

STAUFEN.

EXCELLENT CHANGEOVER AT SCHOTT HUNGARY KFT

SCHOTT
glass made of ideas

Lowering changeover time at SCHOTT HUNGARY Kft.

Decreasing changeover time and introducing a new training system contributed to yearly savings of EUR 250,000 – without increasing resources

COMPANY PROFILE

The company was founded in 1993 in Lukácsháza, Hungary. Pharmaceutical packaging materials are manufactured here at a 280,000 square foot facility, using up-to-date machinery. There is great demand for Schott's state-of-the-art products. Customers include both domestic and foreign pharmaceutical companies. The strictly controlled manufacturing process uses modern production lines. Products are manufactured on automated production lines by machinery equipped with various specialized camera systems. After shaping, measuring and tempering the finished product is sent to the adjoining packaging room where it undergoes quality control for appearance and is then packaged. All manufacturing lines are equipped for full quality control of critical dimensions.

Every year, nearly 1.7 billion vials, ampoules as well as carpules used in the treatment of diabetes are manufactured in a variety of colors and qualities. Products are manufactured according to current international standards and customer specifications.



AT THE STARTING LINE

We devise long-term strategies to meet increasing demand

Thanks to its successful fulfillment of customer requirements, SCHOTT's Lukácsháza plant has become a market leader in its category. With the additional advantage of a favorable business environment, the demand for its products has increased every year since 2012 and approached its maximum manufacturing capacity by 2016.

Based on increasing demand, the management of the facility has devised a long-term strategy to increase manufacturing capacity by 30%.

One of the main elements of this strategy was the reduction of changeover time, the standardization of SMED (Single Minute Exchange of Dies - or „fast changeover“) including separation of preparation and post-production time from the production process as well as precisely specified preparations and scheduled tasks.

Success was not only supported by process preparation but also by the TWI (Training Within Industry) training system. This system can be applied in any industry; its aims are to enable new workers to perform independent and high-quality work, and to improve management in workplace training methods and workplace communication. The required competencies were recorded in personalized work instructions with pictures which provided the basis for uniform training; additionally, management coaching facilitated the appropriate transfer of knowledge, efficient development of workplace communication, and integration of innovative ideas.

This required the optimization of workers' tasks without needing to commit additional resources. The goal was to achieve more efficient (rather than faster) work by minimizing or even eliminating loss.



80% reduction in changeover time in 12 months

APPROACH AND SOLUTION

The first stage included - in addition to surveying current conditions - the introduction of the use of SMED and TWI tools. Taking into account historical data statistics and personal interviews as well as the time requirements and spaghetti diagram of the actual changeover, the project team identified the losses of the mapped process and potential capabilities. Cooperation between the workers and the project team resulted in categorical mapping of losses and potential and the assignment of responsible persons and tasks to each category.

The accuracy of the data collection required the introduction of a manually completable data collection form which was then processed and evaluated offline, but still provided an improved measure of the efficiency of the joint efforts.

Joint efforts soon produced the expected success

Following the initial success, process stability was made a priority, facilitated to a major extent by process standardization and work instructions with photos based on the TWI method. Very detailed photographic illustrations and descriptions as well as lists of the required tools and resources were used to document each step of the changeover.

The newly devised process also highlighted deficiencies in work organization and information flow, which were then eliminated, thus further improving process stability.

Changeover processes are better organized and require fewer resources and improvisation from the workers involved. Trained workers were tasked with using the time freed up for prevention and improvement of the knowledge of new workers, which resulted in further improvement in output.

RESULTS

Changeover time: 36.2 hours → 5.7 hours	-84%
Waiting time – part of changeover: 8.3 hours → 0.3 hours	-96%
Walking distance	-60%

"As a result of these measures, the company successfully improved its throughput without the need to expand its existing machinery."

Döppes Christoph, General Manager, SCHOTT HUNGARY Kft.

STATEMENT ON THE RESULTS



"Successful TWI – Training within industry, implementation of a documented practical pilot project – directly contributed to annual savings of EUR 250,000. We are in the process of gradually extending the methodology to all other areas. Numerous additional positive effects could be seen, such as shorter training times, lower fluctuation, better-organized training and fewer instructions. In short, TWI allowed us to devise our own standards and effective training practices for our organization. During training, management and experienced workers learned how to effectively teach the standards to new workers so that they can work with fewer errors and corrections, less waste, as well as fewer accidents and reduced tool and instrument breakage."

Christoph Döppes, General Manager SCHOTT HUNGARY Kft.

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companies and employees for more than 25 years.

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