Arduino-Timelapse-Slider

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hardware documentation

about this / über dieses Dokument

english: This is the documentation for the technical drawings and all the hardware. all the technical drawings are specific to the parts I used. If you use other parts, some measurements must be changed.
deutsch: Dies ist die Dokumentation für die technischen Zeichnungen, sowie die Hardware an sich. Bitte beachte, dass die Abmesungen spezifisch für die von mir verwendeten Teile sind. Beim Verwenden anderer Bauteile müssen einige Abstände somit geändert werden.

basic Measurements / Grundabmessungen:

english:

- distance between the tubes (inner edges): 45 mm
- tubes diameter: 12 mm
- bearings: 10mm x 4 mm

deutsch:

- Abstand der Rohre (innen): 45 mm
- Durchmesser Rohre: 12 mm
- Kugellager: 10mm x 4 mm

parts I used / verwendete Teile:

english:

amount	description
12	ball bearings MR 104 ZZ / 4 x 10 x 4 mm
8	zylindrical head screws M4x15
4	zylindrical head screws M4x20
24	nuts M4 (8 as distance roll, 16 as counter nut and for the correct distance)
4	rope reel with ball bearings (detailed information see weblink section) outer diameter 24 mm, inner diameter 20 mm, height 11 mm
4	screws M5x15
4	nuts M5 (as counter nut and distance roll)
1	M5 screw and washer to fasten the quick release plate
1	manfrotto 200PL quick release plate
1	manfrotto ball head (using the 1/4 zoll screw of the QR-plate to fasten it)
1 m	toothed belt 5M-9
2	toothed disk (gear) 12-5M-9
4	tiny M3 screws to secure the belt
1	stepper motor (bipolar, 2.7V, 1000mA) by pololu

- small screws to fasten the stepper motor

weblinks

- rope reel: http://jost-technik.de/Klappensteller/Zubehoer---Sonstiges/Umlenkrolle-fuer-Huehnerklappe.html
- ball brearings from ebay
- toothed belt and disk: https://zahnriemen24.de
- stepper motor http://www.exp-tech.de/Servos-und-Motoren/Stepper-Motor-Bipolar-200-Steps-Rev-35x36mm-2-7V-1000mA.html

deutsch:

- deutscher Text folgt noch.

installation notes / Aufbauanweisungen:

english:

tubes, tube support and stepper motor

- build one tube support, that holds the two tubes and a gear for the belt
- build another tube support, that can hold the stepper motor with the other gear on it.

inner sledge

- the inner sledge uses the 10 mm bearings to be held in position. On every side (left and right) are 2 bearings at the top, 2 at the bottom and two on the inner side. All of them are on M4-Screws.
- the inner bearings have a nut on top and bottom as distance tubes, you can also use 3 mm thick tubes instead. The screw of these bearings is also used to hold the tree parts of the inner sledge together. They must be at least 15 mm long
- the outer bearings will be placed on the shorter M4 screws with two nut (each 3 mm) to hold them in place and keep them at the correct distance from the sledge.

outer sledge

- put the rope reel on the M5 screw and secure with one nut. Screw it carefully to the aluminium base AND put it on the rails (tubes).

toothed belt

- cut the belt in two pieces, drill a hole for the M3 screws betwen the tooths to one side of each belt
- hold the belt on the slider to get the correct legth and mark the position for the screw. Kepp in mind, that the two belts will have different lenghts.
- drill the other two holes
- screw the belt to your slider

deutsch:

Rohre, Endstücke und Schrittmotoren

- Übersetzung folgt

innerer Schlitten

- Übersetzung folgt

äußerer Schlitten

- Übersetzung folgt

Zahnriemen

- Übersetzung folgt