Installation and Calibration Manual

for
Universal Lens and Camera Test Bench CamCollimator CLC

Version Sep 24

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Step 1

Wooden cradle is sealed with nails, which have to be removed. Open lid and carefully take out packing materials and different parcels which contain accessories.

Step 2

The basic collimation test bench is fixed with 4 long screws at the bottom of the wooden chest. These have to be removed.

Carefully lift out complete unit of test bench. You need two or more persons for this step!

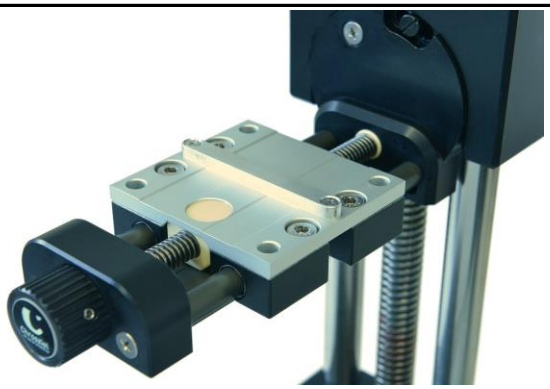
Step 3

With the enclosed allen wrench tool set complete test bench can be adjusted.

Step 4

The adjustable height support including the swing-away bracket have to be fixed with 2x M4 grub screws (included in the plate)

It needs to be clamped at the bottom (see arrow), the threaded rod must be in the ball bearing. This is included in the block.

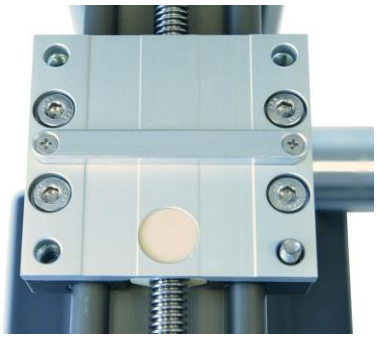


Step 5

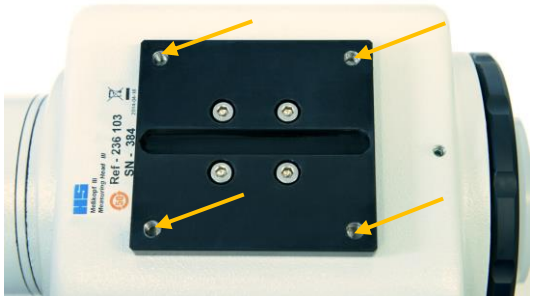
Insert the vertical and side adjustment of the measuring head into the left side basis. Both adjustments are self blocking spindle drives. The sidewards moving spindle table is already mounted to the vertical spindle.

The four screws for the measuring head are already pre-assembled. The screws must be carefully tightened crosswise. The plate (bottom of the measuring head should not be twisted.

Step 6



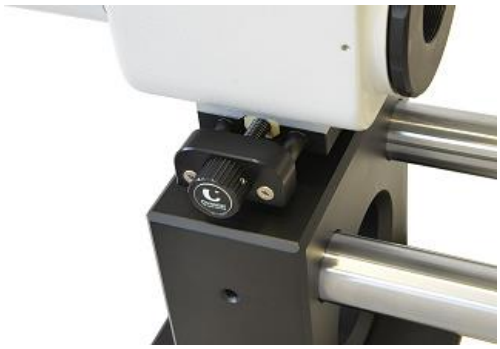
The four corner holes are for the screws to hold the measuring head. The centre block fits into the adaptor plate of the measuring head, in order to centre it on the spindle table.



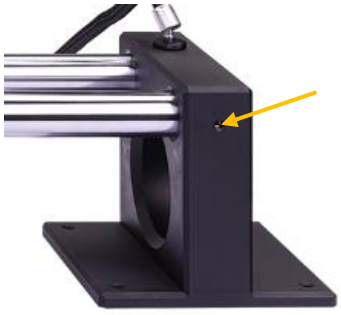
The adaptor plate on the bottom of the measuring head, in order to centre it on the spindle table. Move the spindle table as high as possible and put the measuring head on to it. It is **very important** to secure it with the four Allen screws (M5).

Attention! Do not exert any kind of force to both tubes of the measuring head. This has a negative effect to the measuring results

Do not bring any rotation to the plate. The plate must be placed vertically without tilting. It must be able to be fixed smoothly in the appropriate position. Be careful that no tilting occurs.



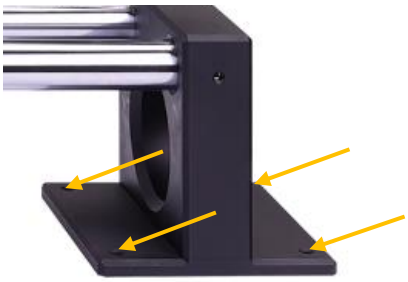
That is how it looks when done.



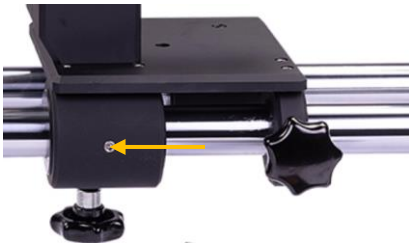
if necessary: Mount an additional Sliding Platform (2 persons are needed)

1. Open all screws on the top of the second sliding platform and the break wheel on the side.
2. Open the grub screw on the side support. (yellow arrow)
3. One Person has to hold both steel columns and one has to remove the side support.
4. Place the second sliding platform and the side support on the columns. The columns have to be at the end of the side support.
5. Fix the break wheel softly
6. Fix all screws on the top of the sliding platform

Step 7



Adjust both side support with the 4 grub screws. The steel columns has to be parallel and levelled to the ground. For that use a spirit level. After that the sliding platforms have to be moved smoothly. (Screws are included)



When the sliding platforms doesn´t move smoothly:

1. Try to fix it with Step 7 again or
2. Try to adjust the ball bearings with the grub screw showed in the picture

Attention: Do not touch the screws on the top of the platform! Otherwise the measured values will be shifted on the screen.

The screws as in the left picture marked can also be on the inside.

Step 8

Connect flexible light-conductive fibre to the cold light source SCHOTT KL 1600 on one end and on the other to the measuring head Mark III 45S.

Now electrical power can be switched on.

For operation please see manual of KL 1500.

Step 9

Put the measuring block on the sliding platform **(never ever with force!)** and tighten it by the knob underneath. Insert the micrometre on the right side and tighten it with the small Allen screw on the back side.

Step 10

Insert the tube with the attached video camera, plugin power- and BNC video-cable.

Don´t open any screws of the measuring head or Camera Adapter, only screw it on.

Step 11
Mount the articulated arm and the monitor, connect power- and BNC video cable.

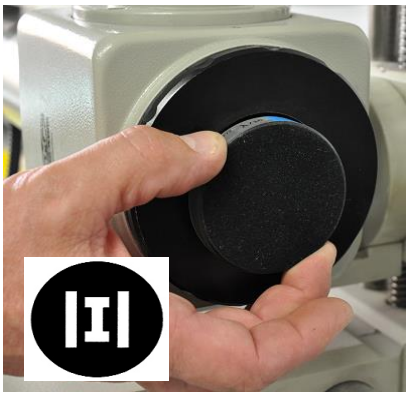
There is only one mains adaptor for the camera and the monitor.
Please use the splitter box for powering them.

Now electrical power can be switched on.

2. Calibration of a Collimator

Step 1

Switch on the light source of the collimator and take the plane glass.



Step 2

for Auto Reflex (no longer available):

Place plane glass in front of exit pupil, look through the eyepiece (ocular) and adjust the test pattern (Siemens star) to the best sharpness

for Universal:

With Universal and LensCamCollimator control that the pattern on the monitor indicates "back focus aligned".

Step 3

Select the measuring cylinder according to the flange length to be measured e. g. 52 mm for a PL mounted lens

For B4 and other mounts with glass way use the longer one of the two cylinders

Calibrate the test gauge by setting the scale to zero. Turn the outer ring of the gauge until the 0 mark matches the pointer.

Step 4

Switch on the digital micrometre, do not care about the read out.

Step 5

Screw the (PL) mount to the micrometre block and insert the test gauge carefully and completely.

Take off mounts with glass way and use the shorter cylinder instead of the mount.

Step 6

Turn the hand wheel of the digital micrometre until the pointer of the test gauge matches "0"

Step 7
press the button "Zero" on the digital micrometre - ready.

As long as the micrometre is not reset, one can change to other mounts - without re-calibrating.

Now put on the lens to check.

Auto reflex Collimator

By watching the test pattern through the ocular, turn the hand wheel of the digital micrometre until you get the sharpest image. If the micrometre shows positive out-of- tolerance values, reduce flange - for negative values add shims to extend the back focus.

Universal / Lens Cam-Collimator

too short correct too long

Do not use any adaptors!

Only Chrosziel mounts and calibration sets guarantee precision measuring.

Please follow now the collimator's manual for operation.

Notice: The Image trough the digital micrometer is not as sharp as with the plane glass. The reason is the smaller reflective surface and the fact that the surface of the plane glass is more reflective than the polished metal surface of the digital micrometer. This has no impact on repeatability, measurement accuracy or the assessment of possible deviations at all. The big advantage of the small surface is a significantly lower potential that it's outside of the center.