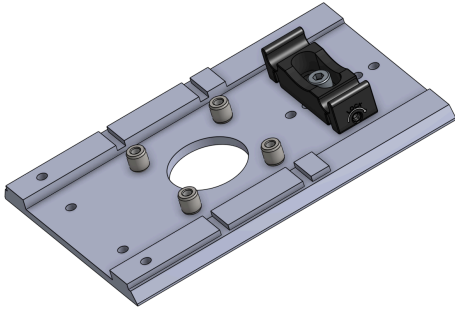


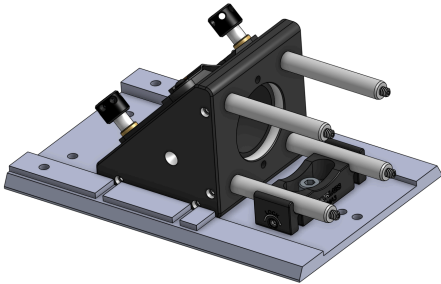
# Assembly guide of Ex2p

## Step 1

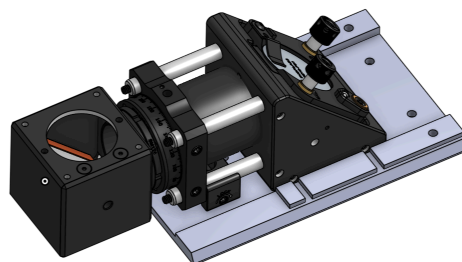
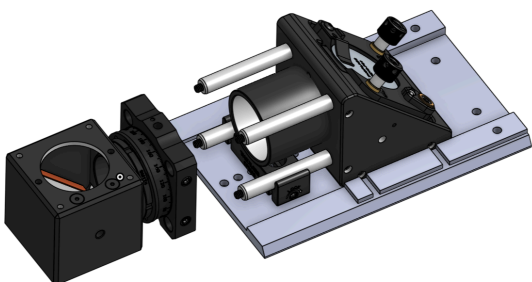
1. Secure the four ER025 rods on plate\_N1 with #4-40 low head screw.
2. Secure the CPMA3 into plate\_N1 with an M4 6 mm screw.



3. Install the Elliptical Mirror (PFE10-P01) into the KCB1EC/M.
4. Connect the four ER1.5 rods into the KCB1EC/M (Remove the set screws before connect).
5. Connect the plate\_N1 and KCB1EC/M. Secure the KCB1EC/M with side screw.
6. Secure the ER1.5 with the set screw of CPMA3.



7. Connect the SM1L10 and KCB1EC/M.
8. Connect the CRM1T/M and CCM1-P01/M with SM1T4.



## Step 2

9. Secure the main unit to the microscope.
10. Secure the laser beam profiler or IR viewer target to the CM1-DCH/M (a beam profiler is recommended).
11. Center the scan mirrors of the two-photon microscope.
12. Open the shutter and emit the IR laser. Adjust the mirror on the KCB1EC/M so that the laser is centered on the laser beam profiler. Continue adjusting until the laser remains centered even when the distance along the optical axis to the laser beam profiler changes.
13. Close the shutter to stop the IR laser.
14. Adjust the angle of the objective lens.

## Notes:

- Be careful not to touch the adjustment screws on the KCB1EC/M after alignment.
- Briefly check the alignment before an experiment.
- When tilting the objective lens, loosen the lock screw(s) on the CRM1T/M, adjust the angle as needed, and then secure it.

## Parts list

Company	Product ID	#	Detail
Thorlabs	SM1A34	1	SM1A34 - Adapter with External SM1 Threads and Internal M32 x 0.75 Threads
	KCB1EC/M	1	KCB1EC/M - Right-Angle Kinematic Elliptical Mirror Mount with Smooth Cage Rod Bores, 30 mm Cage System and SM1 Compatible, M4 and M6 Mounting Holes
	PFE10-P01	1	PFE10-P01 - 1" Protected Silver Elliptical Mirror, 450 nm - 20 µm
	CCM1-P01/M	1	CCM1-P01/M - 30 mm Cage Cube-Mounted Protected Silver Turning Mirror, M4 Tap
	SM1L10	1	SM1L10 - SM1 Lens Tube, 1.00" Thread Depth, One Retaining Ring Included
	ER025	4	ER025 - Cage Assembly Rod, 1/4" Long, Ø6 mm
	ER1.5-P4	1	ER1.5-P4 - Cage Assembly Rod, 1.5" Long, Ø6 mm, 4 Pack
	CRM1T/M	1	CRM1T/M - Cage Rotation Mount for Ø1" Optics, SM1 Threaded, M4 Tap
	SM1T4	1	SM1T4 - SM1 (1.035"-40) Coupler, External Threads, Fixed Shoulder and Locking Ring
	CPMA3	1	CPMA3 - Snap-On 30 mm Cage Mounting Bracket, #8 (M4) Slot
DIY parts	Ex2p_plate_N1	1	
Other	#4-40 low head cap screws	4	
	SPW502	1	SPW502 - Spanner Wrench for Slotted SM05, SM1, and C-Mount Locking Rings
Thorlabs	SM1A34	1	SM1A34 - Adapter with External SM1 Threads and Internal M32 x 0.75 Threads
	KCB1EC/M	1	KCB1EC/M - Right-Angle Kinematic Elliptical Mirror Mount with Smooth Cage Rod Bores, 30 mm Cage System and SM1 Compatible, M4 and M6 Mounting Holes
	PFE10-P01	1	PFE10-P01 - 1" Protected Silver Elliptical Mirror, 450 nm - 20 µm
	CCM1-P01/M	1	CCM1-P01/M - 30 mm Cage Cube-Mounted Protected Silver Turning Mirror, M4 Tap
	SM1L10	1	SM1L10 - SM1 Lens Tube, 1.00" Thread Depth, One Retaining Ring Included