DObserver *RELOADED*
INSTRUCTION MANUAL

VER 2.0 E

POSITIONING

The D-Observer functionality and quality are factory tested.
The assembling and initialization of the equipment requires people expert in the know-how.

D-Observer is equipped with a set of wheels useful for an easy management of its positioning. Once it is placed as desired, remember to activate its breaks to avoid undesired slidings of the equipment.

The D-Observer equipment has been engineered keeping always as primary objective the preservation of the integrity of the film but trying to offer a simple but even effective set of tools. The standard system is compatible with all 35mm and 16mm bandwidth films and optionally, is possible to get the D-Observer even compatible with smaller formats like 9,5Pathé, 8mm and Super8.
The complete system behaviour can be switched between different modalities to obey the film format and even its physical situation.
The tension applied to the film can be adjusted so to avoid any kind of undesired damage or stress to the weak supports.
Special optional gates, especially engineered for Archive curly and curved 35mm and 16mm films, are available as option to give access to the contents of films otherwise unhandables.

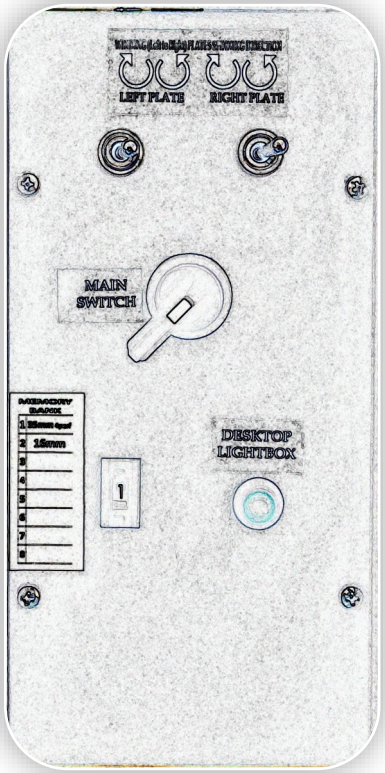
Film and operator safety devices

The D-Observer system is equipped with special film rolls designed so to touch film only at perforation edges and are provided with tin-like ball bearings to avoid film friction stresses and damages. The standard set of rollers is adaptable for the 35mm and 16mm film motion but a special otional set is available to let use the equipment with a wider range of formats.

The film rolls are provided with special safety slides for correct film re-positioning if a loading mistake occours .

In case of emergency or for any other reason the operator, the film and the equipment safety can be protected just breaking all tensions through the easily accessibile Emergency button. Rotate it to restore the tension to the equipment.

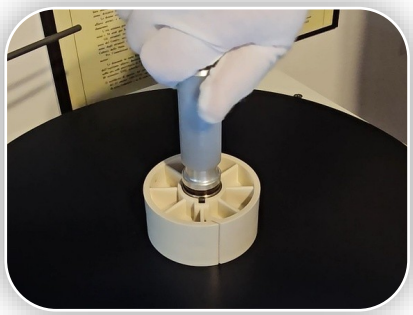
Side Control Panel



On the D-Observer right side panel you have access to the device controls:
· **Left Plate winding direction, Right Plate winding direction**: controls the plates way of rotation.
· **Main switch**: main system power switch.
· **Profile selector:** Using this control, you can select the desired memory bank of settings.
The equipment logic can be customised and adapted on a wide range of necessities. The standard version of the D-Observer is delivered with six active profiles for handling:
Profile 1: Standard 4p 35mm film
Profile 2: Standard Super16 and 16mm film
Profile 3: 9,5mm Pathé (*on selected models*)
Profile 4: 8mm/Super8 (*on selected models*)
Profile 5, 6, 7, 8: *free*

NOTE: Please reset the Steadiness Controls and the Counter for every profile switch exchange.
· **Light Box**: equipment light box switch.

Film loading



- Install on both plates the reel expansion shafts aligning and inserting them into the square fitting slots.
- Place the film take-up spool on the table right plate.
- Place the job roll on the left plate.
- Unroll film from left roll and load it on the right one.
- The transport plates way of rotation can be changed by the special switches on the side control panel.
- Hook up manually the film to the right film take-up spool.
- Tighten the rolls on their shafts rotating them clock wise (1/4 of turn is normally enough for the standard tight/loosen routine).

Tension control

For a correct adaptation of the equipment to the fragility of the loaded film, a tension control knob by equipment left side is provided. A clockwise rotation of this knob will enhance the force applied on the dancing arms spring, generating a more compact final film roll; a counter clockwise rotation of the same will diminish the applied force.

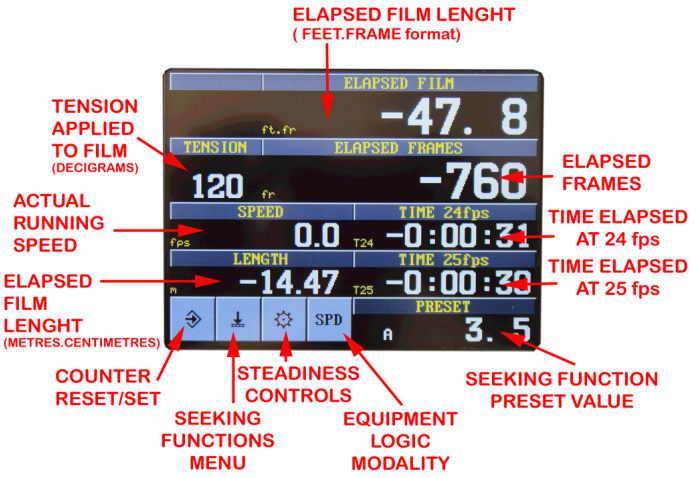
On the main display, an useful reference is visualized. Displayed values are in decigrams.

Touch Screen functions - Display Indications

The system display always shows in real-time all the position and running speed required informations.

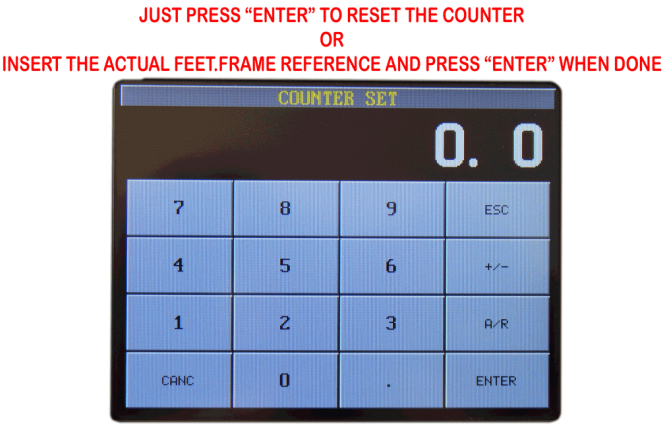
Other functions are even accessible from it just touching the proper menu button:

- COUNTER RESET/SET FUNCTIONS
- SEEKING FUNCTIONS
- STEADINESS FUNCTIONS



Counter function

The film position reset function clears the film counter and simultaneously establishes the image-centering reference relative to the sensor.
Therefore, the reference frame must be positioned at the center of the video window before performing the reset (or setting) of the reference frame.
Pressing the ENTER key when the menu opens will reset the counter to zero.
If required, it is also possible to manually set the reference value of the displayed frame when it differs from zero.



Seeking function

One important function of the D-Observer/D-Archiver equipment, is the ability to approach to any desired frame simply inserting, the right reference through the SEEKING FUNCTIONS menu.

D-Observer/D-Archiver bases its research on a frames referred syntax format; the seeking function can be used for:

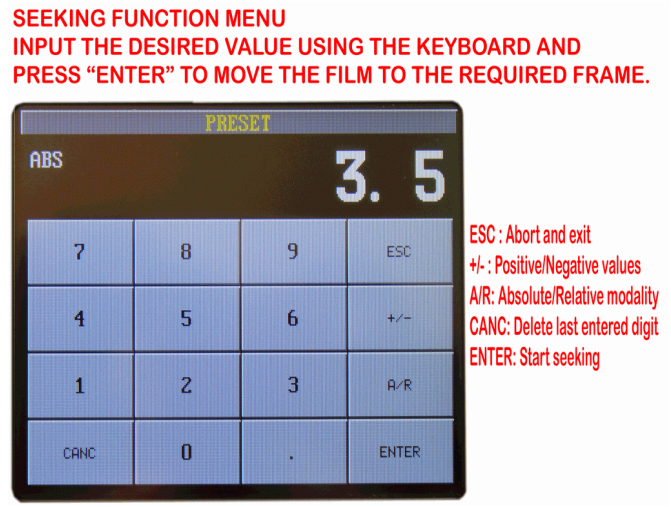
· absolute values (PRESET A): D-Observer/D-Archiver will moves to the frames entered position.

· relative values (PRESET R): D-Observer/D-Archiver will generate the target position (Preset in positive and negative) **adding** (for positive values) or **subtracting** (for negative values) to the actual counter value the inserted one.

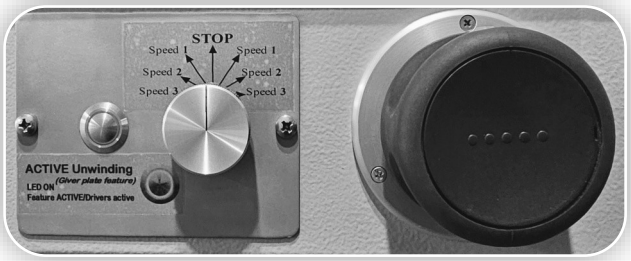
Notes: By pushing the ENTER (8) key, once the goal in absolute mode A is achieved, the system will restart to search with more precision the preset goal (considering that the machine stop precision is inversely proportional to the film running speed, the system will never stop at first exactly on the wanted frame, but will approach it with a +/-5 fr margin; an additional pushing of the ENTER (8) key is therefore necessary to remove By pushing the ENTER (8) key, once the goal in relative value R is achieved, the system will start the search of a new goal equivalent to the algebraic addition of the current film position (Ft) and the wanted value (Preset).

Interrupting the frame research process:

If, at any instant, a seeking function abort is required, press the button **STOP** (on touch screen).

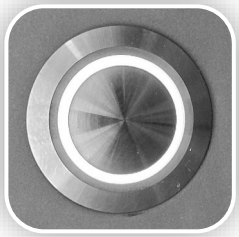


Film winding



One of the most used D-Observer functions is the film movement. You have at your disposal two kind of controls:

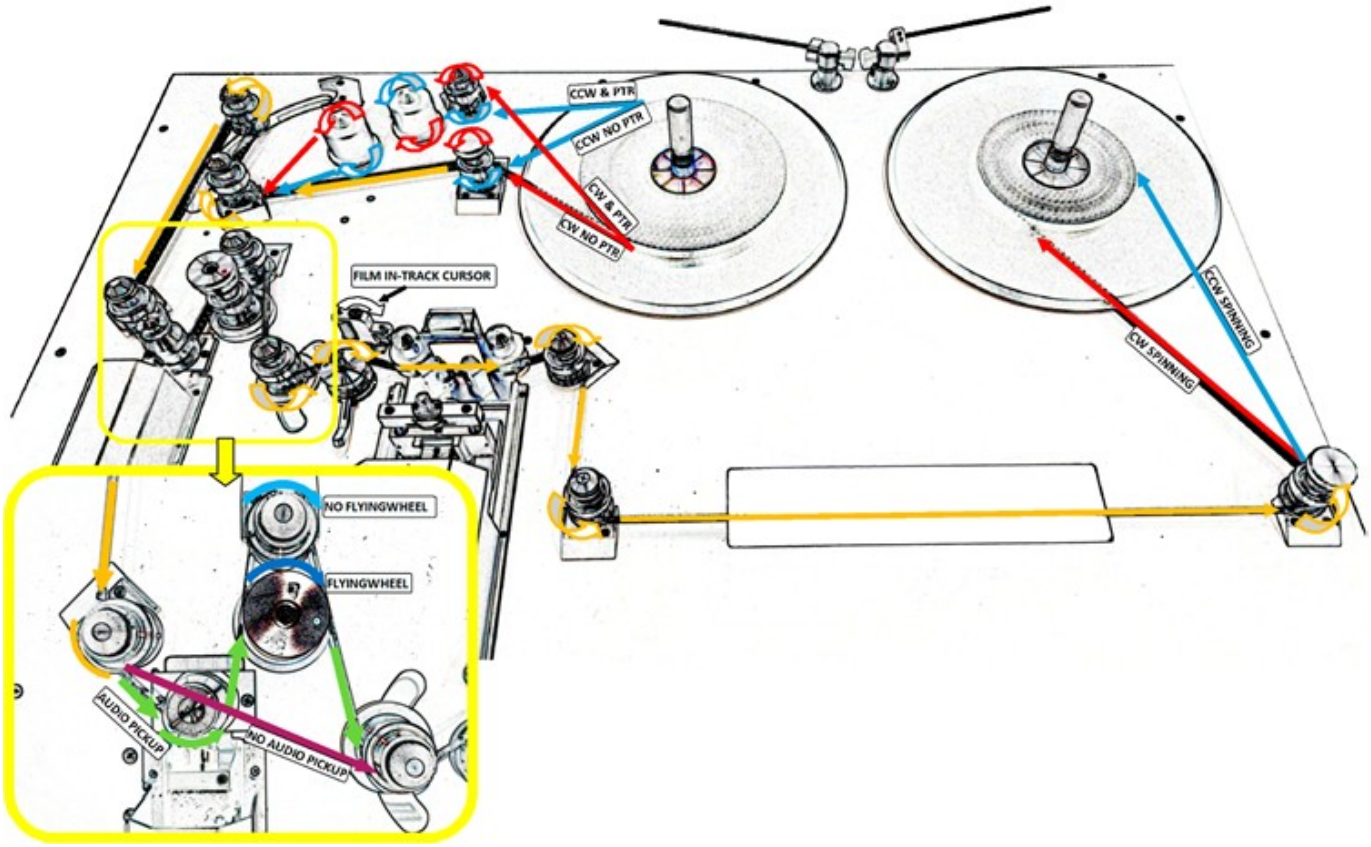
- Three speed control: you can select through this three different speeds. Clock wise positions for going forward, counter clock wise for backward.
- Jog shuttle: this variable position knob, offers a free speed film control. Clock wise turns for going forward, counter clock wise for backward.



An useful feature (if available) is the '**Active unwinding**'. Activating this function (illumination of the active button and absence of tension on the tension-arm lever) will engage the left motor, which will unwind the film during the loading movement (traction operator action) along the transport path. However, it is essential that the film first passes over the tension-arm control roller.
⚠NOTE: Always check that the rotation directions of the reels are correctly set to prevent any reverse-reaction of the motor, which could result in damage to the film.

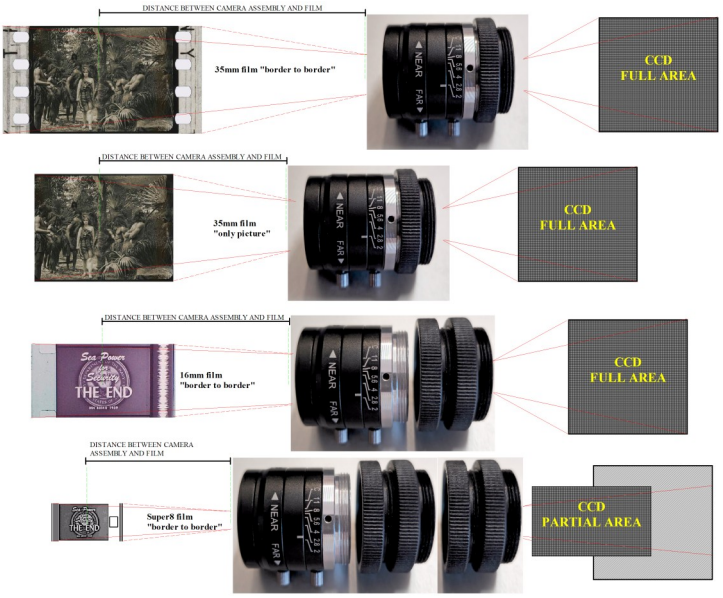
Film loading

The film transport requires the stock to pass through a series of rollers (with variable width). Not all rollers need to be engaged; the path may be adjusted according to the operator's needs and the specific characteristics of the film. However, the tension-arm roller (providing torque-control feedback) and the sprocket (providing speed-control feedback) must always be engaged to ensure correct machine operation.
Multiple explanatory video resources are available on the equipment support page.
Below is a schematic diagram illustrating some of the possible film-path configurations.



CCD Setting up

The sensor provided with the system comes equipped with a lens and a set of spacers and adapters to give the maximum possible flexibility. Assuming that the sensor has a fixed physical dimension with a fixed number of pixel over this surface, remains customisable and adjustable the area the user wants to "activate" of the sensor itself (ROI) and its relation with the film area that needs to be digitized. Adjusting, by consequence, the distance of the complete camera assembly and the distance between the focal point and the CCD surface, it is possible to adapt the scanning results an very wide number of film standards and digitizing requirements.

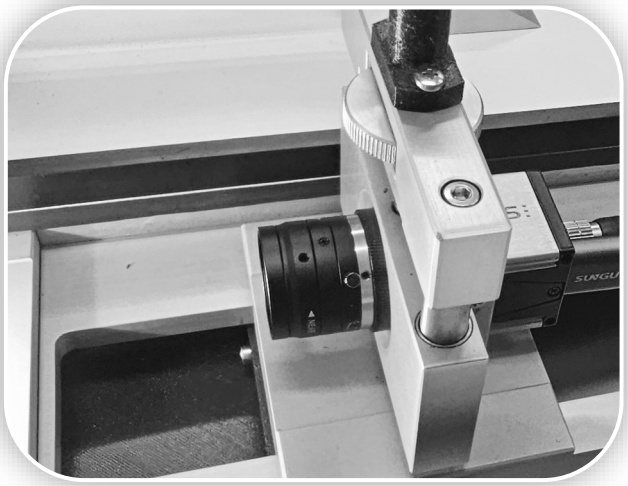


Colour camera assembly positional adjustment:

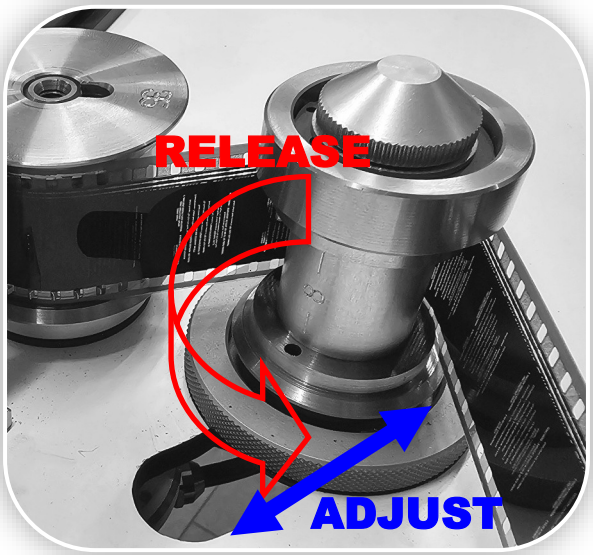
To move the camera on the horizontal axis for zooming in (cropping) or out (enlarge the visible field):

1. Place the camera as wished pulling or pushing the camera&lens block.
2. Focus the image.

To move the camera on the vertical axis (Horizontal picture framing): rotate the upper knob placed on the camera assembly.



Adjust the variable sprocket control



To avoid damages on even very shrunk films, D-Observer comes equipped with a variable engaging control that allows an adaptation of the sprocket on the level of shrinkage of the film.

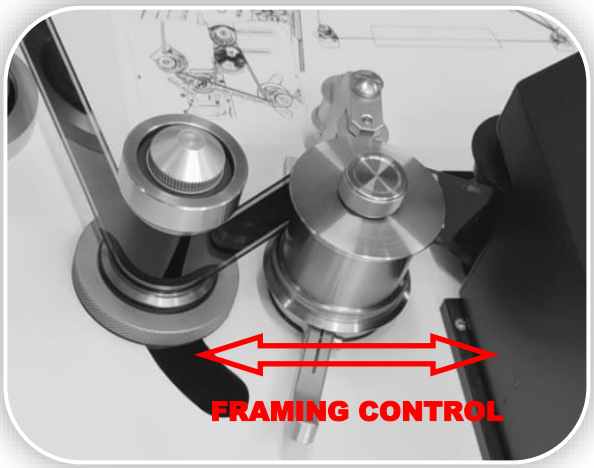
Its logic is based on two axioms: a smaller pin positioned on a sprocket and a micro error on the axle distance (caused by film ageing). The result is that, the less pins are used for engaging the film perforations, the more the film is shrunk.

Release/Lock procedure: to release the variable sprocket control roller, just rotate counterclockwise its basement; to lock rotate the basement clockwise.
DO NOT APPLY TOO MUCH FORCE TO AVOID PROBLEMS WHEN TRYING TO RELEASE IT BACK.
Move the sliding roller upward to diminish the number of pins that are engaging the perforations for shrunk films.

Move the sliding roller downward to enhance the number of pins that are engaging the perforations for standard films.

TRICK: With the film loaded and in tension but not running, check manually if the sprocket slips (you can move slightly the sprocket with no film engage) in the perforation. If so, enhance the number of pins engaging the film moving the roller downside.

Picture framing



The film path inside the optical group passes through a sprocket wheel with a coupled encoder which, during the film transport, sends to the CPU that controls the stroboscopic light, the running tempo of the film perforation.

To get the image framed on the display:
1. When film is loaded, manually centre the zero frame on the screen and then reset the counter (see above KEYBOARD USE); the system will keep the zero frame centring.
2. When film is running, if frame slides out, adjust the picture centring just sliding left<->right the cursor control.

Film formats switch procedure

The standard equipment is ready to be used with all 35mm formats and 16mm or Super16 films. Its adaptation and switch between the formats is a pretty simple procedure.
Installed rollers are adjustable on their width in order to swap from 35mm to 16mm films bandwidth films; an optional set of rollers is available for adapting the equipment to wider nomber of film formats.
The exchange procedure will require the execution of the following operations:

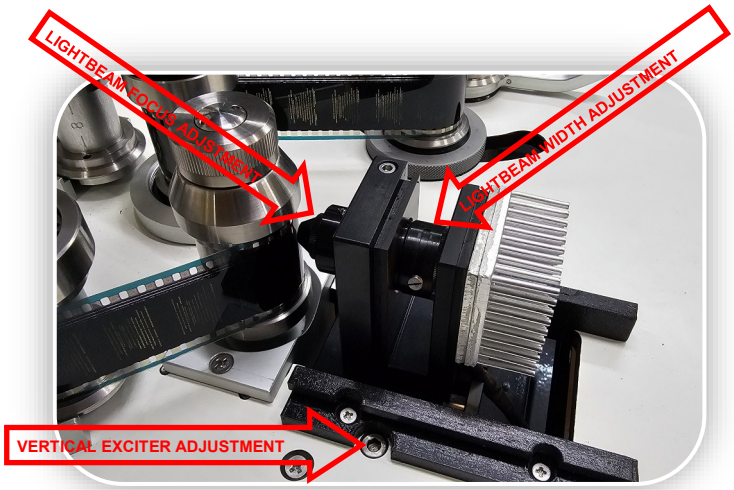
1. Remove all film from the table.
2. Switch off the equipment (from the side panel MAIN SWITCH) and exit from the software (just the table, computer shut down is not required).
3. Set the necessary film profile (obeying the film format and eventually its physical state).
4. Install the proper film gate.
5. Install the proper sprocket.
6. Install the proper sound reader head (ONLY for 35mm and 16mm COMOPT)
7. Switch ON back the table.
8. Align and adjust the sound reader light beam.
9. Start the software.
10. Load the film (pay a special attention to the film perforation positioning and sprocket pins matching).
11. Adjust the position of the camera according to the required area that needs to be visualised.
12. Adjust the position, focus and zoom level of the lens.

Sound Heads installation

The DObserver is equipped with a set of rotating-plane sound reader heads for optical soundtrack reproduction (ComOpt): one head for 35 mm film and two heads for 16 mm film (dedicated respectively to “high-position” and “low-position” optical tracks). An optional 16 mm magnetic soundtrack reader head (ComMag) may also be installed, or alternatively a variable-position magnetic head (FlexMag) suitable for all film gauges up to 35 mm.

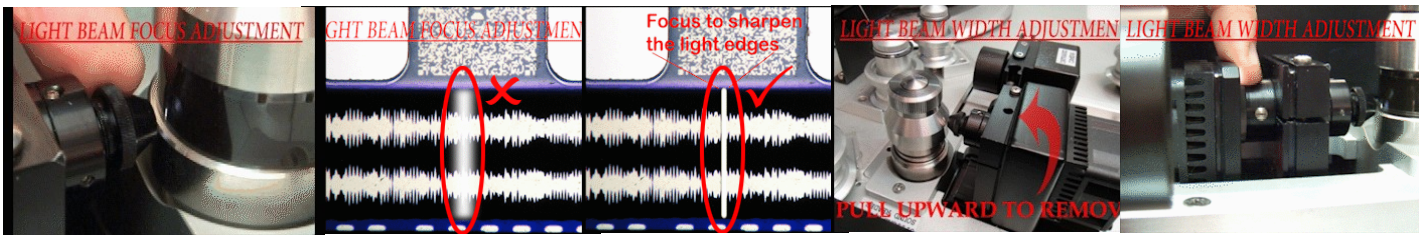
Installation of the ComOpt optical sound reader head

- Remove the mounting screws securing the currently installed head.
- Extract the head and replace it with the selected ComOpt unit.
- Secure the new head to the rotating plane.
- Adjust the vertical alignment of the exciter lamp’s light beam.
- Adjust the beam width if required.
- Adjust the beam focus only when necessary.



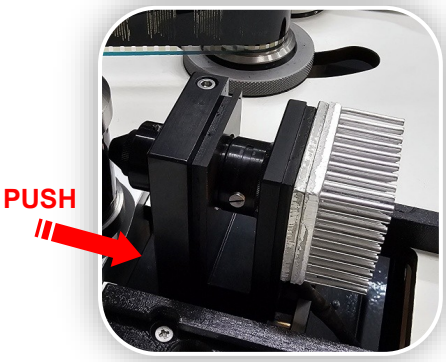
2. Focussing/Width adjustment

A sharp focus of the light beam is required and necessary for obtaining a good modulation effect from the sound track. This control is easily accessible from the front section of the light beam lens module itself.
An adaptation of the light beam width can be necessary for matching the variable width of the sound track. This control is accessible under the main module cover upward pullable. To change it just rotate the light beam lens module appropriate control.



Installation of the ComMag magnetic sound reader head

Remove the mounting screws securing the currently installed head.
- Extract the head.
- Push the exciter assembly to its rear position.
- Install the selected ComMag reader head.
- Secure the head to the rotating plane.



After film loading: Adjust the vertical position of the magnetic pickup, aligning it precisely with the soundtrack (FlexMag head).
Note: After performing an initial coarse alignment, refine the pickup position using the audio output as monitoring feedback
It is also possible—although not required—to adjust the incidence angle of the head relative to the film surface using the trimming screw highlighted in the accompanying illustration.