

Installation Manual

D89-UST01 / 124-318 Ultra Short T/R 0.31~0.33 Throw Lens





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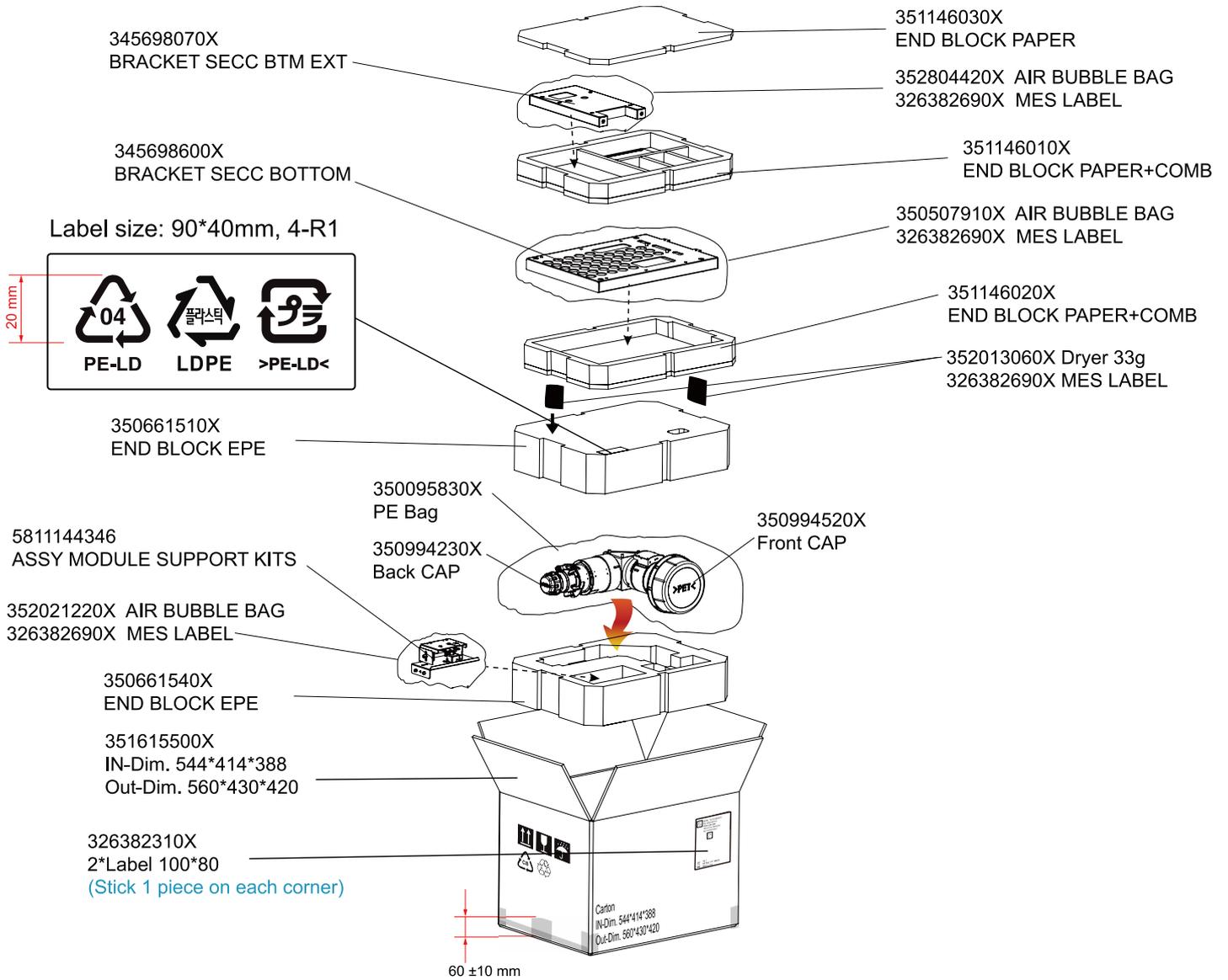
Important Notice

Before using the Ultra Short Lens, make sure to read below important notice.

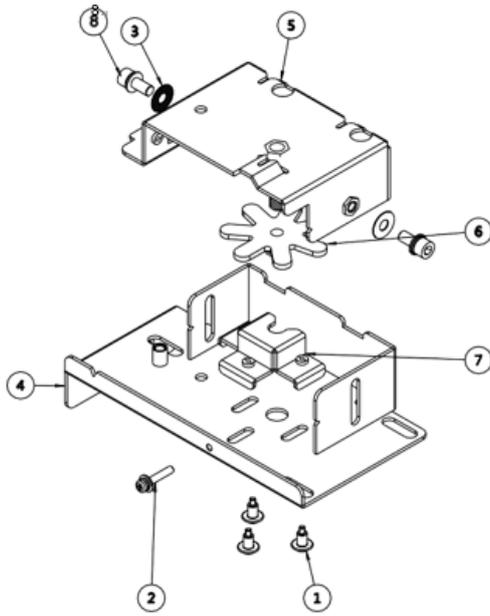
- Be sure to turn the power off and disconnect the power cable from the wall outlet before replacing the Lens. Improper operation may cause to electrical shock or injury to eyes by intense light from the projector.
- Please remove the lens cap before installing the lens to the projector, the projection light may heat the lens cap and melt it, this may raise safety issue or damage the projector.
- Do not place any object near the projection light path, the intense light from the projection lens may result in fire or burn injuries.
- Use a clean, soft and dry cloth or Lens cleaning wipes to wipe away dirt or dust adhered on the lens.
- Do not use the cloth containing oil, dust or water for cleaning. Once dust and dirt adhered on the lens surface, please clean the glass with lens cleaning wipe.
- Keep all the original packing material even you finish the installation, the packing material may be used for avoiding damage during transportation.



Packing Check List

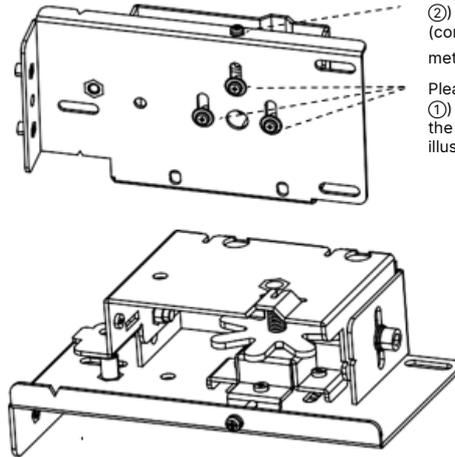


(1) Part Assembly A:



Item	Part Number	Part Description	Qty	Note
1	310108360X	SCREW M M3*0.5*11.5 FPH+CY C SWRCH18A NI	3	
2	310535590X	SCREW M M4*0.7*22 PAN C S+P S18C NI BLK	1	
3	324998320X	WASHER PC V-0 16*6.5*0.4 BLK	2	
4	345698610X	BRACKET SECC SUPKIT DOWN PAINT BLK	1	
5	345698620X	BRACKET SECC SUPKIT HOLDER PAINT BLK	1	
6	345697760X	BRACKET SECC WRENCH S PAINT BLK	1	
7	345698080X	BRACKET SECC SCREW HOLDER PRINT BLK	1	
8	310524960X	SCREW M M6*1*14 FF HEXI S+P S18C ZN BLK	2	

After Assembly



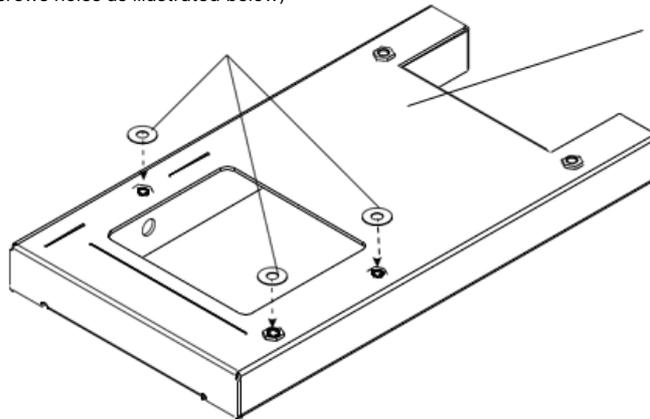
Please ensure the screw (component ②) is stably locked on the metal part (component ⑦) and merges into the metal plate (component ④) °

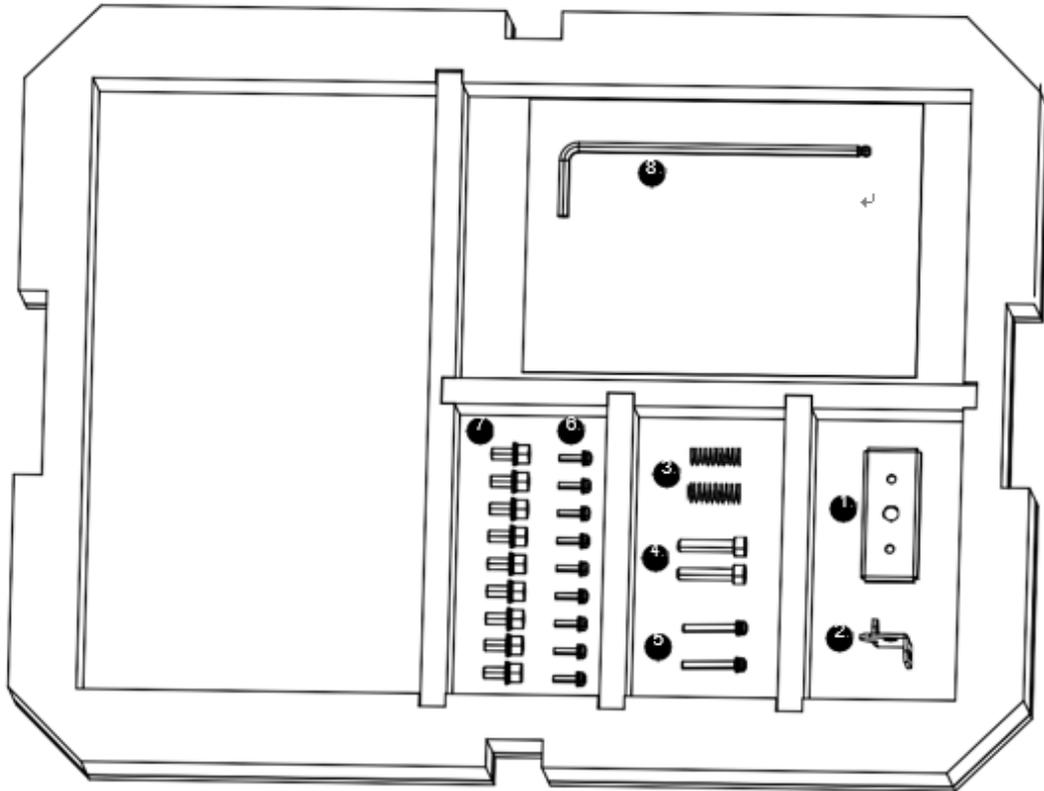
Please ensure the screw (component ①) is stably locked on the position of the track (component ④) as illustrated in the picture on the left.

(2) Part Assembly B:

324998320X WASHER 3pcs
(Please ensure the washers located on the screws holes as illustrated below)

345698070X
BRACKET SECC BTM EXT

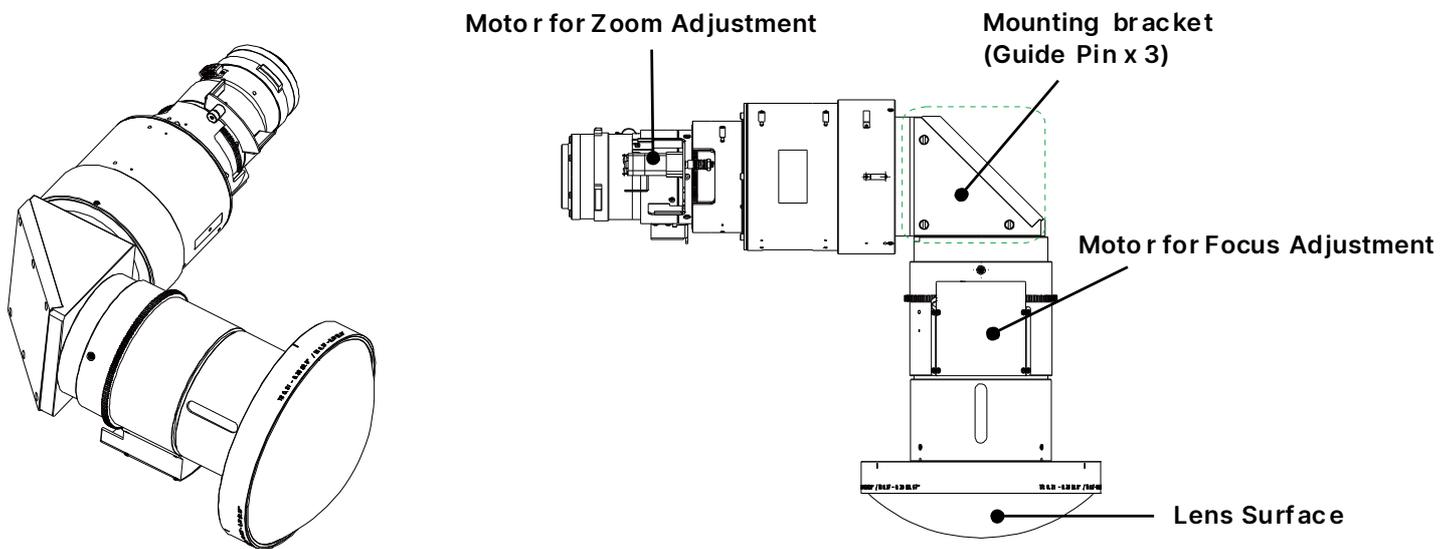
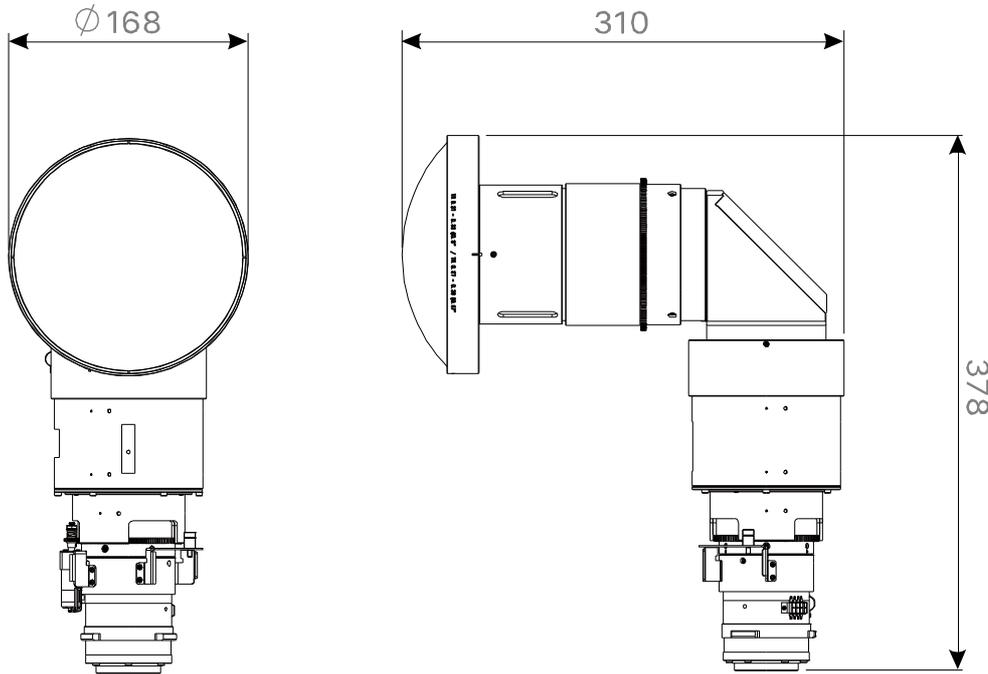




Item.	P/N.	Description.	Q'ty.	Note.
1.	345697670X.	BRACKET SECC SUPKIT SIDE. (3522003503 Air Bubble Bag PE 160*120 CLR).	1.	Content Labeling. (326382690X MES LABEL)
2.	345698530X.	BRACKET SECC SCREW HOLDER (3522003503 Air Bubble Bag PE 160*120 CLR).	1.	Content Labeling. (326382690X MES LABEL)
3.	348944190X.	SPRING. (3522003503 Air Bubble Bag PE 160*120 CLR).	2.	Content Labeling. (326382690X MES LABEL)
4.	310592010X.	SCREW M M6*1*30. (3522003503 Air Bubble Bag PE 160*120 CLR).	2.	Content Labeling. (326382690X MES LABEL)
5.	310535830X.	SCREW M M4*0.7*38. (3522003503 Air Bubble Bag PE 160*120 CLR).	2.	Content Labeling. (326382690X MES LABEL)
6.	310512100X.	SCREW M M4*0.7*14. (3522003503 Air Bubble Bag PE 160*120 CLR).	9.	Content Labeling. (326382690X MES LABEL)
7.	310524960X.	SCREW M M6*1*14. (3522003503 Air Bubble Bag PE 160*120 CLR).	9.	Content Labeling. (326382690X MES LABEL)
8.	315016150X.	WRENCH HEX 160MM. (3505030800 Air Bubble Bag PE 200*200 CLR).	1.	Content Labeling. (326382690X MES LABEL)



Projection Lens Overview



Note

- There are two lens caps to cover the lens, please remove the lens cap before installing the lens to the projector. The projected light may heat the lens cap and melt it; it may raise safety issue or damage the projector.



Installing the Projection Lens

Before Installing the Projection Lens

Notice on the following points:

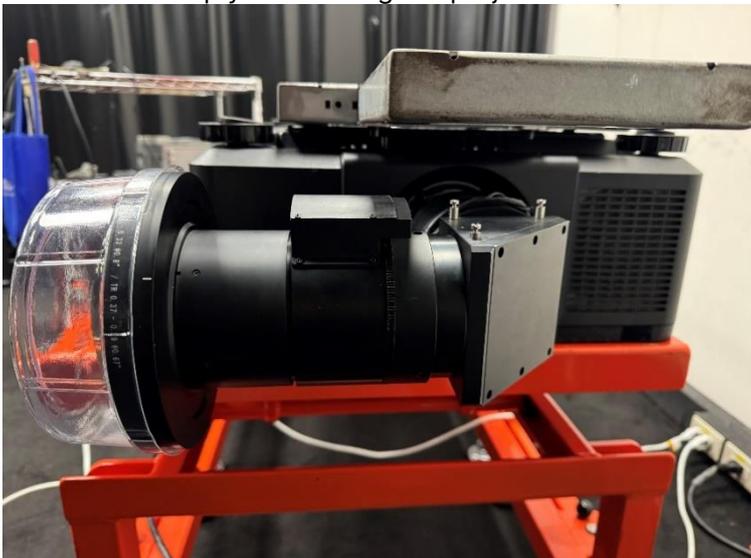
- Make sure all the accessories are ready.
- Make sure that the projector power supply is switched off before attaching or detaching the projection lens
- Place the projector on a flat table; this can be helpful to install the projection lens more convenient.
- Do not touch the electric contact points of the projection lens or it may cause to contact malfunctions.
- Do not touch the glass of the lens, the fingerprints or smudges on the glass may be magnified and lower the quality of Projected image.
- After removing the projection lens, store it safely away from vibration or impacts. Suggest you to keep it in the original package after you take it out from the projector
- Make sure to loosen the screws at the joints of support kits before fine tuning the lens position or performing Center Lens function, improper operation may cause to malfunctioned Lens shift or damage the projection lens.
- Make sure Lens type setting is changed to Non-UST Lens from OSD menu once you change to other projection lens. The default lens position of Ultra short Throw Lens (UST Lens) is different to other zoom lenses; the setting may limit the lens shift range and move the lens to different initial lens position after you perform Center Lens function.
- Make sure Lens Control Lock on OSD is disabling before performing lens adjustment. The Lens Shift, Zoom, Focus and Center Lens functions are disabled if turning on Lens Control Lock.
- When this 0.31~0.33 UST Lens is installed, projector will automatically disable lens memory function. The auto disable may not be available in early installed software and please contact service if you need software upgrade for this feature.
- For best projection effect, recommend to use flat screen and place the projector in parallel with the projector. The image may be distorted if the projection screen is not flat or not in parallel with the rear of projector,
- Check if the support kit is installed properly if the projection image is not clear after adjusting the focus and focus plane

IMPORTANT:

- After the screws of support kit are fixed, please do not use Lens Shift, Center lens and Lens memory functions.

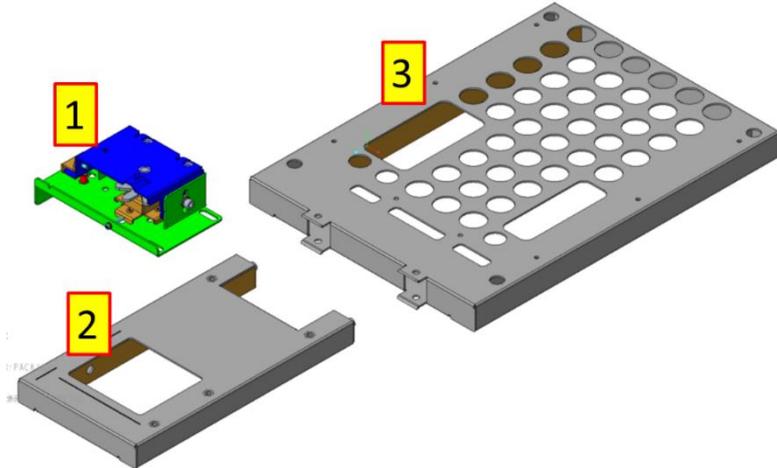
Starting the lens Installation

1. Turn over the projector as below figure, the front of the projector is aligned with the edge of the table. This can help you installing the projection lens more convenient.

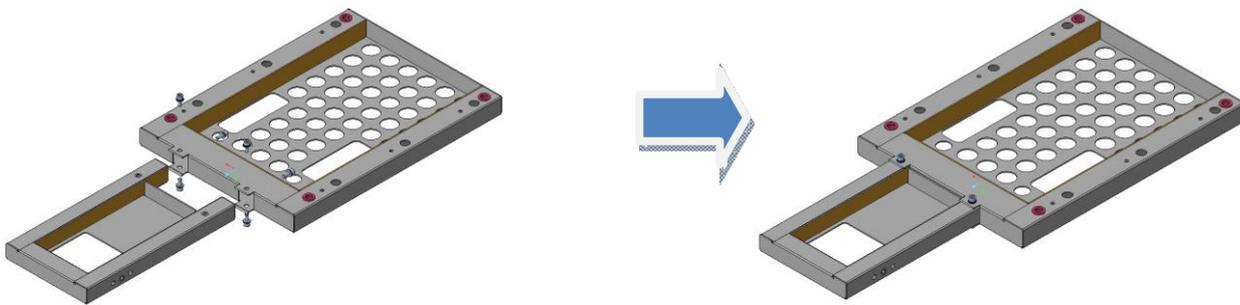


SUPPORT KIT Installation ---Assemble the bracket

Support kits consists of three main components

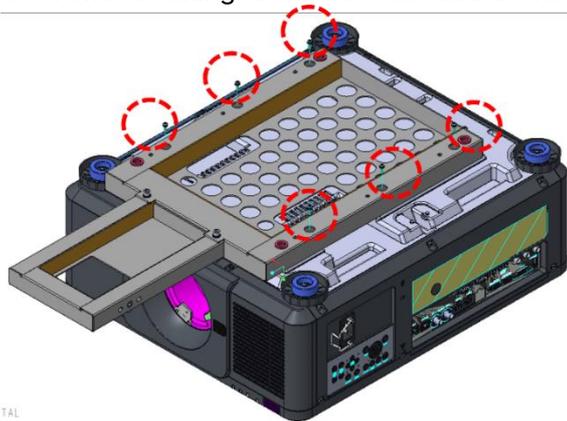


Assemble the bracket



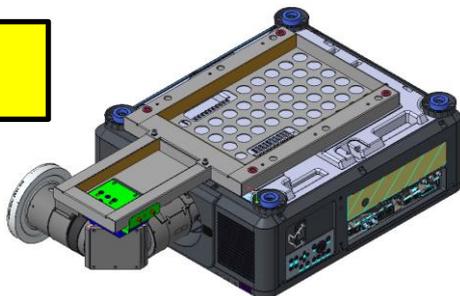
SUPPORT KIT Installation ---Install on the projector

6 screws for fixing to the bottom case of the projector.

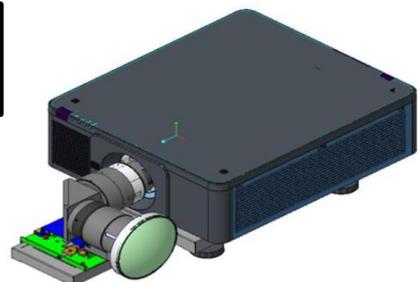


SUPPORT KIT Installation ---Separated into desktop and ceiling models

Ceiling
P10-P13



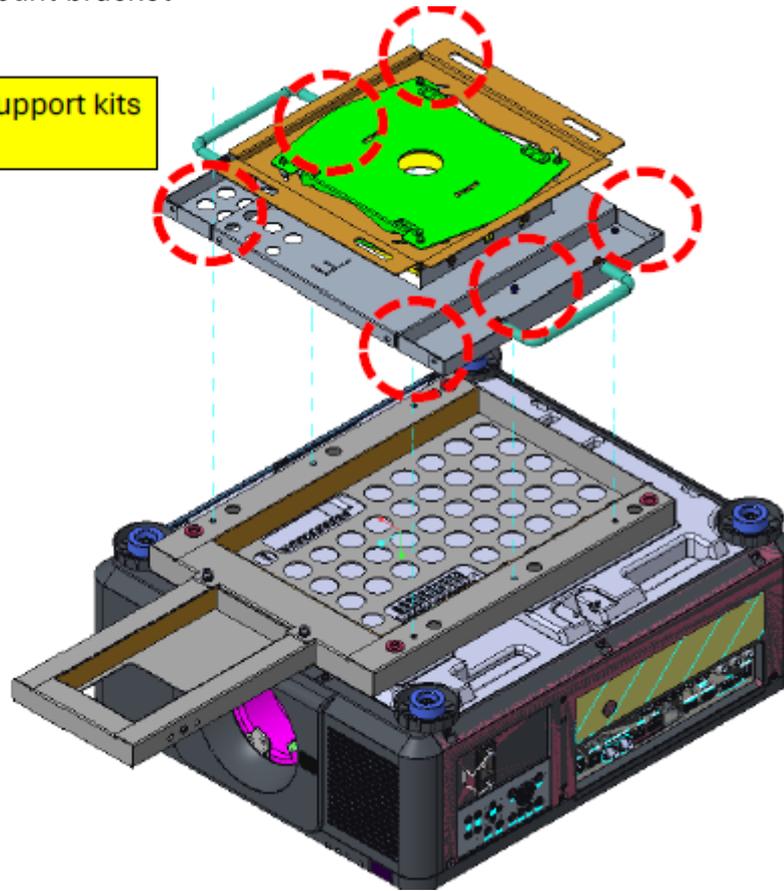
Desktop
P14-P16



SUPPORT KIT Installation --- FOR CEILING

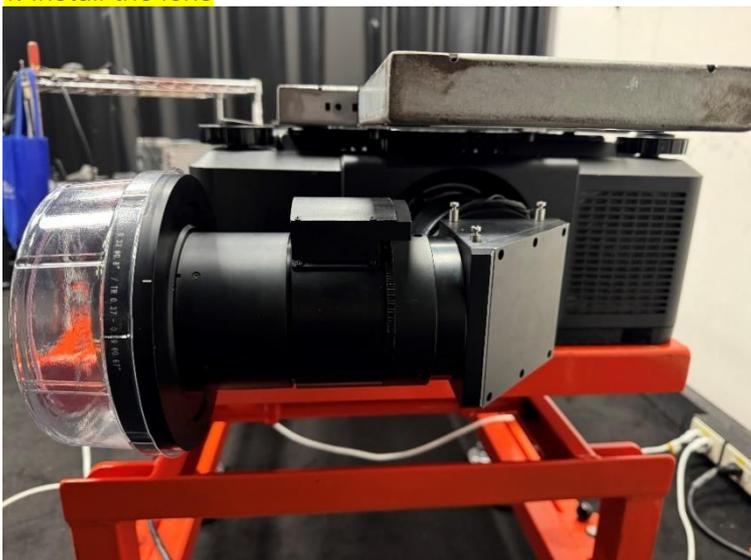
STEP1 – Install the ceiling mount bracket

6 screws for fixing to the support kits metal plate.

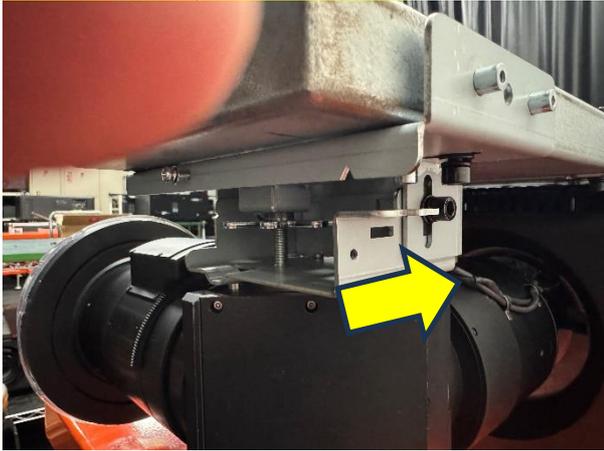


STEP2 – Install the adjustment module

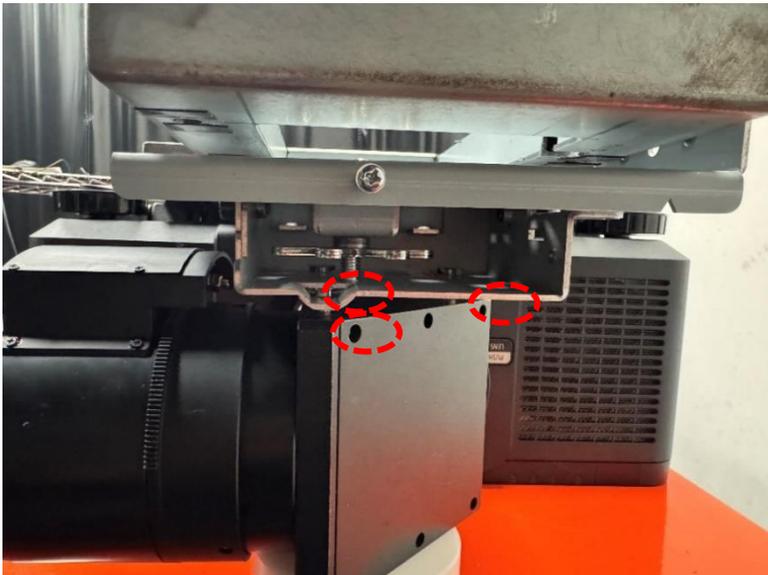
1. Install the lens



2. Install the adjustment module



Installation direction



Ensure that all three screws are engaged in the groove

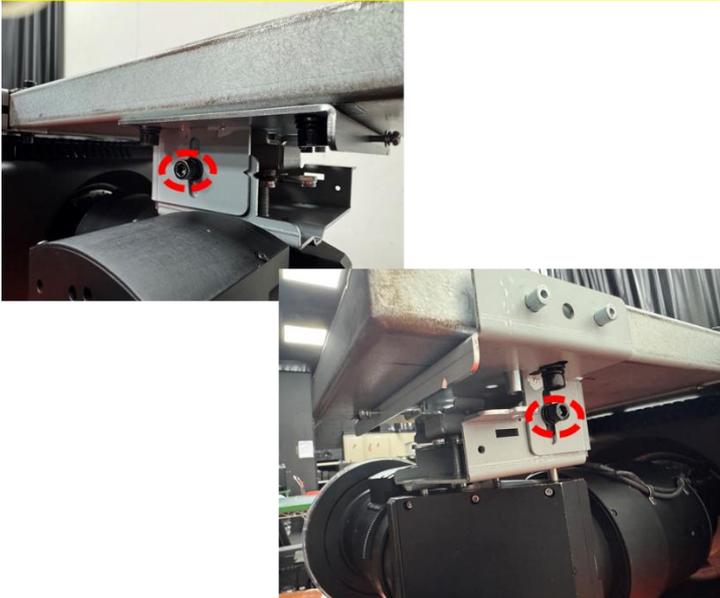
3. Tighten the screw but do not fully tighten it





STEP3 – Prepare for lens shift & center lens

1. Loosen the screw slightly

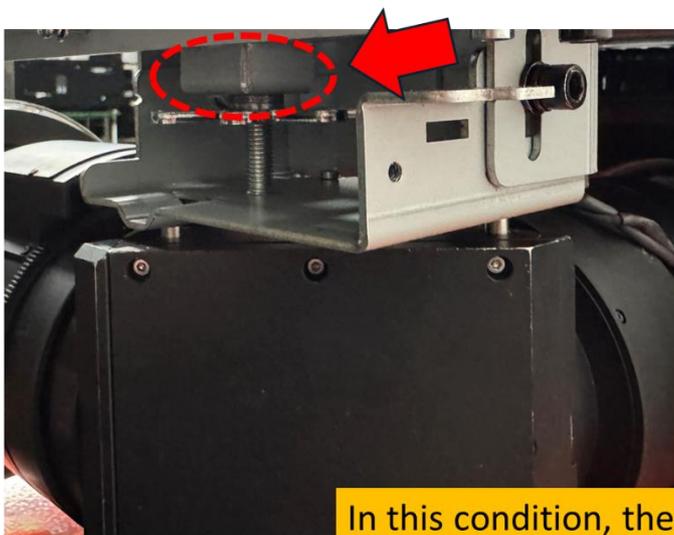


2. Remove the screw



STEP4 - Prepare for lens shift & center lens operation

1. Push out this fastener



2. Turn the knob to the position shown in the figure below

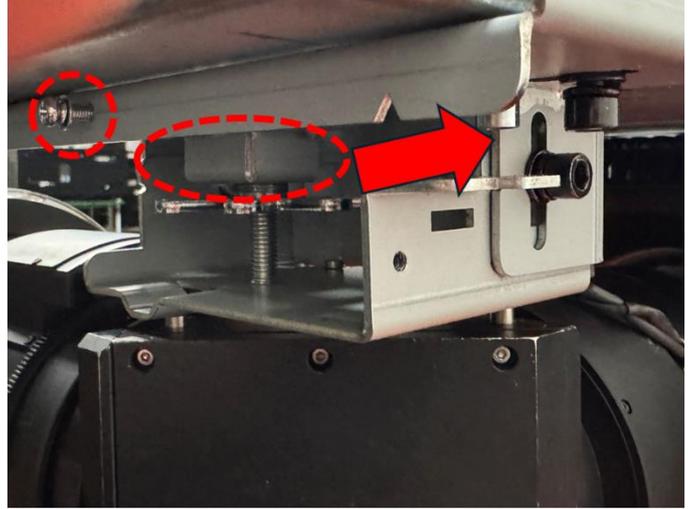
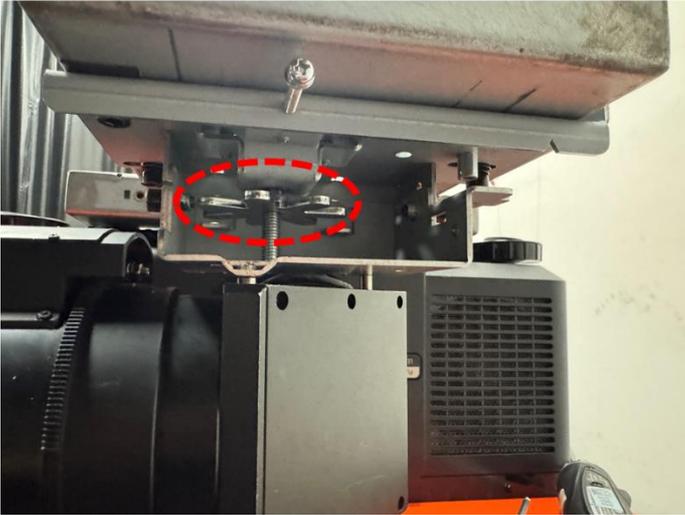


In this condition, the center lens and lens shift operations can be performed.

**STEP5 - After center lens and lens shift operations,
Adjust the lens vertical by knob**

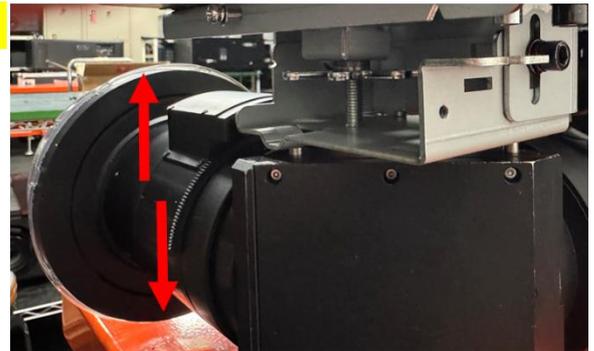
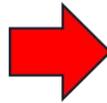
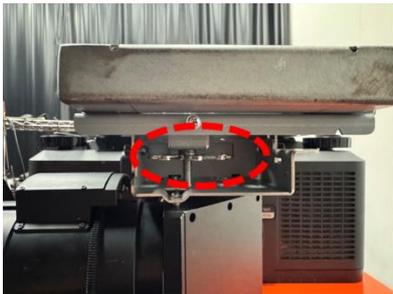
1. Turn the knob to the position shown in the figure below

2. Push the fastener until it locks onto the knob, and install the screw shown below, but do not fully tighten it

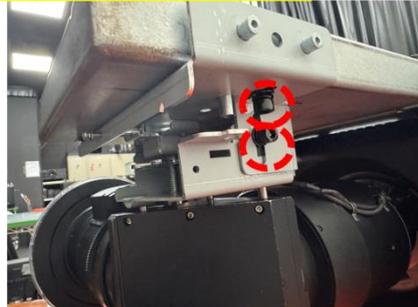
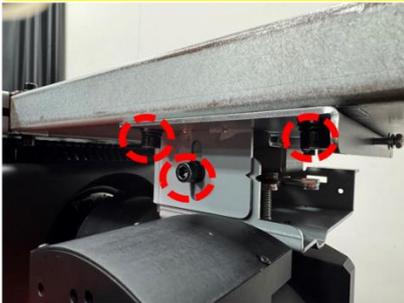


Adjust the lens vertical by knob

1. Adjust the lens vertical using the knob

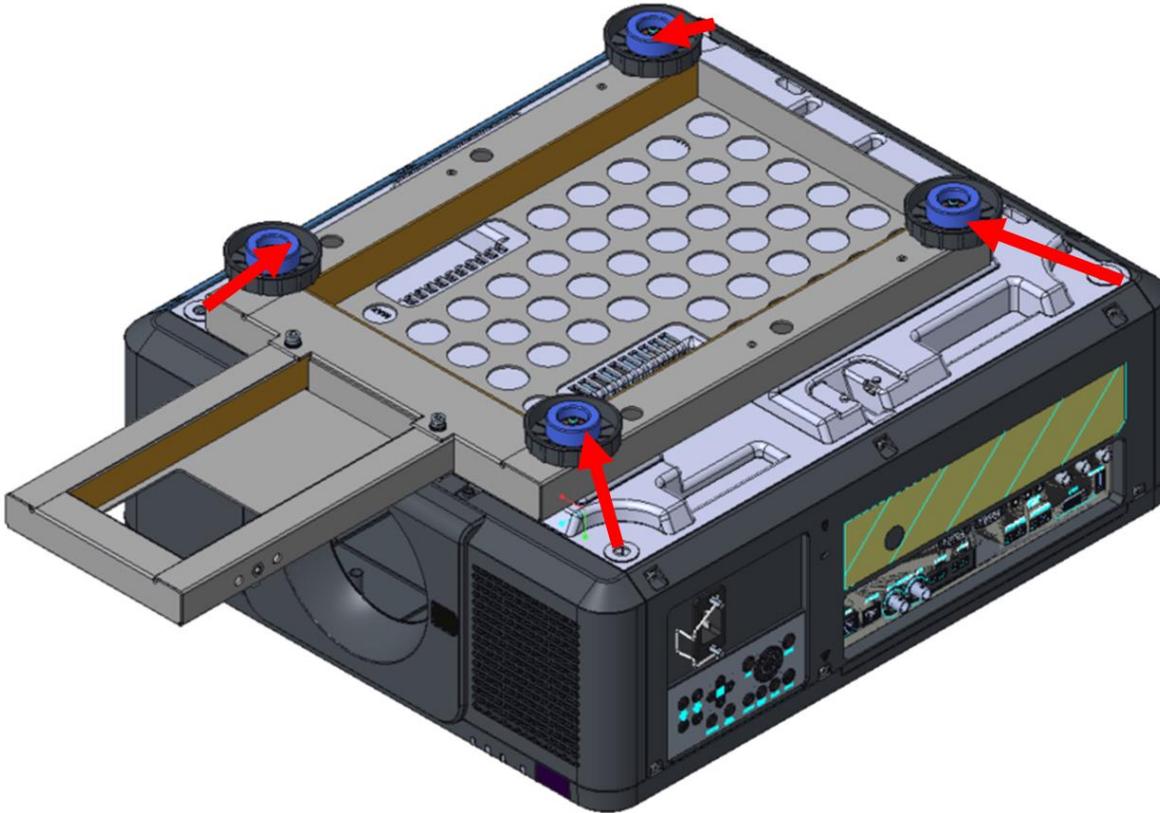


2. Tighten the screws shown in the figure below



SUPPORT KIT Installation ---FOR DESKTOP

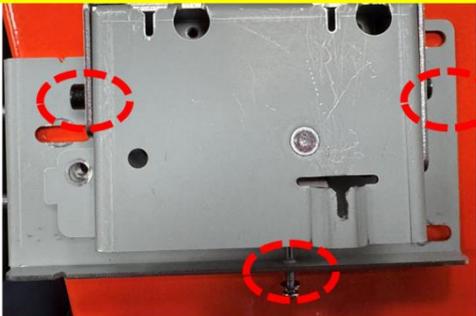
STEP1 - Move the adjustment foot onto the support kit metal part



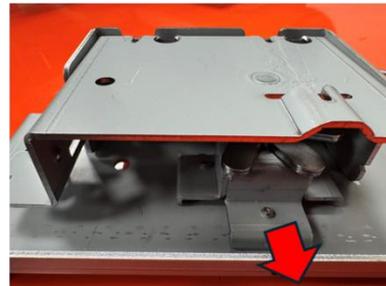
STEP2 - Add springs and screws in the adjustment module

Only for the Desktop (For the ceiling, the springs and screws need to be removed)

1. Remove the three screws



2. Push the fastener outward



3. Install the spring and screws

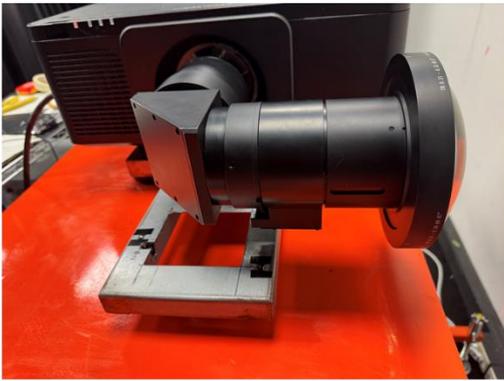


4. Install the fastener to lock onto the knob, and tighten the screw

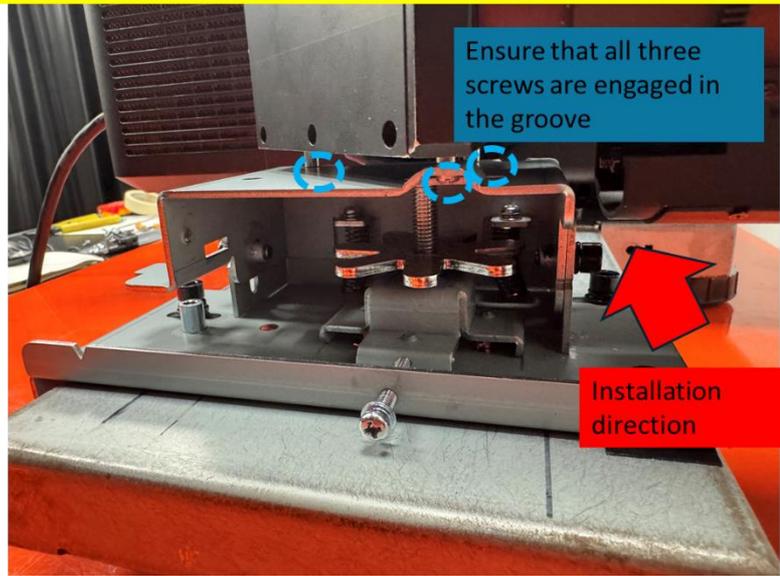


STEP3 - Install the adjustment module

1. Install the lens

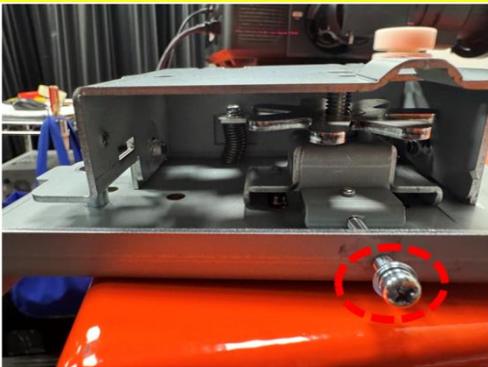


2. Install the adjustment module



STEP4 - Loosen the screw of knob's locking structure

1. Remove the screw



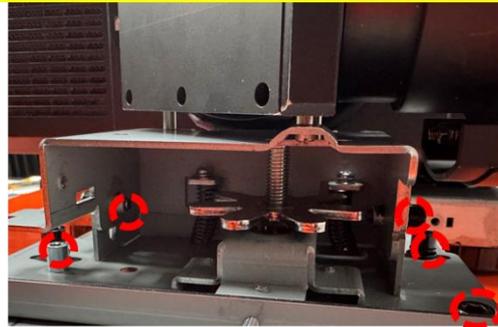
2. Push the fastener outward



3. Turn the knob to the topmost position

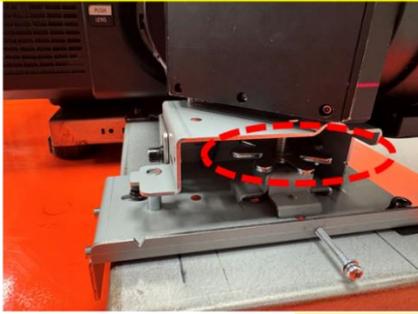


4. Loosen the 5 screws, leaving a gap of 1-2 turns

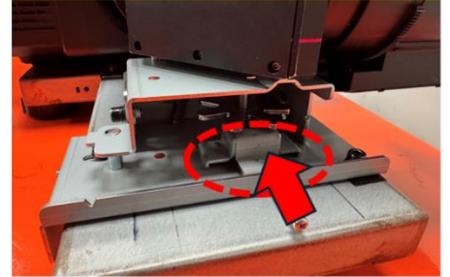


STEP5 - After center lens and lens shift operations, Locking knob

1. Turn the knob to be level with the fixed structure



2. Push the fixed structure all the way in to ensure it locks with the knob



3. Tighten the screws shown in the figure below



STEP6 - Adjust the lens horizontally by knob

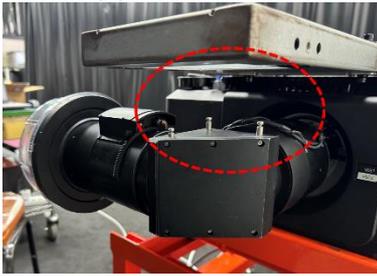
1. Adjust the lens horizontally using the knob



2. Tighten the screws shown in the figure below



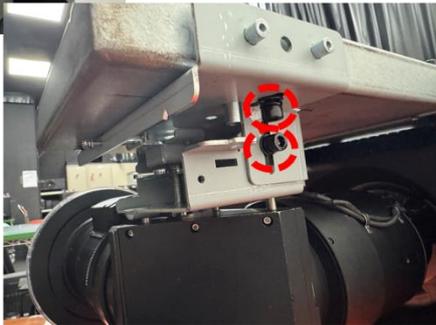
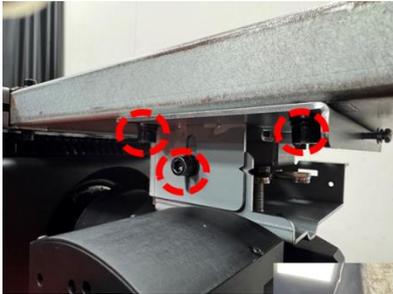
Note - The lens should not be installed on the machine for an extended period of time without the support kit.



The lens should not be installed on the machine alone for more than **one hour** without the support kit.

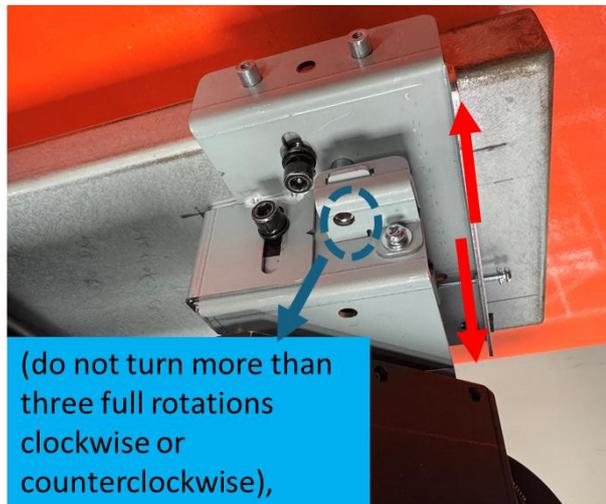
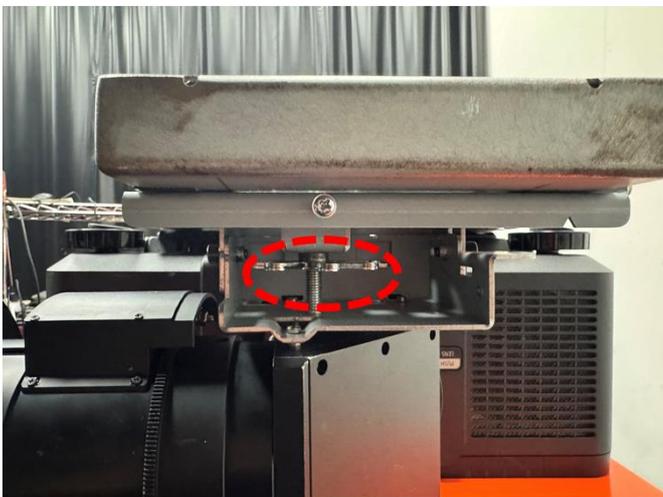
Note – About center lens and lens shift operations

The screw in the figure below is slightly loosened, and the knob is in the position shown below. Only then can the center lens or lens shift operation be performed



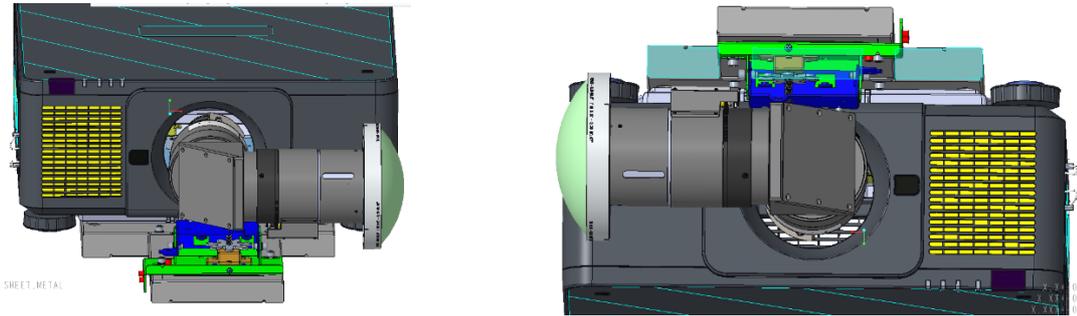
Note - About focus adjustment

Turning the knob can improve focus. If you cannot achieve focus, it is recommended to slightly adjust the screw shown in the right figure, or make slight lateral adjustments to the structure



(do not turn more than three full rotations clockwise or counterclockwise),

- Align the "↑" symbol on the lens label with the "*" " symbol on the top cover of the projector (align to the center of the lens hole), and pull in the lens. Make sure the lens is pushed into the holder and turn it clockwise to the "Lock" position.

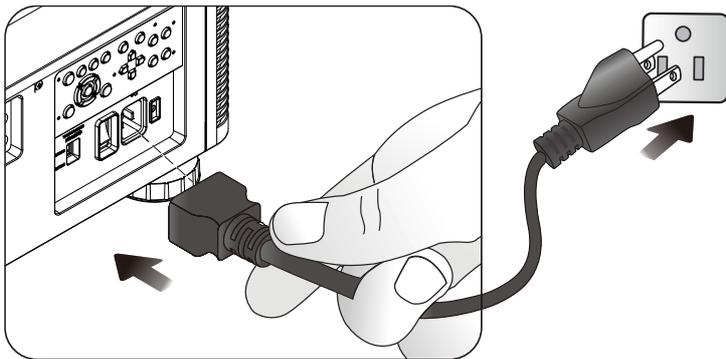


Note:

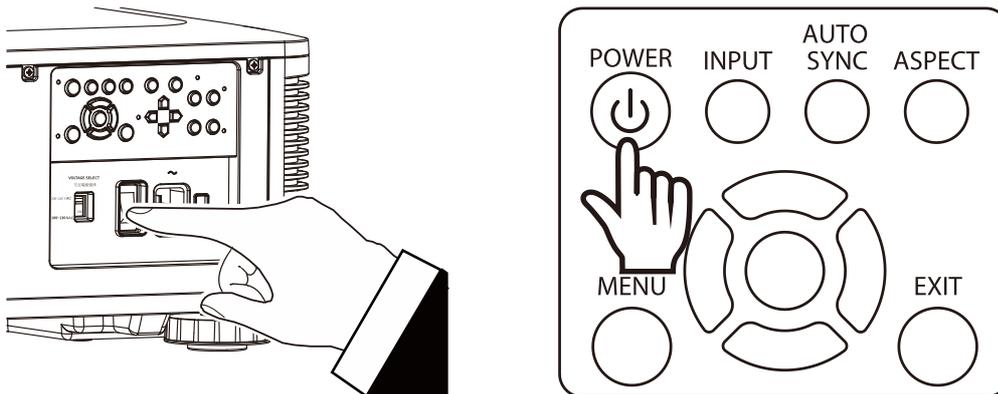
- Before installing the lens on the projector, recommend to place the projector on a table and the front of the projector is aligned with the edge of the table. This can help you installing the projection lens

- Adjust the projecting position of Lens:

- Plunge in the power cable



- Turn on the AC switch then turn the projector on by power button.



CAUTION:

Make sure the projective film on the Lens is removed before turning on the projector; the protective film may be melt during projection then resulting in damage or deformation.

- c. Enter OSD menu then select Lens type option on ALIGNMENT page, press Enter or ► button to choose UST Lens option. The projector can move the lens to initial workable position for Ultra Short Throw lens automatically after performing Center Lens function as following step.

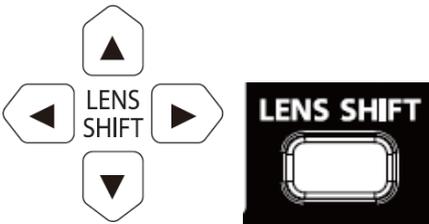
INPUT	PICTURE	ALIGNMENT	CONTROL	SERVICE
Lens Lock			Off	↵/▶
Lens Control				↵/▶
Lens Type			non-UST Lens	↵/▶
Lens Memory				↵/▶
Center Lens				↵/▶
Digital Zoom				↵/▶
Warp				↵/▶
Blanking				↵/▶
Edge Blend				↵/▶
Screen Format			16:10	
EXIT = Back		Item Adjust ◀▶		Scroll ▲▼

- d. Perform Center Lens function to calibrate projection lens by the control button or OSD menu, the calibration can get more precise lens adjustment and move the lens to workable position automatically for the projection.

Note:

- Setting Lens type option to UST Lens will change the default lens position after performing Center Lens function, please select UST Lens in this option if using ultra short throw lens. Otherwise, please select non-UST lens. Improper setting may limit the lens shift range and move the lens to incorrect default position after performing Center Lens function.

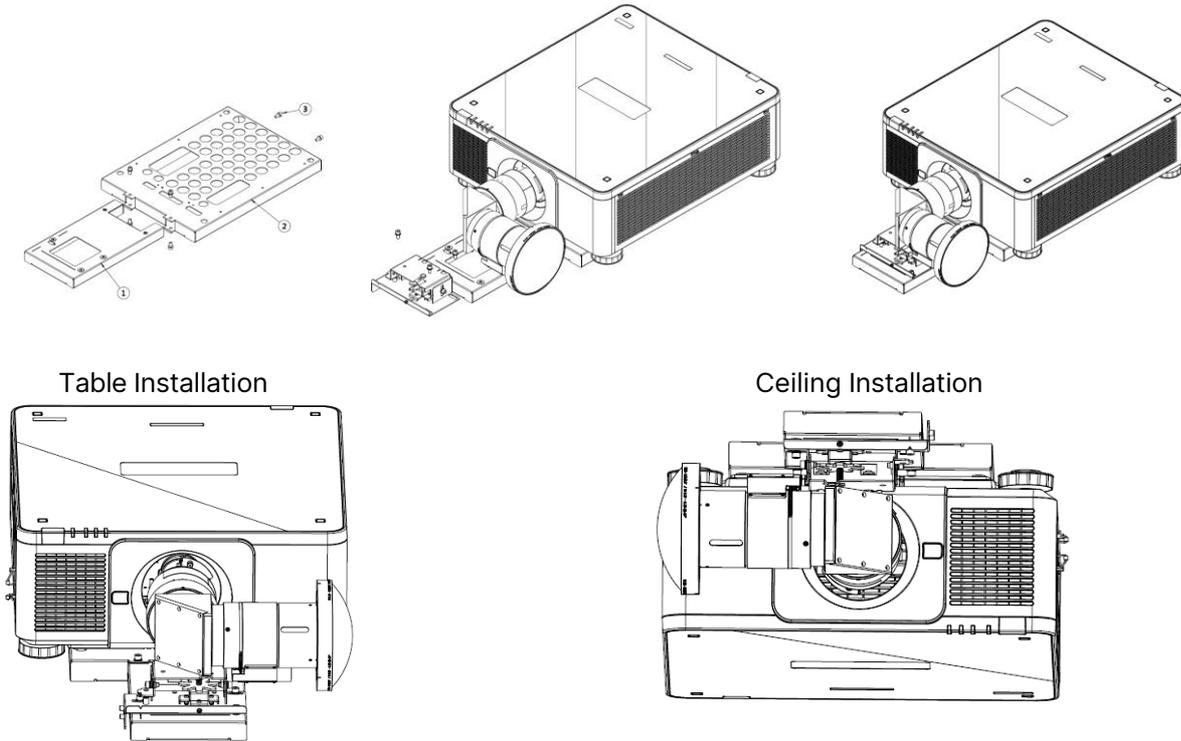
4. Fine tune the projected image position
 The initial position can get best projection performance, some of Vivitek projectors may offers wider adjustable shift range for flexibility in installation, the adjustable shift range are ±5% in horizontal shift, +7% for moving up, -3% for moving down. Please tune the lens shift to desired position by Lens Shift buttons on the control panel or remote control, and check the projection performance.



Note:

- Make sure to loosen the screws at the joints of support kits before fine tuning the lens position or performing Center Lens function, improper operation may cause to malfunctioned Lens shift or damage the projection lens.

5. Tighten the screws to fix the projection lens
Hold the lens and lift it a little in the opposite direction of gravity and use wrench to tighten each screw according to the sequence as below illustration.

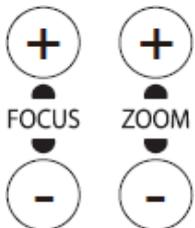


Note:

- The projection lens is fixed firmly after you tighten the screws; make sure to loosen all of the screws on the support kits before operating Lens Shift or Lens Center function.
- Some of Vivitek projectors may offer wider adjustable shift range for flexibility in installation, the initial position by Center Lens can get best projected performance please check the performance of the projected image if adjusting the lens position.

6. Adjust the focus and focus plane.

The lens is equipped with powered adjustment for the focus and focus plane, you can adjust the focus effect by ZOOM or FOCUS button on the remote control or control panel.



Focus Adjustment: Adjust focus effect by FOCUS +/- buttons

ZOOM +/- buttons: Adjust the focus plan by ZOOM +/- buttons

- Press FOCUS+ or FOCUS- button and check the focus effect on central area of the screen till the image becomes clear and the focus effect is acceptable.
- Check top and bottom area of the projected image if the image is clear. If not, press ZOOM+ or ZOOM – button to adjust the focus plane to get the clear image on top or bottom area.
- Repeat a and b till full image becomes clear.

Note:

- For best projection effect, recommend to use flat screen and place the projector in parallel with the projector. The image may be distorted if the projection screen is not flat or not in parallel with the rear of projector,
- Check if the support kit is installed properly if the projection image is not clear after adjusting the focus and focus plane.

7. Lock the Lens control

If your projector is with Lens Lock function on OSD, recommend to lock the Lens Control for avoiding disoperation or unauthorized lens adjustment after you finish the installation and adjustment.

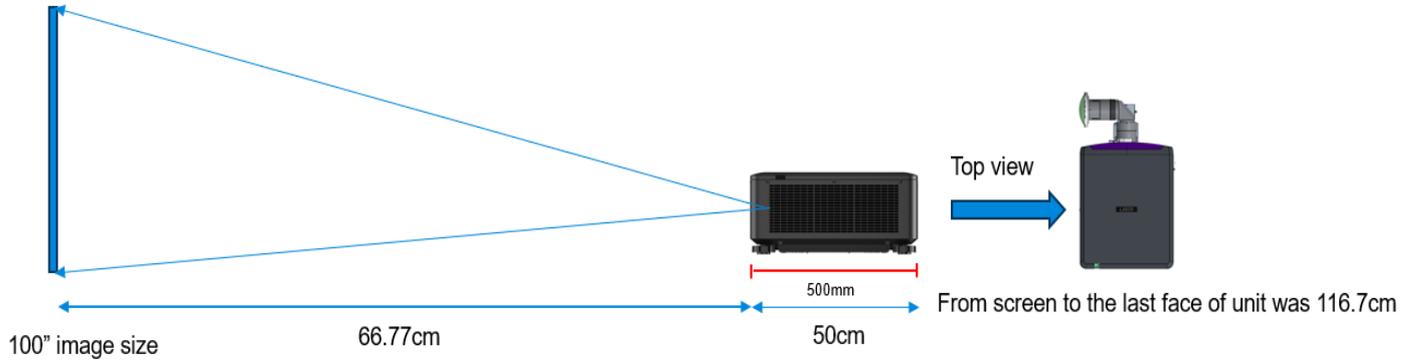
INPUT	PICTURE	ALIGNMENT	CONTROL	SERVICE
			Lens Lock	Off ↔/▶
			Lens Control	↔/▶
			Lens Type	non-UST Lens ↔/▶
			Lens Memory	↔/▶
			Center Lens	↔/▶
			Digital Zoom	↔/▶
			Warp	↔/▶
			Blanking	↔/▶
			Edge Blend	↔/▶
			Screen Format	16:10
EXIT = Back		Item Adjust ◀▶		Scroll ▲▼

Note:

- After the projection lens is fixed by support kit, improper lens shift operation may cause to imprecise lens shift adjustment or damage. Before adjusting the lens position, please make sure all of hex socket cap screws at the joints are loosen, the arm or bracket can be moved.
- In case of disoperation on lens control function happens, please detach the hex socket cap screw then perform Center Lens function to calibrate the lens parameter for precise lens adjustment.

Projection Distance and Size

Project Distance and Image Size



Screen Size						Distance from screen			
Diagonal Size		Width		Height		Wide		tele	
inch	cm	inch	cm	inch	cm	inch	m	inch	m
60	152	50.9	129	31.8	81	15	0.38	16	0.41
80	203	67.8	172	42.4	108	21	0.53	22	0.56
80	203	67.8	172	42.4	108	21	0.53	22	0.56
100	254	84.8	215	53.0	135	26	0.67	28	0.72
120	305	101.8	258	63.6	162	32	0.81	34	0.87
150	381	127.2	323	79.5	202	40	1.02	43	1.10
200	508	169.6	431	106.0	269	54	1.38	58	1.48
250	635	212.0	538	132.5	337	68	1.73	73	1.86
300	762	254.4	646	159.0	404	82	2.09	88	2.25
400	1016	339.2	862	212.0	538	110	2.80	119	3.01
100	254	84.8	215	53.0	135	26	0.67	28	0.72

$$y = 0.00710x - 0.04257$$

x: Diagonal Size of Screen (inch)

$$y = 0.00765x - 0.04873$$

y: Throw Distance (m)

Optical performance
range 80"~300"

ME adjustable range
60"~400"



Projection Lens Specifications

F Value	2.0
Focus Length(f)	5.64mm
Throw Ratio	0:377:1, WUXGA, at 100" screen
Image Size (Minimum/ Maximum Image Diagonal)	100" – 350"
Focus Adjustment	Powered focus and focus plane adjustment
Dimensions	310(W) x 378(D) x 168(H)mm
Net Weight	Approx. 2.7Kg



Projection Lens Dimensions

(Unit: mm)

