

## Sheet Joining Technology



Haeger's Insertion Machine includes modern controls with a computer touch screen and camera system, plus additional monitoring functions. The machine provides the benefit of virtually eliminating missed or incorrectly inserted bolts.

SMB's Chief Executive Officer, Thomas Schneckeburger, (right) and Werner Schwanz, the technician responsible for the Haeger assembly, are amazed by the high quality output and the simple operation of the new Haeger insertion machine.

Latest generation fastener insertion system wins recognition from supplier—SMB Schneckeburger.

# Failure Free Fastener Insertion

by Guenter Koegel. In Today's ever changing hardware insertion departments, delivering sheet blanks or bended sheets won't win most suppliers any prizes these days. Suppliers are asked about assembly-ready parts, or even better, about complete sub-assemblies. The supplier featured in this story, SMB Schneckeburger, has responded to this trend by investing strongly in it - including the latest generation of Haeger's hardware insertion system with computer touch-screen and camera system. Missing or incorrectly inserted fasteners are virtually impossible with the Haeger machine.

“With this machine, you can keep up with the competition from low-wage countries,” stated SMB's Chief Executive Thomas Schneckeburger—he has experienced a positive year of working with the Haeger machine. Various new innovations are primarily responsible for this--fitting the current system from the latest generation at SMB Schneckeburger GmbH and taking out the Haeger presses that were up to 12 years old. Schneckeburger was previously a little sceptical about the touch screen control, “When buying, we asked ourselves

whether a simple insertion machine needed a touch-screen control. However, practical experience proved Haeger to be absolutely right. With the touch-screen, the presses are very easy to operate and you can see at a glance where hardware does not fit correctly. In addition, the set-up times decrease. Although the machine itself has become more complex, thanks to the new control and precise tools, the system can be re-tooled faster.” This fact has potential, according to Thomas Schneckeburger “The process itself is exhausted; the staff cannot work much faster, but you

can still make up for time when converting from Order A to Order B”. Therefore, SMB has accelerated the set-up and built the tools on T-Brackets. With these Brackets, the whole tool can be completely pre-aligned and simply inserted into the machine. This includes the conversion of the feeder bowls, and the change-over from one fastener to another takes less than 5 minutes, according to Werner Schwanz, the technician responsible for the assembly. Another advantage of the Haeger 824 WindowTouch® control is the tooling protection system.

If the worker holds the work piece crooked, the control reports the error and thus prevents the part, the fastener, and the tool from getting damaged. The fastener length inspection makes it impossible to insert a wrong length stud or standoff. Schnekenburger says, "It sounds so trivial; however with the fasteners, it is important that the right fastener is installed, in the right hole with the right length - no more and no less. When we deliver directly to the belt and the goods are processed two hours later, every item has to be in place and correct." This is now guaranteed with the new Haeger machine.

The parts have been programmed so that the operator starts with the largest diameter fastener, and now with the programmed part, it is impossible to insert the fasteners in the wrong location", explains Gerhard Föckler, owner of Haeger's distribution partner HDM & Innowema.

The process in detail is the control screen displays step by step when to insert which fastener.

"The screen changes color and shows the positions for the next fastener. Then the operator recognizes that a new type of fastener is to be inserted now and he prompted on screen to insert the corresponding color at the Turret Station.

The Turret allows both automatic and manual insertion in a user-defined rotation. There is one difference, with manual feed, the operator has to remove the fasteners from the small bins with the respective color



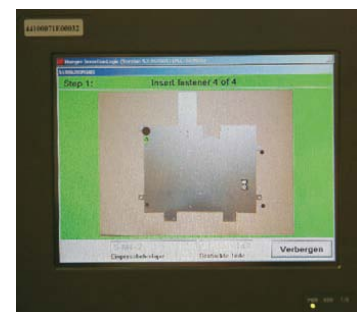
and insert manually. As an additional tool to avoid mistakes and increase process safety, SMB has opted to be one of the first users for the visual illustration of parts on the control screen.

In this process, the worker sees and is prompted which fastener he needs to insert where while looking at the picture of the part. Thomas Schnekenburger says "Certain parts are very easy to document with a photo, as a supplement to the part drawing. The expense is minimal, but the real picture of the inserted part is above all for the employee, who is not always sure about reading drawings. It is another strong support tool and it reassures them that the fasteners are installed in the correct holes." And Gerhard Föckler adds, "With the visual presentation of the parts, it is also not possible to insert fasteners in the wrong side of the work piece."

Schnekenburger only sees one potential risk in using the camera system, "Of course, it has to be mentioned that in the case of possible changes, the pictures are changed too." As the technician responsible for assembly, Werner

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Schwanz, recognizes the control makes it easy to adapt to the proficiencies of the individual workers. "The worker logs into the machine with his password and has automatic access to the priority level relevant to him. The bandwidth is sufficient from full access to all parameters for the professionals, and the straightforward attention handling of the parts without adjustments for semi-skilled temporary workers. The system is also ideal for a semi-skilled and unskilled manpower or temporary workers, because errors are practically impossible." The prevention of errors is one of the fundamental keys for efficient production for Thomas Schnekenburger. "It is always better to work on



## Schnekenburger

SMB Schnekenburger GmbH, a family company with approximately 50 employees and over 25 years of experience in thin sheet technology sees itself not only as a supplier but also as a technology partner to its customers. Innovative ideas and higher technological standards have made SMB the system supplier for casing technology. Our customers are mainly electronics firms, equipment manufacturers, and companies in ventilation technology and medical technology, to whom SMB not only supplies with ready-assembled and painted components, and casing units in quantities between 50 and 1,000, but also supports them in the product design. Chief Executive Thomas Schnekenburger states, "Many customers come to us with their designs and we advise them as a technology partner regarding feasibility and cost-effective production. More frequently, we attend their design meetings and we can incorporate our know-how at an early stage. Through this, we ensure the products are manufactured without any glitches at a good price. We also offer one of the best CAD programs available. We encourage the CAD programmers to process sheets independently to yield perfect results." If the customer likes the result, common designs from SolidWorks can be produced on a 3D CAD system at SMB, and then prototypes and pilot production parts can be developed and then finally go on to manufacture serial parts.

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the process than to have sort out faulty parts later. Previously, we checked critical parts at 100% with test templates, however even with this method, the delivery of faulty parts could not be ruled out. With the new Haeger, we can now move quality assurance closer to the process and improve process reliability. Any chance of missing or forgetting fasteners with the appropriate maintenance sequence, and even mixing up fasteners will be definitely ruled out." And if the fasteners hold, then nothing else can go wrong. The new Haeger from SMB is convincing on this point,



The optional hard stop prevents the high press capacity from deforming soft materials like aluminium.



Gerhard Föckler, owner of Haeger's distribution partner HDM & Innwema, "In order to accelerate set up, SMB has T-Brackets with each tool set allowing the tools to be completely pre-aligned at all times."



With screen's colored flow on the WindowTouch, the operator can recognize from which bin the respective insertion element must be taken.

Schnekenburger says, “If the Haeger has inserted a fastener, we can fully assume that it will hold. The machine has been found to be very reliable here. Also the grounding of stainless steel bolts, which has often been a problem before, works very well today; on one hand by the harder bolts offered by various manufacturers, and on the other hand, by Haeger’s applied consistent pressure and the adjustable dwell time, through which the material has time to flow into the fasteners grooves.”

The advantage of the high press capacity with soft materials such as aluminium does not completely switch over. For example, bulges occur when pressing is close to the edge, so SMB ordered the optional positive stop, thus ruling out such deformations of the basic materials. Also, another option has been proven to be the best one, the part locating light, which guides the operator in faster and easier alignment of the hole onto the lower tool alignment pins.

At another site, SMB deliberately held back when buying options. So the Haeger is only equipped with one feeder bowl for automatic feeding, although up to four bowls is possible.

For Thomas Schnekenburger, this is not penny-pinching, but deliberate calculation, “Our parts mainly contain in between 8 and 18 insertion elements of which have between 2 and 4 different sizes. Very often there is a large quantity of one size fastener and a small quantity of the other sizes. In this case we can automatically feed the one size and manually feed the other sizes and still pick up the part only once. If in some cases there is a large quantity of 2 different fasteners, the operator will have to take the part in his hands only twice.” And if at any time, a second, third or even a fourth feeder bowl would become a necessity, this would be no problem. All Haeger machines are modularly built and can be easily upgraded from a basic model to an automated version. This also applies to the bowls, which can be quickly and easily upgraded.



**Although up to four feeder bowls can be added to this Haeger 824WindowTouch®, SMB has equipped its new Haeger only with one feeder bowl. Most of the parts have a large quantity of only one size fastener and a small quantity of the other sizes.**



**The newer system (to the forefront in the picture) differentiates mainly from the other two Haeger presses by the touch screen control, which makes the presses very easy to operate, but most importantly, very easy and quick to change over in between jobs.**

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The Haeger is generally flexible, not only with regard to the equipment, but also with what applies to the insertion elements. This is an important argument for SMB when they choose Haeger. As a typical contract producer, Schnekenburger said, "It was very important for us to remain independent from fastener suppliers, because at times, our customers demand specific types and brands self clinching fasteners. With Haeger, we are completely open and we can use any type, size, or brand of fastener that our customers ask us to use."

Likewise, what also pleases Schnekenburger very much is the interchangeability of tools, which can be put in on all three Haeger machines. This supplies extra flexibility when processing the orders, "Despite various generations of machines, the tools and feeder bowls are identical. The strategy behind buying the new Haeger was to initially manage new machine capacity as being necessary in order to minimize the number of changeovers".

In view of so much praise, it is no wonder that Schnekenburger's verdict about his Haeger turned out to be positive—for decades, we have used Haeger machines and we are always very satisfied with them. The machines are well-engineered, very reliable, and ideally suited to our requirements. The machines are also very safe because any known weak spots in the machines are continuously eliminated. Haeger always has its ear to the ground in the marketplace and the meetings that we have regularly with the Haeger Team always help us to create new steps in positive development."



Creating Hardware Insertion Profit Centers

Haeger®, Inc. is the world leader in developing and manufacturing hardware insertion machines using innovative fastener insertion technology. For over 25 years, Haeger has pioneered fastener insertion expertise with new technology machines and tooling systems for inserting all types and sizes of self-clinching fasteners. Haeger machines Create Hardware Insertion Profit Centers™ by optimizing labor, improving quality, and increasing productivity through the use of technology. [www.haeger.com](http://www.haeger.com)

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**Start Saving Time and Money in Your Hardware Insertion Area TODAY!**

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**Website:** [www.haeger.com](http://www.haeger.com), or **Phone,** 1-209-848-4000 or 1-800-878-4343

Contact SMB Schnekenburger at:

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