



CINEGEARS MULTI AXIS FOLLOW FOCUS MANUAL

MANUAL BOOK

■ Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, Cine Gears Inc. reserves the right to make changes to the products described in this document without notice.

Cine Gears Inc. does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

■ FCC Compliance Notice: Radio Frequency Notice

The device has met the FCC 15.247 requirement. In order to comply with the FCC RF exposure requirement, the user must keep 20cm away from the antenna.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

■ Information to the user

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

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The Cinegears Multi Axis Digital Focus Kit is a wireless lens control kit for driving your lens rings (focus, iris and zoom.) This system includes the Cinegears Wireless Hand Controller, The Cinegears Wireless Receiver, and the Wireless Lens Motors. The Lens Motors can fit both 19mm and 15mm rail systems. There is also the option to tether the receiver to the controller with a 4-pin Lemo cable.

For ultra-quiet, high-torque lens control, the Cinegears Wireless Multi Axis Lens Control System delivers a complete solution that features remote record, interchangeable mounting brackets, and swappable drive gears. The industrial grade aluminum and steel alloy, allows mounting of heavier lenses while retaining its light weight. Meanwhile, precise machining allows the rail adaptors to fit snugly onto the bracket while allowing clearance for smooth sliding to make quick adjustments.



Controllers and Receivers

■ Multi Axis Controller



With the Wireless Hand Controller, you can deliver a reliable signal from up to 100 meters wirelessly. For jib, Steadicam, or helicopter shots, the Wireless Hand Controller allows focus pullers to stand farther away from camera without compromising precision. Set up to four Focus, Iris, and Zoom presets with a single press of a button, same as the integrated record button. Instead of using a follow focus with limited lens control and mobility, the CINEGEARS Wireless Hand Controller lets you control focus, iris, zoom, and remote REC trigger wirelessly – all from one device.

■ Wired/Wireless Receiver



The CINEGEARS Receiver drives up to 6 CINEGEARS Lens Control Motors, as well as providing wired control, start/stop, and Stereoscopic 3D filming support. The Cinegears Receiver mounts to your rig on a rail by quick clamp and is powered using the 2-PIN 1B TO 2-PIN 0B CABLE. It features a backlit LED screen so you can see exactly what your parameters are. The receiver now has all the trigger functions chipped in: supporting SONY, RED, and ARRI. The trigger cables are also included in the kit.

Multi Axis Motors and Gears

Standard Multi Axis Wireless Motor (1-216)



A focus kit is only as good as its motors, which is why the Cinegears multi axis lens motors are held to strict performance benchmarks for noise, torque, and design. With a hidden antenna and reduced size overall, compared to our single axis motors, the Cinegears multi axis lens motor does not compromise performance; motor power and transmission distances are the same. The motors laterally lock on to 19mm and 15mm rail systems, avoiding the need to remove your matte box and other rail accessories. Low power consumption, 6 motors provide synchronized motion and link up to 6 units with one receiver., remote record, and interchangeable gear heads (m 0.4 to m 1.0), the Cinegears Wireless Standard Motor is ideal for practically any lens setup imaginable.

High Torque Multi Axis Wireless Motor (3-001)



Redesigned with your feedback in mind, it now has twice the torque, to move even the largest lenses, with ease. It still sports all the same features as its smaller brother, including: built-in receiver, Remote REC trigger for ARRI, SONY, and CANON cameras. The Japanese made digital servo motors are crafted in an aluminum alloy, and have removable gears and brackets. We've made it larger, stronger, and faster, but it's still delicate enough for smaller lenses as well.

Gear Re-Locator (1-233)



The Cinegears Gear Re-locator is designed so you can customize the gears' position for better lens control, adding on an extra 0.5 inches of space it provides you with plenty of room for your motor to sit on your camera rods. Made from durable steel, longevity is never an issue.

Extra Thick Gear (1-123)



CINEGEARS T20 Extra Thick Motor Gear is triple the thickness of the standard gear, which provides more contact and traction and reduces slipping. It is made from the same durable aluminum alloy which is in stock now.

Multi Axis Accessories

■ Standard Mounting Brackets (1-125)



The perfect companion to the CINEGEARS follow focus system, this durable bracket makes your installs easier. It has a conveniently placed steel slide which makes attaching it to the motor simple. This dependable bracket creates a fast and easy installation for you. The bracket has to be tough – that's why we made this one from ultra-durable material. You can rest assured that it will stand up to the chaos going on around it, and provide a secure place for the motor. Brackets for both 15mm and 19mm rails are available.

■ Extended Mounting Brackets (1-128)



This set of brackets is the 'Big Brother' to the standard motor bracket. With a longer side of 8cm that you can position with the motor to be suitable with any lens configuration. Just like it's 'little brother' it is made from ultra-durable material, and designed to fit easily onto any rig. Brackets for both 15mm and 19mm rails are available.

■ Finger Bracket (1-135)



Cinegears Express Wireless Hand Controller Finger Bracket is an all new accessory for the Single Axis Controller. It mounts easily to the side, either horizontally vertically. You can use a magic arm or mount it directly to your rig. Now you can control the action with nothing but your finger tip.

■ Gear Replacement Set (1-129)



Cinegears 38mm Variety Pitch Replacement Gears are included, with the radius side of 38mm (original is 45mm), which can provide you with even smoother movement for small lenses. It also can work with different lenses with variety pitches. The pitch size includes: 1.0, 0.8, 0.6 and 0.5.

Multi Axis Accessories

■ Cinegears 4-Port D-Tap Female Cable Splitter with Advanced Surge Protection (1-189)



This Cinegears power solution cable splits 1 D-Tap Input into 4 Outputs at a 10 Amp Maximum Load with Unregulated Voltage and advanced surge protection will keep your electrical products running safely.

■ Multi Power Data Cable



A 7-Pin Lemo Motor Cable for the Multi Axis Receiver.

■ Waterproof Hard-Shell Carry Case (1-220)



The Multi Axis Waterproof case with Foam Insert for One Channel Follow Focus provides protection from fall damage, with a hard and sturdy water impervious shell, the motors and items contained within can support great weight and survive hard falls. The foam inside fits all items snugly making them perfectly stationary while placed in the case.

■ Thick Marking Disc for the Multi Axis Controller (3-004)



Our Magnetic Marking Disc Replacement for the Standard controller is much thicker and sturdier than the original version. With three magnets embedded into the smooth disc. It presents much smoother grip and comfortable touch. The disc also gives a much easier marking capability and washable surface.

■ Large Focus Knob for Multi Axis Controller (1-134)



Our big diameter magnetic focus marking knob compatible with dry erase markers for multi axis controller is uniquely designed with high-density plastic and provides you with the perfect touch to your Express Plus focus knob. It enlarges your focus knob and provides better focus control and is only compatible with the controller.

Multi Axis Accessories

■ Adjustable Rubber Focus Ring (1-401)



High Quality Professional Solid Rubber Lens Focus Ring:--Strong and durable design, flexible and customizable, perfectly fit for most lens size with its standard 0.8 Cinegears pitch.

■ Detachable Antenna for the Multi Axis Receiver (1-211)



The CINEGEARS Multi-Axis receiver antenna is detachable for boosted signal and easier storage. This durable and compact design will ensure that you can always communicate with the receiver.

■ Powertap Power Cable for the Multi Axis Receiver (1-222)



Introducing the all NEW Lemo Power cable for the Multi Axis Wireless Follow Focus system. It now connects at a right angle, saving you space on your rig. It helps to keep the wires organized, as well as making it more universal. You can get it in a variety of lengths so don't hesitate to ask.

Remote Recording Triggers

Multi Axis Remote Record Trigger: Sony/Canon (1-219)



The versatile Cinegears Multi Axis Receiver Remote REC trigger cable (LANC) is compatible with Sony FS7/FS700, Black Magic Production Camera/4K Camera, Black Magic URSA, and Canon C100-C300. A built in LED light indicates recording status, and the black anodized aluminum casing ensures durability.

Multi Axis Remote Record Trigger: RED Epic (1-521)



CINEGEARS Multi Axis REC Trigger for RED Epic is designed for RED Epic cinema cameras. Effortlessly trigger your REC button with the Cinegears Multi Axis REC Trigger for RED Epic cameras; focus your mind, and hands, on other aspects of your shot. The trigger can be powered by D-Tap or USB cables, and can be used as a stand-alone REC trigger. This trigger works with any Cinegears Wireless Motors to add wireless remote REC start/stop control. Housed in sturdy aluminum alloy, durability won't be a concern.

Multi Axis Remote Record Trigger Cable for ARRI (1-218)



The ARRI remote REC trigger cable for the CINEGEARS Multi Axis Motor provides a durable connection between the motor and the ARRI Camera. This REC trigger cable provides a reliable signal from the motor and the camera, with almost immediate synchronization.

Cinegears Wireless Hand Controller

Weight	570g
Material	Aluminum and Steel Alloy
Dimensions	5.75" (14.5 cm) Width: 2.75" (7 cm) Depth: 2.75" (7 cm)
Construction	CNC Machined
Coating	Black anodized coating
Operating Temperature	0°C to + 40°C (32°F to 104°F)
Storage Temperature	-20°C to + 50°C (-4°F to 122°F)
Frequency	433 MHz RF
Supported Battery Type	Li iON Battery 5V
Required Battery Quantity	One (1) Internal



Cinegears Lens Control Motor



Maximum Peak Torque	0.85 Nm
Maximum Speed	2.8 rev/second
Dimensions	4.5" (12 cm) Width: 1.25" (3 cm) Depth: 2" (5 cm)
Weight	326g
Material	Aluminum and Steel Alloy
Construction	CNC Machined 32 bit control chip
Coating	Black anodized coating
Operating Temperature	0°C to + 40°C (-32°F to 104°F)
Storage Temperature	-20°C to + 50°C (-4°F to 122°F)
Operating Power Input range	12 – 28 V

Cinegears Wireless/Wired Receiver



Input Supply Voltage	12-28V
Dimensions	Height: 5.5" (13.5cm) Width: 4.5" (11.5cm) Depth: 3.5" (8.5cm)
Frequency	433 MHz RF
Weight	0.88 lbs
Material	Aluminum and Steel Alloy
Construction	CNC Machined
Coating	Black anodized coating
Operating Temperature	0°C to + 40°C (-32°F to 104°F)
Storage Temperature	-20°C to + 50°C (-4°F to 122°F)

Cinegears Multi Axis Follow Focus Kit - User Manual



■ Materials

The Follow Focus system is made from an aluminum alloy using the precision of CNC machining. The design also allows the drive gear to be installed on both sides of the lens, which makes it easier to have multiple drives. The product uses the latest technology from Japan, with an accurate and precise DC servo motor and the latest 32-bit high-speed control chips, these electronic and mechanical parts combine, perfectly, together to achieve excellent performance, smooth control, and precise positioning.

■ Input

The CINEGEARS Wireless Follow Focus has an input voltage range of +12V to 30V, there is also an automatic voltage regulator circuit inside the controller. The controller also comes with a single channel wireless remote REC trigger. The controller contains a lithium polymer battery that can work continuously for more than 20 hours on a full charge. Recharge the controller using a mini USB cord.

■ Controller

The controls have been designed for ease of use: They allow for preset memory points, where you can save up to four. The controller allows for, up to three types of automatic synchronization (focus, zoom, and aperture). The controller has an adjustable speed which controls the transition speed of the presets. The controller has an accuracy circuit built into it to ensure the lens stop precisely where you want it to, even after repeated use. Physical error is less than ± 0.5 mm and it is mainly caused by the gap between the teeth of the gear.

■ Motor Direction

Press the indicator light briefly on the rear of the drive to change the spin direction of the gear to change motor spin direction.

■ Gears and Rods

The motor comes with a standard gear (teeth mold of 0.8, length of 314mm, width of 10mm or 13mm). It can be applied to various types of lenses. We also offer other standard diameters, from 39 to 45mm, modulus of 0.5, 0.6, 0.8 and 1.0 of the drive gear to fit all lenses.

■ Size

Motor Dimensions: 133 mm (height) x 72 mm (width) x 28 mm (depth) and weighs ~ 380 grams.

Remote Control Dimensions: 115 mm (length) x 68 mm (width) x 32 mm (depth) and weighs ~ 400 grams.

■ Synchronization

Turn on the remote control power switch and plug in the motor. Once both are on press the Code button on the motor for three seconds until the indicator light will turn green. Then within 10 seconds, hold the SET and CODE button on the controller at the same time for 3 seconds, the motor light will blink, and the gear will shudder. This means that the controller and motor have been successfully synchronized. (Note: This process is usually done before leaving the factory.)

■ Automatic Remapping

1) Before installing the drive onto the lens, please make sure the wireless remote controller and motor are powered on and connected. DO NOT turn the wireless remote control dial, put the drive gear close to the lens ring and tighten the screws.

2) The controller can automatically locate the start and end points of any lens. To calibrate your lens, hold the (SET) and (A) button on the remote controller for 3 seconds. The whole process can usually be completed within about 20 seconds. If the drive gear wasn't installed close enough to the lens swivels during the automatic calibration, or the swivel lens does not have a start or end point, please refer to the semi-automatic calibration.

■ Automatic Focus/Zoom/Iris Calibration

SET + B (Hold for 3 Seconds) automatic initialization of Focus only

SET + C (Hold for 3 Seconds) automatic initialization of Zoom only

SET + D (Hold for 3 Seconds) automatic initialization of Aperture only

■ Set Up Presets

Go to the focus point of your choosing, press and hold (A) button until it flashes, your point is now set. Repeat with (B) (C) and (D) for multiple points. Press the same preset button to exit the preset mode.

■ Changing the Motor Speed Between Preset Points

Rotate speed knob on the controller to adjust the motor speed.

■ Switching from Speed Response Mode to Smooth Response Mode

On the controller, press (CODE) + (REC) + (A) (B) (C) or (D) at the same time will switch the motor to response speed 1 2 3 or 4 mode. Lower numbers are speed-priority and higher are smoothness-priority.

■ Change Motor Spin Direction

Press the CODE button on the side of the motor to reverse the direction of the gear.

■ Remote Record Triggers

Press (REC) on your controller to toggle Recording mode ON or OFF.

■ Recalibrating your Controller

Rotate the focus ring clockwise to the end; hold (SET) + CODE + (REC) buttons together for 3 seconds. Rotate to the opposite end and press the three buttons again.

■ Manual Lens Remapping

REC + B (Hold for 3 Seconds) automatic initialization of Focus only

REC + C (Hold for 3 Seconds) automatic initialization of Zoom only

REC + D (Hold for 3 Seconds) automatic initialization of Aperture only

Press and hold (C) to rotate the lens clockwise, then press (A) to choose the start point.

Press and hold (D) to rotate counter clockwise, then press (B) to choose the end point you want.

■ Manual Calibration

Specifically used with infinity lenses that have no start or end point. Now you need to do the calibration for focus, zoom and iris separately. First, Press the CODE and their corresponding buttons on the remote controller together for 3 seconds, (B for focus, C for zoom and D for Aperture). Then you will see A, B, C, D four lights are turned on. Then use (C) button or (D) button to control the lens. (Hold down the C or D key for more than 3 seconds it will automatically rotate continuously.) Once it rotates to the proper position, click the (A) button to set a starting point, (B) button to set the end point. At last, (A, B, C, and D) four buttons lights turn off to indicate the initialization has been completed.

■ Semi-automatic Calibration

You need to initial the focus manually, then initial the other two via a mixed mode. After the initialization of lens, the swivel will automatically shorten the distance for a slight amount to avoid the noise of crashing. The backlight flashes during the setting. The products are able to store the data in the course of sudden power lost and replacement of battery, you can still have the original data memorized and continue the operation once turn the power on. If the drive or Lens has been dismantled or replaced, or the corresponding position of gears has been changed, you need to repeat the initialization. (The data will still be valid when automatic initialization was chosen or having the same type of lens.)

■ Buttons and Lights

- SET + CODE (hold for 3 sec) parameters
- SET + A (hold for 3 sec) ALL (focus, zoom and aperture) automatic initialization
- SET + B (hold for 3 sec) automatic initialization of focus
- SET + C (hold for 3 sec) automatic initialization of zoom
- SET + D (hold for 3 sec) automatic initialization of aperture
- REC + B (hold for 3 sec) manual initialization of focus
- REC + C (hold for 3 sec) manual initialization of zoom
- REC + D (hold for 3 sec) manual initialization of aperture
- During the manual initialization process, make sure A, B, C and D lights are on, use (C) or (D) button to rotate the gear to the position you want then use (A) and (B).

Disclaimers

■ FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Cautions

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

Disclaimers

■ Terms and Conditions

Congratulations on purchasing your new CINEGEARS product. Please read this manual carefully before using the product. By using this product, you hereby agree to this disclaimer and signify that you have read it in full. You agree that you are responsible for your own conduct and any content created while using CINEGEARS products, and for any consequence thereof. You agree to use this product only for purposes that are proper and in accordance with local regulations, terms and any applicable policies and guidelines.

By reading this disclaimer, you also agree:

1. Any part of this disclaimer is subject to change without prior notice. Refer to WWW.CINEGEARS.COM for the latest version.
2. CINEGEARS reserves the right of final interpretation of this disclaimer.

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About Cine Gears Inc.

Cinegears is an industry leading company that designs and manufactures digital wireless follow focus systems, lens control systems, camera motion control systems and accessories for film and broadcast industry. As a big believer in the power of creativity and ideas, we designed the wireless motor drive that integrated a built in wireless transmitter, and the wireless finger wheel controller. The Cinegears wireless lens control system has the international CE certification on all its equipment. CINEGEARS lens control system can achieve the finest minutia of focus pulling, with extreme accuracy and control. It provides smooth focus control for shooting 4k footage at an affordable price. We have been doing this for three years and our equipment has been used on hundreds of movies. Filmmakers of all experience levels will benefit greatly from a simple, professional, and well rounded follow focus system. The Single Axis and Multi Axis models provide greater ease, with less crew, and less wires. You can achieve professional film quality scenes on a shoestring budget. Camera operators, assistant camera operators, and jib operators can use the wireless follow focus to attain that perfect shot.

Customer Support



If you encounter any issues with any of our products please contact us directly via the details provided below. DO NOT CONTACT THE RETAIL STORE.

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