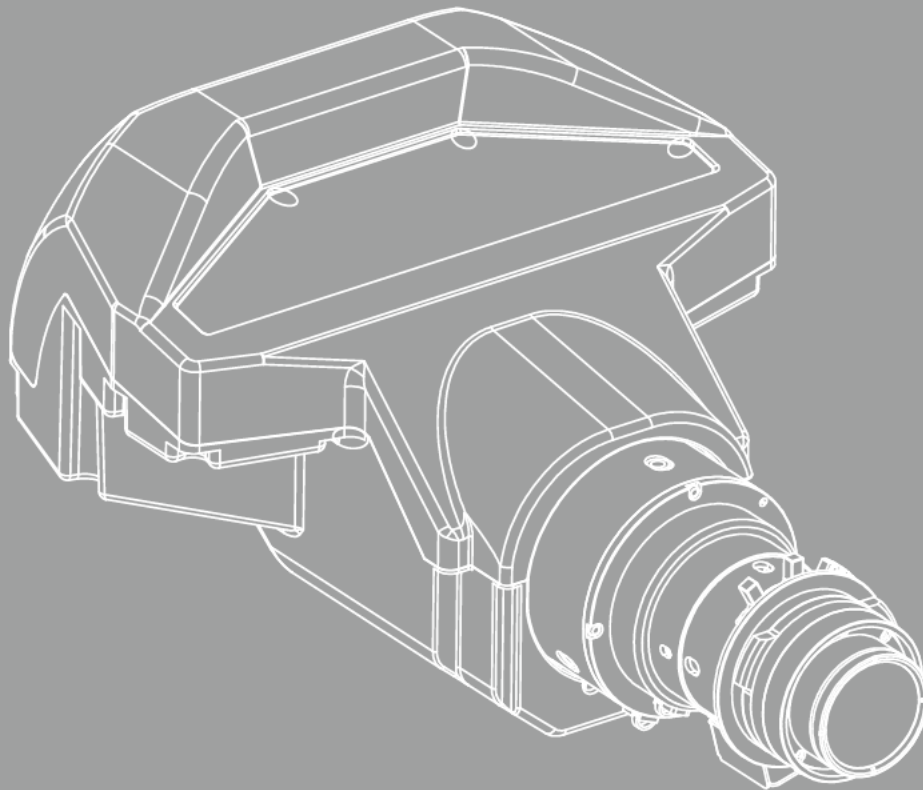


# A16 UST Lens



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# A16 UST LENS INSTALLATION INSTRUCTION

This user manual is designed to assist with the installation of the BX-CTA16 UST lens in your Optoma projector. Before attempting to fit the UST lens, please read through this document in full order to ensure installation steps are made correctly.

## Required accessories and tools

Check that the following items (A-L) are included in the package. Prepare the required tools to install each item.

Item	Image	Name of item	Quantity
A		UST lens	1
B		UST lens boresight module	1
C		Lens mount bracket	1
D		Bracket	1
E		Lens supporter	1
F		M3 x L8 screws	2
G		M3 x L8 hex screws	3
H		M6 x L22 hex screws	2
I		M3-3.7 x 0.8 x 18 washer	3
J		M6-6.7 x 1 x 16 washer	2
K		Boresight extender	3
L		L shape tool	1

## Entering UST mode for installation setup

To complete the UST lens setup, follow the steps below.

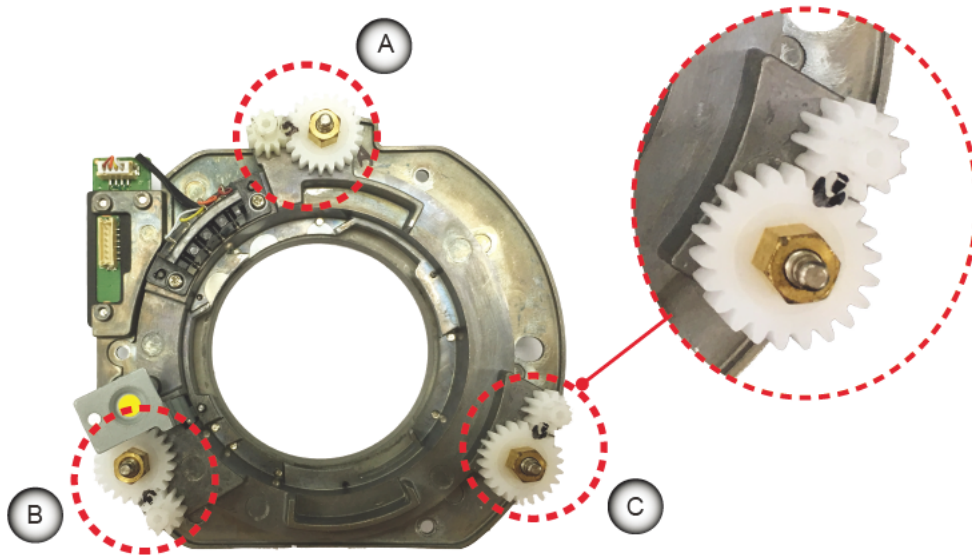
1. Use the hot keys “Exit, Input, Left, Right” on the keypad or Remote control to do UST lens calibration.
2. After UST lens calibration, press “Exit” to turn off the projector.
3. Disconnect the AC cable.

## Boresight pre-adjustment

The UST lens boresight module needs to be adjusted before fitting to the projector.

1. Make sure the boresight gears are in the initial state. If not, turn the small boresight gears counter-clockwise to the end position, where 2 marks are roughly aligned.
2. Turn the boresight gears clockwise according to the installation orientation.

**Note:** The ZU850 has a different orientation table from ZU660 and ZU1050.



ZU850			
Orientation	A	B	C
Table top	3 + 1/4	9	9
Portrait (L)	6 + 3/4	7	10 + 3/4
Portrait (R)	5 + 1/4	10 + 3/4	6
Ceiling mount	10 + 2/4	7 + 1/4	7 + 1/4
Upright	10 + 3/4	8 + 1/4	8 + 2/4

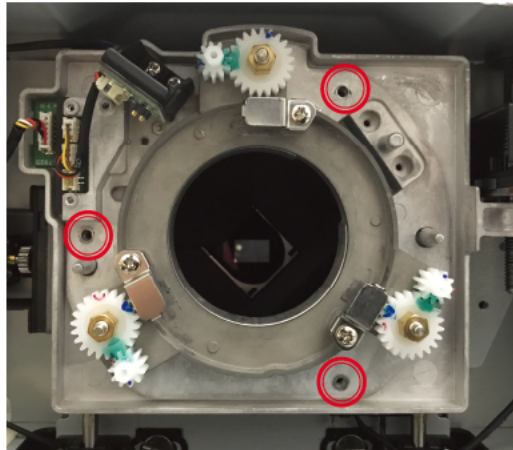
ZU1050 / ZU660 / ZU750 / ZU860			
Orientation	A	B	C
Table top	3 + 1/4	7 + 2/4	8 + 2/4
Portrait (L)	5 + 1/4	4	10
Portrait (R)	5 + 1/4	9 + 2/4	4 + 2/4
Ceiling mount	7 + 1/4	6	6
Upright	7 + 2/4	7	7 + 1/4



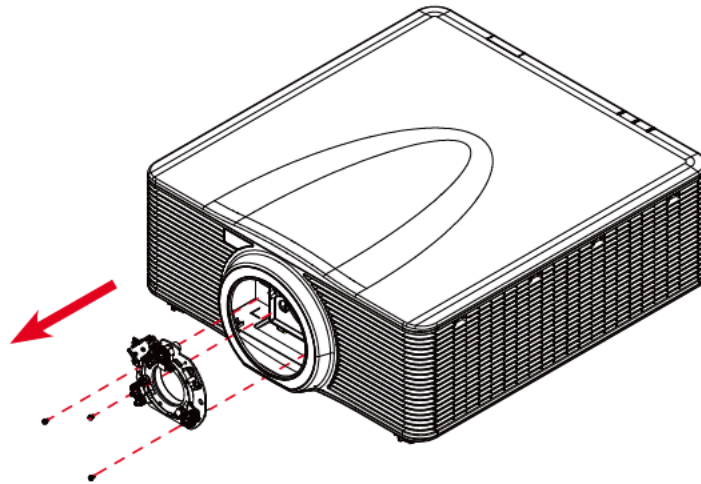
## Installing UST lens boresight module

To install UST lens boresight module, complete the following steps.

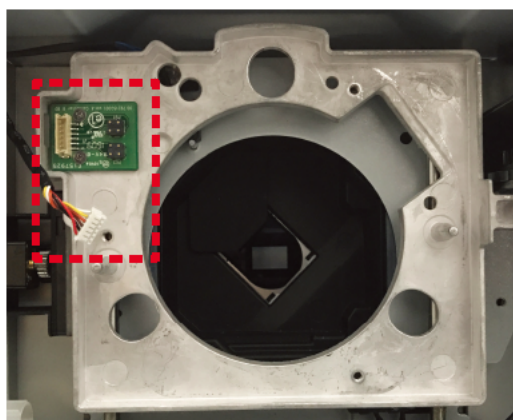
1. Remove the 3 screws with a Philips #2 screwdriver from the non-UST lens boresight module.



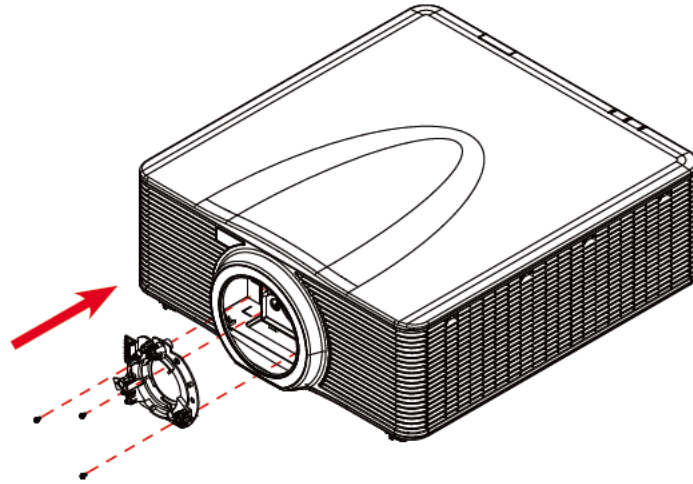
2. Release the non-UST lens boresight module from the projector.



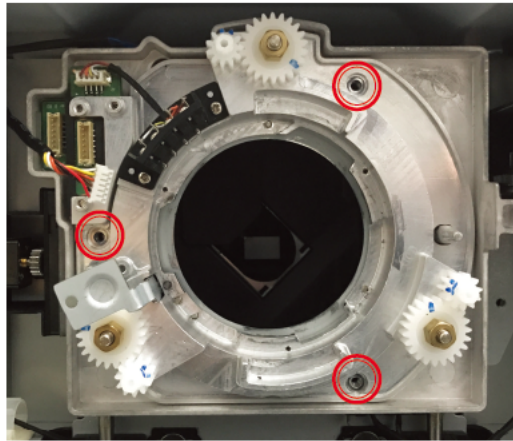
3. Release the lens cable from the original holder on the plate.



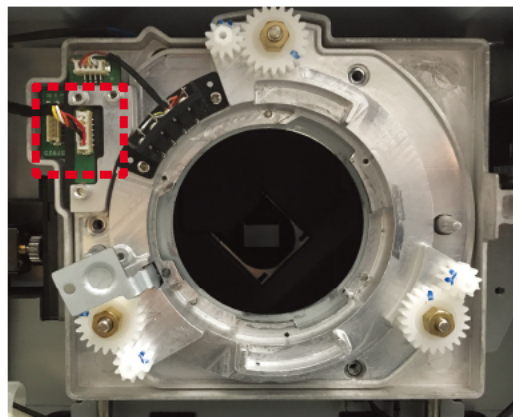
4. Insert the UST lens boresight module to the projector.



5. After installing the UST lens boresight module, fasten the 3 screws with a Philips #2 screwdriver.



6. Insert the cable back into the UST lens boresight module.



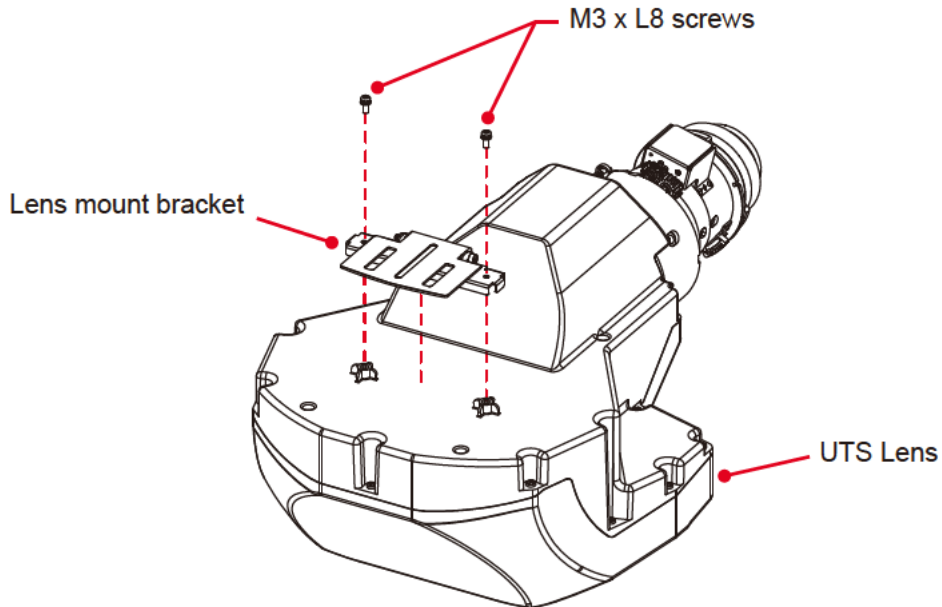
**Note:** Ensure the cable is not wrapped or pinched when fastening the UST lens boresight module.

## Installing the lens supporter

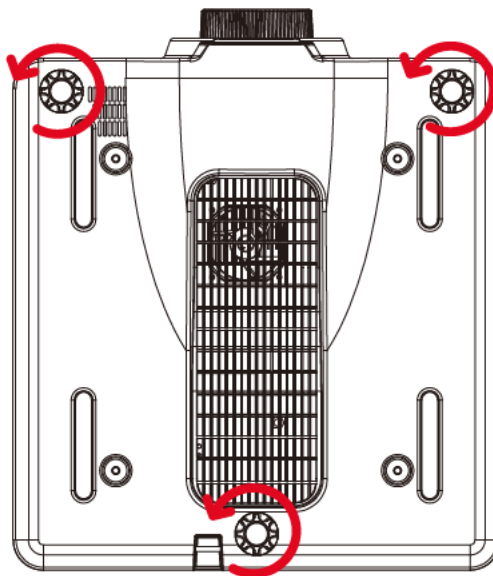
An additional lens supporter is required for this lens. Complete the following steps to install the lens supporter.

1. Place the lens and projector upside-down on the cushioned surface.
2. Use a Philips #2 screwdriver to fasten the lens mount bracket on to the UST lens with two M3 x L8 screws.

**Note:** Ensure the arrow on lens mount bracket is facing out from the lens mount.

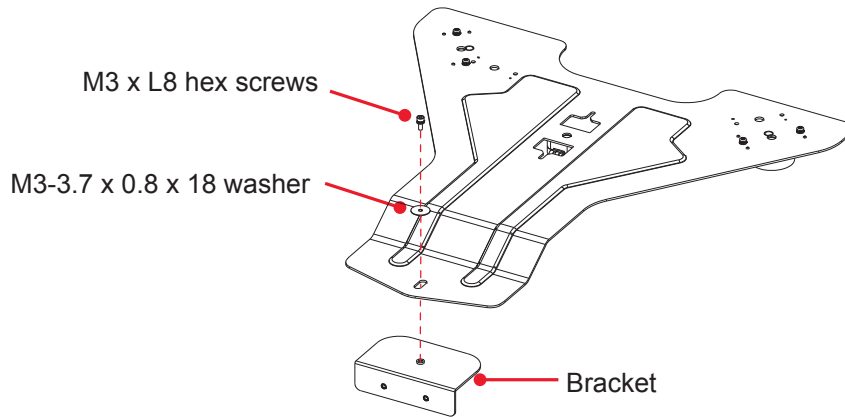


3. To avoid the lens supporter touching the surface, rotate the adjustment feet counter-clockwise for at least 5 turns.

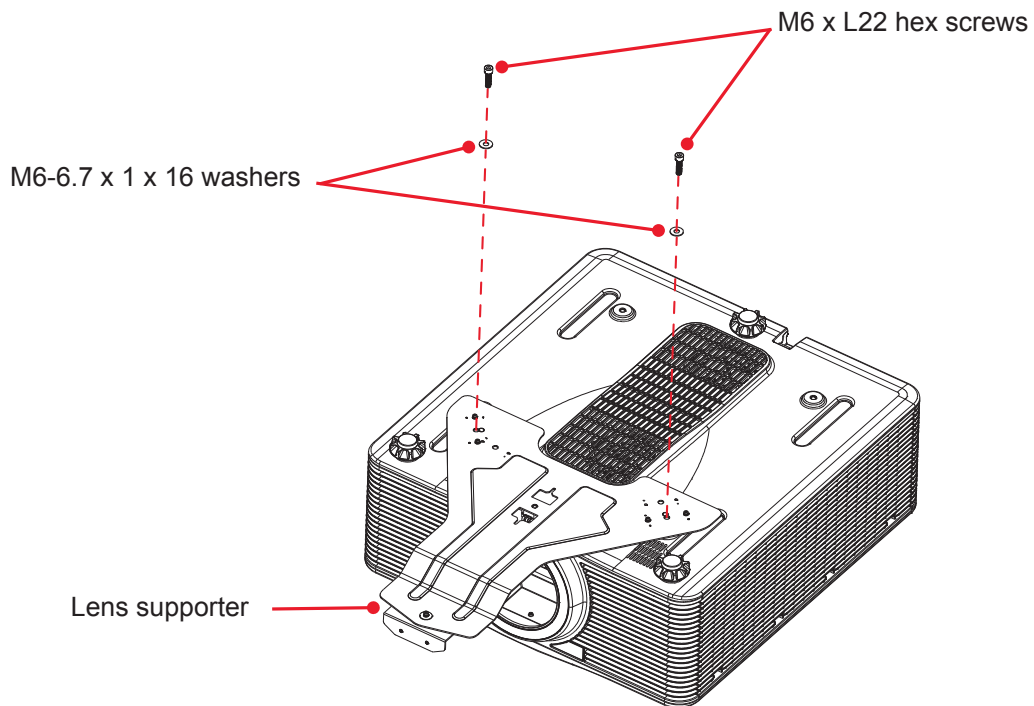


- Use a 2.5 mm Allen key to attach the bracket on to the lens supporter with one M3 x L8 hex screw and one M3-3.7 x 0.8 x 18 washer.

**Note:** Do not fully tighten the screws until the lens has been installed.



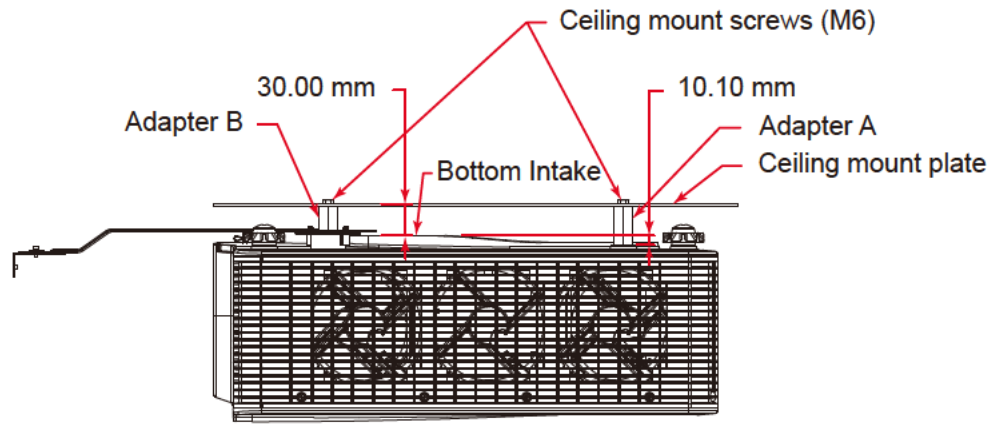
- Attach the lens supporter to the bottom of the projector. Use a 5 mm allen key to fasten the lens supporter on to the mounting holes with two M6 x L22 hex screws and two M6-6.7 x 1 x 16 washers.



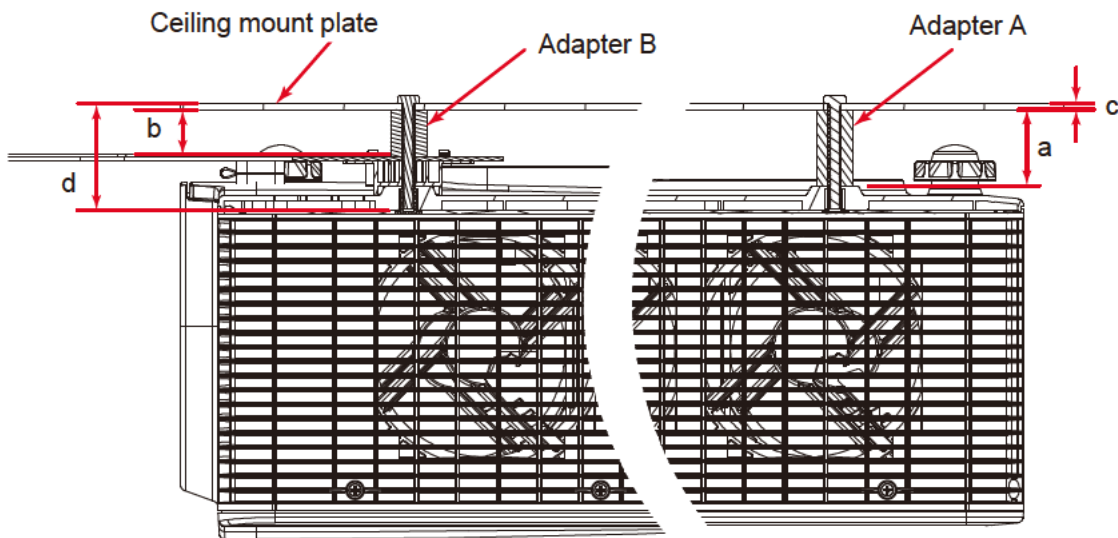
# Installing ceiling mount with lens supporter

To install this lens in ceiling mount, complete the following steps.

**Note:** Due to thermal requirement, user needs to keep at least 30mm between the ceiling mount plate and bottom intake. Furthermore, user would need to prepare adapter A, adapter B, M6 ceiling mount screws and ceiling mount plate that are not included in the package list.



1. Remove two M6 x L22 hex screws and two M6-6.7 x 1 x 16 washers from the mounting holes.
2. Insert adapter B between the lens supporter and the ceiling mount plate, and insert adapter A between the projector and the ceiling mount plate.
3. Fasten the ceiling mount plate onto the lens supporter using the M6 ceiling mount screws.



**Note:**

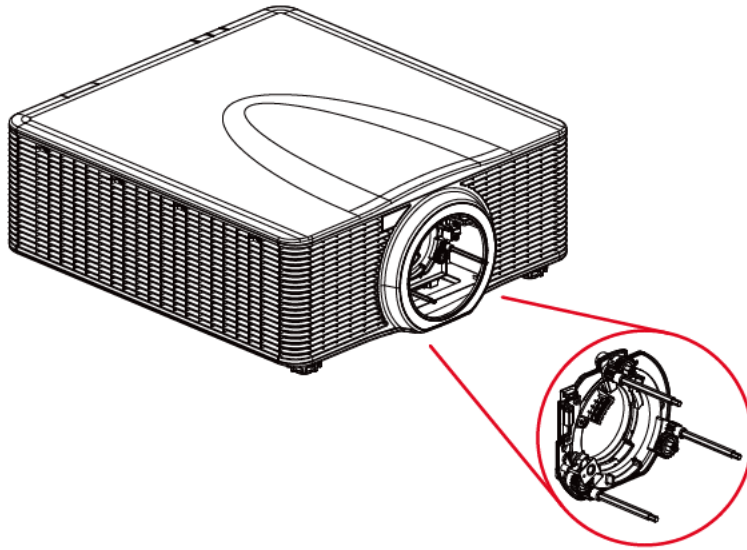
1. Adapter A should be at least 40.1 mm long.
2. Adapter B should be the length of adapter A minus the length between lens supporter and projector. The length between the lens supporter and projector is 15.15 mm.
3. Determine the thickness of the ceiling mount plate in order to have the length of the M6 screws for ceiling mount. M6 screws for ceiling mount should be the length of adapter A plus thickness of ceiling mount plate plus 10 mm.



## Installing the UST lens

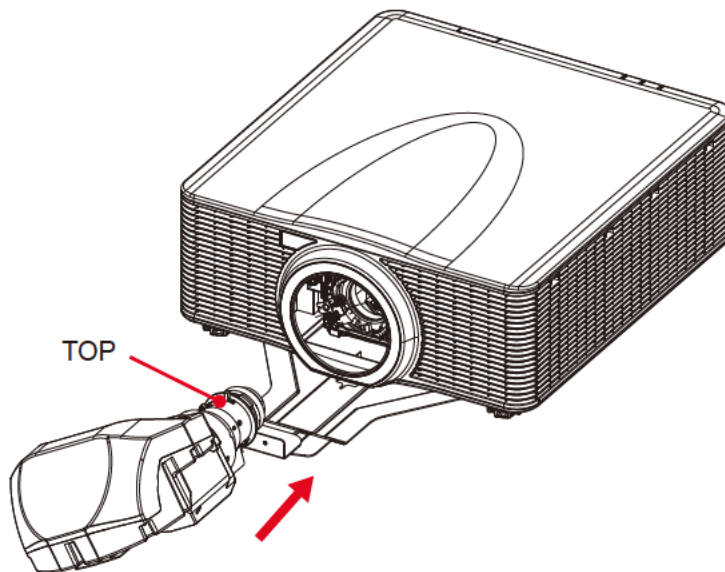
Follow the steps below to install the UST lens.

1. To fine-tune the boresight, insert the boresight extenders before installing UST lens.

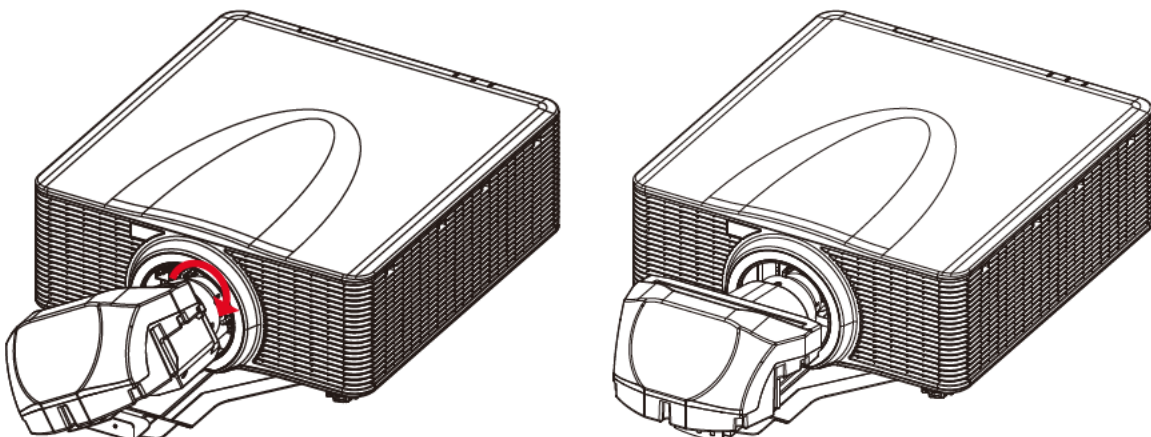


2. Insert the UST lens.

**Note:** Align the TOP mark with the top of projector when inserting the UST lens.



3. Rotate the lens clockwise to lock UST lens.



## Turning the projector on

To turn on the projector after UST lens has been installed, follow the steps below.

1. Connect the AC cable and ensure the power is switched on.
2. Ensure the lens correctly installed in the projector.
3. Ensure no personnel or no object is in the beam path before projector turning on.
4. Turn on the projector by pressing the power key on the remote controller or on the projector's built-in keypad.

## Image adjustment

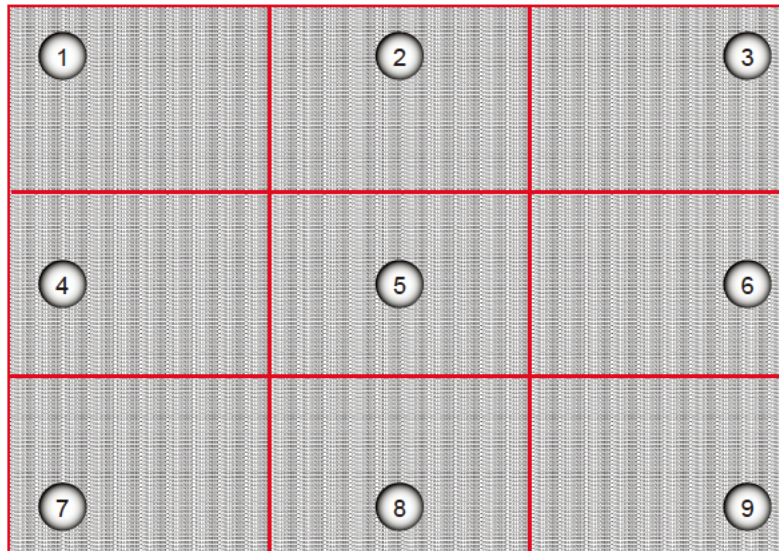
Please note the items below when completing the initial image adjustment.

1. Limited lens shift is allowed.
2. Source input is not available.
3. If Lens Focus Adjustment does not make the image clear, follow the steps in Boresight Adjustment for boresight fine-tuning.
4. Press "Pattern" to switch test patterns.
5. Press "Exit" to exit this adjustment process.

## Lens focus adjustment

To make up the tolerance between lens and DMD chips, user would need to adjust back focus to make the screen distinct. "ZOOM" button on remote control is for back focus length adjustment and "FOCUS" button is for floating focus adjustment.

1. Adjust back focus length to make the area of point 5 clear and sharp.



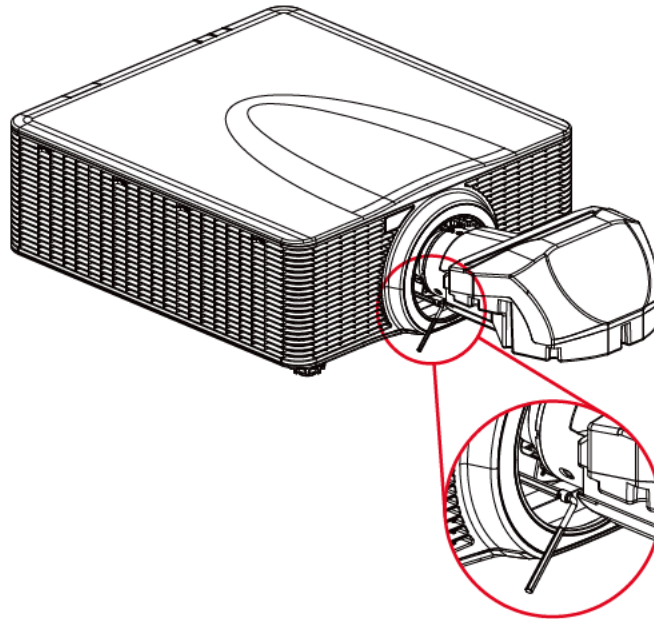
2. Adjust focus to make screen corners (point 1, 3, 7, and 9) clear and sharp.
3. Repeat step 1 and step 2 on full screen to balance center and corner resolution.



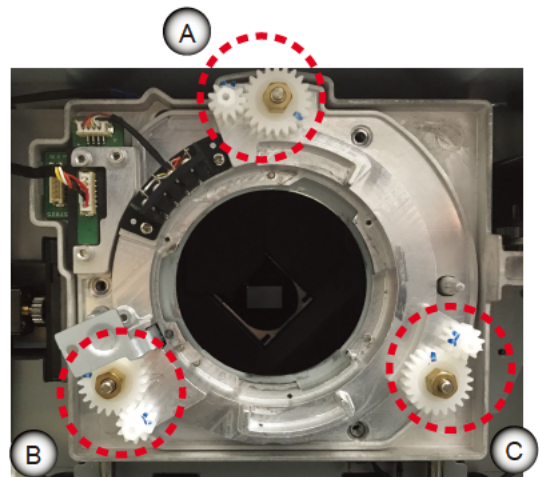
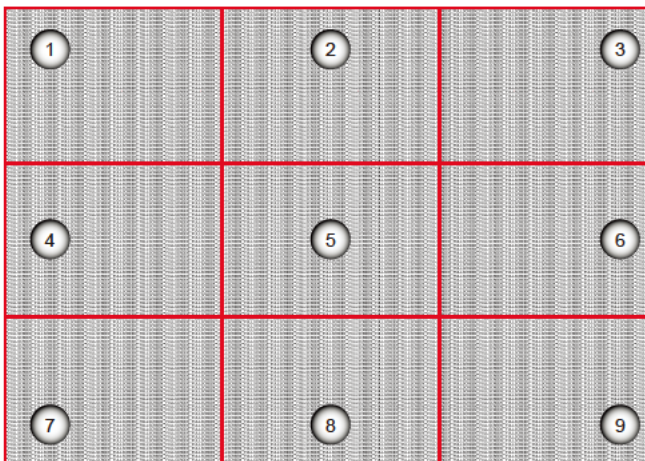
## Boresight adjustment

**Note:** If further tuning is required, follow the steps below. Otherwise, move to the next section.

To complete fine tuning of the image, adjust the boresight gears using the L shape tool. Make sure that the boresight extenders are installed.



1. Adjust boresight gear B using the L shape tool to focus screen point 4 and 7.
2. Adjust boresight gear C using the L shape tool to focus screen point 6 and 9.
3. Adjust Zoom/Focus to make screen point 1 to 3 clear.
4. Adjust boresight gear A using the L shape tool to make screen point 8 visible.
5. Repeat steps 1 - 4 to balance center and corner resolution.

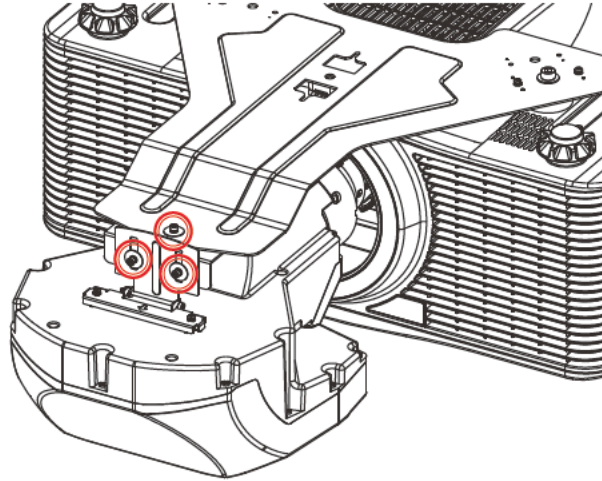




## Attaching the lens supporter to the UST lens

After image adjustment is completed, attach the lens supporter to the UST lens. Follow the steps below to complete the processes.

1. Attach lens mount bracket to the bracket.
2. Fasten the two M3 X L8 hex screws using the 2.5 mm allen key without putting excessive force on the UST lens, bracket and lens supporter.
3. Fasten the M3 X L8 hex screws fully using the 2.5 mm allen key to connect the bracket and lens supporter in to the final position.

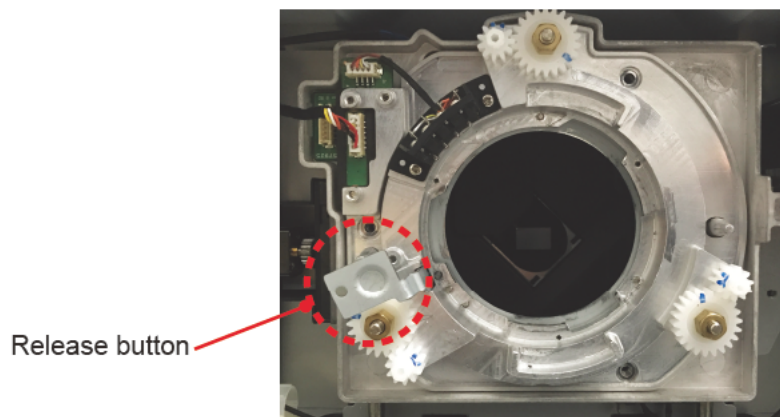


**Note:** To avoid affecting the projected image, do not use any force whilst fastening the screws.

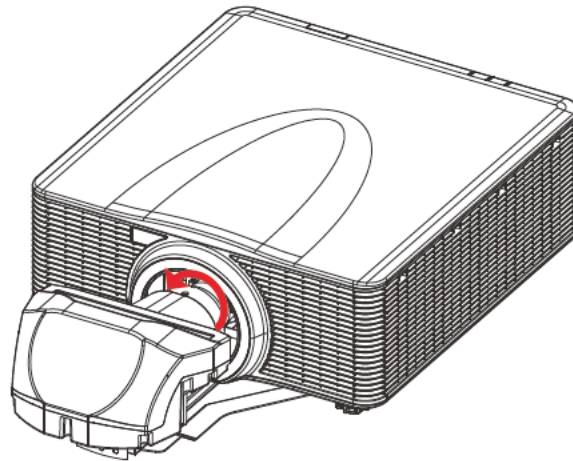
## Removing the UST lens

Follow the steps below to remove the UST lens.

1. Press the lens release button.



2. Rotate the lens counter-clockwise by a quarter and remove the UST lens.



## Change back to the non-UST lens after using the UST lens

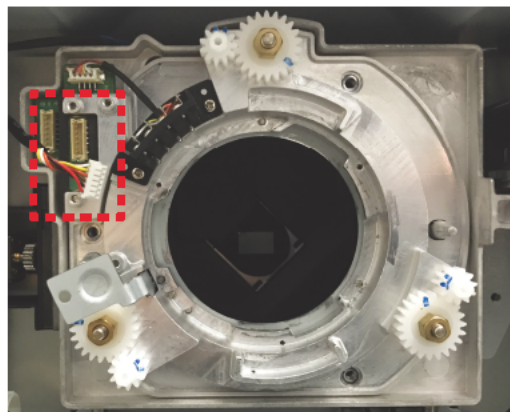
To install non-UST lens, follow the steps below.

1. In the projector menu, follow these steps to switch back to non-UST mode: Option > Service > UST Lens Install > None.  
**Note:** To enter service menu, enter the service password.
2. Turn off the projector.
3. Disconnect from AC power.
4. Remove the UST lens. See “Removing the UST lens” on page 13.
5. Replace the UST lens boresight module with the non-UST boresight module. See “Releasing the UST lens boresight module” on page 14.
6. Change back to the non-UST lens.
7. Power on the projector with AC power on.
8. Complete the lens calibration process by pressing “Lens, Enter” on keypad or “Lens H or Lens V, Enter” on remote control.

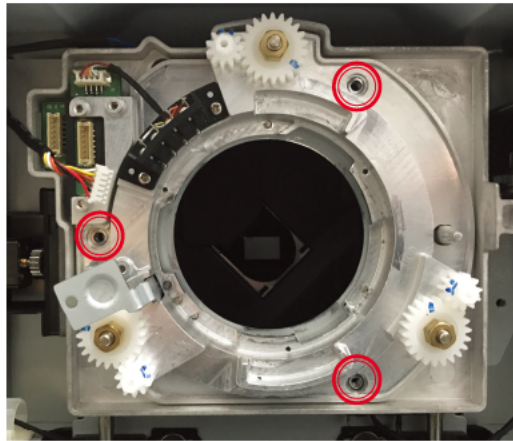
## Releasing the UST lens boresight module

To uninstall the UST lens boresight module, follow the steps below.

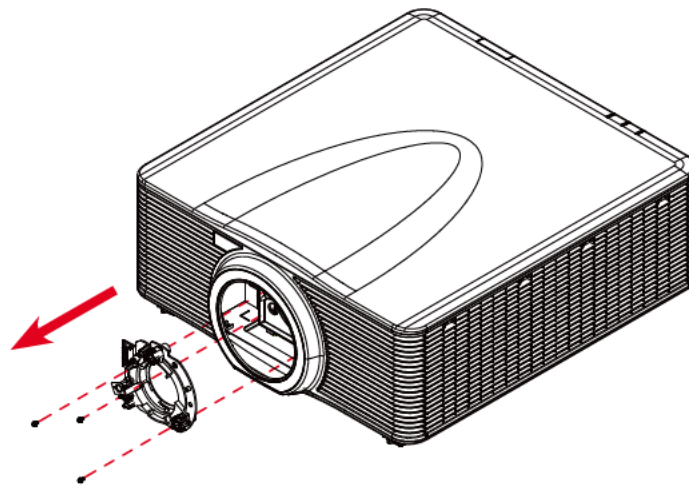
1. Release the lens cable from the UST lens boresight module.



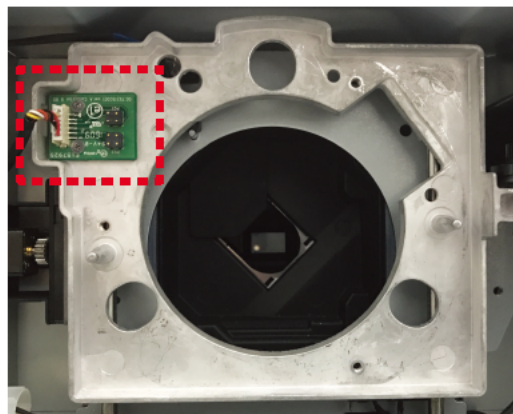
2. Remove 3 screws using a Philips #2 screwdriver on the UST lens boresight module.



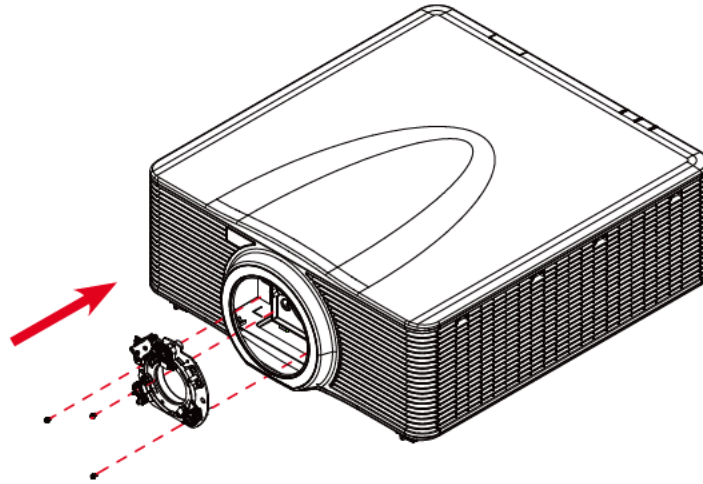
3. Release the UST lens boresight module from the projector.



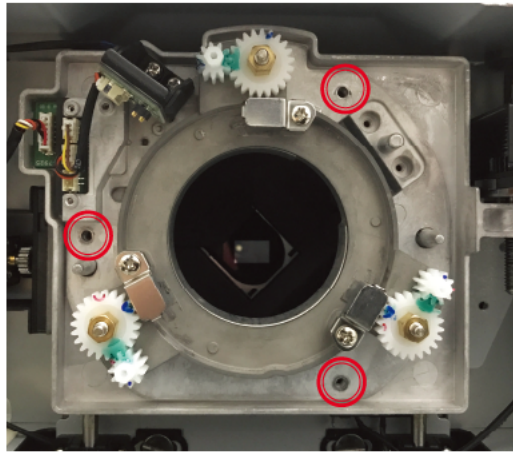
4. Insert the cable back into the lens shift plate.



5. Insert non-UST lens boresight module back into the projector.



6. Fasten the module using 3 screws with a Philips #2 screwdriver.






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