

# DIGITAL JOG CONTROL

CineDrive

*(ONLY COMPATIBLE WITH V2 MCB's AND Bricks)*

by *Kessler*

The Kessler Digital Jog Control allows filmmakers to control the movement of Focus/Iris/Zoom (FIZ) motors that are setup to operate stand alone, connected with the Digital Control Center, or connected with the CineDrive Brain. When used with these Kessler products, the Jog Control must be connected via a CineDrive control cable to each device. Wireless connection between the Jog Control and CineDrive devices is currently not supported.

## In the box:

- Digital Jog Control
- 5.5mm AC Power Supply: Used to power the Digital Jog Control externally
- 3.5mm Battery Charger: Used to charge the Digital Jog Control

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# DIGITAL JOG CONTROL (DJC)

**A) Micro USB Port:** Used for firmware updates and motor configuration.

**B) Power Switch:** Toggles between battery charge/external power supply mode and powered by internal battery mode.

**C) BAT CHG Port:** 3.5 mm port for charging the internal battery of the Jog Control unit with the supplied charger.

**D) EXT PWR Port:** 5.5 mm port for use with external power supplies, such as MagPak battery or AC power supply, for increased length of use beyond the internal battery

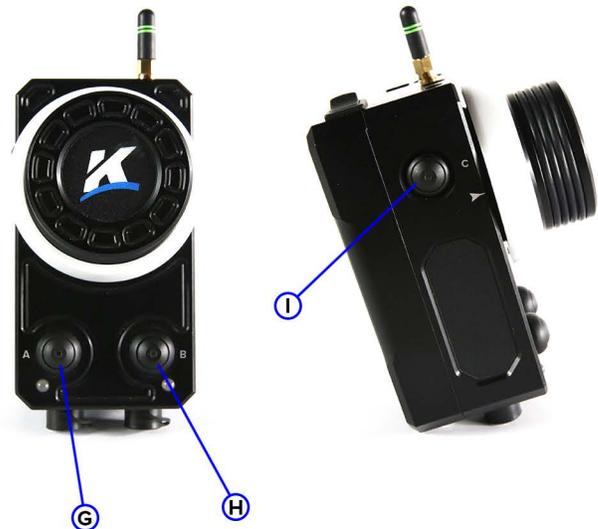
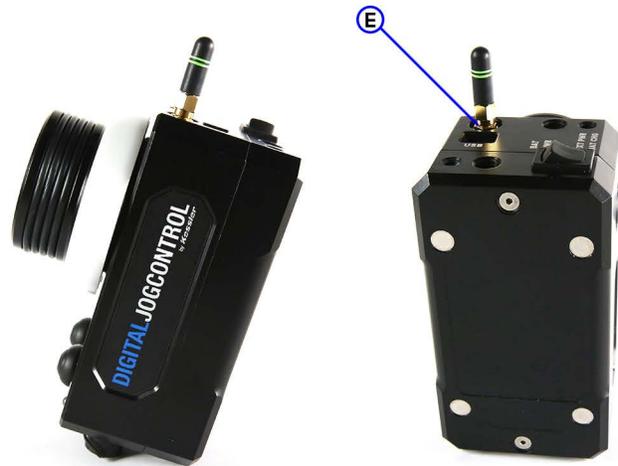
**E) Antenna Port:** Used for wireless connections currently not supported with CineDrive devices.

**F) IN/OUT Ports:** Used to connect to CineDrive devices including FIZ motors, Digital Control Center, and CineDrive Brain. Note: as of now, the OUT port should not be used to connect to the CineDrive or DCC.

**G) A Button:** Used for calibration, subset calibrations, and speed adjustments.

**H) B Button:** Used for calibration, subset calibrations, and speed adjustments.

**I) C Button:** Used to enter update firmware, motor configuration, and speed adjustment modes.



## POWERING THE JOG CONTROL

The Jog Control can be powered by the internal battery or an external power supply. Which source is used to power the Jog Control is determined by the power toggle switch at the top of the device.

- **POWERING VIA THE INTERNAL BATTERY:** Set the power toggle switch to the **BAT PWR** position.
- **POWERING VIA AN EXTERNAL SOURCE:** Set the power toggle switch to the **EXT PWR/BAT CHG** position. The external power supply can be either a 5.5 mm barrel to barrel cable with a Kessler MagPak battery or AC Power Supply plugged into the 5.5 mm jack located on the bottom of the unit.

## CHARGING THE JOG CONTROL

- To charge the internal battery of the Jog Control, connect the Battery Charger to the 3.5 mm port on the bottom of the unit marked **BAT CHG**. Charging will commence once the power switch on the top of the unit set to **EXT PWR/BAT CHG**.
- It is possible to power the Jog Control externally while simultaneously charging the internal battery. Connect the AC Power Supply to the EXT PWR port and the Power Charger to the BAT CHG port. When the power switch is set to EXT PWR/BAT CHG, the Power Charger will charge the internal battery.

## UPDATING JOG CONTROL FIRMWARE

The Jog Control must be externally powered during the firmware update process. Do not power down the device at anytime during the update process.

1. Acquire the Digital Jog Control firmware from either:
  - Within kOS, navigate to Help > Support > Firmware
  - Online at <https://support.kesslercrane.com> under “Software & Firmware”
2. Set the power toggle switch to **EXT PWR/BAT CHG** on the top of the unit.
3. Connect the micro USB Type B connector of a USB cable to the port on the top (antenna side) of the Jog Control.
4. Connect the USB Type A connector of the USB cable to the computer’s USB port.

5. While holding down the C button, plug in the external power source via the 5.5 mm EXT PWR port on the bottom of the unit. Hold down the C button for 10 full seconds. Once the LEDs stop blinking, you have connected the Jog Control to the computer. “JOGWHEEL” should now show up as a drive on your computer.
6. Unzip the firmware zip file and notice the JogWheel.img. This is the Jog Control image file which is not a program your computer can run or open. Drag and drop the JogWheel.img file into the root folder of the “JOGWHEEL” drive on your computer.
7. The firmware file will be written to the Jog Control’s memory, which can take 10 seconds or more. While writing to memory, the LEDs below the A and B buttons will flash.
8. Once the lights have stopped flashing, it is safe to eject/unmount the “JOGWHEEL” drive from your computer.
  - **DO NOT** unplug the Jog Control from the computer while the lights are flashing, as this could corrupt the device.
  - **DO** eject the Jog Control and wait for the lights to stop flashing before unplugging. Note that after ejecting the Jog Control, it may appear on your computer again a second or two later. This is fine.
9. Disconnect the micro USB Type B cable from the Jog Control.
10. Unplug the Jog Controller from your external power supply.
11. At this point, you may power the Jog Control from the internal battery or from the external power supply.
12. Turn on the Jog Control and wait at least 10-15 seconds for the LED lights to turn on. Do not press any buttons or turn the Jog Control off during this process.
13. Once the LED lights are on, the Digital Jog Control is updated and ready to use.

## CONNECTING THE DIGITAL JOG CONTROL TO A FIZ MOTOR

The simplest way to manipulate a FIZ motor with the Jog Control is to connect it directly to a Motor Control Box (MCB)/FIZ combination. All connections between the Jog Control and CineDrive devices require the use of CineDrive control cables. Wifi connections between the Jog Control and CineDrive devices are currently not supported.

1. Plug in a FIZ motor to an MCB configured with a FIZ motor profile.
2. Connect the OUT port of the Jog Control to the MCB with a control cable.

3. You may power the Jog Control with either the internal battery or with an external power supply.
4. Turn on the Jog Control and notice the LED lights blinking.
5. Once the blinking stops, the Jog Control has connected to the FIZ motor.
6. Turning the wheel on the Jog Control will now control the FIZ motor.

To disconnect the Jog Control from a FIZ motor, you may simply turn off the Jog Control and unplug the cables.

## **MANUALLY CALIBRATING THE DIGITAL JOG CONTROL**

Once a connection is established between the Jog Control and a FIZ motor, you may define the range of motor movement through a process called calibration. For example, you may define the range that the FIZ motor drives the lens movement between stops.

1. Rotate the Jog Control wheel so that the lens is at one end of the lens range.
2. Press the A button; this will change the LED below the A button from red to orange.
3. Rotate the Jog Control wheel in the opposite direction to the other end of the lens range.
4. Press the B button; this will change the LED below the B button from red to orange.
5. Now motor movements driven by the Jog Control will be confined to the defined range.

To clear the calibration, press and hold both A and B buttons. After a few seconds, both LEDs below the A and B buttons will change from orange to red.

## **SUBSET CALIBRATING THE DIGITAL JOG CONTROL**

There may be a time where you want to define an additional range of movement that is a smaller than the initial calibration. This is called a subset calibration, and it allows for a shorter range of movement without redefining the full lens calibration.

1. Set up an initial calibration range.
2. Rotate the Jog Control wheel so that the lens is at your first subset location.
3. Press the A button; this will turn the LED inside the A button to red.
4. Rotate the Jog Control wheel in the opposite direction until your lens is at your second subset location.

5. Press the B button; this will turn the LED inside the B button to red.
6. Now motor movements driven by the Jog Control will be confined to the defined subset range.

To clear the subset calibration, press and hold both A and B buttons. After a few seconds, the LEDs in both A and B buttons will turn off. The original calibration is still active, as indicated by the orange LEDs below the A and B buttons. However if you continue to hold both A and B buttons down after clearing the subset calibrations, the original calibration will also be cleared after a few seconds.

You can also clear the subset calibration positions individually. For example if you wanted to clear the first subset calibration, press and hold the A button. The LED inside the A button will turn off. Now you can reset the first subset calibration point. You can redo the second subset calibration point in the same manner with the B button.

## **AUTO CALIBRATING THE DIGITAL JOG CONTROL**

The Jog Control has a feature that allows one to automatically set the calibration range for cinema lenses with hard stops. Once initiated, the Jog Control moves the FIZ motor until it senses a first hard stop. Then the motor changes direction and proceeds until a second hard stop is detected. This sets the calibration range for the lens movement. Auto calibration can be aborted by pressing the A button.

1. Check your setup to make sure you are ready to have the Jog Control seek out the lens hard stops.
2. Double press the C button on the side of the Jog Control to initiate the auto calibration procedure.
3. The Jog Control will move the lens barrel until a first hard stop is detected.
4. Once the first hard stop is found, the Jog Control then moves the lens in the opposite direction to find the second hard stop.
5. This sets the calibration range for lens movement as indicated by the LEDs below the A and B buttons turning orange.

The calibration range can be cleared in the same manner as with manual calibration: press and hold both A and B buttons. The LEDs below the A and B buttons turn red.

## **SPEED SETTINGS FOR DIGITAL JOG CONTROL**

The Jog Control has four speed modes that dictate how far the motor moves for a given turn of the wheel. The lowest speed setting turns the motor the shortest distance while the highest speed setting turns the motor the farthest.

1. To enter the speed adjustment mode, hold down the C button on the side of the Jog Control for two seconds. The LEDs inside the A and B buttons will flash to indicate the current speed settings: one flash represents the lowest setting while four flashes equal the highest setting.
2. To increase the speed setting, press the B button. The LEDs inside the A and B button will increase flashing to show the new speed setting.
3. To decrease the speed setting, press the A button. The LEDs inside the A and B button will decrease flashing to display the updated speed.
4. To exit the speed adjustment mode, simply press the C button. The LEDs inside the A and B buttons will stop flashing when the speed adjustment mode has been exited.

Speed settings are not persistent. When the Jog Control is power cycled, the speed setting will reset to the lowest speed setting.

## **CONNECTING THE DIGITAL JOG CONTROL TO THE DIGITAL CONTROL CENTER**

The Jog Control can be used in conjunction with the Digital Control Center (DCC) for FIZ motor control. To work with the DCC, the Jog Control must be connected via a CineDrive control cable either directly to the DCC or to one of the MCB/FIZ combinations connected to the DCC. Note the Jog Control does not draw power from the DCC. It will have to be powered by either the internal battery or an external power supply.

1. Connect one end of a control cable to the IN port on the Jog Control.
2. Connect the other end of the control cable to the OUT port on the DCC or to an MCB that's already connected to the DCC.
3. Power on the DCC and the Jog Control.
4. The DCC will detect the Jog Control on power up, and the LEDs on the Jog Control will blink about once per second. This blinking pattern indicates the Jog Control has not been assigned a motor by the DCC.

5. To assign a motor to the Jog Control, enter the JTK Configuration menu on the DCC, choose a FIZ motor, and select JW as the device to control the FIZ motor.
6. Once a motor has been assigned to the Jog Control by the DCC, the LEDs on the Jog Control will stop blinking. The LEDs below the A and B buttons turn red which indicates the Jog Control is not calibrated.

Calibrations can be conducted with either the Jog Control or the DCC. Sub calibrations are also honored by both devices. For example if one sets calibrations with the Jog Control, those changes will also be reflected in the DCC menu. Clearing those calibrations with the DCC menu will show up by the Jog Control changing the LEDs below the A and B buttons from orange to red.

Note that sub calibrations can only be set on Jog Control itself, although the DCC will honor the sub calibration limits.

The DCC has added an additional menu item titled Jogwheel that allows one to change the speed settings and to see the Jog Control firmware version. The Jog Control speed settings are changed in the following manner.

1. Select Speed option from the Jogwheel menu on the DCC.
2. Navigate to the FIZ motor currently assigned to the Jog Control.
3. Choose a new speed setting.
4. Exit the Jogwheel menu.

The current version of the Jog Control firmware can be displayed by the DCC.

1. Select Fwr Version option from the Jogwheel menu on the DCC.
2. The Jog Control firmware version is displayed.

## CONNECTING THE DIGITAL JOG CONTROL TO THE CINEDRIVE

The Jog Control can be connected to the CineDrive Brain to control attached FIZ motors. To work with the Brain, the Jog Control must be connected via a CineDrive control cable either directly to the Brain or to one of the MCB/FIZ combinations connected to the Brain. Note the Jog Control does not draw power from the Brain. It will have to be powered by either the internal battery or an external power supply.

1. Connect one end of a control cable to the IN port on the Jog Control.
2. Connect the other end of the control cable to the Brain or to an MCB that's already connected to the Brain.
3. Power on the Brain and the Jog Control.
4. Once the Jog Control stops blinking, it must be assigned to a motor with kOS for CineDrive.
5. Open kOS for CineDrive and navigate to Tools->Accessory Setup. This launches the Accessory Setup menu.
6. Select the Motor drop down to display a list of connected FIZ motors.
7. Select the FIZ motor you want to control with the Jog Control and press the Update button.
8. Your Jog Control will now be in control of the selected FIZ motor.

The Accessory Setup can also be used to unassign the Jog Control from a FIZ motor by pressing the Clear button. Useful information displayed by the Accessory Setup menu includes the Jog Control version number.

Once a FIZ motor has been assigned to a Jog Control, kOS for CineDrive yields control to the Jog Control device. That means all calibrations and speed control must be set through the Jog Control. Calibrations set on the Jog Control device will be displayed in kOS. However sub calibrations are not supported when the Jog Control is configured to work with the CineDrive Brain.