

Canon Powershot SX40

Camera Layout



Canon Powershot SX40

Camera Layout

Hotshoe Cover
(The hotshoe allows you to mount things like external flashes and microphones)

Mode dial

Power On/Off Button

Quick access to flash menu

Shutter Release
(Used to take the image)

Self Timer Indicator/Focus Lamp

Zoom Controls

Flash
(Manually Raised)

Ultrasonic Image Stabilizer = Uses minute sensors to detect camera shake and correct it.

Lens

Diopter Adjustment Dial = Allows adjustment of viewfinder for varied eyesight. Turn the wheel if view is slightly blurred and it should correct.

Viewfinder/Eyepiece

Zoom Framing Assist button = Allows user to come out of full zoom to check framing and zoom back in to the same point

Hotshoe Cover

Record button for movies

Jump button = Used to skip through pictures in playback mode quickly

Shortcut Button
(Allows quick access to certain features)

Scene Mode dial

Playback Mode

Auto Focus Framing = Allows user to choose areas of the screen to be the main focus area (Also used for focus tracking)

Back Screen
(Flip out or clipped in)

Function/Set = Allows selection of main functions

Erase = Used in playback mode

Display = When taking images, can switch between eyepiece and various onscreen views. Also used as an extra function button.

Main Menu button

Back wheel allows option selection and used in manual focus



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Mode Dial

TV (Time Value) - Pick your shutter speed (you tell the camera how quickly or slowly you want to take a picture) and the camera works out the rest.

AV (Aperture Value) - Pick your Aperture/F stop number (judge how much light and focus you want to work with) and the camera will figure out the rest.

Manual - The world is your Oyster. You pick the settings for everything you want to.

C1 and C2 (Custom 1 and 2) - Like a specific set of functions? Save them to a Custom button and they will always be there when you want to use them without setting them up each time!

Program - Actually known as Program Auto Exposure, this is essentially an automatic setting but gives you a little freedom to change things like White Balance.

Automatic - Just point and shoot!

Sports Mode - Designed for fast paced shots kept in focus.

Scene Mode - Preset options for certain shooting situations. This includes: Movie Digest, Portrait, Landscape, Smart Shutter, HQ (High Quality) Burst Mode, Handheld NightScene, Low Light, Beach, Foliage, Snow, Fireworks and Stitch Assist in both directions.

Special Effects Mode - features the following options: Fisheye Effect, Miniature Effect, Toy Camera Effect, Monochrome, Super Vivid Color, Poster Effect, Color Accent and Color Swap.

We will cover each of these later!

Movie Mode - Has the option of changing between regular movie mode, iFrame movie mode (a movie format designed by Apple ideal for programs like imovie) and super slow motion (this allows two different levels of slow motion).



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Automatic Functions



Zoom Framing Assist Button

This button allows you to re-adjust your framing if you are very zoomed in and loose track of your subject.

Try This...

Zoom in as far as you can and focus on something in the distance (don't include digital zoom). You will find that any small movements cause you to lose your target that you are focusing on.

If you press and hold the Zoom Assist button down it will zoom out. Keep the button held down and align your subject with the centre box on the screen. When you are lined up, release the Zoom Assist button and your lens will zoom back in to the same distance you were at before and you have now relocated your target.

If you are in digital zoom, it will only retract as far as the digital zoom goes and will not zoom all the way back out.







Pressing the top of the back Function Wheel / Focus Tracking

The top option on the back wheel when in Automatic shooting mode enables Focus Tracking.

Focus Tracking is great for moving subjects such as children, animals and sports. It allows you to remain focused on the subject you pick without worrying about the focus switching to something larger or closer within the frame.

Try this...

Select the top button of the back function wheel  to enable focus tracking. To select your subject, make sure it is within the white centre square on the screen and then select the Focus Assist button  on the back of the camera. If you now move your camera from side to side you will see that the focus remains on that subject.

To remove focus tracking from that specific subject, press the Focus Assist  button again. If you wish to stop tracking focus all together, press the top  of the back wheel again.

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Automatic Functions



Pressing the Focus Assist Button/ Face Detect

Pressing this button when using Automatic mode without tracking focus enables Face Detect. The camera will detect any faces within the scene and ensure they are in focus for the picture. This is helpful with groups shots especially when some of the people in the shot such as children are moving a lot.



Pressing the Back Wheel Func.Set (Function/Set) Button

Pressing the Func.Set button in Automatic mode will give you access to three features you can choose extra settings from.

Aspect ratio for still images

This allows you to choose the proportions of your images so that they are appropriate for the types of prints or edits that you wish to use.

You can choose between:

- 16:9 (Widescreen)
- 3:2 (Rectangular)
- 4:3 (Classic Television size - rectangular)
- 1:1 (Square)



Still image quality

Here you can choose between different sizes for your image and the camera will tell you what print sizes you are likely to use with the different sizes.

- L (Large) - Printing up to A2 (16x20 inches)
- M1 (Medium) - Printing up to A3 (13x19 inches)
- M2 (Medium) - Printing the average size of a postcard
- S (Small) - Ideal for emails and attachments



Video aspect ratio

Here you can choose the size at which you record video.

- 1920x1080 - Full HD (high definition) movie
- 1280x720 - High definition movie
- 640x480 - Standard definition movie



For all of the Func.Set options there is a number to the right of the options you are picking. For stills, it is telling you how many images you can fit onto your memory card. This number will vary depending on the quality you pick and will only show up to 9999 images, it will stay on that number until the amount of images left goes below 9999. With video, the number is showing how many minutes of footage will fit on the memory card.

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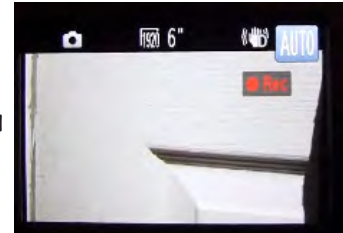
Automatic Functions



Record/Movie button

Pressing this button in Automatic mode will enable video and will start shooting a movie. Press it again to stop recording.

When you record a movie you will see the chosen aspect ratio at the top and to the right of this you will see the counter showing how long you have been filming for.



You will also see the Record icon in the top right to confirm that you are recording.

You can also take a still image whilst you are filming but bear in mind that this will interrupt your filming and you will see a freeze frame during your video. This is because the camera only records to one memory card so it can't save two items to one place at the same time. Some cameras have dual memory card slots for this precise reason but unfortunately the SX40 doesn't.



Pressing the bottom of the back function wheel / Self Timer

The self timer allows you to start a picture taking but with a delay. This is helpful when you are taking long exposures and for situations like group photos.

When you activate the self timer you can select a few different options to customise what your self timer does.

There are four different options that will show up and we will cover them all here:

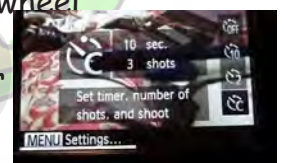
Timer off allows you to disable self timer if you have been using it and have finished with it.

You can have a self timer with 10 seconds delay which is handy when you want to get into a group photo as it gives you a lot of time to get from the camera to the rest of the picture.

Self timer with 2 seconds delay is handy when you want to take a shot, particularly long exposures and you don't want to move the camera by pressing the shutter. This gives you enough time to start the picture and let the camera rest steady before the picture starts to take.

Custom Self timer lets you be more specific. To change your settings you need to select the Menu button to open up the extra options. When the extra options menu opens, you can switch between changing seconds and the amount of shots by pressing up and down on the back function wheel

To change the amount of seconds or shots you can press either side of the back function wheel to make the amount go up or down.



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Sports Mode



This isn't honestly the best mode I have seen in terms of sports photography. Whilst the camera keeps a fairly good focus, it is far too slow in taking images and most sports actions will be over by the time the camera takes the image. I would suggest looking at the HQ (High Quality) Burst Mode as an alternative to this option which I will cover later in the booklet.

But besides this, lets run through the sports mode anyway:



Pressing the top of the back function wheel/Exposure

By pressing the top of the back wheel in Sports mode you can edit the exposure of your image. Perhaps in the sports venue you are shooting in, you may find that the lighting is coming up too bright, or vice versa, the lighting is too dark and the sports mode isn't filtering the settings well. You can use the back wheel exposure option to tell the camera to make your image darker or lighter.

The exposure bar will show up at the bottom of the screen when you press the top of the function wheel.

To make your image lighter (increase your exposure), turn the wheel to the right and towards the +1 and +2 measurements until the exposure looks right.



Alternatively, for a darker image (decrease your exposure) turn the wheel to the left and towards the -1 and -2 options.



Pressing the Back Wheel Func.Set (Function/Set) Button

Pressing the centre Func.Set button on the back wheel in Sports mode brings up some extra menu options:

Single Shot/Continuous Shooting AF (Auto Focus)

You can decide whether you want just a single shot (which is the icon shown as a single square). This will use the focus you have selected and just take the one shot when you press the shutter. Or you can select Continuous Shooting with auto focus which will take as many shots as possible whilst you hold down the shutter button, as well as auto focusing throughout to maintain focus on the main subject. This can be quite a slow process and I often find that it only just captures the action in most cases.



The other three options of Stills Aspect Ratio, Image Size and Video Aspect Ratio are all explained previously in the Automatic Functions section of this booklet.




No Flash Icon

The No Flash icon will show in sports mode as you cannot use Flash in this mode.

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Scene Mode



This mode is pretty intense so whack your seatbelt on and get ready! To access the different scene modes, you will need to press the center Function.Set  button on the back wheel and scroll through the menu there so this is how we will change between each different mode.

Movie Digest

Switching to movie digest mode takes a short clip of video every time you take a picture. It then stitches those video clips into one movie clip which you can watch back on the camera. It's a nice mode to use if you are taking a day trip and are just taking most of your pictures on automatic. If you switch to Movie Digest, you get a days summary of events in one video on top!




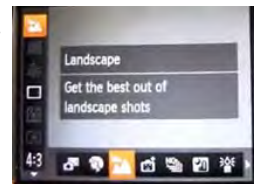
Portrait Mode

Portrait mode will soften colours and tones to compliment the skin. This will help when taking pictures of people.




Landscape Mode

This mode enhances colours commonly found in landscapes such as greens, blues and reds. It is a good idea to set your images to 16:9 as you get a wide shot so you can get the most of the landscape in. To set your image to 16:9, press the Function.Set  button and scroll down to the Still Image Aspect Ratio and select your desired size.



Landscape allows a good depth of field so that the focus reaches the whole scene.

Smart Shutter

In this mode, the camera will pick up certain aspects of the scene and judge when to take an image. Pressing the Display  button allows you to pick what options you wish to set the Smart Shutter to.

The first option is the Smile option and will pick up when the detected face smiles. There is no need to press the shutter for this.

The second option is wink detection. You must press the shutter button to activate this and as soon as you wink in front of the camera a timer will count down and take a picture.



Thirdly, you can use the Face Self-Timer which will activate once a new face enters a scene. So you can get a group photo ready, press the shutter and then enter the shot yourself and the timer will start to countdown for the shot after it recognises a new face.

You can choose how many shots are taken in each of these smart shutter modes by pressing the top and bottom of the back function wheel. You can choose up to 10 shots which can be handy with group photos when some shots may include blinks or movement.

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Scene Mode



HQ (High Quality) Burst Mode

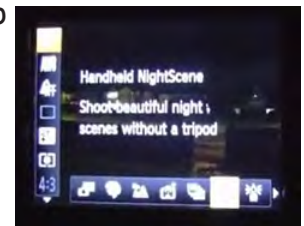
I actually prefer this mode over Sports mode so if you want to capture an action step by step with a fast shutter speed, check this option out! When you use this option you can set your focus by half pressing the shutter button and then fully press it when you are ready to start taking pictures. The camera will take 10 shots in a second, but it will only actually give you 8 in total after processing. Whilst you are taking the pictures, you won't see anything on the screen. These shots will then show up as a 'set' when you go to play back through your memory card.



To view the whole set as individual pictures, press the Func.Set button  when you have the set selected and press right or left on the back wheel to scroll through the images. You can press Func.Set again to exit the group playback.

Night Mode (Handheld Night Scene)

This mode takes several shots at once and compiles them together to help with hand shake at night time. To take a shot in a dark location, you usually need a longer shutter speed which can result in blur. By taking several shots and putting them together, the camera can try to remove that blur by lining up parts of the images that stay consistent in relation to each other within the shot.



If you have moving objects in your scene, they will show up as ghostly images where the four shots are compiled together. This can be quite a cool motion effect but obviously not desirable for every single night shot you take.

Low Light Mode

This is ideal for shooting indoors and allows more light into the shot to deal with darker rooms. It attempts to correct camera shake and blur in such shooting conditions.

Beach Mode

This mode tackles bright light and reflections that are commonly experienced at beaches when the bright sun bounces off of the light coloured sand, skin and sea.

Foliage Mode

This mode is designed to bring out colour and detail. It will bring out vivid colours so that the looks of leaves and petals etc will be far more enhanced than just shooting in automatic.



Snow Mode

This mode allows you to maintain natural looking shots of people within a bright environment such as snow which is often reflective and gives off a lot of light.

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Scene Mode



Stitch Assist

This mode allows the user to take panoramic shots in either the left or the right direction depending on which direction you chose to shoot in. It saves each set of pictures with a number system and uses a different prefix (Image Name) for them to your normal images so it's easy to find them on your memory card/computer.

The major downside to this function is that the images are not stitched together on the camera like most other cameras with a panorama function. The disk that comes with the SX40 does include software to stitch your panorama images together.



The arrow on the settings icon will show you which direction you are going to take your panorama in. In the image shown, it is selected to take images from left to right.

Once you have chosen your direction, take your first shot and after processing, the camera will show you the edge of the last picture taken. You can then line up features of that edge and take the next picture along. You can keep taking pictures until you are satisfied with your selection. One piece of advice is to overlap your images, don't try to line them up perfectly as the software will have more features to work with and to line up if there is an overlap.

To finish taking the panorama, either press Func.Set  or the playback  button in order to stop the panorama process.



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Fun Effects



For all fun effects you can switch between them by pressing the Func.Set button and using the left and right sides of the back wheel  to select different effects.



Fisheye Effect

This effect warps the image as if you were looking through a fish eye or you can imagine it as looking out from inside a fish bowl. The edges curve in and distort the image so that the centre of the image is stretched. This is a fun effect, especially with human faces!




In this mode, you can press the display button  to change the strength of the distortion.


Miniature Effect

Miniature Effect blurs the top and bottom of the image (or the left and right sides depending on your settings) to create a feeling that the subjects in your image are much smaller than they really are.


This feature works well if you are up high and taking a shot of a city or buildings down below, the blur gives a sense of the scenery looking like a model set.



Once you have this mode selected, you can change what area of the image stays in focus by moving the focus selection up and down the screen with the top and bottom of the back function wheel. 

If you want the focus range to be larger, you can toggle this with the zoom lever at the top front of the camera. 

If you wish to switch between a focus area that is horizontal across the picture, to one that is vertical, you can press the Func.Set button  on the back wheel and the camera will alter the direction of the focus range.

Additionally, pressing the menu button  in this mode gives you the option of changing the speed of any movie taken in this mode. It gives you the option of 5x, 10x or 20x the normal speed of filming.



To start filming, press the record button  on the back of the camera and you will notice that it seems quite slow, this is because it is recording at a faster rate and can't preview that speed back as you film.

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Fun Effects



Toy Camera Effect


This effect adds vignetting (darker corners) and blur to the corners of your image and changes the overall colour so that it looks like the pictures are being taken through a toy camera.

You can change the colour temperature of the image between warm, cool and standard by pressing the display  button. You can exit this menu by pressing Display again.



Monochrome (Black and White, Sepia and Blue)

These options allow you to apply a single colour effect to your image.

You can switch between the different colour options by pressing the Display  button and using the back wheel to select between the three different colour options.



Super Vivid

This effect enhances all of the colours within your image and makes them a lot brighter and vibrant. This is a personal favourite of mine and I have found that the Vivid colour option brings out landscapes and skies really well.



Poster Effect

This option makes the image look like an old fashioned hand drawn poster. You will notice that shadows look more pronounced and blocked together in one chunk of colour and the same with highlights too.

Some of the best results I have had with this mode is with scenery and buildings as the sharper edges are more defined and large chunks of colour are grouped together.



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Fun Effects



Color Accent

Color Accent will allow you to single out one colour within your shot and will turn everything else in the shot to black and white.

To select the colour you would like to keep, press the display button and make sure that the colour fills the white box in the centre of the screen. Zoom in so that the colour completely fills the box and you are more guaranteed to select the colour you desire.



When you have the colour in the box, press the left side of the back wheel and you will see the box at the bottom of the screen turn into that colour. The camera will now only allow that colour in the picture and turn everything else to black and white.



The screen will flash between the original image and the black and white version to show what colours will be kept and to allow you to change to a different colour selection if you decide that the one you have chosen isn't ideal.

Color Swap

Color swap allows you to change one selected colour into another. Pressing display will activate your options for swapping colours.



When selecting a colour to change, the colour in the box on the left, will be changed into the colour in the box on the right so make sure you get them the right way around. To select your colour, make sure that the colour you want to change fills the white box in the centre of the screen. When it is filled press the corresponding button on the back wheel, left to select the colour on the left (colour to be changed) and right to select the colour on the right (colour you are changing it into).



With your two colours selected, the screen will flash in the area that has been edited to show which colour is being affected by the colour replacement.

THIS INFORMATION IS FOR BOTH THE COLOR ACCENT AND COLOR SWAP FUNCTION:

You can select how specific the colour range is by pressing up and down on the back wheel to alter this option. If you press the top of the back wheel the number on the far bottom left of the screen will go through 0, +1, +2, +3, +4, +5. Each of these numbers gives you a larger colour range based on your selection so a selection of yellow would start to pick up other colours similar to yellow such as greens and light browns.

Vice versa, pressing the bottom of the back wheel ranges from 0 to -5 and gives a much more specific range stopping too many other colours from being selected as well as your chosen colour.




Once you're happy with your selection, press Display to exit the colour selection or select a new colour with the same methods stated above.



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Movie Mode




There are three different movie modes on the SX40. To change between them press the Func.Set button  and use the left and right of the back wheel to switch between the modes.

To begin filming in any of the film modes, press the record button.  Press it again to stop filming.

Standard Movie Mode

This movie mode lets you record films with automatic settings. You cannot edit the settings when filming which can be a bit annoying when it's too dark to film what you'd like to film.



There are a couple of aspects you can edit in this filming mode. You can edit these by pressing the Func.Set button  and pressing the top or bottom of the back wheel to switch between the extra options.

You can change the White Balance to make sure that the colour temperature of the room you are filming in is correct. This can also help you get more light in the scene which I will cover in the gig photography section. I will also cover White Balance at a later date.

The next option down allows you to put colour effects onto your film. You can shoot with Vivid, Neutral, Sepia, Black and White, Positive Film, Lighter Skin Tones, Darker Skin Tones, Vivid Blue and Vivid Green.

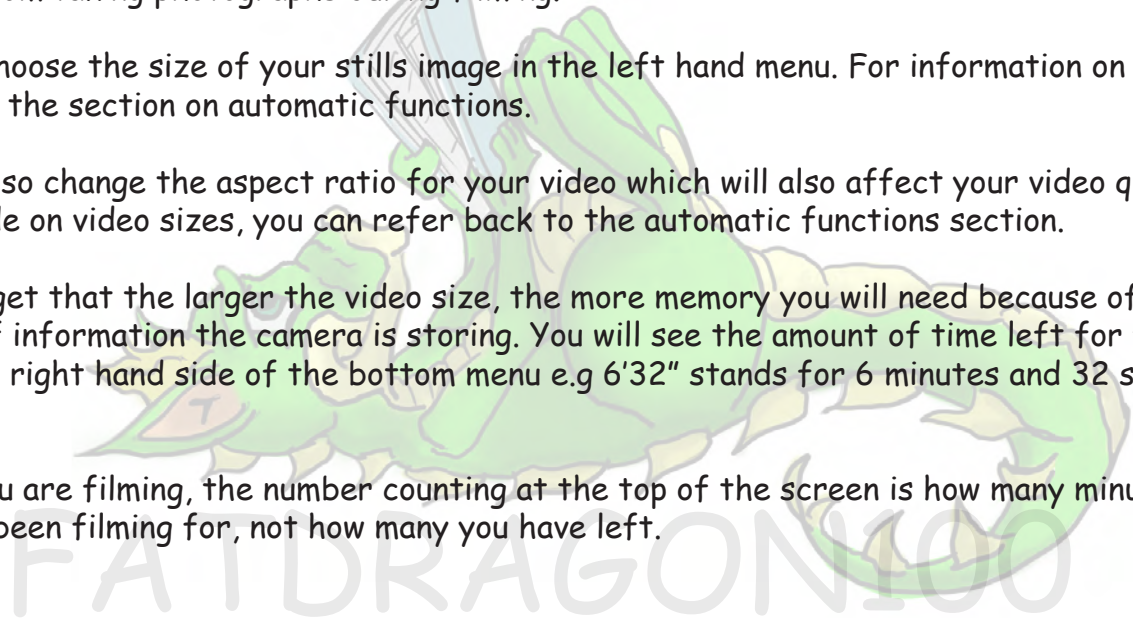
You can take a picture during filming which will actually pause the film. When you watch the movie back you will see the movie freeze and hear the noise of a picture being taken and then the film will continue. There is no way to remove this so if you dislike this function, refrain from taking photographs during filming.

You can choose the size of your stills image in the left hand menu. For information on sizes, check out the section on automatic functions.

You can also change the aspect ratio for your video which will also affect your video quality. For a guide on video sizes, you can refer back to the automatic functions section.

Don't forget that the larger the video size, the more memory you will need because of the amount of information the camera is storing. You will see the amount of time left for filming on the right hand side of the bottom menu e.g 6'32" stands for 6 minutes and 32 seconds.

Whilst you are filming, the number counting at the top of the screen is how many minutes you have been filming for, not how many you have left.



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Movie Mode



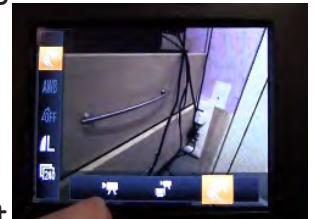
iFrame Movie Mode

This movie format is recommended by Apple and is possible to edit with the software that comes with the SX40. It is also ideal for programs run by Apple such as iMovie. The size of the iFrame movie is restricted to 1280 x 720 and shoots at 30 frames per second.



Super Slow Motion Movie Mode

You can't change the size of the movies in this mode. Because of the high frame rates that the camera shoots during slow motion the camera can't boost the quality any more as it is already dealing with a lot of extra information. No sound is recorded in this mode.



Super slow motion can shoot either 240 frames per second or 120 frames per second. When you imagine that the camera usually shoots at either 24 or 30 frames per second, then the first level of slow motion shooting at 120 frames per second is at least 4 times faster than the original shooting mode. The camera is therefore taking 4 times the amount of frames in one second than it normally does, so it is understandable that the quality of the video is compromised somewhat.

To select the level of slow motion you can press the Func.Set button and use the top and bottom options of the back wheel to select your frames per second. It is the option at the bottom of the menu and you will see the frames per second written in the icon that shows up along the bottom of the screen.



The size of the movie will get smaller the more frames you used as I have explained previously about the demand the extra frames put on the camera.

Shooting at 120 frames per second limits the video size to 640 x 480 and will give roughly 2 minutes of footage.

Shooting at 240 frames per second limits the video size to 320 x 240 and will give roughly 4 minutes of footage.

When you start recording the camera will record for about 30 seconds so make sure you fit your slow motion action within this time frame. You can stop the filming before 30 seconds by pressing the record button again.



Because the camera is taking so many frames so quickly, it's difficult for the camera to let a lot of light into each frame and you may find that the video looks as if it is flickering. This is because of the lack of light so if this happens try to improve the lighting in your shooting situation. If this isn't possible and you are shooting at 240 frames per second, it is advisable to change to 120 frames per second so you can get more light into the video.

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Manual Focus



Manual focus is very handy for when you are photographing something and the camera is struggling to focus on the area of the image that you'd like to keep in focus. Sometimes you like to keep the focus on the foreground and the camera keeps looking at the background, or perhaps you want to focus on something fairly small in the image and the camera keeps focusing on larger items. Using manual focus allows you to pick which area of the picture stays in focus.

To activate Manual Focus, you press the left hand side of the back function wheel.





Not all shooting modes allow the use of Manual Focus. If you try to activate it and you cannot select the MF icon, then that mode will not allow manual focus.



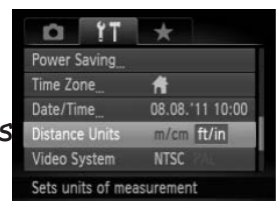
One good aspect to this mode is the Focus Assist which opens a larger focus box on the screen when you select Manual Focus. This expands the center of the image so that you can see your focus more accurately to ensure that the object you want in focus is easier to see.




If this box doesn't open for you when you start to use Manual Focus, go into your main Menu  and select MF Point Zoom and make sure that it is enabled.

To change your focus, you turn the back function wheel on the camera.  Turning to the right focuses further away from you and turning to the left focus closer. You can see the focus range of the camera measured on the right hand side of the screen on a scale. The top of the scale, with a symbol that looks like a sideways number 8 is the symbol for infinity so the camera will focus as far as possible. The bottom of the scale will show how close to the camera you can focus. The scale can be in feet and inches or in meters and centimeters.

To change the units that your manual focus works with, you can go to the second tab of your main menu and change the option called Distance Units by pressing the left and right of the back wheel.



Once you have turned your back wheel to edit your focus, you can half press the shutter  button and the focus assist box will disappear and you can frame your shot as you desire. When you focus with Auto Focus, you have to keep the item you want in focus in the center of the image. Manual Focus allows you to set the focus for the whole image so you may find that you had moved the framing around whilst focusing on your subject. Moving your camera after your Manual Focus is set will not change the focus, it will keep the focus you selected until you change it again. You can fully press the shutter to take the image.

There is a MF icon at the top right of the screen to show you that you are in Manual Focus and it has a green arrow either side of it. If you have reached the end of the camera's focal range, the arrow will turn grey to show that the back wheel cannot be turned in that direction any more.

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Understanding Manual Basics

In this section we are going to look into understanding our Aperture, ISO and Shutter Speed. All three aspects of photography work with the light in your image in different ways and they all work together to help us get a good balance of light and technique in our photography. It's important to understand the relationship between the three aspects in order to understand how they will affect your picture.

Aperture

Aperture is a small opening between the lens and the camera sensor that controls how much light gets into your image/sensor. It also effects how much background blur is caused however with the SX40 and the way it is built, the background blur is not really affected like it would be with an SLR camera. One of the easiest ways to understand Aperture is to compare it to the iris in a human eye.

The picture to the right shows you what the aperture in a camera looks like. The more the slats open, the more light reaches the camera.

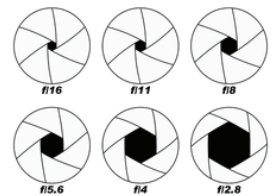
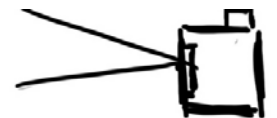


Image from www.basic-photography-tips.com

To understand how the aperture can affect the blur and light in photographs, let's do an exercise:

Close your eyes and face towards a light. Open your eyes wide and notice how much light floods your vision. Repeat this again but this time only open your eyes a small amount to a squint. You should only receive a small amount of light in your vision in comparison to when your eyes were wide - makes sense right? Essentially the aperture is doing the same thing as your eyelids, constricting the amount of light that enters your shot.

In this comparison, the light is constricted and the aperture hole is small, like f16 in the example above.



In this comparison, the light floods in and the aperture hole is large, like f5.6 in the example above.



So thinking about blur also, if you repeated the exercise above look at how much you are able to focus. With wide eyes, it makes everything blurry and more difficult to focus on. With squinted eyes, everything is easier to focus on.

Aperture is the same:

With a wide aperture (low number) there is more light in the image and more background blur.

With a small aperture (high number) there is less light in the image and less background blur.

One way to remember the numbering system easier is to think that a low number is low coverage across the sensor and therefore more light gets in, vice versa, a high number has more coverage across the sensor and less light gets in.