

Ring Flash DIY Macro Close-up - Easiest Ever! for DSLR Pentax Nikon Canon Sony Minolta works with your popup flash on full program features for extreme close-up macro EASY cost under \$5 to build no special tools needed. Better Macro for DSLR.

DIY Ring Flash Cheap!

The *F ring*



This is a fibre-optic flash extension for your DSLR's popup flash. Totally easy! Works great! Durable!
Designed specifically for K20D with 100 2.8 DFA lens but adaptable to other lenses (see Tamron Adaptall 90 2.5 example at the end.) Build your own!

Easy step-by-step Fring assembly instructions:

(Build and use at your OWN RISK. Don't run with scissors. Pop-down flash before storing gear.)

1. Go to your local dollar store (with \$5 and probably a bit more for tax) and buy:

- some balloons (black preferred)



- a bag of cable ties



- and 3 "groovy"
fibre-optic novelty
lights



2. Next, brush your teeth regularly and use up a 75 mL tube of toothpaste. Most tubes seem to be shiny inside (you need one that is

shiny inside.)



3. Then go to your local bicycle shop and kindly ask

for a scrap mountain bike inner-tube for a "craft" project. (Don't try to explain - they will just give you confused looks.)

4. Impress your love with your great dental hygiene, funky mood lighting, and festive balloons.

5. When you are alone (which you are likely to be after step 4) set aside an hour (less if you aren't fussy) to build your Fring.

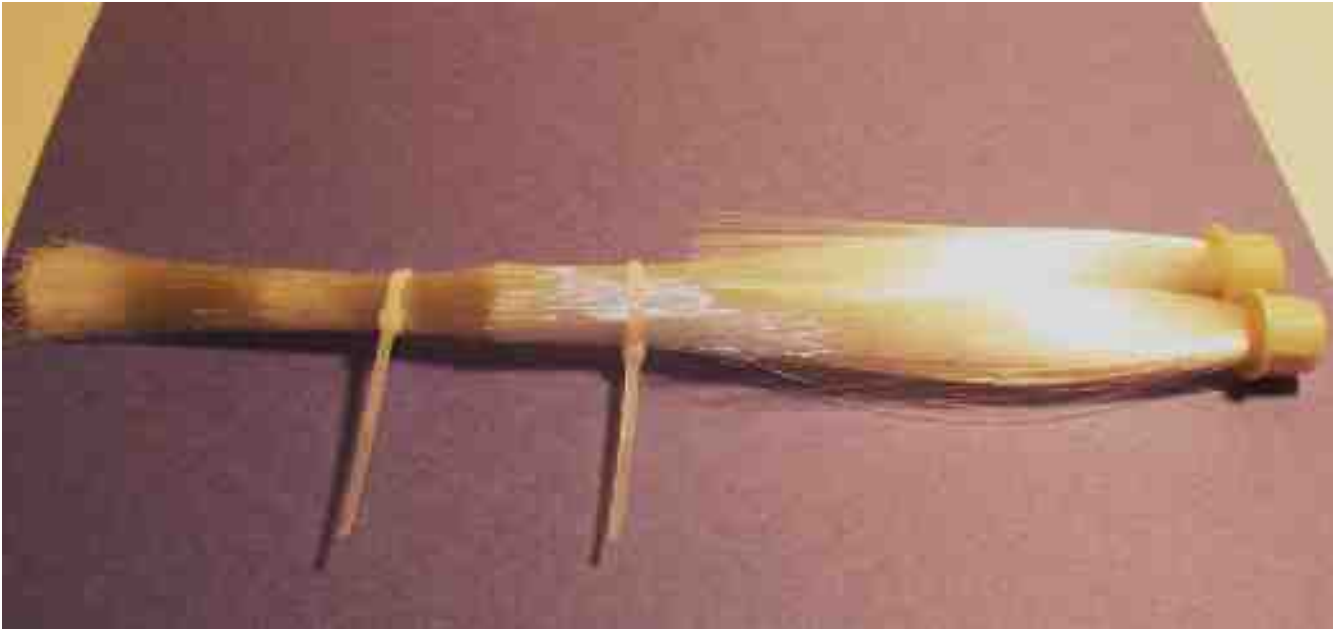
6. You need scissors and cellophane tape (other tape is likely also fine - I just had cello tape handy.)

7. Start by taking two of the fibre-optic bundles out of their packages.



Notice how there are different lengths of fibres.

8. For the Pentax DFA Macro 100 2.8 --- the shortest fibres are too short to be useful. Tightly bind the other fibres with small cable ties.



9. Holding the fibre bundle tightly, cut off the plastic plugs at the ends of the bundles.



10. Fan the bundle out and shake over a garbage can to remove the shortest fibres (too short for the DFA 100 Macro - may be fine to keep with a different lens.)

11. With the DFA Macro 100 2.8, the distance from the outer edge of the lens hood to the camera body - does not change during focusing. The hood does not rotate during focusing either. Both of these facts make this build a bit easier. I have suggestions for different lenses at the end of these instructions.

12. Remove the Hood of the DFA Macro 100 2.8 (or other lens.) Cut a section of balloon to stretch over the hood (provides grip for the fibres.)



13. Stretch the balloon over the hood (you may want to roll it up and then roll it

down - prophylactic style.)



14. Cut two more sections of balloon to have ready.

15. Put the hood on the lens and the lens on the body.

16. With the Pentax DFA 100, you will have no problem putting the base of the fibre bundle up against the pop-up flash - while fanning the ends of the fibres around the end of the hood. Try to fill in gaps. We will deal with the thinness of the fibre at the bottom of the lens later on.



17. Use a section of balloon to anchor the fanned-out fibres around the lens hood. (Roll it up from below.)



18. Using the grip provided by the outer and inner balloon ring - gently reposition fibres as needed. Perfection is not required and there may be a gap at the bottom of the hood. Fibres can cross over, it doesn't matter. Live with some chaos. Don't get hung-up on this part.

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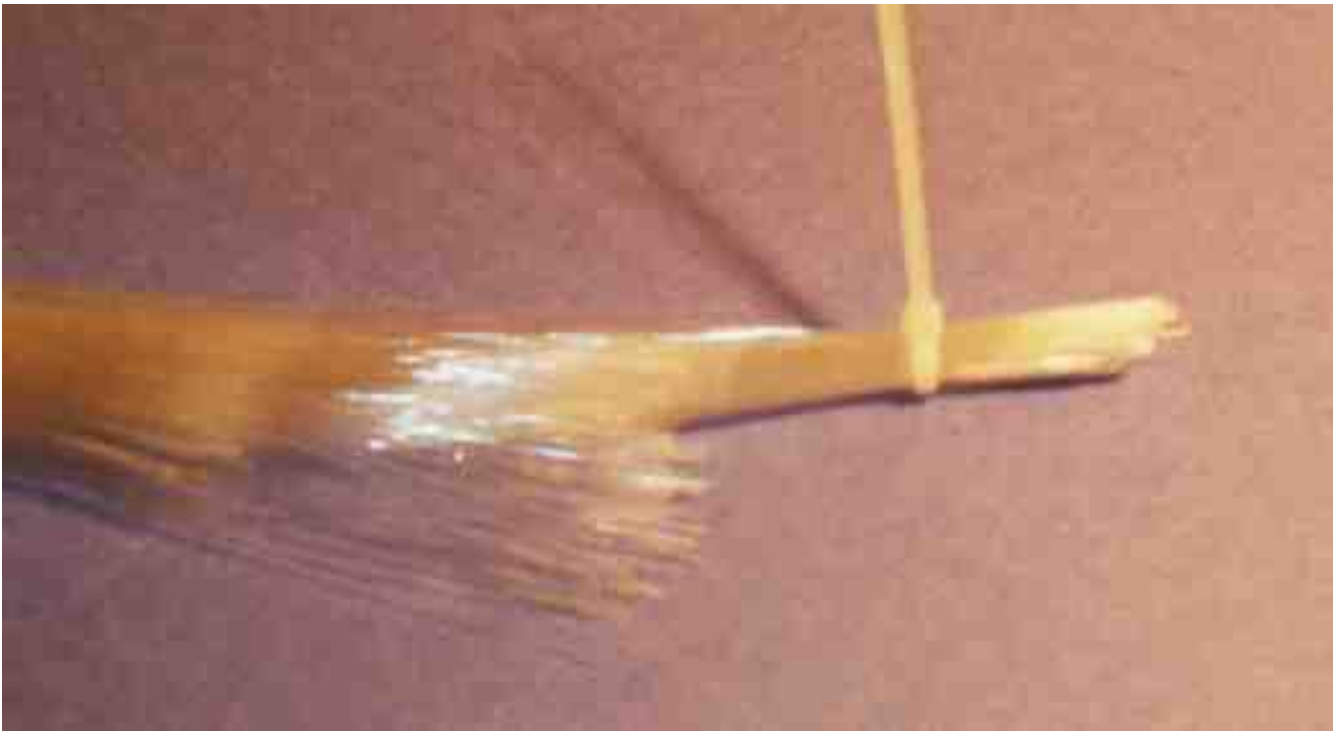
Fibres can cross over, it doesn't matter. Live with some chaos. Don't get hung-up on this part.

19. Tape down the fibres along the edge of the balloon ring - with one layer of cello tape.

20. Trim off excess fringe around the hood. Trim so fibres are flush with outer edge of hood. Put hood back on lens.



21. Get your last fresh fibre-optic bundle. Cable-tie the tip so that the longest fibres are kept.



22. Cut plastic plug off other end of bundle. Shake in garbage can to remove other fibres.

23. We are going to use these long fibres to improve the coverage at the bottom of the hood (where there may be a small gap.)

24. Fan out extra fibres at bottom of hood, align end of bundle with main bundle (ending at the pop-up flash.)

24. Repeat rubber banding, taping, and trimming of these extra fibres.

25. Cable-tie the new bundle to the old bundle. Remove old cable ties on original bundle. Merge fibres and re-tie. It should look like this:



26. The way it is now, it can sort-of work, but there will be stray light.

27. Wash and clean your empty tooth-paste tube and bicycle inner-tube.

28. Cut a section of toothpaste tube to extend from behind the flash to the beginning of the fanned-out fibres.



The reflective surface inside the tube directs the light into the fibres. A gentle curl of tube over and under the pop-up flash will hold it nicely in place.

29. So that other photographers won't laugh at you in the playground, finish "dressing" the Fring. Start by

cutting a section of inner-tube that matches the toothpaste tube.

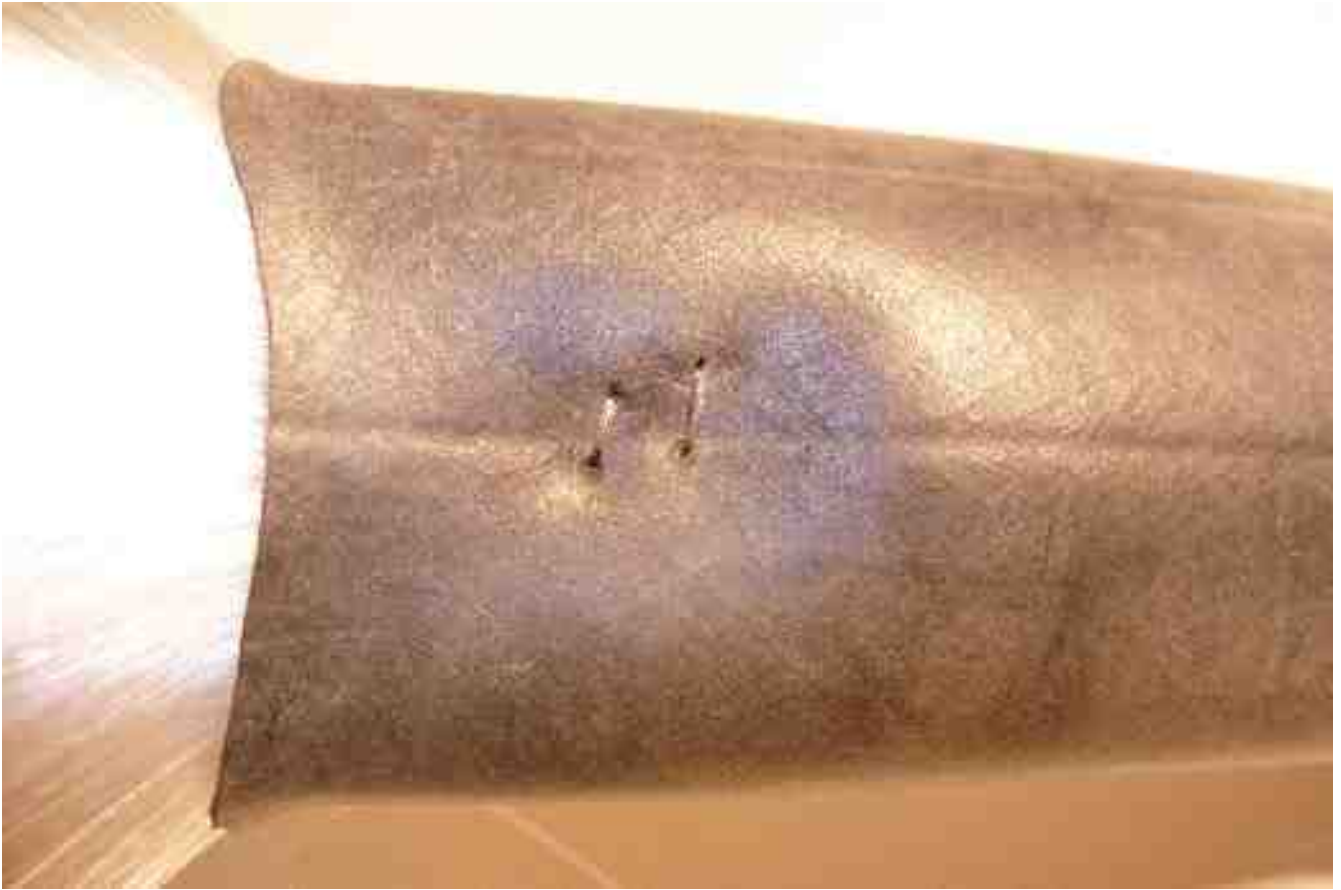


30. Fit toothpaste tube inside matching inner-tube cover. Fit over the main fibre bundle.

31. Optional. Put a stitch right through the inner-tube and tooth paste tube covering, and the main bundle.

This will prevent the covering from slipping off when you remove the lens hood. Stitch between the fanned-out part at the base of the hood and the cable ties holding the main bundle together.

32. Put lens hood back on. Gently curl the covering of



the toothpaste tube and the inner-tube over and under the flash.



33. Stretch a section of (preferably black) balloon over the lens hood. You're finished!



The focus ring should move freely. You can still reach the focus lock. If you want to use the flash without the Fring, just put the hood on with the fring bundle at the bottom and your pop-up flash will be unobstructed. Or buy a second hood (but that will blow the \$5 budget.)



Sample shots provided at the end of the page.

34. You can modify this plan to work on other lenses.

Here is a modified version for a classic Tamron Adaptall 90mm f2.5 with the 2x converter. The end of this lens does not rotate when focusing.

- bundle only the longest and second-longest fibres



- longest go to bottom left and right, second-longest to top left and right.

- instead of a toothpaste tube, use a more shiny and longer tube (or for greater precision, aluminized cardboard open-ended rectangular

prism) - made from lid of take-out container.

- cover reflective tube with inner tube, leaving a "hood" to put over the pop-up flash.

- insert main fibre bundle into the reflective inner tube

- as you focus the lens, the fibre bundle slides inside the tube (with the Pentax 100 DFA - sliding isn't necessary

as the length of the lens doesn't change when focused.)



35. I haven't tried this - but if you are using a regular 50mm and close-up filters, or if you are using a macro lens with a lens-hood that turns during focus you could try this modification:

- use the same plan shown in step 34
- smash the glass out of an old polarizer filter (with the

rotating double ring)

- thread the filter ring on your lens, put your hood on the ring, and your hood should be able to rotate as you focus (I expect you would need to do gentle manual focusing.)

- or make a contraption that allows an arm to extend below from the tripod thread and/or above from the hot-shoe to support a floating ring around the end of your lens

36. If the movement of the focus ring is impeded by the fibres of the Fring --- build up a wider rim on your lens hood so that the fibres are further away from the barrel of the lens.

Here are some sample shots from the Classic TAMRON 90mm 2.5 lens (and the 2X dedicated converter) using the Fring:



Nice even
lighting. Above
images are not
cropped. This
is a great lens

(just manual focus and a bit heavy compared to the
Pentax I replaced it with.) Here's a cropped close-up of
the fly picture:



Here
is a
small
gallery
of
shots
from
the

Pentax DFA Macro 100 2.8. Unless stated, no cropping has been done. Flash used in "P" mode at 200ASA equivalent setting. Hand-held (waiting for my macro rail to arrive - then will try focus-stacking.) At first glance, I think I may have had better resolution with the Tamron 90... aargh...

**Sample Images from Pentax SMC DFA 100mm
2.8 Using the Fring in the Shade**





This how-to is dedicated to all the other poor souls with good intentions and too much time on their hands who have created similar DIY's on the internet. (Many thanks to the guy who showed me how to rewire my old SF1 cable-release to work on my K20D, and to all the people sharing DIY digital projector projects. Thanks in advance to all of the people posting their macro-photography techniques --- which I am looking forward to learning from.) I don't claim that any of the ideas here are particularly original. I do think that this design is a good low-tech and low-cost macro flash solution that almost anyone can build without special tools beyond a pair of scissors. I particularly liked a brilliant "origami" cardboard ring-flash that I saw somewhere on the net. I made a more primitive version of it that worked - but was too bulky and fragile to store in my gadget bag. I think the designs on this page should have very good durability and are quite 'crush-proof.' This page was completed on 11 August 2008. Eventually, someone will probably make a commercial version of this plan - but I think I'll stick with this \$5 solution. This page is slow-to-load because it is one big page --- I'm more interested in improving my photography than I am in improving my web-design. Hope it was



worth the wait while it loaded.

(Insect photo is cropped.)