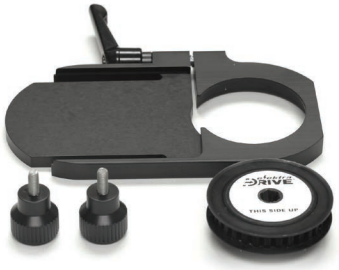
WHAT YOU'LL NEED

- Second Shooter Pro™
- Slider
- Motor
- Mount
- Camera Control Cable
  (or external intervalometer)



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Kessler

THE CONTROLLER
SECOND SHOOTER PRO

A **Extended Range WiFi Antenna**
This isn't just for style, the external antenna provides a longer operational range. It is recommended not to block the antenna from the receiving device for maximum operational range.

B **Menu Button**
Navigate backwards to the previous menu with this button.

C **Directional Arrows**
The directional arrows can be used to navigate through the menu and also control the Left/Right movement of the Slider motor, Left/Right movement of the pan motor, and the Up/Down movement of the tilt axis. Press and hold (for 3 seconds) Left/Right or Up/Down to swap move orientations.

D **Enter Button**
Use this button to select options through the menu.

E **Shift Button**
This button in conjunction with other buttons allows for secondary controls.

Shift+ Directional arrows increases speed during set to allow moves to be programed faster Shift+ Enter turns the LED Light on/off.

Shift toggles backlight on/off during time lapse move.

F **Power Port**
Connect the supplied AC wall power cord or a 12V DC cable for battery power.

G **USB Port**
Connect the Controller to a computer via the supplied USB cable to update firmware.

H **Two Expansion Ports**
Connect to various external accessories such as the Digital Control Center, while at the same time connecting two controllers together in Bridge Mode.

I **Wire Clip**
Connect the power cord through this clip to prevent unwanted disconnection.

J **Lemo 2-Pin Power**
This is an alternative, industry-standard power option that is compatible with many types of batteries and accessories. The system can be powered by MagPak, MagMax 3A, direct AC power, and other devices that provide Lemo 2-pin power.

K **LED Light**
Press Shift+ Enter to turn off/on.

L **I/0 Ports**
Used to connect external intervalometers and bulb-ramping devices, such as Ramper Pro.

M **CAT5 Ports (Slider, Pan, Tilt)**
Connect each axis to corresponding port via provided CAT5 cable.

HARDWARE SET-UP

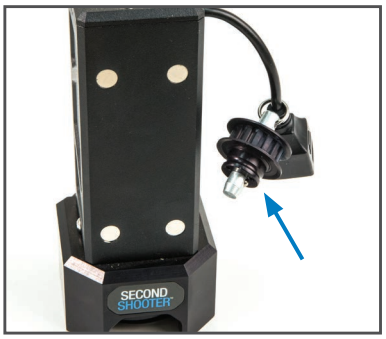
Slider Motor

1. Choose your desired motor speed by arranging the proper combination of motor pulleys. The metal pin on the Slider motor is to be used for storing the extra pulley.

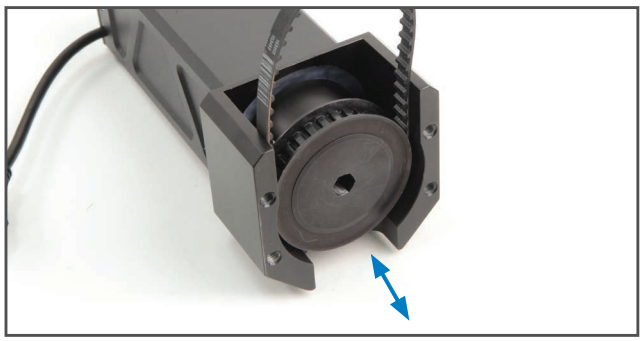
LARGE PULLEY

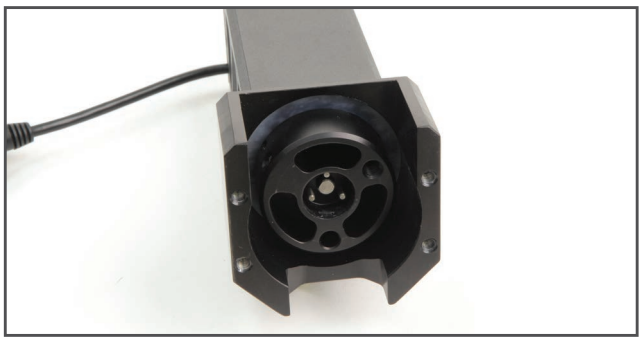
SMALL PULLEY

PULLEY STORAGE PIN



2. To remove the pulley installed on the Slider motor, simply pull outward away from the motor.



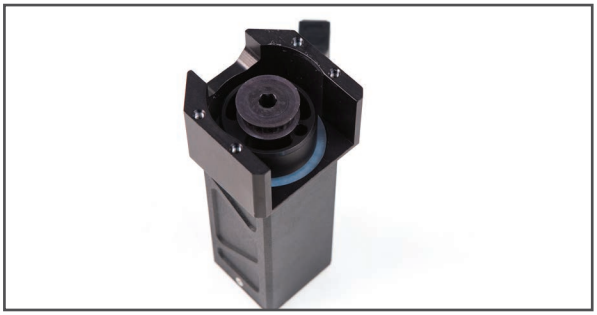


3. To install the pulley, simply push the pulley onto the motor shaft while aligning the holes. Be sure to hold the belt in place while installing.

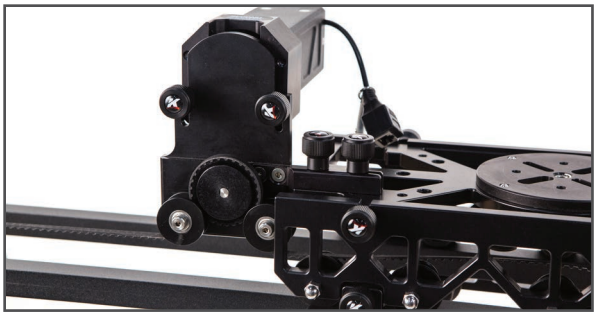
4. Install the Small Pulley onto the Slider Motor.

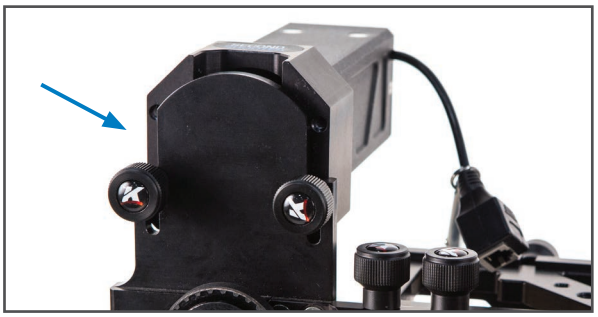
The pre-installed belt (labled 110XL) on the Slider Motor is to be used in most applications. However, if using the Small Pulley in conjunction with the Shuttle Pod, Shuttle Pod Mini, Shuttle Dolly or Pocket Dolly v2.0 follow steps 5-6.

5. Place the smaller belt (labled 100XL) around the Small Pulley.



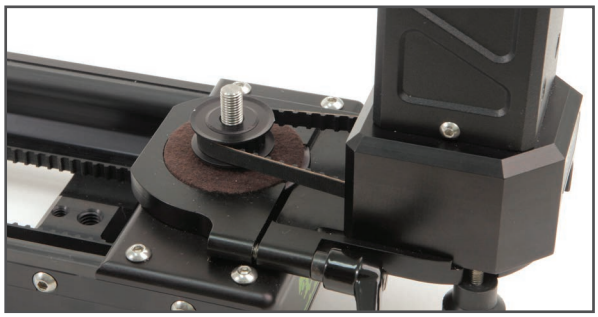
6. Mount the Slider Motor onto the Motor Mount utilizing the threaded holes nearest to the pulley on the back side of the motor.

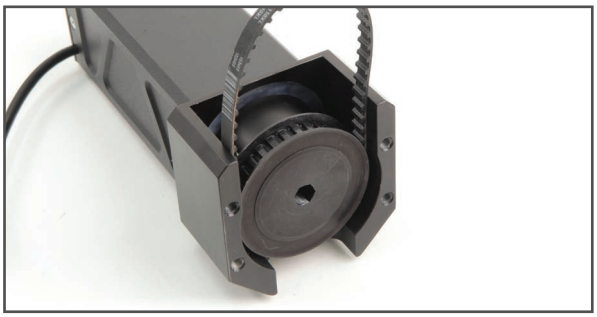




7. Choose between the following pulley combinations: Fast, Normal and Slow.

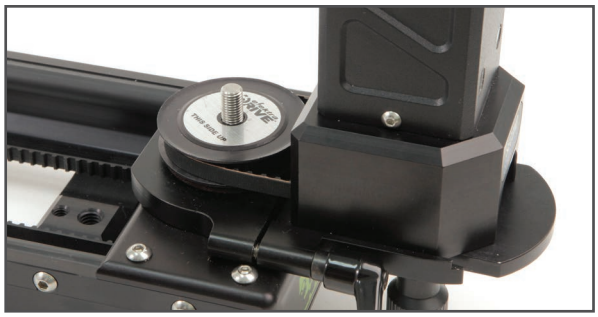
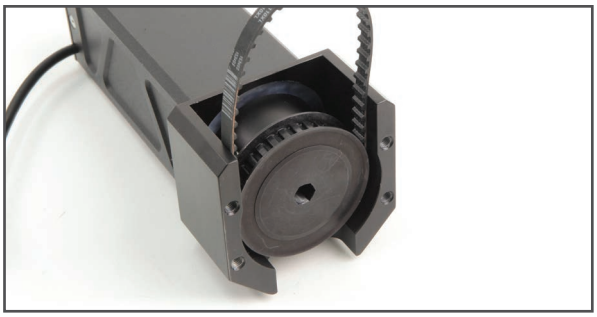
FAST (LOW TORQUE)





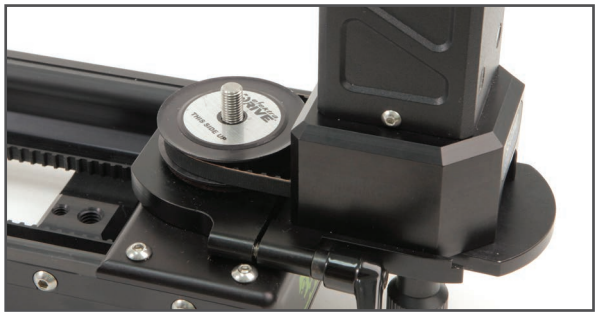
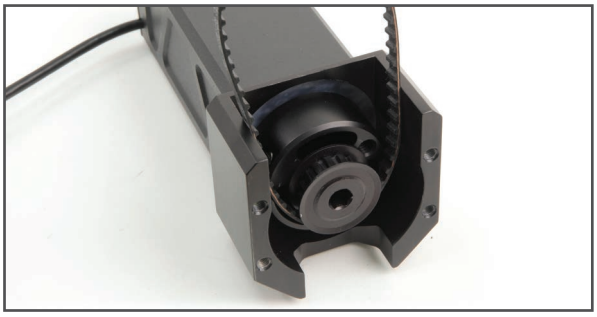
**This combination is only compatible with CineSlider, Philip Bloom and Stealth sliders.*

NORMAL

**This combination requires the pulley from the Motor Mount Kit to be used on the slider.*

SLOW (HIGH TORQUE)

8. Mount Slider motor to slider using a Kessler Motor Mount.


9. Connect CAT5 cable from Slider motor to the SLIDER port on the Controller.


PAN & TILT AXIS

1. Mount your Pan & Tilt head utilizing the 3/8”-16 and ¼” – 20 holes on the underside of the Head. *(Recommended Mounting: Kessler Kwik Release + 3/8”-16 Kwik Short Plate)*



2. Connect CAT5 cable from the side of the Pan base to the PAN port on the controller.
3. Connect CAT5 cable from the Tilt axis to the TILT port on the controller.


4. Plug in power supply.

INTERVALOMETER CONNECT

1. For time lapse or stop motion, connect a Camera Control Cable to the out port on the controller to the camera.


To use the Second Shooter Pro controller with kOS software, you will need kOS for Second Shooter v4.5 or greater for Mac, Windows or iPad. The Second Shooter Pro is not compatible with kOS software versions prior to v4.5.

CONNECTING TO KOS VIA USB

Connect USB/Micro USB cable to computer and Second Shooter Pro controller.

Open kOS and click connect. Your Second Shooter Pro will automatically connect to kOS.

CONNECTING TO KOS VIA WIFI

1. Press the Menu button until the main version screen is displayed. Once the version is displayed, the Operation Mode menu will display.
2. If the WiFi menu option reads “WiFi Enabled”, the Wifi access point is active. Proceed to #4.
3. If the WiFi menu option reads “WiFi Disabled”, select it and press the Enter button, your Second Shooter Pro will reboot and will now say “WiFi Enabled”.
4. On your computer or tablet you will now see a WiFi network named “2ndShooter+”. Connect to that wireless network.
5. Once connected to the “2ndShooter+” network, open kOS and it will automatically connect to your Second Shooter Pro via WiFi.

PAIRING THE SECOND SHOOTER REMOTE APP

Go to your iPhone settings>Wifi> and select Second Shooter Pro. Return to the Second Shooter Remote app and the connection should automatically be made. For further support and troubleshooting, see Second Shooter Remote manual.

Pairing the PS4 controller to Second Shooter Remote app

Hold down the PS button and the Share button simultaneously for 5 seconds, or until the lights flash. Open your iPhone settings, go to Bluetooth, and select DUALSHOCK 4 Wireless Controller from the list of new devices. Once connected, open the Second Shooter Remote app and click the Controller icon to pair. For further instructions, support, and troubleshooting, see Second Shooter Remote manual.

By utilizing one of the available expansion ports, users can link two Second Shooter Pro controllers or a Second Shooter Pro and first generation Second Shooter controller to have 6-axes available simultaneously.

In order to get started with Bridge Mode, users will need to connect each of the controllers with a Bridge Cable.*

In addition to the Second Shooter Pro' Expansion Port being used to connect to controllers in Bridge Mode, it can also be utilized to connect to motion control accessories, such as the Digital Control Center.

SETTING UP BRIDGE MODE

1. Plug in the Bridge Cable* into one of the expansion ports on the bottom of each controller, and connect your motors to the CAT5 ports on the top of the controllers.
2. Once the controllers are powered on, in the **OPERATING MODE** menu indicate if the controller is going to be a master or slave unit. (If bridging a Second Shooter Pro and first generation Second Shooter Controller you will want to set the Second Shooter Pro controller as the master unit.)
3. You can now program a move or do a manual move like normal.

When (Master Active) is shown on the Master controller the arrow buttons on each controller will control the motors connected to that controller.

To be able to control the motors connected to the slave unit through the master unit double tap shift. The controller will now show (Slave Active) and pressing the arrow buttons on the master unit will control the motors connected to the slave unit.

**Although these cables are similar to other RJ-11 cables, DO NOT use any other cable for bridging Second Shooter Controllers. Doing so may put your system at risk for damage.*

After powering up the system you will be presented with four options:

- **PROGRAM MOVE**
- **MANUAL MOVE**
- **TURNTABLE**
- **SETTINGS**

SETTINGS

- Operation Mode – *Standalone, Master/Slave, WiFi settings, Quiet Mode settings.*
- Control Options – *Inverts Controls depending on user preference.*
- Firmware Update – *See "Updating Firmware" section.*
- Lash Compensation* – *Set up a pre-move to remove any lash in the system due to a change in direction.*

**Lash Compensation is a unique setting for each pan unit and is set from the factory if the controller and pan motor are purchased together. If wanting to change these settings, please take note of the factory setting to be able to reset it. The setting for all other motors should be set to zero.*

MANUAL MOVE

1. Select **MANUAL MOVE** to do a live move without programming.

The default speed of Manual Move mode is 50%. This selection will be blinking. If you'd like to adjust that speed up or down you can do so using the Up or Down arrow. Once you've adjusted that to the speed you like, press Enter.

2. The screen will now display **RUNNING** which allows you to manually move each axis by using the directional arrows.

3. The **SET CALIBRATION*** feature allows you to focus on the shot rather than worrying about running your motors into the end of the slider. It works by setting a minimum and maximum limit range of each axis to avoid collisions and event errors by exceeding the travel range of each motor.

**Note: When setting your calibration limits, make sure you've set your range of every active axis before moving on to set the second limit range point.*

TURNTABLE

Select **TURNTABLE** for continuous panning.

The speed can be adjusted by pressing the Up or Down arrow at any time.

Press the pan Left or Right arrow to start/stop panning.

PROGRAM MOVE

Select **PROGRAM MOVE** to set the 1st (begin) and 2nd (end) key frames for the move. Be sure each axis is in the desired position before selecting **SET 1ST KEY FRAME** or **SET 2ND KEY FRAME**.

1. Position your Slider and Pan & Tilt head to desired beginning position and press ENTER to **SET 1ST KEY FRAME.**

2. Position your Slider and Pan & Tilt head to desired end position and then press ENTER to **SET 2ND KEY FRAME.**

3. Creating 3 key frames functions similarly to the way you create 2 key frames.Keep in mind that key frames are created consecutively, so **1ST KEY FRAME** is going to be the start point, **2ND KEY FRAME** is a middle point, and **3RD KEY FRAME** is the end point.

Once all 3 key frames are created, you are prompted with a “2nd KF time” request— this effectively sets the timing from **1ST KEY FRAME** to **2ND KEY FRAME**, and **2ND KEY FRAME** to **3RD KEY FRAME**.

The lower the percentage entered, the faster the movement will be from **1ST KEY FRAME** to **2ND KEY FRAME** and the slower the movement will be from **2ND KEY FRAME** to **3RD KEY FRAME**.

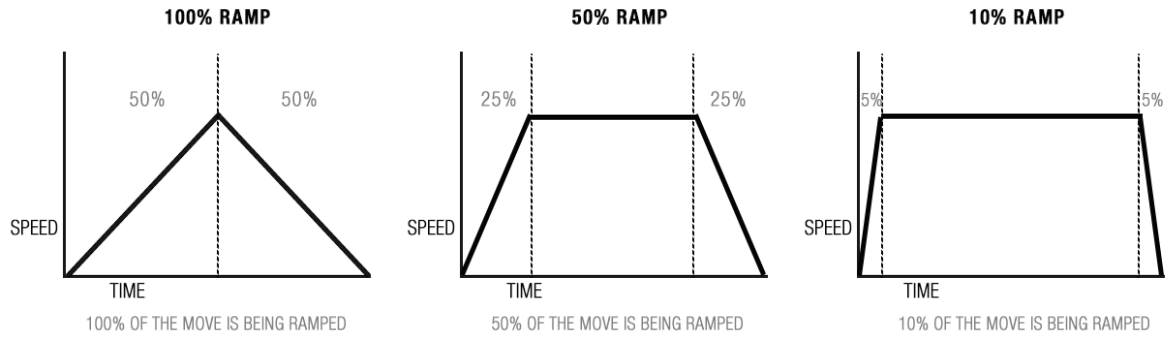
Now choose one of the following shooting modes:

- **LOOP/SCRUB**
- **TIME LAPSE**
- **STOP MOTION**

LOOP/SCRUB

1. Set **TIME** and **RAMP** values by selecting with Enter and adjusting with the Up and Down arrows:
   - Time – *The amount of time it will take to complete entire move.*
   - Ramp – *Percentage value indicates the change in speed of the movement over the entire move. The time value to the right shows how fast/slow the system gets up to the top speed or how fast/slow the camera comes to a stop.*

FIG. A



2. Press ENTER to select **RUN**.
   - Scrubbing – *Press ENTER while Looping to enter SCRUB mode. This feature will allow you to manually advance the position of the Slide, Pan & Tilt axis within the programmed move by holding the LEFT or RIGHT arrow button.*

TIME LAPSE

1. Select **SHOOT/MOVE/SHOOT** or **CONTINUOUS** mode:
   - Shoot/Move/Shoot – *Camera will only fire when not moving. That is, the camera will fire, move to next position, stop and fire.*
   - Continuous – *Camera will move without stopping and fire throughout the duration of the move.*

**If using a 3rd party intervalometer, select Continuous and set the overall run time by increasing or decreasing the Photos value. The exposure, delay and photo values will not be used.*

2. Set values for **EXPOSURE**, **DELAY** & **PHOTOS** by using the Up and Down arrows.
3. Press the Down arrow and select **NEXT**.

4. Set the **RAMP** value by selecting with Enter and adjusting with the Up and Down arrows:
   - Ramp – *Percentage value indicates the change in speed of the movement over the entire move. The frame value to the right shows how many images until the system gets up to the top speed or how many images until the camera comes to a stop.*

5. Select **START** to begin the time-lapse.

   The motors will move into the start position (1st key frame) and the backlight will turn off. Press the Shift button to toggle the backlight on/off. Press the Enter button to Pause/Resume the time lapse move.

6. In Timelapse mode, there are 2 Advanced Settings to note: Pre-Move Delay and Pre/Post Photos.
   - Pre-Move Delay – Operator sets the amount of time before the move begins. This is helpful for long exposures where any camera movement has a chance to settle down, or the operator to clear the frame, or the operator is waiting for a specific time to begin the move.
   - Pre/Post Photos – Allows you to set the amount of frames captured before and after a camera movement to create timelapses with specifically cued camera movements.

STOP MOTION

1. Set values for **#PHOTOS** & **RAMP:**
   - #Photos - Indicates the number of photographs taken during the entirety of the move
   - Ramp – *Percentage value indicates the change in speed of the movement over the entire move. The frame value to the right shows how many images until the system gets up to the top speed or how many images until the camera comes to a stop.*

2. Select **AUTO ADVANCE** or Manual **ADVANCE** by pressing Enter to toggle selections.
   - Auto Advance - In this mode, after the camera fires, the system will automatically advance to the next position in the movement.
   - Manual Advance - After firing the photo, you will hit Left or Right to move the camera into the next/previous position in the move.

3. Select **NEXT** by pressing Enter.

4a. Select **SNAP** to trigger the camera and repeat for auto advance.

4b. Select **SNAP** to trigger the camera. Press the Left or Right arrow to move the camera into the next/previous position for manual advance. Repeat.

1. Download and extract the attached zip file. There are 2 files within the zip. The one you will need is **SECONDSHOOTER+.IMG**.
2. Plug in the power cord for the Second Shooter controller.
3. Plug the micro-USB to USB cable from the USB port on the computer into the micro-USB port on the controller.
4. Once system powers up, navigate to **SETTINGS**.
5. In **SETTINGS**, find and select **FIRMWARE UPDATE**. The Controller will display **FIRMWARE UPDATE READY**…
6. The Controller will show up as a USB device on your computer titled 2nd Shooter.
7. Go to the location where you extracted **SECONDSHOOTER+.IMG**.
8. Click and drag **SECONDSHOOTER+.IMG** to the USB device titled 2nd Shooter and release.
9. The system is now updating. The Controller's screen will detail the update process. Do not remove power to the controller during firmware update process.
10. Select **REBOOT** to restart the controller.

MAC Users: Once 'Reboot' is selected during the update firmware process, a 'Disk Not Ejected Properly' message appears on the Mac OS X desktop. Users may simply close this message without issue.

11. As the system restarts, confirm the splash screen shows the latest firmware version across the bottom.

TERM REFERENCE GUIDE

Exposure – *The length of time the camera's shutter is open when taking a photograph*

Delay – *Amount of time between photos*

Ramp – *Rate of Change of acceleration/deceleration*