup example ECO Frame with ECO-ABP-EP1.0 and ECO-PAULINE-CB



To find out how to install the chosen ECO Series product with the ECO-ABP-x please refer to the corresponding product chapter.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor. Make sure that your onsite structure is capable to carry the overall weight.

8.3 ECO Clamp Set 25 mm to 50 mm

The Clamp Set 25mm to 50mm (ECO-CLP2550SET) is a set of four double clamps. One clamp connects to the 25mm pipe of the EVO frame and the other clamp connects to an onsite 50mm pipe or trussing.

What's in the box?

ECO-CLP2550SET
ECO Series General Warnings

Table 14 ECO Clamp 25 mm to 50 mm model and including parts



Make sure that only an **ECO Frame** is installed with the ECO-CLP2550SET! Do not attempt to use it with other ECO products, because serious accidents can occur!

Please follow the next steps to see how to correctly install the ECO-CLP2550SET:

Step 1: Mount all four smaller clamps (25 mm) to the ECO Frame. For this untighten the nuts and open the clamps. Mount the clamps to the correct position on the frame. Tighten the nuts by hand so that you can slide the clamps later to find the ideal position.

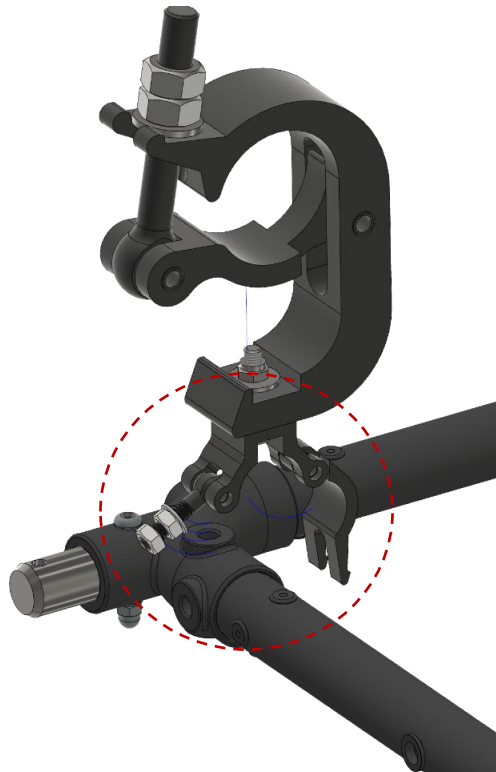


Figure 40 Attaching the ECO-CLP2550SET to the ECO Frame

Manual ECO Series products

Step 2: Once you have found the correction position, tighten the first **M6 nut** using the **10 mm spanner** to secure the clamp. Proceed like that with all four clamp sets. Tighten the second nut using the same **10 mm spanner** on top of the first nut to secure the first nut from loosening. Proceed like that with all four clamp sets.

Repeat Step 1 and Step 2 also for the 50mm clamps by fixing them to your onsite trussing or pipes. The corresponding nuts on those clamps are **M10** nuts which are fixed using the **19 mm spanner**.

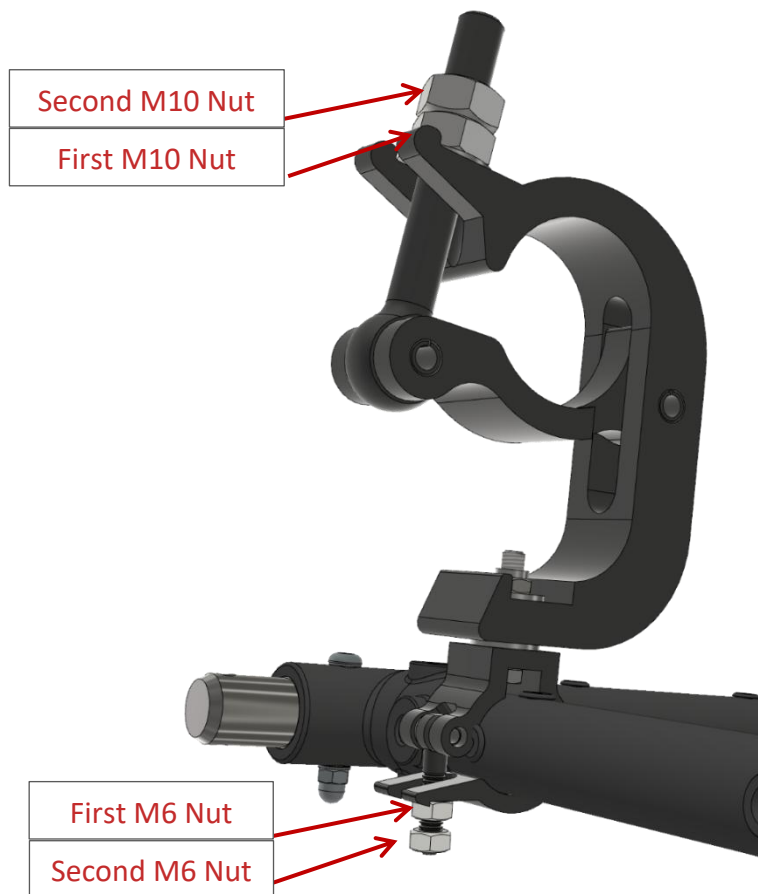


Figure 41 Tighten the nuts

With the help of the ECO-CLP2550SET, the ECO Frame can be attached to a truss in the following positions:

- **Portrait:** Maximum distance between the clamps on the Y-axis is 370 mm.

Manual ECO Series products

- **Landscape:** Maximum distance between the clamps on the Y-axis is 370 mm.
- **Face Down:** Only two clamps are necessary. The clamps must be positioned at the center of the pipe.

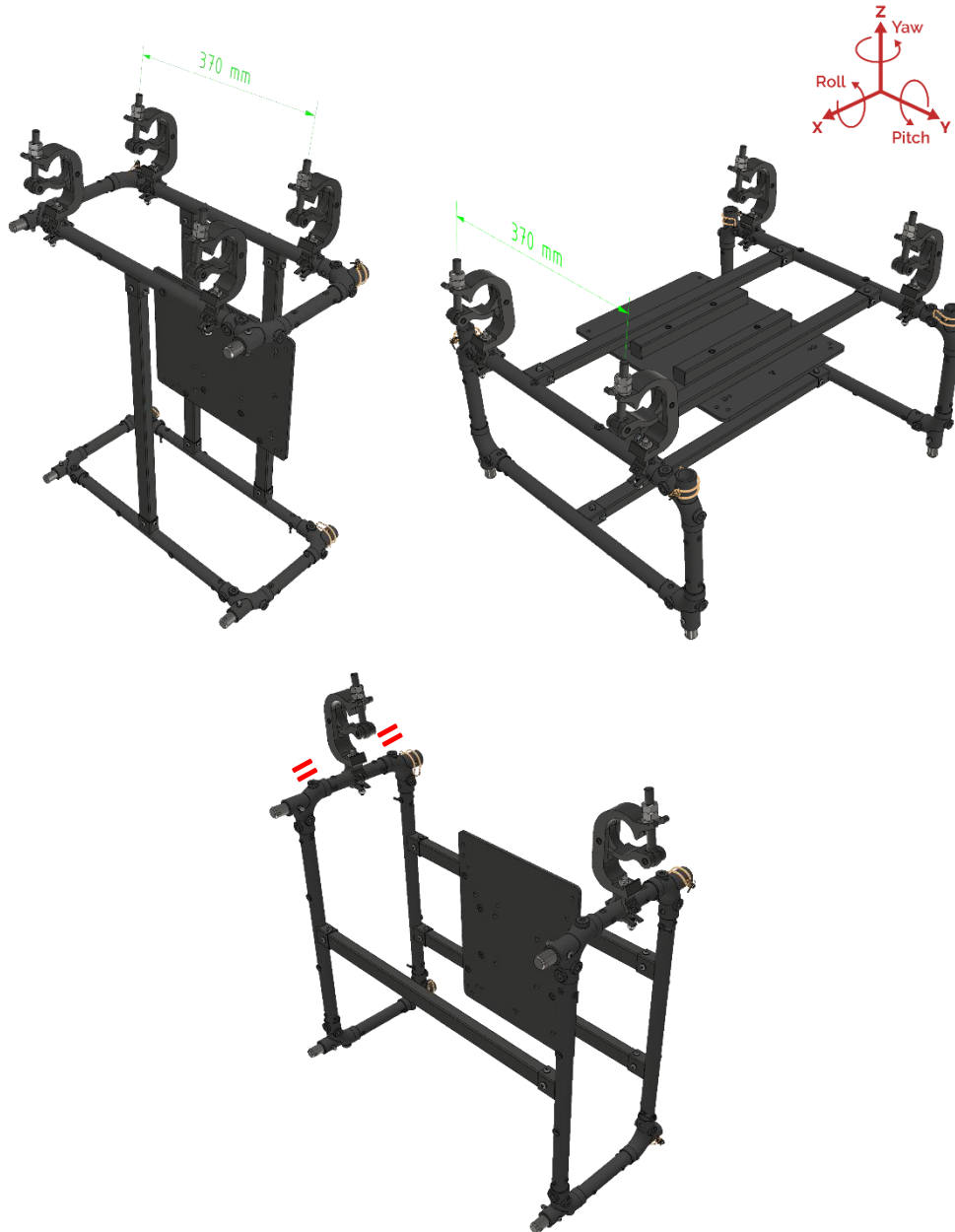


Figure 42 ECO Frame with ECO-CLP2550SET — from top left to bottom: Portrait, Landscape, Face Down.

After all clamps are correctly positioned and closed the load of the frame can be applied to the clamps.

Manual ECO Series products



Before applying the load of the frame to the clamps, check all connections are safe and correct.



Over tightening the nuts may deform the trussing / tube to which it is attached and by this damage those parts. Furthermore, the clamp itself can also be damaged by applying to much torque while tightening the nuts.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor.

9. Description and installation of various accessories

The following chapter will provide information and instructions for further accessories.

9.1 ECO Shift

The ECO Shift can move the projector forward and backward for +/- 60 mm (2.36 inches). This is useful for example when using ultra short throw lenses with a fix throw ratio.

What's in the box?

ECO-SHIFT
ECO Series General Warnings
5 x M6x16 self-locking screws

Table 15 ECO shift model and including parts



Make sure that only compatible ECO products are installed with the ECO Shift! Do not attempt to use it with other ECO products that are not listed in the table below, because serious accidents can occur!

Compatible with:

ECO Frame	ECO Plate	ECO ABD	ECO ABP	ECO Quick Hang M	ECO CB + ECO Quick Hang S	ECO CLP 50	ECO Link	ECO Pauline

Table 16 ECO Shift compatibility

Manual ECO Series products

Please follow the next steps to see how to correctly install the ECO Shift:

Step 1: Remove four of the five **M6x16 self-locking screws** from their parking position.

Step 2: To access the mounting holes, turn the knurled nut to the right, moving the sledge backwards and revealing two of the four mounting holes.

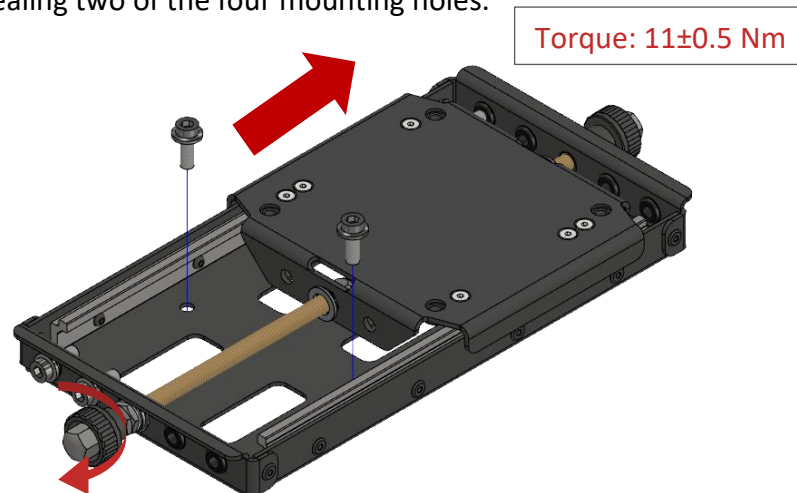


Figure 43 Moving the ECO Shift sledge backwards to access the mounting holes

Step 3: Secure two of the four **M6x16 self-locking screws** with a torque of 11 Nm to attach the ECO Shift to the compatible ECO Series product. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.

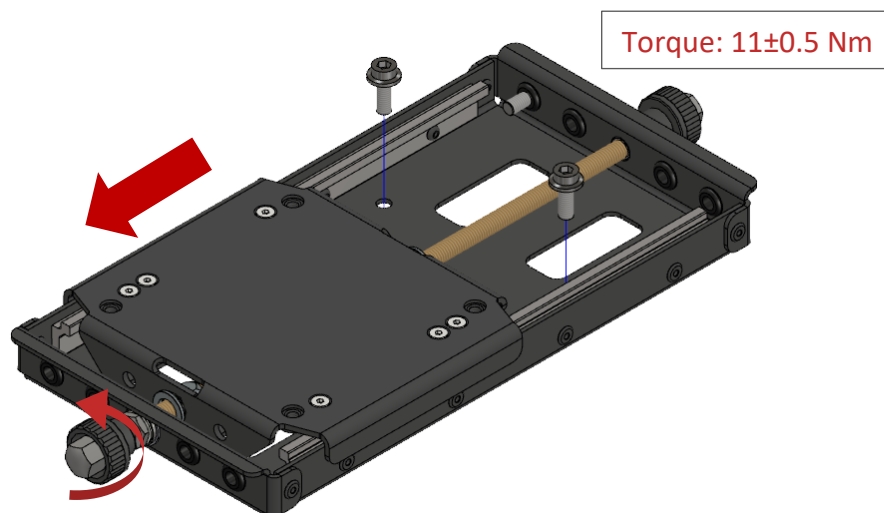


Figure 44 Moving the ECO Shift sledge forwards to access the mounting holes

Manual ECO Series products

Step 4: Repeat Step 2 in the opposite direction—turn the knurled nut to the left, moving the sledge forward and revealing the remaining two mounting holes.

Step 5: Secure the remaining two **M6x16 self-locking screws** with a torque of 11 Nm to fully attach the ECO Shift to the compatible ECO Series product. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.



Make sure you tighten all of the four screws with the correct torque of 11 Nm

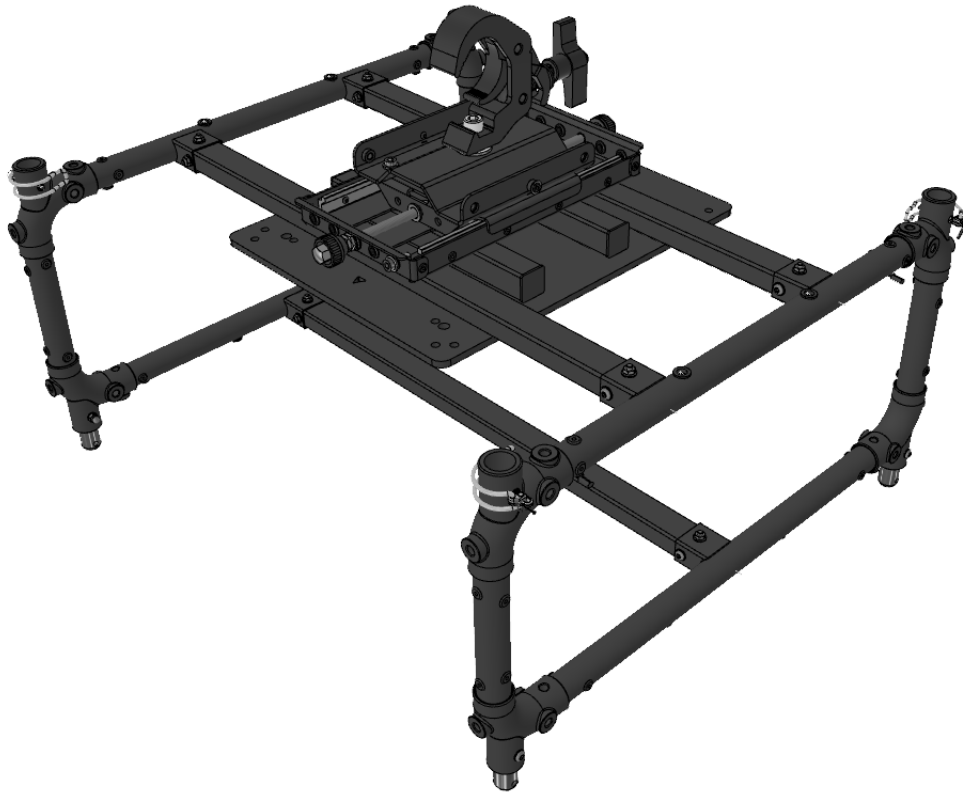


Figure 45 Setup example ECO Shift with ECO Frame and ECO CLP50



To find out how to install the chosen ECO Series product with the ECO Shift, please refer to the corresponding product chapter.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor.

9.2 ECO Quick Hang S

The ECO Quick Hang S (ECO-QH-S) is an optional accessory for compatible products that eases the mounting. It is located between for example the Frame and a truss or ceiling mounting bracket. It is very useful when the space between ceiling and projector is narrow.

What's in the box?

ECO-QH-S
ECO Series General Warnings
5 x M6x16 self-locking screws

Table 17 ECO Quick Hang S model and including parts



Make sure that only compatible ECO products are installed with the ECO Quick Hang S! Do not attempt to use it with other ECO products that are not listed in the two tables below, because serious accidents can occur!

In Table 18, the ECO products that are attached **below** the ECO Quick Hang S are presented.



ECO Frame	ECO Plate	ECO ABD	ECO ABP	ECO Shift
				

Table 18 ECO Products that are mount below the ECO Quick Hang S

In Table 19, the ECO products that are attached **inside** the ECO Quick Hang S are presented.

ECO Link	ECO CLP 50
	

Table 19 ECO Products that are attached inside the ECO Quick Hang S

Manual ECO Series products

Please follow the next steps to see how to correctly install the ECO-QH-S:

Step 1: Use the four **M6x16 self-locking screws** with a torque of 11 Nm to secure the ECO-QH-S to the compatible ECO Series product. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.

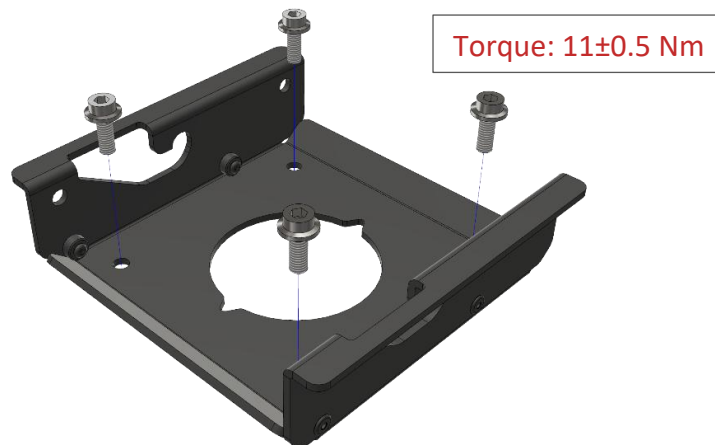


Figure 46 Securing the ECO-QH-S



Make sure you tighten all of the four screws with the correct torque of 11 Nm

Step 2: Slide the ECO Quick Hang S from below into the ECO Series compatible product (in this example, the ECO-CB is shown), so that its two side pins slide into and lock within the two cutouts, as shown in the pictures below.

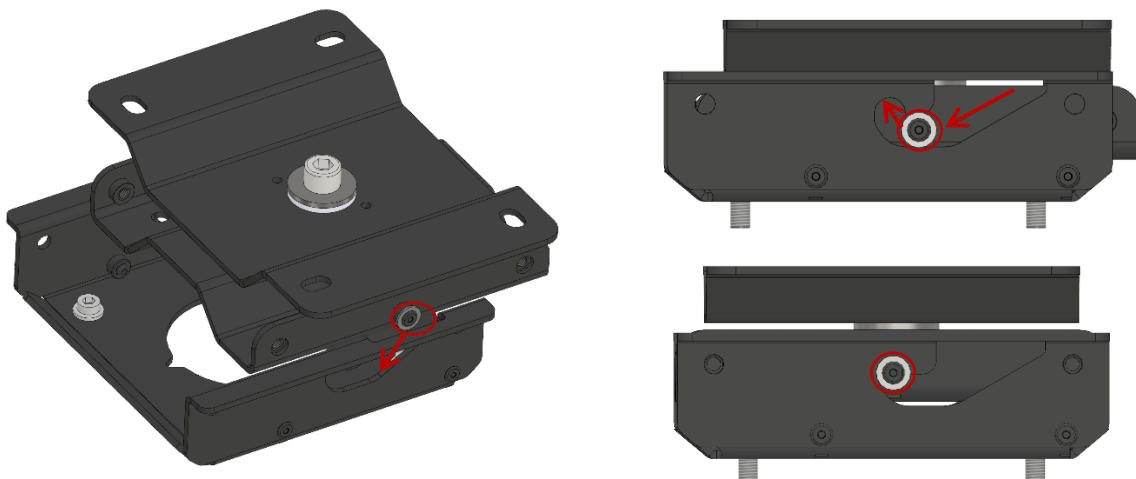


Figure 47 Mounting the ECO-QH-S with the ECO-CB

Manual ECO Series products

Step 3: Secure the four **M6x16 self-locking screws** with a torque of 11 Nm to attach the ECO Quick Hang S to the ECO Series compatible product (in this case the ECO-CB). Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.

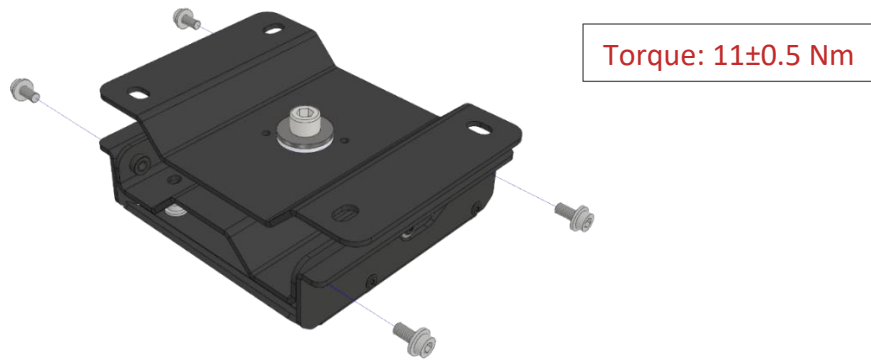


Figure 48 Securing the ECO-QH-S to the ECO-CB



Make sure you tighten all of the four screws with the correct torque of 11 Nm

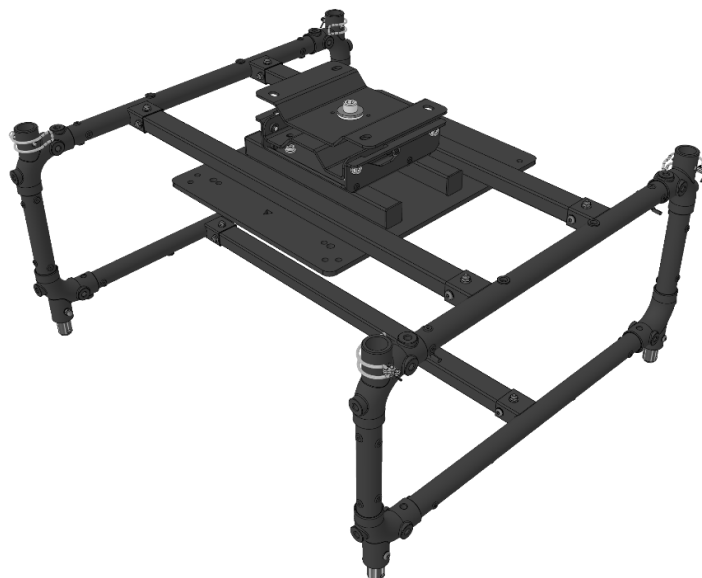


Figure 49 Setup example ECO Frame and ECO-CB+ECO-QH-S



To find out how to install the chosen ECO Series product with the ECO-QH-S, please refer to the corresponding product chapter.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor.

9.3 ECO Quick Hang M

The Eco Quick Hang M (ECO-QH-M) is an optional accessory for compatible products that eases the mounting. It is located between for example the Frame and a truss or ceiling mounting bracket. It is very useful when the space between ceiling and projector is narrow.

What's in the box?

ECO-QH-M
ECO Series General Warnings
5 x M6x16 self-locking screws
5 x M6 DIN980 Lock nut
5 x Ø6 Schnorr washers

Table 20 ECO Quick Hang M model and including parts



Make sure that only compatible ECO products are installed with the ECO Quick Hang M! Do not attempt to use it with other ECO products that are not listed in the two tables below, because serious accidents can occur!

In Table 21, the ECO products that are attached **below** the ECO Quick Hang M are presented





ECO Frame	ECO Plate	ECO ABD	ECO ABP	ECO Shift
				

Table 21 ECO Products that are mount below the ECO Quick Hang M

In Table 22, the ECO products that are attached **inside** the ECO Quick Hang M are presented.

ECO Pauline	ECO Shift
	

Table 22 ECO Products that are attached inside the ECO Quick Hang M

Manual ECO Series products

Please follow the next steps to see how to correctly install the ECO-QH-M:

Step 1: Use the four **M6x16 self-locking screws** with a torque of 11 Nm to secure the ECO-QH-M Plate to the compatible ECO Series product. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.

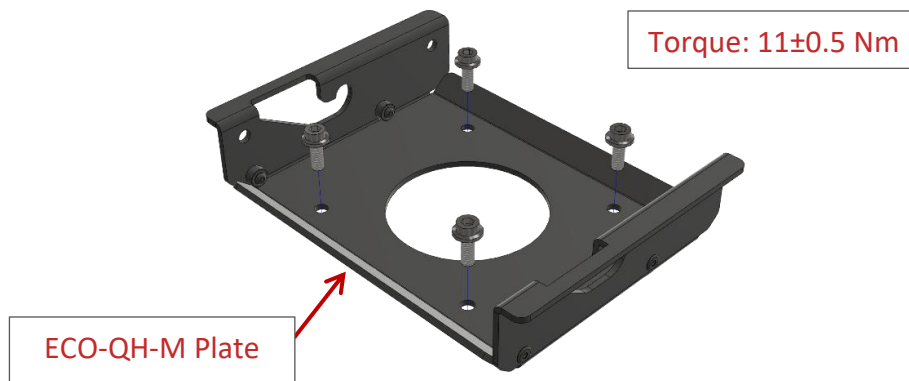


Figure 50 Securing the ECO-QH-M Plate



Make sure you tighten all of the four screws with the correct torque of 11 Nm

Step 2: Attach the ECO-QH-M Adapter to the corresponding ECO Series compatible product (in this example, the ECO-PAULINE-CB is shown). To do so, insert the four **M6 threaded bolts (3)** into the corresponding holes of the ECO-PAULINE-CB. Then, place the four **Ø6 Schnorr washers (2)** from above. Afterward, tighten the four **M6 DIN 980 lock nuts (1)** as shown in the picture below

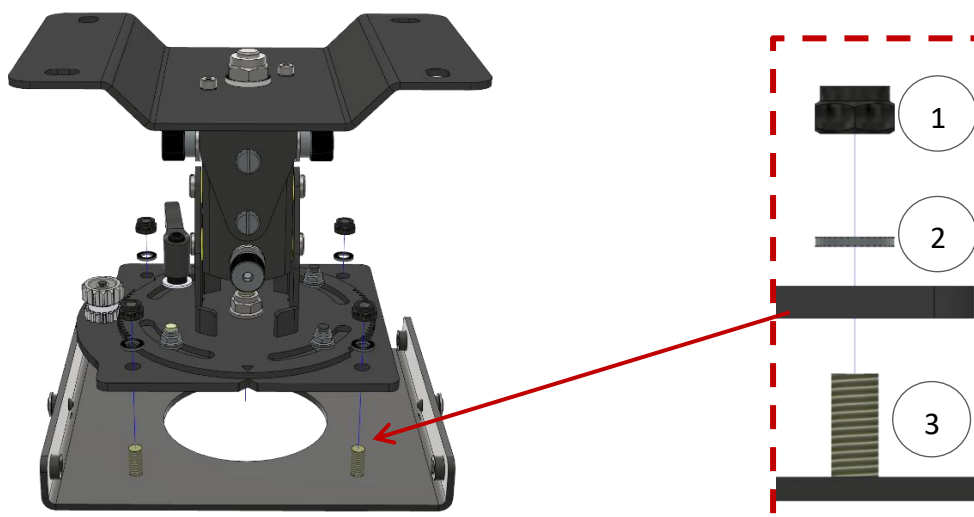


Figure 51 Securing the ECO-QH-M Adapter



Please use the same steps to attach the ECO-QH-M to the ECO-LINK-CB



The orientation of the Schnorr safety washers is important and it is mandatory to install them in the correct orientation. See Figure 52 Orientation of Schnorr safety washer and Figure 53.

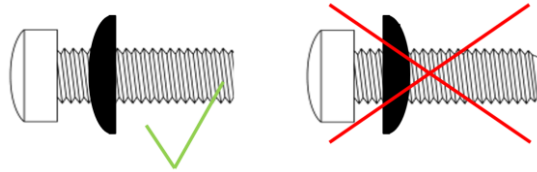


Figure 52 Orientation of Schnorr safety washer

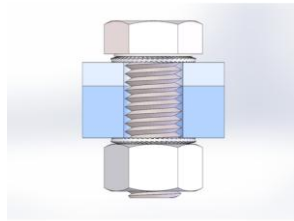


Figure 53 Schnorr safety washer correct orientation (Picture by Schnorr)

Step 3: Slide the ECO-QH-M Plate from below into the ECO-QH-M Adapter so that its two side pins slide into and lock within the two cutouts, as shown in the pictures below.

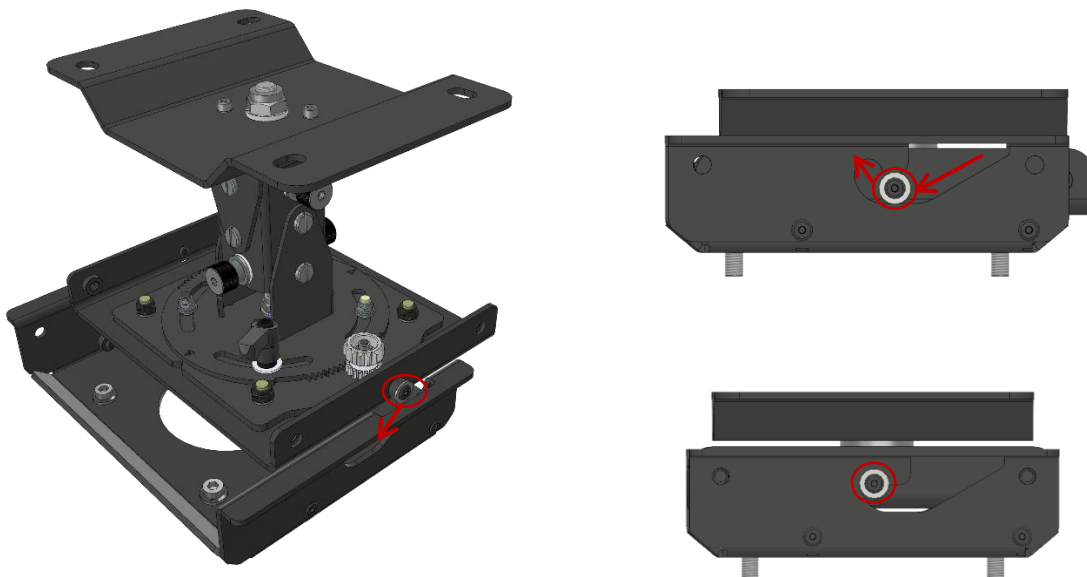


Figure 54 Mounting the ECO-QH-M Plate with the ECO-QH-M Adapter

Step 3: Secure the four **M6x16 self-locking screws** with a torque of 11 Nm to attach the ECO-QH-M Plate to the ECO-QH-M Adapter. Ensure that each screw passes through the plate and properly engages with the corresponding threaded hole.



Torque: 11±0.5 Nm

Figure 55 Securing the ECO-QH-M Plate with the ECO-QH-M Adapter



Make sure you tighten all of the four screws with the correct torque of 11 Nm



Figure 56 Setup example ECO Frame with ECO-PAULINE-CB and ECO-QH-M



To find out how to install the chosen ECO Series product with the ECO-QH-M, please refer to the corresponding product chapter.



Please always make sure not to exceed the load limit, as serious accidents may occur. Please consult the weight load limit matrix in Chapter 4.3 *ECO Series load limits matrix*. for the correct information. In case of unclarities, please don't hesitate to contact your vendor.

10. System maintenance and inspection (Re-examination)



The ECO Series products do not require special maintenance, but a visual inspection **must be done prior to every installation** in which the system is involved. The inspection must be done by a qualified person!



Periodic inspections are mandatory. Depending on local laws and regulations owners / users must do periodic inspections of the products and all components. It is recommended to do this once a year by a qualified and authorised person.



Note: The necessary inspections can also be done by the manufacturer.



Make sure that no part is damaged in any way such as bended, broken, corroded or abrasion for example screw or screw hole threads

10.2 Mounting threads

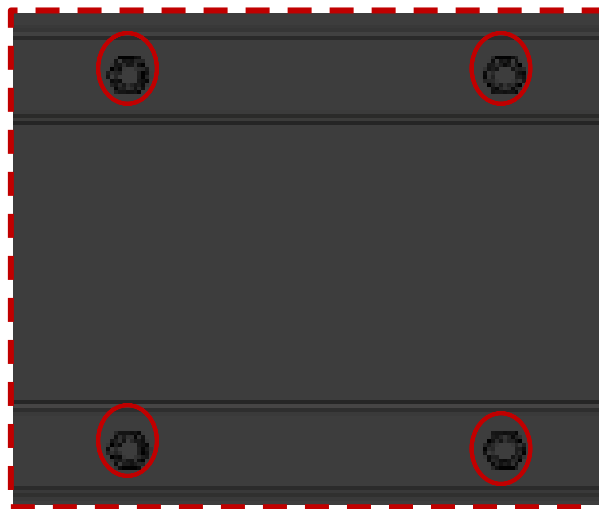


Figure 57 Inspection of the mounting threads

- The ECO Series products feature threaded holes in the form of hexagonal rivet nuts and press nuts. These must be carefully inspected, as they can be damaged during installation and dismantling
- Please carefully examine the threaded holes by checking each one of them and make sure the thread is not broken or damaged in any way.

10.3 Sealed nuts with red coloured wax and other screw connections

- Please make a visual inspection to be sure that all the screws are in the right place and none are missing.
- Make sure that the screws, nuts, spring clips, mounting plate and all the components are not bended, damaged, or broken.



If any parts are broken or missing stop using the product, please contact the seller so he can provide the spare parts.

- On the the screws + nuts of the ECO-CB and ECO-CLP50, shown in the picture below (Figure 58) red sealing wax has been applied to ensure that the nuts remain in the same position and to prevent any attempts to tighten or loosen them.

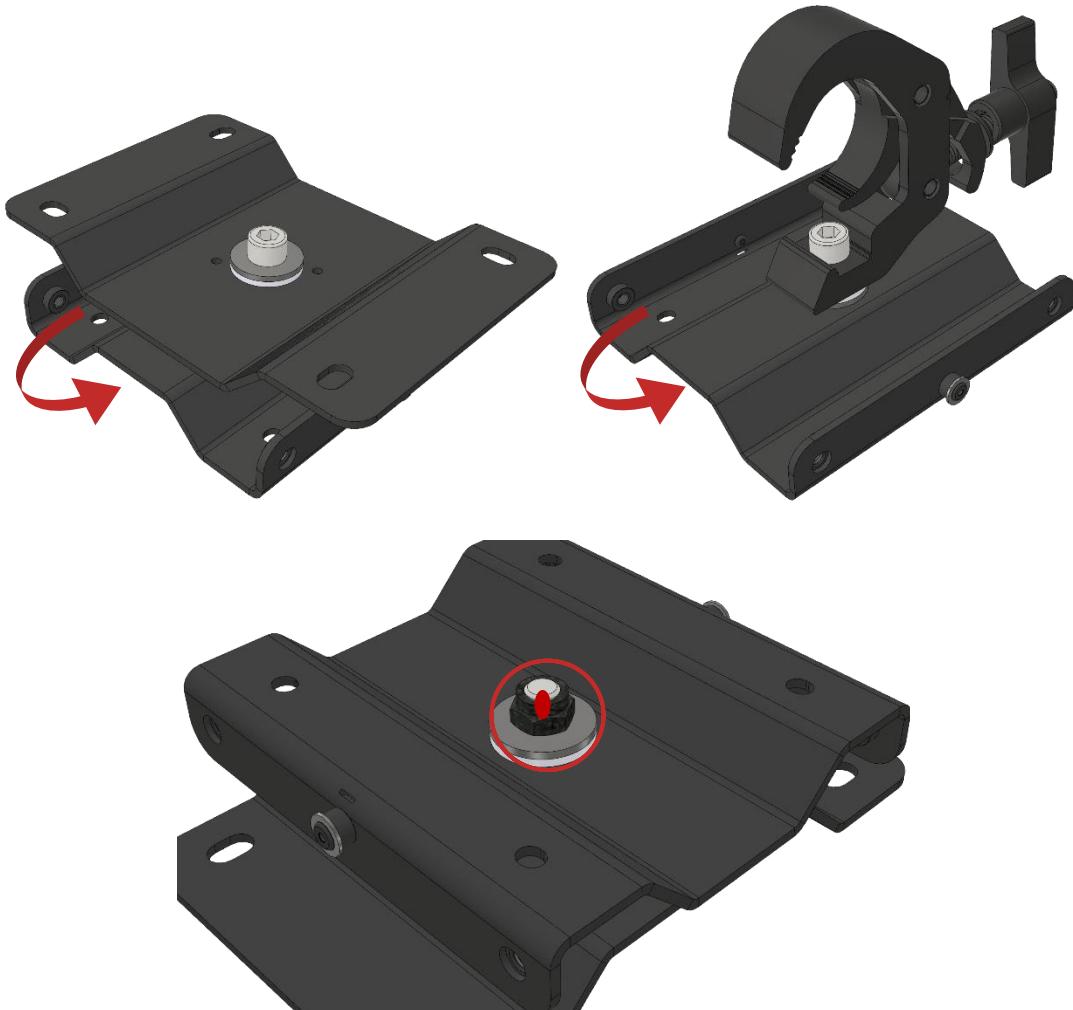


Figure 58 Sealed wax on the ECO-CB and ECO-CLP50 nuts

Manual ECO Series products



Do not try to manipulate these nuts, because the adjustment mechanism can be blocked and accidents can occur!



If one notices that the sealing wax is broken or the nut is moved stop using the product, please contact the manufacturer!

Except for the three nuts described on the previous section (see Figure 58), please control, with corresponding tool, that all the other screws are properly tightened.

10.4 Stacking points and locking pins

Please make sure that the ECO Frame stacking points do not show any damages such as dents, bending etc.

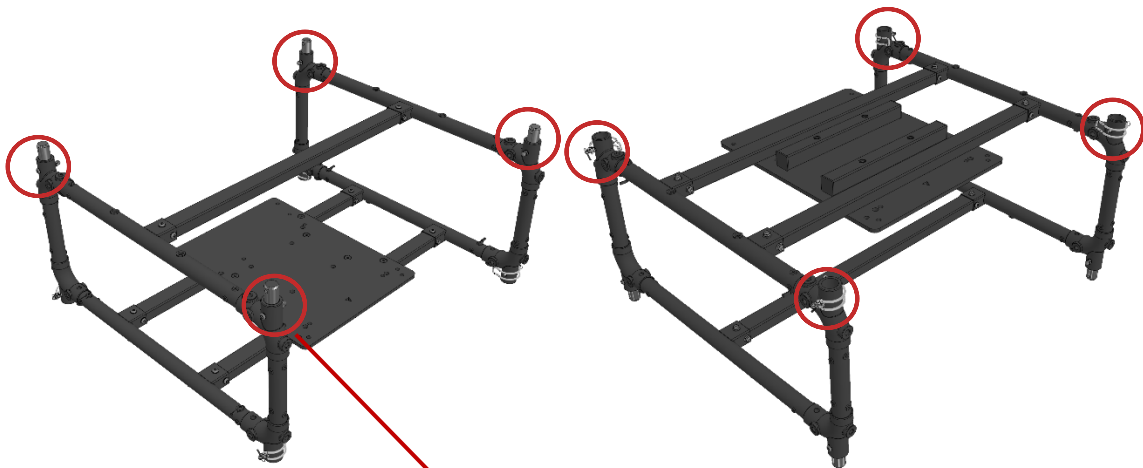


Figure 59 Stacking points bottom side (female)

Figure 60 Stacking points top side (Male)

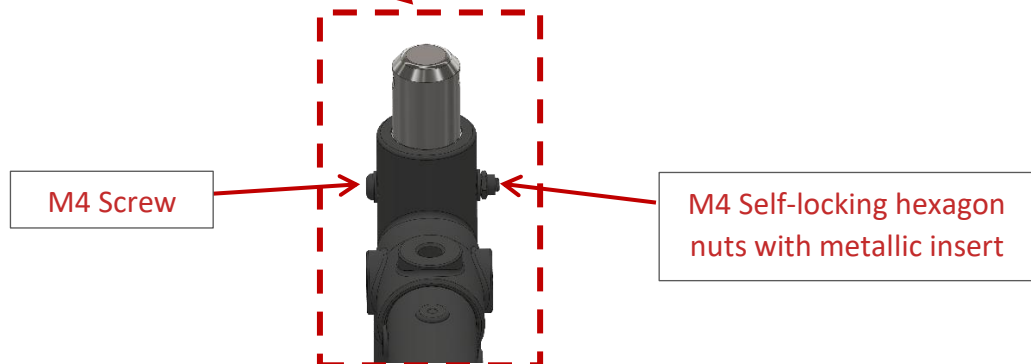


Figure 61 Male stacking detail

Manual ECO Series products

Also, make sure that the M4 screws and M4 Self-locking hexagon nuts with metallic insert used to secure the male stacking points are neither loose nor damaged.



If one notices that the stacking points are not securely tighten or show any sort of damage, stop using the product and contact the manufacturer.

Make sure that all four spring clips are available next to the female stacking points at the bottom side of the frame. It is mandatory to use all four locking pins when frames are stacked (see also chapter 6.2.1 Stacking frames).

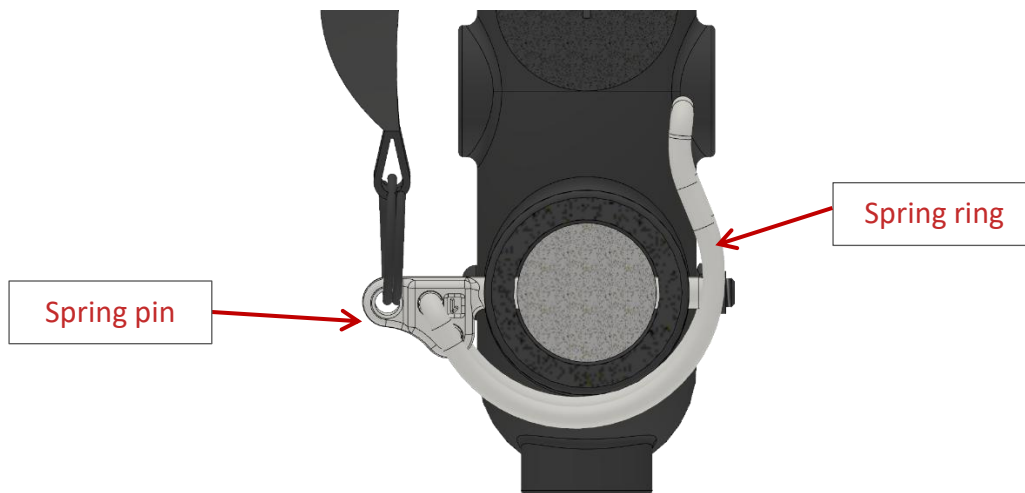


Figure 62 Cutout view of the spring clip securing the male and female stacking points.

Make sure that all four spring clips show no signs of damage, such as bending, deformation, or missing parts (e.g., the spring ring). Furthermore, ensure that when the spring clip is in its final position and the spring pin passes through the male and female stacking points, the spring ring is fully closed and the spring pin also passes through both latches of the spring ring.



Do not keep using a frame with damaged or faulty working spring clips! Contact the manufacturer!

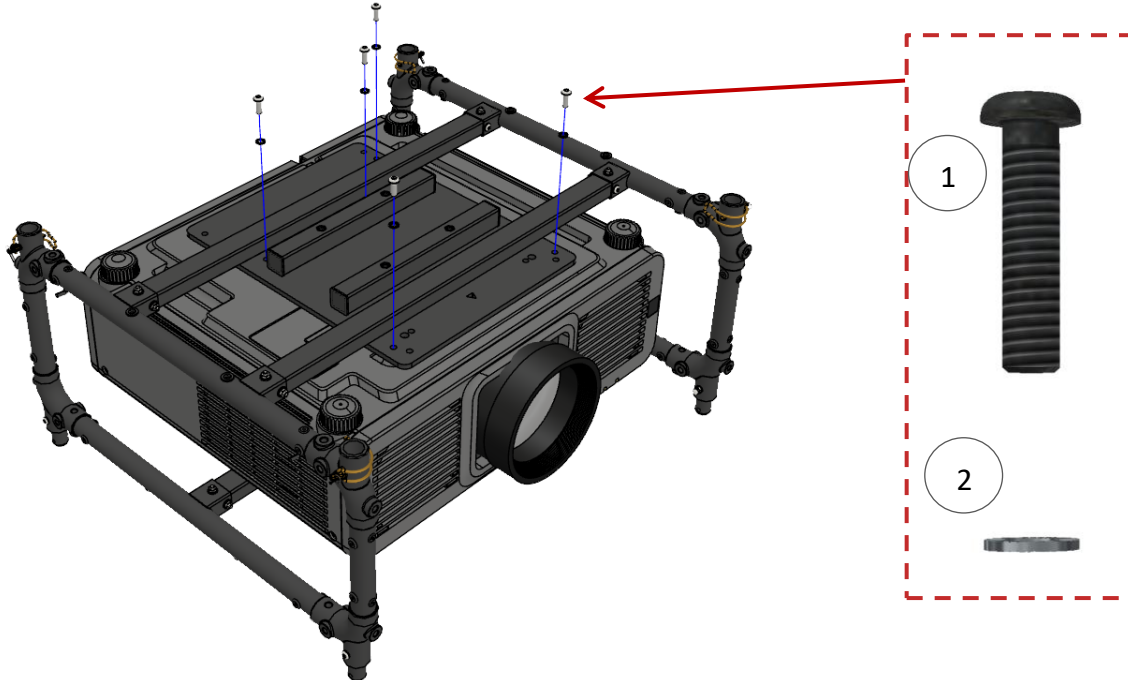


Do not exchange broken or malfunctioning parts with ones that are not accredited by the manufacturer because serious injuries and property damage can occur!



The inspection must be done by a qualified person!

10.5 Screws and safety washers securing the projector in the ECO Frame / ECO Plate and ECO Quick Hang M.



Make sure all correct screws, lock nuts and safety washers are in the correct position and securely fasten. For further details see chapter 6.2 ECO Frame.

11. Disposal of components

11.1 Metal parts and packaging

All metal parts and packaging can be recycled.

11.2 Disposal of entire devices

You have the possibility to send old devices back to us. Please note that you have to take over the transportation costs for this. Please send the devices to:

EXACT solutions GmbH

Lustheide 85

51427 Bergisch Gladbach

GERMANY

Imprint

EXACT solutions GmbH

Lustheide 85

51427 Bergisch Gladbach

GERMANY

Tel.: +49 2204 9485 30

E-Mail: info@exactsolutions.de

Web: www.exactsolutions.de