DIGIBOOM

BY redrockmicro

BETA USER GUIDE

v 1.1 | 2019

QUICK START

1 ATTACH GIMBAL HEAD

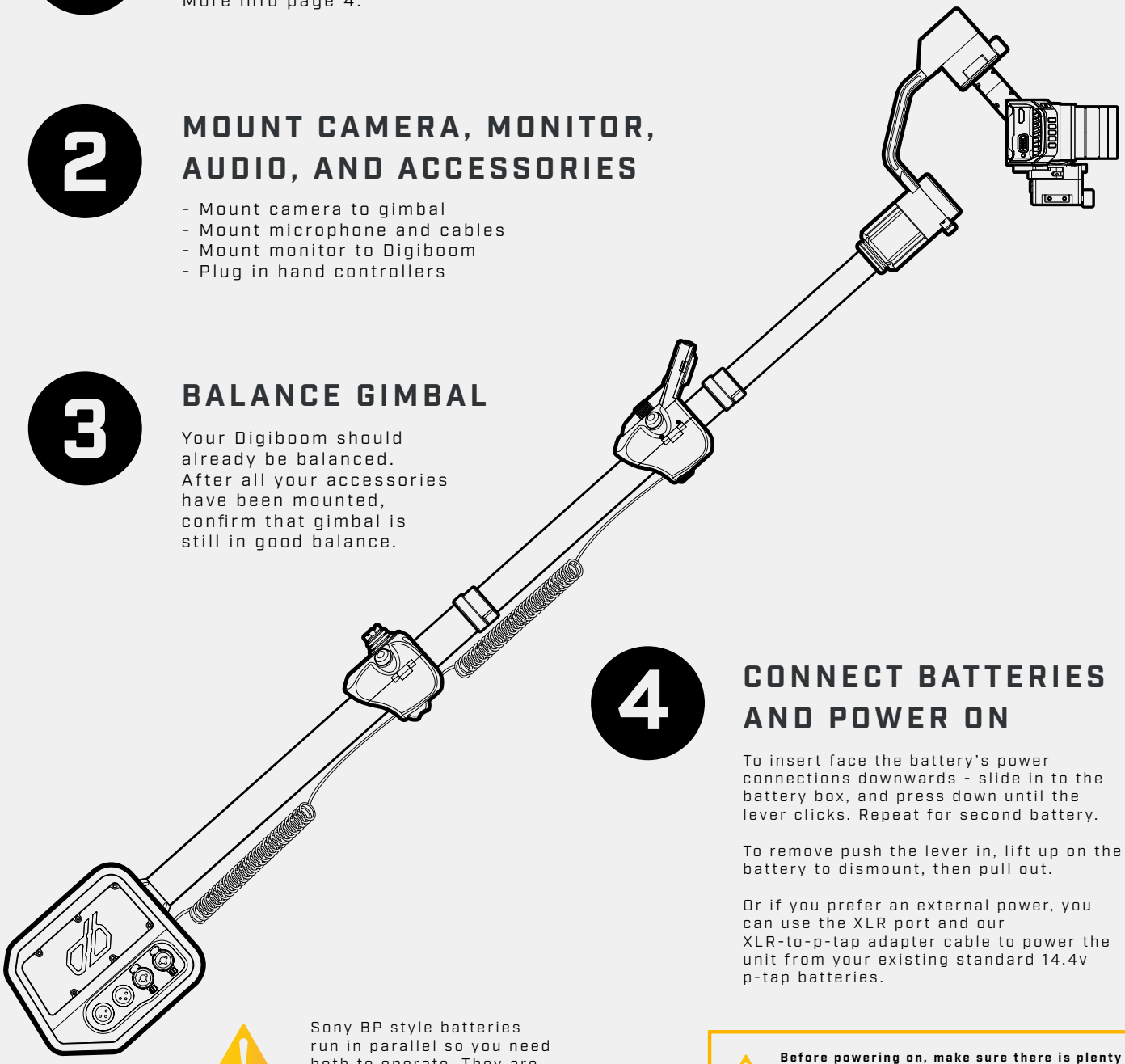
Attach gimbal head to Digiboom.
More info page 4.

2 MOUNT CAMERA, MONITOR, AUDIO, AND ACCESSORIES

- Mount camera to gimbal
- Mount microphone and cables
- Mount monitor to Digiboom
- Plug in hand controllers

3 BALANCE GIMBAL

Your Digiboom should already be balanced. After all your accessories have been mounted, confirm that gimbal is still in good balance.



4 CONNECT BATTERIES AND POWER ON

To insert face the battery's power connections downwards - slide in to the battery box, and press down until the lever clicks. Repeat for second battery.

To remove push the lever in, lift up on the battery to dismount, then pull out.

Or if you prefer an external power, you can use the XLR port and our XLR-to-p-tap adapter cable to power the unit from your existing standard 14.4v p-tap batteries.

Sony BP style batteries run in parallel so you need both to operate. They are not hot-swappable.

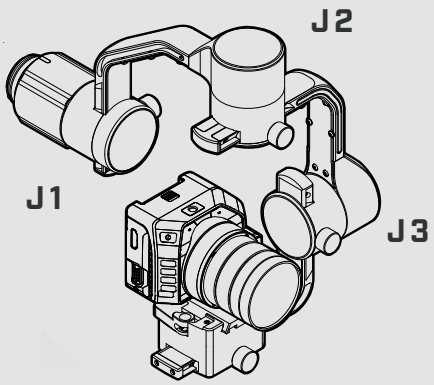
Before powering on, make sure there is plenty of free space around the gimbal. Digiboom enters a 3-part homing phase on power up

OVERVIEW

Digiboom is made up of ***four main sections***: 1) Detachable 3 axis gimbal, 2) Hand Controllers, or UI-1 and UI-2, 3) Extendable carbon fiber pole, and 4) the battery box.

In addition, Digiboom can be expanded with the Audio Expansion Kit, Live Broadcast SDI cable pack, XLR p-tap power cable, Micro Shock Mount, and Digiboom pole extension

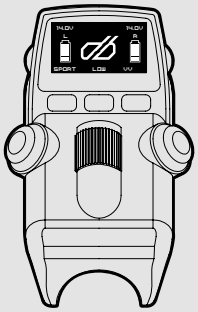
3 AXIS GIMBAL



The gimbal detaches from the pole for storage.

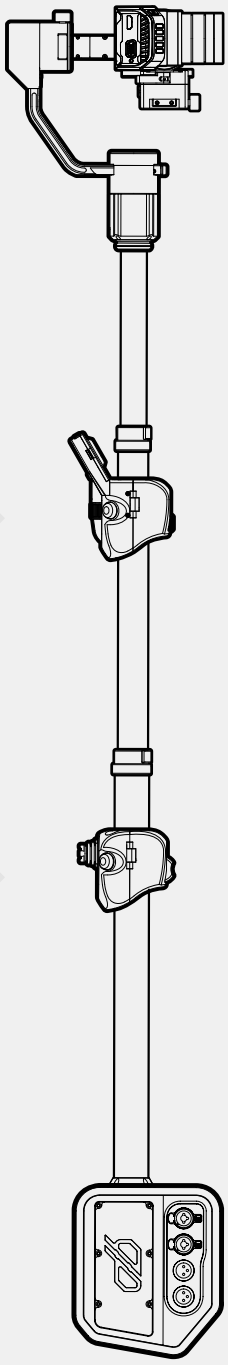
This guide refers to each motor joint in order of distance from the pole. The roll axis is closest, so it is J1. The pan axis is next, J2, followed by the tilt axis, J3.

TOP CONTROL

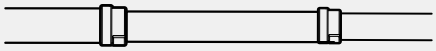


This grip controls Focus, Iris, camera gain, camera menus, and more. More details page 6.

Use the OLED screen to monitor battery levels, change modes (high/low etc.) and more.

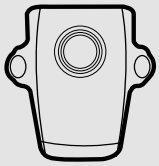


EXTENDABLE POLE



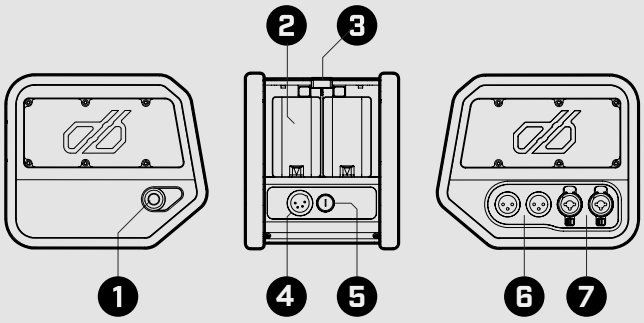
Lightweight carbon fiber pole can be extended or retracted at any time, even when Digiboom is running. Release the pole segment lever, slide the pole in or out, and re-tighten lever. Ensure pole levers are always tight.

BOTTOM CONTROL



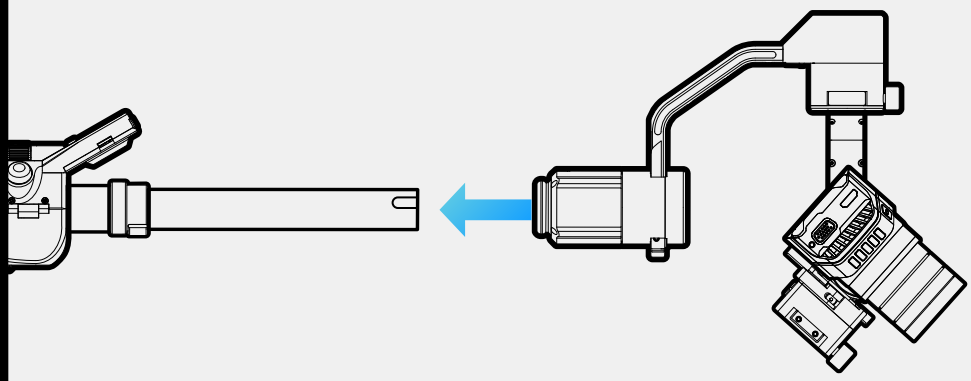
This grip controls gimbal pan/tilt/roll, pause/resume gimbal, camera record/stop. More details page 6.

CONTROL PANEL



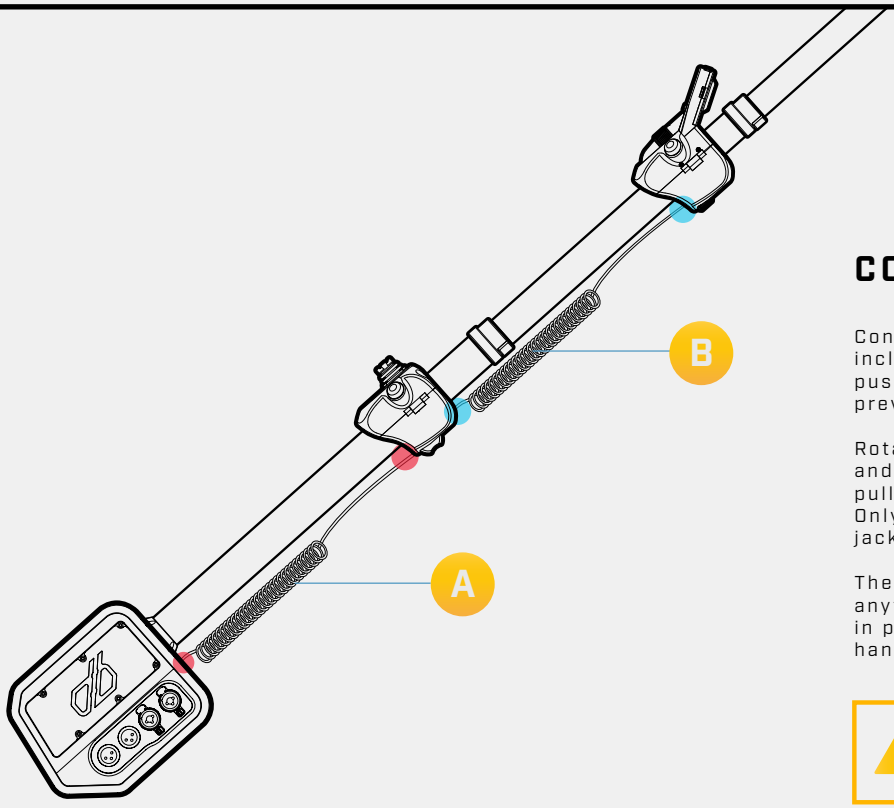
1. Power Switch
2. Batteries (Sony BP style)
3. Battery Release Switch
4. External Power In
5. Fuse
6. Audio OUT (Channel 1 and 2)
7. Audio IN (Channel 1 and 2)

INITIAL SETUP



ATTACH GIMBAL HEAD

Line up the LED indicator on the top of the gimbal with the top of the Digiboom.
Push in to click, then tighten the knurled ring until its tight.
Push up the rubber gasket



CONNECT COMPONENTS

Connect hand units and battery box using the included cables (A & B). Cables are locking push-pull style cables, and are keyed to prevent incorrectly plugging them in.

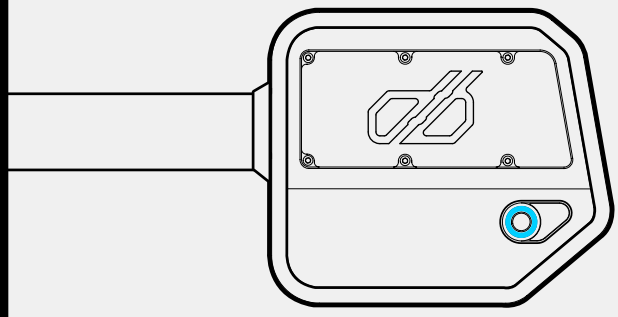
Rotate cable until the connectors match up, and push in until it clicks. To remove cables, pull outwards on the jacket while removing. Only attach and remove by holding the metal jacket, never from the cable itself

The 2 hand controls are designed to be moved anytime without being locked down, but stay in place when gripped. There is no lock on handgrip position, this is normal.

Before powering on, make sure there is plenty of free space around the gimbal. Digiboom enters a 3-part homing phase on power up

POWERING ON

Before powering on, make sure there is plenty of free space around the gimbal. Digiboom enters a 3-part homing phase on power up



TURNING ON DIGIBOOM

Make sure everything is connected and batteries are inserted and fully charged.

On power up the gimbal will go through a 3-part homing phase by turning each axis. Make sure there is plenty of free space around the gimbal so that it can perform this function unobstructed. Note: each axis will not necessarily turn the full extent it's capable of: this is normal

Press the power button on the battery box. Blue light indicates Digiboom is on.

Once the homing phase is done, the gimbal should go to home position, with the camera facing forward and straight

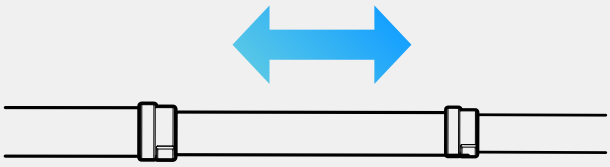
Note: Before use, let the gyros warm up for about a minute after startup. The horizon may be a little off at first, it takes DigiBoom a few minutes to orient itself and establish the horizon. This is normal.

TURNING ON MONITOR

The blackmagic monitor does not power on automatically and needs to be powered on by pushing the power button on the right side of the monitor.

EXTENDING/RETRACTING THE POLE

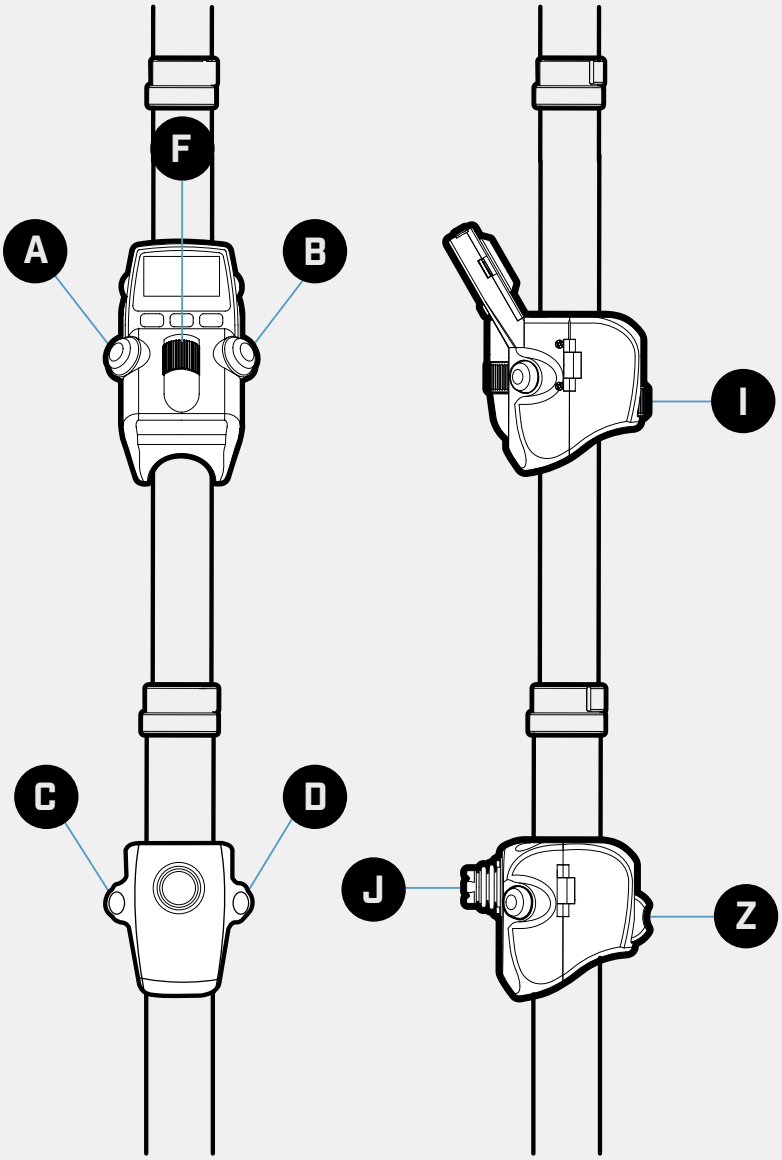
Once digiboom is running, you can extend or retract the pole by releasing the pole segment lever, sliding the pole in our out, and re-tightening the lever. Ensure the pole levers are always tight.



HAND CONTROLS

TOP

BOTTOM



A	Camera Menu *
B	Gain
C	Gimbal Standby
D	Camera run/stop
F	Focus
I	Iris
Z	Zoom
J	Gimbal Pan/Tilt/Roll

* ACCESSING CAMERA MENU

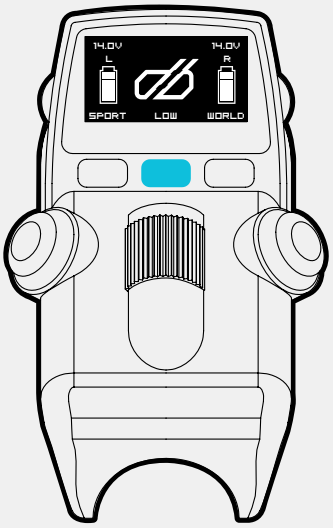
Press the menu button (A) to enter camera menu. Then use the Joystick (J) to navigate the menu. Press UP/DOWN to scroll, and LEFT/RIGHT to set.

Note: If Digiboom isn't speaking to camera functions as it should, make sure 'Generic Command' is set to S.Bus 16 in the camera menuing.

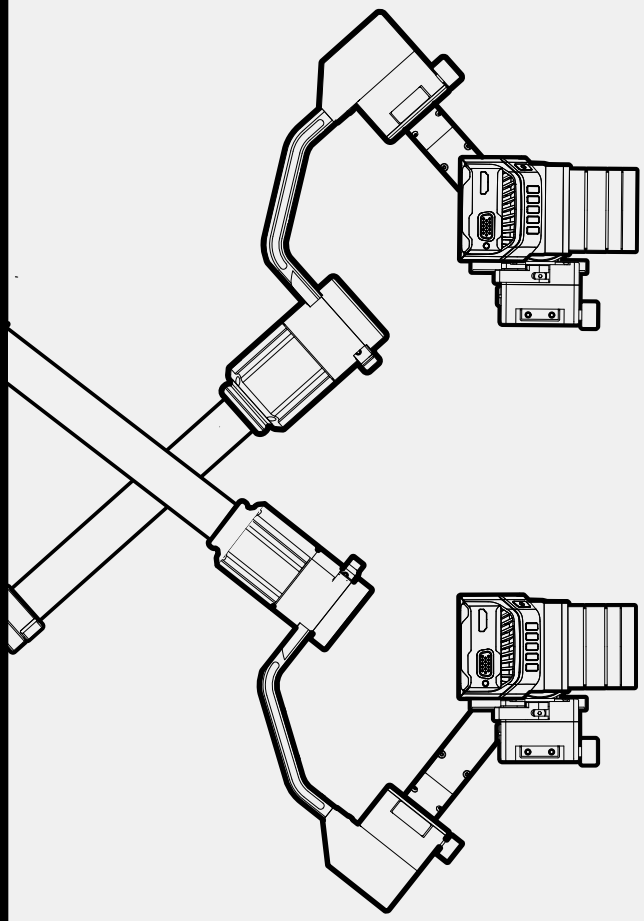
HIGH/LOW ORIENTATION

Orientation determines if the gimbal sits above or below the camera. In either High or Low, DigiBoom has tremendous range of motion and height, so in many situations either mode works just fine. There are some circumstances where one mode would be preferable.

On the top grip, press the middle soft key to toggle between High and Low modes. The current mode will be displayed on the screen directly above the softkey.



When the softkey is pressed, Digiboom will automatically spin the gimbal into place. Make sure you have enough room around the gimbal head before switching modes.



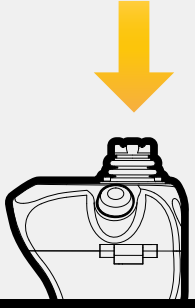
HIGH ORIENTATION

High Orientation - The gimbal sits above the camera, and is ideal for higher-angled shots and birds-eye views, particularly when the camera is angled downwards. In many circumstances, DigiBoom is used to 'get above the action' so high orientation is the typical use.

LOW ORIENTATION

Low Orientation - The gimbal sits below the camera, and is better suited for low-angle shots or grounds-eye views, particularly if the camera is pointed upwards

In either orientation, the gimbal joystick can be used in conjunction to fine tune the camera's position or take more control over pans and tilts



DIGIBOOM AUDIO

DigiBoom offers great options for audio, whether you are recording ambient for B-roll, or live broadcast with multiple microphone inputs.

DigiBoom features a unique 2 channel audio bus built into the DigiBoom's pole. This ensures all audio travels with the video, eliminating any a/v sync issues.

Common Audio Setups below and next page.

Ambient Audio Using In-camera Mics

Using the Blackmagic micro studio 4k camera's built in stereo mics is the simplest way to include ambient audio with your video. The camera's built-in microphones are surprisingly good quality and acceptable for background audio on b-roll type footage.

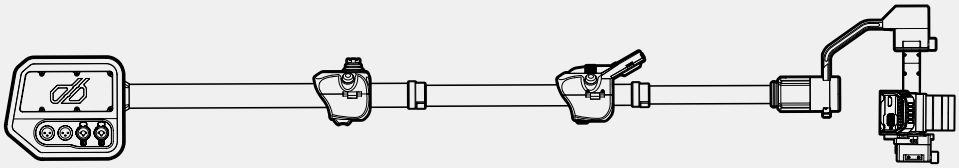
Leave the DigiBoom's audio bus completely unplugged, and have nothing plugged in to the camera's microphone port.

You can set audio levels and microphone sensitivity in the camera audio menus

Camera Audio Settings

Automatic Gain Control	Off
Audio Input	Camera
Microphone Level	50%*
Input Levels	Line
Ch 1 Input	50%*
Ch 2 Uses Ch 1 Input	Yes
Ch 2 Input	50%*

*Adjust levels as needed

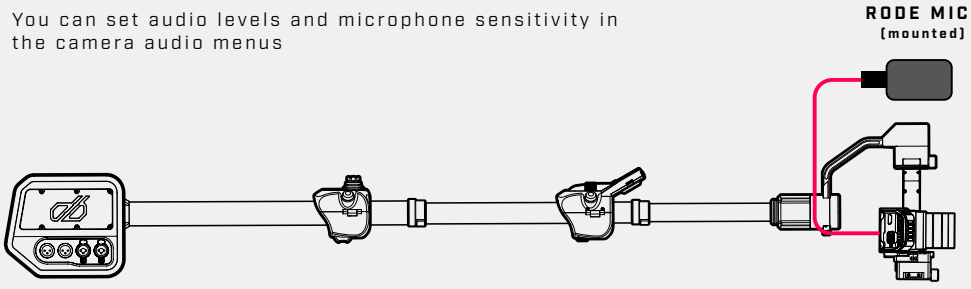


Ambient Audio Using On-camera Mic

If you prefer to use an on-camera external microphone, attach the Rode videomicro mic to the DigiBoom's third gimbal arm using the DigiBoom ultra low profile shock mount.

Plug in the microphone directly to the camera's mic input, bypassing the DigiBoom audio bus.

You can set audio levels and microphone sensitivity in the camera audio menus



Camera Audio Settings

Automatic Gain Control	Off
Audio Input	Inputs
Microphone Level	50%*
Input Levels	Mic High
Ch 1 Input	50%*
Ch 2 Uses Ch 1 Input	Yes
Ch 2 Input	50%*

*Adjust levels as needed

Audio Setups Continued Next Page

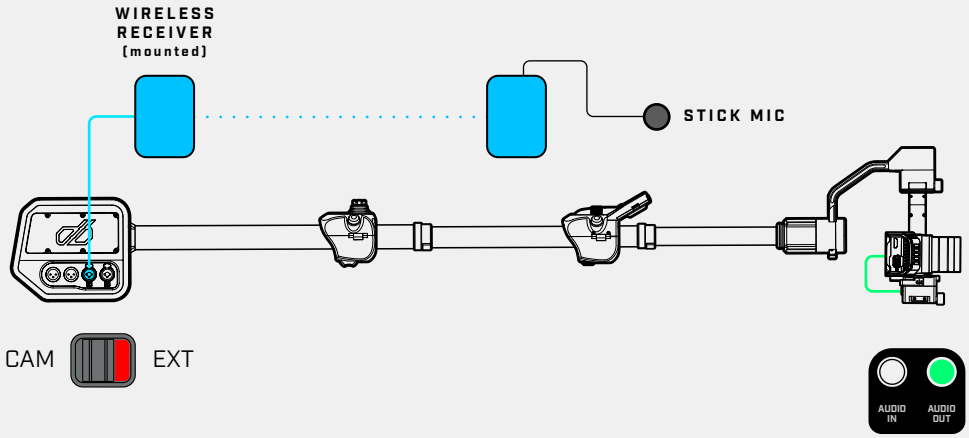
External Reporter ‘Stick Mic’ Only

A common setup for news and interviews is to have a (typically wireless) stick mic the reporter holds, and uses to interview people or give live updates.

To set this up, take the XLR output of the wireless receiver and route it into Input 1 of the DigiBoom’s XLR inputs. Flip the channel’s XLR switch to “EXT” so the external input will be routed into the camera

Attach an audio cable from the DigiBoom audio bus output (beneath the camera) to the camera’s mic input.

Adjust the camera settings so input 2 mirrors input 1, so the audio will not be limited to left or right channel.



Camera Audio Settings

Automatic Gain Control	Off
Audio Input	Inputs
Microphone Level	50%*
Input Levels	Mic High
Ch 1 Input	50%*
Ch 2 Uses Ch 1 Input	Yes
Ch 2 Input	50%*

*Adjust levels as needed

2 Channel: Ambient Audio + Reporter ‘Stick Mic’

This is the best setup when DigiBoom is primarily used for reporters/interviews. Adding a field mixer to your DigiBoom enables you to balance ambient mic with the reporter’s stick mic. Although it’s not required, we highly recommend using a mixer.

To set this up, first attach a compatible field mixer to the Digiboom’s pole using the attachment clamps from the Audio Expansion Pack. Attach the XLR outputs 1 and 2 from the mixer to the DigiBoom’s audio bus. Flip each channel‘s’ XLR switch to ‘EXT.’

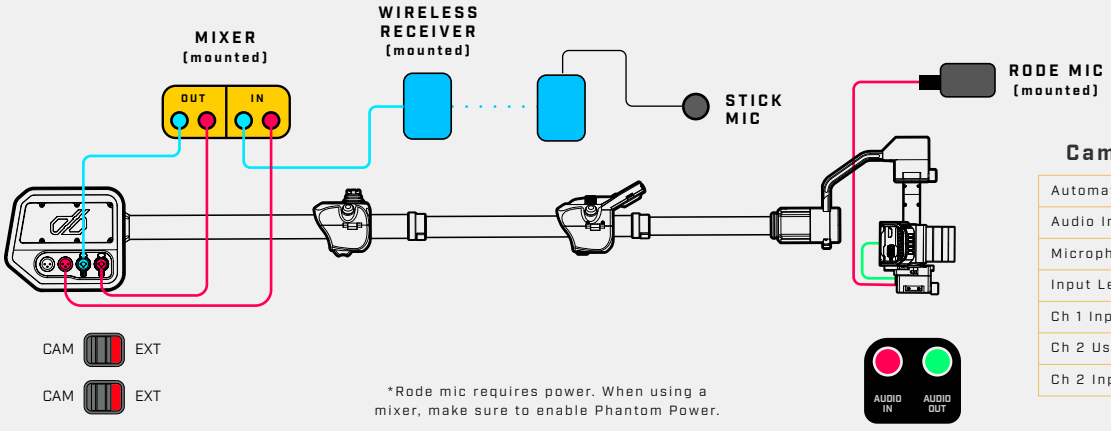
Attach the Rode videomicro mic to the DigiBoom’s third gimbal arm using the DigiBoom ultra low profile shock mount. Plug in the mic’s output to the Audio IN beneath the camera. Plug in the camera mic input to the Audio OUT beneath the camera.

Attach the wireless receiver to the DigiBoom’s audio bracket. Take the XLR output of the wireless receiver and plug it to the mixer’s input channel 1.

Plug XLR cable from DigiBoom output channel 2 into the mixer’s second XLR input.

Use the mixer’s levels to adjust the balance between reporter microphone and ambient on-camera microphone.

Now both the ambient on-camera mic and the reporter mic stick are both set up, and are routed back to the camera. Video and audio now travel together, and eliminate sync issues.



*Rode mic requires power. When using a mixer, make sure to enable Phantom Power.

Camera Audio Settings

Automatic Gain Control	Off
Audio Input	Inputs
Microphone Level	50%*
Input Levels	Line
Ch 1 Input	50%*
Ch 2 Uses Ch 1 Input	No
Ch 2 Input	50%*

*Adjust levels as needed

USING DIGIBOOM

DIGIBOOM MENU

Push dial on the side of the Top Hand Control to enter Digiboom menu. Menu items include:

CAM ID
Use to set gimbal horizon. Press the joystick left or right to set the horizon, then hit enter to set.
* After the startup homing phase, horizon should automatically set after about a minute.

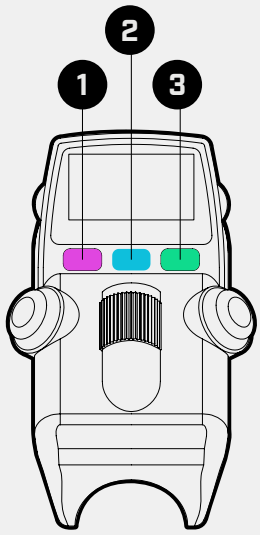
GYRO CAL
Calibrate the gyros. Use as a troubleshooting measure.

REVERSE PAN

REVERSE TILT

PAN/TILT SPEEDS

PAN SPEED



MODES

SPORT MODE
Stiffens gimbal motors. Good for running or when you expect large disturbances. Press soft key 1 to toggle.

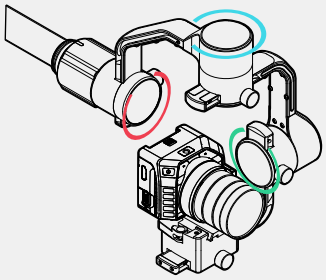
SMOOTH MODE
Digiboom's default mode. Good stabilizations for most scenarios. Press soft key 1 to toggle.

WORLD MODE
Locks on to a direction to matter where the pole is. Press soft key 3 to toggle.

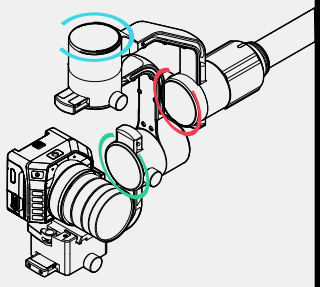
MAJESTIC MODE
Points forward. Will pan with the pole. Press soft key 3 to toggle.

SINGULARITY

Singularity occurs when the gimbal is panned to such an extreme that two motors are working on stabilizing the same axis. Digiboom will still perform in singularity, but you will be shooting without one axis of stabilization.



3 AXES OF STABILIZATION
The gimbal's peak state. Each axis is independent of the other two axes.



SINGULARITY
J1 and J3 are stabilizing the same axis, leaving the roll axis unstabilized.