

H101-MIZAR-TILT

Compatible with

- MIZAR TILT Imaging system

Compatible with the following Okolab Controllers

- H101-BASIC-BL
- H101-CRYO-BL

IST-1927_rev02

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1. Components and dimensions

H101-MIZAR-TILT includes the following components:

- **Chamber Lid** uniformly heated by means water circulation in water tight channels.
- **Light Trap** to avoid any reflected light.
- **Magnetic Clamp** to snap lock the chamber slide.
- **Chamber Base** uniformly heated by means water circulation in water tight channels.
- **Chamber Bracket** to fix the chamber to the stage.

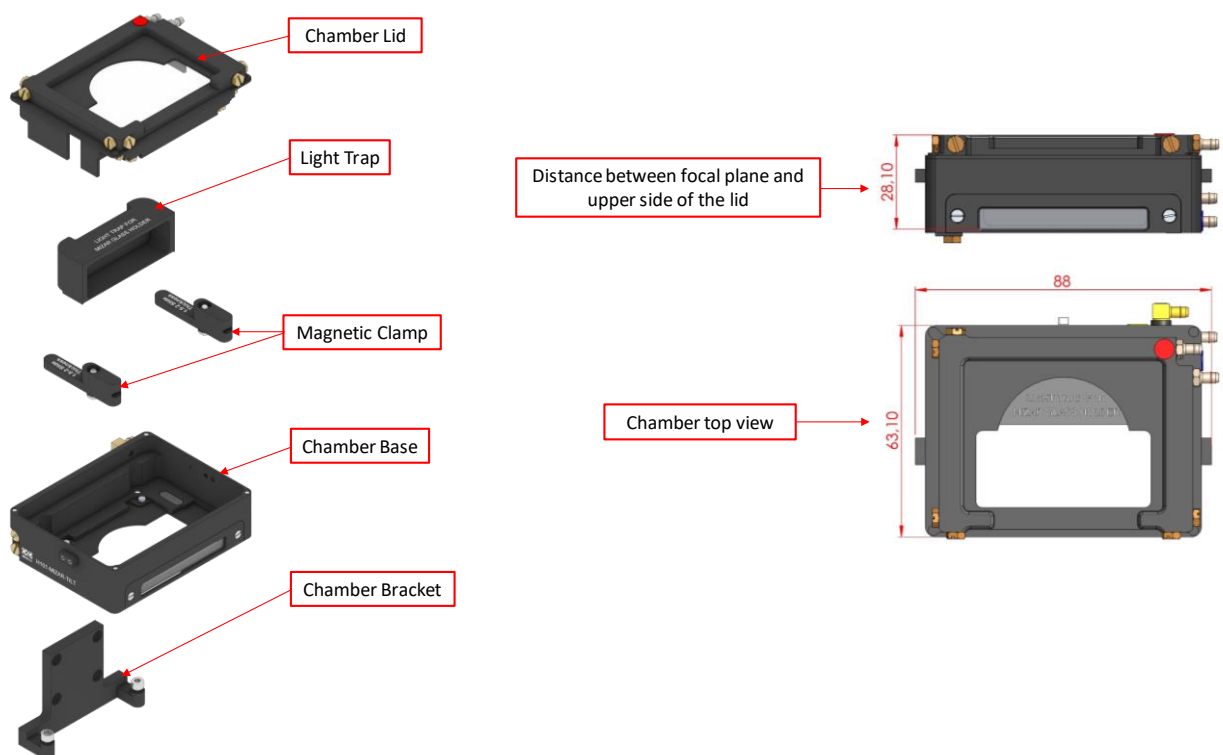


Figure 1. H101-MIZAR-TILT - Components and Dimensions.

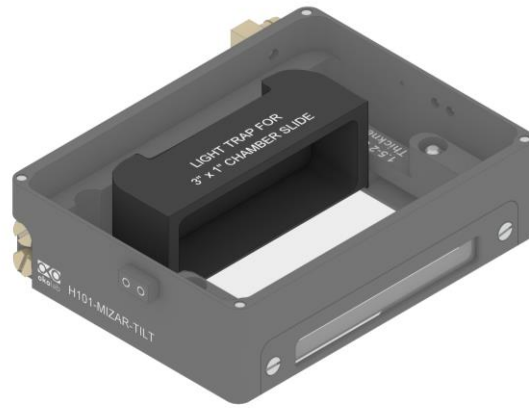
2. Available Light Trap

H101-MIZAR-TILT can accept Mizar Cube Holder (with or without guide arm) and 1"x3" slides/chamber slides. The following light traps are supplied with H101-MIZAR-TILT.

LIGHT-TRAP-MCH	MIZAR-1X22by40 Light trap for Mizar Cube Holder (with or without guide arm).
LIGHT-TRAP-GS	Light trap for 1"x3" slides/chamber slides.



LIGHT-TRAP-MCH



LIGHT-TRAP-GS

Figure 2. Light Trap

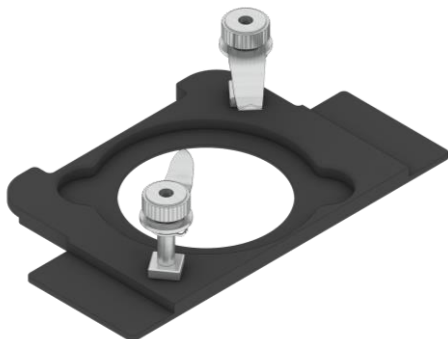
3. Optional Components

3.1 Available Sample Holders

The following sample holders are available for H101-MIZAR-TILT.

NOTE: Please contact info@oko-lab.com if you cannot find the sample holder you are looking for. We are constantly adding new inserts to the list.

MIZAR-1x35-H101	Holder for 35mm Petri-dish
MIZAR-1x22by40	Holder for 22x40 mm coverslip



MIZAR-1X35-H101



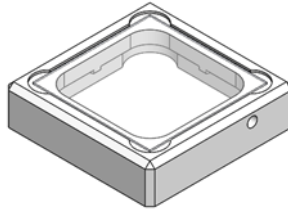
MIZAR-1X22by40

Figure 3 Available sample holder.

3.2 Available Accessories

MIZAR-CUBE GL

Stainless Steel Top Lid for 12.50x12.50 Mizar Imaging Cube. It helps to minimize evaporation.



MIZAR-CUBE GL

Figure 4. Available Accessories

4. Insertion of the Sample Feedback Temperature Sensor

Insert the Sample Feedback Temperature Sensor through the dedicated opening located in the H101-MIZAR-TILT (see Figure 5).

To read the medium temperature and realize a self-calibration of the chamber, fix the Temperature Sensor tip with adhesive tape on the bottom of the medium volume of the sample holder. For more information about the self-calibration, please refer to the user manual of the Okolab controller in use.

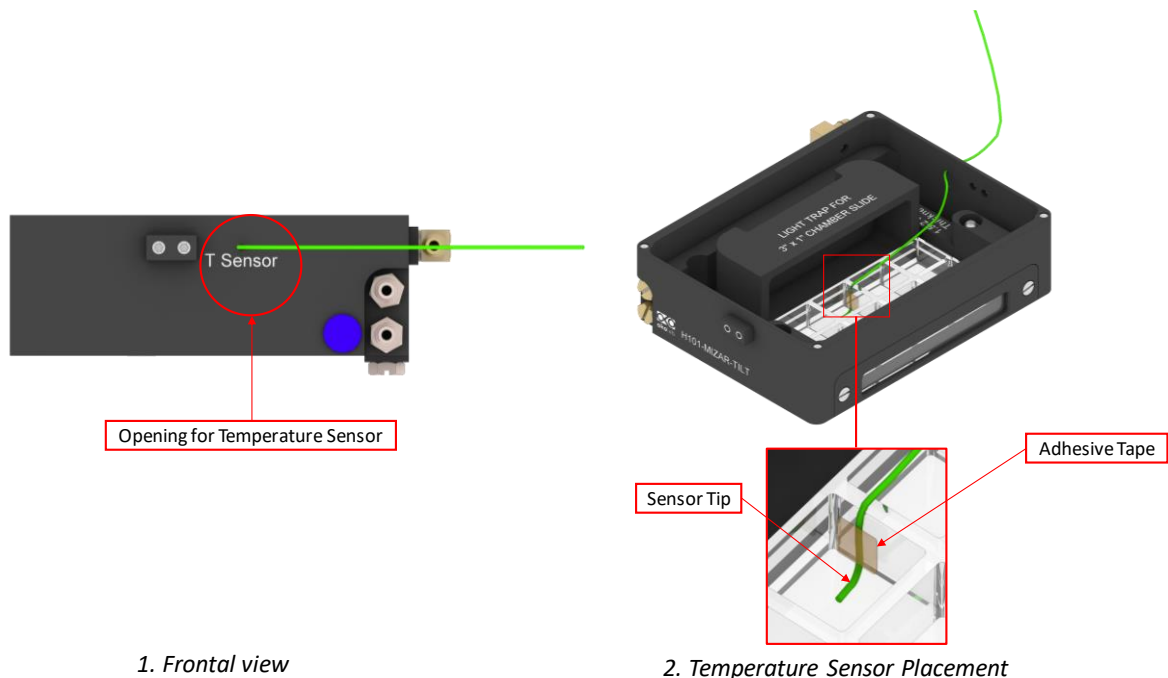


Figure 5. Insertion of the temperature sensor inside the chamber.

5. Working with MIZAR-1x22by40

The MIZAR-1x22by40 fits into the Chamber Base and it is held in place by the magnetic clamps in order to prevent movement inside the opening on the base. To insert the MIZAR-1x22by40, follow the steps shown in Figure 7 and listed below:

1. Insert the MIZAR-1x22by40 into the Chamber Base (see image 1 in Figure 7).
2. Place the magnetic clamps over the insert (see image 2 in Figure 7), then push down the head of the clamps simultaneously and move it in the direction shown in the image 3 of Figure 7.
3. Insert the Light Trap into the Chamber Base as shown in image 4 in Figure 7.
4. Close the Chamber Base with the Lid (see image 5 and 6 in Figure 7).

NOTE: Please follow the same steps also to insert the Mizar Cube Holder.

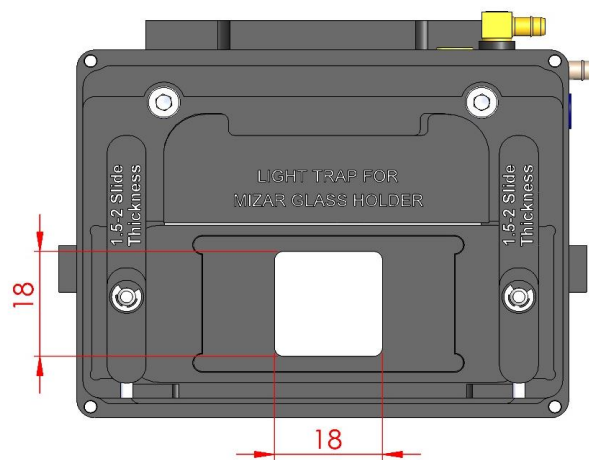


Figure 6. Base Top view.

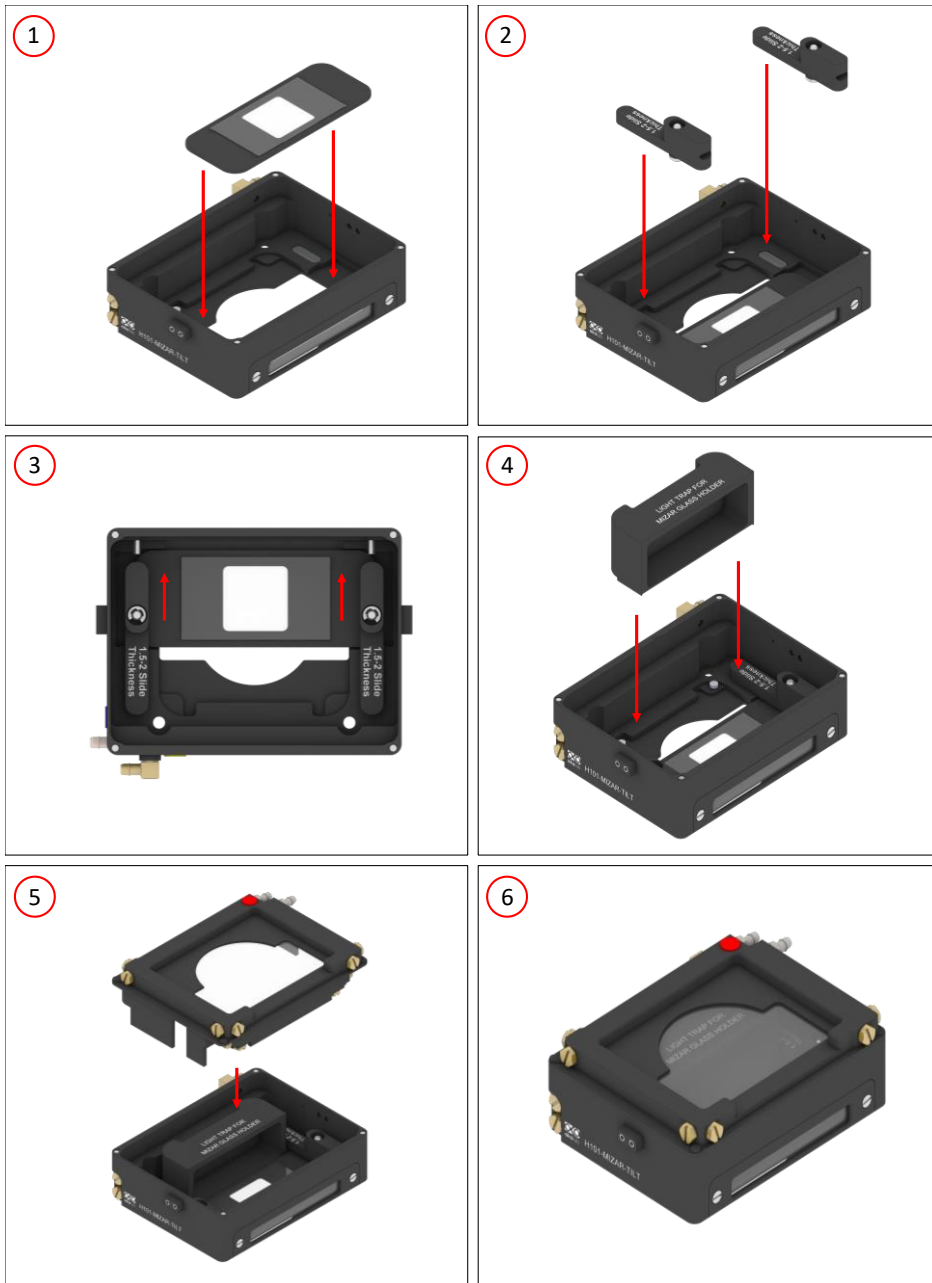


Figure 7. Working with MIZAR-1x22by40

6. Working with 1"x3" chamber slide

The 1"x3" chamber slide fits into the Chamber Base and it is held in place by the magnetic clamps in order to prevent movement inside the opening on the base. To insert the 1"x3" chamber slide, follow the steps shown in Figure 9 and listed below:

1. Insert the 1"x3" chamber slide into the Chamber Base (see image 1 in Figure 9).
2. Place the magnetic clamps over the 1"x3" chamber slide (see image 2 in Figure 9), then push down the head of the clamps simultaneously and move it in the direction shown in the image 3 of Figure 9.
3. Insert the Light Trap into the Chamber Base as shown in image 4 in Figure 9.
4. Close the Chamber Base with the Lid (see image 5 and 6 in Figure 9).

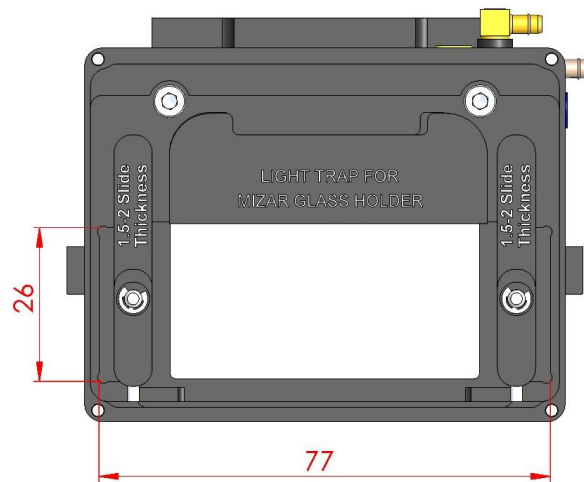


Figure 8. Base Top view.

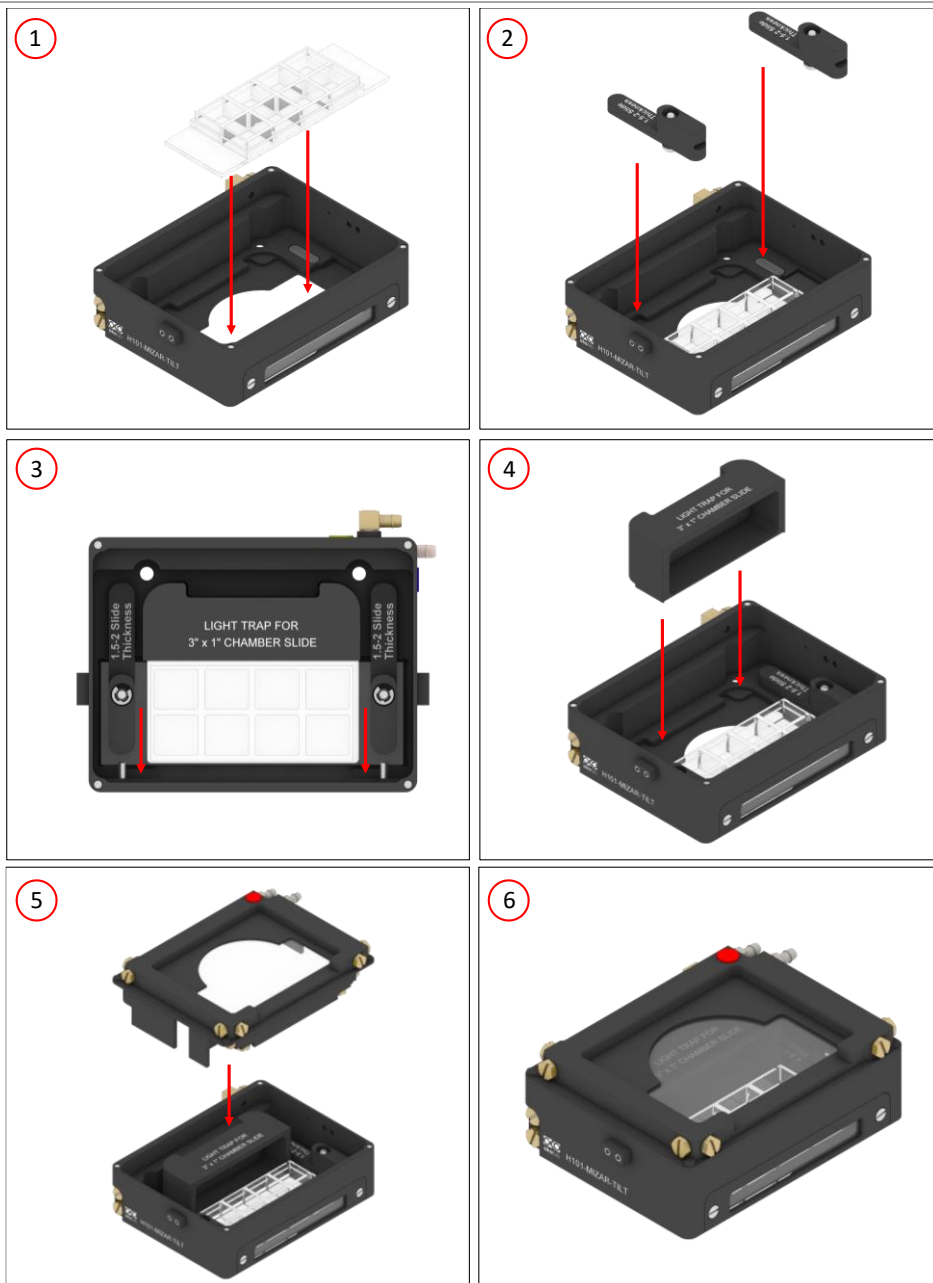


Figure 9. Working with 1"x3" chamber slide.

7. Working with 35mm petri-dish

Flat springs prevent movement of 35mm petri-dish inside the opening on the Chamber Base. To insert the MIZAR-1x35-H101, follow the steps shown in Figure 11 and listed below:

1. Insert the MIZAR-1x35-H101 into the Chamber Base (see image 1 in Figure 11).
2. Place the magnetic clamps over the MIZAR-1x35-H101 (see image 2 in Figure 11), then push down the head of the clamps simultaneously and move it in the direction shown in the image 3 of Figure 11.
3. Turn the flat springs (see image 4 in Figure 11) and insert the petri-dish (see image 5 in Figure 11) into the sample holder.
4. Lock the petri-dish by using the flat springs (see image 6 in Figure 11).
5. Close the Chamber Base with the Chamber Lid (see image 7 and 8 in Figure 11).

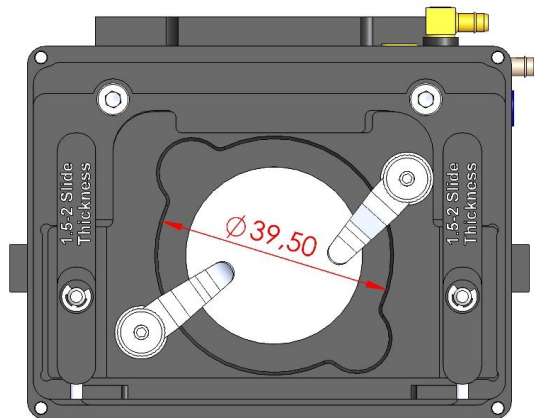


Figure 10. Base Top view.

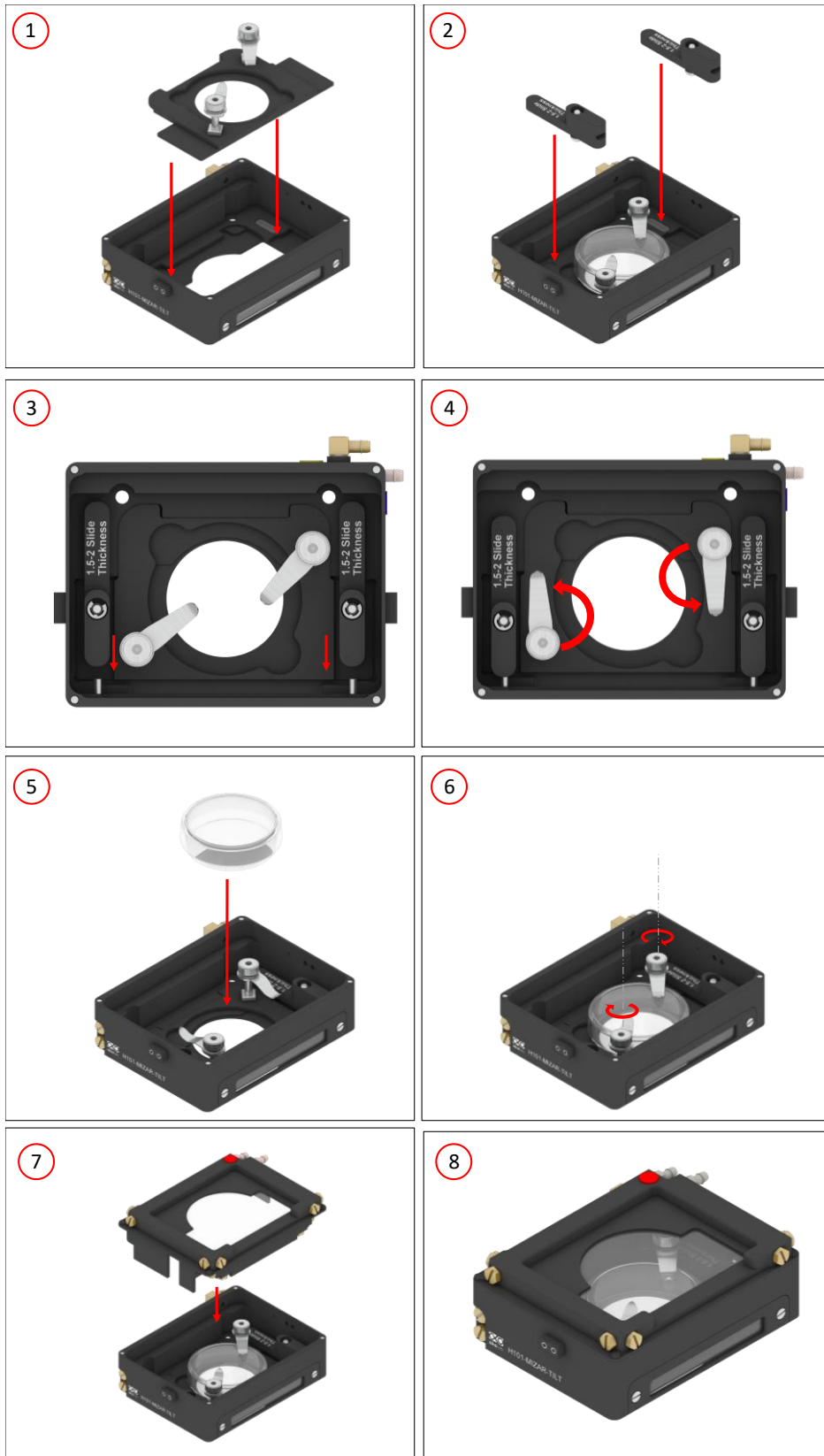
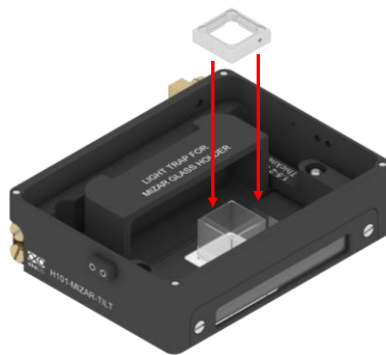


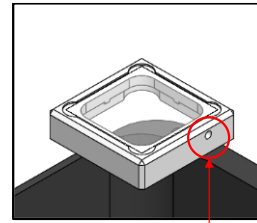
Figure 11. Working with 35 mm petri dish.

8. Working with MIZAR-CUBE GL

H101-MIZAR-TILT can accept Mizar Glass Holder with Mizar Imaging Cube. The following glass lid is available to cover the 12.50 x 12.50 mm Mizar Imaging Cube, in order to reduce evaporation of the medium. The glass lid provides a lateral dedicated hole to insert the Sample Feedback Temperature Sensor (see 2 in Figure 12).



1. Insertion of MIZAR-CUBE GL



Temperature Sensor dedicated opening

2. Temperature Sensor

Figure 12. Working with MIZAR-CUBE GL

9. Connection of the Gas Supply

A single silicon tubing carries out gas from the Okolab Controller to the H101-MIZAR-TILT. Silicon tubing connects to a gas output - brass opening indicated by a yellow dot - located on the rear side of H101-MIZAR-TILT, see Figure 13. Connect by gently pushing silicon tubing onto brass opening.

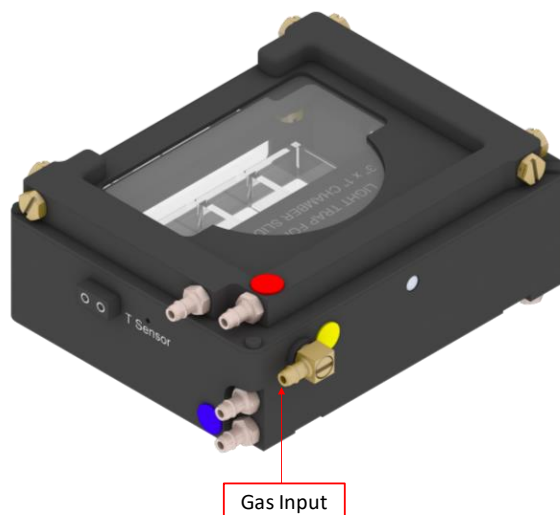


Figure 13. Connection of the gas supply.

10. Connection with the thermostatic bath

Connect the silicon end of TUBE S (the one with a red tape) to the brass connector indicated by a red dot on the Chamber Lid (1 in Figure 14). TUBE S is used to connect the water OUTPUT port of the thermostatic bath to the water INPUT port of the chamber.

Connect the silicon end of TUBE T (the one with a blue tape) to the brass connector indicated by a blue dot on the Chamber Base (2 in Figure 14). TUBE T is used to connect the water INPUT port of the thermostatic bath to the water OUTPUT of the chamber.



Figure 14. Connection with the thermostatic bath.

Use the single silicon tube to connect the Chamber Lid to the Chamber Base in order to carry out the water from the Chamber Lid water jacket to the Chamber Base one, see Figure 15. Connect the silicon tube to the non-labelled brass opening.



Figure 15. Communication tubing between the Base and Chamber Lid

11. Working with Perfusion

H101-MIZAR-TILT features 4 perfusion holes on the sides of the chamber base for the insertion of perfusion tubing up to 2.0 mm in outer diameter. Small screws plug the perfusion holes when not in use (Grub screws M2,5x3). Remove the small screws as necessary before introducing perfusion tubing.

Figure 16 shows the location of the perfusion holes.

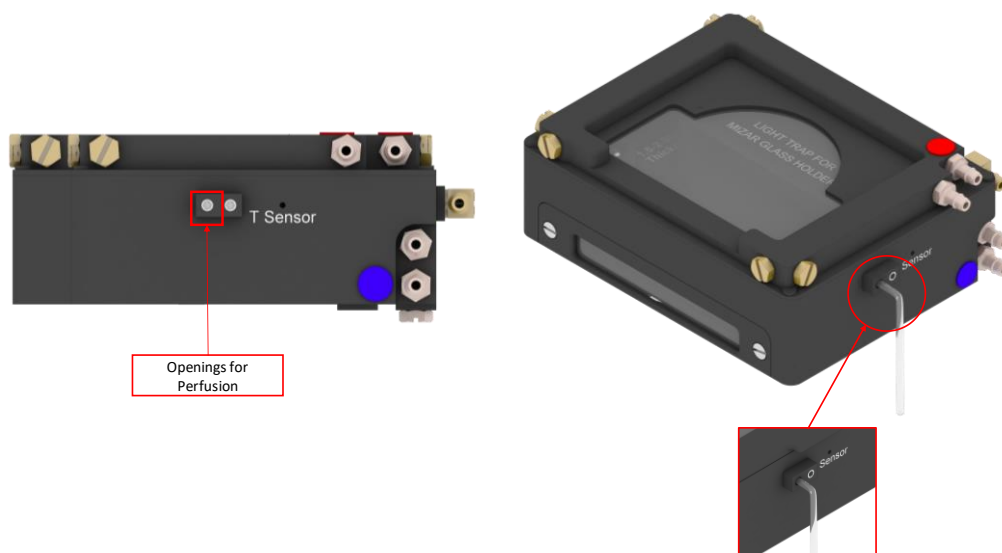


Figure 16. Perfusion

12. Connection of the Chamber with stage

To fix the H301-MIZAR-TILT on the stage, follow the steps listed below and shown in Figure 17:

5. Fix the bracket to the SLR.300 Piezoconcept Stage with four M2.5x6 screws (see Image 1 of Figure 17).
6. Fix the base of the chamber with two M3x6 screws on the bracket (see Image 2 of Figure 17).
7. Insert the sample holder (see paragraph 5, 6 or 7 according to the sample holder you have purchased).

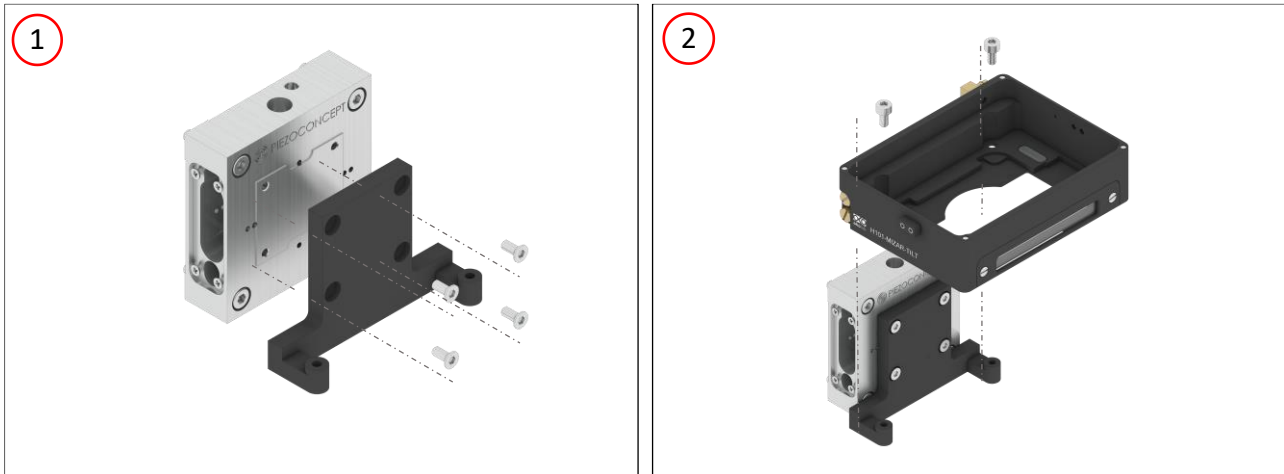


Figure 17. How to assemble the chamber to the stage.

13. Cleaning

- Turn the system off and pull the mains plug out the socket
- Remove the lid from the chamber main body, and keep it separate from the chamber main body while the chamber cools down.
- To clean the body and the glass lid of the chamber, wipe with a soft micro-fiber cloth. For stubborn smudges, you can damp the soft micro-fiber cloth with ethyl alcohol (product code UN1170). Do not put any liquid directly on the chamber. While cleaning the glass lid, do not apply strong force to the surface of the glass lid because it can be damaged.