

Strapping of Tiles: Improved availability and product life even in rough environments

Although strapping is one of the last steps of the production process, it is a determining factor for the productivity rate of the entire machine line. Rough production conditions with abrasive dust, typical for example for the production of tiles, constitute an extraordinary strain on machines and equipment, frequently reducing the up-time and machine life quite considerably.

With their SMB SV1K, the company SMB Schwede Maschinenbau GmbH is presenting a strapping machine designed especially for applications in rough production environments. Thanks to its construction and robust technology, the machine ensures a very high rate of reliability and a long product life - a measurable contribution to an increase in the total productivity rate.



SMB SV1K consists of the strapping machine itself with a sealing aggregate positioned at the side and a strap arch, optionally combined with a roller table module with a pneumatic pusher. The unit itself is very slim, the position of the operating unit and coil position being available in variable positions, even with an external coil. Therefore, it can be integrated to match existing automatic production lines. The arch is separable, so it can be installed without much adjustment into the customer's conveying equipment – all it needs is a small slot for the strap. What's more, it is easy to move the machine out of the line – e.g. for maintenance - without having to disassemble the conveying equipment.



The operation of SMB SV1K is fully automatic: The control unit releases the tile bundle to enter the machine, the bundle is stopped accurately in the pre-selected strapping position, the pusher presses it to the side of the sealing unit, ensuring an optimal close position of the bundle to achieve tight strapping even on hard products such as tiles, and even for small bundle sizes.

When operating mode parallel strapping is selected, the bundle moves on to the second strapping position, is laterally pressed and receives the second strapping. After the tile bundle has exited the machine, a "Ready" signal is released to start the next cycle.

Depending on conveying speed and product size, SMB SV1K produces up to 1,500 bundles single strapped, or up to 750 double straps, in an hour.

To assure such a high performance rate in continuous operation and to achieve a maximum product life with minimal maintenance requirements, the SMB SV1K is designed to optimally endure rough application conditions:



Not only the strapper itself, but also the roller table with its toothed belt drive is extremely robust in construction, making it also durable for heavy bundles. The pusher is sensor-controlled, allowing entry of bundles only when the cylinder is in its end position. Additionally, it is protected with a mechanical deflector, reliably guarding it against damages from entering bundles. In order to avoid unnecessary strain at the sealing unit during the pressing process, the machine detects whenever a bundle rests at the table top and switches off the feed motion.

The strapping machine sucks in clean air from outside through a filter, generating interior overpressure and preventing intrusion of abrasive dusts – an effective means of protection against wear. In addition, the sealing unit is cast-iron-clad, so that the first maintenance job is due only after 3 million strap cycles, or after 2,000 operating hours respectively, run on maximum speed!

The strap arch is protected against intruding particles by industry-quality brushes. It is also open at the bottom, so that dust cannot accumulate either. The strap guide and the strap flaps are made of stainless steel, drastically reducing wear, in comparison to the widely used hinged plastic frames.

The welding plate of SMB SV1K comes with an integrated self-cleaning function, which not only extends its product life but also ensures a consistently high quality of sealing. As a result, it achieves a breaking strength of the welded joint of approx. 80% of the respective tearing strength of the strap material. By the way, SMB SV1K can run on PP as well as PET strap, without having to refurbish it. This ensures that customers can always use the optimal strap material to fit their products. In addition, it also allows for a flexible reaction to changing raw-material prices - to choose whichever material is most economic at a given time.



SMB SV1K is operated through the SMB JogDial unit, with a turn-selector switch located in the middle. This solution is intuitively easy to use, therefore meanwhile also established throughout other domains, like the automobile industry. Of course, parameter sets for various products can be saved and called up at the push of a button. This helps to cut down set-up times and keeps operating staff from making adjustment mistakes.

Despite the multiple measures to maximize downtime and minimize maintenance, SMB's SV1K will still need some maintenance now and then. But it is designed with an eye to maintenance efficiency: as an example, the pusher runs on slide bearings – making it easy and economic to replace. The cover parts of the machine are simple to remove separately from the table top, so that the strapper is open and freely accessible from all sides. This ensures that after an only short maintenance break, SMB's SV1K is back and ready for the demanding daily routines in a rough environment.

SMB Schwede Maschinenbau GmbH