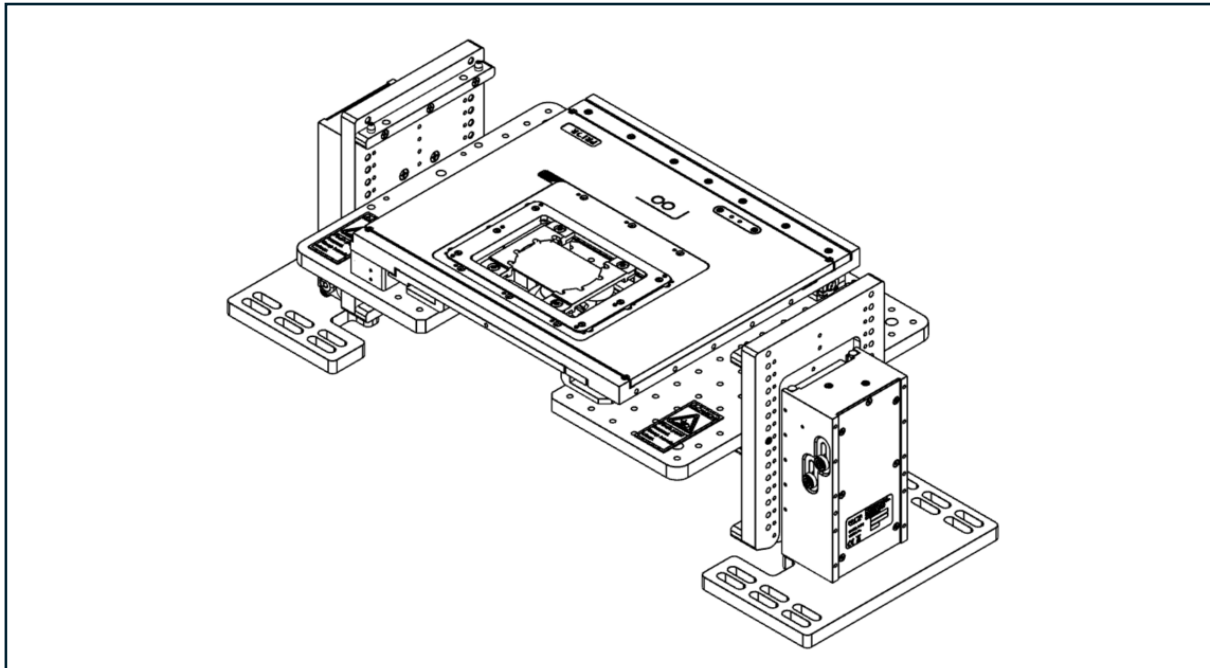


## HZ106KT2 – User Manual



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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.

*Figure 1*



## Unpacking the system

Carefully unpack the HZ106KT2 system and its accessories. **Retain the packaging should you need to return the unit.** If it appears to be damaged, immediately return the unit to the factory 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 contact or Prior directly.

The system includes

| Part Number      | Description                                            | Quantity |
|------------------|--------------------------------------------------------|----------|
| H101N1F/H101E1F  | Stage                                                  | 1        |
| V31XYZF/V31XYZEF | ProScan 3 controller                                   | 1        |
| CS200XY          | XY Joystick                                            | 1        |
| CS200Z           | Z Digipot                                              | 1        |
| H3848            | Stage to sample holder adapter                         | 1        |
| H473UP           | Universal Sample holder                                | 1        |
| H6591            | Mounting plate for Focus block                         | 2        |
| H6592            | Breadboard for the stage                               | 1        |
| FB210            | Primary Focus Drive. Fitted with H7029 and 3x H7160.   | 1        |
| FB210R           | Secondary Focus Drive. Fitted with H7029 and 3x H7160. | 1        |
| HH644            | Condenser Assembly                                     | 1        |
| H6593            | Stage mounting block                                   | 2        |
| H6594            | 30mm stage Mounting post                               | 2        |



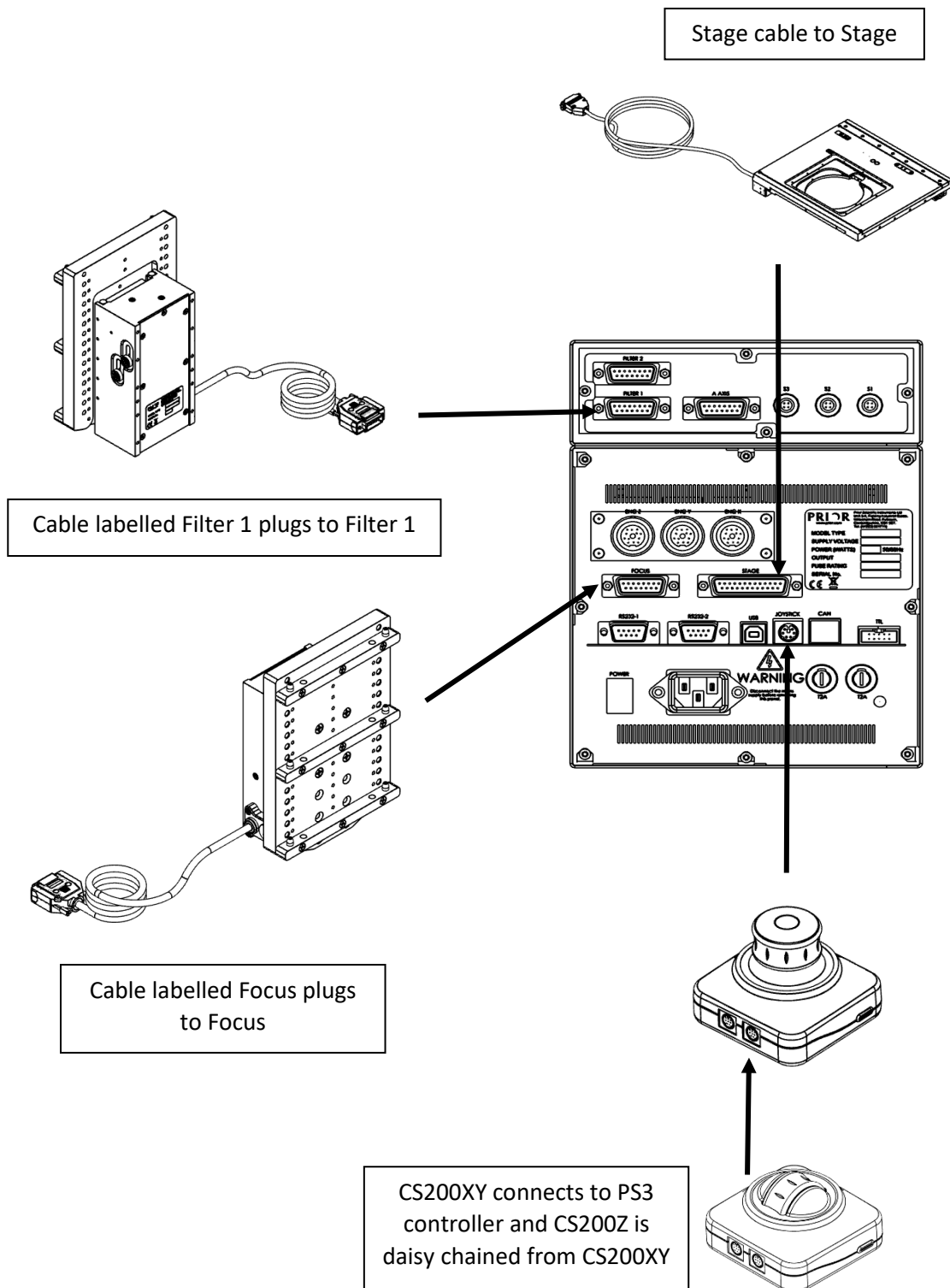
Be careful when transporting the unit.



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

## Connections to PS3 controller

Please refer to our Proscan 3 Quick Start Guide before connecting any components.

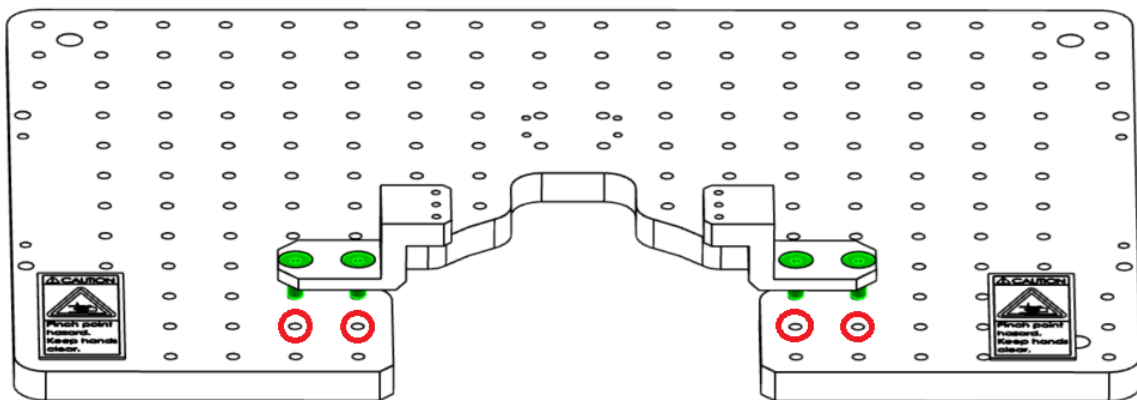


## Introduction

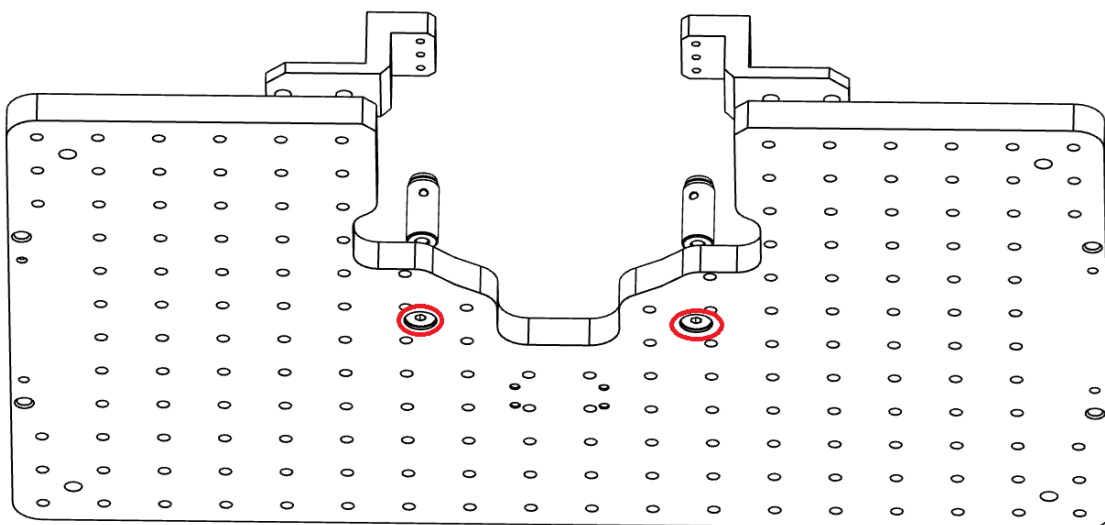
HZ106KT2 is a dual focus block actuator with breadboard and XY stage mounted on the breadboard. It is designed to be used with Proscan III controller. Proscan III controller range is an approved product under the IEC CB scheme.

## Assembling the stage onto the breadboard

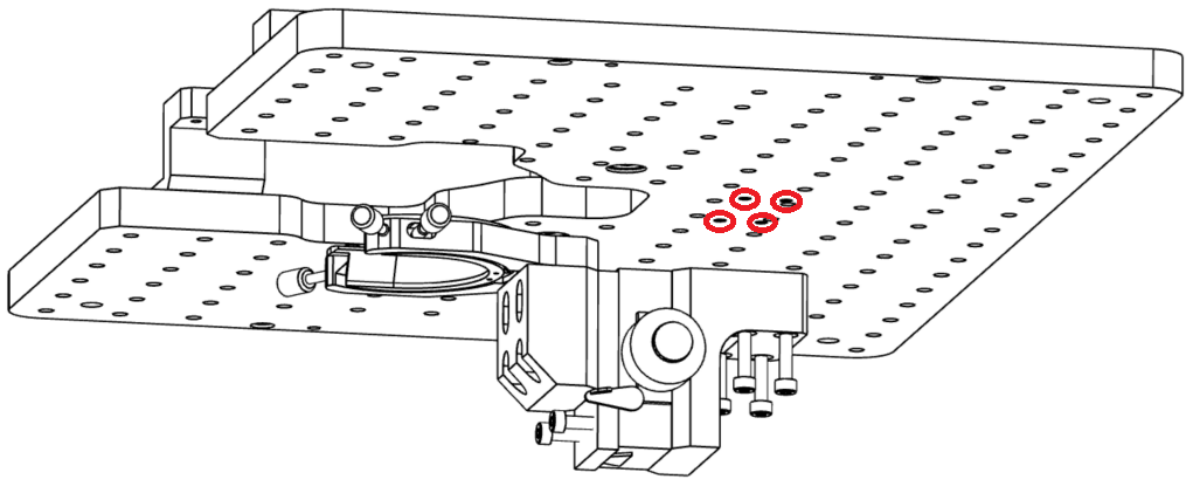
1. Attach the stage mounting block on holes either side of the breadboard (circled in red) using 4 x M6 x 16mm countersunk screws.



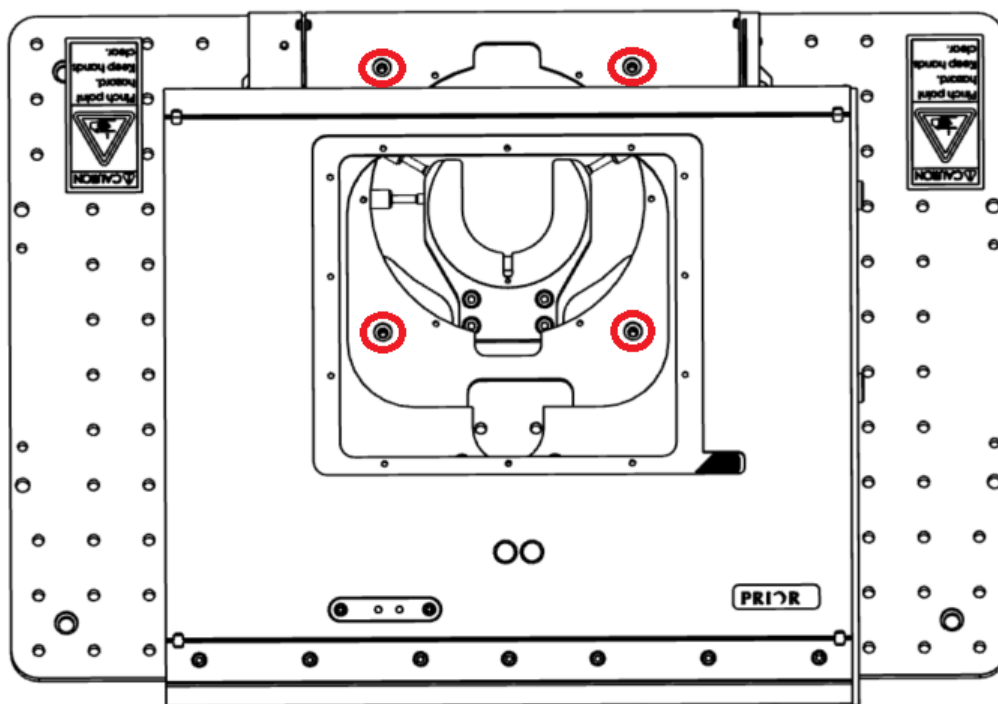
2. From the bottom of the breadboard insert 2 x M6x16mm countersunk screws and screw the 30mm mounting post on either side from the top.



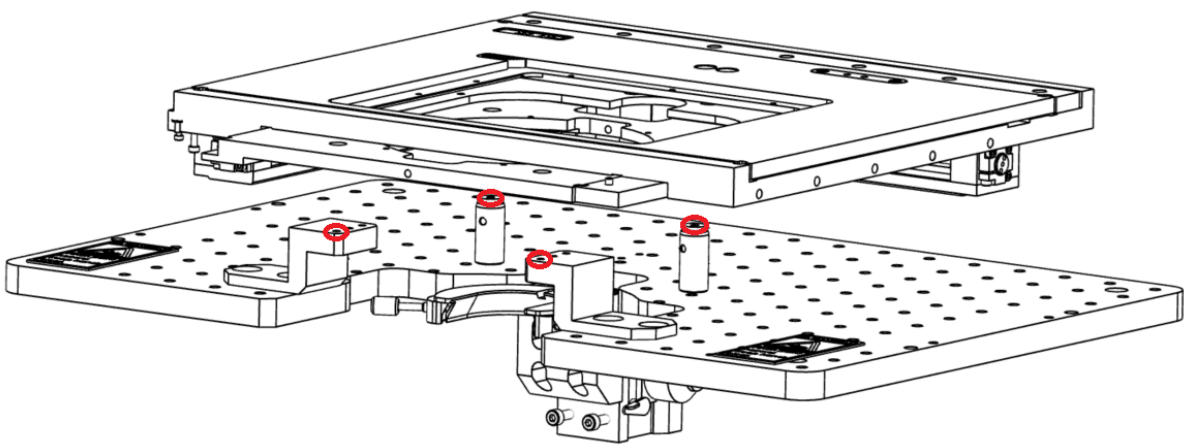
3. OPTIONAL: Attach the condenser assembly (HH644) using 4 x M4x16mm cap head screws onto the breadboard (circled in red).



4. Ensure the controller is switched off. Attach the stage cable to the controller as shown above in section 'Connections to PS3 controller' and attach the XY joystick. Switch on the controller.
5. Move the stage so that you reveal the four holes to mount the stage (circled in red).

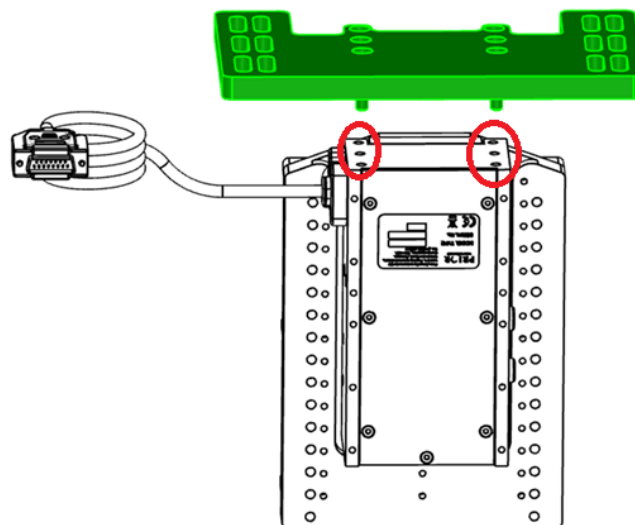


6. Mount the stage on the mounting block and the 30mm post (circled in red) using M4 x 10mm cap head screws.



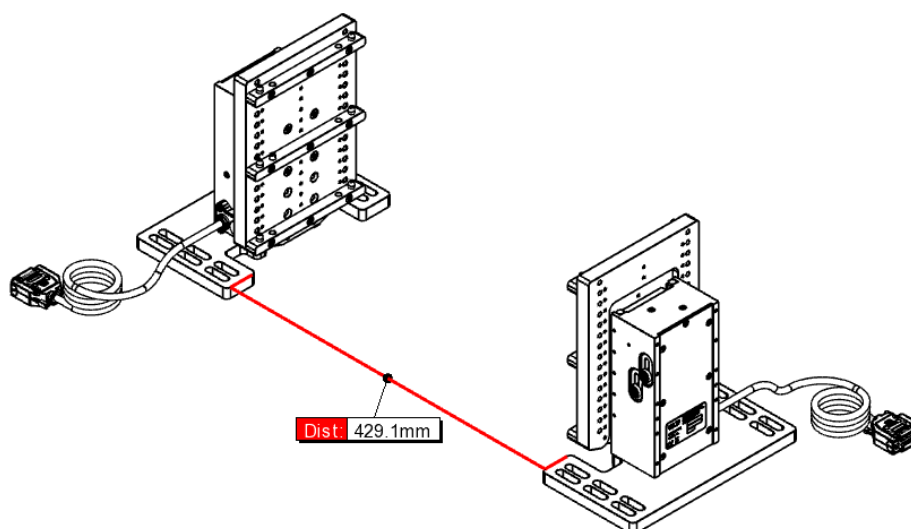
### Assembling the HZ106KT2 system

1. Invert the FB210 and FB210R and attach a H6591 to each using 6 x M6 x 20mm cap head screws.



2. Place the FB210 and FB210R on the optical breadboard roughly 429mm apart between the mounting plates (H6591). The two blocks should be placed either side of the microscopes transmitted light

system where applicable. Don't screw the plates down to the breadboard yet.



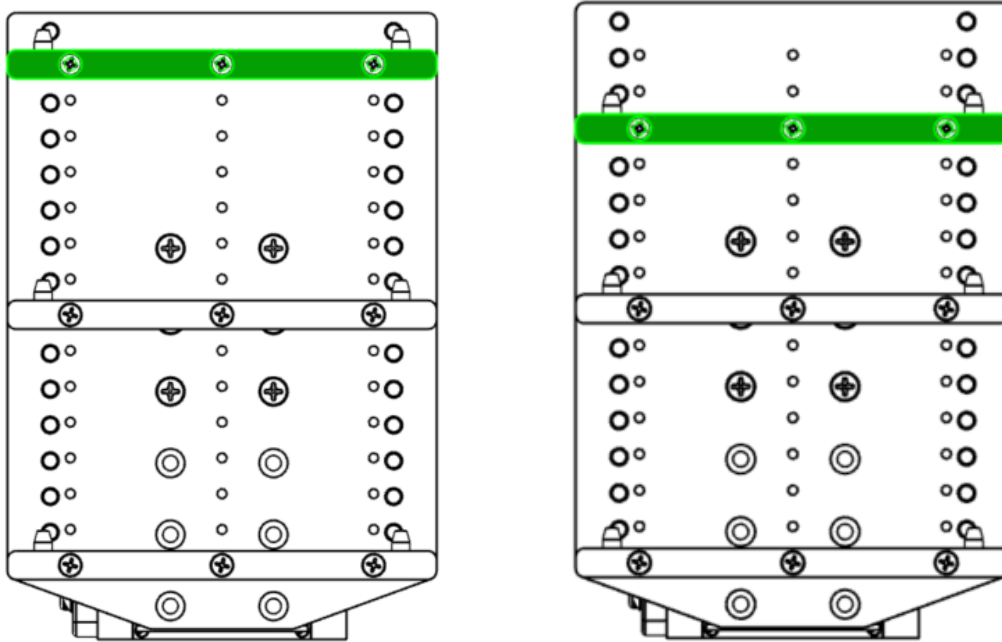
- ⚠ Switch off the controller, connect the two focus blocks (cable labelled focus) to Focus on PS3 controller and (cable labelled filter 1) to Filter port 1 port in the PS3 controller.
- ⚠ Connect the XY and Z joysticks, power cable.

3. Switch on the controller and use the CS200XY or CS200Z buttons to move the focus blocks to their limits. Move them both to the upper and lower limit. This will ensure the focus blocks are synchronized.

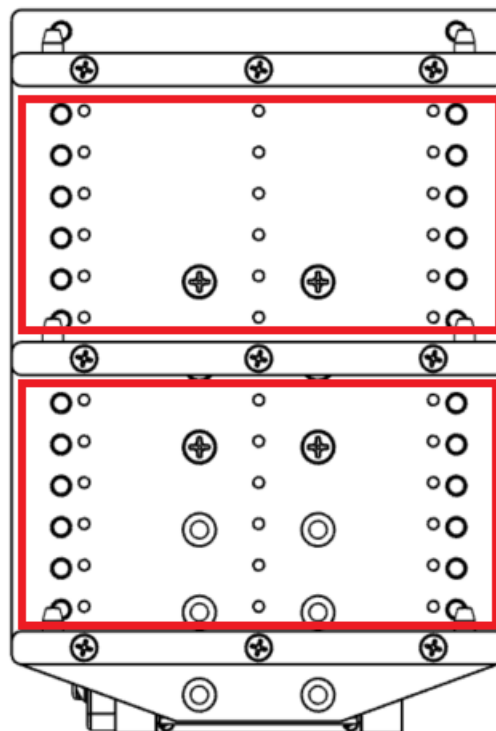
⚠ Each Focus block has an upper and lower limit switches which is externally adjustable to limit the range of travel

⚠ If the focus blocks are desynced remove the breadboard and move them to both upper and lower limits to sync them again.

4. Once the synchronization is completed switch off the controller and remove the cables from the PS3 controller.
5. The shelf supports (highlighted green) can be adjusted according to the sample that is going to be used. The default shelf supports will be mounted as shown below on both focus blocks.

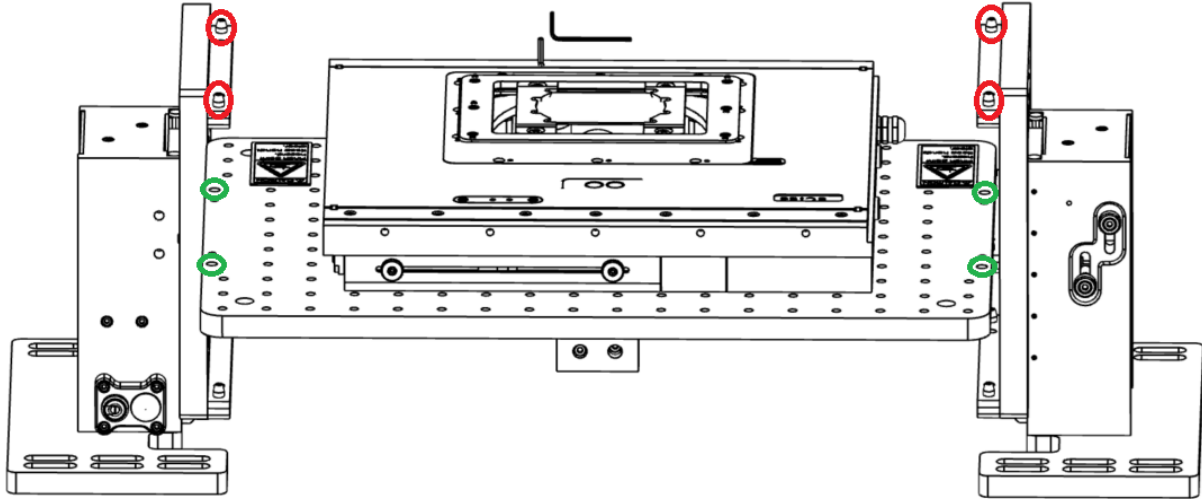


6. The shelf supports can be moved to any of the holes provided as shown below

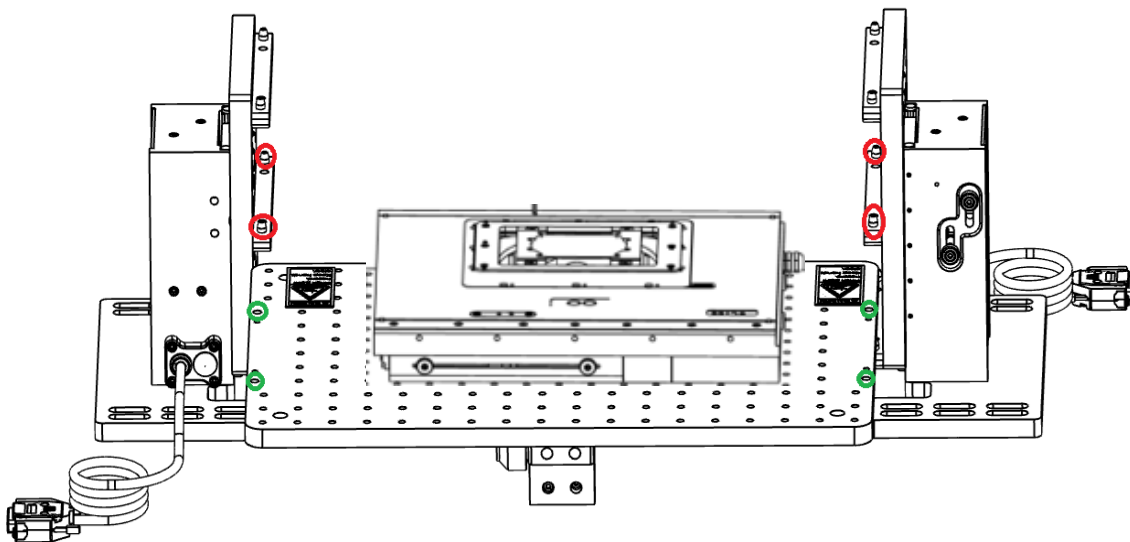


7. Slide the breadboard for the stage into the mounting shelf that is at the best height for the application. Ensure the breadboard holes (circled in green) slots into the locating pin (circled in red).

8. For example, when using thin sample on a slide the stage should be mounted on the uppermost shelf supports with the Z axis close to its upper limits.

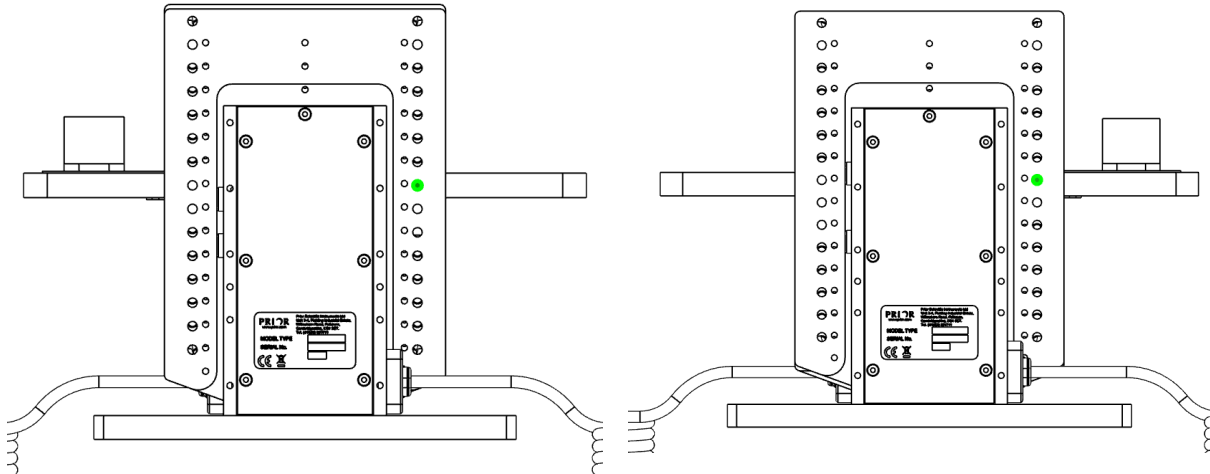


9. If using a live animal, the breadboard with the stage can be moved from the top shelf to the middle shelf or even the lower shelf if required.

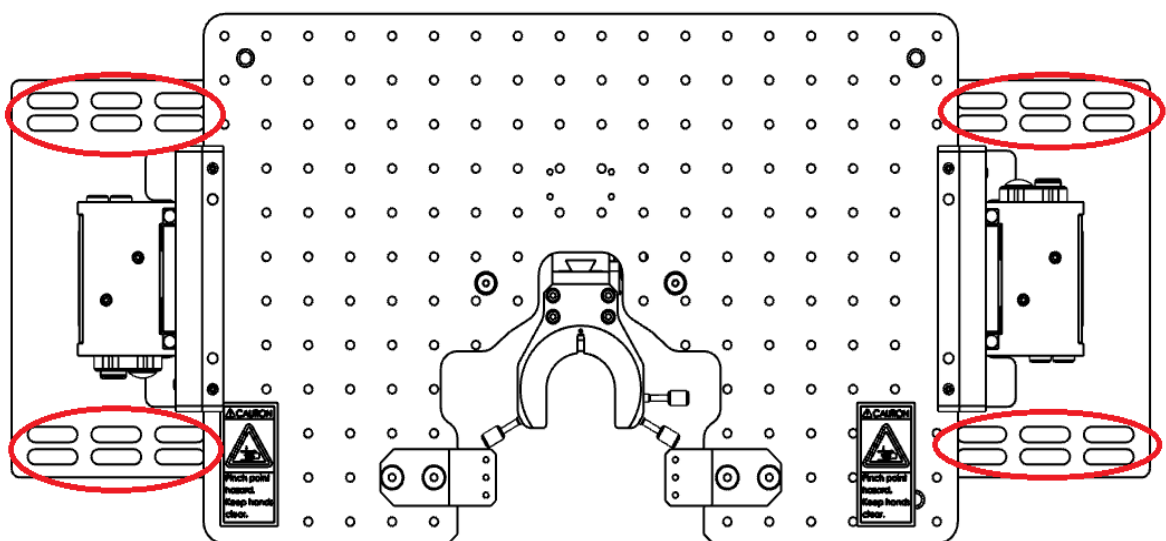


**⚠** When moving the stage between shelves ensure you have enough cable length to move the full travel range.

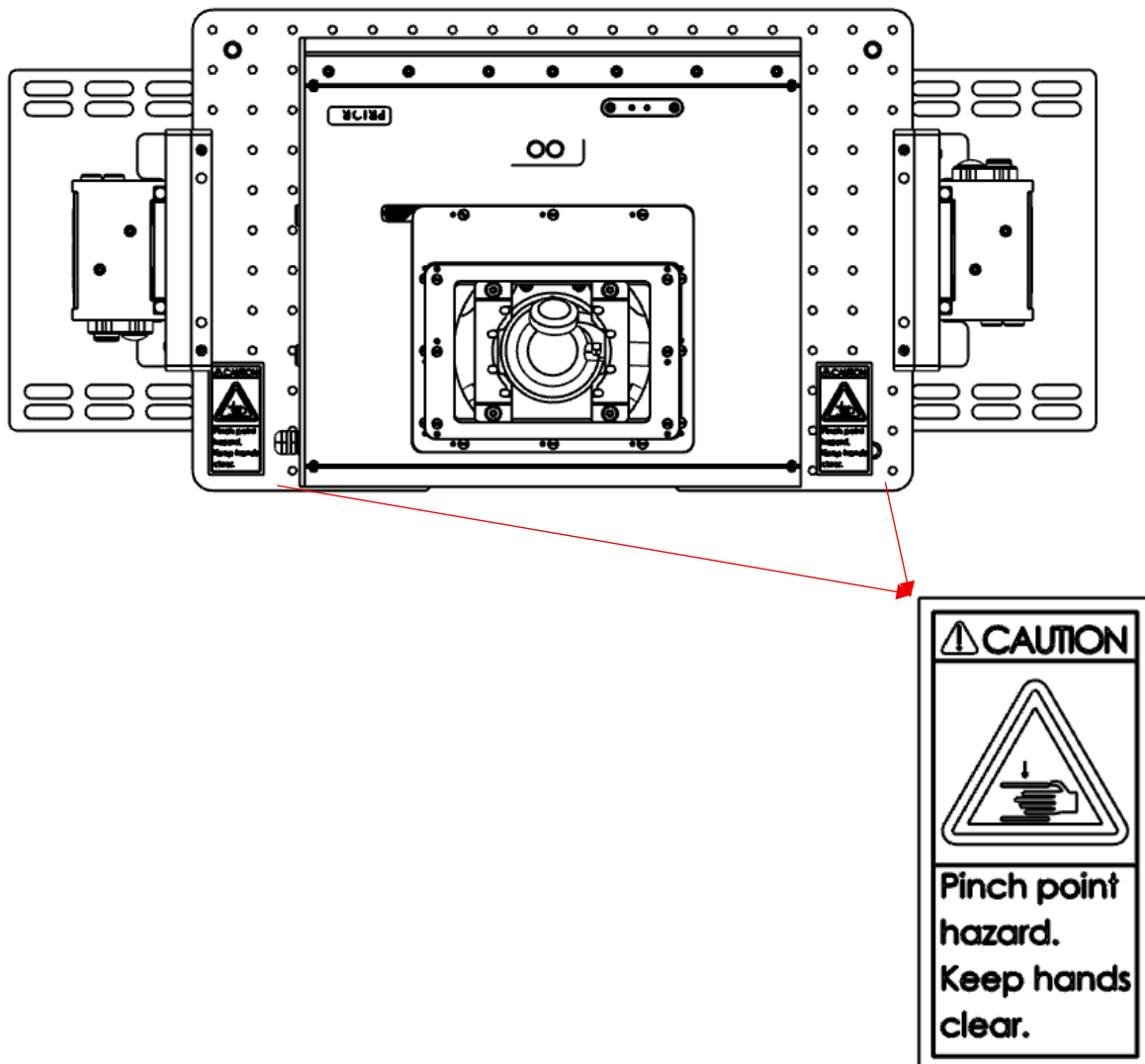
10. This is optional if you want to keep the breadboard in place, screw the set screw with nylon tip (highlighted in green) gently till you hit some resistance from one focus block (FB210) and another set screw with nylon tip (highlighted in green) gently till you hit some resistance from another focus block (FB210R).



11. You might have to move the entire assembly to ensure you holes on the focus mounting plate (H6591) align with the holes on the optical breadboard. Attach to the optical breadboard using M6 x 20mm cap head screws.



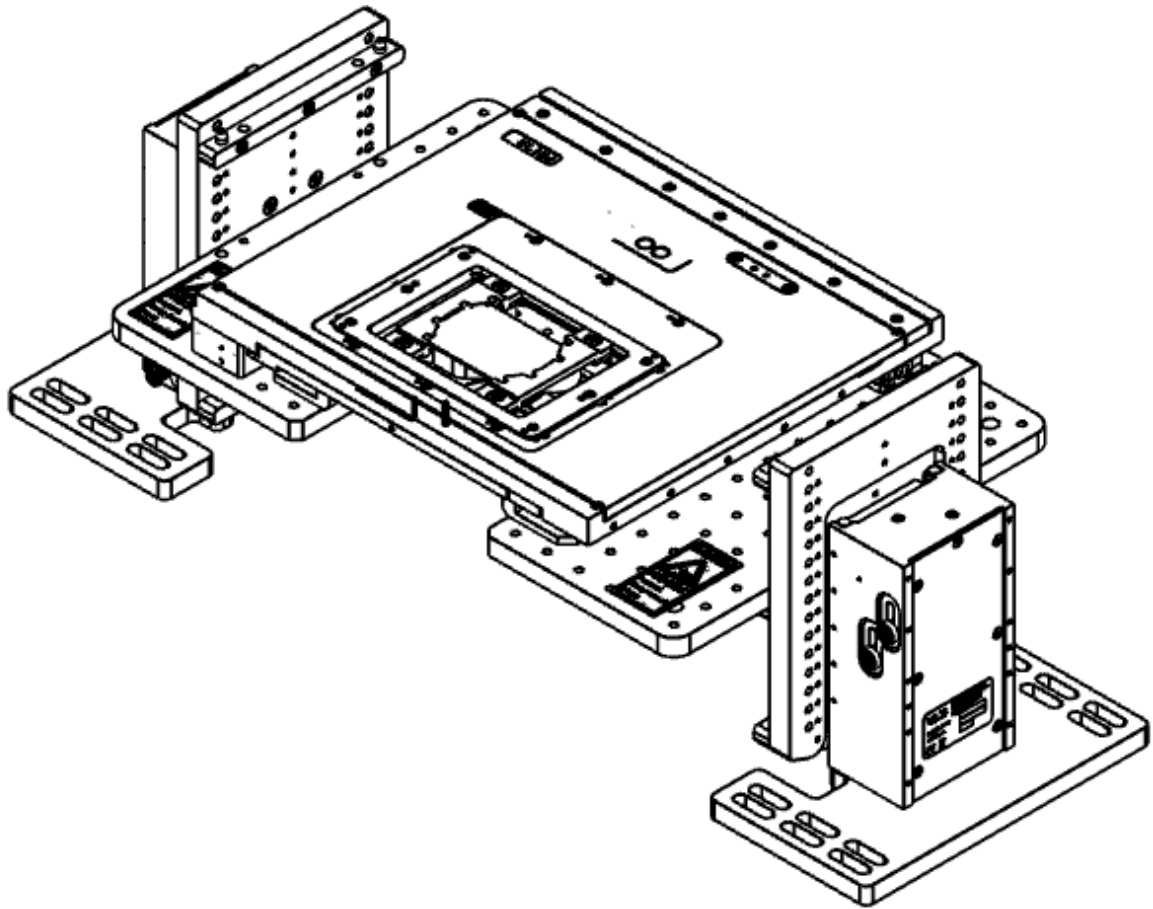
12. Switch off the controller. Connect the rest of the cables such as focus blocks, Z digipot, USB cable. Switch on the controller.



 The following label is placed onto the assembly to indicate areas where caution should be taken especially when the stage is moving.

13. Move the Focus blocks using the buttons on the joystick to ensure the blocks are synced.

14. System is now ready to be used.



⚠ If the user or integrator intends to add additional components or alter the setup of HZ106KT2 a risk assessment should be performed which considers the whole integrated system. It may be necessary to install additional safety measures if additional risks are introduced.

## Software Commands

Please refer to Proscan 3 manual from Page 47 – 56 for commands to control the XYZ axes. Prior Terminal software is available here (<https://www.prior.com/download-category/software>) as “64/32 Bit Prior Scientific DLL SDK”. Please select the download that fits your operating system’s bit and install the Prior software. To integrate the system into your own software please download Prior SDK - 2.0.0 from the website link provided above.

## 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

If you have a technical question, you can contact our expert support team:

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**Visit** prior.com and use our online chat

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