

21st Century Super Sub

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Frank Green, Greenfield Engineering Managing Director



After twelve months working with the Performer had Frank Green made the right choice? "It was a gamble for Greenfield. We quizzed Salvagnini relentlessly, we asked for guaranteed uptime, and they responded by giving us written guarantees. We have actually had 100% uptime and no problems with the machine whatsoever. The quality of the products that are being produced on the Performer are so



Performer Operator Jonathan Davis

The news may be filled with dismal stories of failing UK manufacturing and of the economy being on the brink of recession, but at Greenfield Engineering Limited in Devon there is massive optimism, investment and success. Established in 1989, specialising in precision sheet metal work, Greenfield has grown from two people working out of a small unit to a work force of forty-five operating twenty-four hours a day in a 22,000 square feet purpose built factory with a turnover of £3.5 million. Delivering in their own fleet of lorries Greenfield ship products to customers throughout the UK and continental Europe.

Founder and Managing Director Frank Green embodies the almost dauntingly positive, work hungry, high quality service ethos of the company. The factory floor has an impressive array of new equipment from press brakes to automated turret punches and a recently introduced laser. All supported by off-line programming software, in-house finishing offering full pretreatment, stove enamelling and online powder coating. So what would be the company's next move?

Greenfield wanted something different, something that they could offer their customers that would make Greenfield stand out even more from other subcontractors. In 2000 Greenfield started researching the methods available for forming/bending sheet metal. They looked at robotic press brakes and visited exhibitions - Mach 2000 at the NEC and then a week spent at Blech in Hanover viewing all new equipment on offer. There was one machine that really stood out from the rest, the Salvagnini Performer compact panel bender. The Greenfield team assessed the Performer's capabilities and moved quickly from being impressed by the software and the machine's performance to thinking what they could offer customers with such a system. However there was one big concern, Salvagnini's old reputation for being unreliable. Whispers of 'fantastic performance when it works but nothing but trouble when it doesn't' floated in from the sidelines. Greenfield analysed the scenario. Many of the comments were coming from other machine manufacturers who, for all their warnings, were busily trying to reinvent Salvagnini technology in their own machines. It was decided that the Performer offered the best option and solution to Greenfield's immediate and future requirements and so a Performer was ordered.

good." As a subcontractor Greenfield are selling time on a machine and their expertise in sheet metal. They know that their customers will not pay for a supplier's inefficiency and so they are constantly striving to be more cost effective, think smarter and continue to reinvest in their resources. In the Performer they have found a

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machine that helps them to deliver what the customer is looking for. Greenfield is impressed with the sales and support they have experienced with Salvagnini. Frank Green has praise for both their honest sales approach and after sales service "Jon Grainger (Salvagnini's U.K. Sales Manager) is a good engineer. He understands both the machines and sheet metal

manufacturing processes, which is important. Unlike other suppliers he can help you with the technical approach in introducing new technology into your factory. Jon understands the sheet metal industry and that is very refreshing. Nothing is too much trouble for Salvagnini and after the machine is installed the support continues."

Software is a major aspect of the success of any modern technology and whilst the Performer's CNC programming is very powerful, Salvagnini's offline software has further capabilities. Salvagnini provide full operational and programming training. This training is often staggered over a period of time so that users can build up their knowledge as they become familiar with the machine and the software. After the first stage of training Greenfield were writing most of the programmes for the Performer at the control unit on the shop floor. Then, after more advanced training, they began to use the offline software to see how new jobs could be formed. A job is drawn and then run in simulation to check if there are any problems. One part of Lee Jolliffe's job as Production Design Engineer, is to liaise with customers about how their components are manufactured. Since the arrival of the Performer, Lee has noticed a common response "When I tell a customer that we will be using a Salvagnini their eyes light up!" The design team has adopted a new approach since the Performer's arrival. As customer's drawings arrive in the drawing office the first question asked is will it go on the Salvagnini? They then



Greenfield Engineering Design Team

use the software to draw it up, simulate it and check to see if it can be produced. If they are not happy with any of the bends, the designers go back to the customer to ask if they can make adjustments to the dimensions or design, which they have checked will not affect the quality or performance of the product, but will allow them to produce the job on the Salvagnini. Once the customer is happy Greenfield are immediately able to save that customer costs because the job is not being handled. The flat sheet is loaded



The Performer's Bending Unit

onto the Performer, processed, product comes out finished ready to load on to a pallet and ready for the next operation if any.

After the installation of the Performer Greenfield took a lot of work off their press brakes and put it onto the Salvagnini because production was faster. However since its arrival the company has won so much new work, they have had to push the less complicated work back onto the press brakes. Frank Green "We always believed that Salvagnini did not really offer the flexibility for a subcontractor and that their machines were for large manufacturers. But the Performer is, I think, specifically designed for subcontractors. It handles panel work really well, not necessarily extremely large panels but components that require complex folds. The Performer is able to repeat complicated and intricate folding, without error, in under a minute, whether it is Dutch folding or reverse folding - The only limits are down to the limitation of your drawing office. The tool change is done in under three minutes

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and to change from one job to the next is just so straight forward and simple, as is the operation of the machine, it is amazing." This ease of operation is displayed by the fact that Greenfield is happy to have first year apprentices operating and setting the Performer. The advantages of time savings and subsequent cost savings combined with the credibility of having a Salvagnini are bringing the company measurable new business and new customers who they had not been able to win work from before. Frank Green "When I say that we have a Salvagnini people ask what do you manufacture? When I say that we are a subcontractor they say, "Wow, a subcontractor with a Salvagnini"! Then all of a sudden they want to come down and see our operation. We tell them that it is the baby Salvagnini, "but hey look at what it can do". We pass on any cost savings and product improvements direct to our customers. If I am competing with standard press brakes for a contract, we eat them alive purely and simply on how well the machine performs."

The whole philosophy of Greenfield is to work closely with their customers and care as much about their business as they do their own. One example of this thinking, and of how the Performer is playing an integral part in putting this in to practice, is with a recent project for a leading supplier of industrial storage equipment. The equipment had historically been made by a number of different subcontractors, which had resulted in different standards of both quality and design across the range. Greenfield was given samples and no drawings. Their first brief was to standardise the range and so the drawing office first produced complete manufacturing drawings. The next stage was to design cost out of the cabinets, this required a little more lateral thought. The equipment, in particular the cabinets, once made were to be shipped across the UK, Holland, France and Belgium. Greenfield asked

themselves why were they shipping big pieces of metalwork with lots of fresh air inside which cost a lot of money and had a high risk of transport damage. They decided to redesign the cabinet as a flat pack. They still needed to retain rigidity but more importantly than that they decided to reduce the fabrication work of the cabinet by taking out the hinges and the internal bracketry. They developed a new flat packed design that has given their customer a 35% cost saving.

Greenfield see in Salvagnini the same attitude as they have themselves, Frank Green "We are like Salvagnini. When customers come to us we don't just ask what they want and go away and make it. We ask what is it for, why does it have to be made like that, can we change it, can we take some of the cost out of it, can we reengineer it? That is the way we are approaching most of our customers and we are finding that, especially in the current economic climate, they are very receptive to long term partnerships and any change which is cost effective or improves the product in some way. Some of our ideas are initially rejected, but down the line they evolve into what

"Wow, a subcontractor with a Salvagnini"

the customer wants. We look at things from a totally different angle; we look at it not from our customer's viewpoint but from that of the end user. We ask ourselves if what we are thinking of changing is going to affect the end user? If no then we have overcome one obstacle. Have we taken manufacturing processes out without detriment to the product? Yes, then we have overcome another obstacle. Can we now show a really good cost saving to the customer? Yes, then lets present our ideas to our customer and ask if this is acceptable. Seventy five percent of the time it is. This is the philosophy that we are working to."

Greenfield is convinced that despite the strength of other machine suppliers in the subcontract market that the Performer will make a substantial impact. Frank Green adds "I think that people will read this article and say yes but the Performer is not the right machine for me, but if they spent the time and really looked, they would surprise themselves. Their concerns will be the same as we had, is it going to be flexible enough for us? It is amazingly flexible. It does have its limitations and of course you cannot eliminate a press brake for small components. But with clever thinking and reengineering it is surprising what you can do. All of a sudden you are not bending little brackets, you design those brackets within the panel that you were going to weld them onto. So straight away you have taken out a bracket, you have taken out a fabrication process, you have saved a cost to a customer and you have eliminated half of your competition because they are unable to do that. With the Performer, Salvagnini have used all of their skills that have been honed over the years developing systems for some of the largest and the best known companies in the world and come up with a machine for subcontractors like us, and they appear to have hit the nail right on the head."

Has Greenfield sat back contentedly with their new equipment? Unsurprisingly the answer is no. The stop press news is that following the successful introduction of the Performer Greenfield travelled to Salvagnini Italy to view an S4P4 (punch-shear-bend) Automated System. The S4 punch shear with MD store and auto stacking arrived at Greenfield in March 2002. It is the first of the new generation of Salvagnini punch shear machines to arrive in the UK since the launch at EMO 2001. More notably Greenfield will be the first subcontractor in the UK to have a Salvagnini S4 system. No subcontractor has ever had the capabilities that they now have. The next six to twelve months should be a very interesting time at Greenfield Engineering as they enter new territory in UK precision sheet metal work subcontracting.



Greenfield Engineering's newly installed S4. Operating the S4: top right Nick Westlake, above Mark Maloney.