



## Sharp Edges on Sheet Metalwork — A Perennial Problem

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### Message from the Chairman

Any sheet metal cutting process, whether it be laser, punch or guillotine creates a problem with sharp edges and burrs. This can be more or less evident depending on the process and the material, and it can be more or less serious depending on customer expectations and requirements. Products subject to handling either during manufacture or use need to have smooth safe edges to avoid injury. Aside from basic safety issues, customers naturally expect that sheet metal components and assemblies (*often incorporated into expensive machinery and equipment*) are properly finished and this means adequate deburring. Whether we are supplying just laser-cut blanks, or folded, welded, finished and assembled sheet metal fabrications, the deburring process is vital to ensuring customer satisfaction.

Most sheet metal is cut by laser these days, and the typical problems are 'needles' on the underside of the cut (*which tend to worsen as material thickness increases*). Even if there are no needles, the underside of the cut will normally be sharper than most customers are prepared to accept. Furthermore, the top edges tend to be very square with laser cutting and in many cases (*for example, in the production of food packaging machinery*) these edges need to be 'softened' to avoid operator injury. Punched or guillotined components usually have a sharp and continuous burr on the underside and

possibly unacceptable witness marks from nibbling operations on the upper surface.

If it were just the outer edges of a blank which require deburring, the problem would not be so bad, but sheet metal blanks normally contain many holes and cutouts which all require treatment.

Faulty or inadequate deburring is one of the most common and serious problems identified by customers. This is not surprising because, in the past, deburring has been a hand-based process using portable sanders and similar equipment. The results are operator dependent and impossible to standardise. As a result, even when the sharp edges are reasonably well removed, the appearance of the product is compromised because of uneven finish.

It is also a very labour intensive process to carry out, adding as much as 15-20% to the cost of the product, and the better it is done, the more costly it is, often requiring a skilled man to maintain acceptable quality standards.

To see how City have tackled this serious problem, turn to the back of this leaflet.



### All You Expect from a Quality Sheet Metal Shop

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# A Deburring Revolution

While not the most glamorous of subjects, deburring is the process which customers most commonly complain about and producers find most difficult and expensive to achieve.

## City Engineering's solution to an age-old problem



City has just installed a new £70k machine from Lissmac in Germany, the first of its kind they have manufactured. This machine will, in one pass of the blank, remove needles (or other burrs from punching or guillotines) and then polish all edges, including holes and cutouts on one or both sides. If the blank is protected with polycoating, this will be entirely unaffected by the process (provided laser quality coating is used). The unprotected side will have a fine polished finish.

The result will be a blank that is deburred on one or both sides as required. The process can be easily controlled so that appropriate degrees of finish are achievable. Being a mechanical process, all items will come out with a consistent high quality finish which will enhance your product. It will also carry out the process in the fraction of the time with consequent savings in cost and improved lead times.

**The Lissmac deburring centre can do in a minute what takes a skilled man an hour, and do it better, saving costs and improving quality.**

Please note that City only offers this deburring facility on stainless steel and aluminium to avoid problems of cross contamination with carbon steels.



## The Lissmac Deburring Centre

*The process has removed all needles or hint of sharpness while giving a "machined" quality to the product.*

## Before & After Photographs

