

When Styrofoam is pushed through the hot wire, it is, in static terms, balancing upon the wire. It is therefore important, to guide the styrofoam properly. Stabilising work with the hands should support the work piece against wire on two levels: Pressure, when cutting, should therefore be directed diagonally against the working surface and guide bar as well as through the wire. The foot switch should only be turned on, when the material touches the wire.

The wire bends a little during cutting so that the wire's lengthways tension does not increase too much. When cutting bends, cut slowly, as only then will the wire follow all changes in direction smoothly. When cutting 'round the corner', wait until the wire has tightened straight. Then, before going on, switch off, or continue cutting in the new direction without delay.

A good cut means: a smooth surface without grooves or annoying Styrofoam threads. You achieve this by smooth, continuous pressure and a rather low level of heat on cutting wire.

The blower (fan)

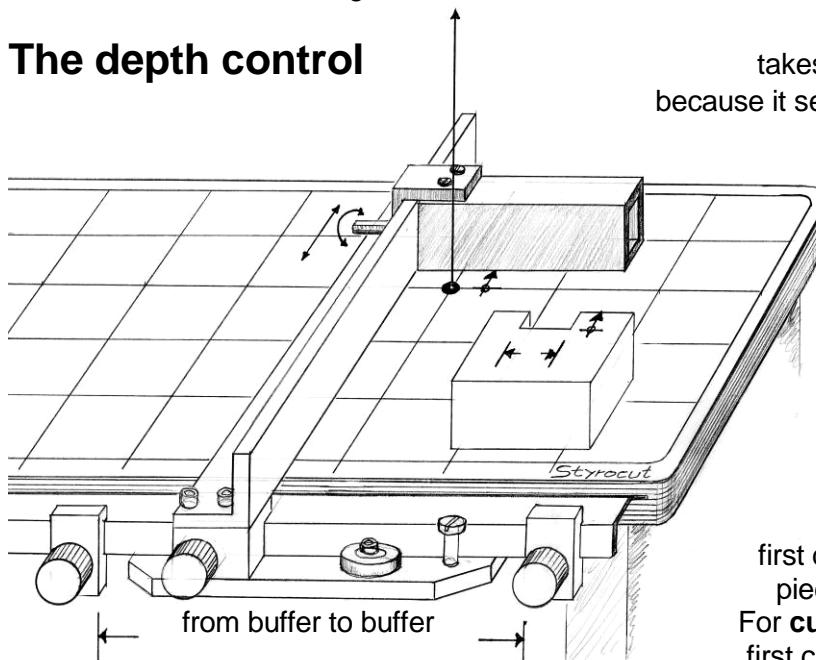
The fan is usually turned on (connector socket on back side). This means: the fan is working as soon, as the cutting wire is heated. In first place, it prevents Styrofoam from unnecessarily evaporating on the cutting wire. Secondly, the fan prevents the upper cutting-edges from extending. This will be important especially when peaces shall be fixed together and always, when you are changing cutting directions.

How to carry out different cuts

Styrofoam can either be cut lengthways on the fixed guide bar (2.00) or, loosening the fixing screw of guide bar, and guiding the piece to be cut together with the guide bar crosswise through the wire.

With all possible wire-angles set, the guide bar can be driven up to zero-point of cutting wire. The right buffer (2.5) may be mostly used to stop the guide bar and prevent it from knocking against cutting wire. Both buffers may be used to set a particular path in advance or, to find a particular setting again after doing different cuts without having to re-measure or to re-test.

The depth control



takes over the buffer's role, when pushing forward, because it sets the exact depth of cut behind cutting wire. For, while cutting wire bends while cutting and stretches while stopping, the point of changing in the direction of cut can not be correctly be set in advance. With the guide bar fixed, piece of Styrofoam can be pushed sideways along depth square or driven sideways at depth square together with moving guide bar.

Cutting angles

you do best bend the cutting wire like in the first drawing up to an angle of about 45° and push piece of Styrofoam against it along the guide bar. For **cutting roofs** you simply turn the part over after first cut and push through again (if the ridge is to be centred and eaves are on same level).

With roofs that are steeper than 45°, roof angle is not to be set to the perpendicular, but to working surface. That means the house-width piece of Styrofoam is to be pushed upside-down through the hot cutting wire. When cutting the second half of roof, leave the already detached roof wedge in place, so that the largest possible surface remains when guiding the piece along the guide bar.

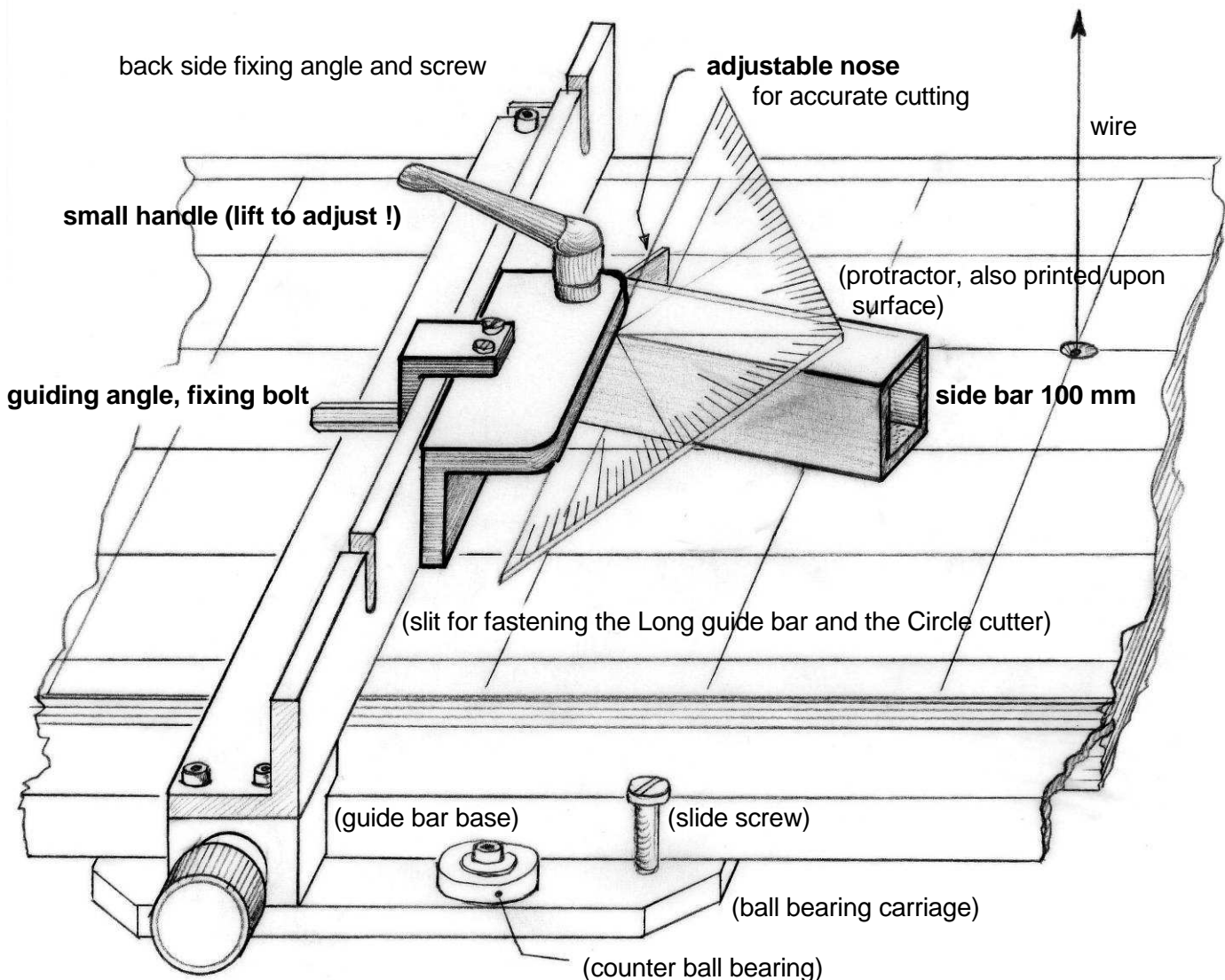
Very small segments of stick-shaped pieces may be best cut off by putting it next to a right-angled piece of waste Styrofoam (or to a piece, cut to any desired angle) and pushing both towards the wire. Thus the cutting wire may be guided through the shape and you do easier remove the cut piece of Styrofoam.

With long straight cuts, with serial cuts and whenever nothing may shake, the guide bar (2.00) can be fixed with the long side of the small hexagonal spanner at the back side fixing screw (2.08). Especially when using the Long guide bar (-0118) the spanner should be inserted through the bore-hole into the back fixing screw.

Frequently required small pieces should be produced first as a long shape and then shortened one after the other with a single setting.

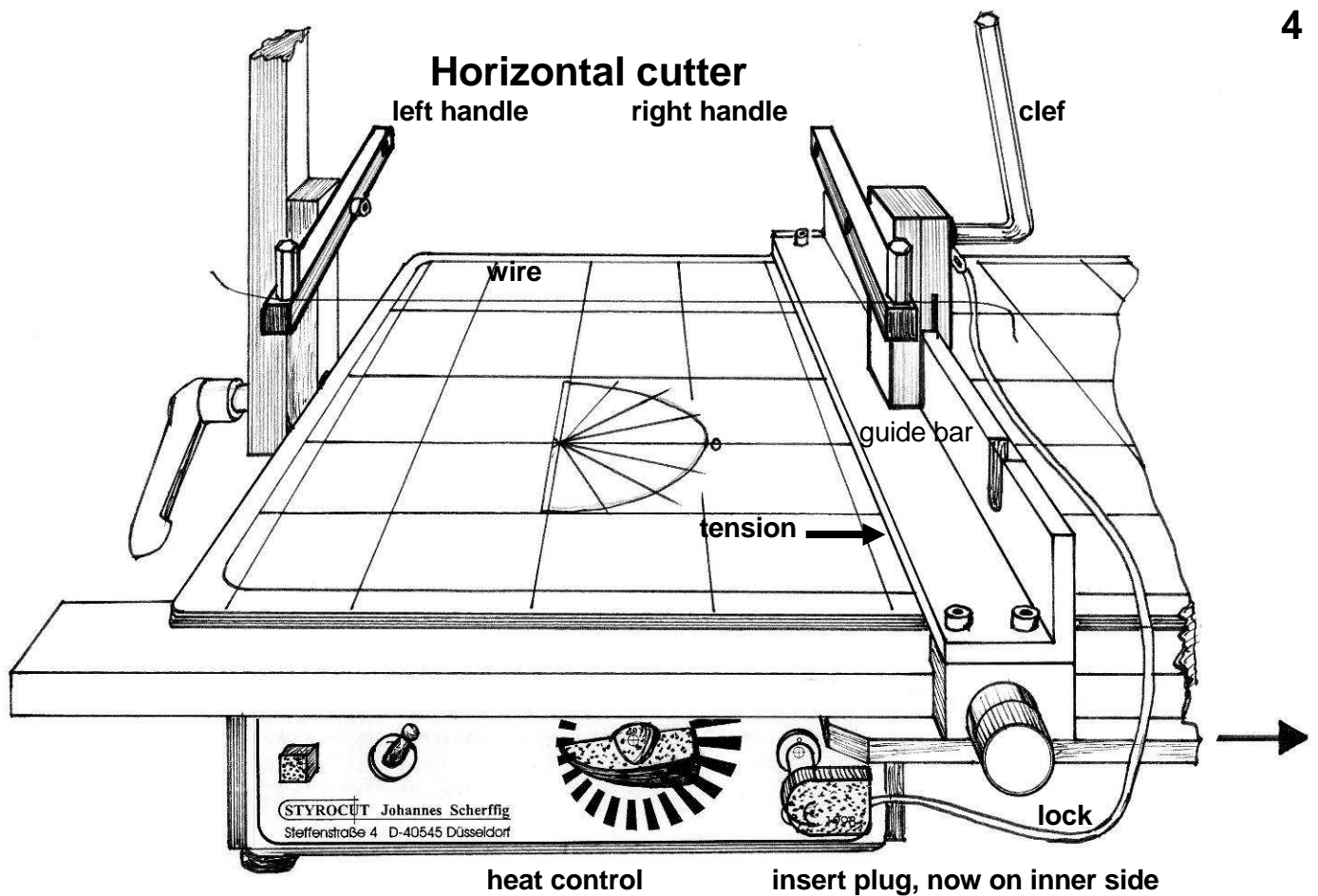
When cutting around a stencil, the mistake is often made of fixing a stencil on top of the work-piece. Since the hot wire always bends even from smooth pressure, it cannot follow the desired shape exactly when cutting. For this reason refer to the special directions 'Stencil cutting'.

Angle cutting sledge



The angle cutting sledge is pushed forward when the hexagonal bolt is loose or diagonally together with the moving guide bar with the bolt tightened. Use protractor (mostly that which you find upon working surface) for angle setting. The fastening handle may be set into every wanted position: Lift it and let it return to a preferable position. The adjustable nose will help you to pre-set and cut just into the accurate point. The nose may be fixed by its long or short angle or even with the narrow edge toward the work-piece. Last position will mostly be suitable.

If you have to change direction of cut into another angle, stop and switch off. Then turn the work-piece, using the (cold) wire as a fulcrum and replace the pre-set angle cutting sledge carefully against it.



To set the cutting height, shorten a left-over piece of Styrofoam and lower the tight wire onto it. Cutting heights of less than 10 mm require a slice of at least 10 mm thick to be placed underneath and pushed through together. Cutting heights of more than app. 80 mm should be done with the second hole or thread in the handles.

The guide bar's thin edge works as a guiding edge when cutting. Only tighten the wire to the necessary length as it is easier to cut like this. It is quite normal for the wire to stretch, especially after the first cut. When the wire does not have yet stretched, it would be best to stretch it about 10 % before cutting.

Free curves, large radii, exact stencil cuts: **only for Styrocute-3**

Stencil cutting

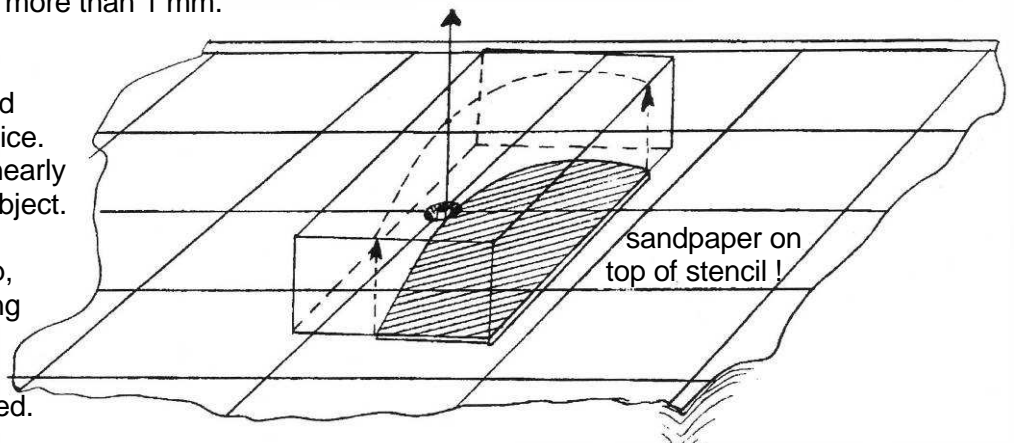
You can find a blunt steel-pin next to the two spanners in the right wooden beam of the Styrofoam-cutter.

With this pin, push or carefully knock out the brass square tube that centres the wire, from the clamp underneath to the to the table-top. After releasing the clamp you might stick the steel pin there between so that it touches the tube. This tube should then be knocked upwards with a light hammer until it sticks out beyond the table's surface no more than 1 mm.

Cut the desired curve or form from a hard piece of cardboard or from a 1 mm polystyrene slice. The stencil's edge has to be nearly 1 mm smaller, than the final object.

With a Styrofoam block on top, this stencil is then guided along the jutting out brass tube.

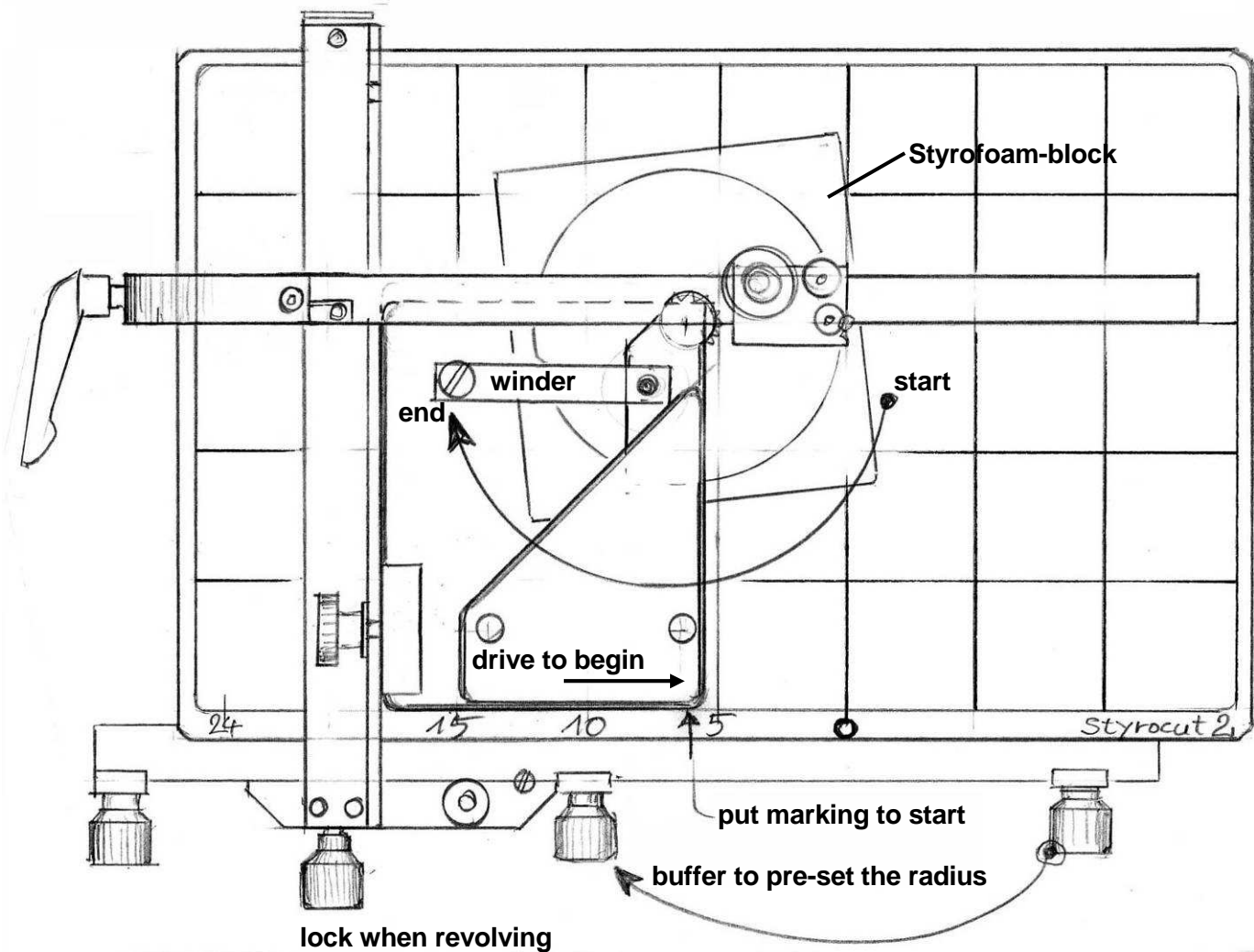
The wire remains tight and a groove-free cut may be realised.



The path to be cut should be drawn on the upper surface (by means of the stencil) to enable a better survey of the way to guide it (see broken line in picture). The Styrofoam block does not slip off the stencil, when you glue the work-piece lightly to it with two parts of double-sided sticky tape or: disable sliding by sandpaper.

When the work is finished, push the brass tube back down about 1 mm below the surface.

5 Circular Cutter



Large Styrofoam-blocks (radius up to 110 mm) must first be cut manually around with little overlap. Smaller work-pieces are best only square. First mark the centre of the piece to be cut. Then lift the upper part of circular cutter and push the Styrofoam block onto the lower pivot. Move the upper part downwards until it sits gently upon the block. This is to avoid later correction, for, the piece can now be adjusted vertically by means of the protractor. Only then, push the gear pinion tightly into the block, so that the gear grips. A test-turn shows, whether the block can revolve freely.

Now slide guide bar with circular cutter to the pre-set point (buffer!) of radius to be cut, diving the hot wire into the Styrofoam. The marking on front of circular cutter, too, shows the respective set radius on cm-scale. Heat of wire should be selected rather low. After having stopped, pause briefly, until the wire has fully straightened. Immediately afterwards the right hand starts gently turning the winder, while the left hand holds the circular cutter. After a half revolution of the winder, the block should be back at the starting point. Now the circular cutter with work-piece might be driven back out of the wire (for cylinders and cones). Alternatively switch off to adjust a new radius (for cylinder walls).

Important: Do not pause while turning! For cutting speed stays always the same, big radius will take much more time, than little and winder must be moved very slowly.

Inner circles: Simply guide into the inner radius of the Styrofoam block. The slit may be shut by gluing. When the block is higher, than required, you can shorten it afterwards to the desired length and thus even remove the traces of pivot and gear pinion.

Adjustments: In case the turning part's diameters an top and on the bottom are not right, check first whether the gear pinion stands exactly over the revolving pivot. This may be adjusted by loosening the two screws on the upper part of circular cutter. Only then, if necessary, correct the angle of cutting wire.

Sticking Styropore foam

All purpose glue is mostly best suitable for sticking Styropore to itself and to other materials. But, especially together with wood and paper only, if free of water. To achieve faster result, you might often stick by contact: apply all purpose glue on one side only, press the pieces together. Then remove parts sideways one from the other to avoid threads of glue. After a few moments of ventilation, while the glue is still sticking, press parts together a second time to have sufficient stability to continue working.

White wood glue is mostly suitable, too, for sticking Styropore. The advantage of it is the drying without any tension, although it takes a little more time. Faster stability will be received, when the glue is attached up to the edges of the workpiece.

Transfer glue, similar to both sided adhesive tape, a pure layer of glue between silicone-filled papers, is suitable for sticking any structure plates, photos and other prints to Styropore. It is even suitable for rough structures such as roofs, for every point which touches to the ground, will stick. If thin materials of complex shape must be stuck to a workpiece, transfer glue should be attached to the material before cutting the shape. Thus, no glue will well over of the edge of material.

Spray glue (aerosol) is mostly ready for Styropore materials, too. It might be used with large pieces or for coating Styropore with drawings.

Whatever glue you take, it must be suitable for Styropore **foam** or proved before working with it.

Treating Styropore foam with colour

All dispersion-, toning- and poster paints are suitable as well as pure acrylic paint (pre-test it!). Apply with a soft brush. In Germany, there is even colour spray ("MARABU" or "GIANT") available for Styropore. When spraying, bits of Styropore become noticeable upon the surface, which have been brought up by electricity. They can after drying be broken off by hand or brush. On the second application a clean mat finish is achieved.

As for the colour, white is our favourite. It removes the plastic appearance of Styropore and gives it the touch of massive structure.

Technical characteristics

In-plug power-supply, operating from 110 to 240 V~ 50/60 Hz, Euro-AC-adapter plug, exchangeable against AC-adapter plug for GB, Australia or North America (Euro-to-Swiss on demand).
Output 12VDC, connection lead 1.8 m, low voltage plug 5.5/2.5 mm (outer /inner diam.)