

Model-making with etched models for Scale N implies:

- True to scale
- Lots of detail
- Individuality

Etch model: **KT044**

Conveyor Nr. **2**

Level of difficulty: Level 4 from 5

Congratulations

to your new *etchIT*-Model!

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

KT044 Conveyor No. 2

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

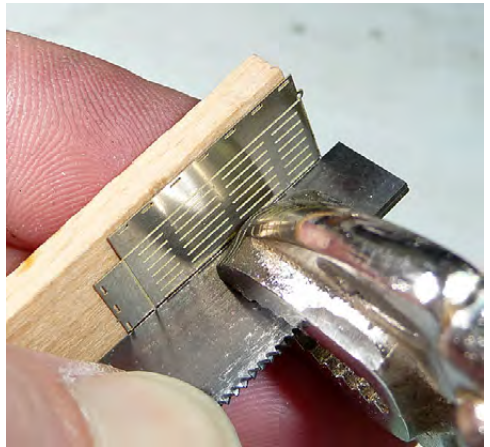
The folding is to be made on the straight side of the coupled sawblade pieces. The metal sheet which should be folded is right between the two saw blades and the pre-etched edge is visible in full width (see picture below).

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

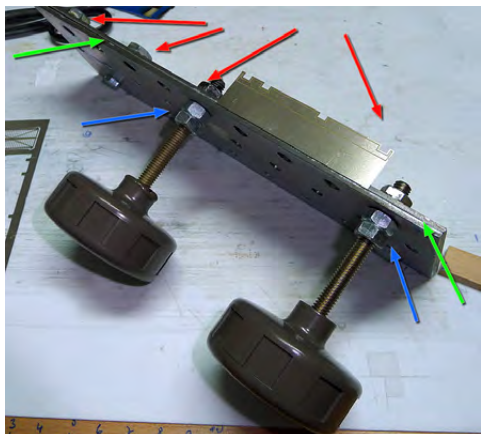
the picture below:



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.

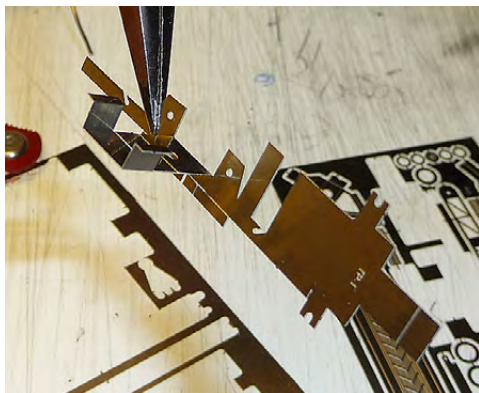
In the following context of this assembly manual we assume that you are able to bend even small and long edges perfectly without deformate the metal sheet in any way — the perfect fit of a metal model is the appeal no plastic modelkit ever can accomplish.

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

Chassis and steer

The base of the conveyor consists of the chassis and the turnable steering axle with a shaft.

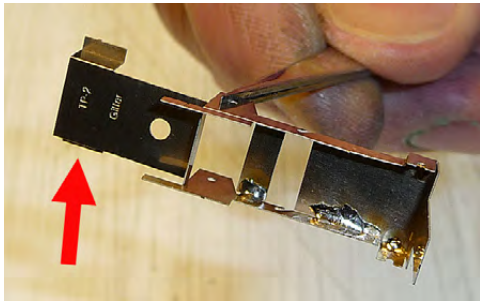
On the following pictures you will find the way the chassis has to be bent.



As deccribed initially, the edges are pre-etched along the way they should be folded. This simplifies the way to bend but also means that the material is just half as thick on such an edge.

So avoid always to bend a part forth and back more than one time; otherwise it will break at that edge.

After folding a part you can increase stability by setting a small soldering point inside a folded edge at an unseen place. So the folded angle is fixed.



At this point it is important NOT to fold the motor housing finally but to let it in the condition shown above (red arrow). Before folding finally the steer will be mounted. After bending the motor body it will hide the screw that connects chassis and steer.

This is the steering axis:



Leave the flap in the shown position (blue arrow above). Later on it will fix the wheels in the half-holes of the axle.

Axes and wheels are produced in the following workflow:

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 position 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.

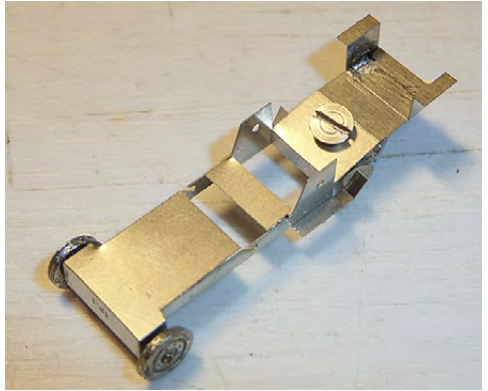
After that, you can insert a fitting steel wire and solder it. *Important:* Lead away the heat from already soldered locations, e.g. as shown in the following image.



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.

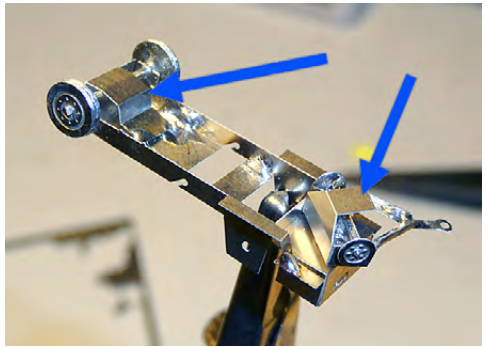


On the etched board are also the washers you will need for the chassis/steer-connection. Tighten the screw until the steer can be turned smoothly, then fix the tread within the nut also with superglue.

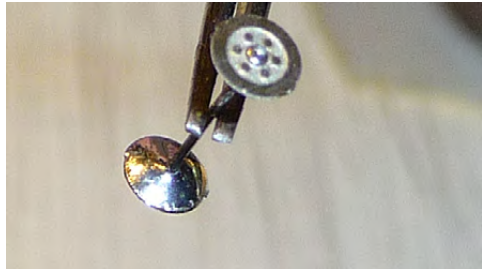


Assembling

After this generally information about building wheels we'll come back to the specific wheels for this conveyor or KT044. This is the completed axle:



The blue arrows indicate the flaps for fixing the axles in their bearing and keep the wheels turnable.

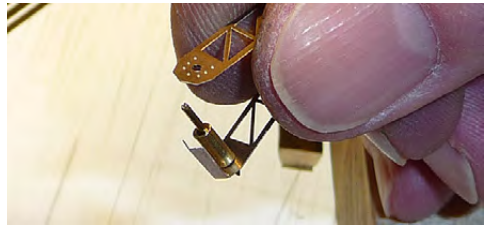


Conveyor belt

The upper part of the conveyor consists of the filigree sides and the support that integrates the slideway, the input hopper and belt itself.



Now the chassis and the steer will be connected via screw and nut. To fix the nut solder it or glue it with a quick drying superglue.



As described above the filigree body of the conveyor should be stabilized with some small solder points (see blue arrows).

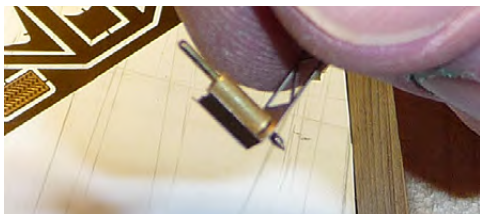
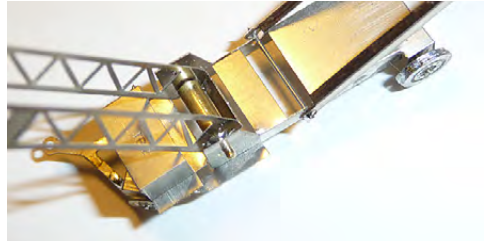


The „belt“ will be bended at the upper and lower end and will be dissapear under the upper and lower traverse of the conveyor body. The belt is – as most in model making – just a fake and not turnable...

Maybe the specialists in model making build in a real belt? The rolls are able to turn. Here is the way to assemble these rolls:

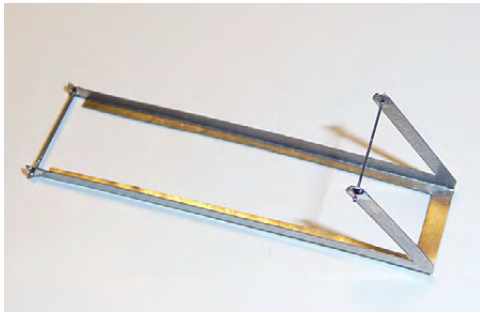


After insertion of the roller axles and the rolls the body will be soldered on the remaining open edges.



The Height adjustment

The modelkit KT044 has a real-life original and is constructed to transport heavy weighted material. In the following pictures you'll see how to assemble the height adjustment.



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.

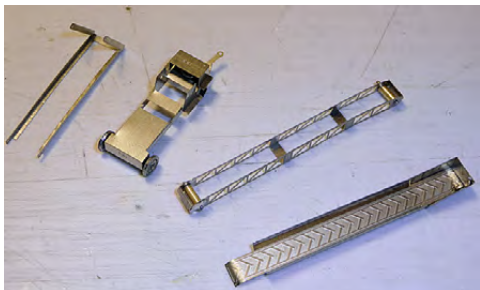
Another method is the use of color in spray cans especially made for model making purposes (e. g. Tamiya spray colors for plastic model making).

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!



Here are some pictures of the single main parts and a finally mounted 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!

