

Step 1:

Install Arduino Software and Teensyduino-Addon

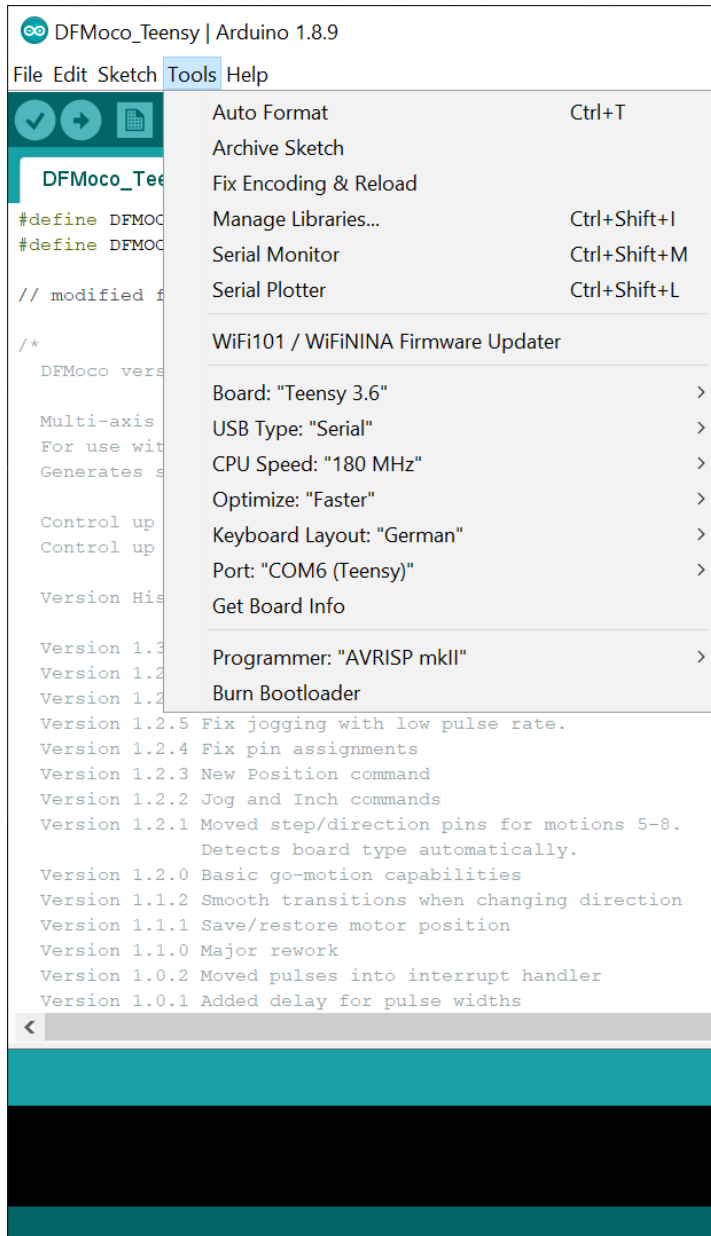
<https://youtu.be/GvsXE-jLFT0>

But instead of downloading the firmware and libraries from the website, you take these here:

https://downloads.puremoco.com/firmware/dragonframe/DFMoco_Teensy.zip

<https://downloads.puremoco.com/firmware/dragonframe/libraries.zip>

- The current implementation of Dragonframe and the PureControl only offers „stop-motion“ movement
- Continuous movement for video shooting (real-time) is currently not possible and will take some time to be developed.



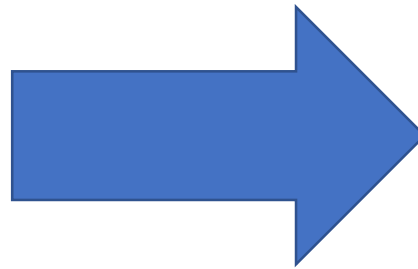
1. Extract the archive „DFMoco_Teensy.zip“ and open the Arduino file inside.

2. Choose Tools → Board → Select „Teensy 3.6“

```
digitalWrite(EN_PINZ, LOW);
delay(100);
MotorU.begin(); // Initiate pins and registeries
MotorU.microsteps(4);
MotorU.rms_current(600);
MotorU.stealthChop(1);

digitalWrite(EN_PINU, LOW);
delay(100);
MotorV.begin(); // Initiate pins and registeries
MotorV.microsteps(4);
MotorV.rms_current(600);
MotorV.stealthChop(1);
```

Search (CTRL+F) in the code for the lines on the left and adjust the current for the Focus and Zoom Units (U-axis and V-axis)



Make sure those units do not heat up during operation

```
digitalWrite(EN_PINZ, LOW);
delay(100);
MotorU.begin(); // Initiate pins and registeries
MotorU.microsteps(4);
MotorU.rms_current(200);
MotorU.stealthChop(1);

digitalWrite(EN_PINU, LOW);
delay(100);
MotorV.begin(); // Initiate pins and registeries
MotorV.microsteps(4);
MotorV.rms_current(200);
MotorV.stealthChop(1);
```



DFMoco_Teensy

```
#define DFMOCO_VERSION 1
#define DFMOCO_VERSION_STRING "1.3.0"

// Modified for Teensy support
/*
  DFMoco version 1.3.0

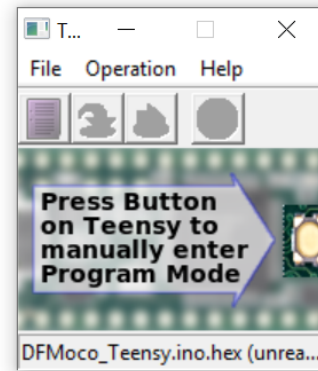
  Multi-axis motion control.
  For use with the Arc motion control system in Dragonframe 4.
  Generates step and direction signals, which can be sent to stepper motor drivers.

  Control up to four axes with an Uno, Duemilanove or 101 board.
  Control up to eight axes with a Mega or Mega 2560.

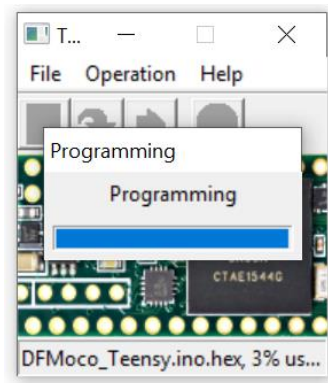
  Version History

  Version 1.3.0 Arduino 101 support. Remove non-Arduino support (chipKit, Maple).
  Version 1.2.7 Direction setup time.
  Version 1.2.6 Add PINOUT_VERSION option to use older pinout.
  Version 1.2.5 Fix jogging with low pulse rate.
  Version 1.2.4 Fix pin assignments
  Version 1.2.3 New Position command
  Version 1.2.2 Jog and Inch commands
  Version 1.2.1 Moved step/direction pins for motions 5-8.
           Detects board type automatically.
  Version 1.2.0 Basic go-motion capabilities
  Version 1.1.2 Smooth transitions when changing direction
  Version 1.1.1 Save/restore motor position
  Version 1.1.0 Major rework
  Version 1.0.2 Moved pulses into interrupt handler
  Version 1.0.1 Added delay for pulse widths
```

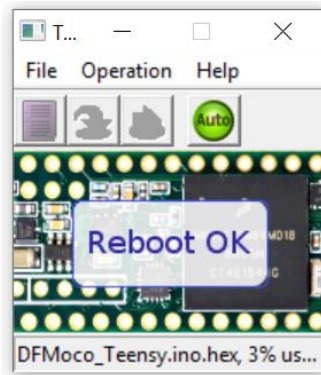
Compiling sketch...



Click on „Upload“ button, the little Teensy window should appear

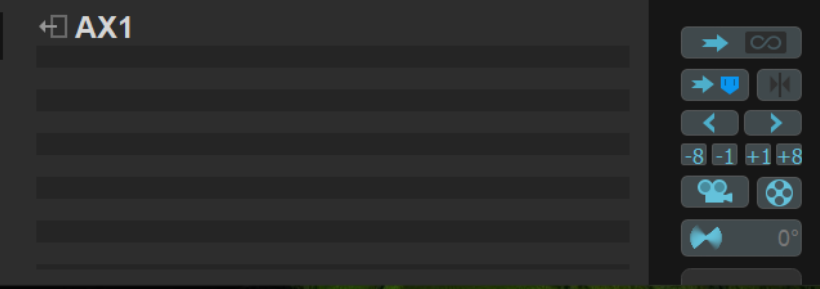
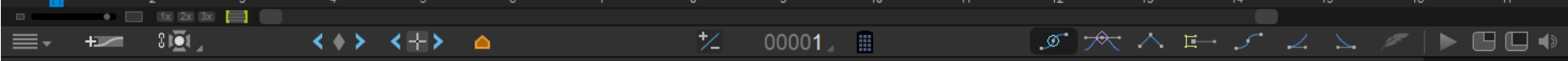
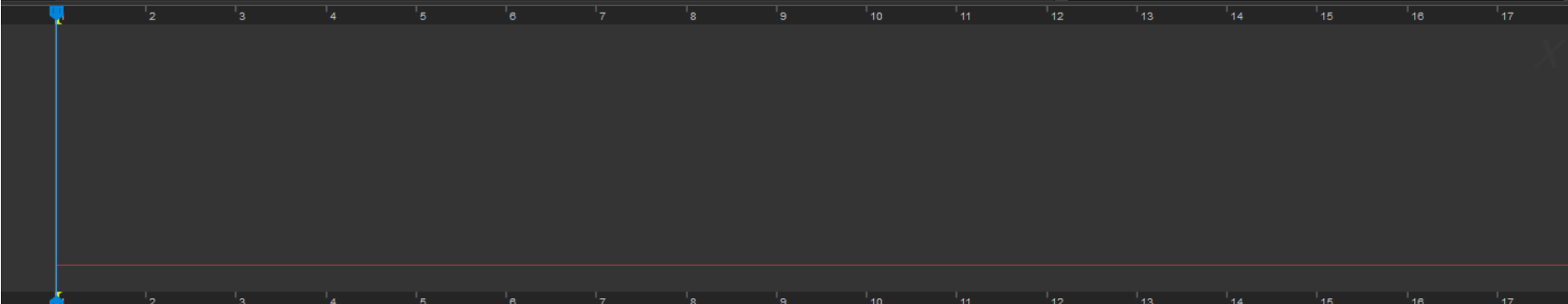
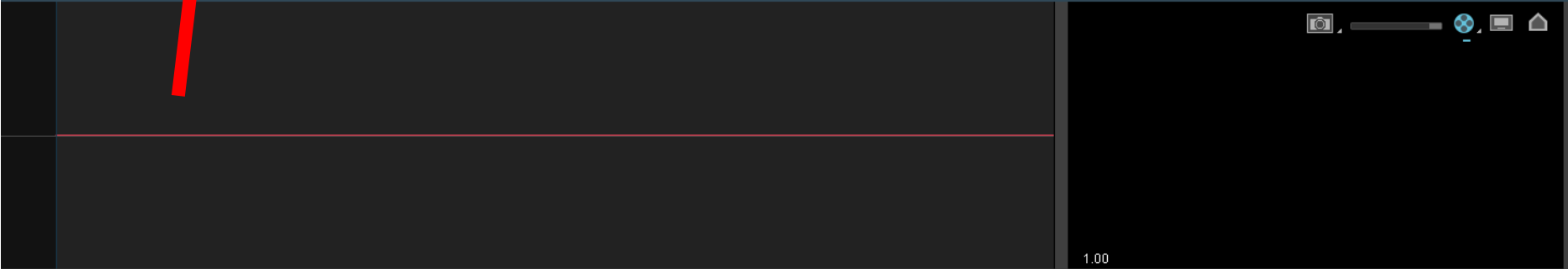


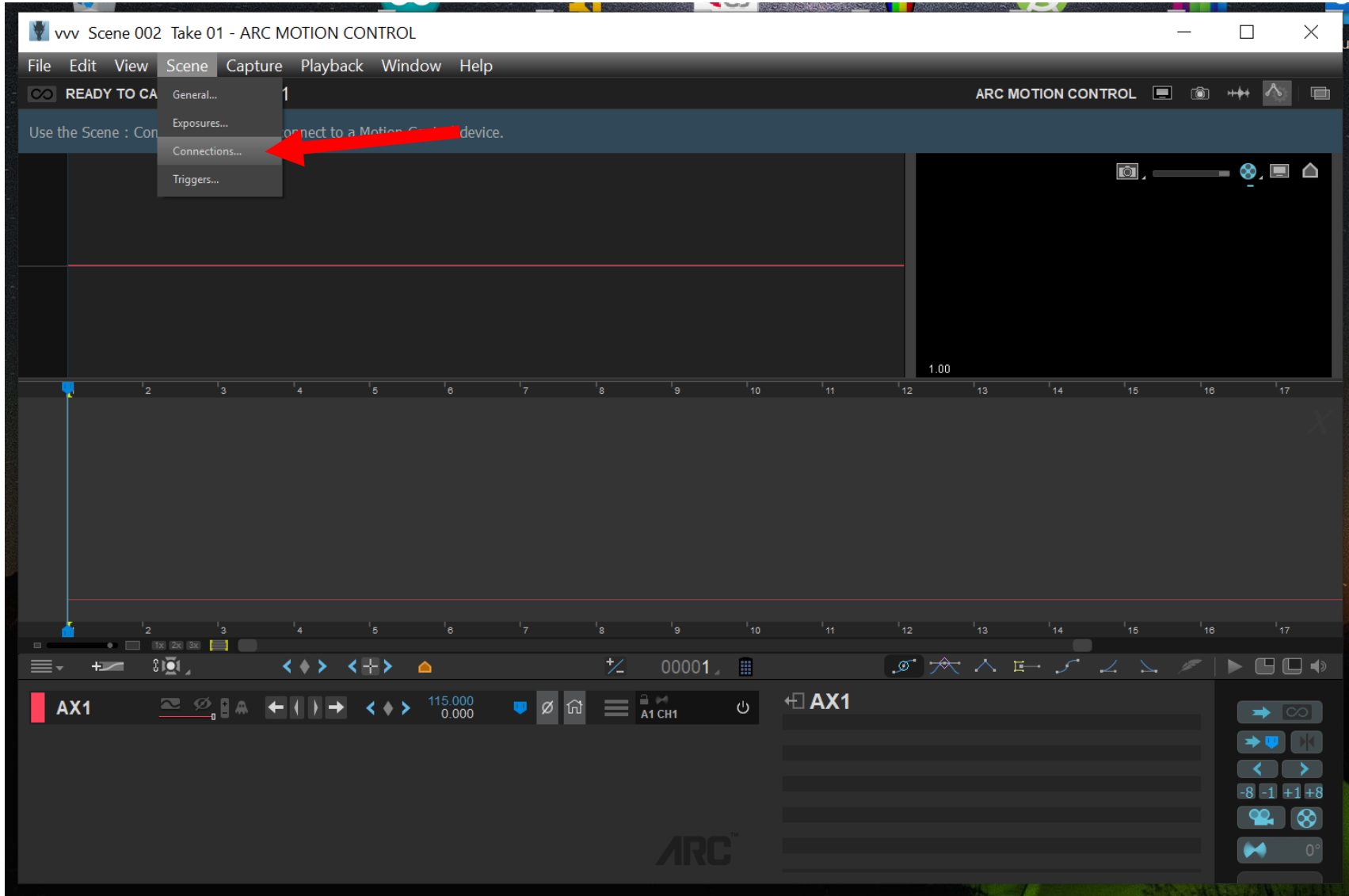
The window will show „Programming“

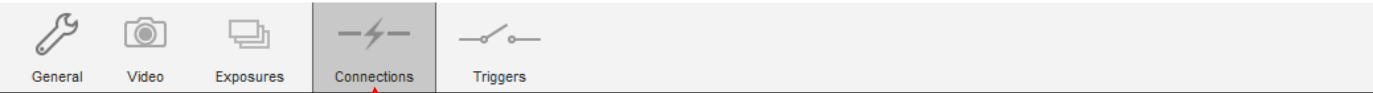


And then it will show „Reboot OK“, upload is finished, you can close the Arduino Software

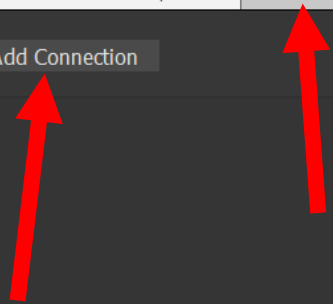
Use the Scene : Connections dialog to connect to a Motion Control device.



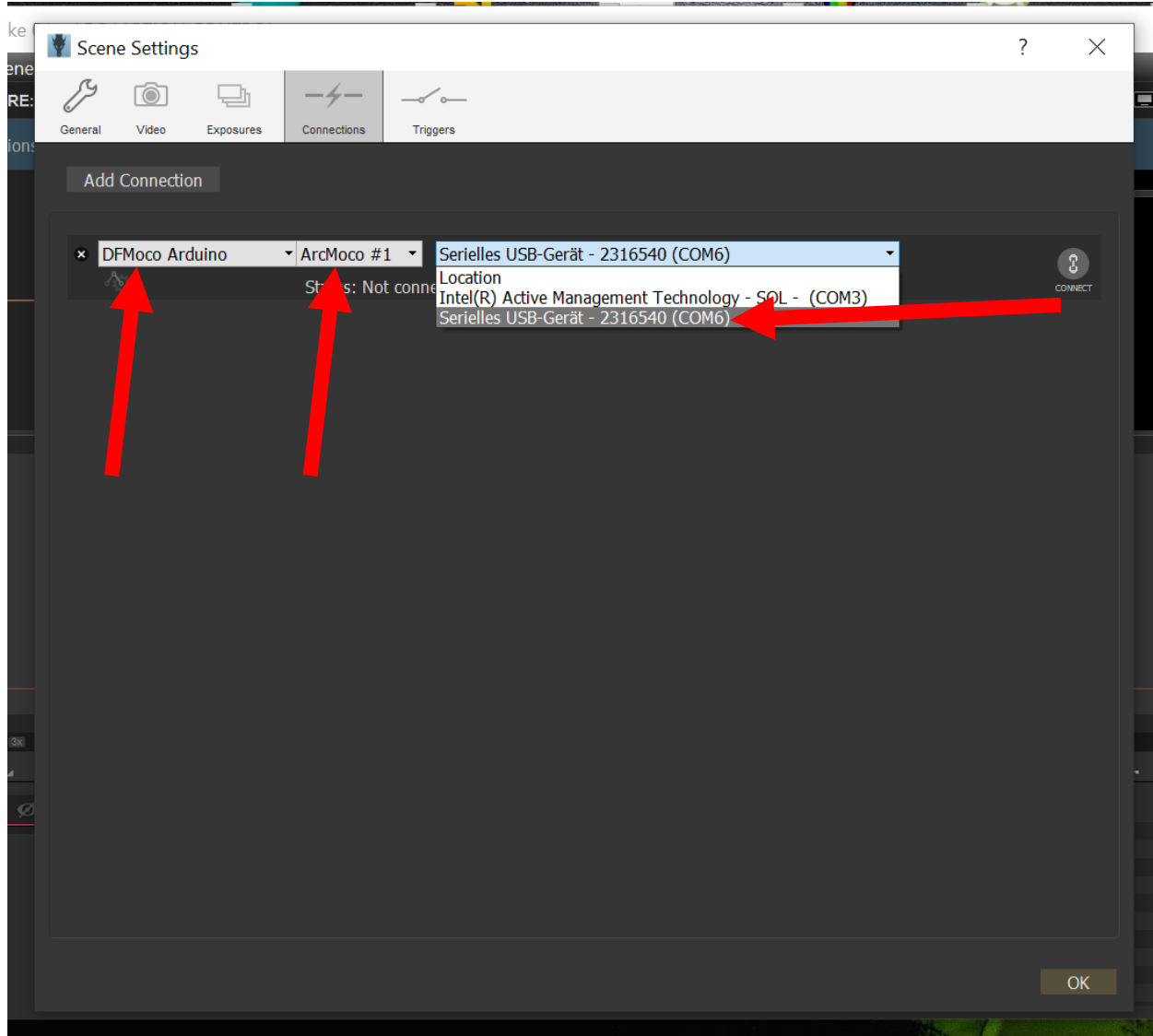




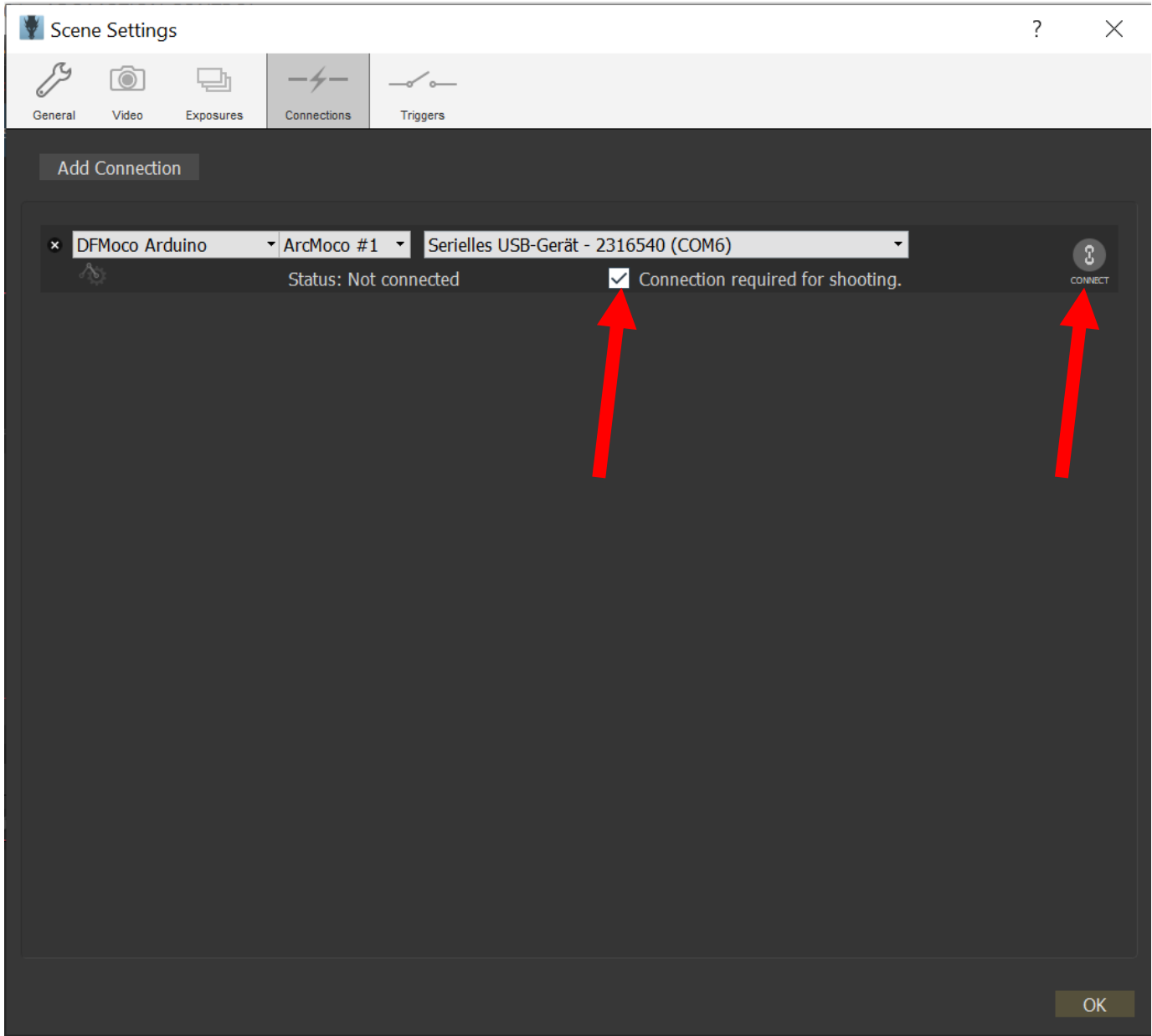
Add Connection

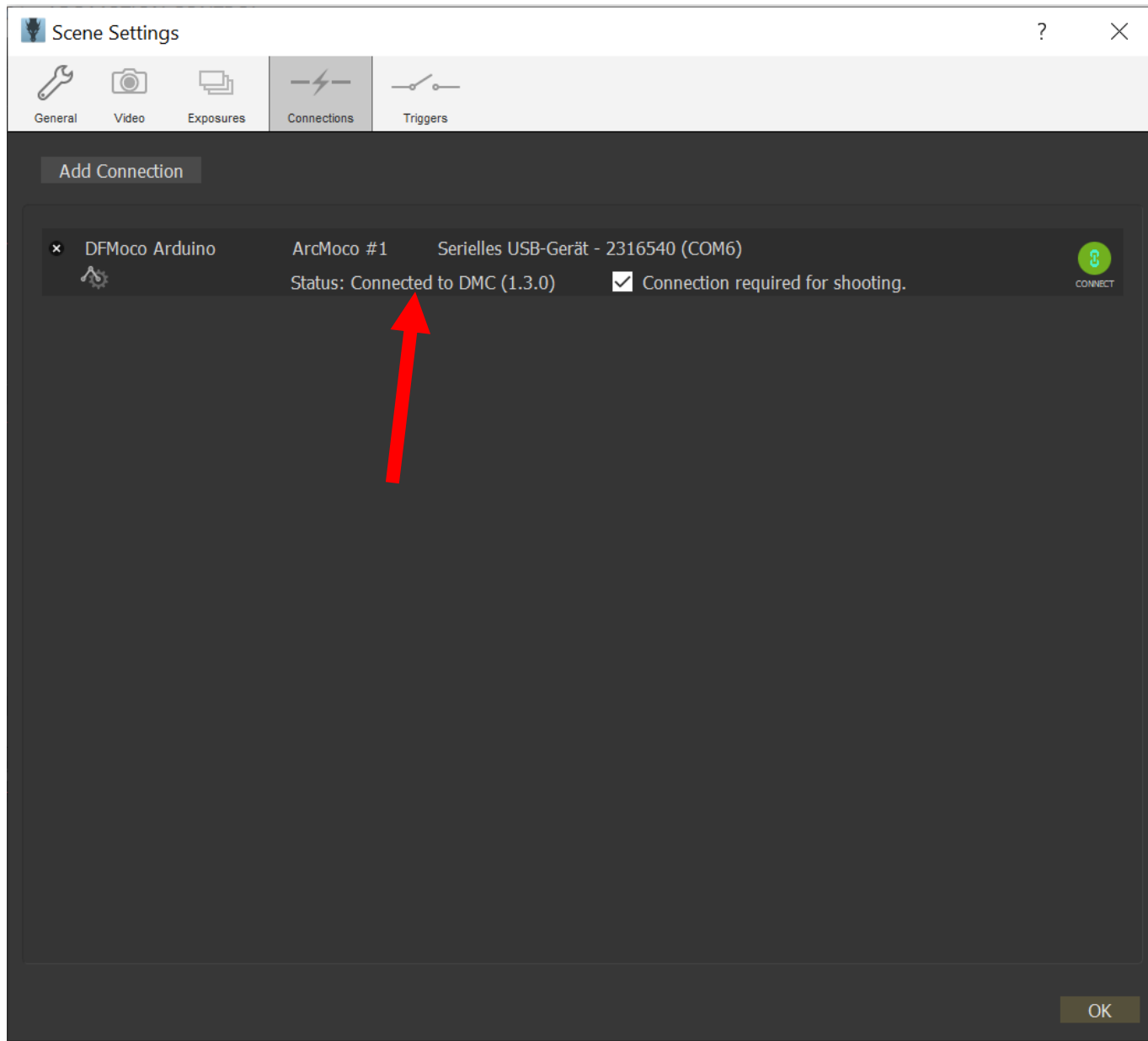


OK



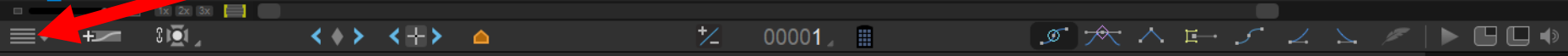
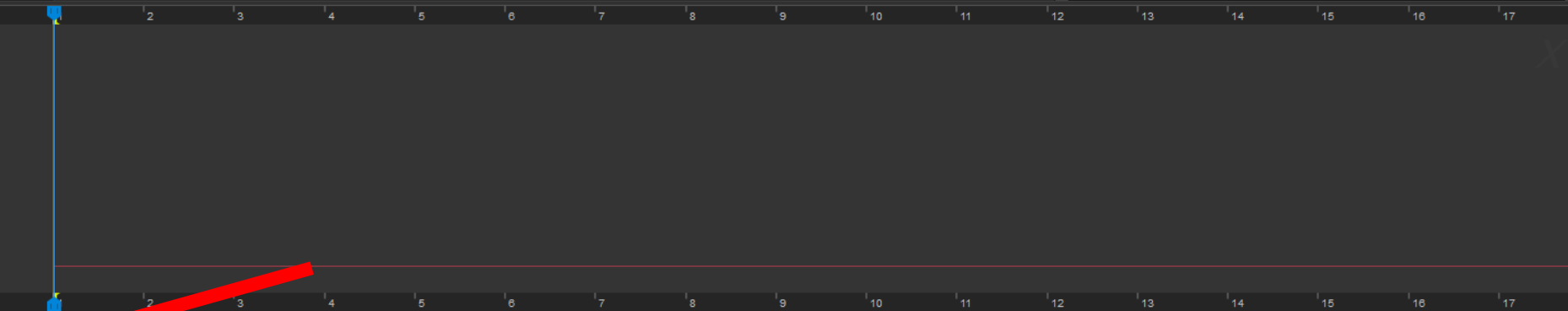
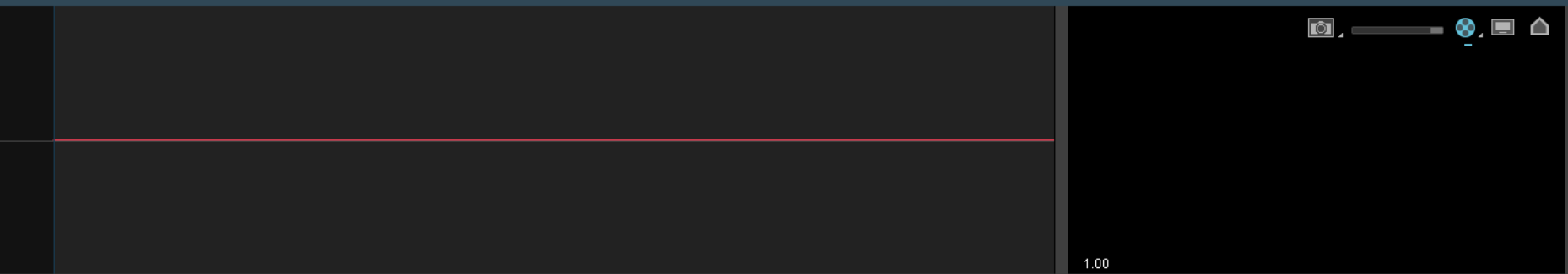
Make sure to select the right COM-port





Status should change to Connected after you click „Connect“

Use the Scene : Connections dialog to connect to a Motion Control device.



AX1 115.000 0.000 A1 CH1

AX1

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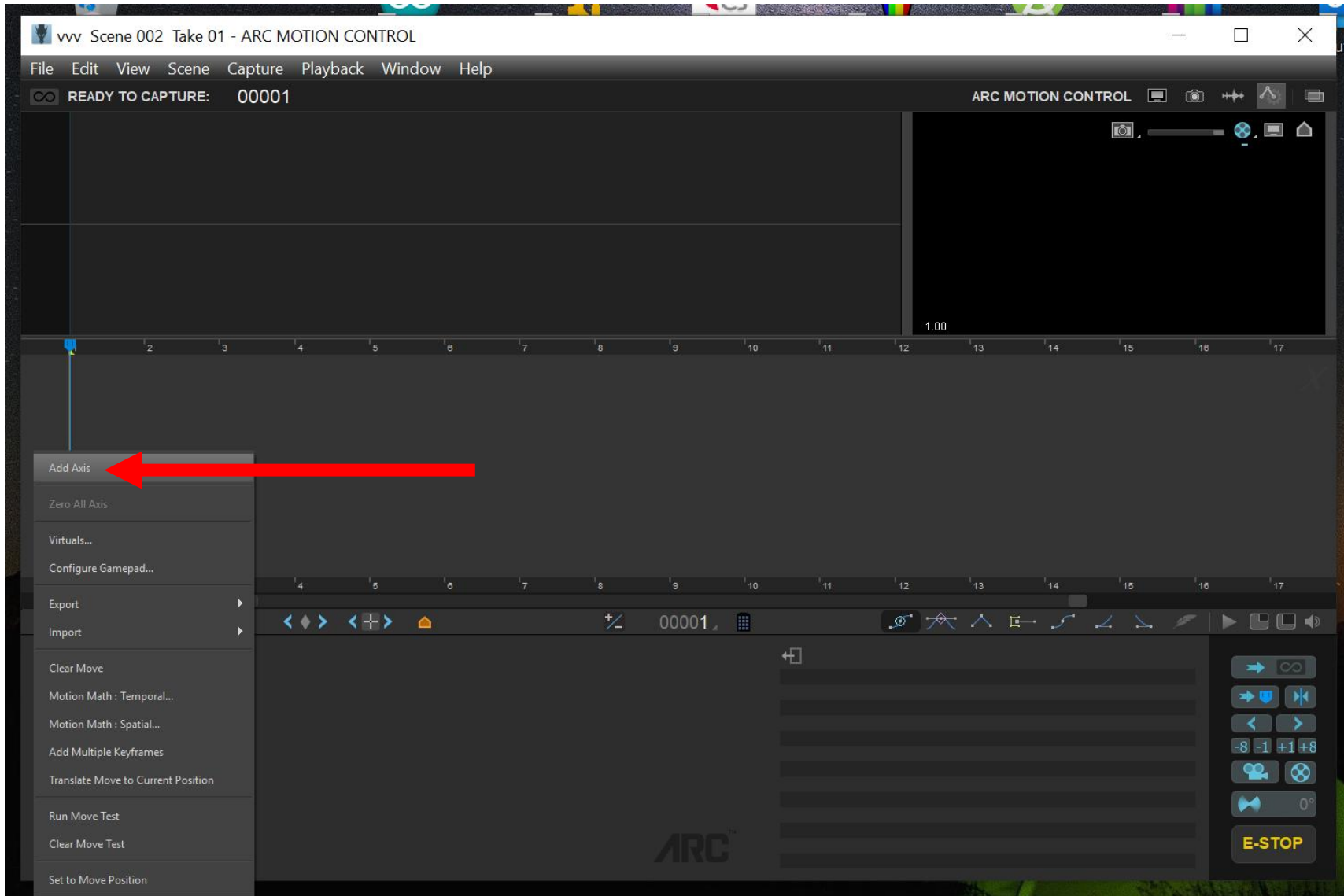
-8 -1 +1 +8

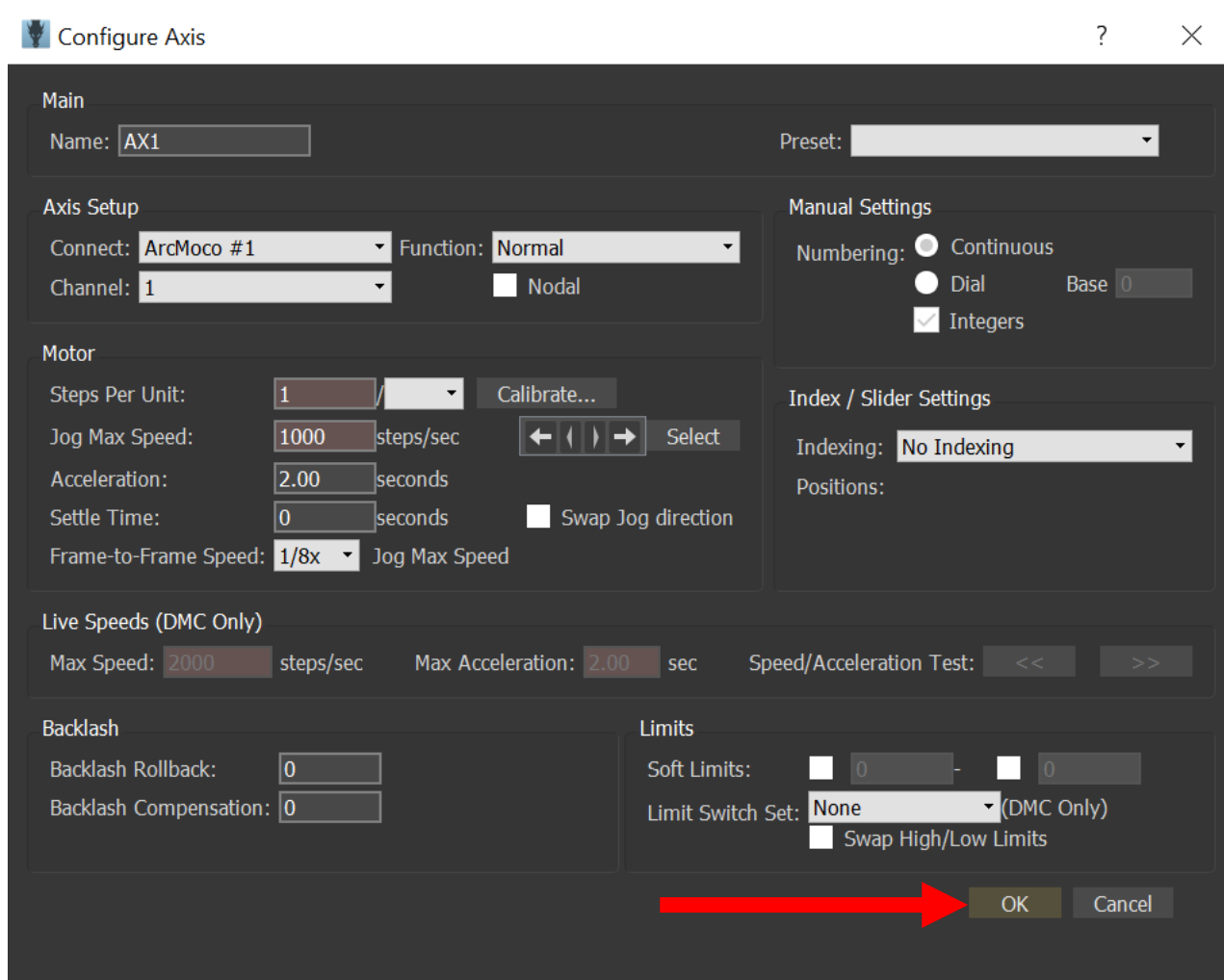
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ARC

The bottom section of the interface contains a control panel for the 'AX1' device. It includes a status bar with 'AX1', '115.000', '0.000', and 'A1 CH1'. Below this is a large 'AX1' label, a set of playback controls (stop, play, etc.), a set of offset controls (-8, -1, +1, +8), and a set of camera controls (target, focus, etc.). The 'ARC' logo is visible at the bottom center.





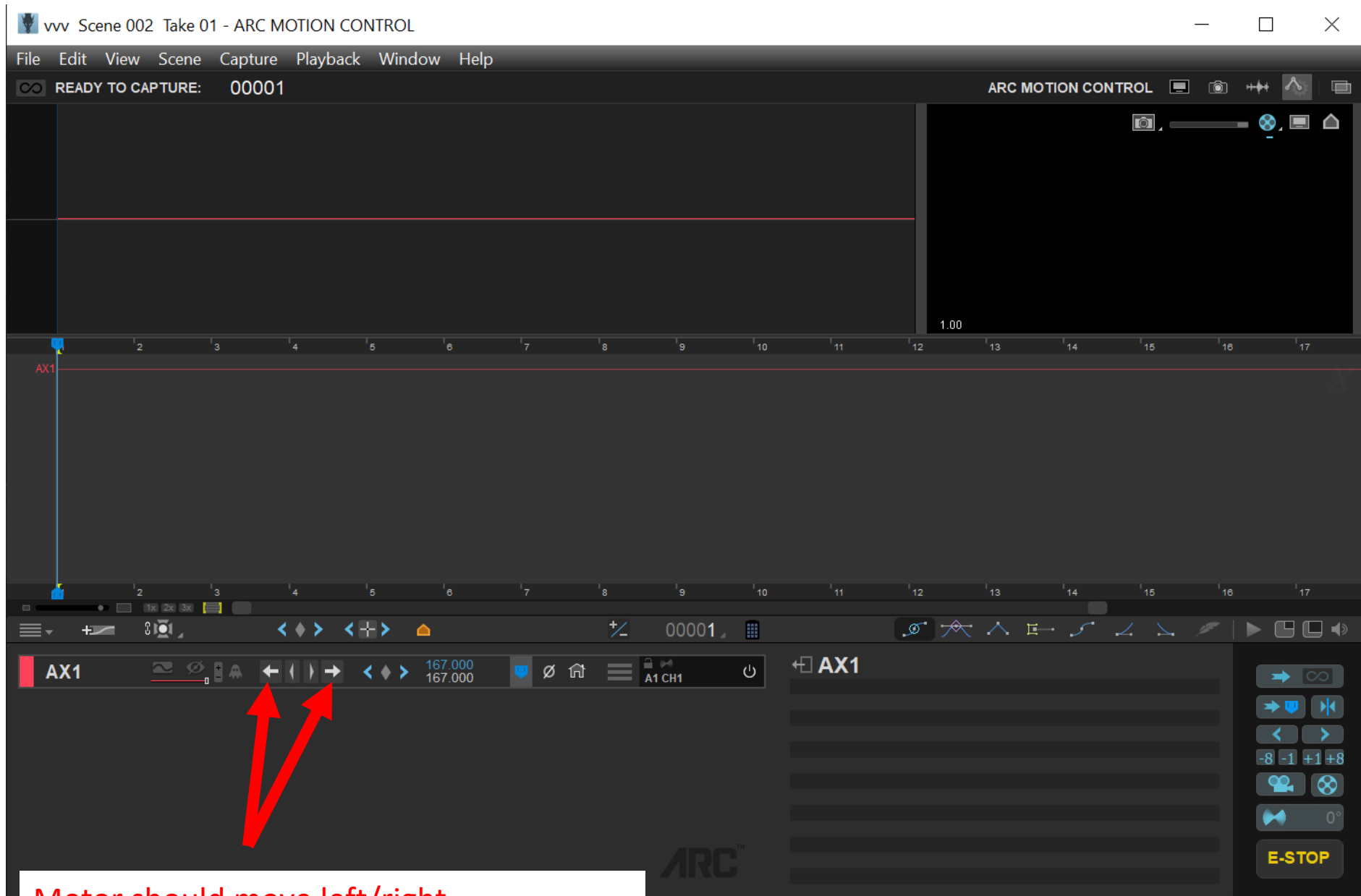
Make settings according to your axis

A Standard stepper motor has 200 steps per 360° turn. Microstepping is set to 1/4. So you have 800 steps per full turn.

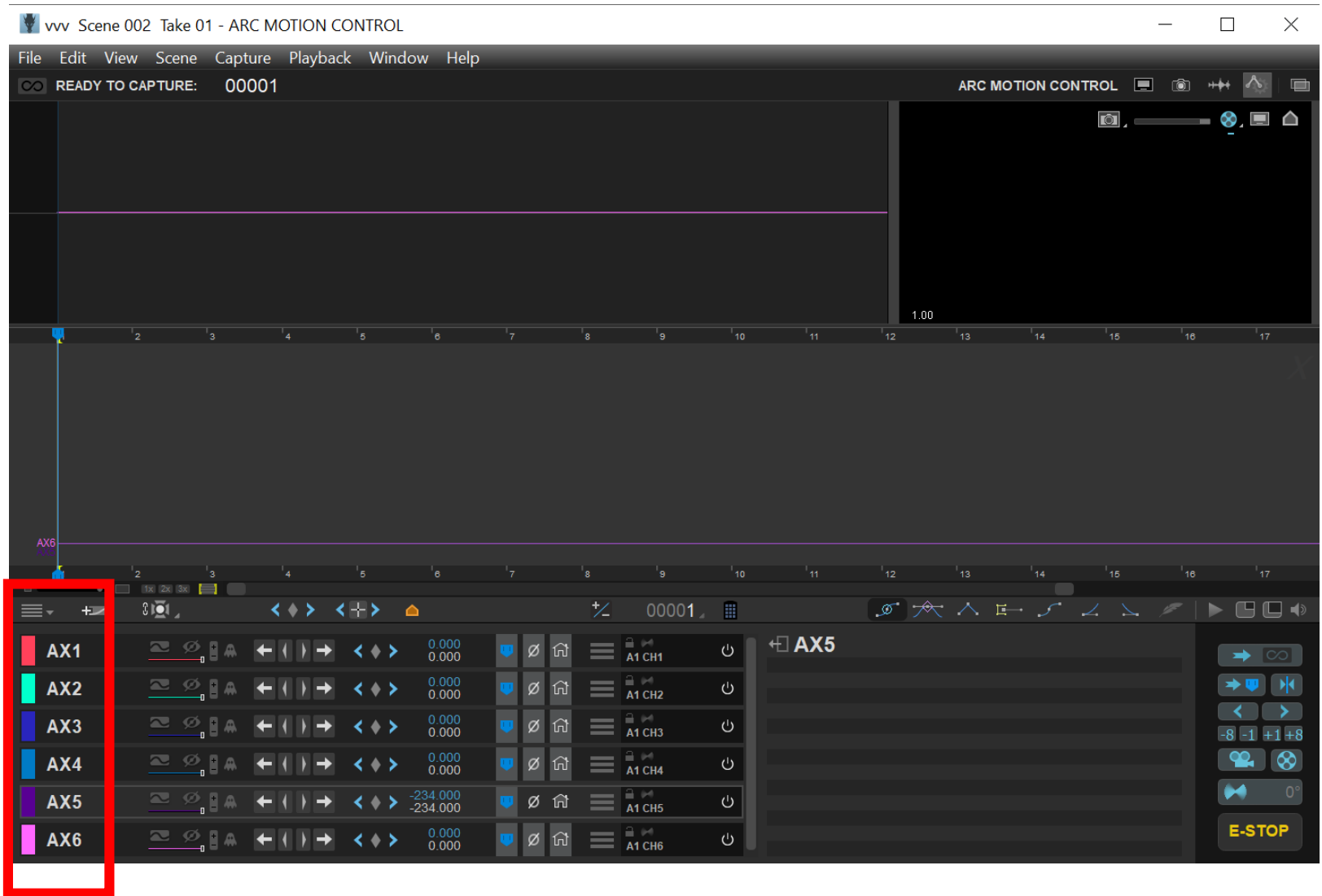
The Focus-Zoom-Unit has a gear reduction of 1:10. So you need to set $800 \cdot 10 = 8000$ steps per 360° turn

(22.2222 steps per 1°)

Jog Max Speed and Acceleration also must be adjusted depending on your preferences.



Motor should move left/right



Add all other axis:

AX1: X-axis (Pan)

AX2: Y-axis (Tilt)

AX3: Z-axis (Slider)

AX4: U-axis (Focus)

AX5: V-axis (Zoom)

AX6: W-axis (...)