

Model-making with etched models for Scale N implies:

- True to scale
- Lots of detail
- Individuality

Etch model: KT043 Conveyor No. 1

Level of difficulty: Level 3 from 5

Congratulations

to your new *etchIT*-Model!

With this assembling manual we want to provide you with important suggestions building your new model

KT043 Conveyor No. 1

Follow these instructions and you will get your individually gem on your model railway!

If you are satisfied with this model – we guess you will – then visit our website from time to time

www.etchIT.de

the amount of available models is permanently growing.

Now we wish you a lot of success and a lot of fun while assembling this detailed model from *etchIT*.

General information

The basic material of this model kit is nickel silver sheet metal. This material is robust even in thin sheets and it is stainless. You can glue this metal or you can solder it. The soldering method adds extra stability and should be the preferred method to fit nickel silver parts together.

More information about soldering are to be found in this manual some pages downwards.

Please find all the actually available assembling manuals (most of them in german language) on the following web address (put as ONE line into the address line of your web browser):

<http://www.easy01.de/etchIT-store/assets/own/manuals.htm>

Folding edges

As mentioned, nickel silver is very tough and so all edges which to be fold are pre-etched on one side of the sheet metal. Most of the time this etched edge is the INNER edge.

There are commercial tools on the market that may help you while bending nickel silver or brass sheet metal. These tools are highly helpfull except for bending very long edges. And these tools are a bit expensive.

So the following paragraphs show you how you can build your own tool(s) for bending edges exactly.

Take...

- ...an old carbide metal saw blade
- ...chip a 5 to 7 cm long piece of that saw blade on both sides (you can't saw! It is too hard. A parting-off grinder maybe usable). **Please always watch your personal safety and use safety goggles and/or other safety material to protect your eyes, hands and body.**

- ... put the two pieces together with a rivet through the holes of the pieces or with a fitting screw and nut.

- ...and you have finally made your first bending tool

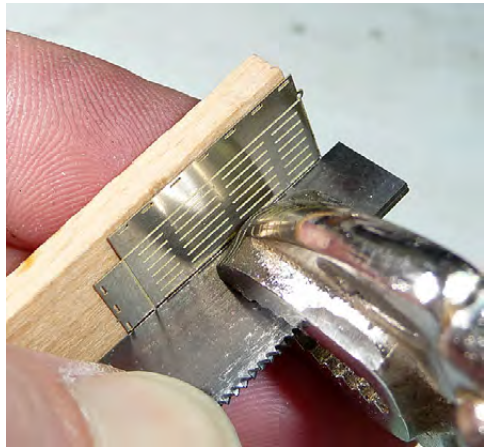
The folding is to be made on the straight side of the coupled sawblade pieces. The metal sheet which should be folded is right between the two saw blades and the pre-etched edge is visible in full width (see picture below).

To avoid that the two saw blade pieces will drift apart clamp the pieces with the inside sitting metal sheet into a machine vise or use gripping pliers as shown in

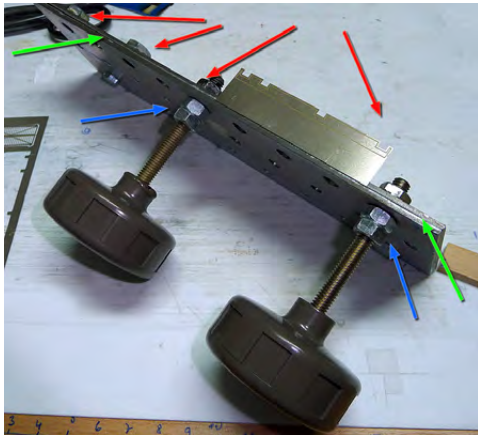
the picture below:



Now you bend the metal along the pre-etched edge with an appropriate piece of hardwood :



There is another bending tool we want to introduce to you. This one always is used when long edges have to be fold (until 170 mm!). Maybe its not a candidate for a design award but it is very useful:



This tool uses 2 perforated plates (timber connectors) from the Do-It-Yourself-center sized $200 \times 60 \times 2$ mm. Both plates are connected with two screws and nuts on one of the long sides of the plates. Please watch that the two plates diverge a bit — into this gap we will put the edge for bending .

Now you solder on one side of a plate 4 pcs. of M6 nuts (fix them temporarily with M6-screws); shown in the picture at the red arrows.

Two pcs. of threaded rods will get two additional hex nuts thightened together (blue arrows). On the ends of the rods toggles are mounted so you can press the two plates together onto the metal sheet in between.

Please press the plates together and watch the upper small sides of the plates. If they do not fit together exactly please grind this ledge until it is flat and plain.

In the following context of this assembly manual we assume that you are able to bend even small and long edges perfectly without deformat the metal sheet in any way — the perfect fit of a metal model is the appeal no plastic modelkit ever can accomplish.

And now: Have fun and success while building your new modelkit from etchIT!

Main Body

The main body of the conveyor is made of the filigree sides and the slidaway inbetween. The conveyor belt will come onto this slidaway later on.

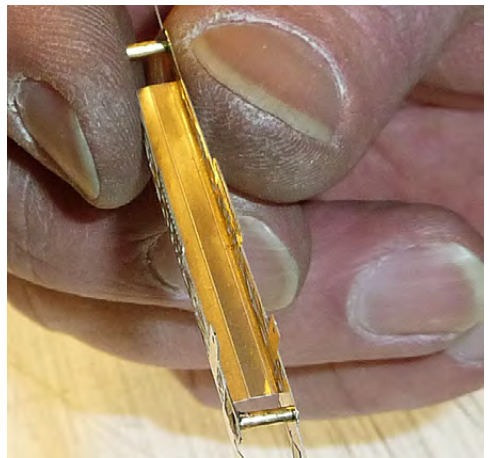
First bend the slipway as shown in the pictures, then fold the sides in right angles. You HAVE TO use one of the tools we've been talking about initially. Otherwise the filigree sides will be deformed inevitably.

The image below shows the bended main body:



The next image shows the mounted rolls for the belt.

ATTENTION — The picture shows the first prototype of the conveyor. Your modelkit has been optimized and uses axles and rolls slided over these axles. You also can see that in the construction graphics later on.

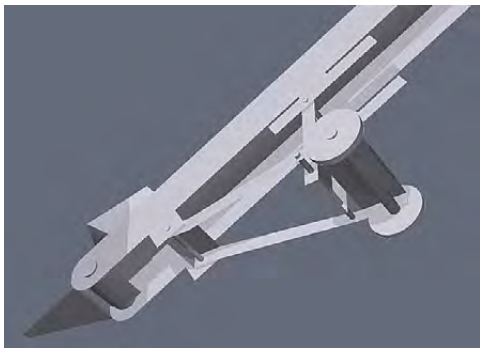
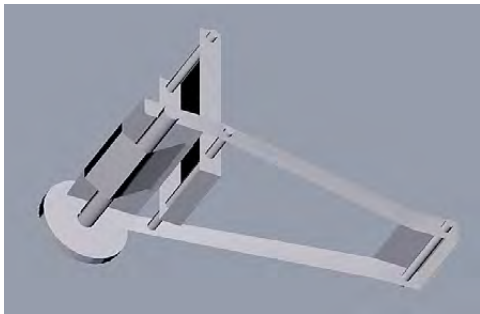
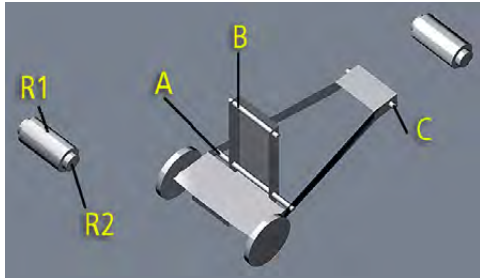


Chassis, Support and Axles

The chassis is connected to the main body with a support. The height of the slideway can be adjusted. To assemble wheels and several other parts we need axles; the appropriate steel wire is part of the model kit.

The rolls (R1) and their axles (R2) are already cut to their final sizes. For the axles A, B and C is enough steel wire enclosed and you will cut the needed lengths by yourself.

The locations of the axles can be seen from the following construction plans:



Please keep in mind that the axle B remains long enough to fit into the slits on the sides of the conveyor body for height adjustment.

Another method to bend a short edge exactly:



After mounting the wheels (see next chapter) the flap at the chassis is bent in a way the wheels axle can not fall out but stays turnable.



The next image shows the mechanics for the height adjustment:



If your conveyor is fixed on one final location you will not need this height adjustment. But if you plan to use it later on at another place or combine it with vans or trucks the variable height capability is very useful.

Wheels

If we use the correct method even such a thin metal sheet can be basis to manufacture properly wheels/tires for a vehicle.

We simply combine more than one layer together to the required thickness of a wheel. The layers of a wheel are connected with small connecting bars **and they stay in this condition!**

Cut out the connected layers as one unit and then bend it in zig-zag form as shown in the following figure:



Depending on the wheel we want to simulate there can be up to 10 layers for one stack. The layers are centered with an appropriate steel wire.

The layers could be glued together — but this maybe a mess for both your fingers and the perfect wheel you desire...

So: better solder the layers. Here is the how to:

- Fold stack
- press layers together (watch out they are centered!) with a flat-nose pliers
- put a LITTLE bit soldering fluid (in german: Lötöl) on the tread of the wheel (the outer rim). The soldering fluid penetrates into the stack
- put a LITTLE bit solder with the tip of your soldering iron to the same location. The solder zips immediately into the small gaps between the layers filled with soldering fluid.
- grab the layer stack at another place of the wheel (where soldering is finished) and repeat the soldering fluid/solder action.

Always ensure that as little amount of solder as possible is used and the solder is just between the layers, not outside on the surface of the wheel.

After that, you can insert a fitting steel wire and solder it. *Important:* Lead away the heat from already soldered locations, e.g. as shown in the following image.



The small nickel silver piece has been given a drill-hole (between two wooden boards) sized a bit smaller than the wheel diameter. Pressed onto the soldered wheel with two clamps you lead away the heat produced while soldering the axle.

Finally grind away the small bumps on the tread of the wheels remaining from the connected layers.

Bit complex you argue? — Just for the first and second time; then you will produce perfect wheels as shown in the following pictures.



The last thing to do is to cut out the conveyor belt and adjust it so it fits over the transporting rolls and the slipway.

Color Design

By no means you should color stairs, grids and other filigree parts with a paint brush. Whether your color is runny or it is viscous — the paint brush occludes filigree perforations and reduces details dramatically. The realistic charme of your precious model is blown away...

The best way is to use an airbrush and fine grained acrylic airbrush colors. But — to use such an airbrush in the right way is not easy and needs a lot of experience and training.

Another method is the use of color in spray cans especially made for model making purposes (e. g. Tamiya spray colors for plastic model making).

First of all use a primer on the degreased metal surface (with Aceton for example) and let the primer dry overnight. Then you color your model in thin layers of spray laquer.

Always pay attention to the safety notes on all products you use!



The finalized model:



We wish you a lot of success and enjoyment in the following hours of model making fun and once again:

Congratulations for your detailed etchIT model!

