



# **LunchBox Sync**

## *User's Manual*

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## ***Introduction***

The LunchBox Sync™ is an animation frame grabber capable of recording individual frames or full motion video and audio, and playing them back, full screen, at a user selectable 24 or 30 frames per second for the NTSC model, or 25 frames per second for the PAL model.

The LunchBox Sync is designed to be easy to use. Most users learn all they need to know about the LunchBox Sync by using it for a few minutes. But since there are some useful features which are not so obvious, you might want to scan the Table of Contents to help you decide which sections of this User's Manual are worth reading. *In particular, we recommend scanning through the “How To” section. Briefly look at the left hand column, the descriptions of what can be done with your LunchBox Sync. When you need to perform these actions, you can come back and read the right hand column.*

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## ***Protect Your Animation***













The LunchBox Sync stores your animation on a hard disc drive. These drives are quite reliable. However, if you drop or strike your LunchBox Sync, or your electrical system suffers a harsh power surge, the hard drive may fail. Such a failure could mean that you would no longer be able to access the video or audio on the hard disc drive.



If your animation is of value to you, it is your responsibility to protect it. This means periodically storing your animation on other media, such as video tape or on a computer's hard drive, in case of a catastrophic failure of the hard disc drive. The more the value of the animation to you, and the more difficult it would be to recreate the animation, the more frequently you should store the animation on other media.

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# Caring for the LunchBox Sync

## Operating Conditions

Operating conditions for the LunchBox Sync are the same as for most electronic equipment. It should not be operated in a damp or hot environment. Operating temperature should be in the range of 5° C to 45° C under normal relative humidity (non-condensing). High humidity decreases maximum temperature to 30° C. If the LunchBox has just been transported in cold temperature, it should not be operated until the LunchBox reaches room temperature. Care should be taken not to cover the vent holes on the sides of the LunchBox Sync.

*You should avoid banging or dropping the LunchBox, especially while it is operating.*

The recessed display is glass, so you should avoid contact with it.

The LunchBox Sync must only be operated on 50 or 60 Hz, 110 or 220 volt AC power. Make sure the power cord is fully inserted into its socket in the side of the LunchBox Sync.

The LunchBox Sync is not user serviceable-- if it needs servicing, it must be returned to Animation Toolworks for service.

## How to clean the LunchBox Sync

Disconnect the power cord, then wipe it with a dry or slightly damp sponge or cloth.

# Setting Up the LunchBox Sync

## Choosing components

### *Camera*

The camera will usually be the component which limits the image quality of the LunchBox Sync system, so it's important to choose the right camera for your needs. If you require higher quality output, you will need a high resolution camera. If you are doing reference tests with a low resolution monitor, almost any camera will do.

The LunchBox Sync will work with CCD based cameras. These include most camcorders or video cameras built since 1990. While camcorders will work for most uses, they have some limitations:

- Some camcorders turn off after a few minutes of not recording. This necessitates having to frequently touch, and inadvertently move, the camera.
- Some camcorders have low video resolution and poor lenses. Manufacturers put the money into a tape transport mechanism and battery power system which you will not use while animating with the LunchBox Sync.
- Few camcorders have interchangeable lenses

The alternative to a camcorder is a video camera. For the same price, you can usually get higher resolution in a video camera than in a camcorder. Low resolution webcam-type cameras can be found for less than \$100; high resolution color cameras can cost over \$1000. Many animators like to use cameras with a C mount lens system, since this is the same system used on some 16mm film cameras, such as the Bolex.

Video cameras today have 1/4 inch, 1/3 inch or 1/2 inch CCD arrays. 1/2 inch CCD arrays are usually higher resolution cameras, and are more expensive. Just as with film, the different format cameras produce different results with the same lens. In our experience, the following lens choices offer good results:

Camera	2-D on copy stand	3-D stop motion set
1/3 inch CCD	8 mm fixed focal length	8-75 mm zoom
1/2 inch CCD	12 mm fixed focal length	8-75 mm zoom

Some cameras can output S-Video, in addition to the normal "video out." S-Video is generally higher quality than the normal video out, which is also called composite video. The LunchBox Sync can accept either composite or S-Video as input. It will also output either of these forms of video.

You can also use most **digital video cameras** with the LunchBox Sync. Connect the "video out" port (this is the analog video port) of your digital video camera to the LunchBox Sync's video in connector.

If you wish to use a **digital still camera**, you may do so if the camera has a video out port, which is the analog video port. As of this writing, a minority of digital still cameras have such a video port.

Animation Toolworks offers a selection of cameras and lenses which have been tested with the LunchBox Sync. Call for more information.

## ***Monitor***

You will need a video monitor with a "video" or "line" input. If your monitor only has an "Antenna" or "Cable" input, you will not be able to connect it directly to the LunchBox Sync.

Most consumer or professional video monitors will work well with the LunchBox Sync. For optimal image quality, we recommend a monitor which accepts S-Video (sometimes labeled as "Y/C") as input.

If you plan to frequently connect and disconnect the LunchBox Sync and the monitor, we recommend you find a monitor with BNC connectors instead of RCA jacks. RCA connectors do not handle the stress of repeated use very well, and may start to fail after a few hundred connections.

Animation Toolworks has a selection of monitors available for purchase. Call for more information.

## ***Video Cables***

Don't skimp on cables. If you've ever wasted an hour because a cable was defective you know what we mean. We recommend using 75 ohm RG59 BNC video cables for your composite video connections. You can also use good quality RCA jack type video cables, but the connectors will wear out faster and you will need an adapter on the LunchBox Sync end of the cables. Do not use 50 ohm RG58 computer cables. Do not use RCA jack type audio cables.

If you are instead using S-Video, these connectors work just fine. Be sure to carefully align the pins of the connector and of the cable.

## ***Audio Source***

Any powered audio source with a standard audio line level (~1V P-P) can be used. This includes tape decks, CD players, VCRs, computer audio ports, or the audio out from a camcorder. Unpowered audio sources, such as a passive microphone, will not provide acceptable audio input to the LunchBox Sync. Whichever source you use, turn the volume of your output near its maximum when you first test to see if your audio is being recorded. This can save you considerable time if you do experience problems.

## ***Audio Speakers***

Any powered speakers can be used. The audio output from the LunchBox Sync is line level. Alternately, you can connect the LunchBox Sync's audio output to an amplifier's audio input, or to a monitor's audio input. Headphones or other unpowered speakers will not work.

## ***Audio Cables***

The LunchBox Sync uses 1/8" (3.5mm) mini-phono plugs for the audio in and audio out jacks. Use a phono cable with a mini-plug on at least one end, or a converter to a mini-plug. Please use a stereo mini-phono plug for each audio connector. It is fine to use RCA type cables, with the proper mini jack adapters, for the audio (but do *not* use them for the video). If you are driving the audio input to the LunchBox Sync with a mono device, use the RIGHT (RED) channel.

### ***Serial Port Cables***

The LunchBox Sync uses a DB9 to DB9, female-to-female, serial cable when the serial port is in use. The cable should be wired straight through—**do not** use a null modem cable.

### ***Power Strips***

A good power strip makes setup easier and can reduce problems with the video equipment. Look for a power strip with a 15 Amp circuit breaker. Consider using a power strip with a surge protector built in-- they are inexpensive, and can protect all your video equipment at once.

# Attaching Components



## *The Basic Setup*



Equipment:

- Power strip
- Video Camera
- LunchBox Sync
- Video Monitor
- Two 75 ohm BNC video cables, or, Two S-Video video cables
- Optional: Audio source, audio speakers, two audio cables

Please note: your camera and monitor must support composite video, which uses either BNC or RCA type connectors. Your camera and monitor may support S-Video, which uses round, black multi-holed connectors. The LunchBox Sync supports either type of video. If you have both types of connectors on your camera or monitor, we recommend that you select the S-Video connectors, as S-Video provides a superior image.


1) Plug the Camera, LunchBox Sync, and Monitor into the same power strip.


2) Attach a 75 ohm video cable from the round, metallic BNC connector above the  symbol on the LunchBox Sync to the "Video out" connector on the camera. If your camera has an RCA type connector, use a BNC to RCA adapter. If you are instead using a camera that has an S-Video capability, attach an S-Video cable from the round, black, multi-holed connector above the  symbol on the LunchBox Sync to the S-Video connector on the camera.

3) Attach a 75 ohm BNC cable from the round, metallic BNC connector above the  symbol on the LunchBox Sync to the "Video in" or "line" or "aux" connector on the monitor. If your monitor has an RCA type connector, use a BNC to RCA adapter. If you are instead using a monitor that has an S-Video capability, attach an S-Video cable from the round, black, multi-holed connector above the  symbol on the LunchBox Sync to the "S-Video in" connector on the monitor.

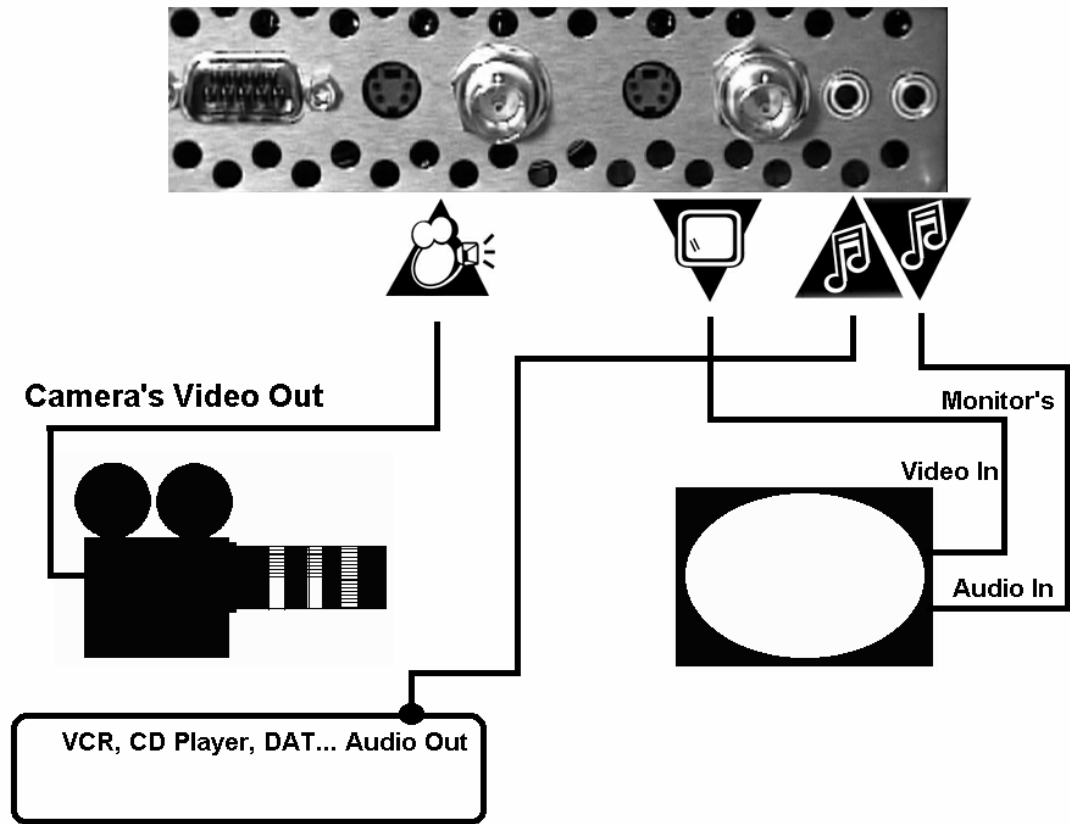
**Note: Do not attempt to attach the BNC cable to the monitor's antenna connection.**

4) Set the monitor to the correct video input mode. Frequently, the monitor will have a "Video" mode, or a selection for "line" or "aux", instead of the video tuner. For example, say you have attached the cable to the monitor's "Video 3 In" connector. Use the monitor's buttons or menus for "Input", or "Line In", to select "Video 3" as the Input.

5) If you wish to record audio, attach an audio cable with a stereo mini-jack from the audio connector above the  symbol on the LunchBox Sync to the "Audio Out" connector on your audio source. See the section on **Audio Source**, above, for acceptable devices.

6) If you wish to playback audio, attach an audio cable with a stereo mini-jack from the audio connector above the  symbol on the LunchBox Sync to the "Audio In" connector on your monitor, audio amplifier, VCR, or speakers. See the section on **Audio Speakers**, above, for acceptable devices.

If you encounter any difficulties, refer to the Troubleshooting section.





**The Basic Setup**


## *The Recording Setup (Allows recording to video tape)*


### Equipment:

- Power strip
- Camera
- LunchBox Sync
- Monitor
- Video Tape Recorder
- Three 75 ohm BNC video cables, or 3 S-Video cables
- Optional: Audio source, audio speakers, three audio cables

1) Plug the Camera, LunchBox Sync, and Monitor, and Video Tape Recorder (VTR) into the same power strip.

2) Attach a 75 ohm video cable from the round, metallic BNC connector above the  symbol on the LunchBox Sync to the "Video out" connector on the camera. If your camera has an RCA type connector, use a BNC to RCA adapter. If you are instead using a camera that has an S-Video capability, attach an S-Video cable from the round, black, multi-holed connector above the  symbol on the LunchBox Sync to the S-Video connector on the camera.



3) Attach a 75 ohm BNC cable from the round, metallic BNC connector above the  symbol on the LunchBox Sync to the "Video in" or "line in" or "aux" connector on the video tape recorder. If your video tape recorder has an RCA type connector, use a BNC to RCA adapter. If you are instead using an S-Video video tape recorder, attach an S-

Video cable from the round, black, multi-holed connector above the  symbol on the LunchBox Sync to the "S-Video in" connector on the video tape recorder.

4) Attach a 75 ohm BNC cable from the "video out" or "monitor" connector on the video tape recorder to the "Video in" or "line" or "aux" connector on the monitor. If both your video tape recorder and monitor support S-Video, attach an S-Video cable from the "S-video out" connector on the video tape recorder to the "S-Video in" on the monitor, instead of the BNC cable.

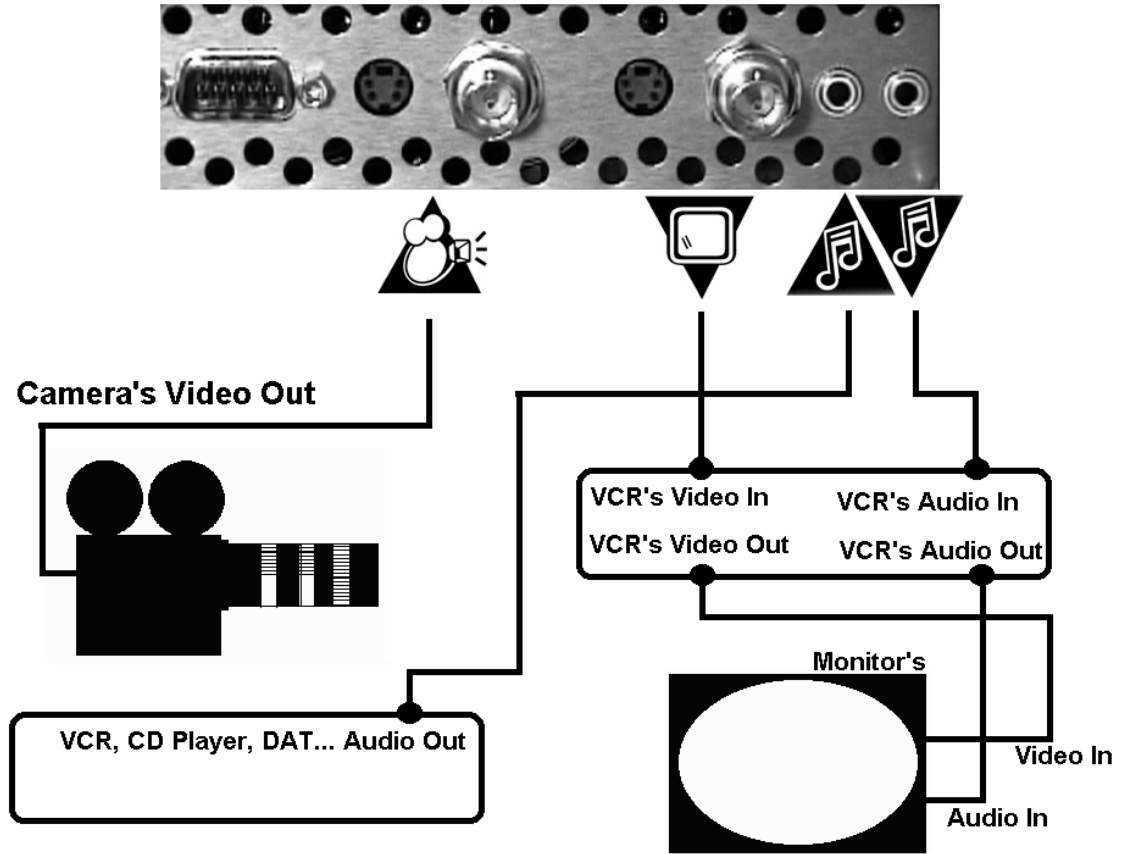
5) Set the monitor to the correct video input mode. Frequently, the monitor will have a "Video" mode, or a selection for "line" or "aux", instead of the video tuner. For example, say you have attached the cable to the monitor's "Video 3 In" connector. Use the monitor's buttons or menus for "Input", or "Line In", to select "Video 3" as the Input.

6) Select the LunchBox Sync as the source input for the VTR. Most VTRs have an "input", "input select", or "input source" selector switch. Select "line" or "aux" or "L1". On some VTRs, this is done by changing the channel until "line" or "aux" or "L1" appears.

7) If you are using audio, attach an audio cable with a stereo mini-jack from the audio connector above the  symbol on the LunchBox Sync to the "Audio Out" connector on your audio source. Also attach an audio cable with a stereo mini-jack from the audio connector above the  symbol on the LunchBox Sync to the "Audio In" connector on

video tape recorder. Finally, connect the "Audio Out" of the video tape recorder to the "Audio In" of the monitor.  
8) Operate as described in "Scenario 3: Saving images to video tape" on page 29.

If you encounter any difficulties, refer to the Troubleshooting section.




The Recording Setup


## Download setup (Allows loading frames from a video tape)



### Equipment:

- Power strip
- LunchBox Sync
- Monitor
- Video Tape Recorder
- Two 75 ohm BNC video cables, or two S-Video cables
- Two audio cables

1) Plug the LunchBox Sync, Monitor, and Video Tape Recorder (VTR) into the same power strip.

2) Attach a 75 ohm video cable from the round, metallic BNC connector above the  symbol on the LunchBox Sync to the "video out" or "monitor" connector on the video tape recorder. If your video tape recorder has an RCA type connector, use a BNC to RCA adapter. If your video tape recorder supports S-Video, attach instead an S-Video cable

from the round, black, multi-holed connector above the  symbol on the LunchBox Sync to the S-Video connector on the video tape recorder.

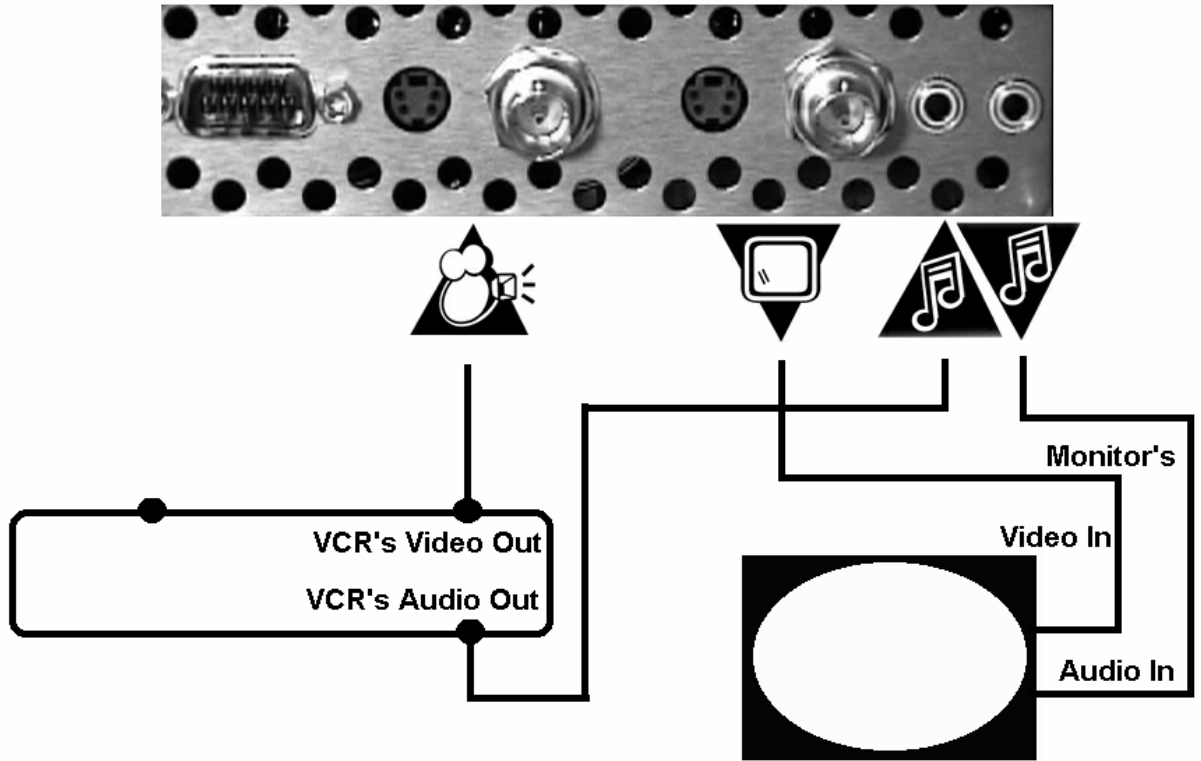
3) Attach a 75 ohm BNC cable from the round, metallic BNC connector above the  symbol on the LunchBox Sync to the "Video in" or "line" or "aux" connector on the monitor. If you are instead using a monitor that has an S-Video capability, attach an S-Video cable from the round, black, multi-holed connector above the  symbol on the LunchBox Sync to the S-Video connector on the monitor.

4) Set the monitor to the correct video input mode. Frequently, the monitor will have a "Video" mode, or a selection for "line" or "aux", instead of the video tuner.

5) If you are using audio, attach an audio cable from the connector above the  symbol to "Audio out" connector on the video tape recorder. Then connect an audio cable from the audio connector above the  symbol to the "Audio in" connector on the monitor.




















6) Operate as described in "Scenario 4: Loading images from video tape" on page 30.

*If you encounter any difficulties, refer to the [Troubleshooting](#) section.*



The Download Setup

## Two- Minute Tutorial

- 1) Attach your video camera to the  input of the LunchBox Sync, using either a BNC or S-Video cable to the appropriate connector. Make sure your camera is turned on.
- 2) Attach your video monitor to the  output of the LunchBox Sync, using either a BNC or S-Video cable to the appropriate connector.
- 3) Make sure your camera, monitor, and the LunchBox Sync are all plugged in and turned on. For best results, plug all three into the same outlet or power strip.
- 4) Plug in your LunchBox Sync *after* your camera is attached and turned on. After some color bars, you should see a "live" image from the camera on the monitor. If instead you see "Select Reel #" on the LunchBox's small green display, click  or  to select the numbered Reel (or storage area) on which you wish to work. When you have the desired Reel selected, press the Yes (Green) key.
- 5) The LunchBox Sync has a cluster of black keys, in the red area, which perform all the basic functions. Click the  key. You've captured the image.
- 6) Click the  key to see the captured image. Click  again to see the live image.
- 7) Animate a few frames, clicking the  key after each frame. The numeric display indicates your frame number.
- 8) Click the  key. This plays your loop at 25 fps (PAL) or 30 fps (NTSC).
- 9) Click the  or  keys to move backwards or forwards through your frames.  
Advance to the last frame you shot by clicking the  key.
- 10) Click and hold down the  key for one second. Now the LunchBox Sync rapidly toggles between the live camera feed and your last frame. This is called "flip-flop" mode. Start moving your character to see how this works.
- 11) Click the  key while in flip-flop mode. The image is instantly captured, and you are ready to shoot again. Animate a few more frames.
- 12) Click  to exit flip-flop mode.
- 13) Hold down  for one second to see your loop continuously. Click any key to stop it.
- 14) Hold down  or . You will go forwards or backwards at a faster and faster rate.
- 15) To delete all your frames, press  and hold it down for about 8 seconds. When the question "Clear LunchBox?" appears, press the Yes (Green) key. The No key is Red.











**That's all! You've mastered the basic operation of the LunchBox Sync.**

# Video LunchBox Users: LunchBox Sync Summary

The LunchBox Sync interface is similar to the Video LunchBox, but some changes were made with the new features. This brief summary of operation is intended for users of the Video LunchBox.














## Primary Functions





The LunchBox Sync has a cluster of black keys which perform all the primary functions:

- There is only one Play key, . It can be set up for either 24fps or 30fps operation.
-  plays from frame 1 to the current frame, unless special in or out marks are set.
- There is no special Flip-Flop key. The Live key, , which toggles the video source between "live" and "memory", can be held down to start flip-flop mode.
- The Shoot key, , does not switch to real-time capture when it is held down. Instead, it can be set for several different types of capture, including audio.
- The  and  keys move you from one image to the next, in sequence. These keys accelerate as they are held down longer.
- There is a Setup key, , which sets the behavior of various keys.  puts you into setup mode, where you indicate which key's behavior you want to modify by pressing that key. You then choose from a list of options. When choosing from a list of options, use the  or  keys to see different options, then press the Yes (Green) key to select the option you wish. Press the No (Red) key to cancel Setup.

## New Features

The LunchBox Sync has many new features not available in the Video LunchBox:

- Mark key, : used to mark an "in-mark" and "out-mark" frame.  will play from the in-mark to out-mark. If there is only an in-mark,  will play from the in-mark to the end. Hold down  to clear both marks.
- Hold key, : Each image can be held for multiple frames by increasing its "hold count". Holding down  resets the hold to "1".
- Insert key, : New frames can be inserted in a clip. Insert acts like capture, except it makes room for the new frame by pushing later frames forward. If you're looking at frame #52 and hit , you will create a new frame #53, and the old frame #53 will become #54.
- Delete key, : Delete an unwanted frame.
- First, , and Last, , keys: Go to the first or last frame of a clip with a single keystroke. If in-mark or out-mark frames exist,  and  take you to them instead.

- Shoot key,  : Can be used to capture audio (either capture a reference clip before capturing images, or dub audio after image capture). Also, real-time capture includes both a video and an audio track. Timelapse can also be shot using .
- Audio Sooner, , and Audio Later,  : Slides the audio clip relative to the video.

## New Display

The LunchBox Sync has an informational display. It is organized into 4 lines:


- 1) Current frame info: a symbol indicating live video or stored frame, current frame number, and hold count
- 2) Loop info: if they exist, the [in-frame:out-frame]
- 3) General info: (e.g.-- Playing 24fps...)
- 4) Options list: which keys can be used in this situation (e.g.-- when capturing real-time, "Any key to stop")

Next to the display are the green "Yes" key and the red "No" or "Cancel" key. They are used in setup or whenever the display asks a question.


## Persistence





The LunchBox Sync does not lose its image data when the power is interrupted. This means you can turn the box off overnight or longer without losing any frames. It also means once you set the box the way you like (e.g., frame rate, flip-flop rate, shoot on twos, etc), you don't need to set it again.

Persistence means you can no longer "clear" the box by unplugging it. To clear all images and

audio from the box, hold down  for several seconds until the display asks, "Clear LunchBox?" Hit Yes to confirm, or No to cancel. All images and audio will be cleared, but settings such as playback rate will remain in place.

## Setup key,

The  key allows you to customize the behavior of the LunchBox Sync. For example, to select the playback frame rate:

1. hit . Display says, "Setup which key?"
2. hit . Display says, " Play 30fps?"
3. hit  or  to see the options. Display says, "Play 24fps?"
4. hit Yes when you see the option you want, or No to cancel the operation

Several other keys can be "setup":



1. Capture single frames
2. Capture real-time audio and video

3. Capture audio only
4. Capture timelapse



1. Slow flip-flop speed
2. Medium flip-flop speed
3. Fast flip-flop speed



1. Playback at 24fps
2. Playback at 30fps



1. Set all frames to "ones"
2. Set all frames to "twos"
3. Set all frames to "threes"



1. Step to "Live" mode after the last frame
2. Don't step to "Live" mode after the last frame



1. Turn on monitor display of frame numbers
2. Turn off monitor display of frame numbers




1. Change the Reel being edited. Only for MultiReel equipped LunchBoxes.

## Frame Capacity

The LunchBox Sync without the MultiReel Option has a capacity of 9,999 images. The limiting factor in terms of storage of your animation is the number of different images you have, not the number of frames. When your whole animation is shot and played back on ones, then the number of images and the number of frames are the same, and you have a capacity of 9,999 frames. This is over 5 ½ minutes at 30 frames per second (fps), nearly 7 minutes at 24 fps, and over 6 ½ minutes at 25 fps (PAL model).




Using the Hold key  you can increase your frame count significantly. For example, if you playback your animation all on twos, the capacity becomes 19,998 frames. This is over 11 minutes at 30 fps, nearly 14 minutes at 24 fps, and over 13 minutes at 25 fps. If you have poses which are held for many frames, for example, titles or credits, you can increase your frame capacity further.

Audio capacity is in excess of 53 minutes. The amount of audio you store does not affect the number of images you can store.

If frame capacity is a concern for your production, remember to capture each image only once




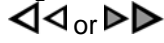
with the Shoot key  and alter the number of frames you want it exposed with the Hold

key  .

## MultiReel

With the **MultiReel** Option, frame capacity is increased dramatically. A LunchBox with MultiReel has the frame capacity of 18 LunchBoxes (PAL) or 22 LunchBoxes (NTSC). A MultiReel LunchBox has 18 (PAL) or 22 (NTSC) Reels. Each Reel has the same frame capacity described in the section above. Furthermore, you don't have to worry about accidentally editing the wrong Reel. The LunchBox Sync with MultiReel has built in interference protection. Once you start editing a Reel, your changes only apply to that Reel and no others. In a classroom setting, 18 or 22 students can independently store and edit their respective animation.

You can tell you have the MultiReel Option when your LunchBox first powers up. After the color bars are displayed, you will see on the display "Select Reel#". This allows you to choose which Reel you would like to start editing. Reels are numbered from 1 to 18 or 22. You can also tell you have the MultiReel Option when you are editing: in the upper right corner of the display, you will see a "#" sign followed by a number. This indicates which Reel number is being edited.




If you have the MultiReel Option, you can begin editing a different Reel by pressing the  key *twice*, select the Reel number you want to edit with , and then pressing the Yes (green) key. **Once you are editing a particular Reel, the LunchBox behaves virtually identical to a LunchBox without the MultiReel Option.**




# Audio on the LunchBox Sync

With the LunchBox Sync, you can capture audio, playback audio, and synchronize your audio and video.

## Capturing Audio

There is one audio track contained within the LunchBox Sync (there is one audio track *per Reel* contained within a LunchBox Sync with the MultiReel Option). A capture with audio erases any existing audio (with MultiReel, it erases any existing audio on the Reel being edited). You can


either capture audio only, or real-time audio and video. The Shoot key, , is used to capture audio, in conjunction with the Setup key, . Press , and in response to the question


“Setup which key?”, press . A series of choices can be scrolled through using  or . Choose either “Capture Audio” or “Capture real-time A/V” by pressing Yes (green key) when the desired choice is on the display. If you are just starting a new project with an audio track to which you must animate, you probably will want to Capture Audio. If you are creating an animatic, or plan to start with keyframe animation, you probably want to Capture Real-time A/V.


Audio is synchronized to the frame at which the capture was entered- i.e., if you go to frame 1000 and capture audio, the beginning of the audio clip is at frame 1000, and all the old audio is erased, including the audio before frame 1000. Likewise, if you do a real-time A/V capture starting at 500, all the old audio is erased, including the audio before frame 500, and the audio is synchronized with the video at 500.



No matter how much audio you capture, it will have no effect upon how many frames of video you can capture.

## Playing Audio



When you  a clip to the final video frame in the LunchBox Sync, the audio continues to play until the end of the audio clip or until another key is hit to interrupt it. If there are 100 images and






you are pointing at image 100 when you hit , the video will play through image 100, and the audio will continue past then. If you back up one image (or at any image prior to the last one)



and , the audio will stop when the video stops advancing.

You can hear the audio associated with an image when you use  or  to move a single image at a time. If an image has a large hold count (the number of frames the image is exposed, expressed as the number following the “x” on the display), there will likely be more audio at that image than at an image with a hold count of one. Stepping through the images one at a time is a convenient way to check your synchronization.

## Synchronizing Audio

Audio sliding lets you choose an image at which the audio clip starts. When you click Slide Audio Sooner, , or Slide Audio Later, , the audio starting point shifts by one image, and you are told the frame number of the audio start. When the audio is shifted *before* the beginning of the video, the frame number displayed cannot be a real one-- it is a fake one, which gives you a sense for how far earlier the audio is.

To synchronize your audio with your video, go to the last frame using , then press . If the audio is starting too late, make a rough estimate of how late (in frames), then tap  until you have moved the audio close to your estimate. Then press  again, and repeat the process if necessary. If your audio is starting too soon, use  instead.

When you are done using  or  and press , you will see a "Moving Audio" message. The length of time required for this operation is dependent upon how many frames you have.

# Video on the LunchBox Sync

## Order of Turning on Components

The LunchBox Sync has two video inputs-- an S-Video connector and a composite video (BNC) connector. The LunchBox Sync automatically decides which input to use based on which connector has an active video source attached to it **when the LunchBox Sync is powered on. Therefore, make sure your camera is attached to the LunchBox Sync and powered on when you power on the LunchBox Sync.** The LunchBox Sync first checks to see if there is a composite camera attached and powered on. If there is, it uses the composite camera.

If you decide to switch between an S-Video and composite video camera you will need to remove the cable connecting the composite camera to the LunchBox Sync, and power cycle the LunchBox Sync so it will recognize the new video source.

*If you are experiencing difficulty getting your S-Video camera to work with the LunchBox Sync, please check that 1) your camera is powered on and connected to the LunchBox Sync before the LunchBox Sync is powered on; 2) disconnect the composite video input to the LunchBox Sync before the LunchBox Sync is powered on. Then turn on the LunchBox Sync.*

## Operating Without a Video Source

The LunchBox Sync can also be operated with no video source if you simply wish to review images already stored in the box. When you apply power to the LunchBox Sync, if there is no video source the LunchBox Sync display will ask, "No Camera. OK?" Press the green key to confirm you wish to continue with no camera, or else attach a camera and press the red key so the LunchBox Sync will look for a video source.





## Using Both Video Outputs

The LunchBox Sync simultaneously produces both S-Video and composite video outputs. You can use either output or you can use both at the same time for different devices. For example, you can use two different monitors, or you can use one signal to drive your monitor and the other to drive your VCR. The S-Video output will produce a better image than the composite output, so it should be the preferred output for making presentations or dubbing to video tape.

# How To







## Scenario 1: Replacing a bad frame

*I accidentally hit  before  
I was ready*

- 1) Click the  or  keys until you are at the bad frame
- 2) Click the  key to back up one frame before the bad frame
- 3) Click the  key to overwrite the bad frame



## Scenario 2: Accurate replacement or repositioning

*I need to place a character  
back on my set in the same  
position it was in for frame  
17*

- 1) Click the  or  keys until you are at frame 17
- 2) Click and hold  key to enter flip flop mode. The monitor will flicker between the stored frame with the character in position, and the live video feed. As the character approaches the correct position, the flickering appears less and less.
- 3) If the flip-flop mode changes too slowly for you, press the  key followed by . Use  until the question asking if you want Fast Flip-Flop appears, and then press Yes.







### **Scenario 3: Saving images to video tape**

*I want to save my animation  
for future reference*

- 1) Set up the LunchBox Sync with the video tape recorder as described in "Recording Setup".
- 2) Select the LunchBox Sync as the source input for the Video Tape Recorder (VTR). When you are successful, the LunchBox Sync image will appear on your monitor.
- 3) Insert a tape in the VTR and cue it as desired.
- 4) Cue the LunchBox Sync to the last frame of the loop.
- 5) Click  to switch to a live video feed.
- 6) Place a lens cap on the camera for a black leader (optional).
- 7) Press "RECORD" on the VTR to start the recording.
- 8) Wait a few moments for the VTR to finish recording a leader. (Most VTR's don't record cleanly for the first few seconds)
- 9) Click . You may want to do this a few times, pausing between each for some black space between recordings.
- 10) Stop the VTR.

## Scenario 4: Loading images from video tape







*I want to restore a  
previously saved animation*

- 1) Set up the LunchBox Sync with the video tape recorder as described in "Download Setup".
- 2) *NTSC model only*: If you have been playing back at 24fps, temporarily change to 30fps by clicking the  key followed by the  key. Then answer Yes to the question, "Play 30fps?".
- 3) Press the  key followed by . Use  until the question asking "Capture Real-time A/V" appears, then press Yes.
- 4) Cue the VTR to slightly before the desired segment, and press Play on the VTR.
- 5) A few seconds before the desired segment, click the  key on the LunchBox Sync.
- 6) When you see the end of the desired segment, press any key to stop recording.
- 7) See Scenario 19 for deleting any unwanted frames.
- 8) *NTSC model only*: If you had temporarily changed to 30fps playback, change back to 24fps. See Scenario 13: Switching Playback between 24 and 30 frames per second

## Scenario 5: Shooting live- motion reference



*I want to shoot the mouth of  
a reference actor for lip-  
synch*


**NOTE: Capturing  
Audio/Video in real time  
will erase previously  
captured audio tracks.**


- 1) Use the "basic setup" with a camera as the source to the LunchBox Sync.
- 2) Click the  or  keys until you are at the frame you want the live action to begin. Subsequent frames will be overwritten.
- 3) Press the  key followed by . Use  until the question asking "Capture Real-time A/V" appears, then press Yes.
- 4) Press  on the LunchBox Sync when the actor begins to speak the line.
- 5) When the actor finishes the line, press any key.


## Scenario 6: Animating to a live-motion reference

*I have filled the LunchBox Sync with live motion as in scenario 4 or 5, and now wish to animate to it.*

1) Click the  or  keys until you are at a frame you wish to replace.

2) Press the  key for one second to let you compare the position of your character with your reference.

3) When your character is in position, click the  key to back up one frame.


4) Click the  key to overwrite the reference with the animated frame.



5) Proceeding in this manner, frame by frame, replaces the live motion reference with your animated character.

## Scenario 7: Key frame animation

*I want to set up key frames first, then fill in with additional frames*

1) Place a lens cap on the camera.

2) Repeatedly tap the  until the desired number of frames are filled with a black image. If the number of frames is large, you could place the lens cap on the camera, and follow the directions *Scenario 5, Shooting Live Motion Reference*.

3) Use the  or  keys to go the frame *before* each keyframe.


4) Shoot each key frame using the  key.

5) Fill in the other frames as usual.


## Scenario 8: Setting custom loop boundaries

*I have 50 frames in the LunchBox Sync, and want to examine a cycle from frames 10-30.*


1) Use the  or  key to get to frame 10.

2) Press the  key to mark this as the loop start. You will see the frame number and a “[” symbol appear in the display.

3) Use the  key to get to frame 30.




4) Press the  key to mark this as the loop end. You will see the frame number and a "]" symbol appear in the display.

**Note:** If you omit this step, the LunchBox Sync will automatically play from the “[” point to the last frame as you add new frames.

5) Press  to view the loop. Hold the key down for one second to view the cycle continuously.


### Scenario 9: Changing a loop boundary

*I've completed Scenario 8 and have narrowed down my problem to someplace between frames 10 and 20 within the cycle. I want to view only those frames now.*

- 1) Use the  key to get to frame 20.
- 2) Press the  key to mark this as the loop end. You will see the frame number change from 30 to 20 in front of the “[ : ]” symbol in the display.
- 3) Press  to view the loop. Hold the key down for one second to view the cycle continuously.







### Scenario 10: Erasing custom loop boundaries

*I'm finished examining a cycle, and wish to restore the LunchBox Sync to normal operation.*

- 1) Press the  key and hold it down for about one second, when “Marks cleared” appears on the display. The frame numbers enclosed by the “[ : ]” will be cleared.


### Scenario 11: Shooting time lapse video

*I want to shoot a time lapse video of the clouds moving by my window. I choose to shoot a frame every 15 seconds, so 1 hour of weather will be viewed in 8 seconds.*

- 1) Press the  key followed by . Use  until the question asking “Capture timelapse” appears, then press Yes.
- 2) Use the  or  key to select how much you want to speed up time. A speed up of 60X means a minute of real time becomes a second of video. A speed up of 3600X means an hour of real time becomes a second of video. If you want to capture one frame every 15 seconds of real time, the speed up is 30(fps, NTSC model) times 15 seconds, or 450X. For PAL, the speed up is 25(fps, PAL) times 15 seconds, or 375X. After you have selected the rate of capturing frames, click Yes.
- 3) You can now begin timelapse recording by pressing . To stop timelapse recording, press any key.

### Scenario 12: Clearing images to start over

*If you are done with a previously stored animation, you can erase all images and audio to start out fresh.*



- 1) Hold down the  key for about 8 seconds until “Clear LunchBox?” appears on the display of the LunchBox Sync.
- 2) Press Yes if you want to erase all frames. Otherwise press No. With the MultiReel option, only the current Reel has frames erased.

**Warning:**  
**All images and audio will be erased permanently!**

### Scenario 13: Switching Playback between 24 and 30 frames per second

*I want to switch from 30 fps playback to 24 fps, or from 24 fps back to 30 fps.*







**Note: NTSC model only**

- 1) Press the  key followed by .
- 2) If you had been playing back at 30fps, you will be asked “24 frames per second?” on the display. Press the Yes key if you want 24 fps playback. Otherwise, press No.
- 3) If you had been playing back at 24fps, you will be asked “30 frames per second?” on the display. Press the Yes key if you want 30 fps playback. Otherwise, press No.

### Scenario 14: Capturing only Audio







*I want to capture an audio soundtrack to use with my animation, but I don't want to capture video at the same time.*

**NOTE: Capturing an audio track will erase previously captured tracks.**

- 1) If you have already captured some frames, use the  or  key to select the frame where you want your audio to start.
- 2) Press the  key followed by . Use  until the question asking “Capture Audio” appears, then press Yes.
- 3) Start your audio source playing, and at the same time, press . The frame counter increments to indicate that you are in the process of capturing the audio.
- 4) When you are done recording the audio, press any key to stop the recording. *Since you have not captured video, the frame counter will return to the frame where you started. No new frames have been added.*


### Scenario 15: Synchronizing audio to your video


*I've captured the audio track, but it doesn't synchronize with my frames.*


- 1) Press  to go to the last frame.
- 2) Press the  key to listen to your audio. If you cannot hear all of your audio, see Scenario 16.
- 2) If your audio is starting too soon, press the  key. Each time you press it, you move the starting point of your audio track one image later than it started before.
- 3) If your audio is starting too late, press the  key. Each time you press it, you move the starting point of your audio track one image earlier than it started before.
- 4) Listen to your audio again. If the synchronization is better than it was, but not just right, continue pressing the  or  key as you did before.

### Scenario 16: Listening to all of your audio

*I've captured my audio, now I want to hear the whole audio track, even if it plays for a longer time than the frames I've entered so far.*



1) If you have captured some frames, press  to go to the last frame.


2) Press . You can press any key to stop listening to the audio before it is done playing.

3) If you cannot hear the first part of your audio, you have moved it to before the first frame of the video you are playing. You can move the audio later in the video stream by tapping the  key until you can hear the beginning of the audio.

### Scenario 17: Listening only to part of your audio

*I've captured my audio, now I want to hear only the audio up until the frame in the frame counter*



1) Use the  or  to move to the frame where you want the audio to stop.

2) Press . The video and audio will play from the beginning until the current frame. If the current frame is the last frame, all of your audio will be heard, even the audio that plays after the video has stopped playing.

### Scenario 18: Inserting a frame



*I forgot to capture a few of my drawings. I want them to go after frame 789.*


1) Click the  or  keys until you are at frame 789

2) Position your first drawing underneath the camera. Click the  key. You have just inserted a frame of this drawing after frame 789. What had been frame 790 before is now frame 791. 3) Click  once for each frame you wish to insert.

### Scenario 19: Deleting a frame

*I accidentally hit  before I was ready*

1) Click the  or  keys until you are at the bad frame



2) Click the  key to erase the bad frame


3) You will be asked "Delete frame # ?" on the display. Press the Yes key if you want to delete the frame. Press the No key if you are at the wrong frame.


## Scenario 20: Capturing Audio with Video

*I want to capture audio and video to use with my animation.*

**NOTE:** *Capturing an audio track will erase previously captured tracks.*

1) Click the  or  keys until you are at the frame you want the audio and video to begin. Subsequent frames will be overwritten.




2) Press the  key followed by . Use  until the question asking “Capture Real-time A/V” appears, then press Yes.

3) Start your video source playing, and at the same time, press .

4) When you are done recording the video, press any key.

## Scenario 21: Shooting on 1s, 2s or 3s



*I want all of my frames to be shot on 2s*

1) Press the  key followed by . Use  until the question asking “Shoot Twos” appears, then press Yes.


**Warning:** Changing to 1s, 2s or 3s, by pressing the Yes key erases all previously entered holds on all frames. If you plan to shoot on 2s or 3s, it is a good idea to make this change when starting a new project.





## Scenario 22: Increasing the Holds (exposures) for an image

*I want to hold a credits image for one second*

1) Click the  or  keys until you are at the frame you want to hold.



2) In the display, you will see an “x” followed by a number. The number is the exposures that image will be held.

3) To increase the number of exposures, tap the  key. When you do so, the number following the “x” will increase, letting you know the number of exposures for the image.


4) Continue to tap the  key until you reach the desired number of frames. To hold the image for one second, tap the  key until the number of exposures is 24 or 30 (NTSC), or 25 (PAL), depending upon your selected playback rate. If you hit the  key too many times, press and hold down the  key. The number indicating the number of exposures will be reset to 1.

## Scenario 23: Removing the Holds (exposures) for an image

*I no longer want to hold a frame for multiple exposures*

1) Click the  or  keys until you are at the frame you want to hold.




2) In the display, you will see an “x” followed by a number. The number is the exposures that frame will be held.


3) To decrease the number of exposures, press and hold down the  key. The number indicating the number of exposures will indicate 1.

## Scenario 24: Playback at 12fps or 15fps


*I want to playback at 12 or  
15 fps.*

**Note: NTSC model  
only**

1) Press  followed by . Press  until the question asking "Shoot Twos" appears, then press Yes.















3) Press . If you were playing back at 24fps, your effective frame rate is now 12fps. If you were playing back at 30fps, your effective frame rate is now 15fps.

4) To return to your original rate of playback, repeat the above instructions, but answer Yes to the question if you want Holds on 1s.

**Warning:** This scenario will remove any Holds you have set using . Do not use this scenario if you wish to retain your hold counts. This scenario assumes you have been shooting on 1s.


## Scenario 25: Creating an animatic


*I've entered my audio track using the Scenario for Capturing Audio. Now I want to create an animatic consisting of four scenes.*

- 1) Make sure you can have captured your audio, as described in Scenario 14.
- 2) Capture the first image for your first scene using the  key.
- 3) If the scene runs for more than 2 seconds of audio, press the  key at least one time for each additional 2 seconds of audio. In our example below, we will have one image for each scene, except scene 3 which has 2 of the same images.
- 4) Repeat steps 2 and 3 for the first image of each scene.
- 5) If you have an exposure sheet, use it as a guide. Otherwise, estimate how long, in frames, the audio for each scene lasts. In this example, let's say scene 1 starts at frame 1, scene 2 starts at frame 36, scene 3 starts at frame 78, and scene 4 starts at frame 168 and ends at frame 180.
- 6) Go back to the initial frame of the first scene using the  key. Increase the holds (see Scenario 22) on this frame by tapping , until the hold indicator says 35, or one less than the frame number that marked the first image of scene 2.
- 7) Advance to the image for scene 2 by pressing . Increase the holds for scene 2 by tapping  until the hold indicator says 42, the amount of frames scene 2 lasts. It is 42 because scene 3 starts at 78, and scene 2 started at 36.
- 8) Advance to the image for scene 3 by pressing . We want to hold scene 3 for  $168-78 = 90$  frames. Increase the holds for the first of the 2 images of scene 3 by tapping  until the hold indicator says 60. Then advance to the second image of scene 3 by pressing  once. Increase the holds for the second of the 2 images of scene 3 by tapping  until the hold indicator says 30. Now the amount of time scene 3 lasts is  $60+30 = 90$ .
- 9) Advance to the image for scene 4 by pressing  once. Increase the holds for scene 4 by tapping  until the hold indicator says 12 ( $180-168$ ).
- 10) Use the  key to go to the end, then press the  key. If your animatic doesn't synchronize exactly, change the holds on the frames as described in Scenarios 22 and 23.
- 11) If you want to replace a scene with animation, refer to the Scenarios on deleting and inserting frames.

**Scenario 26:  
Showing the frame  
number on the  
monitor**

*I want to see the frame  
number of a stored image  
while standing far from the  
LunchBox Sync*

1) Frame numbers are visible only when viewing a stored image.  
If the frame number is not visible on the monitor, press  in  
case you are viewing the live video. If the frame number is still not  
visible, you need to turn on the display of frame numbers.

2) Press  followed by . You will be asked if you want to  
“Show frame #?”. Press Yes in response to this question.

3) Starting the next time you move to another frame, you will see  
the frame number on the monitor.

**Scenario 27:  
Suppressing the  
frame number on  
the monitor**



*I want to look carefully at the  
image on my monitor. How  
do I get rid of the frame  
numbers?*

1) Press  followed by . You will be asked if you want to  
“Hide frame #?”. Press Yes in response to this question.

2) After you move to another frame, you will no longer see the  
frame number on the monitor when viewing a stored frame.

**Scenario 28:  
Stopping playback  
at a particular  
frame**

*I noticed an error in my  
animation during playback.  
How do I stop playback at  
that frame?*

1) During playback, tap the  or  when you reach the bad  
frame. Playback will stop at the frame that was playing at the time  
you pressed the key.



**Scenario 29:  
Recording a  
sound-track on top  
of existing video**



*How do I record audio while  
I watch my video and  
improvise a soundtrack?*

- 1) During playback, improvise your audio and record onto an  
audio tape deck or camcorder.
- 2) Hook up this audio tape deck or camcorder as the audio input.
- 3) Record audio as in Scenario 14: Capturing only Audio

### Scenario 30: Editing a different Reel (MultiReel)

*How do I change to the Reel I want to edit?*



1) The number of the Reel being edited is shown in the upper right corner of the display. To edit a different Reel number, press  followed by  a second time.


2) Using  or , select the Reel number you want to edit.

3) Press the Yes (green) key. You are now editing your selected Reel, and its number appears in the upper right corner of the display.

### Scenario 31: Stepping into “Live” video at the end of frames



*I am doing stop motion animation. I want to see how my puppet currently looks compared to the previous few frames. How can I rapidly step back a few frames from the end and then forwards, ending in Live video?*



1) To make sure you “step” through your frames and show the Live video after the last frame, press  followed by .

2) You will be asked if you want to “Go Live at end?” Press the Yes (green) key. Afterwards, anytime you tap  when you are viewing the last frame you will view the Live video.

### Scenario 32: Don't step into “Live” video at the end of frames


*How can I step forwards and keep looking at the last frame even when I step too far forwards?*

1) To make sure you “step” through your frames but don't show the Live video after the last frame, press  followed by .











2) You will be asked if you want “No Live at end?” Press the Yes (green) key. Afterwards, anytime you tap  when you are viewing the last frame you will continue to view the last stored image. You can view the Live video by pressing  once.




# LunchBox Sync Reference



The LunchBox Sync front panel has 16 push-button keys. Many keys have one function when it is depressed momentarily, and another when it is held down. Many of the keys can












also be configured using the  key



## Basic Key functions:

<p><b>Setup</b> </p>	<p>The Setup key allows you to change the way other keys behave.</p> <hr/> <p>When you press , it asks you which key you want to set up. <b>Respond by pressing the key you wish to alter.</b></p> <p>Choices for that key are then presented on the display.          To see other choices, use  or .</p> <p>To accept a choice, press the Yes (green) key.          To cancel setting up a key, press the No (red) key.</p> <hr/> <p>Pressing  followed by  lets you select a different Reel to edit (this only applies if your LunchBox is equipped with the MultiReel option). Use  or  to select a Reel, followed by the Yes (green) key. You will then be operating upon the selected Reel.</p> <p>To clear all images and audio from the LunchBox Sync (or from the current Reel with the MultiReel option), hold down  for about 8 seconds. You will then be asked if you want to Clear the LunchBox. Hitting Yes will delete all images and audio.</p> <p><b>Warning:</b></p> <p>Holding down  for about 8 seconds causes the LunchBox Sync (or the current Reel with the MultiReel option) to be cleared, or wiped clean. To erase all your animation, you must confirm the removal by pressing Yes.</p>
---	---

<p><b>Shoot</b> </p>	<p>The shoot key advances the frame counter by one frame, and then captures a single frame of video.</p> <p>In conjunction with ,  can also be used to</p> <ul style="list-style-type: none"> <li>Capture single frames;</li> <li>Capture video frames and audio in real-time (30 fps);</li> <li>Capture audio only;</li> <li>Capture timelapse.</li> </ul>
---	---

After you press Yes, the next time you press  , you will capture the type of input you have selected. Subsequent to that capture,  reverts to capturing a single frame of video.

<p><b>Backward</b> ◀◀</p>	<p>The backward key displays the previous stored image. The audio around that image is played. When the backward key is held down, the display of images accelerates until image 1 is displayed.</p>
<p><b>Forward</b> ▶▶</p>	<p>The forward key displays the next stored image. The audio around that image is played. When the forward key is held down, the display of images accelerates until the last frame is displayed. If you have setup "Step into Live," the live video will be displayed after the last frame is reached. See Scenario 31: Stepping into "Live" video at the end of frames</p>
<p><b>Live</b> </p>	<p>The Live key toggles the LunchBox Sync between displaying the "live" video feed from the camera, and the stored frame. "Live" camera display shows an opened square on the display of the LunchBox Sync. A closed square is displayed when stored frames are viewed.</p> <p>If the live key is held down, the LunchBox Sync switches quickly between the "live" camera input and the image stored at the current frame number ("flip-flop" mode.) While you are in flip-flop mode, you can use the shoot key to shoot the current scene. To leave flip-flop mode, tap the  key.</p> <p>In conjunction with , you can change the rate of flip-flop to slow, medium or fast. You may find that the Fast flip-flop speed useful for repositioning a fallen puppet, while the slower speeds help during frame to frame animation.</p>
<p><b>Play</b> </p>	<p>The Play key plays a loop of frames, starting at frame 1 and ending at the current frame. The rate of playback appears on the LunchBox Sync's display.</p> <p>To play all frames, use the  key to go to the last frame, and then press .</p> <p>A portion of frames can be played, see the  key.</p> <p>If  is held down for more than one second, the playback loops continuously until another key is pressed. To stop playback, press any key. Playback stops immediately and displays the frame that was shown before  was hit. You can stop playback at an earlier frame by tapping  or  when playback reaches the desired frame.</p>





	In conjunction with   changes the rate of subsequent playback to either 24 or 30 fps (NTSC model only).
--	---





### Yes/No Keys:

<b>Yes</b> <i>Green Key</i>	When you press some of the keys, you may be asked a question on the display of the LunchBox Sync. To answer the question affirmatively, press Yes.
-----------------------------	--

<b>No</b> <i>Red Key</i>	When you press some of the keys, you may be asked a question on the display of the LunchBox Sync. To cancel the action, or to answer negatively, press No. When playing back your animation, or when recording in real-time, you can press any key to stop the playback or capture. The No key is a good key to get in the habit of using for that purpose.
--------------------------	--

### First/Last Keys:

<b>First Image</b> 	The First Image key takes you to the first image in your sequence. If you have used the  to show a subloop of your sequence,  will display the first image in your subloop. With a subloop, if you hold down  for one second, it will go to the first image in the LunchBox instead of the first image in your subloop.
--	--

<b>Last Image</b> 	The Last Image key is a quick method for displaying the last image in your sequence so you can play the entire animation. If you have used the  to show a subloop of your sequence,  will display the last image in your subloop. With a subloop, if you hold down  for one second, it will go to the last image in the LunchBox instead of the last image in your subloop.
---	--

## Editing Keys:

Mark



The Mark key is used to display a subloop, or a portion of your animation. Only this subloop will be played when you subsequently press

To create a subloop, use and to find the frame you want to serve as the start of your subloop. Then, press . In the display you will see “[” followed by the frame number which starts your subloop. Next, use and to find the frame you want to serve as the end of your subloop. Once again, press . In the display you will see “]” preceded by the frame number which ends your subloop. From this point on, when you press , only those frames defined by your subloop will be displayed on your monitor.

To return to the display of all of your frames, press and hold it down for one second. You will know the subloop is gone when the “[” and “]” and the start and end frame numbers are no longer on your display.

### **Special Note:**

You can have a subloop which begins at a specified frame and plays until the end of your frames, even as you add more frames. Simply press for the start frame, but do not specify the end frame.

## Hold



The Hold key allows you to change the number of exposures, or frames, an image is displayed. For example, a hold of 24 will display the same image for one second at 24fps.

To increase the hold count for a frame, use ◀◀ or ▶▶ to view the desired frame. An “x” followed by a number in the upper right of the LunchBox Sync display shows the number of exposures, or frames, the image is held. To increase the number of exposures (or the “hold count”), tap 🎞️ once for each additional exposure.

To return the hold count to 1, press 🎞️ for one second.

An image can be held for a maximum of 60 exposures. If you need more than 60 exposures, you need to set the holds on more than one image.

Using 🎞️, you can dramatically increase the storage capacity of the LunchBox Sync. Or you can easily add title frames. Or even create an animatic.

In conjunction with 🎞️, 🎞️ changes the hold count for *all* images to 1s, 2s, or 3s. This can be used to “shoot on 2s,” for example, even after you are done shooting on 1s.

**Note:** when you change the hold count for all frames, you wipe out any previously entered hold counts for individual frames.

## Insert



The Insert key allows you to place additional images in between existing images.

To insert an image, use the ◀◀ or ▶▶ key to find the image you want to insert *after*. Then press 🎞️, and an image will be captured.

For example, if you went to image 20 and pressed 🎞️, the new image would come after image 20, and become the new image 21. Images which had previously been numbered 21 and on would now be numbered 22 and on.







## Delete



The Delete key allows you to delete the image you are currently viewing.


When you press 🎞️, you are asked if you want to delete the specified image number. Answer by pressing Yes or No. If you answer yes, the image will be deleted, and all subsequent frames will be renumbered to be less than they were. For example, if you have 2037 frames and delete frame 2001, what was frame 2002 becomes 2001, what was frame 2003 becomes frame 2002, and so on.

## Audio Keys:

<p><b>Start Audio Sooner</b></p> 	<p>Use the Start Audio Sooner key to synchronize your audio with your animation. If your audio is coming in too late to match your animation, tap  .</p> <p>Each time you tap it, the audio will start one image sooner than previously. On the display of the LunchBox Sync, you will see a counter near the bottom telling you at which frame the audio now starts.</p> <p>After you have moved the audio to your satisfaction, test the synchronization by pressing  .</p>
<p><b>Start Audio Later</b></p> 	<p>Use the Start Audio Later key to synchronize your audio with your animation. If your audio is coming in too early to match your animation, tap  .</p> <p>Each time you tap it, the audio will start one image later than previously. On the display of the LunchBox Sync, you will see a counter near the bottom telling you at which frame the audio now starts.</p> <p>After you have moved the audio to your satisfaction, test the synchronization by pressing  .</p>

## LunchBox Sync Display

The LunchBox Sync has an informational display. It is organized into 4 lines:

- 1) Current frame info: a symbol indicating live video or stored frame, current frame number, and hold count. If your LunchBox Sync has the MultiReel Option, you will see the current Reel number in the upper right corner of the display.
- 2) Subloop information: if they exist, the [in-frame:out-frame] as set by 
- 3) General information: (e.g.-- Playing 24fps...)
- 4) Options list: which keys can be used in this situation (e.g.-- when capturing real-time, "Any key to stop")

Next to the display are the green "Yes" key and the red "No" or "Cancel" key. They are used in Setup or whenever the display asks a question.

## LunchBox Sync Messages

### Adjusting Audio

*What it means:* The LunchBox Sync needs to make sure that your video and audio are precisely synchronized. After you have completed a series of editing operations that might affect this synchronization, the message "Adjusting audio" may appear indicating the audio and video are being resynchronized.

*What you can do:* This message appears very briefly, usually just flashing on the display for a moment.

### Cleanup in progress

*What it means:* Sometimes, the LunchBox Sync performs maintenance on its hard drive to insure it is operating at peak efficiency. This operation is done when the LunchBox Sync powers up. It is only done when necessary, following a session in which insertion and deletion operations were performed. When this maintenance operation is performed at power up, the message "Cleanup in progress" appears on the display.

*What you can do:* You can either wait for the cleanup to finish, or you can begin using the LunchBox Sync and terminate the cleanup. If you choose to use the LunchBox before it finishes its cleanup, the next time you power up, the LunchBox will again try to complete the cleanup. If you repeatedly terminate the cleanup before it is done, you may eventually notice that playback of your video may pause where it shouldn't. If this happens, turn the LunchBox off and then on again, and wait for the cleanup to finish. The playback pauses will no longer appear. Depending upon how many inserts and deletes you performed, and where in the frame sequence they were done, the cleanup operation may take several minutes.

### Select Reel #

*What it means:* Your LunchBox Sync is equipped with the MultiReel option. There are at least 18 Reels on your LunchBox, each of which can be edited independent of the others. You need to indicate which Reel number you wish to edit before you can begin animating.

*What you can do:* Use the ◀◀ or ▶▶ key to indicate which Reel you wish to edit. When the display shows the number of the Reel you want, press the Yes (green) key. You will then be editing the Reel you have selected.

# Troubleshooting


## ***The LunchBox Sync appears dead-- no display, no fan***

- 1) Check the power cord-- it must be securely and completely inserted into the socket on the left side of the LunchBox Sync.
- 2) Check the electrical outlet-- attach another device to it to make sure it is working
- 3) Contact Animation Toolworks for help!

---

## ***I have no video output and when the LunchBox Sync starts, it says "No cam. OK?"***

Something is wrong with the video input:

- 1) Make sure the camera or video source is connected to the  connector
- 2) Wiggle the cables. If the video flickers, replace the cable.
- 3) Make sure the camera power is on and the camera is producing a signal. You can check the camera by attaching it directly to the "video in" on the monitor.
- 4) The Lunchbox Sync will not work reliably with a tube based video camera (for example-- a surveillance camera that is more than 10 years old). Use a CCD based camera (any modern camcorder or video camera). Contact Animation Toolworks for a recommendation.


---

## ***The live-mode video disappears after a few minutes***

Some camcorders turn themselves off after a few minutes. Check the camcorder manual to see if you can disable this feature. With some cameras you disable this feature by removing the video tape.

---

## ***The LunchBox Sync display is on, but there is no video on the monitor***

- 1) Check the cable between the Lunchbox Sync and the monitor. It should connect to the  connector on the Lunchbox Sync, and the "Video In" or "Line" connector on the monitor. It should not be connected to the "Antenna" or "CATV" or "Cable" connector on the monitor.
- 2) Make sure the connections are securely attached. Wiggle the cable between the Lunchbox Sync and the monitor. Replace the cable if the video flickers. Turn the LunchBox Sync off and then on, causing the LunchBox to search for the video source again.
- 3) **Most Common Problem:** Make sure the monitor is set to accept its signal from the "Video In" or "Line" connector. This may involve going into the monitor's program mode and selecting the input source for the monitor. The video source you need to select will usually be called "line" or "aux".

Other monitors have a "Video" mode switch which switches between the video jack and the internal TV tuner.

---

### ***The LunchBox Sync does not seem to work with my S-Video camera***

The LunchBox Sync automatically decides which input to use based on which connector has an active video source attached to it **when the LunchBox Sync is powered on**. The LunchBox Sync first checks to see if there is a composite camera attached and powered on. If there is, it uses the composite camera. If you want to instead use your S-Video camera,

- 1) Power on and connect your S-Video camera to the LunchBox Sync.
  - 2) Disconnect the composite video cable from the LunchBox Sync.
  - 3) Then plug in the power to the LunchBox Sync.
- 

### ***Playback sometimes pauses, or seems to get "stuck" for a while***

- 1) This symptom may occur following several insertions and deletions of frames. If so, the LunchBox Sync needs to insure that its hard drive is operating at peak efficiency.
    - (a) Unplug the power to the LunchBox Sync for a moment.
    - (b) Plug in the power to the LunchBox Sync, turning it back on.
    - (c) If the message "Cleanup in progress" appears, wait until it is done. The pauses should be gone.
- 

### ***The video output has a line or ripple moving slowly up or down the screen***

- 1) All video equipment used with the Lunchbox Sync should be connected to the same branch circuit. The easiest way to do this is to have the camera, monitor, LunchBox Sync, and the Video Tape Recorder (VTR) all share a common power strip.
  - 2) Keep video cables as short as possible. Replace long, coiled up cables with shorter cables.
  - 3) Try moving video cables and power cables which drape across different pieces of video equipment.
  - 4) Try moving components which are close to each other. Move the Lunchbox Sync away from the monitor, or move the monitor away from the VTR.
- 

### ***Some stationary objects on camera appear to move between frames***

- 1) Your camera is compensating for varying light levels by changing the exposure time. If your camera lets you disable the automatic exposure compensation, try the manual exposure instead.

- 2) The contrast of the image is different than the previous image. With many video monitors this will cause the image to grow or shrink slightly, making it seem like objects at the edge of the screen are moving. A different monitor may reduce the problem.
- 

### ***I cannot hear any audio on playback***

- 1) You must be playing audio from a line-level audio source to record onto the LunchBox Sync. A microphone is usually not line level. An amplifier or a camcorder usually output line level audio.
  - 2) You must be using powered audio speakers. Headphones will not work. If on playback you can very faintly hear the audio, your speakers are probably not powered and are not amplifying the audio.
  - 3) Try turning the volume on your audio source up near its maximum, and try capturing audio again.
  - 4) Check your audio cables. Where they plug into the LunchBox Sync, they should be *stereo* mini jacks. Stereo mini jacks have two circular grooves on the metal connector, while mono jacks have only one groove.
- 

### ***Audio scrubbing (hearing pieces of audio as you step through the frames) has stopped working.***

- 1) Check your audio output cable at both ends, it may have come loose.
  - 2) This symptom may occur following numerous insertions and deletions of frames. If so, the LunchBox Sync needs to insure that its hard drive is operating at peak efficiency.
    - (a) Unplug the power to the LunchBox Sync for a moment.
    - (b) Plug in the power to the LunchBox Sync, turning it back on.
    - (c) If the message "Cleanup in progress" appears, wait until it is done. Audio scrubbing should be restored.
- 


### ***The video image is grainy; there are speckles in the dark regions***






Your camera doesn't have enough light:

- 1) Open the aperture on the lens
- 2) Chose a slower exposure time if your camera has manual exposure
- 3) Use more lights

---

**When I press , nothing happens**

 plays from the first frame to the frame number on the display of the LunchBox Sync.

- 1) Check which frame you are on. Make sure it is not frame 1. If you are on frame 1,  will play from frame 1 to frame 1, making it appear as if nothing is happening. Move to a different frame and try  again.
- 2) Look at the display of the LunchBox Sync. If there is a question on the display, hit the No (red) button, then try  again.
- 3) Look at the display of the LunchBox Sync to see if Marks have been set correctly. If you are unsure, hold the  key down for at least one second, then try  again.

## Specifications

<b>Model LBS3000N</b>	<b>Model LBS3000P</b>
<b>Playback:</b> 24 or 30 fps, single step forward/backward	<b>Playback:</b> 25 fps, single step forward/backward
<b>Video Input:</b> Composite or S-Video NTSC (e.g., a camera, video tape player, or computer NTSC output device)	<b>Video Input:</b> Composite or S-Video PAL (e.g., a camera, video tape player, or computer PAL output device)
<b>Video Digitization:</b> input digitized at 720x240 active pixels (NTSC CCIR601 field)	<b>Video Digitization:</b> input digitized at 720x288 active pixels (PAL CCIR601 field)
<b>Video Output:</b> Composite or S-Video NTSC (e.g., video tape recorder, or computer NTSC input device)	<b>Video Output:</b> Composite or S-Video PAL (e.g., video tape recorder, or computer PAL input device)
<b>Video Connectors:</b> BNC or S-Video	
<b>Realtime capture:</b> 30 fps	<b>Realtime capture:</b> 25 fps
<b>Output modes:</b> single frame; playback of frames; live input feed; Flip-Flop between single frame and live input feed	
<b>Image Hold Capacity:</b> up to 60 per image	
<b>Audio Connectors:</b> 1/8" (3.5mm) stereo mini-phono plug	
<b>Audio Signal:</b> Standard audio line level (~1V P-P). 8-bit, 15KHz sample rate, PCM encoding	
<b>Video Capacity</b> , standard: 9,999 images <b>Video Capacity, MultiReel</b> option: 22 Reels of 9,999 = 219,978 images	<b>Video Capacity</b> , standard: 9,999 images <b>Video Capacity, MultiReel</b> option: 18 Reels of 9,999 = 179,982 images
<b>Audio Capacity</b> , standard: 53 minutes <b>Audio Capacity, MultiReel</b> option: 22 Reels of 53 = 1166 minutes	<b>Audio Capacity</b> , standard: 53 minutes <b>Audio Capacity, MultiReel</b> option: 18 Reels of 53 = 954 minutes
<b>Electrical Input:</b> 100-240V AC, 50/60Hz, 0.3-0.2A	
<b>Size:</b> 9 7/8"x7 3/8"x4 3/4" (25x19x12 cm.)	
<b>Weight:</b> 5 3/4 lb. (2.6 kg)	
<b>Warranty:</b> 12 months	

# Limited Warranty

**Note:** Peripheral products (e.g., video cameras, video monitors, lenses, etc.) not manufactured by Animation Toolworks are warranted separately by their manufacturers. Warranty and service information for these products accompanied them at the time of delivery.

Animation Toolworks, Inc. warrants the LunchBox Sync against defects in material or workmanship. Warranty duration for the Lunchbox Sync is one year from the date of purchase. Animation Toolworks will repair, or at our option, replace any part that becomes defective.

## Conditions:

- If you need to ship the Lunchbox Sync, please pack it in its original carton, and send it prepaid and insured, to

### *Within the US:*

Animation Toolworks, Inc.  
Production Department  
3 Hazel Street  
Hood River, OR 97031  
USA

### *Outside the US:*

ship to your local dealer

- Proof of the date of purchase is the burden of the product owner.
- This Warranty only applies for products under normal use.
- This Warranty only applies to the original purchaser. The warranty is not transferable.
- Replacement parts supplied under this Warranty carry the unexpired portion of the original Warranty.
- The liability of Animation Toolworks, Inc., if any, and purchaser's exclusive remedy for damages, shall not be greater than the actual purchase price of the product with respect to which such claim is made. In no event shall Animation Toolworks, Inc. be liable for any special, indirect, or consequential damages of any kind.

## What is not covered by this limited warranty:

- This Warranty does not apply to any part(s) of the Lunchbox Sync that have been installed, altered, repaired, or misused, or if serial numbers have been altered or removed.
- Damage due to an external electrical fault
- Damage due to severe operating conditions
- Damage due to accident
- Damage to or loss of any data, or costs of recovering such data
- Data loss that may occur during repair or replacement
- Normal cosmetic and mechanical wear

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