

METHOD AND APPARATUS FOR CUTTING THROUGH A FLAT WORKPIECE
MADE OF BRITTLE MATERIAL, ESPECIALLY GLASS

ABSTRACT OF THE DISCLOSURE

The method and apparatus for cutting through flat workpieces made of glass can cut through workpieces with greater thickness, e.g. glass panes with a thickness greater than 0.2 mm, than possible up to now with a comparable known method, without micro-fractures, glass fragments or splitter. In the method of the invention a heat radiation spot symmetric to the cutting line is produced on the workpiece. This heat radiation spot has edge portions with elevated radiation intensity and is moved along the cutting line and/or the workpiece and the heated section of the cutting line is subsequently cooled. A scanner motion produces the heat radiation spot so that edge portions of elevated radiation intensity coincide with a V- or U-shaped curve, which is open at the leading end of the heat radiation spot. The peak portion of the V- or U-shaped curve on the cutting line is at a temperature maximum that is under the melting point of the workpiece material. A controller of the scanning motion controls the scanner in circular cutting and freeform cutting so that a curved V- or U-shaped intensity distribution which fits the curved cutting path arises.

FIGURE 1