VariZoom

www.varizoom.com

Cinema Pro JR

Operations Manual

BEFORE YOU START, READ THESE WARNINGS

1) NEVER PLUG POWER DEVICES OTHER THAN THOSE SUPPLIED BY VARIZOOM INTO THE SYSTEM. ONLY USE VARIZOOM POWER SOURCES AND CABLES. USING DIFFERENT POWER COMPONENTS CAN LEAD TO SEVERE DAMAGE TO THE HEAD AND EVEN THE CAMERA. THIS TYPE OF DAMAGE IS NOT COVERED UNDER WARRANTY.

2) DO NOT MODIFY THE SUPPLIED CABLES OR ATTEMPT TO DISASSEMBLE THE HEAD.

3) LENS CONTROL CABLES MUST ONLY BE PLUGGED INTO THE SPECIFIED INPUT JACK ON THE LENS ITSELF – <u>NEVER PLUG A 12-PIN CONNECTOR ON A VARIZOOM LENS CONTROL CABLE INTO THE 12PIN JACK ON THE CAMERA BODY</u>. WHEN IN DOUBT, CONSULT VARIZOOM OR YOUR LENS MANUAL.

4) THE ADVANCED CONTROLLER DOES NOT REQUIRE SEPARATE POWER, IT RECEIVES POWER THROUGH THE GREEN-CODED CONTROL CABLE THAT CONNECTS TO THE HEAD. THE "AUX" POWER JACK ON THE ADVANCED CONTROLLER IS ONLY UTILIZED IN WIRELESS CONFIGURATIONS AND SHOULD ONLY BE CONNECTED TO A VARIZOOM POWER SUPPLY.

5) DO NOT OPERATE THE HEAD WITH AN UNBALANCED LOAD (i.e., with the camera's weight extremely off-center either horizontally or vertically).

6) DO NOT GET THE SYSTEM WET – IT IS NOT WATERPROOF.

7) ALWAYS MAKE SURE YOUR LENS AND POWER CABLES HAVE ENOUGH SLACK RUNNING THROUGH THE TILT AXIS TO PREVENT TWISTING AND TEARING OF THE CABLES.

8) MAKE SURE YOUR LENS CLEARS THE BASE OF THE HEAD WHEN TILTING. IF THE LENS DOES NOT CLEAR THE BASE, SET SOFT LIMITS (SECTION 7) TO PREVENT THE LENS FROM STRIKING THE BASE OF THE HEAD WHEN TILTING.

9) WHEN USING THE CP JR's ONBOARD LENS CONTROLS TO CONTROL YOUR CAMERA, ALWAYS POWER THE CAMERA UP LAST. OTHERWISE, THE RECORD START/STOP FEATURE MAY FALL OUT OF SYNC. TO AVOID THIS ISSUE, JUST MAKE SURE TO CONNECT XLR POWER TO THE HEAD **BEFORE** YOU TURN YOUR CAMERA ON.

General Description

The CinemaPro JR is a lightweight, two-axis motion control head for film and video cameras. It has a wide variety of operating modes: manual operation from joystick, motion control style record and playback, "go to mark" preset framing. Software upgrade options are also available for additional features such as intervalometer, camera sync, PC data share, and additional recorded takes and mark points.

The Cinema Pro JR Advanced Controller gives the user all input and programming capabilities and has a joystick for pan & tilt control. The Advanced Controller also works in concert with two optional control input devices: Pan Bars for broadcast-style operation or Hand Wheels for cinema-style operation.

The Jibstick remote is a simpler, less expensive controller designed for one-man jib operation. The jibstick only offers joystick pan & tilt with smoothing and speed control.

The Cinema Pro JR's lens interface controls zoom and focus. It handles several control signals: RS-232 for Fujinon digital lenses or Varizoom (TOC) motor drives, RS-422 for Canon digital lenses or Preston motor drives, position or speed based analog, pulse width type RC servos, and LANC.

The following is an in-depth description of Cinema Pro JR operation and a more complete description of each of its features.

Cinema Pro JR Advanced Controller

Front Panel buttons: – The top row of buttons default to act like a normal record - playback system; record, rewind, stop and play. The top left button, 'Q', is used as a 'Shift' key.
The bottom row includes:
The "Menu" button = '*'
The "Accept" button = '<-'
The "Cancel" button = 'x'

The main page may always be enabled by pressing the "Cancel" button one to three times, depending on which sub-menu you start out from.

 The upper right portion of the LCD screen shows motor status and current positions for pan, tilt, zoom and focus.   A check in the box to the left of the axis name indicates that that motor is enabled to run. If soft limits are enabled for the axis, the box is filled and appears white with a blue check mark. The numbers to the right of the axis names are the motor positions; pan and tilt are shown in degrees, and zoom and focus are shown as an unscaled number from 0 to 1000.

1. Navigating the menu screens

Use the knob above the joystick to navigate through the menu screen. This knob (called the setup knob) will also be used to change the value of selected parameters.

Use the "enter" button to select an item.
The "Menu" button is used to enter setup menu.
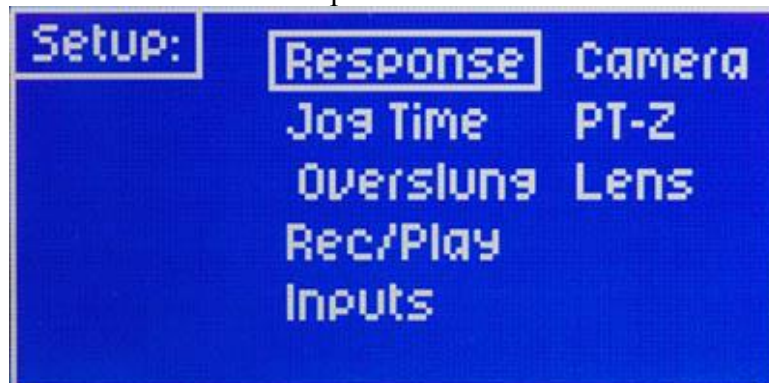
   When pressed while already in the setup menu, the "Menu" button will enter a second setup menu.

The "cancel" button is used to cancel the last item changed, or to back out of a sub menu. Pressing "cancel" twice will always return to the main screen.

The "Q" button is basically a shift key, and is used to change the function of other buttons.

The "Record" "rev" "stop" and "play" are used for the motion control features. This will be addressed later on.

The main menu screen will show pan, tilt, zoom, and focus positions. It will also display which take is enabled, which go to mark is enabled, as well as a few basic functionality adjustments.

When changing the value of a parameter, the setup knob will increase or decrease the value in increments of 1. Hold the "Q" button while moving the setup knob, and the values will move in increments of 10. Hold the "menu" button while moving the setup knob, and values will move in increments of 100. Hold both the "Q" and "menu" buttons while moving the setup knob, and the values will change in increments of 1,000.

Display Contrast can be adjusted from the second setup menu.
While in the main screen, press the "menu" button twice.
Select the "contrast" option.
Contrast can be adjusted from 0-100

2. Basic Setup
-Secure the head to crane, tripod, or solid mounting beam
-Plug the FACTORY POWER SUPPLY into AC mains
-Connect XLR cable between head and FACTORY POWER SUPPLY
-Plug green control cable into the head and the jack marked "CTRL" on the Advanced Controller (or Jibstick, if applicable)
-If applicable, connect camera power (red) and lens control cables (orange) and route the cables through the tilt axis port hole to connect to your camera ⟶
-Make sure to turn camera power on as the LAST step.

Feeding External Cables through the Head
In some cases, you will need to feed video or other cables through the head. To do so, simply remove the cable covers (pictured at right, covers may differ slightly in appearance). 4 screws secure the long vertical cable cover, while only 2 screws secure the short horizontal cover. Run the cables through the pan base and tilt arm with enough slack, and reattach the cable covers.

If using the TOC system
Connect the TOC 3A (3 axis lens drive box) between the orange 16-PIN lens control connector located on the head, and the grey "control" connector located on the TOC 3A. Connect the Lens drive motors to the appropriate connection according to their function (zoom, focus, iris)
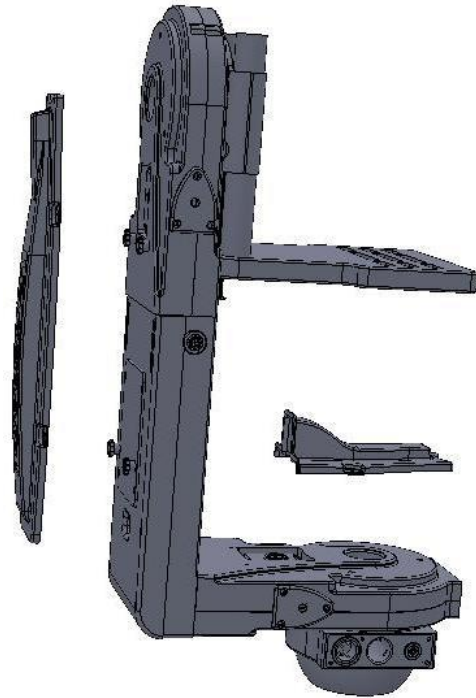
Balance the Camera – Although the head will hold position very well, it operates best when the camera is balanced on the mounting platform. With heavier cameras, it is essential, as an out-of-balance load will cause the servos to constantly fight to hold position. **Make sure that the motor power is turned off before balancing. This will allow you to move the tilt axis by hand.** To balance the camera horizontally, you need to place the camera's front-to-back center of mass at the center of the mounting platform slot. You can do this by trial and error, sliding the camera front-to-back on the mounting platform until it stays level. The simplest accurate way to find the camera's center of mass is to lay a pencil/pen on a table and try to balance the camera on it front-to-back. The spot on the camera where it comes closest to balancing on the pencil is the center of mass. Place the camera's center of mass at the center of the mounting slot and secure the camera with mounting screws (2 if possible). When horizontally balanced, the platform should stay

level.
To get the vertical balance right, raise or lower the platform to get the camera's vertical center of mass located on the center of tilt rotation. To adjust, loosen the platform locking lever about ½ turn. Turn the black knob on the underside of

the platform to precisely raise or lower it – you can use a hex key. Try to get the center
of mass right on the center of tilt rotation. Rotate the platform to various angles and
adjust until it holds position at any angle. If it falls down, you need to adjust the platform
upward. If it drifts upward, you need to lower the platform. When balance is achieved,
tighten the platform locking lever.

After all connections have been made and the camera is
balanced, the head is ready to be powered up.
Connect the power supply to AC power. Switch on the
Advanced Controller's power in sequence: start with the
switch on the left. Wait for sync to be established - a
spinning diamond will appear in the lower left corner of the
remote. After the diamond stops spinning, sync is established
between the Head and the controller. Now switch on motor
power (the power switch on the right)

Set inputs- You will now need to set the Head to respond to the correct controller
inputs.
Press the "menu" button to bring up the setup menu. Select the "inputs" option. This
will bring up a controller inputs grid.

 Here is where you can assign how Pan, Tilt, Zoom, and Focus will be controlled.
Move the cursor box to where you'd like to control each axis.
Note: Make sure you have the correct controller selected. I.E. if you are using the
joystick, check mark all boxes next to "Joystick"; if using wheels, make sure "wheels" is
selected, etc. This will greatly affect the performance of the Head.

Overslung/Underslung- Make sure this selected for the proper configuration. If
this needs to be changed, simply move the cursor box over the selection, and press
"enter". This will change the Pan response.

Lens- This only needs to be changed if you are using camera lens controls other than the VariZoom TOC system. In other words, if you're connecting directly to a Canon or Fujinon lens servo, or even a Preston system, you'll need to go into this menu to set things up properly.

Press the "menu" button to enter the main setup menu.
Select the "Lens" option.

When the "Current Lens" box is selected, pressing "enter" will change the selection.

Preston
If you are using a Preston MDR2, press the "enter" button until the box reads "Preston."

Canon or Fujinon Analog Servos
If you are using a Canon or Fujinon lens with an <u>analog</u> zoom motor, press the "enter" button until "default" appears.

Connect the Lens Control Cable
To set up the lens control, you need to first connect the lens cable to the servo jack(s) on the lens itself (NEVER connect to the jack on the camera body where the lens plugs in, or damage may occur). You will plug into the same jack(s) where you would plug in any external lens control, so consult your owner's manual if necessary.

Adjust the Voltages
You must then adjust the voltages in the lens menu so the lens servo responds properly – <u>you may notice the lens zooming on its own when you first connect the cable, but this is normal.</u> Start by adjusting the middle number until the lens servo stops zooming. If the lens is all the way at one end of the range, you may have manually zoom the lens in or out to reset the position in order to see if the servo is still moving. (Some people also flip the lens servo switch to manual and just listen to hear the servomotor stop running)

Once you've set the middle number to the proper rest voltage, you need to make sure the voltages on the left and right are equally far from the middle "rest" voltage. In other words, if your rest voltage is 4.00, the left voltage could be 1.50 and the right 6.50.

If the difference is unequal, you'll notice the lens zooms faster in one direction than the other. The greater the difference, the faster the lens will zoom in that direction. The left number should always be lower than the middle number and the right number should always be higher than the middle number.

<u>Canon or Fujinon Digital Servos</u>
If you are using a Canon or Fujinon lens with **digital** servos, press "enter" until the lens manufacturer's name appears. Digital servos should automatically work with no setup.

Head Setup – You only need to enter this menu to switch the head between wired and wireless mode. Press the "menu" button twice to enter the secondary setup menu. Select the "Head setup" option.
        - Using the Head in Wired Mode: The "Communication" setting should be on "two-way" and the "Select head type" setting should be on "Wired"
        - Using the Head in Wireless Mode: The"Communication" setting should be on "one-way" and the "Select head type" setting should be on "Wireless"

Warning: In the "Head setup" menu, there is also a set of head speed options: "S-Standard," "HS - High Speed" and "HSX – Ultra Speed" – **DO NOT CHANGE THIS SETTING FROM "S – Standard" – THE CP JR SHOULD ALWAYS BE SET TO "S - Standard."**

3. Basic operation and adjustments

<u>WARNING</u>**: If your lens has an optical image stabilizer (OIS)**, we recommend that you disable the OIS. The motion of the CP JR may cause the OIS to exhibit some strange behavior. In some cases, the OIS may create the illusion that the head is drifting at 90 degrees to the axis of motion (e.g., at the end of a pan move, the image may "tilt" slightly up or down). Turn off the OIS to prevent optical problems.

The Head can control Pan, Tilt, Zoom, Focus, and record start/stop (when available from the camera and with optional cables attached) from the advanced controller, and has programmable parameters for each axis. Iris can also be controlled from an optional FIZ controller.

Pan, tilt, and zoom can be controlled with the joystick by moving the joystick forward, backward, left, right, or twist for zoom. Focus is controlled with the knob to the left

Pan and Tilt can also be controlled by using the optional encoded handwheels or with the optional panbar controller pan and tilt to be controlled as if using a fluid head. This can also be fitted with optional Pro style zoom and focus controls.
.
Record start/stop is done by holding the "Q" button and pressing the "enter:" button. A "C" (for camera) will appear next to the "Go To" option when camera record has started. <u>Note that the record start/stop feature may be thrown out of sync if you connect XLR power to the head while the camera is powered up – make sure the camera is off when you plug power into the head.</u>

Speed adjustment

Basic speed adjustment for pan and tilt can be made in the main menu screen. Move the cursor box to "spd" using the setup knob, and press "enter". The setup knob will then change the speed for both pan and tilt (the number shown in the box is a percentage of the advanced speed setting). Pressing the "enter" button again will allow you to change the advanced speed setting. In this menu the setup knob will adjust tilt speed, and the focus knob will adjust pan speed. The number shown in the box is a percentage of full speed capability. Press enter again to keep your selection, and return to the main screen.

4. Motion Response

From the main screen press the "menu" button, Select the "response" menu.
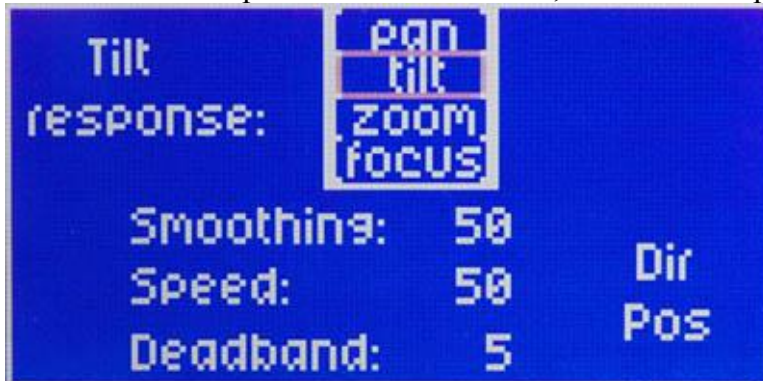
Here you can adjust parameters for Pan, Tilt, zoom, and focus. Select the axis that you'd like to adjust.

Smoothing will adjust how "quick" the axis will respond. Smoothing can be adjusted from 1-100. 1 being instant response, and 100 being the maximum delay in response. Smoothing will also affect the how quick the axis will slow down while making the move.

Speed will adjust the advanced speed setting. The numbers in the box are the same numbers that appear in the advanced speed setting accessible from the main screen.

Deadband only affects the joystick. It will adjust the amount the joystick must be moved before the axis responds. Deadband can be adjusted from 1-100. 1 being minimum amount of movement before response, and 100 being maximum amount of movement before response.

Direction- In will change the direction in which the signal is sent to the head. It is what you will need to change to reverse axis responds. I.E. if tilt is set + turning the encoded wheel clockwise will tilt the camera up, and pressing the joystick forward will tilt the camera down. If it is changed to – turning the encoded wheel clockwise will tilt the camera down, and pressing the joystick forward will tilt the camera up.

Direction- Out will change the direction in which the head sends the signal back to the controller. This will change the axis positions on the main screen display as they relate to zero. I.E. a pan maneuver from left to right will have decrease the angle if the output direction is marked as+. Switching the output direction to – will result in the angle number increasing when a pan maneuver is made from left to right.

5. Motor Enable/Disable

To enable or disable control of pan, tilt, zoom, or focus, or to place pan or tilt in neutral, while in the main screen select the "ENL" option.

The cursor box then appears in the top right corner, and lets you select one of the four axes. Move the cursor over which axis you wish to control.
Pressing "enter" will disable, or enable that axis from the controller. When disabled, power will remain to this axis, so it will hold its position. It will just be disabled from control.
While holding "Menu", press the "enter" button. This will place the selected axis (this only works for pan or tilt) in neutral. That axis not only will be disabled from the controller, and will no longer be powered allowing you to move the axis by hand.
From this menu, you can also set each axis for live playback, or manual control (this only applies when playing back a move which will be addressed in a later chapter)

Note: A check mark next to the axis indicated that the axis is enabled.
An "x" next to the axis indicates the axis is disabled.
An "o" next to the axis indicates an axis that is in neutral.
A blue check mark with a white background indicates an axis with a soft limit set
If the name of the axis appears blue with a white background, this indicates an axis that is set for live control during playback of a move (this will be addressed in a later chapter)

6. Setting Zero

You can custom set the axis position indicator to read zero wherever is necessary.
Move each axis to your desired zero point**.
From the main screen select the "set" option. Then a sup menu will appear to the right.
Select the "zero" option.
All axes will then reference their current position as zero.

**If using the TOC system, Preston MDR2, or any Canon of Fujinon lens with digital
servo control. Setting zero will only affect pan and tilt. Zoom, and focus will be
referenced to the actual motor position.

You can always return all axes to zero at any time.
From the main screen, select "Go To"
From the sub menu, select "Zero"
All axis will then return to the zero position

7. Soft Limits

Soft limits will allow you to limit the range of the pan, tilt, zoom, or focus axes. This is
very useful if you have any hard wired cables that will restrict pan or tilt movement, or
any lenses that limit clearance. You can set two limits per axis.

From the main screen select the "set" option. A sub menu then will appear to the right.
Select the "soft limits" option.

Select the axis that you'd like to set soft limits.

When setting a limit, leave the soft limit as "disabled"
Move the selected axis to the desired limit.
Then select "set limit"
Now move the axis in the other direction to where you need the other limit set.
Select "set limit"

Now move the cursor box to "Disabled", and press "enter" The box now shows "enabled", and your soft limits are set that that particular axis.
Note: If the system is set up to be in "one-way" mode, you can quickly enable or disable pan and tilt soft limits from the main screen.
While in the main screen Hold "Q" and press "record". This will enable or disable pan and tilt soft limits.

Reset Zero will set the current position of the selected axis to read as zero.

Set Default will automatically set the selected axis to +90° and −90° from its current position. This is just for a quick limit set that doesn't require the operator to have the head in any direction.

Reference is the point from where the soft limits are set. For the CPJR, it can only be set to Zero.

8. Mark points
Mark points will be limited to 2 with the basic remote software installed. (A software upgrade allowing for 2,000 mark points is available as an optional upgrade).
Marks will set preset positions for all available axes.

Setting Marks
To set a mark point, select "Mark" on the main screen.

The number in the box will indicate where your mark will be stored. As you scroll through the numbers, the lower right will display the current positions recorded for each mark.
Once you choose where you want to store the mark, press "enter"
Move the axes to the position that you wish them to set for this mark position.
Select the "set" option.
From the sub menu select "Mark"
This will then record all current axes positions to the mark displayed in the upper left.

Recalling Marks
To recall a mark position, select the "Mark" number you wish to recall from the main screen. (The axis positions will be displayed in the lower right)
Select the "Go To" option

From the sub menu, select "Mark"
All axes will go to the position that is recorded for this mark.

Note: A quick way to scroll through marks. While holding the "Q" key, press "Play" and the mark numbers will increase. Press "Stop" and the mark numbers will decrease. This is much faster than scrolling with the setup knob.

Jog Time is the speed and time that the Head will take to move to and from a mark, or to and from zero. This can be adjusted for linear ramping, and will be addressed in more detail in a later chapter.

9. Recording moves
The Head can record up 4,650 seconds of motion. Basic remote software only allows one take to be stored. An optional upgrade to your software allows up to 2000 takes to be stored. Takes can be played back in real time, or stretched in time-lapse with the optional intervalometer (The intervalometer will be addressed in more detail in a later chapter)

Recording a move- Select the take where you want to store the move. From the main screen, move the cursor box to the number next to the "take" option.

From here, you can select the take where you want to store your move.

The bottom left will display how long the existing take is (if it is empty it will display "0"), and how many seconds are available for recording in the system's memory.

Press the "record" button. If a move is already stored it will read "overwrite take?"

Press enter to overwrite. It will then read "hit record to start"

Once you hit record, it will instantly begin recording the moves for all applicable axes (pan, tilt, zoom, focus, and iris)

When you are done, press the "stop" button

Note: You can record a "go to mark" maneuver.

Before you begin recording, make sure that the desired mark is already displayed in the upper left.

Begin recording.

Any time during the recording hold the "Q" button and press "play". The Head will then automatically move from the current position to the mark point displayed in the upper left. This can be done as many times as necessary during the recording.

Playing back a move- Select the take that you wish to play back

Press the "play" button. All recorded axes will then move to the starting point of the selected take.

After the all axes have returned to the start point, press "play" again, and the Head will play back the recorded move.

Note: During playback of a move, the joystick, panbars, or handwheels, will be disabled until the axes are done playing back the move.

Manual control on axes during playback- It is possible to isolate a specific axis or axes to be disabled from playing back while the other axes play back the move.

From the main screen select the "enl" option.

Then select which axis you'd like to disable from playback

On the lower left, next to "playback" it will display either "active" or "live"

When "active" is displayed, the axis will be played back during a move.

When "Live" is selected, the axis will be disabled from playback, but you will be able to control that axis with the controller while the other axes playback the move.

Note: When selecting a take for playback, or recording, hold the "stop" button while turning the setup knob. This will skip to the next take that has a move recorded. I.E. if you have a move recorded on take 2, and a move recorded on take 12, and moves 3-11 are blank, this will scroll the numbers directly from take 2 to take 12.

Delete a take- Select the take that you want to erase.

While holding "stop" press "record" This will then erase the move that is stored on the selected take.

10. The Intervalometer Option

Intervalometer is only available with optional upgrade software installed.

The intervalometer allows recorded moves to be played back over a specified time. To activate the intervalometer, select the "record/play" option from the setup screen. Select "playback time".
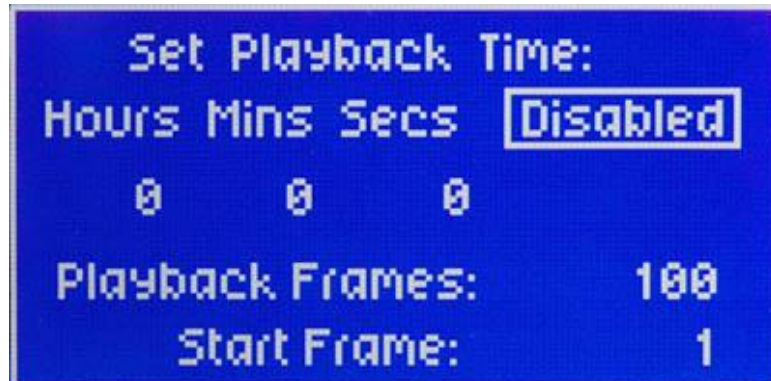
Adjust the time you wish for the move to be played back. (the playback time selected must be **greater** than the move time)

Move the cursor box over "disabled", and select it. It will then change to "enabled" to enable the intervalometer.

Note: this setting will be applied to all recorded moves. If a move has a greater recorded time than what the intervalometer is set to, the move will not play until the intervalometer is either disabled, or the playback time is adjusted to be greater than that of the selected take.

11. Camera Sync Option

*Camera Sync is only available with optional upgrade software installed. Call for details.

12. Jog Time

Jog time is the time the Head will take to or from a mark or zero.
Select "Jog Time" from the setup menu

Under the "jog time" option, you can set the number of seconds the Head will take to go from mark to mark, from zero to mark, or from mark to zero.

Under "jog motion" you can choose either "s-curve" or "linear". This is how the speed will vary throughout the motion.

"s-curve" will start slow, speed up, then slow down before all axes reach their destination.

"Linear" will start slow, and then increase speed. Maximum speed will be reached at no more than 50% of the move.

"linear ramp" will adjust the percentage of the move the Head will take to reach full speed in while "linear" is selected.

13. Camera

This is related to the camera run (aka record start/stop) feature available through the lens control interface. If you are connecting to your lens from the CP JR's orange-coded jack, you may be able to start and stop recording by pressing the "Q" (shift) button along with the "<" (enter) button. The 'camera' menu allows you to change the settings for the start/stop feature. If start/stop is already working properly, you don't need to change anything in this menu. If the feature isn't working, you can try changing the settings of "Camera Trigger". If the "C" prompt is showing up out of sync with the camera record state, you can change the "Run Feedback" setting. "Select camera" is just a preset and should remain on "Custom" unless you're using a Red One.

14. PT-Z

PT-Z is the menu where you can change the Pan/Tilt sensitivity according to the position of the zoom axis.
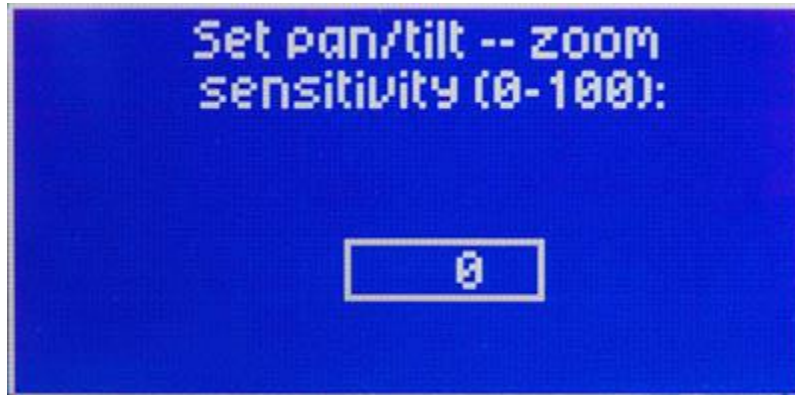
PT-Z can be adjusted between 0-100. The greater the number the slower the pan and tilt axes will respond according to the position of the zoom axis. When 0 is selected, zoom will not affect the pan and tilt axes.
Note: This is only accurate when using the Varizoom TOC system, Preston MDR2, Canon lens with digital servos, or Fujinon lens with digital servos. If you are using a Canon or Fujinon lens with Analog Servos, the zoom positions will not be accurate, and with feature will not function properly.

15. Servo Tuning

Servo tuning should not be changed from the factory settings. If the settings have been changed from the factory settings or you suspect they may have changed, you can check them by entering the second setup menu (hit "Menu" twice, then select "Tuning")

 These settings are factory preset, and should never be changed. If they have been changed, they must be changed back to the following, or the Pan and Tilt motors will perform poorly and possibly be damaged.

CinemaPro JR Servo Tuning

KP: 80   **KI: 15**
KD: 250   **IL: 25**

After the setting is made, move the cursor box to the "ok" option, and press "enter". The settings will not be saved until this is done. Settings should be the same for both pan and tilt axes.

16. Troubleshooting

No Response from head
1) Check the "inputs" settings to make sure that the controller (joystick, handwheels, or panbars) you're using is selected.
2) Make sure that the motor power switch is turned on, and the light above it is green.
3) If using a wireless module, check the "head setup" menu to make sure that "wireless" and "one way" are selected.
4) If using handwheels, or Panbars, first make sure that they're selected in the "inputs menu", then make sure that they are plugged into the "PB-W" connector on the back of the console.
5) Make sure all motors are enabled. Go to the main screen, and make sure that there is a white checkmark next to Pan, Tilt, Zoom, and Focus.
6) Check to make sure that there aren't any soft limits set too close together. Disable all soft limits, and then try again.
7) Power down the system, unplug the XLR connector, wait for a few seconds, re-plug everything back in, power it back up, then try again.
8) Perform all of the system resets.

Pan and Tilt moves too slowly or PanBar range is limited
1) If using handwheels or panbars, check the "inputs" menu, and make sure that the proper controller is selected ***note. When "reset all" is selected, this setting defaults to "wheels"**
2) Check the "PT-Z" setting. This will slow down all pan and tilt moves if the controller thinks that the lens is zoomed in.
3) Check both speed settings. The "global" speed setting located on the main screen as well as the individual speed settings located in the "response" menu.

Head is "jerky" or too responsive
1) If using handwheels or panbars, check the "inputs" menu, and make sure that the proper controller is selected
2) If using a wireless module, make sure that the head is set for "wireless" and in "one-way". Also make sure that the two wireless transceivers are at least 15 feet away from each other.
3) In the "response" menu, increase the "smoothing" setting for each axis.
4) Turn down motor speed.
5) Check to make sure that the servo tuning in the "tuning" menu is set to the factory setting. Selecting "reset all" will return this to the factory preset.
6) Perform all system resets

Soft limits aren't accurate
1) If the head has been moved while powered down, the reference position will be lost and you will have to reset the soft limits.

My jib or crane sways, swims, moves around when the head is rotating
    1) This is a problem of imbalance in rotational inertia. If the jib moves when panning, you need to attach the optional counterweight. If the jib move around when tilting, you need to adjust the vertical balance (adjust the camera platform until the camera's center of gravity is on the center of tilt rotation.

17. System resets

The "reset all" option is found in the second setup menu screen.
When selected this will reset all parameters only. All stored marks, and takes will not be effected.

To reset all motor parameters only, turn the console power off
Hold the "cancel" and "stop" button simultaneously. While holding both buttons turn console power on.
The screen will then read "Accept = reset all motors"
Press the "enter" button, and all motor parameters will be reset.

To erase all takes turn console power off.
Hold the "cancel" and "record" buttons simultaneously. While holding both buttons turn console power on.
The screen will then read "Accept = erase all takes"
Press the "enter" button, and all takes will be erased.

To erase all marks turn console power off.
Hold the "cancel" and "play" buttons simultaneously. While holding both buttons turn console power on.
The screen will then read "Accept = erase all marks"
Press the "enter" button, and all marks will be erased
Note: resetting all motor parameters is recommended after updating system software. It is also recommended if the systems memory ends up corrupted.

18. Options and Specs

Additional Software- The controller can be upgraded to have more position marks, intervalometer mode, and additional recorded moves.

Additional Head options-
The Head can be fitted with either a 100mm half ball or Mitchell mount. A Mitchell ring adapter is available for old style Mitchell mount.
An adapter is also available to adapt Mitchell mount to Jimmy Jib style mount.

Wireless control is available, and operates up to ¼ mile. (1 mile with line of sight).

Additional controller cables are available in 50', 100', or 150' increments. A coupler is available to join the cables, or we will make a cable of any reasonable length as a custom item on request.

Head XLR power cables are available in standard 30' or 75' increments, or longer as a custom item on request.

External Lens Drive Motors available for separate purchase

Specs-

Head construction: Primarily Aluminum, with carbon fiber platform rails and some stainless steel, steel, brass, bronze and delrin components

Height: 20.5"

Width: 11.3"

Depth: 6"

Weight: 13lbs

Camera weight limit: 35lbs

Maximum speed: 130 deg/sec (limited for optimal performance)

Power Supply (included): 24VDC, 5A

Head Power Requirements: 24 VDC regulated, 120 watts max

WARNING: Do not connect the head to any power supply other than the one supplied. If you must power the head another way, make sure you clear it with VariZoom first.

Connectors-

Head Base connectors
Controller - 7pin LEMO (green)
XLR 4-pin Head/Camera Power
Passageway for external cables (video, lens control, etc.)

Head Top connectors
Lens Control Out to camera/lens/lens drive - 16pin LEMO (orange)
Camera Power Out - 2pin LEMO (red)

Controller connectors
CTRL - 7Pin LEMO – Head control cable (green)
SERIAL - 8pin LEMO – TOC or Preston Lens Drive Hand Units (gray)
ANALOG - 5pin LEMO – Pan Bars zoom & focus controls (white)
WHEELS - 6pin LEMO – Handwheels or Pan Bars Control Input (blue)
BLOOP - 6pin Fischer (not active on CP JR)
VIDEO SYNC – BNC connector – (only active if software upgrade purchased)

Jib Counterweight Option

Some lightweight jibs may not have enough mass to neutralize the high acceleration and torque of the CP Jr head. If the motion of the head causes your jib to sway from side to side in a way you want to eliminate, we have a counterweight option that will effectively eliminate the problem.

Heavier jibs will not be affected much, and the effect is only significant during sudden moves. Adding our counterweight to the CP Jr balances out the rotational inertia so even lightweight jibs will not be susceptible to the swaying effect caused by sudden moves.

Attaching the counterweight is simple. Before attaching the counterweight, fix the head to your jib.

(1) Start by attaching the interface plate to the head with the 4 small screws (supplied). Now fix the support arm to the interface plate using the supplied thumbscrews, lockwashers, and flat washers. Put the flat washers between the support arm and the lockwashers to prevent scratching. Tighten the thumbscrews thoroughly.
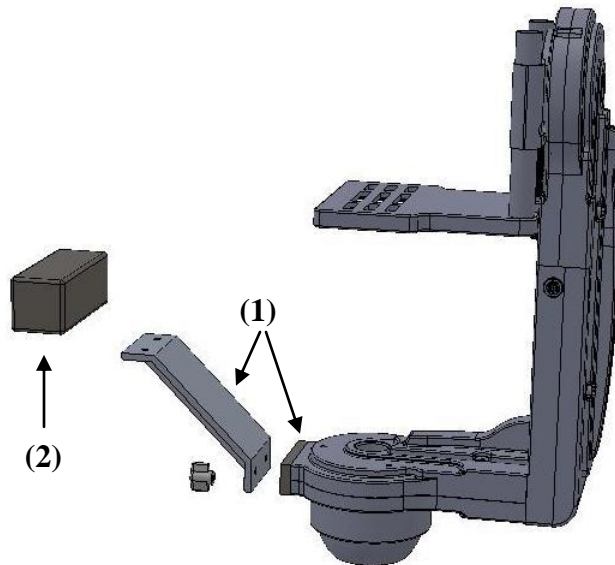
(2) Now attach the square weight to the support arm, using the same type of thumbscrews, lockwashers and washers. Tighten the thumbscrews thoroughly.

The counterweight adds about 7 lbs total weight to the system, so if you don't need it, try operating without it first. Also note that some swaying may be caused by the camera platform being out of vertical balance – remedy this by adjusting the camera platform up or down so the camera's center of mass is on the center of tilt rotation.
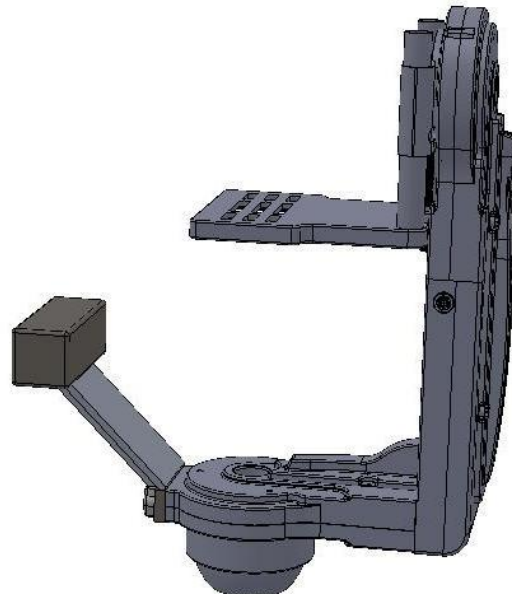
Appendix

24VDC Power Supply Connector

1) Power Supply Connector – XLR 4-pin Female

Pin	Function	Wire Color
1	N.C.	
2	CP JR Neg.	Black & Green
3	CP JR Pos.	White & Red
4	N.C.	

* 2) <u>Optional XLR Y-adapter for running head AND camera power through single XLR extension</u>

<u>Y-1</u> "Camera" Power Input Male XLR Connector

Pin	Function
1	Camera Neg.
2	N.C
3	N.C.
4	Camera Pos.

<u>Y-2</u> "Head" Power Input Male XLR Connector

Pin	Function
1	N.C.
2	CP JR Neg.
3	CP JR Pos.
4	N.C.

<u>Y-Single</u> Female XLR Output Connector (combines Camera & Head Power into one XLR cable run – connect to 30' XLR extension that plugs into CP JR head)

Pin	Function
1	Camera Neg.
2	CP JR Neg.
3	CP JR Pos.
4	Camera Pos.

CP JR Head - Base Connectors

1) Head Control Connector (Green) – LEMO EGG1B307CLL

Pin	Function	Wire Color (Cable)	
1	Common	Brown	
2	RS-422 RXD	Red	
3	RS-422 RXD!	Orange	
4	RS-422 TXD	Yellow	
5	RS-422 TXD!	Green	
6	24 VDC +	Blue	Power to Remote or Jibstick
7	24 VDC -	Violet	Power to Remote or Jibstick

2) Power Input Connector – XLR 4-pin Male

Pin	Function	Wire Color
1	Camera Neg.	Black
2	Cinema Pro Neg.	White
3	Cinema Pro Pos.	Red
4	Camera Pos.	Green

*** WARNING: DO NOT POWER THE CINEMAPRO JR WITH ANYTHING OTHER THAN THE INCLUDED FACTORY POWER SUPPLY OR YOUR WARRANTY MAY BE VOIDED. THE UNIT MAY BE SEVERELY DAMAGED AND CAUSE DAMAGE TO YOUR CAMERA IF YOU USE A NON-APPROVED POWER SUPPLY. IF YOU MUST POWER IT USING A BATTERY SYSTEM, MAKE SURE THE SETUP IS APPROVED BY VARIZOOM AND EXECUTED BY A QUALIFIED TECHNICIAN.

CP JR Head - Top Connectors

1) Camera Power (Red) – LEMO EGG2B302CLL

Pin	Function
1	Camera Power +
2	Camera Power -

2) Lens Control (Orange) – LEMO EGG2B316CLL (Final Version)

Pin	Function	Lens Connection
1	RS-232 RXD	Fuji Digital
2	RS-232 TXD	Fuji Digital
3	+5 VDC – Iso	Fuji Digital
4	Common – Iso	Fuji Digital
5	RS-422 RXD	Canon Digital
6	RS-422 RXD!	Canon Digital
7	RS-422 TXD	Canon Digital
8	RS-422 TXD!	Canon Digital
9	Common	
10	+5 VDC	
11	Analog #1	Focus
12	Analog #2	Zoom
13	RC Servo #1	Focus
14	RC Servo #2	Zoom
15	24 VDC +	
16	24 VDC –	

Lens Connection Table

Lens Control, 16 pin LEMO FGG2B316CLAD

	Fujinon Digital HR10A-10P-10P	Fujinon Analog HR10A-10P-12P	Fujinon Telecon HR10A-10J-12P	Canon Digital HR25-9P-20P	Canon Analog HR25-9P-20P
1 RS-232 RXD	3				
2 RS-232 TXD	2				
3 Iso Vcc	4				
4 IsoCom & IsoCom3	5			19 & 20 - Green	
5 RS-422 RXD				17 - Orange	
6 RS-422 RXD!				18 - Yellow	
7 RS-422 TXD				15 - Brown	
8 RS-422 TXD!				16 - Red	
9 Common		2	3		20
10 Vcc (5 volts)					
11 Analog #1 out		7 (If zoom)	9 (Zoom)		2
12 Analog #2 out		7 (If focus)	8 (focus)		3
13 RC Servo Out 1					
14 RC Servo Out 2					
15 Head power + out					
16 Head power - out					

Tie pins 1 & 2 to 7
for position control

Advanced Controller Connectors (if applicable)

1) Auxiliary power input

1	Center 18 to 36 volts input
2	Common

2) "CTRL" - Head Control (Green) – LEMO EGG1B307CLL

Pin	Function	Wire Color (Cable)	
1	Common	Brown	
2	RS-422 RXD	Red	
3	RS-422 RXD!	Orange	
4	RS-422 TXD	Yellow	
5	RS-422 TXD!	Green	
6	24 VDC +	Blue	Power from Cinema Pro
7	24 VDC -	Violet	Power from Cinema Pro

2) "SERIAL" - Peripheral Connector (Gray) – EGG1B308CLL

Pin	Function
1	Common
2	#1 RS-232 RXD
3	#1 RS-232 TXD
4	+5 VDC
5	24 VDC -
6	#2 RS-232 RXD
7	#2 RS-232 TXD
8	24 VDC +

3) "ANALOG" - Panbars Option Zoom & Focus Input (White) – EGG1B305CLL

1	Common
2	Motor disable
3	Zoom analog signal
4	Focus analog signal
5	+5 VDC

4) "WHEELS" - Wheels and Panbars Option Input (Blue) – EGG1B306CLL

1	Common
2	+5 VDC
3	Pan encoder signal "A"
4	Pan encoder signal "B"
5	Tilt encoder signal "A"
6	Tilt encoder signal "B"

5) "BLOOP" - Sync & Bloop – Fischer D103A056-130

1	Common – Isolated
2	+5 VDC – Isolated
3	Sync In
5	Bloop out #1
7	Bloop out #2

6) "VIDEO SYNC" - BNC

1	BNC signal
2	Isolated common

Jibstick Connectors (if applicable)

1) Cinema Pro Control (Green)– LEMO EGG1B307CLL

Pin	Function	Wire Color (Cable)	
1	Common	Brown	
2	RS-422 RXD	Red	
3	RS-422 RXD!	Orange	
4	RS-422 TXD	Yellow	
5	RS-422 TXD!	Green	
6	24 VDC +	Blue	Power from Cinema Pro
7	24 VDC -	Violet	Power from Cinema Pro

2) Focus Input – Fischer D103A054-130

1	Common
2	+5 VDC
3	Focus analog signal
4	Zoom analog signal (unused)
5	Common