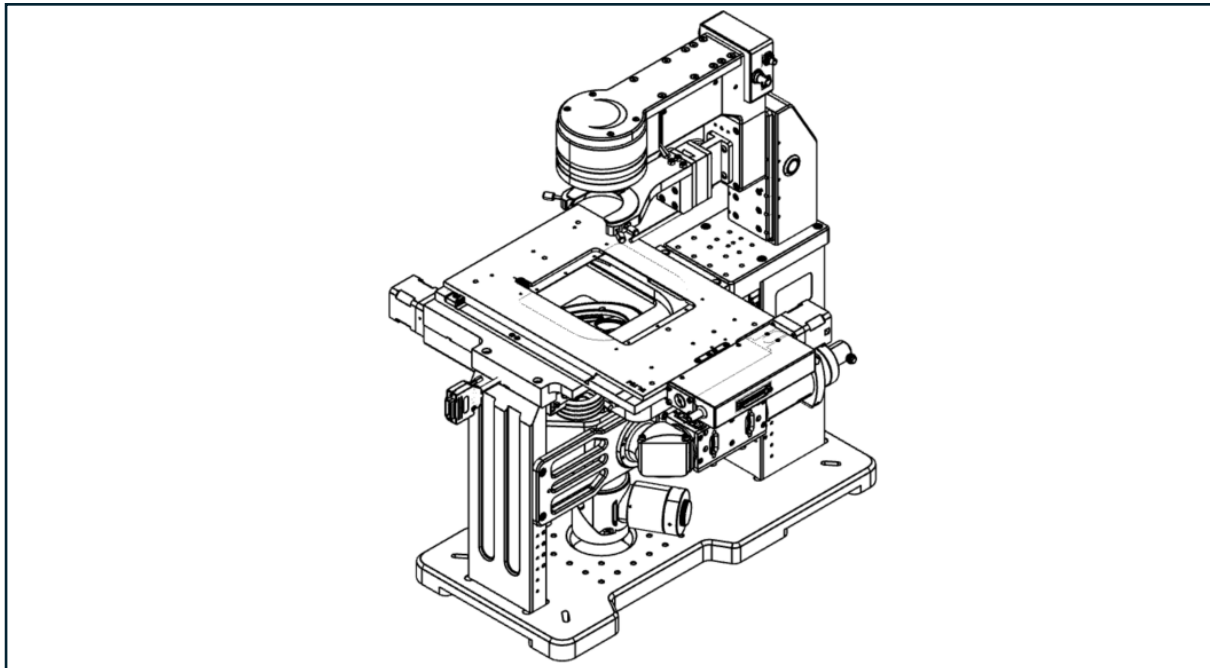


OpenStand-V – User manual



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Safety Information

- Save this manual as it contains important safety information and operating instructions.
- Use only as specified by these operating instructions or the intrinsic protection provided by the unit may be impaired.
- Before using the stage system, please follow and adhere to all warnings, safety and operating instructions located on the product and in this User Manual.
- It is safe for use in an ambient temperature from 5 to 40°C with relative humidity (RH) to 80% up to 31°C decreasing linearly to 50% above 31°C.
- **Do not** expose the product to water or moisture while energized.
- **Do not** expose the product to extreme hot or cold temperatures.
- **Do not** expose the product to open flames.
- **Do not** allow objects to fall on or liquids to spill on the product.
- Make sure the focus cable is located so that it will not be subject to damage.
- Make sure the system is installed so that the focus cable is easily accessible.
- For use in a manner not specified in this manual contact Prior before any work is done.
- To reduce the risk of damage, do not plug or unplug the product from the controller while it is switched on.
- **Do not** attempt to disassemble the product. Doing so will void the warranty. This product does not contain consumer serviceable components. Service should be performed by Authorized Service Centre's.
- Only the exterior of this product should be cleaned using damp lint-free cloth.
- We recommend at least 2 people lifting the system from the packaging. Follow good lifting practice when doing so.

- Some of our actuators are capable of producing forces in excess of 300N. During active use please ensure body parts are kept away from moving parts. Trap hazards may be formed between our actuators and other items in close proximity which are out of our control. Please be aware to minimize this risk during the installation of our equipment into your wider system
- If the sample contain Hazardous material the user must ensure that Good Laboratory Practice is followed.



This warning sign indicates there is a hazardous voltage.



This warning symbol indicates that there is a strong magnetic field



This warning sign indicates that there is a potential hazard – read instructions before continuing



In accordance with The Waste Electrical and Electronic Equipment Regulations, this symbol indicates that the product must not be disposed of as unsorted municipal waste but should be collected separately. Refer to your local authority in the EU for return and/or collection systems available in your country.



Unpacking the system

Carefully unpack the Openstand and accessories. **Retain the packaging should you need to return the unit.** If it appears to be damaged, immediately return it in its original packaging. Prior will not assume liability for damage arising from the use of non-approved packaging.

Ensure all items and accessories specified below are present. If not contact either your sales outlet or Prior directly.

The system includes

Part Number	Description	Quantity
Inverted OpenStand	Inverted OpenStand	1
Stage	Proscan Inverted Stage	1
Proscan 3 Controller	Main Controller	1
Joystick	XY Joystick	1
Digipot	Z Digipot	1



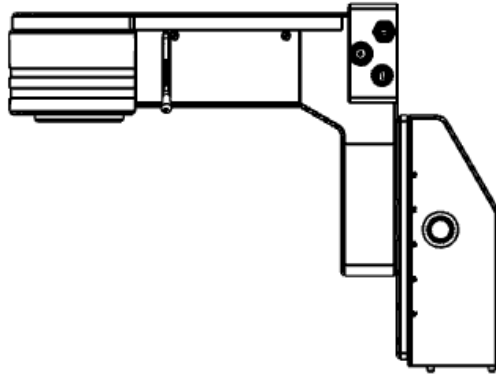
Be careful when transporting the unit.
Lift properly and do not attempt to lift it on your own!



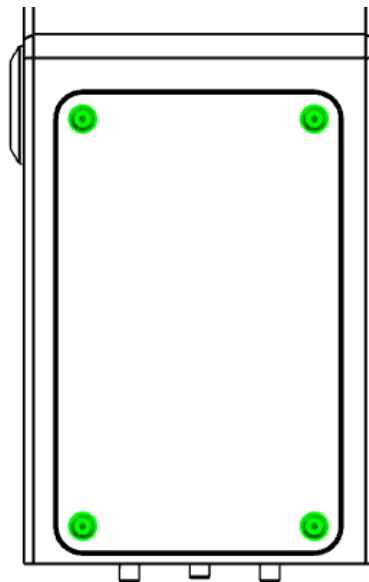
The unit **MUST** be positioned close to the controlling PC terminal, such that the operator has a clear and unobstructed view of Openstand.

Fitting the inverted Openstand Kohler illumination

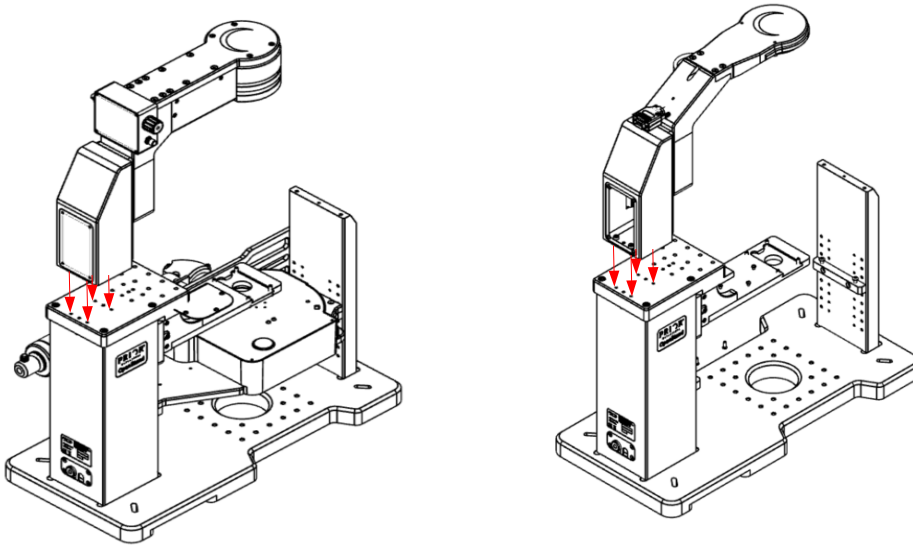
The inverted openstand brightfield kohler unit (HH511LM) will be separately packed to the base unit. To attach the brightfield column:



1. Remove the 4 screws at the back of the column and remove the panel.

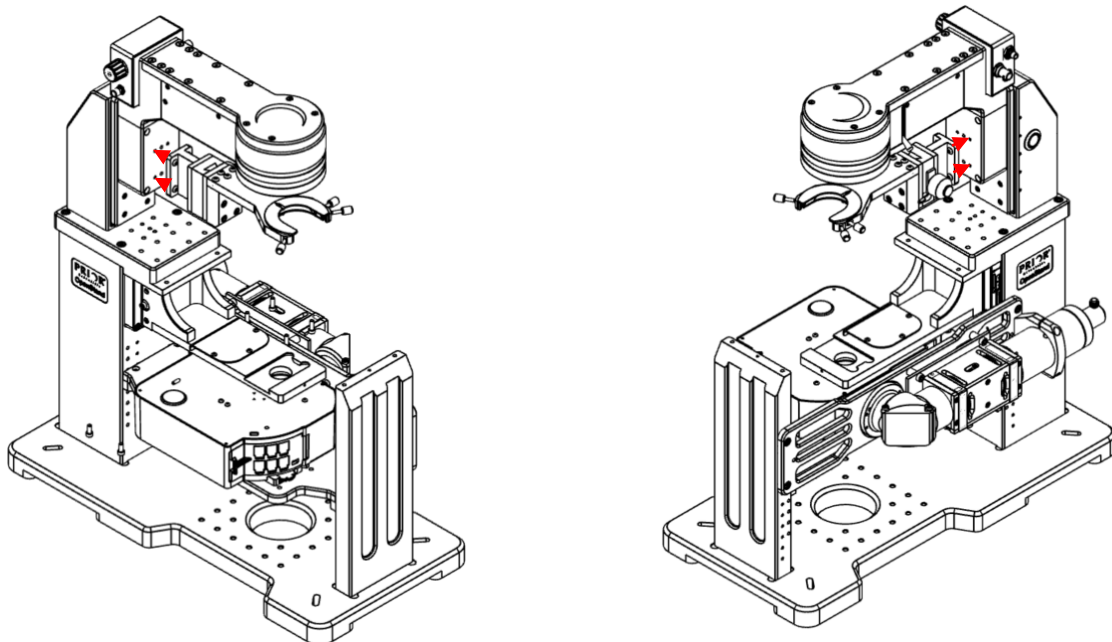


2. Insert M4 x 12mm cap head screws in the column and attach it to the base assembly as shown below.

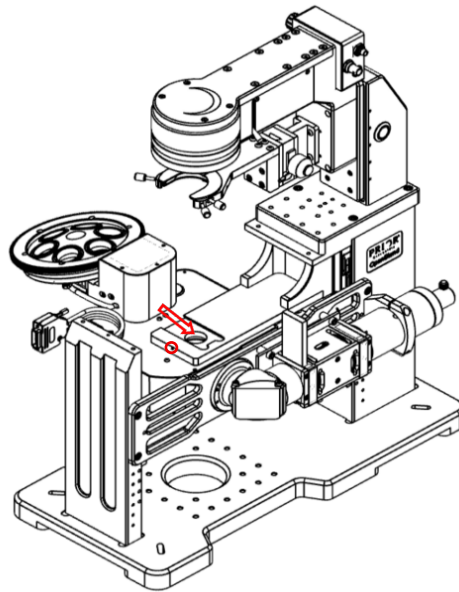


3. Once you have secured the column, screw the panel back on.

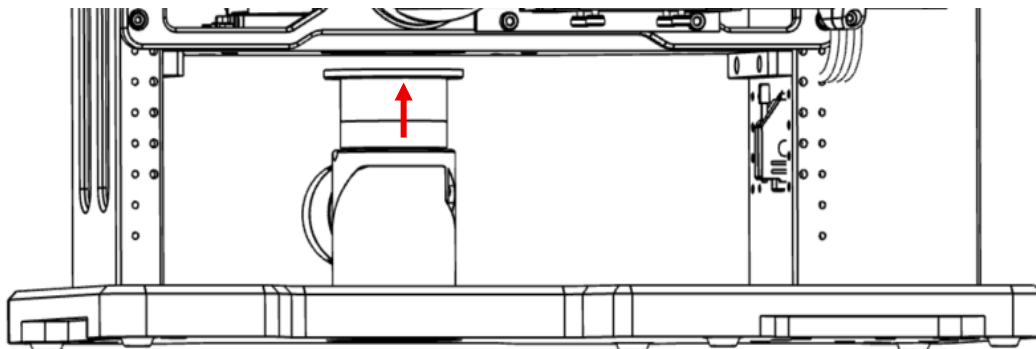
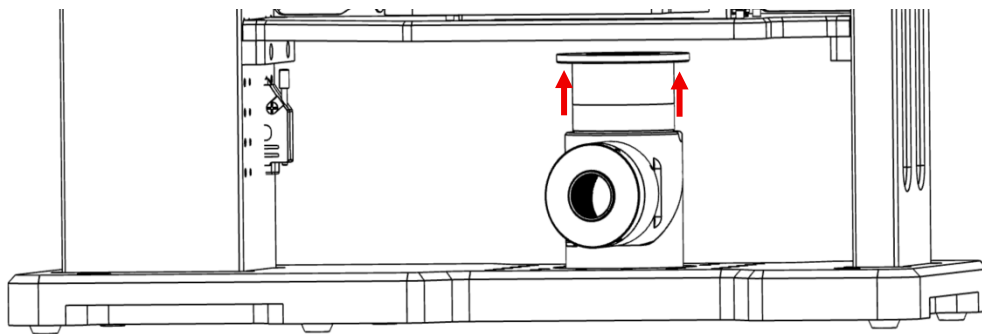
4. Attach the condenser arm (HH380V).



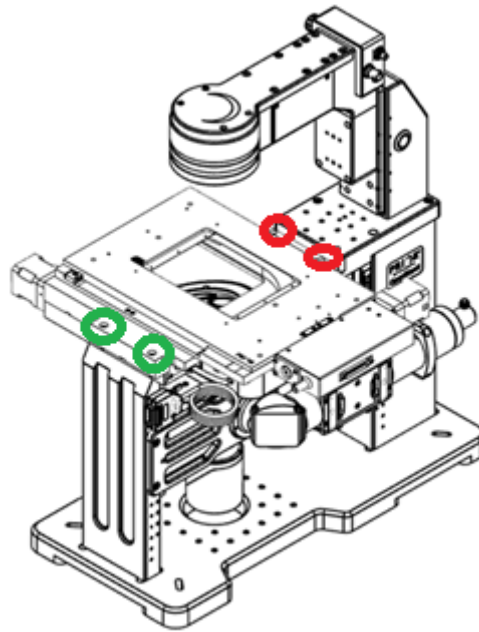
- 5.** Slide the nosepiece fully onto the nosepiece dovetail until resistance is felt and secure the nosepiece by tightening the grub screw using 1.5mm allen key.



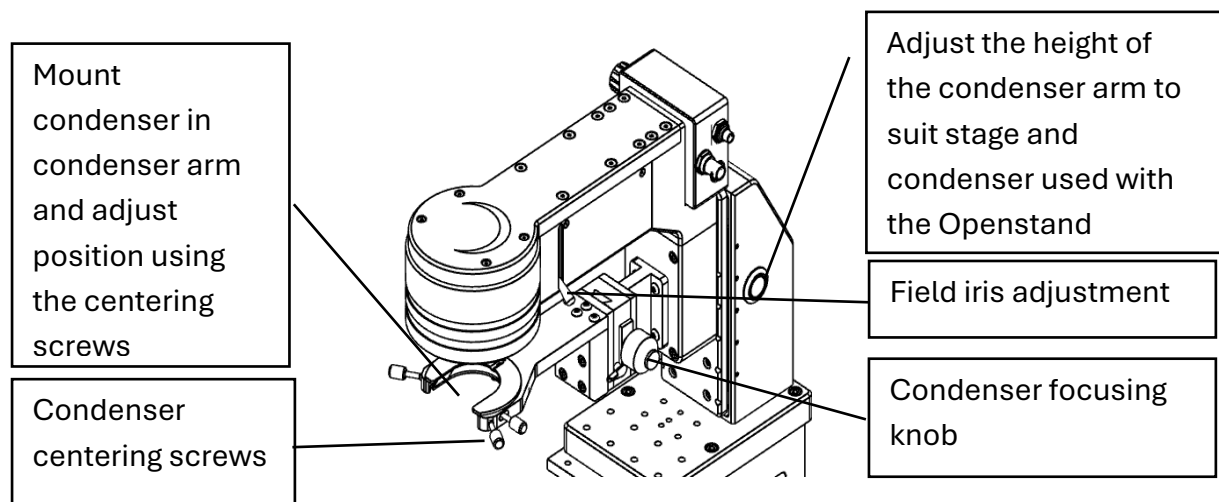
- 6.** Lastly attach the single port tube lens to the bottom of the shelf with 3 x M3 x 8mm countersunk screws provided.



7. Attach the stage on to the inverted Openstand. The screws will be provided with the stage. The M5 x 20mm screws are attached at the back (circled red) and M5 x 25mm screws are attached at the front (circled green).

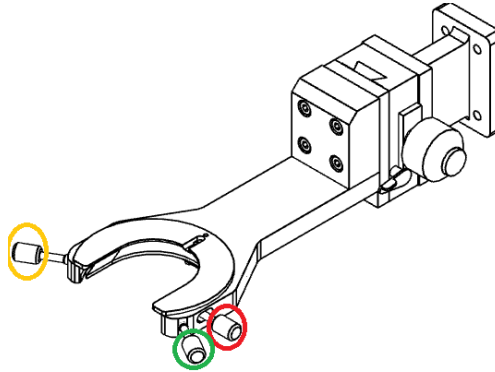


Fitting and adjusting a condenser on H285OIMF

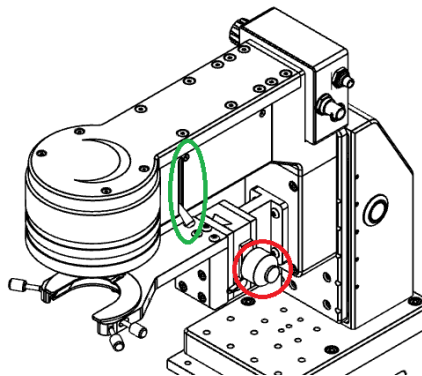


Setting up condenser arm for Kohler illumination – Transmitted light

1. Mount the condenser onto the condenser arm. Use the thumb screw circled in red secure the condenser in position.



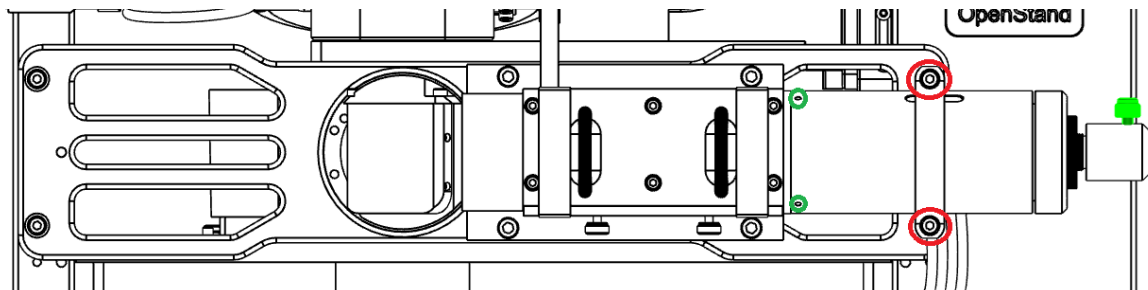
2. Adjust the condenser height (circled in red) so the top lens is just underneath the surface of the slide but not touching.



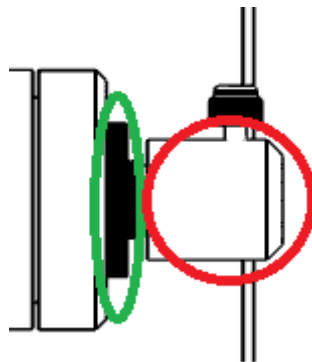
3. Switch on illumination and using a 10x objective focus on the sample.
4. When the sample is in focus, close the field iris to 1/3 of the field of view using the lever on the side of the illuminator (as circled in green).
5. Adjust the height of the condenser until the edge of the field iris are in sharp focus.
6. Using thumb screws circled in orange and green to center the aperture of field iris.
7. Open the field iris until it's just outside the field of view.
8. Adjust the aperture of the condenser to 80% the NA of the objective i.e. 20x NA 0.75 adjust the condenser to read 0.6 NA.

Collimating Liquid Light Guide (required before setting up Kohler Illumination)

1. Remove the 2 screws circled in red. Remove 3 grub screws highlighted in green to remove the collimator from the Openstand. 2 should be visible on one side and the other rotate the tube to reveal the grub screw.



2. Firmly push the light guide into the aperture until it has reached the end-stop and tighten the thumbscrew (highlighted in green) to secure the light guide.

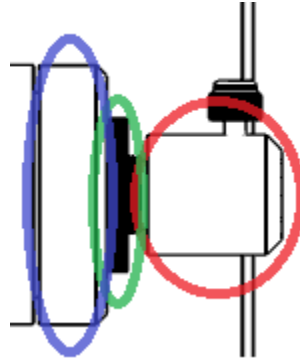


3. The illumination is collimated by adjusting the collimating optics by screwing in/out (circled in red) to focus the beam on a nearby flat surface. Fix this position using the locking ring (circled in green).
4. Reattach the collimator back onto the EPI using the 3 grub screws.
5. The field stops and aperture stops will need to be optimized for Kohler illumination. Please follow the instructions below to set up the Kohler illumination.

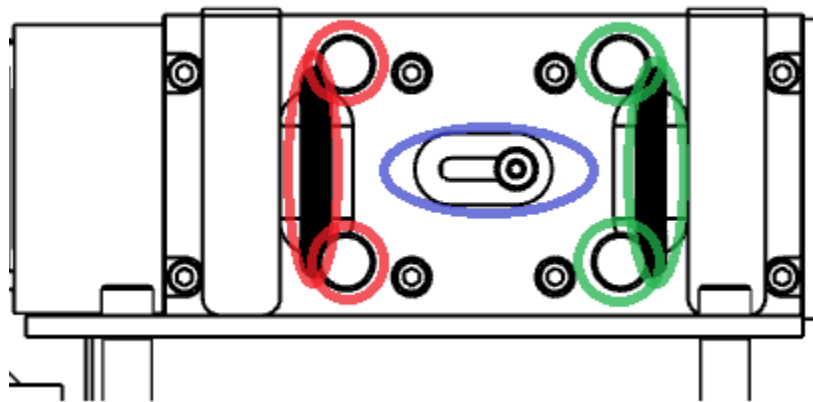
Setting up the Kohler Illumination on EPI

Please note the Field stop/aperture stop adjustments are facing towards the table not the ceiling unlike upright Openstand.

1. The liquid light guide illumination may not be centered in the aperture stop. To correct this, slightly release the black locking piece (circled in blue) of the collimator and the silver lock ring (circled in green). Now the silver lock ring can slide around and be used to center the illumination. Once finished, relock the two parts, being careful not to move the alignment.



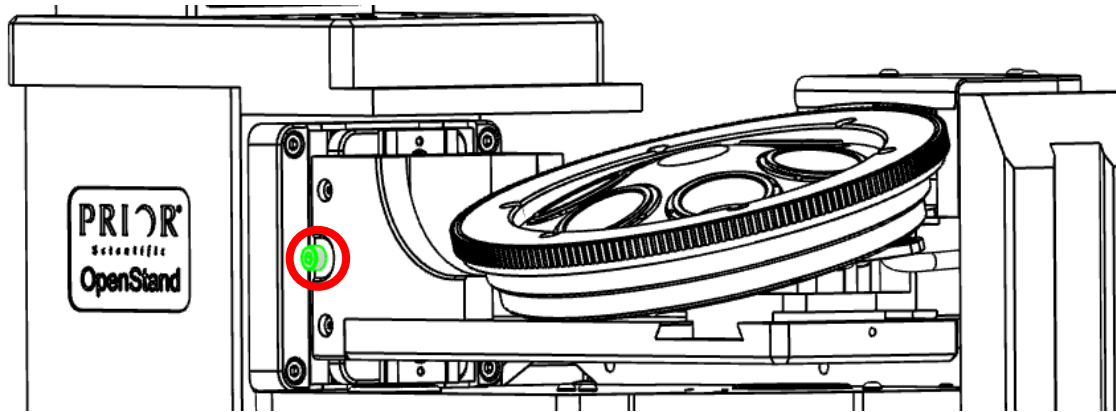
2. To adjust the aperture, stop (circled in green) you will need to see the back focal plane of the objective.



3. Please remove one of your objectives and place a tissue paper or a target at the nosepiece aperture.
4. Adjust the aperture iris and center using two grub screws adjacent to the thumbscrew (circled in green).
5. If the aperture iris is not in focus, use the slider (circled in blue) to focus the iris.
6. Open the iris to 80% of the full aperture to give a contrast to the image.
7. Focus on the sample with the objective.
8. When in focus, adjust the field iris (circled in red). Stop down the iris using the adjusting ring so that the leaves of the iris are in view. Check that the iris aperture is centered.
9. If not, use the two-thumbscrew adjacent to the adjusting ring (circled in red) to center the iris in the field of view. Once centered open the iris until the leaves are just out of the field of view.
10. Kohlering has completed. Replace the objective.

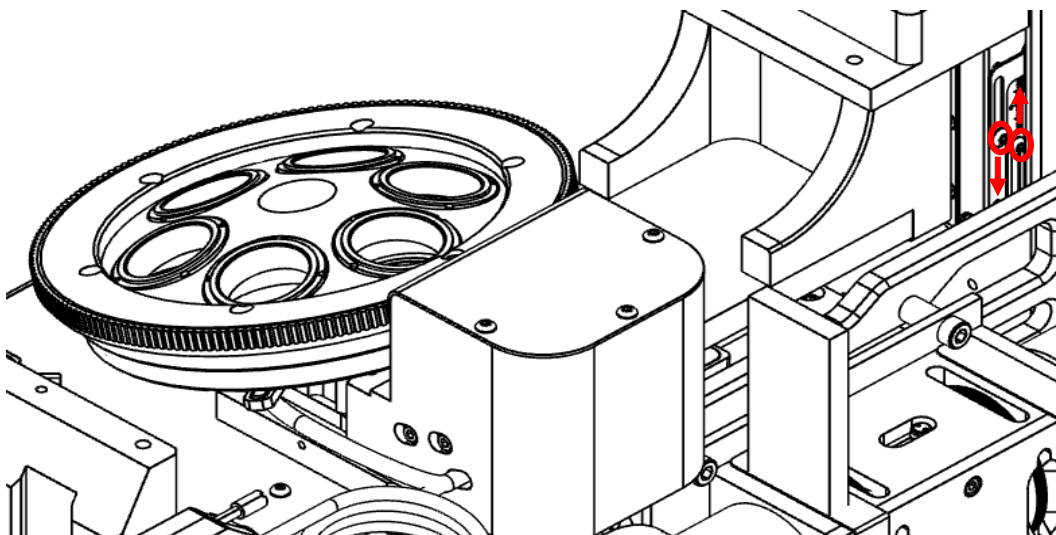
Adjusting the position of the nosepiece arm

To adjust the nosepiece arm dovetail, hold the nosepiece arm with one hand unscrew the T74 (M4 x 16mm) screw highlighted in green slightly you can slide the nosepiece arm dovetail up or down to level that you require. Retighten the screw to secure the nosepiece arm dovetail. The range of movement of the nosepiece arm on the dovetail is around 15mm.



Limiting the Z travel range

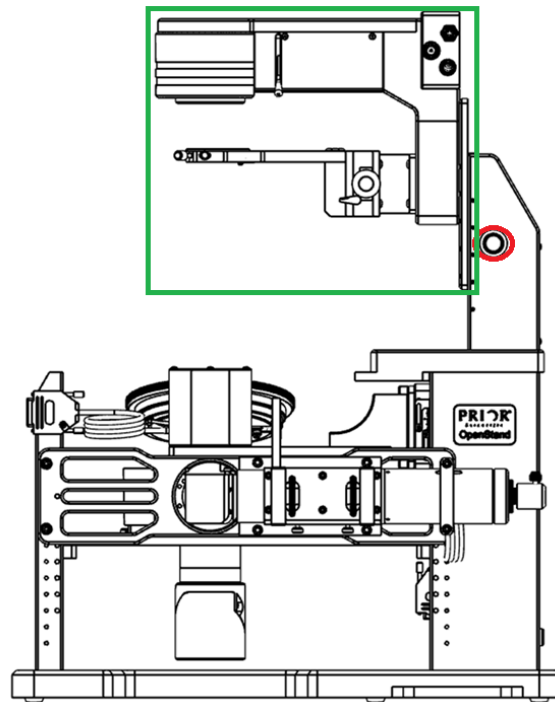
The travel range can be adjusted. There are two limit sliders located behind the nosepiece dovetail. You can either limit the travel going up or the travel going down. The focus block has a total travel range of 20mm, the scale has a 0 reference in the middle, and it is scaled at a 1mm pitch. Unscrew slightly and move either up or down to limit your travel range accordingly and tighten the screw again to secure it in place.



Moving the condenser and illuminator assembly

To move the condenser assembly out of the way when loading/unloading sample.

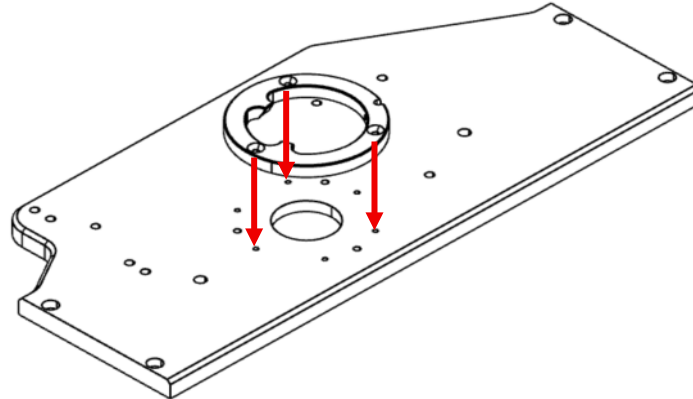
Ensure the condenser is removed from the microscope. Press/hold the button circled in red and lift the entire assembly upwards until you reach a hard stop and release your hand from the button. The condenser + illumination assembly should sit on the stopper at that height.



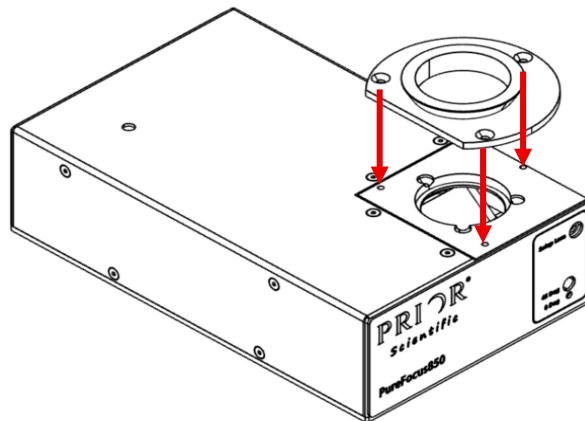
When the loading and unloading of the samples is completed, press and hold the button circled in red and move the entire assembly down till it reaches the hard stop so that the condenser comes back to the correct height.

Fitting PF850 on the Inverted Openstand

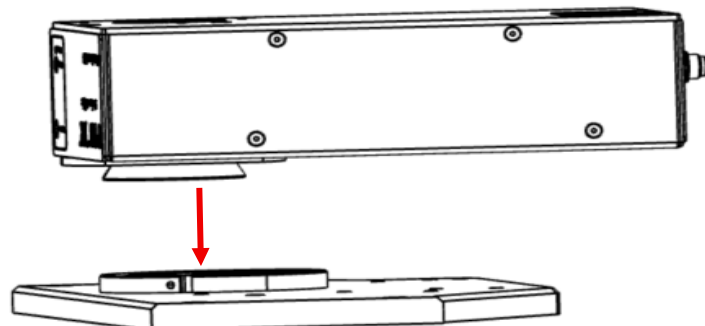
1. Attach the LF522 (male flange of LF335OSV) onto the inverted shelf as shown below using 3 x M3 x 10mm countersink screws.



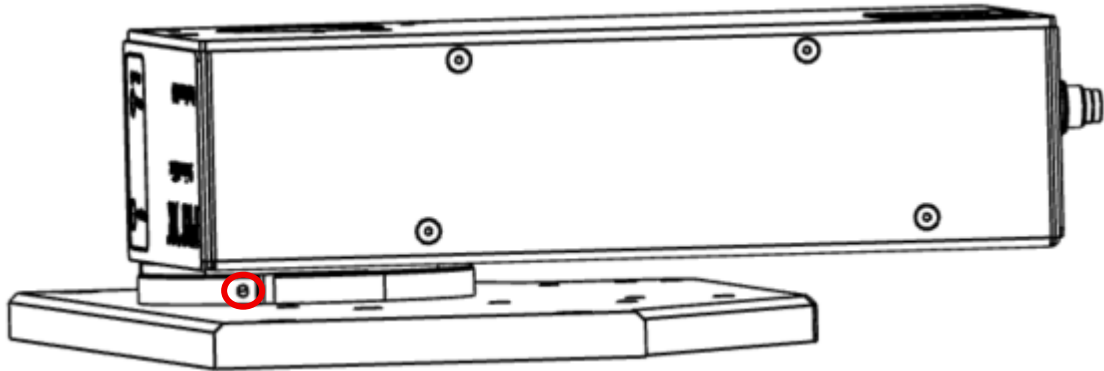
2. Attach the H6070 (the female flange of LF335OSV) to the PF185 head as shown below using 3 x M3 x 6mm countersink screws.



3. Insert the PF185 + H6070 onto the LF522 attached to the inverted shelf.



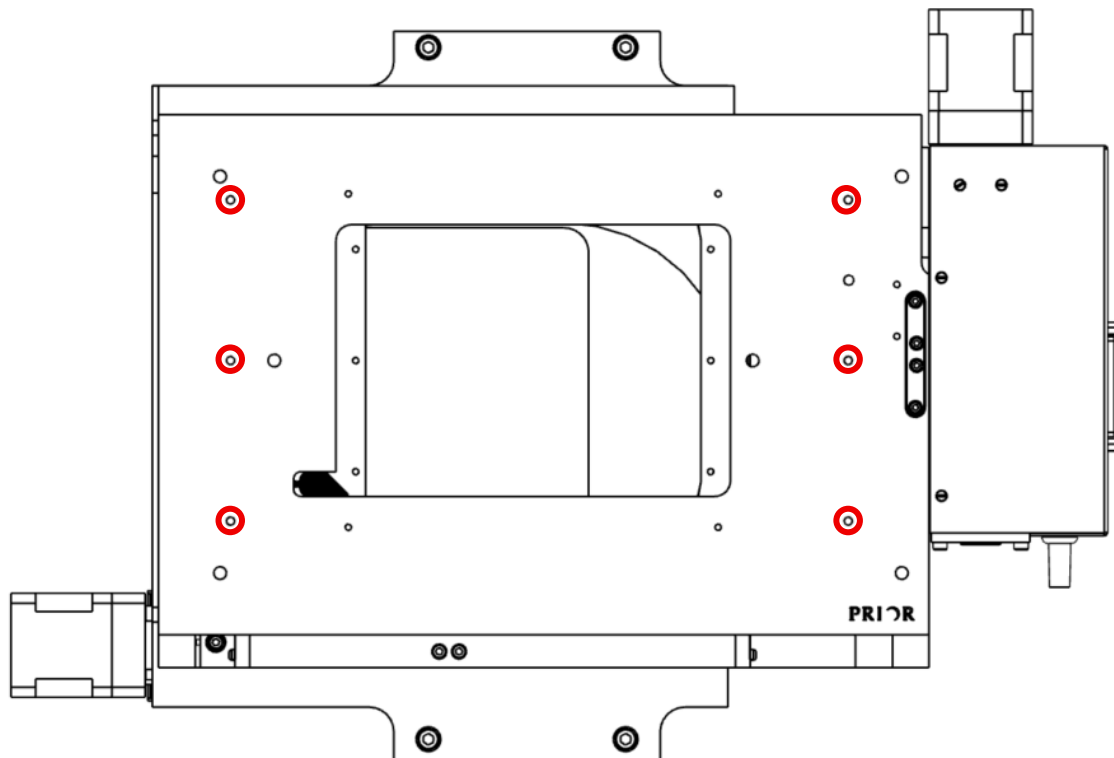
4. Once inserted fully to datum screw in the grub screw using 1.5mm allen key.

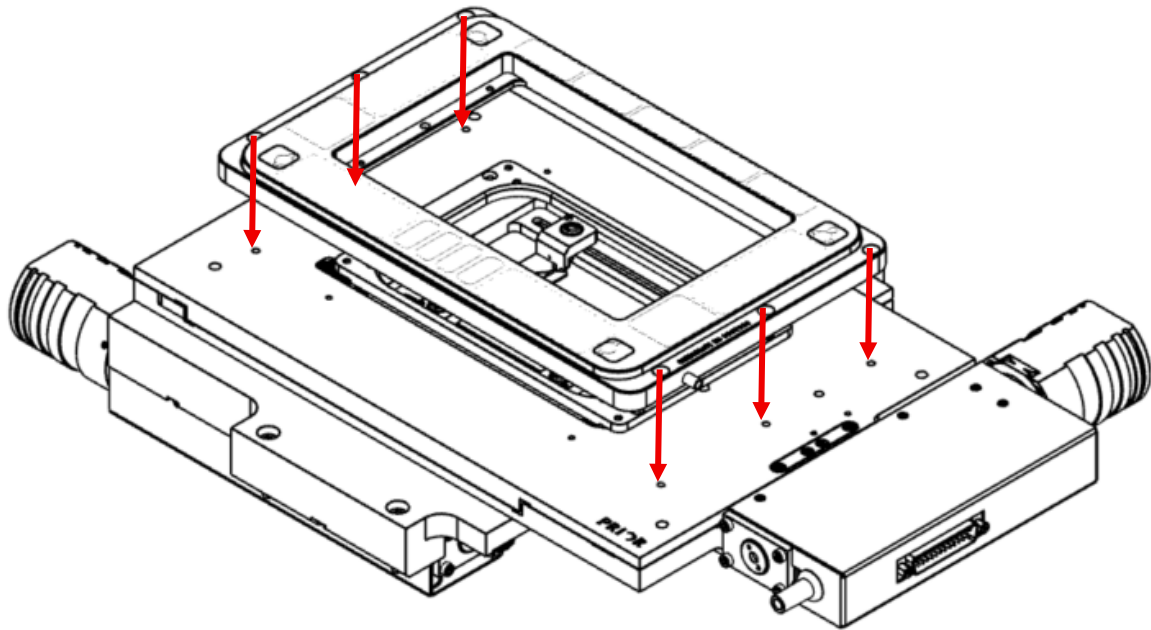


SP and OP mounting on inverted Openstand

SP200/400/600/800 mounting

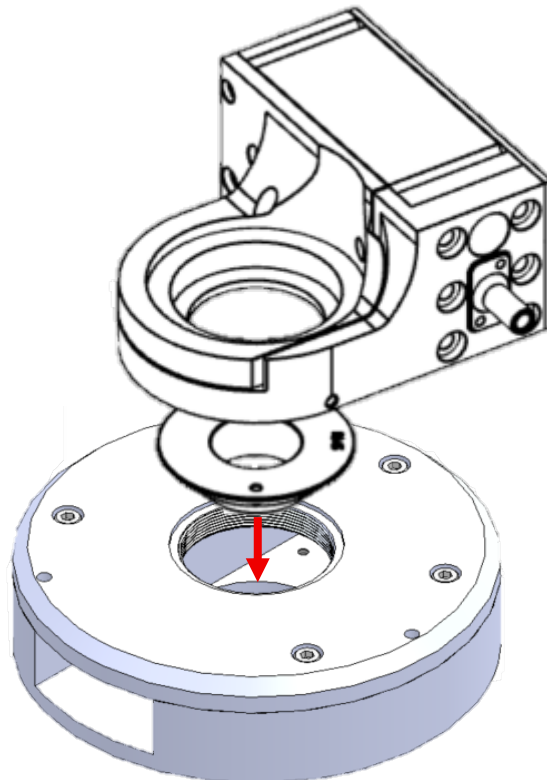
Mount the Sample positioner onto stage H117 using 6 x M4x8mm cap head screws.



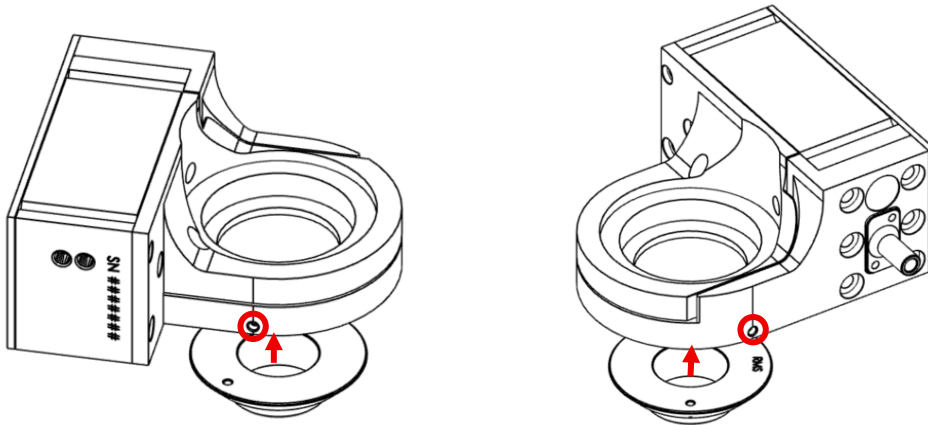


OP200/400/800 Mounting

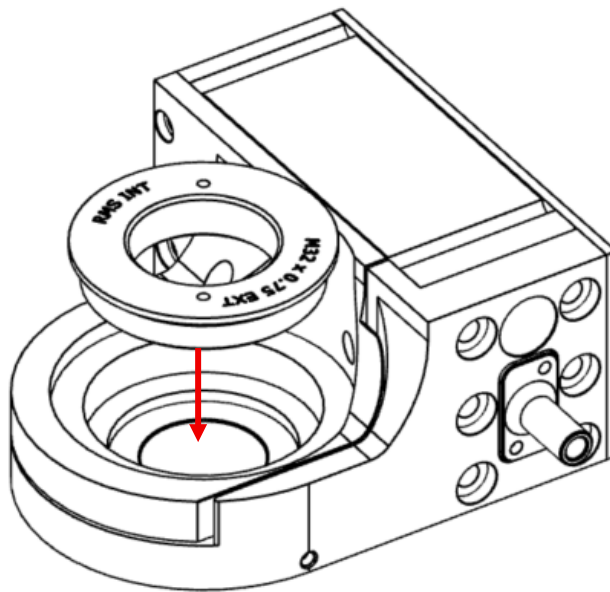
Mount the M32 threads onto HH664 (single nosepiece). Secure the thread onto OP400 using two



Attach the M32 thread to OP400 by securing the 2 grub screws on both sides.



Insert the appropriate thread for the objective used. We provide RMS, M25, M27 and M26.



Connections to Proscan III controller

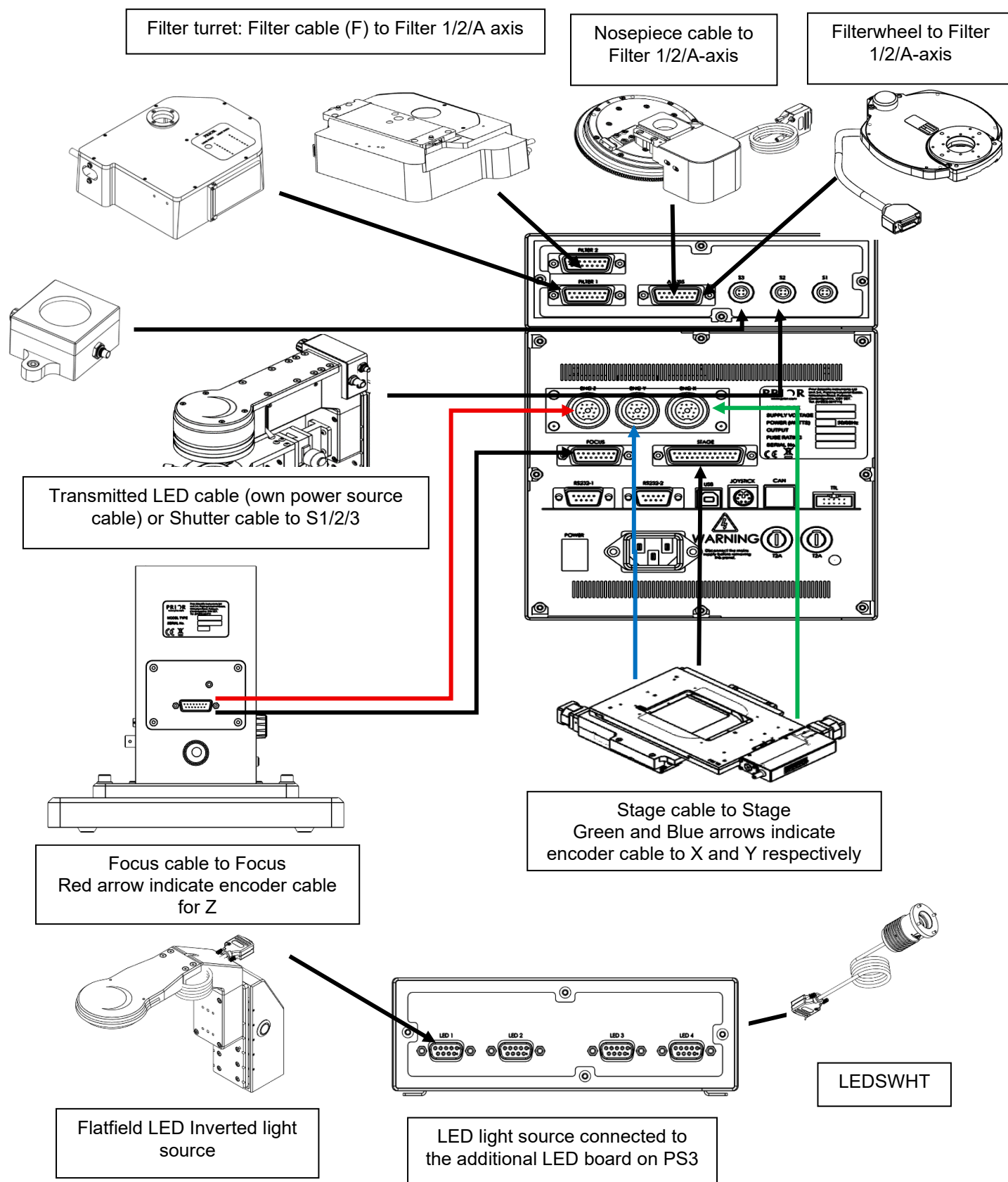


Fig1: Connections to the Proscan III controller

If more than three devices are connected to the filter board, an additional filter board axis is required. The first board supports Filters 1, 2, and 3; the second board is stacked above it and configured in the firmware as Filters 4, 5, and 6.

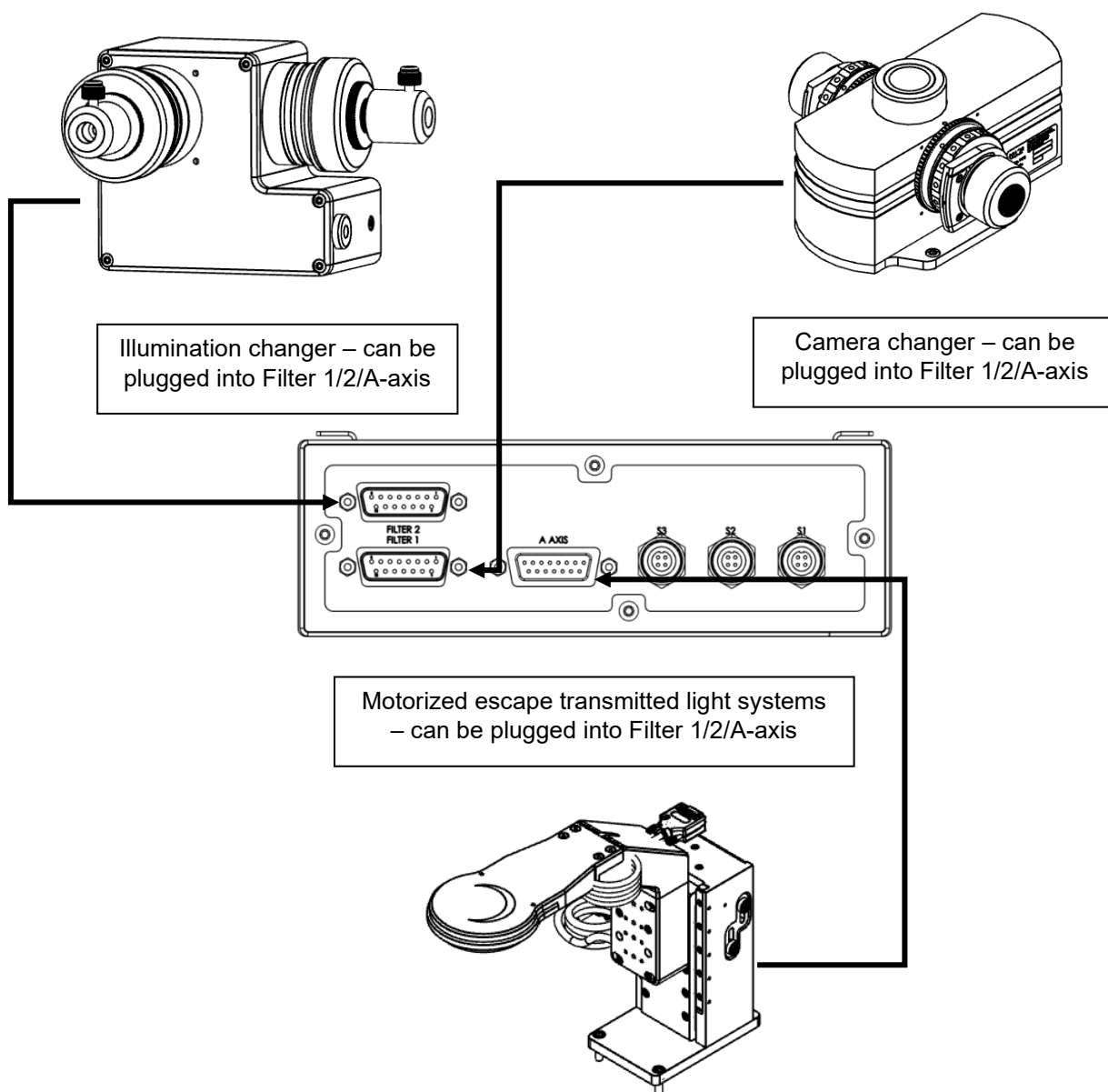


Fig2: Connections to the Proscan III controller for OEM devices

Software Commands

Refer to the [Proscan 3](#) manual for full setup instructions and command details for each device type. In the commands below, **axis number** refers to the controller axis into which the device cable is connected.

Axis numbering examples: if an LED is connected to LED 1, use axis number 1. On the first filter board, Filter 1 = axis 1, Filter 2 = axis 2, and A-axis = axis 3. On the second filter board, the axes continue as Filters 4, 5, and 6.

- **XY stages:** see pages 46–55 of the Proscan 3 manual.
- **Focus/Z stage:** see pages 56–58.
- **Filter turret, nosepiece, and filter wheel:** see page 59. These devices are detected automatically by the controller. To home the device, use: 7, **axis number**, h.
- **Transmitted LED via shutter cable to S1/S2/S3:** see page 60.
- **Flatfield LED and LEDSWHT connected to the LED board:** see page 61.
Use these commands:
 - LED, **axis number**, power,100 — sets LED power to 100%.
 - LED, **axis number**, state,1 — switches the LED on. Use state,0 to switch it off.

OEM device commands

OEM device commands are listed on pages 65–66 of the Proscan 3 manual. These commands are **not retained** after a power cycle and must be reissued each time the controller is powered on.

Illumination changer and camera changer

Use the following sequence to configure the device and move the mirror between positions:

- OEM, **axis number**, config, HH379 — configures the device in the Prior controller.
- OEM, **axis number**, g, 1 — moves the mirror to position 1.
- OEM, **axis number**, g, 2 — moves the mirror to position 2.

Motorised escape transmitted light systems

Use the following commands to configure the focus block and control movement:

- OEM, **axis number**, config, OEMNO — configures the focus block.
- OEM, **axis number**, GR, **number of steps** — moves the system by the specified number of steps.
- OEM, **axis number**, GV, **steps per second** — moves the system at the specified velocity, for example to travel to a limit.

Prior Terminal software is available from the [Prior Scientific software downloads page](#) as “64/32 Bit Prior Scientific DLL SDK”. Select the download that matches your

operating system, then install the Prior software. To integrate the system into your own application, download the Prior SDK from the same page.

About Prior Scientific

Prior Scientific has manufactured precision optical and electromechanical equipment and instrumentation for over 100 years.

As the leader in the development of systems for precision motion control and microscope automation, we work closely with our partners and customers to develop customized optical and automation systems as well as providing a wide range of standard microscopy components.

We partner with system integrators and OEMs to develop prototypes, custom-built products, and complete imaging system solutions according to individual customer requirements for a variety of applications. Our integrated design and manufacturing facilities enable us to seamlessly transition from concepts to production systems. Typical applications for our products are found in photonics, life science research, material science, nanotechnology, medical devices, metrology, and semiconductor manufacturing.

Our mission

We understand that every problem requires a unique approach. Our team works closely with customers and partners to identify their specific needs and design a cost-effective and tailored solution that meets their unique requirements. We continue to push scientific boundaries and constantly build on and improve our expertise in automated precision optical and mechanical systems.

Technical Support

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Visit prior.com and use our online chat

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