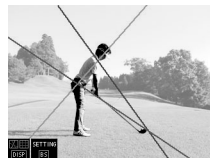


Golf Swing Analysis Guide

Using the Camera to Analyze a Golf Swing

You can use the High Speed Movie and other advanced recording features of this camera to shoot a golf swing and then insert lines into the image to analyze the swing. You can analyze your swing from the front (face on) or from behind.



From the back



From the front

Recording a Golf Swing

Your camera includes a variety of features that make it easy to record and analyze golf swings. The following five BEST SHOT scenes are available for golf swing recording.

Slow Motion Swing (Behind)
Slow Motion Swing (Front)
Self Slow Motion (Behind)
Self Slow Motion (Front)
Swing Burst

■ Golf Swing Shooting Precautions

- Use a tripod that is set up so the camera is level and about waist high.
- Compose the image so the club head remains within the frame during the entire swing.
- When shooting from the front (face on), set up the camera so it is waist high to the golfer with the golfer's body in the center of the monitor image.

★ IMPORTANT!

- Before shooting, carefully check the surrounding area to ensure that there is no danger or anyone or anything being hit by the golf club or ball.
- You can use an AV cable to connect the camera to a TV and view the image on the TV screen as you record. Real-time monitoring of the record image with an HDMI cable connection is not supported.

Slow-motion Recording of another Person's Swing from Behind (Slow Motion Swing (Behind))

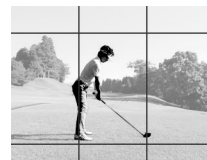
Use the procedure below to record a High Speed Movie of a person's golf swing from behind. Use of a tripod to keep the camera still is recommended.

1. In the REC mode, press [BS] (BEST SHOT).
2. Select "Slow Motion Swing (Behind)" and then press [SET].
3. Press [SET] and then use [▲] and [▼] to select the fifth control panel option from the top (High Speed Movie fps).
4. Use [◀] and [▶] to select the speed (frame rate) setting you want and then press [SET].

A fast frame rate (such as 240 fps) will result in a smaller image size.

Image Quality	Speed (frame rate)	Image Size (pixels)
HS120	120fps	640×480
HS240	240fps	512×384

5. Compose the image so the trunk of a right-handed golfer is aligned with the left vertical line or the trunk of a left-handed golfer is aligned with the right vertical line. The bottom horizontal line should be aligned with the bottom of the golfer's shoes.



6. Press [●] (Movie) to record.

Press [●] (Movie) to start and stop recording.

- The camera focuses automatically when you first start recording a movie, but focus is fixed while movie recording is in progress.

NOTE

- Precautions and the shooting procedure are the same as those for High Speed Movie recording, except that the following functions are disabled.
 - Prerecord Movie
 - YouTube movie recording

Slow-motion Recording of another Person's Swing Face On (Slow Motion Swing (Front))

Use the procedure below to record a High Speed Movie of a person's golf swing from the front (face on). Use of a tripod to keep the camera still is recommended.

1. In the REC mode, press [BS] (BEST SHOT).
2. Select "Slow Motion Swing (Front)" and then press [SET].
3. Press [SET] and then use [▲] and [▼] to select the fifth control panel option from the top (High Speed Movie fps).
4. Use [◀] and [▶] to select the speed (frame rate) setting you want and then press [SET].

A fast frame rate (such as 240 fps) will result in a smaller image size.

Image Quality	Speed (frame rate)	Image Size (pixels)
HS120	120fps	640×480
HS240	240fps	512×384

5. Compose the image so the vertical line is aligned with the golfer's trunk and the horizontal line is aligned with the bottom of the golfer's shoes.



6. Press [●] (Movie) to record.

Press [●] (Movie) to start and stop recording.

- The camera focuses automatically when you first start recording a movie, but focus is fixed while movie recording is in progress.

NOTE

- Precautions and the shooting procedure are the same as those for High Speed Movie recording, except that the following functions are disabled.
 - Prerecord Movie
 - YouTube movie recording

Slow-motion Recording of Your Swing from Behind (Self Slow Motion (Behind))

The procedure below uses a self-timer that lets you shoot a five-second High Speed Movie of your own golf swing from behind. Use of a tripod to keep the camera still is recommended.

1. In the REC mode, press [BS] (BEST SHOT).
2. Select "Self Slow Motion (Behind)" and then press [SET].
3. Press [SET] and then use [▲] and [▼] to select the fifth control panel option from the top (High Speed Movie fps).
4. Use [◀] and [▶] to select the speed (frame rate) setting you want and then press [SET].
A fast frame rate (such as 240 fps) will result in a smaller image size.
5. If you are right-handed, your trunk should be aligned with the left vertical line. If you are left-handed, your trunk should be aligned with the right vertical line. The bottom horizontal line should be aligned with the bottom of your shoes.
 - You can ask someone to assist you to make the above adjustments. If you are alone, set up the camera the best you can according to the above.



6. Press [●] (Movie) to record.

Movie recording will start approximately 10 seconds after you press [●] (Movie) and will continue for about five seconds.

- The camera's front lamp will flash while the countdown is being performed.
- The camera focuses automatically when you first start recording a movie, but focus is fixed while movie recording is in progress.
- You can interrupt an ongoing self-timer countdown by pressing [SET].
- You can change the self-time countdown duration setting to "2 sec" if you want. Note that Triple Self-timer cannot be used during this type of recording.

NOTE

- Precautions and the shooting procedure are the same as those for High Speed Movie recording, except that the following functions are disabled.
 - Prerecord Movie
 - YouTube movie recording

Slow-motion Recording of Your Swing from Face On (Self Slow Motion (Front))

The procedure below uses a self-timer that lets you shoot a five-second High Speed Movie of your own golf swing from face on. Use of a tripod to keep the camera still is recommended.

1. In the REC mode, press [BS] (BEST SHOT).
2. Select "Self Slow Motion (Front)" and then press [SET].
3. Press [SET] and then use [▲] and [▼] to select the fifth control panel option from the top (High Speed Movie fps).
4. Use [◀] and [▶] to select the speed (frame rate) setting you want and then press [SET].
A fast frame rate (such as 240 fps) will result in a smaller image size.
5. The vertical line should be aligned with your trunk and the horizontal line should be aligned with the bottom of your shoes.
 - You can ask someone to assist you to make the above adjustments. If you are alone, set up the camera the best you can according to the above.



6. Press [●] (Movie) to record.

Movie recording will start approximately 10 seconds after you press [●] (Movie) and will continue for about five seconds.

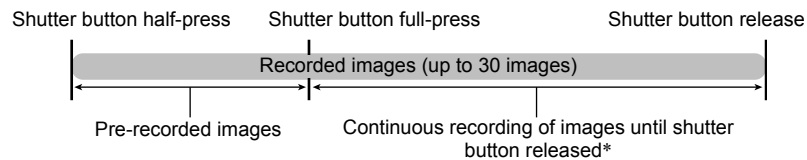
- The camera's front lamp will flash while the countdown is being performed.
- The camera focuses automatically when you first start recording a movie, but focus is fixed while movie recording is in progress.
- You can interrupt an ongoing self-timer countdown by pressing [SET].
- You can change the self-time countdown duration setting to "2 sec" if you want. Note that Triple Self-timer cannot be used during this type of recording.

NOTE

- Precautions and the shooting procedure are the same as those for High Speed Movie recording, except that the following functions are disabled.
 - Prerecord Movie
 - YouTube movie recording

Recording a Golf Swing with High Speed CS (Swing Burst)

High Speed CS provides you with a variety of options to suit exactly the type of image you are trying to record. Recording continues as long as you keep the shutter button depressed. Swing Burst uses Prerecord CS, so half-pressing the shutter button starts continual pre-recording of images to a temporary buffer. Then when you press the shutter button the rest of the way down, the camera stores what is currently in the buffer and starts continuous shutter recording of new images. Recording continues until you release the shutter button or until the maximum total number of images (buffer images plus new images) are recorded. Some of the images are of action that occurred before you full-pressed the shutter button and some are after. This helps to ensure you capture exactly the moment you want, even if your timing is slightly off. To eliminate troublesome setup requirements, Swing Burst is pre-configured with initial default settings that are optimized for shooting a total of five Prerecord CS images of a golf swing.



* You can record up to a maximum of 30 images (pre-recorded buffer images plus real-time images) for each Prerecord CS operation.

1. In the REC mode, press [BS] (BEST SHOT).

2. Select "Swing Burst" and then press [SET].

The following are the initial default Prerecord CS settings used for Swing Burst.

High Speed CS fps	Max CS shots	Prerecord CS shots
10 fps	30 (3 seconds)	5 (0.5 seconds)

- You can change the High Speed CS fps, Max CS shots, and Prerecord CS shots settings if you want.

3. Half-press the shutter button.

The camera will continually pre-record images to a temporary buffer to a buffer as long as you keep the shutter button half-pressed.

- If you release the half-pressed shutter button before pressing it the rest of the way down, all of the pre-recorded images currently in the buffer will be deleted.
- The camera will not emit a shutter sound when you half-press the shutter button while Prerecord CS is selected.

4. When you are ready to shoot, press the shutter button the rest of the way down and keep it depressed.

This will record the images in the pre-record buffer and start recording new images in real-time. Images continue to be shot as long as you keep the shutter button depressed.

5. Real-time shooting will stop when you release the shutter button or after the maximum number of shots is reached.

NOTE

- If you full press the shutter button without first half-pressing it to pre-record images, only real-time images are recorded. Whenever possible, be sure to half-press the shutter button, aim the camera, and then full-press the shutter button.

Analyzing a Swing

You can analyze a swing that was shot from the front (face on) or from behind.

To analyze a swing shot from behind

1. Press [▶] (Play) and then use [◀] and [▶] to display the movie of the swing you want to analyze.

2. Press [SET] to start playback. When playback reaches the image of the golfer addressing the ball, press [SET] again to pause playback.

- You can fast forward and fast reverse playback by holding down [◀] or [▶] during playback.
- To play the movie at high speed, start playing the movie and then press [AUTO]. Note that this operation is not supported while playback is paused.

3. Press [▲] (DISP) to display blue, red, and green red alignment lines.

4. Press [BS].

5. Use [▲], [▼], [◀], and [▶] to move the point of intersection of the blue and red lines until it is located at the ball.

6. Press [SET].

7. Use [▲], [▼], [◀], and [▶] to move the intersection of the red and green lines until it is located at the bend of the hips of the golfer.

8. Press [SET].

9. Use [▲], [▼], [◀], and [▶] to move the intersection of the blue and green lines until it is located at the golfer's neck.

10. Press [SET].

11. Press [BS].

This will start playback of the movie with all of the lines superimposed, which you can use to check the swing plane and analyze the swing.

To analyze a swing shot from the front

1. Press [▶] (Play) and then use [◀] and [▶] to display the movie of the swing you want to analyze.

2. Press [SET] to start playback. When playback reaches the image of the golfer addressing the ball, press [SET] again to pause playback.

- You can hold down [◀] or [▶] to fast forward or fast reverse to the frame you want.
- To play the movie at high speed, start playing the movie and then press [AUTO]. Note that this operation is not supported while playback is paused.

3. Press [▲] (DISP) to display vertical and horizontal lines.

4. Press [BS].

5. Use [◀] and [▶] to move the vertical blue line on the right until it is aligned with the golfer's left foot.

6. Use [▲] and [▼] to move the lower horizontal red line until it is aligned with the ball.

7. Press [SET].

8. Use [◀] and [▶] to move the vertical blue line on the left until it is aligned with the golfer's right foot.

9. Use [▲] and [▼] to move the upper horizontal red line until it is aligned with the top of the golfer's head.

This completes the adjustment procedure.

10. Press [BS].

This will start movie playback during which you can view the arc of the club head and check for any vertical or horizontal movement.

IMPORTANT!

- The camera remembers the positions of all of the lines you insert into a movie shot with this type of camera. The next time you press [▲] (DISP) while playing the movie, the lines will be at the same positions you last adjusted them to. You will be able to change the positions of the lines again, if you want.
- The camera does not remember the positions of lines you insert into a movie shot with another type of camera. The next time you press [▲] (DISP) while playing the movie, lines will be at different positions. You will be able to adjust the positions of the lines.
- The lines will also appear during playback of the movie on a TV connected to the camera with an AV cable or HDMI cable. The lines will not appear on a computer screen or on the screen of another digital camera.

Extracting a Still Image of a Swing Movie Frame (MOTION PRINT)

Use the following procedure to extract a frame from a swing movie and save it as a still image.

1. To pause movie playback, press [SET].

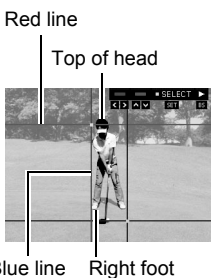
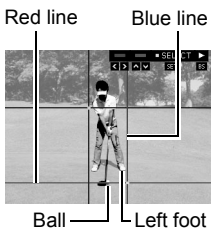
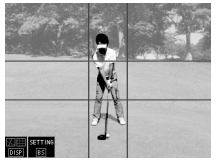
- To play back the movie at high speed, press [AUTO] during playback. Note that this operation is not supported while playback is paused.

2. Use [◀] and [▶] to scroll through the frames of the move and display the one you want.

Holding down [◀] or [▶] scrolls at high speed.

3. Press [●] (Movie).

This saves the displayed frame as a snapshot, exits movie playback, and displays the extracted image.



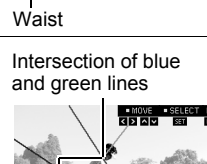
Intersection of blue and red lines



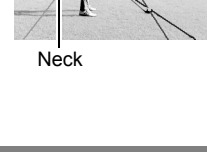
Ball



Intersection of red and green lines



Intersection of blue and green lines



Waist



Neck