



Portable Studio



Battle Creek Area Community Television

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1. Choose Your Positions

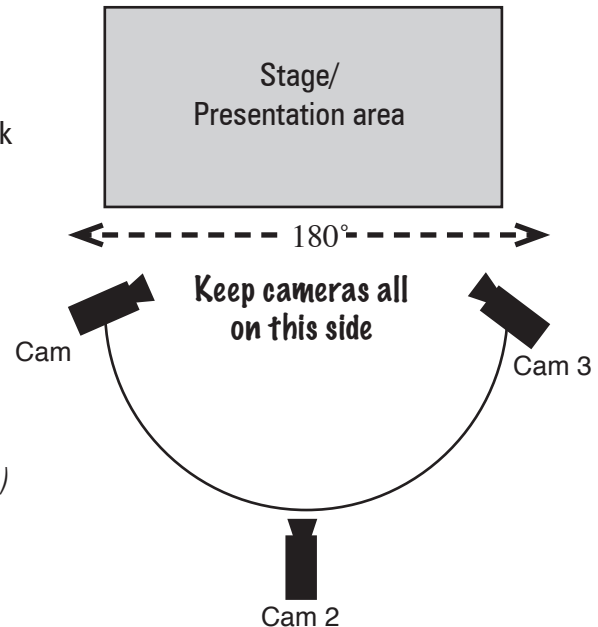
If possible, do a site survey ahead of time. The portable studio can accommodate 1 - 4 cameras. Think about camera positions, power availability, location of the studio and where sound will come from - microphones or sound system feed?

Place the studio:

- Near power
- Near the sound source
- In a quiet, secluded place where the director can talk without interfering with the action

Place the cameras:

- Where they can best see the action happening
- Where they will not block anyone's view or interfere with the action
- Where they will need the shortest length of cable to connect to the studio
- So that they do not cross the 180° axis (*see diagram*)



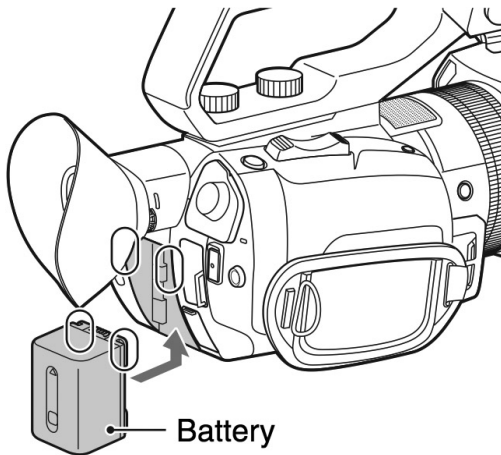
2. Set Up The Cameras

(SEE DIAGRAMS ON NEXT FEW PAGES)

1. Attach the battery.
2. Mount camera on the tripod and connect the remote zoom cable.
3. Open the LCD screen to turn on power.
4. Remove the lens cap.
5. Make camera adjustments: manually set exposure, focus and white balance, if necessary.
Remember to set the **AUTO/MANUAL** switch to the **MANUAL** position to make adjustments.

Attaching the battery

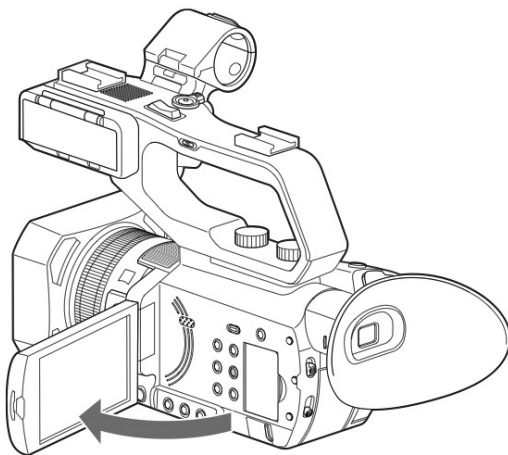
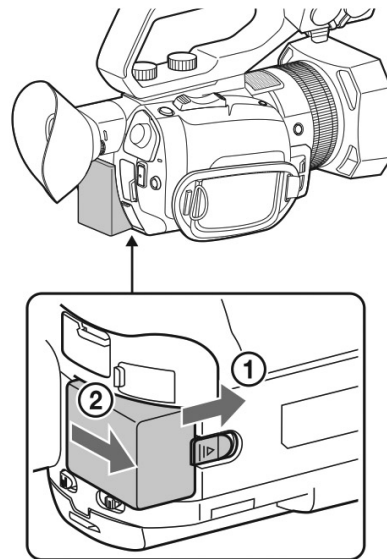
Close the LCD screen and store the viewfinder before attaching the battery.



Remaining battery life is shown as a percentage on the top left corner of the camera screen.

To remove the battery pack

Turn the power off, then slide the BATT release lever to release the battery.



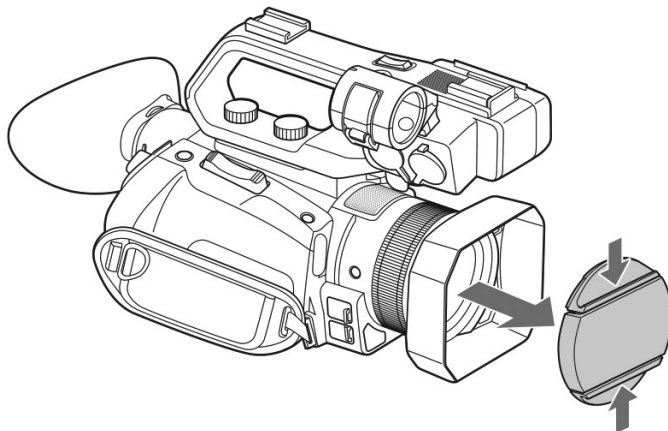
Turning on the camcorder

Open the LCD screen and turn the power on.

You can also turn on the power by extending the viewfinder or by pressing the POWER button.

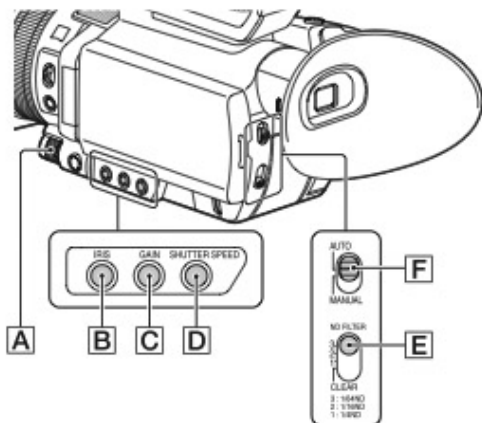
Removing the lens cap

Press the latches on both sides of the lens cap and remove it.



Setting exposure

You can adjust the image brightness by adjusting the iris, gain or shutter speed, or by adjusting the light volume with the ND filter **E**.



Notes

- When you set the AUTO/MANUAL switch **F** to AUTO, iris, gain, shutter speed and white balance are adjusted automatically. You cannot adjust any of them manually.

Adjusting the iris

This is handy for making the background blurred or sharp.

- Set the AUTO/MANUAL switch **F** to MANUAL.

2 Press the IRIS button **B**.

The **A** or **E** next to the iris value disappears, and the iris value is highlighted.



Iris value

3 Turn the MANUAL dial **A** to adjust the value.

The volume of the light increases the more that you open the aperture (decreasing F value). The volume of the light decreases the more that you close the aperture (increasing F value).

To temporarily adjust the iris automatically

- Hold the ASSIGN5/IRIS PUSH AUTO button down.

The iris is adjusted automatically for as long as you hold the button down.

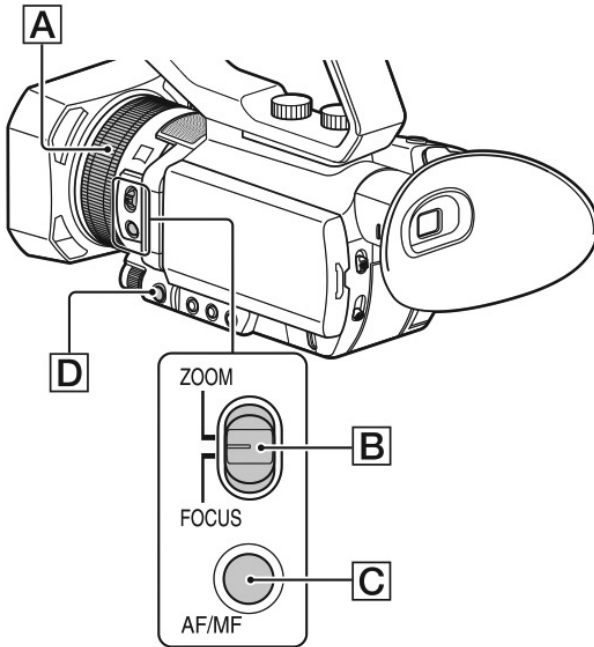
To adjust the iris automatically

Press the IRIS button **B** while the iris value is highlighted.

The iris value disappears or **A** appears next to the iris value. When AE is fixed, **E** appears next to the iris value.

Tip: Use the **ND FILTER** only when shooting outside, if necessary. The iris should not have to be higher than F8; if it is, use the ND filter. **NEVER USE THE ND FILTER INDOORS.** If "ND OFF" flashes on the screen, turn the ND filter OFF.

Adjusting Focus



- 1 During recording or standby, press the AF/MF button **C** to set the focus to manual.

appears.

- 2 Move the ZOOM/FOCUS **B** switch, and turn the manual lens ring **A**.

- FOCUS: You can manually adjust the focus by turning the manual lens ring.
 - ZOOM: You can manually adjust the zoom by turning the manual lens ring.
- changes to when the focus cannot be adjusted any farther. changes to when the focus cannot be adjusted any closer.

To restore automatic adjustment

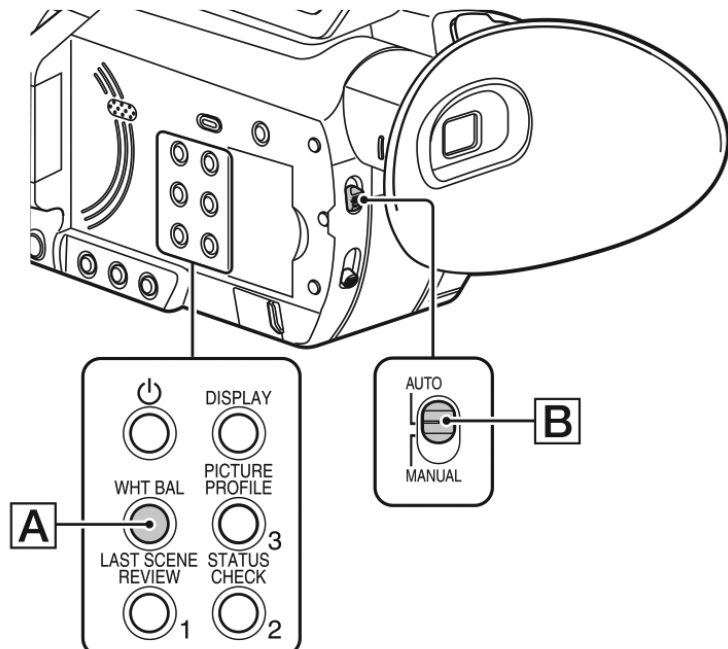
Press the AF/MF button **C** to set the focus to automatic.

disappears and the automatic focus adjustment is restored.

Adjusting Color

To set the White Balance, which adjusts the color in the cameras:

1. Set the AUTO/MANUAL switch to MANUAL.
2. Press the WHT BAL button
3. Press MENU > CAMERA SET > WB SET > (execute).
4. Point camera at something white; press EXECUTE to set.

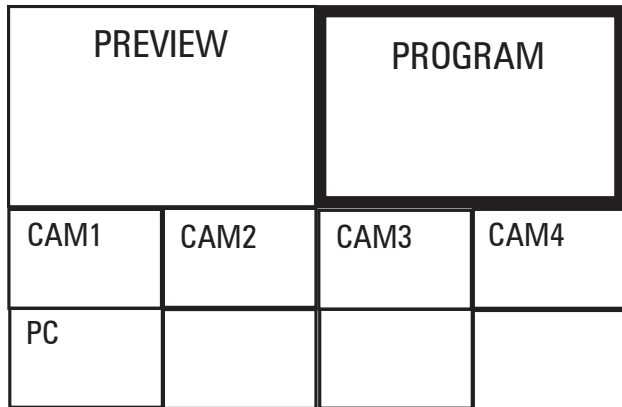


3. Set up the studio

1. Unpack. Remove the covers from the rack case. Remove the rack case from the wheels and set it on top of the empty camera case.

2. Connect power. Turn on the master power switch and wait for the switcher to start up.

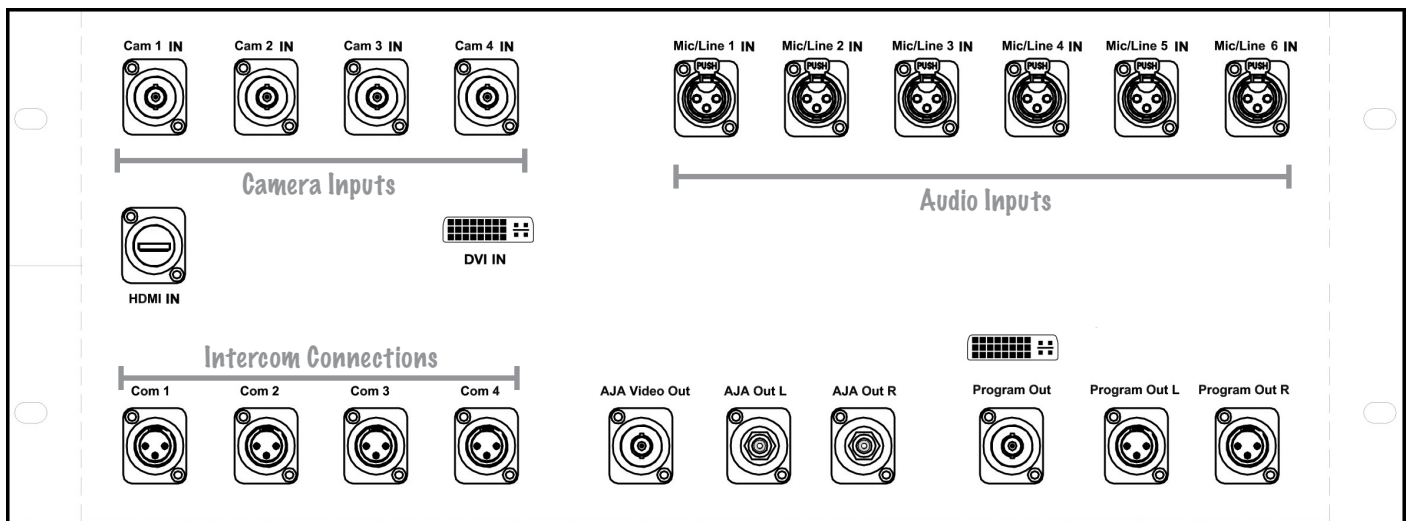
3. Unfold the monitor. Use input #1 for viewing the switcher's **multi view** screen. The **multi viewer** allows you to display multiple video inputs and program output simultaneously on the monitor. A red frame around one of the boxes indicates that input is selected for program or "live"/ "hot".



The monitor's input #3 displays video & sound directly from the recorder.

4. Connect cables. Keep the cable reels as close to the studio as possible. Unwind the cables from the reels first, then connect the ends to the camera and the studio. Avoid running cables across walkways. Use gaffer's tape to secure any cables in areas of traffic.

Plug cables into cameras and into rear rack plate. Keep track of which camera is plugged into which input number. Connect audio cables to microphones or to sound system mixing board. If connecting to a mixing board, make sure to plug the studio into the same power circuit or use a ground lift.



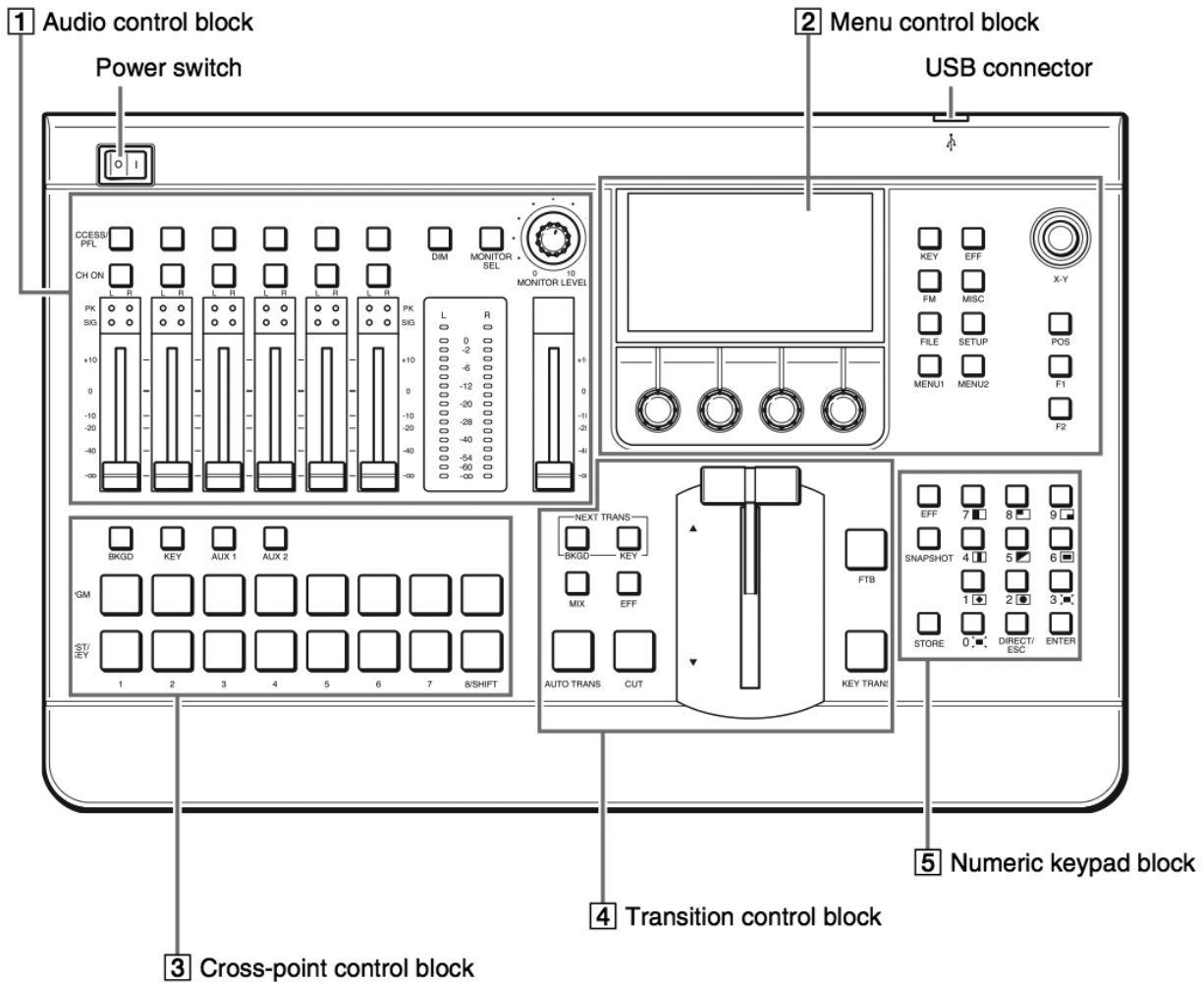
5. Connect the intercom.

Connect the XLR cables (bundled with the camera cables) to the appropriate intercom jacks and plug the other end into the intercom belt packs.

Connect the intercom headsets to the belt packs. Press and hold down the TALK button to talk, or click it twice to keep the mic on. The green light indicates that the mic is on.

Plug the director's headset into the front of the ClearCom unit in the rack and push the left TALK button.

4. Switcher



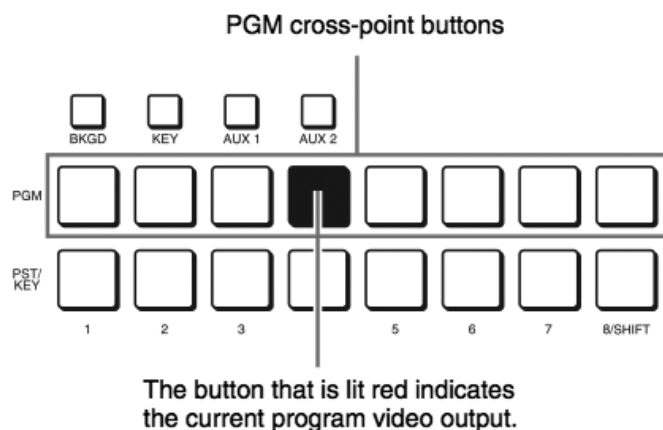
Block 1 is the audio mixer, where you control the volume for any sound sources.

Block 3 is the video switcher. The top row of buttons is called the PROGRAM BUS (PGM). Whichever input is selected to be recorded (or "live" or "hot") lights up in red.

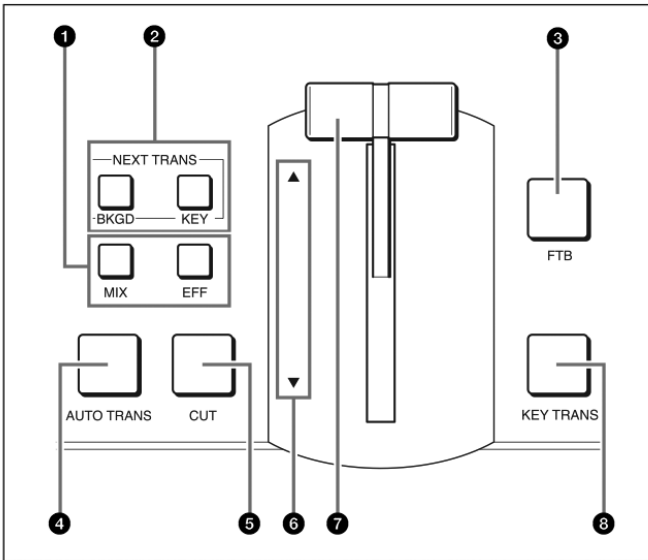
The bottom row of button is called the PRE-VIEW BUS (PST). Whichever input is selected to transition to next lights up in orange.

To cut from one camera to another, simply push a different button on the PGM bus.

The input button on the PST bus that is lit is what will be taken next when the CUT button is pushed. To dissolve to the PST input, move the fader bar or push the AUTO TRANS button.



4 Transition Control Block

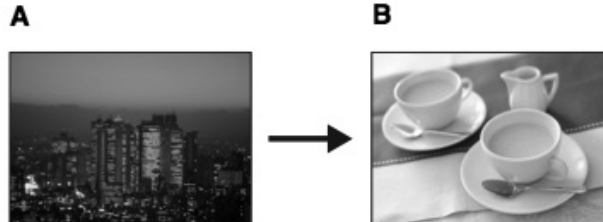


Block 4 is the transition control block. Use the fader bar or AUTO TRANS button to gradually transition between sources. Use the CUT button to cut from the PGM bus to the PST bus. Use the FTB (Fade To Black) button to fade from the PGM bus into black.

Block 5 is where you choose the wipe or transition pattern.

Cross-Point Button Switching

This is the most basic form of switching. Switching between video A and video B occurs instantly without added effects.



You can cut between videos by pressing a PGM cross-point button to which a different video is assigned. The button you pressed lights red, and the video is output as the program output.

Applying Effects while Switching (Mix/Effect)

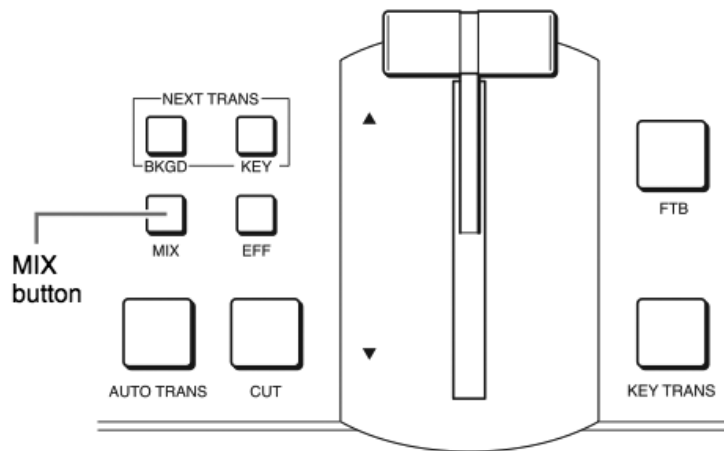
Instead of an instantaneous cut, you can gradually switch from one video to another through the various effects.

Mix: Transition into the next video by gradually overlapping the existing image.



Switching with Mix

1. Press the PGM cross-point button of the video for program output.
2. Press the PST/KEY cross-point button for the next video for output.
3. Press the MIX button in the transition control block - the button lights up orange.
4. Execute the transition by pressing the AUTO TRANS button, or by manually moving the fader bar.



Fader lever (manual execution)

The video switches over as you move the lever. Move the lever in the direction of the lit transition indicator. The transition starts, and proceeds according to the rate at which you move the lever. When the lever is completely raised or lowered, the transition is complete and the transition indicator for the opposite direction will light.

NOTE: If both indicators are lit, completely raise or lower the fader lever in either direction.

Effect: You can use Wipe, NAM (non-additive mix), Slide, Squeeze, Door, Frame In/Out, Flip, Tumble, PinP (picture-in-picture), Mosaic and Defocus effects. For example, when transitioning using a **wipe**, the next video for output replaces the current program video output as if wiping it away.

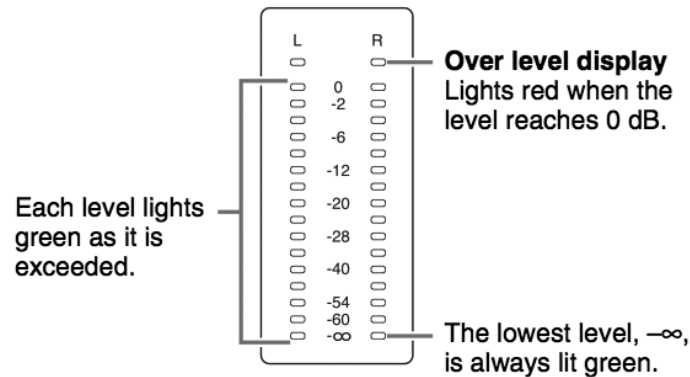


Switching with Effect

1. Press the PGM cross-point button of the video for program output.
2. Press the PST/KEY cross-point button for the next video for output.
3. Press the EFF button in the transition control block - the button lights up orange.
4. Execute the transition by pressing the AUTO TRANS button, or by manually moving the fader bar.

Setting Audio Levels

After connecting your sound sources, press the CH ON button so that it lights up and raise the fader to set the level. Check the audio meters - a good signal should peak between **-12** and **-6**. Plug headphones into the monitor and listen. You will notice a delay, that is normal.



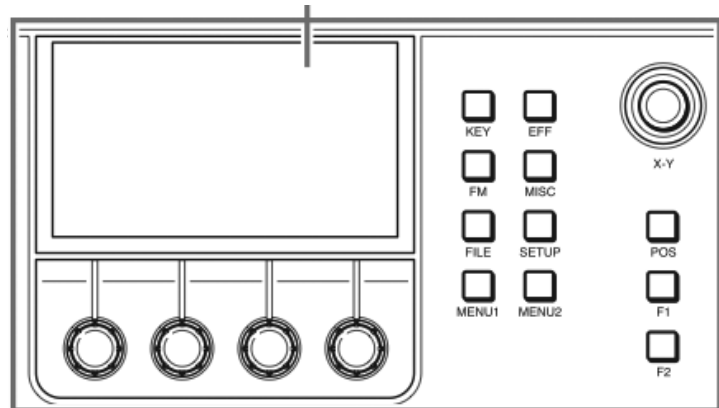
If you are connecting to a mixing board or sound system, you may need to go into the SETUP MENU to change the MIC/LINE level of the audio input:

1. Press the **SETUP** button.
2. Turn the far left knob to scroll down to **AUDIO MIC/LINE1 LEVEL** (or whichever number input you're using).

3. Push down on the knob to select **ENTER**.

4. Turn the far right knob to select either **+4dB** or **-20dB** for line level; otherwise it should be set to **-44 dB** for microphones.

5. Press the **MENU** button to close the menu. Now check the volume.

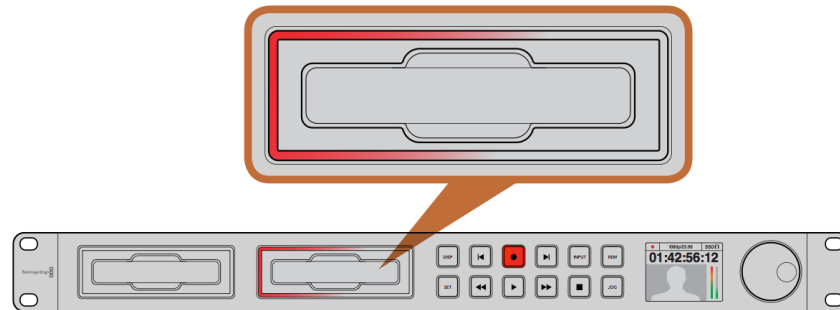


You should not have to max out the fader to get a good volume level. If a reasonable volume level is not showing, you can adjust the audio input signal levels:

1. Press the **ACCESS/PFL** button above the appropriate channel fader.
2. Under **INPUT TRIM**, turn the far right dial to increase or decrease the gain, from **-15 dB** to **+15 dB**.
3. Press the same **ACCESS/PFL** button again to close the menu.

5. BlackMagic Hyperdeck Studio

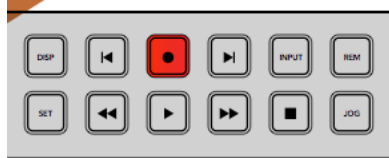
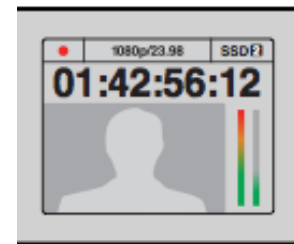
HyperDeck Studio is a rack mount broadcast deck style recorder that records Quicktime movie files to a solid-state hard drive (SSD).



SSD slots on HyperDeck Studio models have rotating LEDs to show the unit is recording video.

To begin recording:

Press the record button to start recording to the SSD instantly. A looping red light on the SSD slot indicates the SSD is recording. The small built-in screen displays video and level meters for audio. What you see what you'll get on your recording. **NOTE:** if there is no video or audio showing, press the INPUT button to get the signal to pass through.



Each time you start/stop the recorder, a new file is created. Long recordings will show up as one big file, not segmented into multiple pieces. In high definition, the file size will be about 54 GB per hour of recorded time. The hard drive used for recording is 500 GB.

To stop recording:

Press the Stop button to finish your recording. DO NOT remove the hard drive while it is recording.

To edit:

Pull the hard drive out of the Hyperdeck and plug it into the dock in the edit room. ***Please be sure the dock's power is on switched OFF before inserting or ejecting the drive.***

Import the files into a project on your editing drive to edit. Quit Final Cut Pro, then eject the drive from the Desktop, turn off the dock's power switch, and push the eject button.

Files recorded on the Hyperdeck contain 16 channels of audio. Four of these channels will have the same content (in mono), and the rest are empty. Simply disregard the extra tracks or turn them off when you edit. Recordings made on the portable studio are in high definition. Once you've finished editing in Final Cut Pro, Share the project using the **ProRes LT for HD** preset, then copy the resulting movie file to the **HD Inbox** (not the SD Inbox) for on air playback.

6. Directing

The Director will give commands to be carried out by all camera operators. The director will give a preparatory "Ready to . . ." command followed by the "Do it" command (e.g.: "Take", "Fade", etc. . .). Do not execute the operation until the command is given by the director. Example: "Ready camera 2, take 2." When reframing shots, it is important for the camera crew to execute the director's commands as quickly as possible.

Ready: is followed by an "execute" cue. You are alerting others involved in the program what is going to happen next. "Ready Camera 1 - Take 1."

Take: is a direct cut between two cameras.

Dissolve: is a smooth transition from one video source to another.

Tilt: vertical camcorder pivot; "tilt up" or "tilt down."

Pan: horizontal camera pivot from a stationary position; "pan left" or "pan right."

Dolly: camera & tripod movement toward or away from a subject; "dolly in" or "dolly out." Dollying results in a more dramatic change in perspective than zooming.

Truck: horizontal camera & tripod movement alongside a subject; "truck left" or "truck right."

Pedestal (or boom): vertical camera & tripod move; "pedestal up" or "pedestal down".

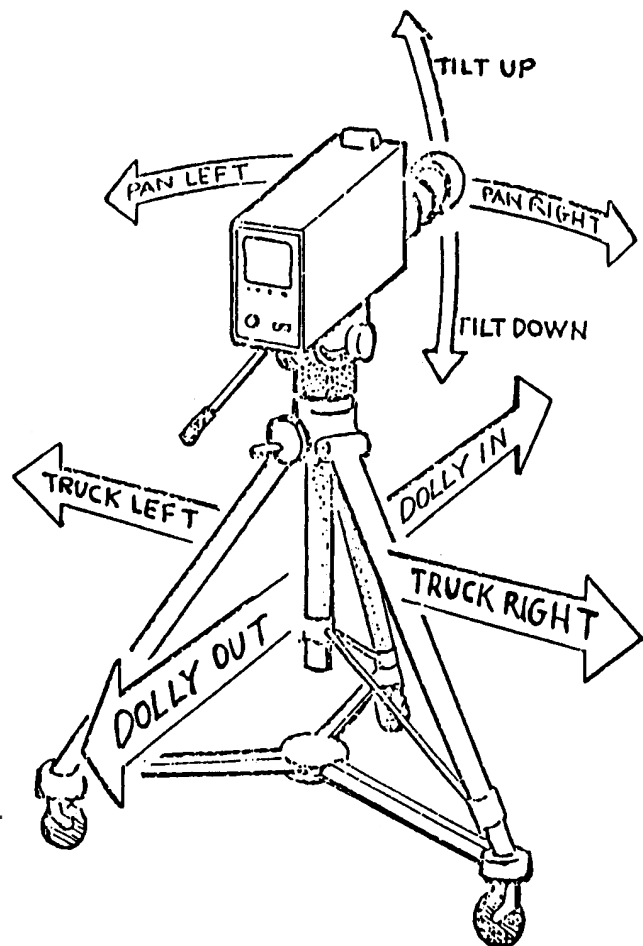
Zoom: changing the focal length of the lens from wide angle to telephoto or vice versa, to enlarge or shrink the subjects and show more or less space around them in the frame. "Zoom in" (close up) or "zoom out" (wide shot).

Head room: amount of empty space above the top of the head.

Lead room (or nose room): amount of empty space in front of the subject on the side that they are facing.

That's a wrap: means the shoot is finished.

Strike: means tear down and pack up equipment.



7. Do's and Don'ts

DO NOT change any of the settings accessed in the switcher's SETUP menu, aside from the audio input MIC/LINE level settings! The system is very customizable and it is easy to accidentally change essential settings that can result in no picture or sound being recorded.

If you do accidentally change something that shouldn't be, simply turn the power off to reset the switcher. Any changes made in the setup menu are not retained unless they are saved before powering the unit off.

Directing:

- Stay one step ahead of yourself and always be ready with the next camera. Use the Preview monitors to set up the next shot.
- Always talk to your camera operators and let them know what is happening.
- Anything is fair game while a camera is not selected. If a camera needs repositioning, go to a different one while the adjustment is being made.
- Don't ask inexperienced camera operators to do "live" camera moves.
- Keep it simple. Cuts and dissolves are the best transitions. Don't overuse wipe patterns.
- Always have a "safety" shot to go to. Lock off one camera on a wide shot as a backup. You could even record to an SD card in this camera to edit this shot in later and cover up any switching mistakes.

Camera Operators:

- Pay close attention to the director.
- Don't move your camera unless the director tells you to.
- If you have to do a "live" camera move, do it slowly and as gracefully as possible.
- Execute commands as quickly as possible.
- Keep intercom chatter to a minimum; if you have to talk, do it quietly.

Check out rules

- New members must volunteer/assist on one remote production prior to checking out studio.
- A van is available for checkout, located in the parking ramp. Must have a valid Driver's License.
- Limit of one advance reservation per month for each organization. No limit on walk-in reservations.
- No overnight use without special permission. In order to keep the portable studio overnight, you need to supply a letter written on your organization's letterhead. This letter should be signed by someone in an official financial capacity (finance person on the board of trustees, for example) indicating that the organization will take fiscal responsibility for the equipment.

Jason Augenstein, Projects Coordinator
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