



Case Study

Lighthouse rings in the changes for Plastibell's production operations

*Integration across various machine types delivers real business
and process benefits*

Introduction

Manufacturing medical devices is not only a precise process but it demands exacting measures are taken in the preparation and maintenance of the manufacturing surroundings. Indeed, all of the equipment must be contained in a clean-room environment, ensuring that no contamination of product or parts is possible during the entire production process. Plastibell Pharm has established such an environment for the work it does for leading suppliers of pharmaceutical and medical devices and the company is using software from Lighthouse Systems to help it to ensure that the process quality is maintained across its injection moulding area and, in time, within its assembly operations.

Mr. Deshayes, Quality Manager at Plastibell Pharm, comments, “We have two factories operating in different locations across France and at present one of the plants is running a trial of Lighthouse’s Shopfloor Online. It is already showing many benefits to us as an organisation and new ways of using the software present themselves as we learn more about it. We plan to extend use of the systems to the remaining factory once the trial is completed.”

The process

In one plant alone there are 16 injection moulding machines making hundreds of different types of parts for various medical devices. Each part requires a different moulding tool and this makes the production process expensive to complete. Each tool has between one and 64 cavities, depending on the part or device to be produced. Each cavity within the tool will have its own unique behaviour which must be monitored and tracked throughout its production lifecycle. With a minute margin for error it is vital that any degradation in performance of a cavity is highlighted and acted upon immediately. Only by tracking the unique identity of each cavity can Plastibell Pharm be sure that it is providing the quality of product to its customers that is required. It is Shopfloor - Online that provides Plastibell Pharm with the confidence to know that its cavity analysis is exact and complete.

Should a particular cavity be wearing over time, Plastibell Pharm will be aware of its status and can take it out of the tool and replace with another. It is possible to exchange a number of cavities or even to block them. Blocking a cavity means that manufacturing can continue at a lower production rate rather than the company incurring extended machine downtime. Of course, there comes a time when the machine

will need to be shut down and a tool replaced due to inactivity in a certain number of cavities.

On completion of a cycle the parts created from the cavities are taken and a number of characteristics are checked using a non-contact co-ordinate measuring machine from Werth. This machine is non-contact because many of the parts can be soft so a light is shone onto the various parts and a camera records images from which measurements are taken and an ASCII file is created that is picked up by Shopfloor Online. This process is carried out automatically and alerts are raised if there are any “out of spec” measurements detected.

How systems help with production

Knowing what is being used when and by whom is paramount throughout the production life-cycle and Shopfloor Online is central to this process. The system knows when a cavity has been blocked from production. It knows which operator requested this action, when it happened and the identity of the cavity. The audit trail of all actions is recorded right up until repair has been completed and production returns to full power.

It is also important for companies like Plastibell Pharm to know the history of any particular tool so Shopfloor Online records

which operations have been carried out by each one so that any problems can be dealt with quickly and effectively by going back through the information held and located where a problem first occurred. In this way, the company can be sure to use the tools that provide the best performance in particular jobs and therefore positively impact on overall plant performance.

Systems working together

Of course, it is important that systems across the organisation communicate seamlessly with each other to ensure that overall reporting on performance is sound and precise. Lighthouse has developed an interface to Plastibell Pharm’s ERP system from QAD, MFGPro. This system knows when a job on a machine changes and this is communicated immediately to Shopfloor Online so that it can record the relevant data. This transparent flow of production information takes some of the strain from the operator by performing some of the tasks usually associated with them. This should result in fewer errors occurring in setting up and scheduling jobs and ensures that the correct tools are used at all times.

Interfacing with the internal gauge management software is also important. This database of all measuring tools holds the unique identification numbers of all tools and

ensures that they are calibrated at regular intervals – usually every 12 months. The database outlines when calibration is due for each tool and will alert operators should any specific tool be taken out of production. Shopfloor Online is responsible for these alerts and cross-references different data stores to check dates and times of measurements. If gauges need to be recalled, emails are automatically created and sent to the relevant managers so that appropriate action can be taken.

Finally, Shopfloor Online interfaces with a Sylvac multiplexer which brings together a number of gauges into a single box. Information is transmitted directly from the gauges, via the Sylvac system, through the PC and into Shopfloor Online. The result is a smooth transition of all data from disparate machines to a single system that then produces reports, alerts and schedules to meet the production process requirements.

Generating useful feedback

Reporting is essential at all stages of the production process and Shopfloor Online helps Plastibell by taking the data and measurements it receives from the various sources and providing regular, accurate reports on progress. It also generates certificates of analysis on completion of jobs to deliver pre-determined levels of information to customers. As the system is

programmed to generate these forms automatically operator time is saved from conducting this process manually and querying data from the Shopfloor Online databases and other systems, such as the ERP platform.

Next steps

As the plant environment is critical to ensure the production process remains clean and within specific bounds regarding pressure, particular and microbiological level, these variables are to be introduced into the Shopfloor Online system. This will ensure that should an environmental condition change an alert will be raised to address the situation. Hopefully, such an alert will ensure that production stoppages are few as remedial actions can be taken before the environment becomes untenable for the production process to continue.

Mr. Deshayes concludes, “The Shopfloor Online trials have run exceedingly well and we plan to implement the software in our other pharmaceutical facility and in the other facilities of the DTP Group. It has delivered real value in Plastibell Pharm already and we look forward to reaping further benefits across the other plants. The software has been developed to adhere to CFR21 part 11 standards which is very important to us and to the industry as a whole. It demonstrates that

the software is fit for purpose. Besides, experience shows us that this system delivers

great performance benefits in all areas of the production process that it touches.”

Lighthouse Systems is one of the world’s leading developers of Manufacturing Execution Systems (MES) with offices in London, Singapore, Australia and Rochester, NY. Lighthouse Systems Shopfloor-Online is web based modular software that provides real time visibility of the entire manufacturing operations environment. Applications include Maintenance Management, Concern Management, Quality, SPC, Downtime, OEE, Spoilage and Inventory Traceability. Shopfloor-Online is being used in a wide range of industries with some of the biggest manufacturing companies; it is deployed in 15 languages in 28 countries.

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