

# SECOND SHOOTER PLUS™ USER GUIDE

by *Kessler*

## WHAT YOU'LL NEED

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

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# THE CONTROLLER

## a) Menu Button

Navigate backwards to the previous menu with this button.

## b) 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.

## c) Enter Button

Use this button to select options through the menu.

## d) Shift Button

This button in conjunction with other buttons allows for secondary controls.

Shift + Directional arrows increases speed during set up to allow moves to be programmed faster

Shift + Enter turns the LED Light on/off

Shift toggles backlight on/off during timelapse move

## e) Power Port

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

## f) USB Port

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

## g) 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.

## h) Wire Clip

Connect the power cord through this clip to prevent unwanted disconnection.

## i) LED Light

Press Shift + Enter to turn off/on.

## j) IN Port

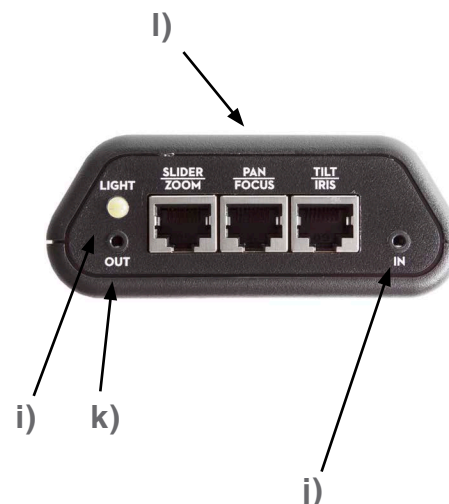
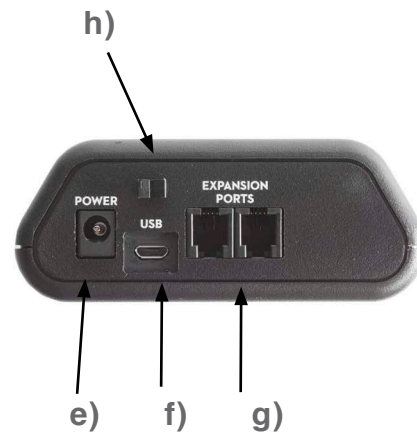
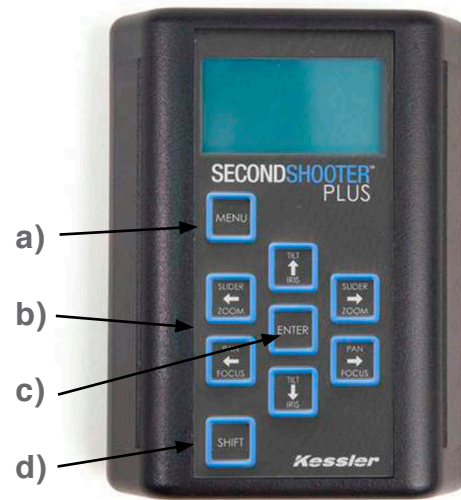
Used to connect external intervalometer or bulb rafter

## k) OUT Port

Used to connect a camera via the Camera Control Cable for intervalometer control of the camera by the Second Shooter Plus, or to connect to a bulb ramping device that supports receiving an external trigger signal.

## l) Cat5 Ports (Slider, Pan, Tilt)

Connect each axis to corresponding port via provided CAT5 cable.



# GETTING STARTED: 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**



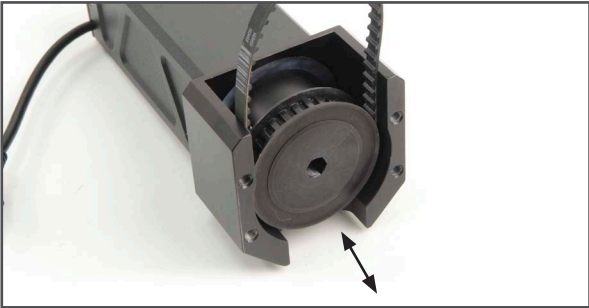
**SMALL PULLEY**



**PULLEY STORAGE**



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.

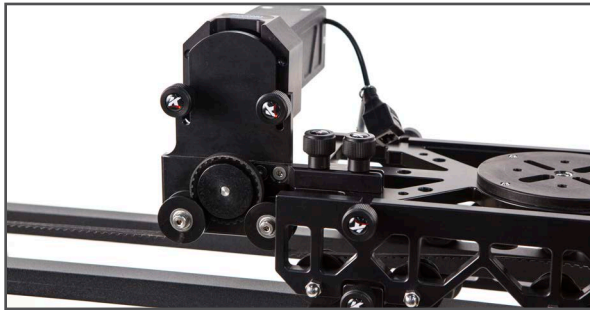
4. Install the Small Pulley onto the Slider Motor.

The pre-installed belt (labeled 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 or Pocket Dolly v2.0 follow steps 5-6.

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

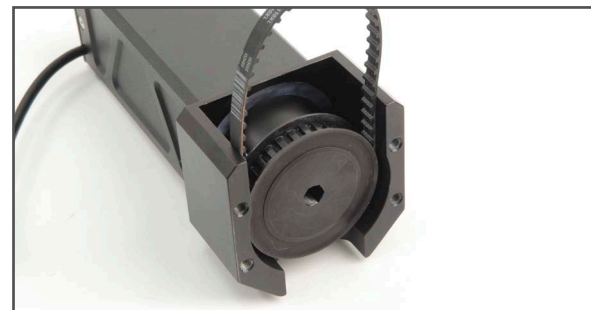


6. Mount the Slider Motor onto the Motor Mount utilizing the threaded holes nearest to the pulley on the back side of the motor.



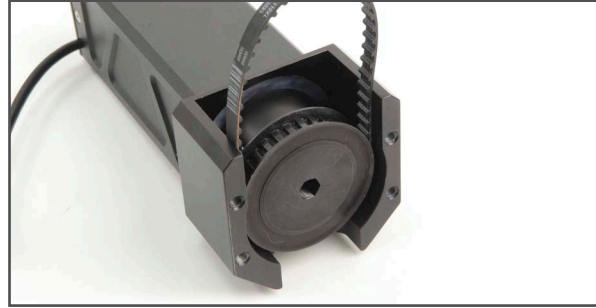
7. Choose between the following pulley combinations: Fast, Normal and Slow.

### FAST (LOW TORQUE)



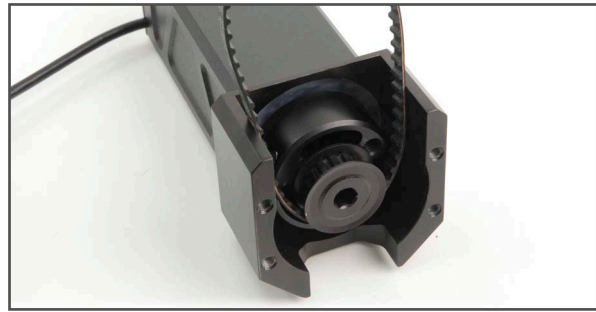
*\*This combination is only compatible with CineSlider, Philip Bloom and Stealth sliders.*

## NORMAL

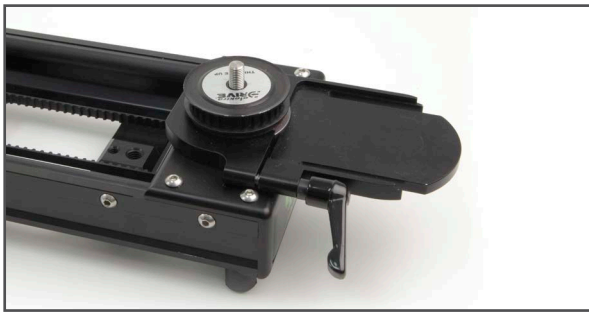


*\*This combination requires the pulley from the Motor Mount Kit to be used on the slider.*

## 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 1/4" – 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.



## BRIDGE MODE

By utilizing one of the available expansion ports, users can link two Second Shooter Plus controllers or a Second Shooter Plus 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 Plus' 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

- 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.
- Once the controllers are powered on, in the Power Up Menu indicate if the controller is going to be a master or slave unit. (If bridging a Second Shooter Plus and first generation Second Shooter Controller you will want to set the Second Shooter Plus controller as the master unit.)
- 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.*

## POWERING UP THE SYSTEM

To Power on your Second Shooter Plus simply connect the controller to a power source and the unit will automatically power on. Powering on while holding **SHIFT + ENTER** will reset the controller to factory defaults.

## POWER UP MENU

Upon power up, you will see 4 menu items. If no item is selected within 30 seconds the controller will boot into the main menu with the same selection as the previous time the controller was booted.

- **STANDALONE:** Used for a single controller set up. To enter this mode simply press **ENTER**
- **MASTER/SLAVE:** Used if operating with two controllers in bridge mode to determine which unit is the Master and which is the Slave unit. To change these setting **SELECT MASTER/SLAVE** with the **ENTER** key and then **SELECT** either **MASTER OR SLAVE** and press **ENTER**.

- **WIFI SETTINGS:** Used to toggle between WIFI Enabled and Disabled. To toggle **SELECT WIFI** Enabled with the **ENTER** key. Select **MENU** to exit WIFI Settings, the controller will automatically reboot with WIFI Disabled. Repeat to re-enable WIFI. To connect Second Shooter Plus via USB the WIFI should be disabled on the controller

- **MOTOR OPTIONS**

- **AXIS ENABLE/DISABLE:** Used to Enable and Disable individual axes. To disable an axis, highlight desired axis with the **UP/DOWN** arrow key and press **ENTER**. The axes will be crossed out, showing that it is disabled.
- **FAST MODE:** Used to enable or disable Fast Mode. Press **ENTER** to toggle between Fast Mode Enabled and Disabled
- **QUIET MODE:** Used to enable or disable Quiet Mode. Press **ENTER** to toggle between Quiet Mode Enabled and Disabled. When Quiet Mode is enabled Motor RPM's can be changed from 1,000-4,000 by highlighting Quiet RPM with the arrow key pressing **ENTER** and then changing the speed with the **UP** and **DOWN ARROWS** and pressing **ENTER**.

## MAIN MENU

Once the power up menu is exited, the main menu is displayed with the following menu items:

- **PROGRAM MOVE:** Select **PROGRAM MOVE** to set up a 2 or 3 key frame move. (Page 8-10)
- **MANUAL MOVE:** Select **MANUAL MOVE** to use the controller to move your axis manually using the directional buttons on the Second Shooter Plus controller. (Page 10)
- **TURNTABLE:** Select **TURNTABLE** to use the controller for continuous panning (Page 10)
- **SETTINGS:** Select **SETTINGS** to get to, OPERATING MODE, CONTROL OPTIONS, FIRMWARE UPDATE AND LASH COMPENSATION (Page 11)

## PROGRAM MOVE

- Select **PROGRAM MOVE** to choose 2 or 3 key frames for the move. (If using a Master/Slave configuration press **SHIFT** twice to toggle between Master/Slave motors (Page 7))
- Move your motors to desired beginning position and press **ENTER** to **SET 1ST KEY FRAME**.
- Move motors to desired 2nd position and press **ENTER** to **SET 2ND KEY FRAME**.
- If setting up a 3 key frame move then move motors to desired 3rd position and press **ENTER** to **SET 3RD KEY FRAME**.

- Now choose one of the following shooting modes

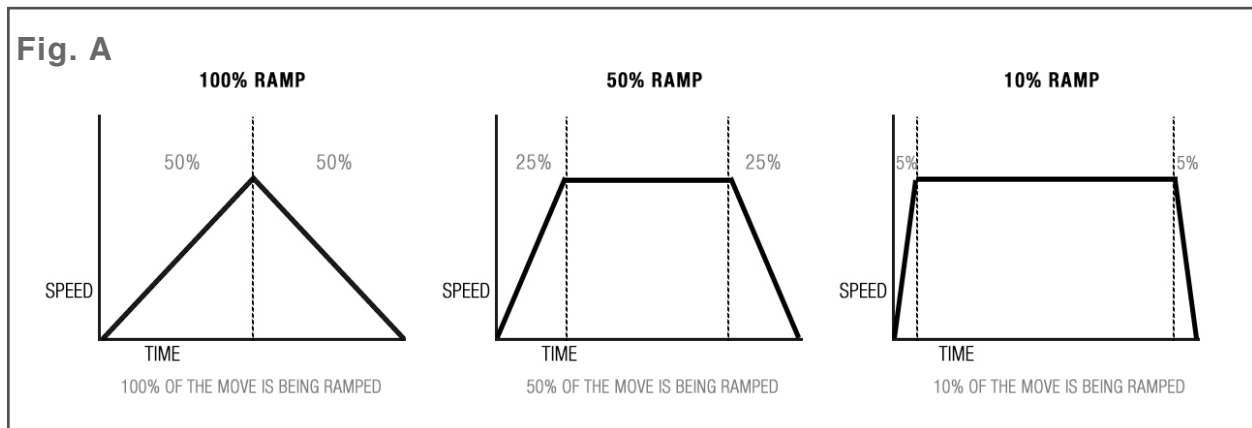
- **LOOP/SCRUB:** Loop your 2 or 3 key frame move for a set amount of time or manually Scrub through the 2 or 3 key frame move (Page 8-9)
- **RUN ONCE:** Run through a 2 or 3 key frame move one time (Page 9)
- **TIME LAPSE:** Create a basic or complex timelapse with a 2 or 3 keyframe move (Page 9-10)



- **STOP MOTION:** Manually or auto advance through each position of a 2 or 3 key frame move to achieve a flawless stop motion. (Page 10)

## LOOP/SCRUB

- 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.*
  - *Runtime Optimization: Press **SHIFT** twice to auto calculate the fastest move between keyframes.*

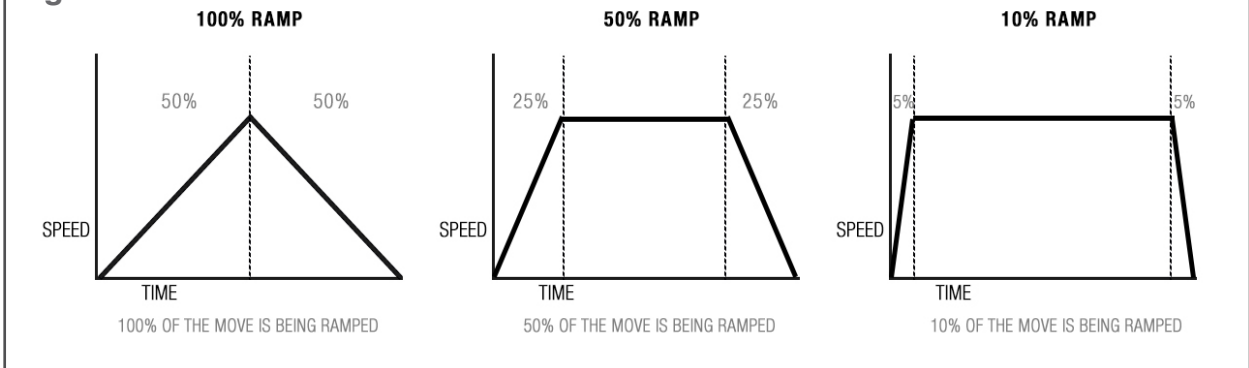


- Press ENTER to select **RUN**.
  - *Scrubbing – Press ENTER while Looping to enter SCRUB mode. This feature will allow you to manually advance the position of the Slide, Pan & Tilt axis within the programmed move by holding the LEFT or RIGHT arrow button.*

## RUN ONCE

- 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.*
  - *Runtime Optimization: Press **SHIFT** twice to auto calculate the fastest move between keyframes.*

**Fig. A**



- Press ENTER to select **RUN**.

## TIME LAPSE

- 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.
- 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.
- 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.

## STOP MOTION

- 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.

- 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*
- Select **NEXT** by pressing Enter.
  - Select **SNAP** to trigger the camera and repeat for auto advance.
  - 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.

## MANUAL MOVE

- Select **MANUAL MOVE** to do a live move without programming.
- Set Speed: Select Speed by pressing **ENTER**. Adjust speed with **UP/DOWN** arrows and press **ENTER** to set.
- Set Ramp: Select Ramp by pressing **ENTER**. Adjust ramp with **UP/DOWN** arrows and press **ENTER** to set.
- Set Cal Limits: Select Cal Limits. Use controller to position motors to desired start position and press **ENTER** to set BEGIN, then position motors to desired end position and press **ENTER** to set END.
- Select **START** to begin Manual Move.

## 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.

## SETTINGS

- Operation Mode – *Takes you back to the Power Up Menu.*
- 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.*

## USING KOS WITH SECOND SHOOTER PLUS

To use the Second Shooter Plus controller with kOS software, you will need kOS for Second Shooter v4.5 or greater for Mac, Windows or iPad. The Second Shooter Plus 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 Plus controller.
- Open kOS and click connect. Your Second Shooter Plus will automatically connect to kOS.

### CONNECTING TO KOS VIA WIFI

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

### UPDATING FIRMWARE

- Download and extract the attached zip file. There are 2 files within the zip. The one you will need is **SECONDSHOOTER+.IMG**.
- Plug in the power cord for the Second Shooter controller.
- Plug the micro-USB to USB cable from the USB port on the computer into the micro-USB port on the controller.
- Once system powers up, navigate to **SETTINGS**.
- In **SETTINGS**, find and select **FIRMWARE UPDATE**. The Controller will display **FIRMWARE UPDATE READY...**
- The Controller will show up as a USB device on your computer titled 2nd Shooter.
- Go to the location where you extracted **SECONDSHOOTER+.IMG**.

- Click and drag **SECONDSHOOTER+.IMG** to the USB device titled 2nd Shooter and release.
- 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.
- 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.*
- 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*

Visit ***support.kesslercrane.com*** for manuals, support videos, references & more