

£80,000 Savings

Radan Saves On Material Usage

Switching to the world's most powerful sheet metal CAD/CAM software saved an environmental control systems manufacturer £80,000 on material usage in the first year.

Eminox Ltd's Information Systems Manager Alex Mills says the savings were entirely the result of Radan's outstanding nesting capabilities. "Nothing else changed. We used the same files and geometry to create exactly the same products. But Radan nests the components much more efficiently than the standard software provided with our Trumpf CO2 laser cutters."

Having over 8,000 active laser parts at any one time, Laser Nester and Production Planner Mark Atkinson creates between 40 and 50 Radan nests a day, to produce an average of 1,000 parts. "What varies is how many of each part we need on a given day. Some may be cut every other day, and some just once a week, so the actual combination of parts on today's nests will probably never be needed again.

"One day we might want 20 off, but only eight the following day. Using Radan's Project Nesting function means it's quicker and more efficient to create new nests specific to each day's individual requirements every time, instead of using existing nests from previous production runs which would give us unwanted stock." He says most nests take about five minutes to generate, containing a maximum of 30 different parts on two and a half 2,500 x 1,250mm stainless steel blanks.

The parts are then assembled into Eminox's high value environmental control systems such as Eminox CRT® (Continuously Regenerating Trap), SCRT® (CRT + Selective Catalytic Reduction) and FBC® (Fuel Borne Catalyst), which reduce pollutant gases and particulate matter in medium and large sized diesel engines on buses, lorries and trains, as well as offroad vehicles such as mechanical diggers, cranes and dumper trucks. Customers include Caterpillar, Volvo and Iveco Irisbus.

As a make-to-order, just-in-time company, Eminox's ERP software uses the Japanese Kanban style of scheduling that determines what to produce, when to produce it, and how much to produce at its core manufacturing site in Gainsborough, Lincolnshire. Thousands of systems are completed each year for OEMs and for retro-fitting. Their Laser Module Access database finds the day's manufacturing demand from the ERP software, which generates the schedules so the production department knows what to cut. It identifies the dxf files corresponding to those parts and quantities, and constructs the system files for Radan. Mark Atkinson uses those files to create the nests and NC program code.



About The Company :

Name : Eminox Ltd

Business : Vehicle Environmental Control Systems manufacturer

Website : www.eminox.com

Benefits Achieved :

- £80,000 savings on material usage
- Eliminates error
- Automates sequence of operations

Comments :

"Even though there's no margin for error on the high precision requirement, there's no inspection at the laser production stage, as we know Radan will get it right first time"

Alex Mills
Information Systems Manager

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radan

Once the exhaust system design, created from Catia, has been committed to manufacturing, the sheet metal will not be touched by human hand until the profiled part is taken off the laser for rolling or bending. As Alex Mills says: "Even though there's no margin for error on the high precision requirement, there's no inspection at the laser production stage, as we know Radan will get it right first time."

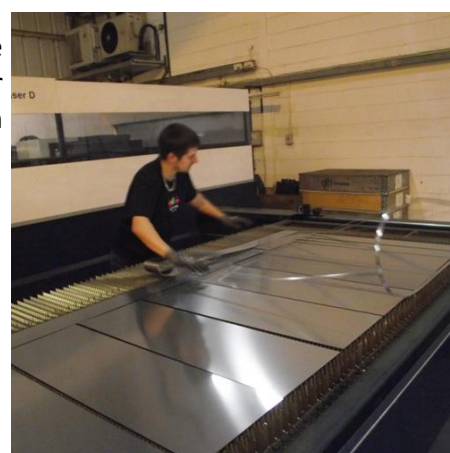
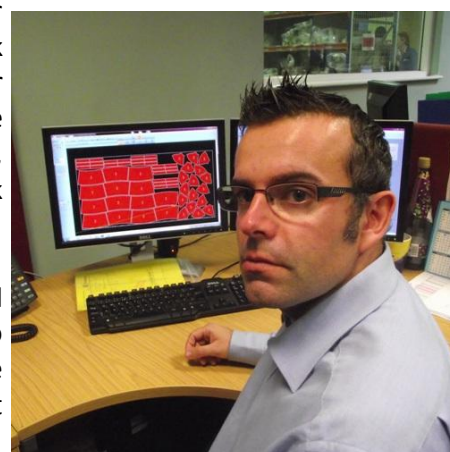
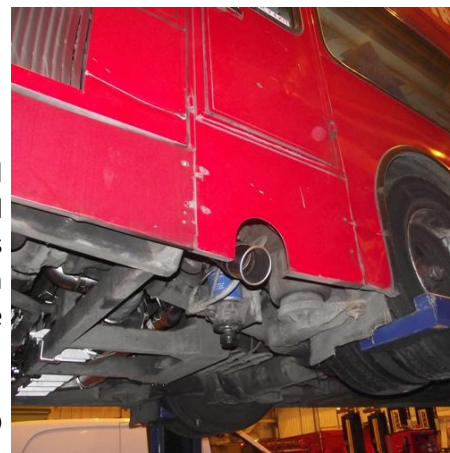
Catia flattens the design and makes it available for laser profiling. The 2D profile is then presented to Radan as a dxf file. Radan interrogates the profile to measure its surface area and ensure it has a closed profile for the laser to process. The area calculation in Radan ensures that the correct view of the part has been used for the profile as it checks with the Catia calculation, and the two should match within tolerance bands set by the CAD team.

"We have to ensure that what goes to the laser can be produced without any problem, so every part transferred from design to the ERP system will be checked by Radan," says Alex Mills (pictured right). "If there are any issues, such as unwanted open contours, it won't allow the part to be transferred. The CAD software is completely integrated with Radan using VBA tools."

As well as the £80,000 first year material savings, Eminox gains other major benefits from Radan: automation through the VBA capability – Mark Atkinson (pictured right, with a Radan nest) is able to press just one key for Radan to perform a sequence of operations that would otherwise require six or seven keystrokes; and he also makes full use of the remnants feature, which increases their material utilisation even further and keeps their stack of offcuts to a minimum.

Alex Mills believes Radan's nesting functions are among the most powerful of any CAD/CAM system available. "We know, because we push them to the limit. Radan's developed by a software company, not a hardware manufacturer that just provides software to go with its machines, and that makes all the difference."

Eminox are considering investing in CNC machines for laser tube cutting...either straight tube cutting, or 5-axis which offers greater flexibility. "Whichever hardware system we invest in we know that Radan will be able to program it, irrespective of the machine manufacturer."



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