

Print Set (DPOF)

Supplement to Mastering the Nikon D7000

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In-Camera Printing

At first I thought it odd that Nikon chose to put image printing functions in the **Playback Menu**. Then I thought about it and realized that printing is a *permanent* form of image playback. You play (print) the images to your printer and then view them without camera or computer. What a concept!

There are two ways to print images from your camera without using a computer. One is by using Digital Print Order Format (DPOF) to create a “print order” on a memory card. This function is called **Print set (DPOF)**. We’ll call this method “DPOF Printing” in the upcoming section.

The second way to print from your camera is to plug in a USB cable and print directly to a PictBridge-compatible printer. Let’s call this “PictBridge Printing” in an upcoming section.

We’ll be considering both ways to print pictures without a computer in the next two sections.

In-Camera Printing – Not for RAW Images

If you are a RAW shooter, the in-camera printing process won’t benefit you—unless you use the Retouch Menu to create JPEGs on your memory card. Not all printers can handle printing from RAW files, so Nikon chose to limit PictBridge and DPOF printing to JPEG files in the D7000.

DPOF Printing

Print set (DPOF), in the **Playback Menu**, is designed to create a print order on your camera’s memory card. Later, this print order can be used to print directly from the memory card by inserting it into a DPOF-compatible printer. You can print to any device that supports DPOF. All you have to do is insert the memory card, select “print” from the printer, and wait for your pictures to print out. This is not a difficult process to use, and it is quite fun and satisfying.

When using DPOF you do not have to connect the camera to anything. All you have to do is insert a memory card that contains a digital print order on it and the printer will detect the order and offer to fill it. Each DPOF printer’s method of doing this varies, of course. However, the entire process is automated so that a new user won’t have to do much more than select the number of prints and whether or not a border is required.

These seven steps will allow you to create and print a digital print order on your DPOF-compatible printer:

1. Press the **Menu button** and select the first menu on the list, the **Playback Menu** (see FIG 10A).

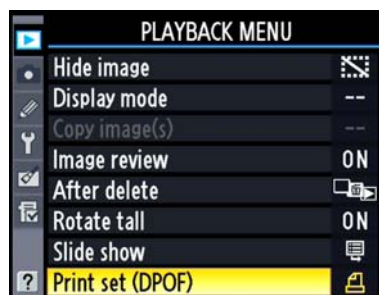


FIG 10A - Print set (DPOF)

2. Select **Print set (DPOF)** and scroll to the right. You’ll see the screen presented in FIG 10B, image 1.

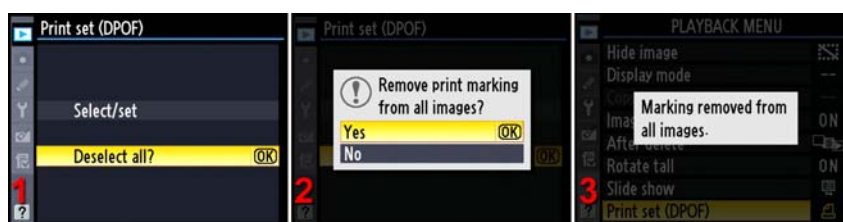


FIG 10B – Removing the marking from all images

3. If you don't have any existing digital print orders on the memory card, please skip this step and go directly to step 4. Otherwise, if you have an existing print order that you no longer want, you'll need to choose **Deselect all?** and scroll to the right (see FIG 10B). The next screen will ask you, *Remove print marking from all images? Yes/No*. Choose **Yes** and press the **OK button**. If there are previously marked images, a message that says, *Markings removed from all images* will flash on the screen, and then the **Playback Menu** will reappear. Otherwise, no message will appear and the camera will just return to the menu.
4. Since you're going to create a new print order and save it to the memory card, you'll choose **Select/set** from the **Print set (DPOF)** screen and then scroll to the right (see FIG 10C, image 1).



FIG 10C – Choosing images and print amounts

5. Now you'll see the **Select/set** thumbnail list with all the JPEG images on your memory card (see FIG 10C, image 2). You'll need to select the images you want to print with the **Multi Selector**. Once you have an image highlighted, hold down the checked **Thumbnail/playback zoom in button** (just below the **ISO** label) and scroll up with the **Multi Selector**. Each upward or downward press of the **Multi Selector** changes the number of prints ordered for that particular image (see FIG 10C, image 2, red arrow). You can select from 1 to 99 prints for each image you highlight. I chose three prints for the image with the red arrow. Each thumbnail you choose will be marked with a number-of-prints value and a tiny printer icon. Once you've scrolled through your images—highlighting and incrementing print amounts—just press the **OK button**.
6. The next screen allows you to add data or date imprints to each of the images in the print order (see FIG 10C, image 3). You can add as follows:
 - **Data imprint** – This prints the shutter speed and aperture on each print in the order.
 - **Imprint date** – This prints a date on each print in the order.

You put checkmarks in the tiny boxes next to these selections by highlighting the line and scrolling right on **Set**. When you have completed your choices, scroll up to **Done** and press the **OK button** (see FIG 10C, image 3).

7. You'll be presented with a screen telling you that the print order is complete, like you see in FIG 10C, image 4.

At this point, your print order has been saved to the memory card. You'll need to remove it from the camera and insert it into a DPOF-compatible printer's memory card slot. The printer will detect the digital print order on the card and then offer printing choices for the images you selected in the print order.

Single DPOF Print Order Only

I have not found a way to create more than one digital print order on a single memory card. An existing order can be edited with the Print set (DPOF) > Select/set function, or removed with the Print set (DPOF) > Deselect all? function. If you look at a memory card containing a digital print order on your computer, you'll see a folder named MISC. It will have a file in it named AUTPRINT.MRK. That file is the digital print order.

PictBridge Printing

PictBridge allows you to connect your camera directly to a compatible printer and print any or all of the images on the card, without having to involve a computer in any way. You get to the PictBridge menu by pressing either the **OK** or **Menu button** when an image is showing in a PictBridge screen (see FIG 11B).

Your D7000 comes with a special USB cable, which has a very small end that fits into the camera—see FIG 11A—and a normal, big USB end that plugs into the compatible printer's PictBridge port. This is the same cable that you use to transfer images from the camera to a computer.

In FIG 11A you can see a picture of the included-in-the-box USB cable and where to plug it into your camera. Open the rubber flap on the side of the camera that your left hand normally covers and find the small USB port—the small end of the cable plugs in there. It will only fit in one direction, so don't force it. The small USB port is on the bottom, where the red arrow is pointing in FIG 11A.



FIG 11A – Connecting the USB cable to the camera

We'll examine each of the PictBridge printing types in the next couple of sections.

Single Image PictBridge Printing

Let's just jump right in to printing pictures directly from your camera to a PictBridge-compatible printer. All you have to do is go out and shoot some images, and then connect your camera to the printer with the included-in-the-box USB cable.

First, turn on the printer, and then plug in the USB cable. Nikon says to turn the D7000 off before you plug the USB cable into the camera. When you first turn the camera on, you'll see a series of two screens (see FIG 11B).



FIG 11B - Initial D7000 PictBridge screens

As shown in FIG 11B, image 1, the first screen you'll see is the PictBridge logo, which looks like a couple of stretched water droplets. Next you'll be presented with the PictBridge playback screen and a JPEG image from your memory card. You'll notice in FIG 11B, image 2, that the PictBridge playback screen has the droplet logo in the top left corner, letting you know that the screen is not a normal playback screen.

Now we'll consider how to print a picture, or pictures, once you've gotten to this point. In FIG 11C, you'll find a series of screens used to select pictures and send them to the printer for printing.

Note: You won't be able to see the PictBridge screens unless your camera is plugged into a PictBridge printer with the included USB cable (see FIG 11A).

Here are the eleven steps you'll use to print a single picture:

1. Turn your camera off.
2. Turn on the PictBridge printer and connect the transfer USB cable to the printer. Then connect the small end of the USB cable to the camera.
3. Turn the camera on.



FIG 11C - Press OK to enter Setup

4. You'll be presented with the **PictBridge** logo screen and the first image found on your memory card in PictBridge playback view (see FIG 11C, images 1 and 2). Scroll through your pictures with the **Multi Selector** until you find an image you'd like to print.
5. Press the **OK button** and you'll be taken to the printing **Setup** screen (see FIG 11C, image 3).

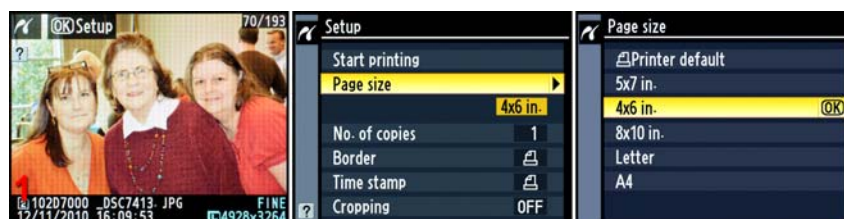


FIG 11D - Select a page size for the print

6. Select **Page size** from the list, scroll to the right, and select the picture printing paper size for your printer. I am printing with a 4x6 printer, as shown in FIG 11D, image 3—yours may have other sizes available too.

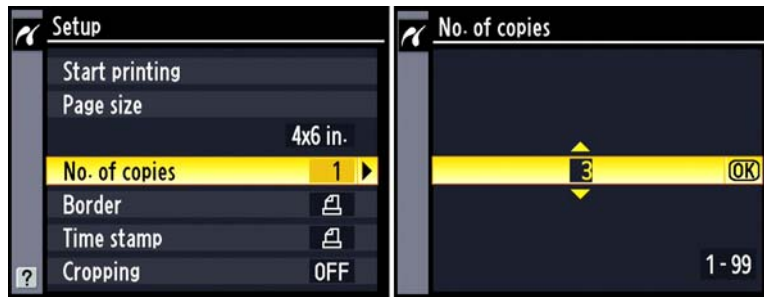


FIG 11E - Select number of copies for the print

7. Now, select the number of copies you'd like print (see FIG 11E). You can select between 1 and 99 prints. I selected 3 prints.



FIG 11F - Select border or borderless for the print

8. Next, make a choice between **Print with border** and **No border** (see FIG 11F). If your printer does not support printing with borders, this will be grayed out. You can also select **Printer default** if you want to leave it up to the printer to decide.



FIG 11G - Select time stamp for the print

9. Select whether you want a time stamp on the bottom right corner of the picture. Select **Print time stamp** or **No time stamp** (see FIG 11G). You can select **Printer default** if you want the printer to decide.



FIG 11H - Select cropping for the print

10. Finally, you must choose whether or not you want to crop the print:
 - **Crop** – If you select **Crop**, you'll use the **Thumbnail/playback zoom out button** (looks like a magnifying glass with a checkerboard) to select the area of the crop. You can move the yellow crop frame around using the **Multi Selector**. If you need to zoom back out you'll use the **Playback zoom in button**, which looks like a magnifying glass alone (see FIG 11H, image 4).
 - **No Crop** – If you don't want to crop, just select **No cropping**, and press the **OK button**.
11. Once you've made all your selections, scroll back up to the **Start printing** line and press the **OK button** (see FIG 11H, image 5). Your printer will now print the single picture. FIG 11H, image 6, shows the screen you'll see while the image is flowing to the printer, which shows the **No. of copies** being printed. Immediately thereafter the printing starts.

Multiple Image PictBridge Printing

The previous section discussed how to select a *single image* and print one or more copies of it by pressing the **OK button**.

By pressing the **Menu button** instead of the **OK button**—when an image is displayed on the PictBridge playback screen—you'll see alternate PictBridge methods, which allow printing *multiple images*. These include:

- **Print select**
- **Select date**
- **Print (DPOF)**
- **Index print**

Let's discuss each of them in detail.

Note: Once again, you won't be able to see the PictBridge screens unless your camera is plugged into a PictBridge printer with the included USB cable.

First, let's examine how to choose a series of images for multi-image printing.

Print select

The **Print select** method is for when you want to print more than one image at a time. You can choose from many images, set the number of prints for each, and select borders and time stamp information.

Here are the nine steps used to configure **Print select**:

1. Turn your camera off.
2. Turn on the PictBridge printer and connect the transfer USB cable to the printer. Then connect the small end of the USB cable to the camera.
3. Turn the camera on.



FIG 12A - Print select printing screens

4. As shown in FIG 12A, you'll see a JPEG image after the **PictBridge** logo is displayed. Since we're interested in printing more than one picture, we will **not** press the **OK (Setup)** button at this time, as the PictBridge playback screen suggests. Instead, we'll press the **Menu** button. This will display the **PictBridge** printing menu, with **Print select** as the top choice. Choose **Print select** and scroll to the right (see FIG 12B).



FIG 12B - Print select screens

5. The **Print select** screen will now appear (see FIG 12B, image 2). It contains the JPEG files available on your camera's memory card. Scroll around with the **Multi Selector** to select images for printing:
- Highlight an image.
 - Hold down the **Protect** button (just below the **Menu** button, with the key logo) and scroll up or down with the **Multi Selector** to change the number of prints for the selected image—up to 99 prints per image. Notice in FIG 12B, image 2, how selected thumbnails have a number, like "02", and a small printer symbol in the upper right corner (see FIG 12B, image 2, red arrow)? I have chosen to print 2 pictures for this particular image.
 - Repeat steps *a* and *b* for each additional image you want to print.
 - Press the **OK** button when all images are prepared.

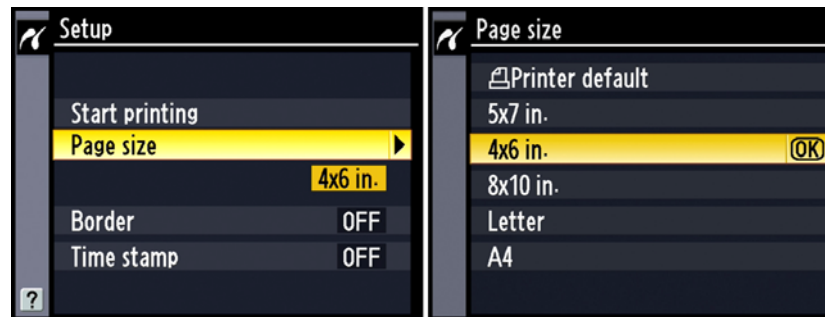


FIG 12C - Printing setup screen - Select page size

6. The camera will now switch to the printing **Setup** screen. You'll need to choose a **Page size** that fits your desired image (see FIG 12C). Once you have made your selection, press the **OK** button to return to the **Setup** screen.

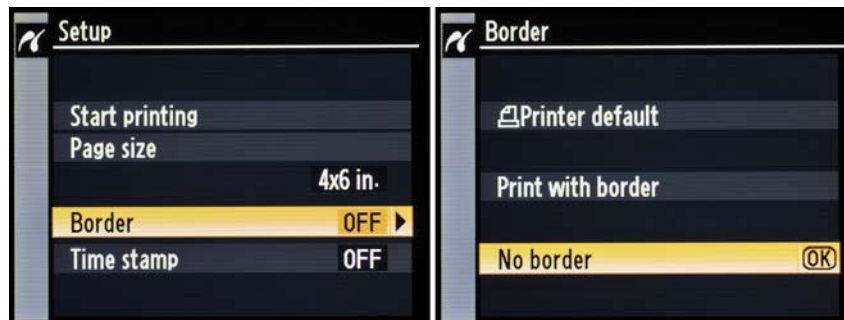


FIG 12D - Printing setup screen - Choose border style

7. Do you want a border on this image? If so, select **Border** and scroll to the right (see FIG 12D). Select **Print with border** or **No border**, or let the printer decide with **Printer default**. Press the **OK button** to return to the **Setup** screen.



FIG 12E – Printing setup screen – Choose time stamp

8. Now choose a **Time stamp**, if you want one. This will print the date on the lower right corner of the picture (see FIG 12E). Select from **Print time stamp**, **No time stamp**, or **Printer default**. Press the **OK button** to return to the print **Setup** screen.
9. To print the pictures, scroll up to **Start printing** and press the **OK button**. Your printer will now print a variable number of copies of each picture according to your selections.

Now, let's turn our attention to the steps for using PictBridge to print an existing digital print order created with **Print set (DPOF)**. Nikon has included a form of DPOF printing within the **PictBridge** printing menus. It's called **Print (DPOF)**, and shouldn't be confused with the **Print set (DPOF)** function found on the **Playback Menu**.

The major difference between the two is that **Print (DPOF)** is used to print an already existing print order created by **Print set (DPOF)**. In other words, **Print set (DPOF)** creates a print order that can be printed with PictBridge's **Print (DPOF)** function via USB cable, or by plugging a memory card directly into a DPOF-compatible printer, not involving Pictbridge in any way.

Select Date

The **Select date** function allows you to select a series of images to print based on the date of the image. All images from each date are grouped together and presented to you in a format that lets you choose one or more dates.

Here are the nine steps used to configure **Print select**:

1. Turn your camera off.
2. Turn on the PictBridge printer and connect the transfer USB cable to the printer. Then connect the small end of the USB cable to the camera.
3. Turn the camera on.



FIG 13A – Opening screens for Select date

4. As shown in FIG 13A, you'll see a JPEG image after the **PictBridge** logo is displayed. Since we're interested in printing more than one picture, we will **not** press the **OK (Setup)** button at this time, as the Pictbridge playback screen suggests. Instead, we'll press the **Menu** button. This will display the **PictBridge** printing menu, with **Select date** as the second choice from the top. Choose **Print (DPOF)** and scroll to the right. Choose **Print (DPOF)** and scroll to the right.



FIG 13B – Selecting a date or dates for printing

5. Choose **Select date** from the PicBridge screen and scroll to the right (see FIG 13B, image 1). Select one or more date by placing a check mark next to it. You place a check mark by highlighting a line and scrolling to the right toward set (see FIG 13B, image 2). This toggles a check mark into the box. Scroll to the right again and you'll be at the **Start printing** screen (see FIG 13B, image 3).



FIG 13C – Printing setup screen – Select page size

6. From the **Start printing (Setup)** screen you'll need to choose a **Page size** that fits your desired image (see FIG 13C). Once you have made your selection, press the **OK** button to return to the **Setup** screen.

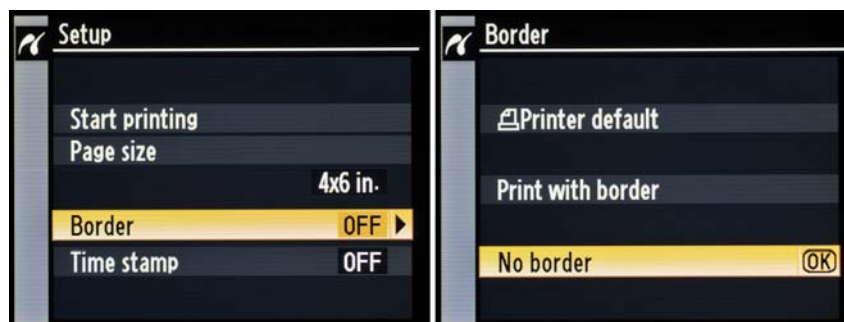


FIG 13D – Printing setup screen – Choose border style

7. Do you want a border on this image? If so, select **Border** and scroll to the right (see FIG 13D). Select **Print with border** or **No border**, or let the printer decide with **Printer default**. Press the **OK** button to return to the **Setup** screen.



FIG 13E – Printing setup screen – Choose time stamp

8. Now choose a **Time stamp**, if you want one. This will print the date on the lower right corner of the picture (see FIG 13E). Select from **Print time stamp**, **No time stamp**, or **Printer default**. Press the **OK button** to return to the print **Setup** screen.
9. To print the pictures, scroll up to **Start printing** and press the **OK button**. Your printer will now print a variable number of copies of each picture according to your selections.

Print (DPOF)

If you have created a digital print order and saved it to your camera's memory card, **Print (DPOF)** will give you the choice of printing the existing print order. If you have not already created a print order, this method acts like the **Print select** function we discussed previously.

Here are the nine steps to print an existing print order from your memory card:

1. Turn your camera off.
2. Turn on the PictBridge printer and connect the transfer USB cable to the printer. Then connect the small end of the USB cable to the camera.
3. Turn the camera on.



FIG 14A – Print an existing DPOF print order using PictBridge

4. As shown in FIG 14A, you'll see a JPEG image after the **PictBridge** logo is displayed. Since we're interested in printing more than one picture, we will *not* press the **OK (Setup)** button at this time, as the Pictbridge playback screen suggests. Instead, we'll press the **Menu button**. This will display the **PictBridge** printing menu, with **Print (DPOF)** as the third choice from the top. Choose **Print (DPOF)** and scroll to the right.



FIG 14B – Validate or change the existing print order

- The screen will now present an existing print order from your memory card (see FIG 14B), if one exists. If there are no current print orders, the images will not have quantity numbers in their top right corners, and you can proceed to add some, as outlined in step 5 under the **Print select** section. You can change the quantity on any image by selecting the image, holding down the **Protect button**, and pressing up or down on the **Multi Selector**. This changes the number of prints for the selected image. Press the **OK button** when you've examined, modified, or approved the print order.



FIG 14C – Printing setup screen – Select page size

- The camera will now switch to the printing **Setup** screen. You'll need to choose a **Page size** that fits your desired image (see FIG 14C). Once you have made your selection, press the **OK button** to return to the **Setup** screen.

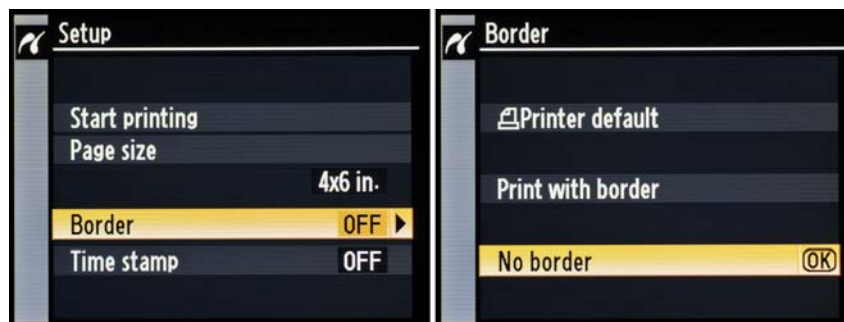


FIG 14D – Printing setup screen – Choose border style

- Do you want a border on this image? If so, select **Border** and scroll to the right (see FIG 14D). Select **Print with border** or **No border**, or let the printer decide with **Printer default**. Press the **OK button** to return to the **Setup** screen.



FIG 14E – Printing setup screen – Choose time stamp

8. Now choose a **Time stamp**, if you want one. This will print the date on the lower right corner of the picture (see FIG 14E). Select from **Print time stamp**, **No time stamp**, or **Printer default**. Press the **OK button** to return to the print **Setup** screen.
9. To print the pictures, scroll up to **Start printing** and press the **OK button**. Your printer will now print a variable number of copies of each picture according to your selections.

Index print

When you select **Index print**, the camera will find up to the first 256 JPEG images on your memory card and make an index print containing thumbnails of each of them. If all the thumbnails will not fit on one sheet, they will be printed on multiple pages. This is basically the same as the old contact sheet of yesteryear.

Here are the nine steps to create an **Index print** for your JPEG images:

1. Turn your camera off.
2. Turn on the PictBridge printer and connect the transfer USB cable to the printer. Then connect the small end of the USB cable to the camera.
3. Turn the camera on.



FIG 15A – Making an Index print

4. As shown in FIG 15A, you'll see a JPEG image after the **PictBridge** logo is displayed. Since we're interested in printing an **Index print**, we will *not* press the **OK (Setup)** button at this time, as the PictBridge playback screen suggests. Instead, we'll press the **Menu button**. This will display the **PictBridge** printing menu, with **Index print** as the last choice on the list. Choose **Index print** and scroll to the right (see FIG 15B).



FIG 15B – Index printing screen

5. You'll now be presented with the first 256 JPEG images found on your camera's memory card (see FIG 15B, image 2). You can't do anything with the images except scroll through them. Press the **OK button** when you are ready to print.

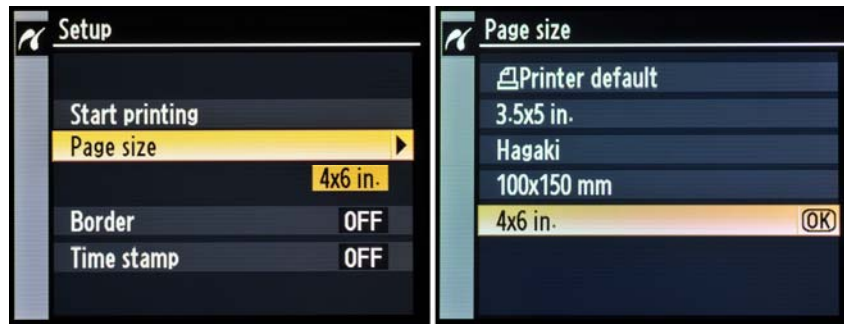


FIG 15C – Printing setup screen – Select page size

6. The camera will now switch to the printing **Setup** screen. You'll need to choose a **Page size** on which to print the multiple thumbnails (see FIG 15D). Once you have made your selection, press the **OK button** to return to the **Setup** screen.

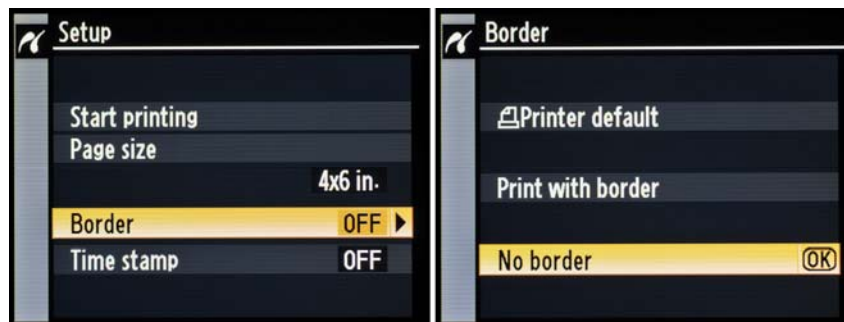


FIG 15D – Printing setup screen – Choose border style

7. Do you want a border on this image? If so, select **Border** and scroll to the right (see FIG 14D). Select **Print with border** or **No border**, or let the printer decide with **Printer default**. Press the **OK button** to return to the **Setup** screen.

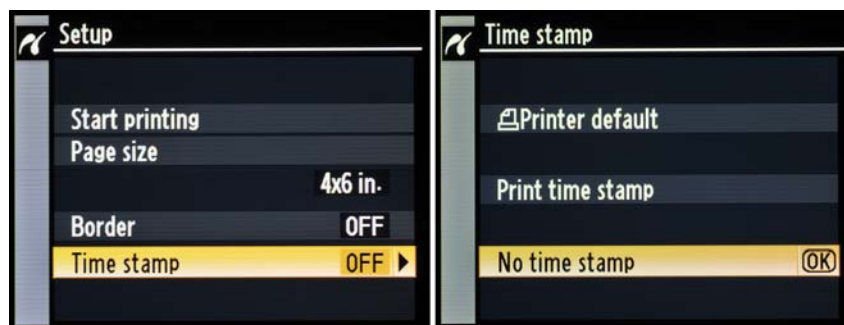


FIG 15E – Printing setup screen – Choose time stamp

8. Now choose a **Time stamp**, if you want one. This will print the date on the lower right corner of the picture (see FIG 14E). Select from **Print time stamp**, **No time stamp**, or **Printer default**. Press the **OK button** to return to the print **Setup** screen.
9. To print the index, scroll up to **Start printing** and press the **OK button**.



FIG 15F – Sample 4x6 inch (10x15cm) Index print

In FIG 14F you can see a 4" x 6" (10 cm x 15 cm) **Index print**, as printed on my PictBridge printer. Even a print this small can contain 20 thumbnail images. I took a picture of a picture to capture this **Index print** for the book. Oh, and try to ignore the subject matter, these are just family and friend snapshots. My camera gets handed around quite a bit in my family. As a matter of fact, I don't think I took any of the images on this **Index print**. Everyone loves to use the D7000. My 13-year-old son once took 200 images of his face. It's a good thing a DSLR doesn't use film!

My Recommendation: I had absolutely no interest in printing directly from my camera to a PictBridge printer until I wrote this article and saw how fun and easy it is. Printer costs are reasonable, so you might want to pick up a PictBridge/DPOF-compatible printer. Just look for the PictBridge droplets logo on the printer's packaging or body. If it has memory card slots, it should be DPOF compatible. Give this printing method a try; you might enjoy it.