Operation manual

Nic-O-Tilt

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Nic-O-Tilt operation manual
1. edition

I. Foreword

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II. Purpose of use

The Nic-O-Tilt is a device for recording animated time-lapse sequences.

III. Safety instructions

The operation of the Nic-O-Tilt is at the user's own risk. The user is liable for damage to property and personal injury resulting from the operation of the Nic-O-Tilt.

The nominal voltage of the device is 12V. Operation at a higher voltage may result in unwanted heat generation, which may lead to the destruction of the device.

The Nic-O-Tilt is designed for indoor use. When used in humid areas and outdoors, the appropriate safety regulations must be observed, especially when the unit is connected to the mains.

When operating outdoors, the user is required to provide adequate weather protection.

The Nic-O-Tilt has no end stops for the end position of the camera positions. To prevent damage, do not operate the unit unattended.

IV. Guarantee

I grant private end customers the legal guarantee of 2 years on all parts of the Nic-O-Tilt. Modified components, assemblies and controllers (firmware) are excluded from the warranty.

Prerequisite for the guarantee is the use of the device according to the purpose of use and compliance with the above safety regulations.

V. Setting the worm gear preload

After the running-in phase or prolonged use of the Nic-O-Tilt, the play in the transmission may increase. This cannot be avoided mechanically. The following steps are necessary to reduce this backlash:

1. remove the camera angle or extension bar from the turntable.
2. remove two countersunk screws DIN 7991 - M5x10 (Fig. 1)

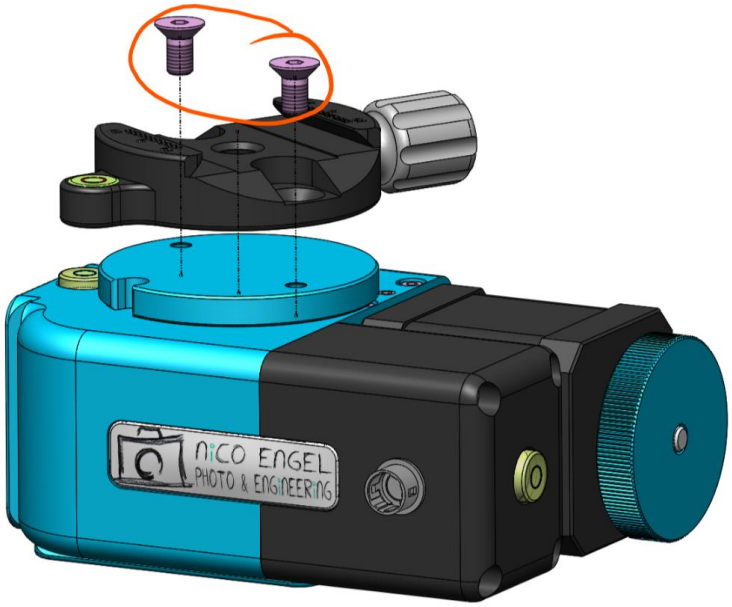

Fig. 1

3. turn the turntable by hand until you can see the clearance on the cheese head screw (Fig. 2).

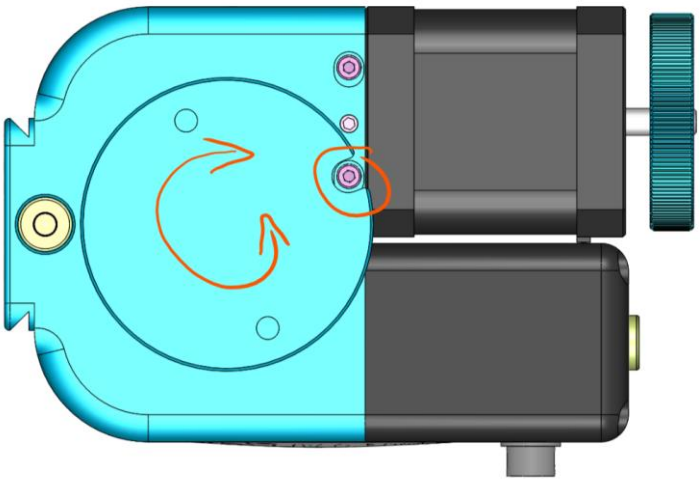

Fig. 2

4. loosen, but do not unscrew completely, all fastening elements of the motor unit;

   - Four cheese head screws DIN 912 - M2.5x6 (Fig. 3)
   - two grub screws DIN 916 - M4x4 (Fig. 3)

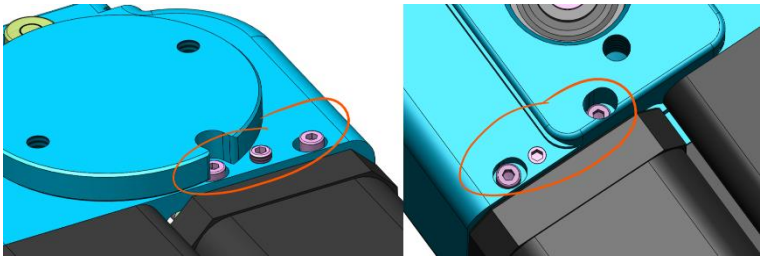

Fig. 3

5. Press the motor by hand towards the turntable and cover and tighten the two upper cap screws lightly (hand-tight) with continued pressure on the motor.
6. Tip: Place the Nic-O-Tilt on a suitable surface as shown and press it with one hand on the motor (Fig. 4).

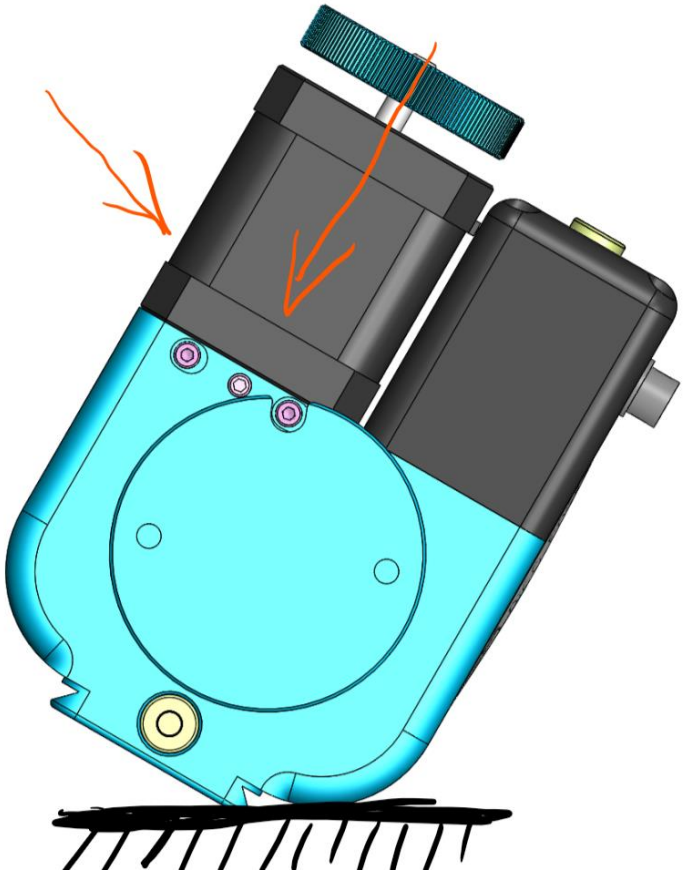

Fig. 4

7. Tighten two lower cylinder screws lightly (hand-tight) as well, force no longer has to be exerted.
8. Now slowly screw in the side grub screw DIN 916 - M4x10 (Fig. 5) to increase the preload.

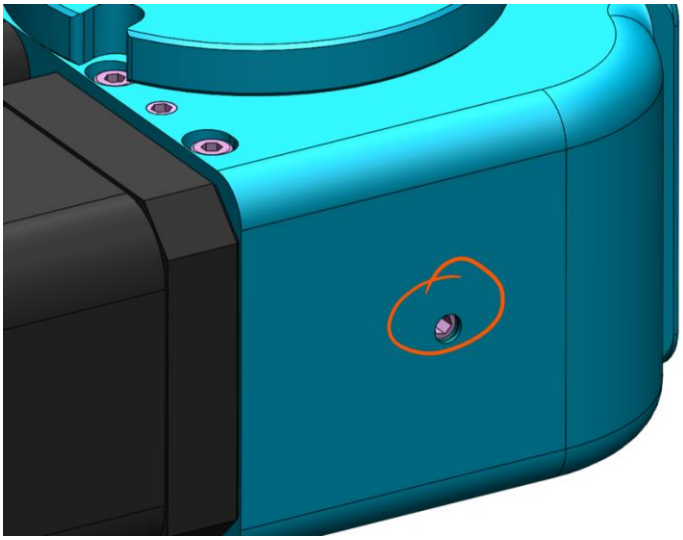

Fig. 5

9. turn the handwheel when turning it in and check that it moves smoothly, do not overtighten! If too much pretension is applied, the stepper motor will jam and stop turning (strong whirring / vibration).

10. try to turn the turntable by hand to see if the play is outside. If there is any play, this can be felt quite easily, as the turntable can be turned without noticeable effort (wobbles a few degrees back and forth). If a lot of force is applied, the turntable will twist slightly but swing back again (like a spring). This is due to the plastic gears, which are not infinitely stable and which can transmit a large force to the small shaft via the lever.

11. when the play is outside, tighten the four cap screws (Fig. 2) to a maximum of 0.5Nm.

12. to secure the position, tighten the two grub screws (Fig. 2) to a maximum of 2.0Nm.

13. Mount the countersunk screws (Fig. 1) again and tighten them to a maximum of 4.0Nm.

VI. Troubleshooting: A lot of play on the turntable

If, under any circumstances, grub screws on the turntable should come loose, you will notice a rather large play on the turntable if it can be turned several degrees without much effort, noticeably more than if there is a pure gear backlash (see point V.). To eliminate this, the following steps are necessary:

1. Loosen four cylinder screws DIN 912 - M3x45 (Fig. 6) on the motor cover.

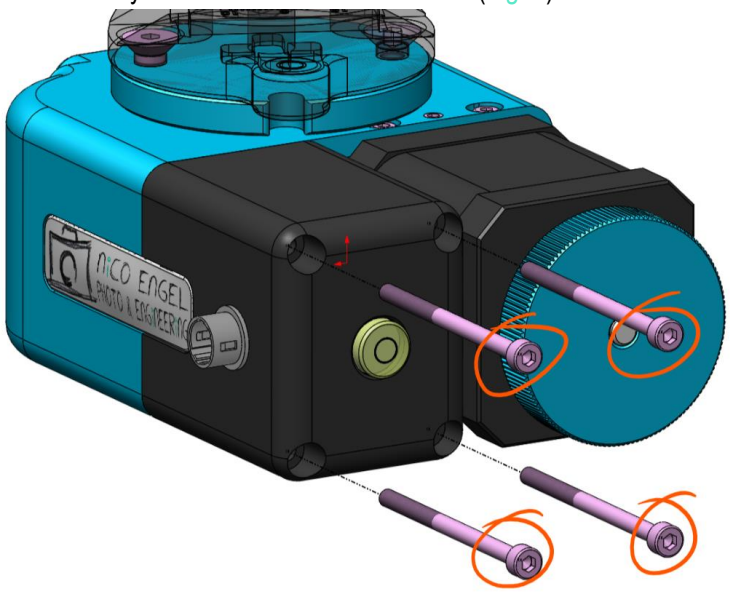

Fig. 6

2. tilt the motor cover in the direction of the attached logo.
3. Carefully remove the logo from the motor cover (still sticks sufficiently well afterwards).
4. looking inwards, the worm wheel (Fig. 7) becomes visible on the turntable.

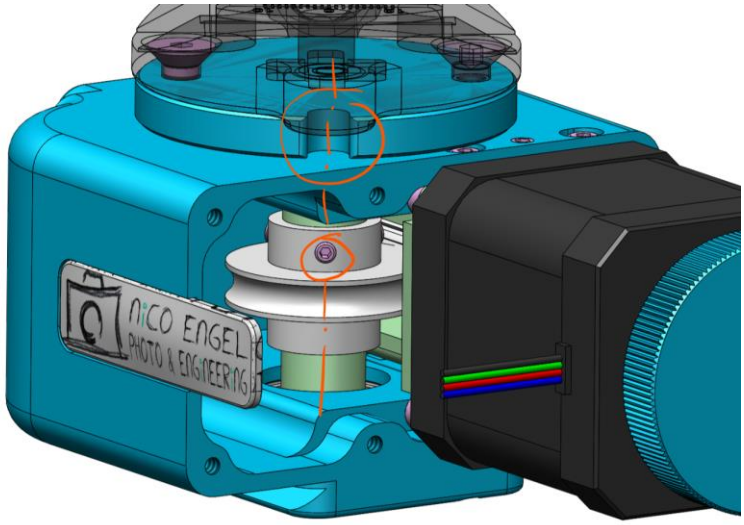

Fig. 7

5. three grub screws DIN 916 - M3x5 are attached to the circumference, each distributed at 120°.
6. three spanner surfaces distributed over 120° are also milled on the turntable shaft. One of them points exactly in the direction of the clearance on the top of the turntable (Fig. 7).
7. Align the worm wheel with a grub screw for franking and tighten hand-tight.
8. Turn the motor further with the handwheel and hand-tighten the next two grub screws.
9. Then tighten all three grub screws one after the other to a maximum of 1.0Nm.

10. check extreme play on the turntable, this will no longer be the case.
11. Replace the motor cover and align it flush with the edge.
12. Tighten four cap screws to a maximum of 1.0Nm.
13. stick on the logo again and press it on firmly.