Transforming instruction for the Nikon SA-21 Adaptor to an SA-30 Model

If you think that you can't transform your Adaptor by your self contact me as an e-mail.
I can do this modification for you as a small money, but only for Europeans.
(Sorry, but shipping and tax to oversee will be to much for this. I may be certain you will find some one who can do it)

In order to change the Nikon SA-21 Adaptor to an SA-30 Model, you will need the following items:

1) A Philips screwdriver (watchmaker size). Check that the screwdriver fits to the screw on the bottom of the adaptor. Some screws might be tighter than you expect, so make sure it has a good grip.
2) A slightly larger Philips screwdriver (small hand-worker size)
3) A single slit screwdriver of about the same size.
4) A fine soldering iron (max. 25 watts) and an electrician's soldering tin.
5) Please download the pictures for the transformation. Make enough space so that it is possible to work in front of the computer screen, in order to be able to refer directly to the pictures.

The transformation will take about 1½ to 2 hours to complete. I, myself have been able to do it in an hour, including testing, before and after. Please take into account, however, that I have performed the transformation a number of times.

Please make sure that you have all tools ready in-front of you before starting the transformation. The very small screws can not be screwed in and out several times.

Open up the adaptor, in the normal way (as if you were cleaning it). Refer to Picture 1.

Next, carefully lever the "second-reel lifting device" (bridge) away from its hinge-pin and keep it safe for later. These "bridge" has slits in the hinge-socket with which you can lift the "bridge". Please do not bend the "bridge" out of shape, or it might not fit back on to the hinge-pin.

Then take the small Philips screwdriver and remove the two blackest screws. These screws hold the pressing-spring to the loading track. Refer to Pictures 2 & 3.

Now you can remove the loading track. Please look very carefully at the loading track. The pins on the right and the left hand side, which hold the track in place, are different sizes. This means that it only fits in one way. Picture 4.

Warning! Underneath the loading track, a light-sensor can be seen (on the side where the screws are closer together and closer to the opening). Please do not touch or scratch this sensor! Damage to this would mean that the adaptor can no longer position the film correctly.

Now, turn the adaptor over, and remove all six screws on the bottom. Carefully lift the housing upwards and remove it. Now you can see that the "bracket" is open at the bottom. Lift both of the open ends out of their holding and slide the "bracket" in the

direction of the smaller end of the adaptor. At the same time, turn the "bracket" a little so that it can be released from its track. Pictures 5-8

The loading direction of the "bracket" is not important, as it is completely symmetrical. All you will need to remember is that it has to be loaded firstly into the loading slit, so that it will then later fit into the two holding pins. This is a little bit difficult. The "bracket" does not seem to fit easily into its holding when the adaptor is turned over in order to replace the housing. At the same time, you have to make sure that the cabling for the light sensor is also packed inside the housing.

Next, turn over the adaptor and remove the eight screws, as shown in pictures 9-16. Please be especially careful with the two screws left and right from the light sensor, next to the opening. Pictures 14-15. Caution! If your screwdriver slips at this point, there is a good chance that you will destroy your light sensor!
After all eight screws have been removed, the complete loading-ensemble can be lifted up, turned 180 degrees and placed next to adaptor body. Picture 17
Here, you can recognise the three light-sensors which are attached with a screw to the underside of the loading-ensemble. To be more exact, one can see the "flat cable" which is soldered to the light-sensors. You do not need to be overly concerned about this cable, as it is very robust. It can be twisted around without problem, so long as it is not directly bent.
The plugs that connects the "transport-motor" and the "lock out magnet" to the "circuit board" should NOT be removed. These plugs are very small, and they are barbed very difficult. There is also the risk of creating hair-fine tears in the "circuit board".
For the same reasons, the "flat cable" should also not be unplugged - the cable can simply be twisted around in order to complete the work.

You will now need the larger Philips Screwdriver, in order to unscrew the two screws attaching the blue connector and the circuit board to the body of the adaptor. The blue connector and the circuit board underneath belong together. Picture 18-20.
After this unit has been removed, free the cable which leads to the motor. The circuit board and blue connector can now be folded over 180 degrees. Pictures 21-22.

The under-side of the circuit board is now visible. You are now ready to begin the main part of the transformation.

Seek out the three contacts which belong to the blue plug. In every row, there is a small number printed into the circuit board. The contact next to each printed number indicates the contact number. The contacts 16 and 17 have to be connected to each other (with the blue connector facing towards you, in the middle row, the fourth and the fifth contacts from the right hand side). Take the single slit screwdriver and bend the two contacts towards each other so that they touch, or at least almost touch each other. Pictures 23-25.

A little force might be needed, but there is no need to worry about damage. You should just be careful that you bend the two correct contacts, and that the others are not bent. Possible tears in the soldering points will be corrected in the next stage.

Take your small soldering iron and solder the two ends of the bent contacts together. Keep the iron held on the contacts until the bottom of the contacts become slightly liquid.

At this point, apply a little more tin at the top of the contacts in order to form a bridge at the top. Picture 26.

And there you go! Your SA-21 can now fulfil all of the functions of the SA-30 Adaptor.

Please continue to read the manual, as it contains further important tips.

Nikon, or myself, would solder the contact-bridge in a different place. I have purposely chosen this solution for users of this manual, who might not possess all of the necessary equipment. For more experienced users, however, the originally designed position is shown in the last picture. Picture 27.
Under the finished bridge, shown in the last picture, there are two very small soldering-tracks.

Please only solder at this point if you have both the necessary equipment and experience….

At this point, I would like to explain a little about the reconstruction of the adaptor.

Please do not tighten all screws as tightly as they were beforehand. The screws were originally tightened by a high-speed machine, which causes them to become quite hot. Because of this heat, the screws had been slightly melted into their fixings. This explains why they were so tightly fixed.
I recommend thoroughly dusting down all components before building the adaptor back together. Make sure that you only use a very soft brush in order to do this. Be particularly careful when dusting the lens of the light-sensors.

There is NO need to oil or lubricate the moveable components in any way….

Please only test your adaptor after it has been completely put back together. Even if only the top plate has not been re-attached, your scanner will not work correctly with the adaptor…

So, I hope that your transformation has been successful, and that you can now enjoy the additional features of your improved adaptor.

To finish, please also read my "note for the safe using of your modified SA-21 Adaptor".

For questions, please contact me as an e-mail. But please note that my English isn't good enough for long mails with a lot of special technical words ;-(

Special thanks: to Rupert Gillet for the excellent translation in a very short time!

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