

# Hot Gears™



## Instruction Manual

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### System Components:

- Hot Gears Control Modules
- Signal processor/ Split box
- Tilt Motor Mount
- Pan Motor Mount
- Umbilical Cable (30' or 100')
- ARRIHEAD Gear box Screws
- Power cable

- Camera Power Cable
- 5 Pin XLR for Cam & Remote ON/OFF
- Joy Stick Control (Optional)
- REC/PLY Control
- Bloop Light
- 12 VDC Output for Video Monitor or other ACC.

### **Installation of Hot Gears:**

**1-** Hot gears is as accurate as the gear head to which it is attached. Please take great care to insure that the gear head you choose falls into the following category:

**A: No backlash** in Pan or Tilt Axis

**B:** Make sure that the shaft on the gear head is straight (unfortunately the only way to check for this condition is to attach the motors to the gear head, and see if the motor mount is swaying back and forth)

- 2 -** Install supplied Registration Pins on ARRIHEAD, two for Tilt & two for the Pan.  
**3 -** Install Battery bracket or the supplied front box adaptor on the gear head.

Hot Gears Bracket: (for both ARRI and PANAVISION Gear heads)

Attach the front box adaptor to the split box via the to knurled screws ( see diagram)

ARRI HEAD Battery bracket

Secure Split box with the velcro strap

- 4 -** Place & secure Split Box on to the gear head  
**5 -** Unscrew the gear head's wheels and install them on the Hot Gears control unit.  
**6 -** Attach Pan Motor

**A -** Set Pan Break with the key way rail in a upright position.

**B -** ( ARRI ONLY) Align the two ARRI registration pins and the motor mount.

**C -** Tighten the slotted screw/ knob at the center of the hub until you override the break tension.

**D -** Unlock both brakes on Pan axis

**E -** Move Pan gear selector to one

**F -** Connect Pan connector to the Pan receptacle on the Split Box

- 7 -** Attach Tilt Motor

**A -** Set Tilt Break with the key way rail in a upright position.

**B -** (ARRI ONLY) Align the two ARRI registration pins and the motor mount.

**C -** Tighten the slotted screw/ knob at the center of hub

**D -** Unlock all brakes on tilt axis

**E -** Move tilt gear Selector to one

**F -** Connect Tilt connector to the Tilt receptacle on the Split Box.

- 8 -** Connect Camera power and remote ON/OFF Via 5 pin outlet on the top of the split box  
**9 -** Connect the Umbilical Cable to split box and to the Hot Gears Control Unit

- 10** - Support the umbilical cable though the velcro strap on the tilt motor bracket.
- 11** - Connect power cable (24-36 VDC) to Hot Gears
- 12** - Connect appropriate battery to power the camera through the umbilical cable

**CAUTION:** Since there are numerous 3 & 4 pin battery configurations, the Hot Gears system is defined to accept the proper voltage polarity. If you connect Power to the Hot Gears console and the circuit breaker pops, it is a indication of reverse polarity. To correct this problem, use or order the proper cable labeled PANAVISION, ARRI, CLAIRMONT, OTTO, ECT

- 13** - Connect Video monitor power to Hot Gears console. via 4 pin to 4 pin connector
- 14** - Turn the Hot Gears console on by pressing the circuit breaker & the on/off switch

#### **Calibration:**

**1** - Calibrate the system by pressing and holding the CAL. button on the split box. This will allow the controller to calibrate the tilt axis. This function was designed to protect the gear head from any damage due to the very strong motors that are supplied with Hot Gears.

#### **For best results and ease of operation :**

- A** - Build Camera package as desired
- B** - Connect all appropriate cables (Power, Video, Lens Control, ETC)
- C** - Balance & level the camera package as you would do with the any gear head.
- D** - Make sure that the PAN & TILT gear speed are in the First gear and all the locks disengaged
- E** - Press and hold the CAL. button.

This function will teach the Hot Gears where the physical limits are in the Tilt Axis.  
This allows the operator to move the camera as fast or as slow near the physical limits of the gear head, without worrying about either damage to the gear head or ruining the shot.

#### **Operation:**

Set the gear ratio from 0 to 9,

Hot Gears Speed Control / Gear Head Speeds

- 0 slower than 1
- 1 slower than 1
- 2 slower than 1
- 3----EQUAL TO--1
- 4 slower than 2
- 5----EQUAL TO--2
- 6 slower than 3
- 7----EQUAL TO--3
- 8 Faster than 3
- 9 Faster than 3

**Soft Limits:**

There are four soft limit buttons. They are designed to help the operator set soft limits. To set soft limits, move the camera to the desired position and press the appropriate soft limit button. (I.E., when panning camera to the right, push the Right button when you reach the desired position and the limit will be set.)

- Solid green indicates that you have marked your position.
- Flashing green light indicates that your hand or joystick position is beyond the soft limit.
- If you have traveled beyond your soft limit, you need to turn the wheel back as many times as you turned it in the original direction to get back into the normal operation.

**Joy Stick Operation:**

- Connect the Joy Stick to the accessory connector on the Hot Gears control unit.
- Adjust the Pan & Tilt Speed control for desired control feel
- Utilize the four soft limit switches to set your soft limits as needed.

**Record / Playback:**

There is **62 seconds** of real time memory within Hot Gears.

**Items required:**

- A - Record / Playback Module
- B - Bloop Light ( Bloop Light is an optional sync device for post production use)
- C - Connect the Record/Playback Module to the Hot Gears control unit
- \*D - Connect the Bloop Light to the Record / Playback Module via standard BNC video cable

**To Record a move:**

- \*A - Hold the Bloop Light in front of the lens
- B - Start Camera, wait for sync, then slate
- C - Press REC button to start the recording
- \*D - Remove the Bloop light as soon as the LED lights up ( the editor will use the LED to sync up different plates)
- E - Execute the move
- F - After executing the move, press the STP button to stop the recording.
- G - Turn the camera off

**To Playback the move:**

- A - Press PLY once to move the camera to the first position or the beginning of the move.
- \*B - Hold the Bloop Light in front of the lens.
- C - Start Camera, wait for sync, then slate
- D - Press PLY for the second time to play back the move
- \*E - Remove the Bloop light as soon as the LED lights up
- F - Hot Gears will playback the move in its entirety or the play back could be terminated by pressing STP button.
- G - Turn the camera off

**\* = OPTIONAL**

**To erase the move :**

**A** - Press Both REC & STP (this will erase the move in the memory )

**Specifications:**

- Power requirement: 24-36VDC
- Max Current: 4 A
- Real Time Record/Playback Time 62sec
- Weight: 8 lbs. (3.6 Kg)
- Size: 18 x 10.5 x 5" 457.2 x 266.7 x 152.4 mm
- Umbilical Cable Up to 100' Up to 33 Meters
- Vibration/shock resistance Up to 4.5g
- 12 volt output 8A Max

**Drawings**

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