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Bent metal parts in glass facades



Anyone who imagines a skyscraper with a glass facade probably does not think about how many bent metal parts it contains. The Canadian company BVGlazing has specialized in this industry and bends the parts using a RAS Multibend Center panel bender as well as an XLTbend UpDown folding machine.

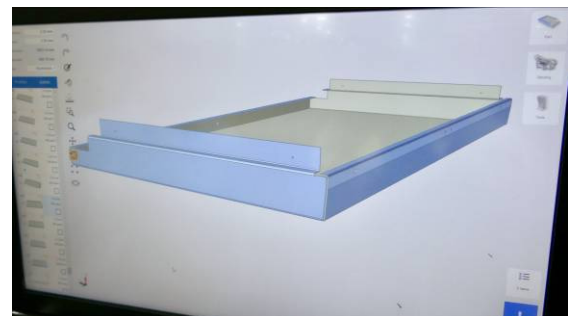
Managing Director Tony Manders explains that BVGlazing specializes primarily in glass facades for high rise buildings. The Toronto factory focuses primarily on high volume business and simpler glass facades.



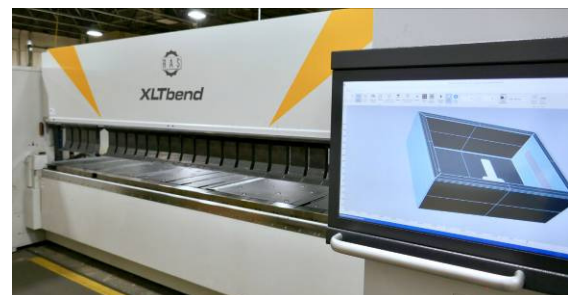
To withstand the demand, the fully automatic RAS Multibend Center bending center is in operation at this facility. At the Niagara Falls plant, the focus is on very individualized and complex glass elements that are designed as self-supporting modules and placed in front of the concrete or steel structure. About 500 such modules leave the city of the world-famous Niagara Falls every week.

The XLTbend RAS 71.40 with its bending length of 4060 mm and a maximum sheet thickness of 2.5 mm mild steel is perfect for the needs of BVGlazing. Usually either thinner galvanized steel sheets or aluminum cassettes up to 3 mm thickness are bent on the XLTbend. In many cases, the parts are not necessarily large, but require two tool setups due to the design of the workpiece. For example, this is necessary if the short side of a facade cassette has to be bent flush

with the long side. After importing a STEP file of the part, the Bendex software calculates the ideal bending sequence on the Office PC.



The automatically generated program also includes the tool setup calculation. Jeremy Pasma can already view the program sequence and tool setup in a bending simulation before sending the programs to the job list of the machine.



The operator at the machine only calls up the provided program, places the tools in accordance with the setup instructions, and the job can start. Almost all facade cassettes

include positive and negative bends. "Because the XLTbend folds in both directions, it's not necessary to flip the large size panels," says plant manager Stephen Worthy while describing what makes work easy for the machine operator.



The stop fingers of the XLTbend position the blank for each bend on the bend line. Suction cups in front of the stop fingers hold the part in position. This allows the updown bender to automatically process complete sequences with multiple positive or negative bends without the operator being involved in the actual bending process.



With these automatic sequences, the XLTbend achieves a precision level where the many interlocking components fit perfectly together. Moreover, this quality does not depend on the experience of the machine operator as it would on a press brake.

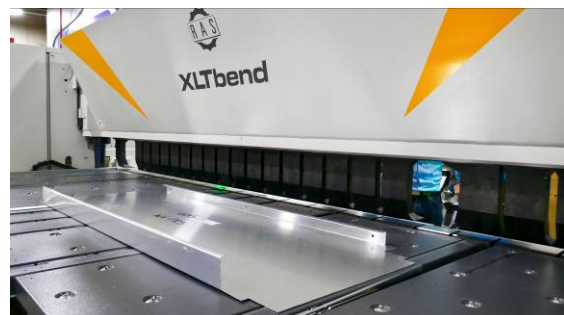


Each architect has different ideas about how the building façade should be designed. Therefore, the number of required components is indeed considerable in tall buildings. As

BVGlazing has to deliver the glass modules according to the progress of construction, the total quantity will be divided into several small batches. This requires maximum flexibility and absolute bending repeatability from the XLTbend.



But back to the initial question: where do you actually find the bent parts on a glass façade? There are some vertical and horizontal profiles that are purely optical which structure the glass façade according to the architect's design. Sometimes these profiles cover support pillars of the building structure. In case of glass-fronted facades, bent metal cassettes mounted behind the glass conceal the view to the concrete floors and ceilings. Often they are isolated for reasons of thermal insulation and are therefore sandwich-designed with an inside and outside cassette. Also, the window side extending into the building comes with a variety of mostly slim profiles. If you add up all these metal components to the size of a skyscraper, you get a feeling of why the machines at BVGlazing are working double shifts to keep up with the orders.



Since many bent parts are visible on the building shell, they must not be scratched during bending - another advantage of the folding technology over press brake bending. The bent parts at BVGlazing are very different in character. Large metal cassettes alternate with slim profiles. The XLTbend masters these special challenges by being operated from the front side of the machine and from the rear. For large cassettes, the worker runs the machine

from the gauging system side while moving to the front of the folding beam side for profiles and narrow parts.



Flexibility, innovative façade design, and precision work are characteristics that BVGlazing has developed in its 60-year history. Visible results are modern glass facades, which can be admired on skyscrapers in Canada, USA, but also in Australia.

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