KIT PP(-L, –M, –S -XS) – Post Plate Long, Medium, Short ver 1.8

Photo: PP-L kit with maximum length posts (structural element hidden behind drywall)

WARNING - SAFETY ISSUES
READ AND UNDERSTAND THE INFORMATION BELOW
BEFORE USING THIS KIT

★ **The manufacturer of this kit is not responsible for fastener selection or installation methods used to attach this mount to a ceiling assembly or any other structure.**

★ **This kit is designed to be used with the CineSlide™ anamorphic lens transport device. It is not approved or suitable for any other use.**

★ **The manufacturer of this kit does not specify, recommend or approve sizing of structural elements including backing plates, joists or any other structural items. A qualified installer should consult a licensed engineer or architect for structural load design and/or for any advice related to the structure's ability to support a CineSlide, and proper sizing of fasteners used to attach a CineSlide or a CineSlide mount to a structural element.**

★ **The manufacturer of this kit does not recommend or approve any structural element modifications of any kind.**

★ **It is the installer's responsibility to size and use proper fasteners regardless of structure.**

Warnings Continued Next Page

★ **It is the installer's responsibility to guarantee and ensure no mechanical or electrical system elements are contacted by any fastener penetration including but not limited to electrical, water, sewer, or gas lines.**

★ **Any wiring including low voltage must be done in accordance with building codes by a qualified installer or licensed electrician as appropriate for the installation.**

★ **All local building and electrical codes must be followed.**

★ **Fastener examples herein are EXAMPLES ONLY and not recommendations. Any examples are those that were found to be of sufficient load bearing capability for the particular example installation to wooden ceiling joists. EACH INSTALLATION IS DIFFERENT, ANY EXAMPLES MAY NOT APPLY.**

★ **Any fastener must be of sufficient length to penetrate and engage the proper thread depth of the fastener into the structural element. The length must take into account the thickness of the CineSlide metal ceiling mount plate (1/4" typical), drywall thickness (varies by installation), and any other wall/ceiling assembly layer including but not limited to airspace or air gaps between the drywall and the structural element (varies by installation).**

★ **Installing any CineSlide mount should be treated similarly to mounting a 150-200 lb home theater ceiling mounted projector. Even though the CineSlide and lens is relatively lightweight, it will generate repetitive forces that can work small fasteners free and could cause a mount installation or fastener to fail if sufficient fastener strength is not provided. A general guideline is every individual installed fastener should have a pullout strength of 180 lbs or greater**

★ **All ceiling plate fastener holes should be used, do not leave any fastener hole unused.**

★ **DO NOT INSTALL or hang a CineSlide directly from drywall, wall board, oriented strand board (OSB), "MDF", particle board, or any similar material. A Structural element of "2x" wood, ¾" or thicker furniture grade plywood, ¾" finished oak board, or properly engineered metal supports must be used. Any structural "backing plate" should be made from 2x structural wood material or minimum ¾" furniture grade plywood with no voids in the plywood layers. Any backing plates must also be properly attached to a structural element.**

★ **Ceiling fan hangers should not be used. This mount may experience lateral (sideways) forces that a Ceiling fan hanger may not be designed to handle.**

★ **This symbol is used in this document to call attention to items or procedures that require special attention, and may be safety related. Pay careful attention to all such warning symbols and follow their instructions completely.**

The Bosch-Rexroth System components:

The CineSlide mount kits are made from Bosch-Rexroth Aluminum Framing system components. The following shows the components used and information about using them.
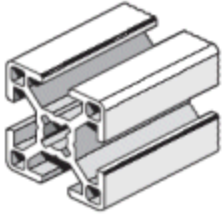
Posts/Rails

The core component of the Bosch-Rexroth system is its structural aluminum profiles (called rails or posts in these instructions). They are designed so they have a "T-slot" running their length on all 4 sides. CineSlide mounts use these profiles for the *Mount Posts*, and *Headrail* assemblies. They are also used as Isco lens mount posts, identical to the Isco stock mount (except ours are black anodized). The T-slots in these profiles accept a variety of connectors and fasteners. The CineSlide mount kits use Gussets, T-nuts, and T-blocks to interface to the profile's T-slots.
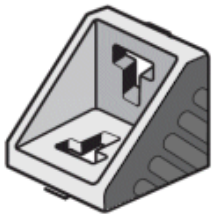
Gussets

One of the main connection components used in the CineSlide mount is the 90 degree gusset. This gusset is made from cast aluminum. Since Cast aluminum does not anodize well, the CineSlide kits include gussets that are painted black. Use caution not to scratch the painted surface on the side of the gusset where it might show.

The Gussets have tabs on one or both of its connecting surfaces that normally align the gusset with the rail's T-slot. **The CineSlide mount kits may include (2) different gusset configurations.** The first type has alignment "tabs" on both its connecting surfaces. The second type has the tabs removed on one side only. The second type is for use where a gusset is to be connected to a flat surface, such as the CineSlide body, or a flat Ceiling Plate

When using these gussets, be sure you are using the correct type gusset for the connection location. For a rail-to-rail corner, the first type is used. For a flat-surface-to-rail connection, the gusset with one flat side (no tabs) is used. The alignment tabs fit into the rail's T-slot.

T-nuts

T-nuts are T-slot nuts that can slip straight into a bar's T-slot from the top. This nut does not have to enter via the end of the post/rail. These are designed such that you:
   a) Place an M6x14mm screw through a gusset hole,
   b) Thread the T-nut LOOSELY onto the end of the screw,
   c) Insert the gusset with the T-nut into the T-slot, slide the gusset to its desired location, and then tighten the M6 screw. The tightening motion causes this specially made T-nut to turn 90 degrees to the slot and then as it is tightened, it will grab the inside of the T-slot and give a very tight hold.

⚠️ **IMPORTANT**: When using T-nuts it is important that you visually check to <u>ensure the T-nut did rotate 90 degrees</u> and <u>is perpendicular to the T-slot groove</u>. If a T-nut needs to be loosened for adjustment, etc. **IT MUST be a few several turns**. A T-nut that is tightened from a less than fully loose condition may not turn 90 degrees and may not properly lock. If the T-nut did not turn 90 degrees, loosen it fully then retighten. This procedure should cause the T-nut to turn properly and engage the slot. **ALWAYS VISUALLY CHECK T-nut's after tightening and be SURE it is rotated properly to the locked position (90 degrees from the slot direction)**

Other Fasteners used with the CineSlide Mount Kits and Bosch Components:

Flat Head Cap Screw (FHCS)   **FHCS** used with Ceiling Plate to posts, lens mount posts

Button Head Cap Screw (BHCS)   **BHCS** used with Gussets, CineSlide to post screws

Socket Head Cap Screw (SHCS)   **SHCS** used with some lens mount post safety stops

Hex Head Screw (HHS)   **Hex head screws** used with lens mount plate

Nylon Insert Lock Nut   **Nylon inset lock nuts** used with some Gusset connections, lens mount plate safety nut

Flat Washer

Split Lock Washer   **Flat washers** and **lock washers** used on CineSlide body-to-post, also used with lens mount plate hex screws

Metric Fasteners are used with these components. More than one size of a particular fastener type may be used in the mount kit. Check sizes listed in the instructions and use the proper size, type, and length fastener as indicated.

NOTE:
Fasteners in this manual are referenced using their name abbreviation, followed by their size
Example:
M6 x 25 BHCS = 6mm screw size, 25mm long, Button Head Cap Screw.

Ceiling Plate Center Mount Screws

The PP kit includes M8x25 FHCS "center mount screws".   These are installed in the upper ends of the mount posts and attach the mount plate to the mount post. These screws prevent a mount post from coming loose from a ceiling plate in the event a gusset comes loose from a T-slot. DO NOT OMIT

CineSlide Posts are shipped with the mount posts pre-threaded and this screw pre-installed. If posts are cut/shortened, this screw MUST BE REINSTALLED. If the mount post is cut by the installer (vs. factory cut), the cut end must be tapped with an M8x1.25mm thread and countersunk before reassembly.

NEVER OMIT THE CEILING PLATE CENTER MOUNT SCREW. FAILURE TO INCLUDE THIS SCREW IS UNSAFE AND NOT APPROVED.

Special tools required:

- ★ 10mm open ended wrench for lens mount plate
- ★ 4 mm Hex key Wrench (Allen wrench) for gusset fasteners - **Ball head strongly recommended**
- ★ 5 mm Hex key wrench for CineSlide to post screws, Safety FHCSs

ONLY IF MOUNT POSTS ARE CUT TO LENGTH BY THE INSTALLER:

- ★ Non-ferrous metal cutting blade metal saw (if post length is to be cut on-site. Posts are available pre-cut to order). **HAND CUTTING WILL NOT PRODUCE AN ACCEPTABLE CUT OR PROPER STRENGTH JOINT.** A proper saw capable of making a clean, square cut is necessary to cut the mount posts to length.
- ★ M8 x 1.25 hand tap
- ★ Power drill for use with Hand Tap

Installation

Installing a CineSlide mount kit involves the same basic steps. There are several ways to accomplish each step and the experienced installer may find a method that works better for them. The steps outlined below are a reliable method to do it correctly.

Start with the CineSlide assembled, including a complete lens-mount but NO LENS. See manual for lens-mount assembly.

**1. Size and prepare mount posts, cut to length**

> **NOTE: If your posts were pre-cut to length by the factory (NORMAL), skip this step.**

a) Determine "Beam Height". Turn on the projector, project a bright image or white test pattern that is aligned with the screen. Measure the distance from the ceiling plate's **<u>mount surface</u>** to the center of the rectangular beam of light at the point where the rear of the anamorphic lens will sit in front of the PJ. This is the "beam height" For **most installations this is not the vertical center of the projector's lens** (See diagram below) Remember to account for any structural element that the ceiling plates will mount to (e.g. plywood, oak board, etc.). The structural element is the mount surface.

b) Leg length = Beam height – 5.5"

Mount surface

Beam Height

Post Length

PJ Lens

Lens Offset

Ana. Lens
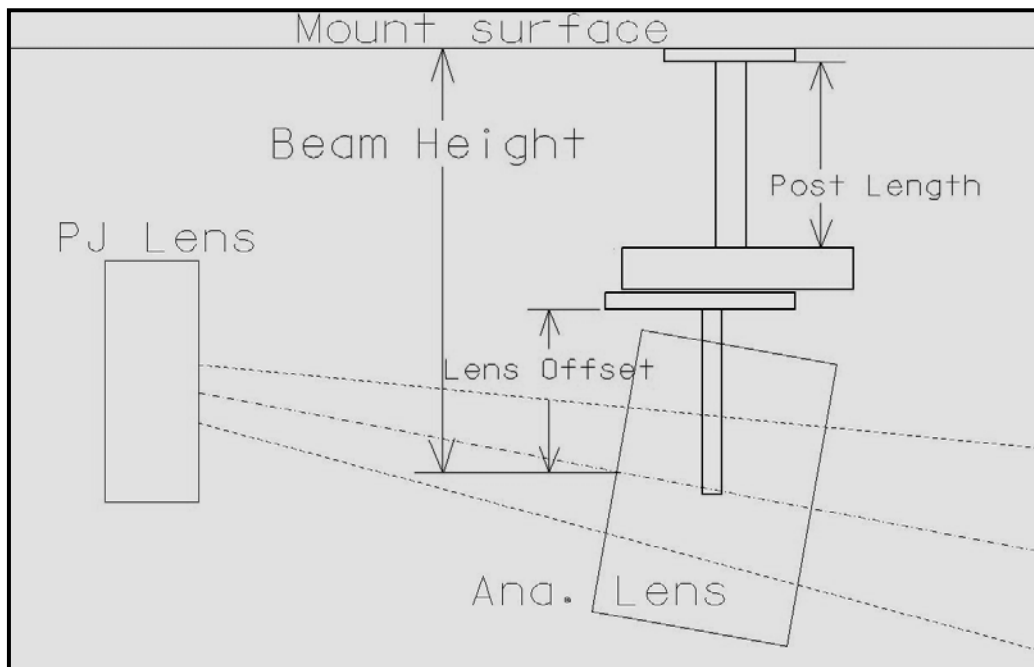
c) The mount posts MAY have been shipped with the upper and/or lower gussets pre-installed. If the posts are being cut to length, make a note of how the gussets were installed and then remove the:
   a. Upper safety screw
   b. All upper gussets

d) Using a proper metal saw cut the posts to the proper post length. The post must be cut with a saw capable of making a clean and square cut such as a metal saw with a carbide non-ferrous metal cutting blade. The connection at the CineSlide body MUST be square. **HAND CUTTING WILL NOT PRODUCE AN ACCEPTABLE CUT OR PROPER STRENGTH JOINT.**

e) Use a file and smooth any sharp cut edges. Debur the cut. Avoid damaging the black anodize finish, touchup silver edges if necessary with a permanent black marker or model paint.

f) Tap the center holes of the cut ends with a M8 x 12.5mm hand tap 7/8" deep.

g) Using the socket head cap screws and T-nuts provided, attach all upper stabilization gussets. Position so their upper edge is flush with the mount post edge. Also orient the gusset so the gusset's "flat side" (no guide tabs) is up, where it will be flat against the ceiling plate. With the gusset aligned, tighten to the post.   Repeat for all upper gussets. Be sure the T-nuts are properly turned 90 degrees in the T-slot after tightening. Loosen completely and retighten if they are not (See "T-Nut section above) **(Photo Below):**

NOTE: (PP-XS) Posts 1.75" in length have no upper gusset. (PP-S) Posts 2" to 6" in length have 1 upper gusset. (PP-M and PP-L) 6" to 18" have 2 upper gussets. For PP-M/L orient the 2 gussets left-right. For PP-S kits, orient the single upper gusset on same side of post as lower gusset (facing outward on each side of the CineSlide body)

Rear of PP-L post
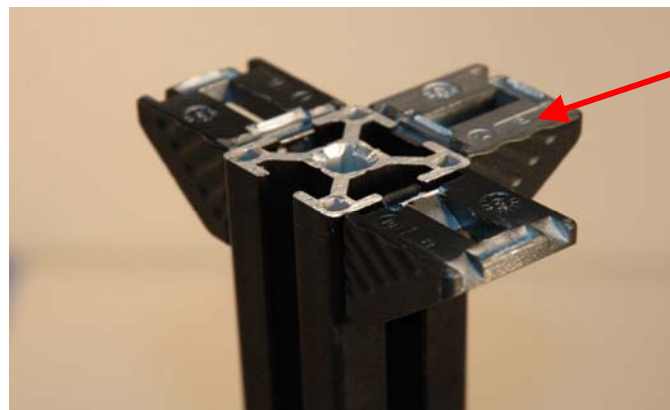
h) Using the same procedure as step g) above, attach the single lower gusset to the mount post. Orient the flat side so it faces down. Align so it is flush with the end of the post and tighten the gusset. Be sure the T-nuts are properly turned 90 degrees in the T-slot after tightening. Loosen completely and retighten if they are not (See "T-Nut section above)

i) Attach the ceiling plate to the post end using the M8x25 FHCS. Align the post square with the ceiling plate, align the gussets with their mount holes and <u>loosley snug</u> this screw. The small indention in one short side of the PP mount plate will face rearward once mounted.

j) Install the gusset-to-ceiling plate hardware for all upper gussets (up to 3) on each leg. Use M6x18 FHCS, and nylon lock nuts. Tighten firmly. Now firmly tighten the M8x25 center safety screw.


Ceiling Plate with Fasteners Top view

Ceiling Plate with Fasteners Bottom view

2. Assemble mount posts to the CineSlide.

a) Using (2) M8 x 25 button head cap screws, 2 M8 split ring lock washers, and (2) M8 flat washers, Attach the mount posts to CineSlide™ body. Be careful not to damage the finish. The posts are attached to each side of the CineSlide body through the slotted 8mm mount holes. <u>Position the mount bolts and posts in the center of this slotted hole</u>. Rotate the posts so the front is parallel with the CineSlide front. Align sloted PP moutn holes perpindicular to the CineSldie body. The small indent in the PP mount plate should face rearward. Gently snug the M8 mount screw to hold the post in its correct position.

b) Install CineSlide body-to-post gussets screws, one for each post using an M6x20 BHCS with a flat washer on the lower (screw head) side and a M6 nylon insert locknut on the top/gusset side. Orient the screw so it is at the outside of the gusset's slotted hole (away from the corner). Washers and lock washers go on the bottom side as shown below.

c) Gently tighten the M6 BHCS and the M8 BHCS.
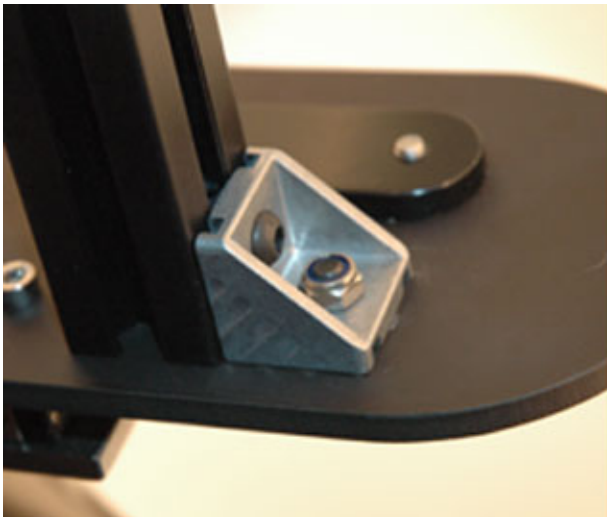
4. Locate mount on a structural backing plate.

The PP kit must be installed to a structural backing plate of some type. We recommend installing to a suitable length ¾" thick furniture grade plywood or finished oak board. The installer may find it necessary to mount the PP ceiling plates to the structural element, and then install the structural element to a ceiling. Installing a structural element such as plywood to a ceiling is beyond the scope of this document. These instructions are written to address how to locate the mount on an element on the ceiling.

Gently move the CineSlide lens mount to the Lens-ON position stop by hand (see manual for description of "Lens-ON" position; this is typically the motor-side stop).

Have one or two helper's lift and firmly hold the CineSlide and mount assembly to what will be its final, mounted position on the ceiling. Fine tune the location and check these items:

- The lens mount is in the "Lens-ON" position (to the travel stop), and the lens mount is centered to projector lens OR to the projector's light path (for projectors with side offset lens)

- The rear of the lens mount is located the preferred distance from the front of the projector (typically as close as possible)

- The ceiling plates are flush against the mount surface. If the mount surface is level, the posts will be plumb when the ceiling plates are flush. If they are not plumb and are significantly out, shims may be required under the ceiling plates.

- The CineSlide is oriented parallel to the screen (or at the desired angle relative to the projector/screen). Be sure that any mount angle will not cause the lens to move into the Projector once installed (i.e. incorrectly angled toward projector).

With the assembly being held so the CineSlide is in its final location as described above, mark the ceiling mount plate mount holes on the structural element.

Once the ceiling plates and are properly located on the structural element, securely mount the ceiling mount plates to the ceiling structural element. Use appropriate fasteners (not supplied, **SEE WARNINGS AT BEGINNING OF THIS DOCUMENT**). **Use one fastener in every available mount hole of the ceiling plate. Do not omit any holes, all are required.**

Fine adjust the mount forward rearward position using the slotted holed in the ceiling plates.

Generally, for an oak board installation, a screw size of #10 for a PP kit with deep threads such as a fully threaded hex-head sheet-metal screw, or a typical square-drive cabinet hanging screw is often an acceptable fastener. Use a hex, or truss-head or similar screw head style.   Such a fastener should engage a structural plate fully. For ¾"furniture grade plywood, #10 through-bolts with **nylon insert lock nuts** are usually suitable fasteners. Proper pilot holes should be provided for all screws.

8. DO NOT INSTALL gusset caps until after final fastener check and safety checklist.

9. This completes the PP kit specific steps. See the owner's manual for the final instructions on electrical connections, and fine adjusting, and the safety checklist

10. Complete the safety checklist, verify all mount fasteners are tight,

11. Install decrative gusset caps

ADDENDUM – PP-XL-Custom Kit

PP-XL (post lengths of 24" or longer require extra bracing for stability of the mount.

For long mounts a cross brace between the 2 PP-XL legs will make the legs more rigid and prevent the legs from flexing when the lens is moved. Install the cros brace in the rear side of the legs using the suppled T-nuts and standard T-nut assembly methods (ensure T-nut is turned 90 degrees to the slot after tightening).

Cross Brace:

For very long mounts (PP-XXL-Custom), front to rear stabilization is required. This will both pervent the CineSlide from swaying, and prevent the PP mount feet from being over stressed if the CineSlide is pushed from external forces.

Front to rear brace shown with ceiling mount foot: