

Your Security through High Quality!

QLibro: Process Optimisation and Quality Assurance for Perfect Binding

Is it the measure of uncertainty that sometimes disturbs you with perfect binding? Would you not be happy if you could always



rely on the quality and stability of the adhesion of your perfect-bound products?

This is also what your customers

expect: Good, convincing, even impressive products, with a good lay flat, and which – above all – do not fall apart. They do so with good reason, since nowadays the technology for this is available!

On the other hand, you well know how difficult it is to harmonise processes and tools with the selected materials. How easily a machine parameter gets to be set badly! Even products that are not bound in PUR should not fall apart after having been read a few times. The goal is to produce a hard-wearing and lasting perfect binding despite difficult or unknown paper, which has never been worked with before. And at the same time you give a guarantee that under the normal stress the individual pages would not fall out of the perfect bound product.

Every day you are walking this difficult tightrope walk, which is subject to high performance and cost pressure and sometimes under the threat of sudden complaints, or high expenses and unforeseen costs for reprint, or – where applicable – even penalty for non-performance of a contract. Not to forget: You have a good reputation to lose.

Therefore, through this article, you will be made familiar with an effective and comprehensive method of quality assurance for industrial perfect binding.

Four Pillars of the Quality Assurance Concept:

1. Precise Quality Tests

First of all you need an objective evaluation of the quality of your products.

For this a so-called pagepull tester is commonly being used for the examination of the stability of a binding. Such testing devices are made to measure the pulling force that is required to extract or tear out of the adhesive bonding one single page under defined and well controlled conditions.

However, only exact measurement readings have reliable validity. This is why the precision of the measuring instrument used is of crucial significance.

In our daily life we are also quite conscious of this fact. Would you

adjusting mechanism is necessary to make sure that the pulling force on the single test page is always directed vertical in relation to the block spine. And in the mean time this new principle has been patented.

Our pagepull tester also applies the pulling force in the downward direction, while the opened product is fully supported at any given time. Thereby we prevent the weight force of the product to become a hidden source of error in the measurement.

2. Getting Results Fast and Easy

Only a measuring method, which in the daily routine of production saves time and personnel resources, can in the long run be employed. It must be simple and efficient.

Quality assurance yes – but it must be fast. 8 individual measurements on 4 products, taking about 2 minutes each, sum up to about 1 hour. This is surely too long for you!

That is the reason why we designed our pagepull tester *PPT Newton 451* in such a way that an

opened perfect-bound product can simply be placed onto the device and then only a single button needs to be pressed. Due to the mechanical design of the automatically closing block support bars, also registered as a patent, you do not have to go through any extensive aligning and clamping of the test block or single test

not rather be certain that the fuel gauge counts precise, when you fill up your car?

In the same way we from QLibro wanted to ensure reliable measurement results. Therefore we have completely reconsidered the principle of operation and mechanical design of a pagepull tester. With that we came to the conclusion that a special self-



page. The measuring result is directly transferred into a computer via a serial interface. After each measurement the pulling and clamping mechanism automatically return into their original positions so that already after a few seconds the next measurement can be started.

Thus we took care to develop a highly efficient method of measuring: Through speed and simplicity you save time, additional personnel, and hence expenses.

3. Analytical Procedure

In addition to the fast and precisely obtained measuring results of the pagepull test, the third pillar, on which the quality of your production now comes to rest, is to store all kinds of process parameters and machine settings.

This is what the QLibro development and proven software concept *PerfectBinder* serves you for. It helps save data systematically and later supports the analytical processing of them. By means of this software correlations between quality-influencing parameters and their impact on the end-result can be evaluated.

At this point you will not only get to know how good or bad the product was. Rather you will understand the Why! Which factor resulted in better quality? Which one had a rather negative influence? And most importantly: Which is the screw to be adjusted to enhance the quality?

The QLibro software package can be customised and configured individually and supports your quality assurance work so effectively that within a short period of time and without prior knowledge of statistical mathematics profound results will be achieved.

4. Application of the Obtained Insight

The next step logically falls in line: The knowledge as obtained as a result of measurements and analysis will be reintroduced dynamically into the production process and thus used as a feedback. In this way a sort of

regulatory circuit is being created, through which the stability and quality of your products will be improved to a significantly measurable degree and lastingly assured.

The Practical Proof

This concept of quality assurance, which in other areas of industry is long time state of the art, has in the mean time proven itself in the book binding field as well. Thus by making use of this method a large book bindery was able to more than double their average pagepull test results within a time frame of about two years.

By means of statistical data machine defects and misadjusted basic settings as well as blunt spine processing tools could be detected and located early and their negative influence on the products could be averted. It was possible to harmonise machine settings better to the different materials and select more suitable processing tools or change their combination.

Benefit and Practicability of the QLibro Quality Assurance Concept

- The bookbinder learns, which influences have a bearing on his product, can better evaluate such parameters, and in this way makes sure to get the best out of his machines. He thus reduces the risk of customer complaints and liability and secures the reputation of his company by means of excellent products.
- Machine manufacturers screen their production processes. They are using the possibility of quality intervention and thus maintain ground in the market with their technologies. The analytical concept is an aid to refine and further develop machine technologies and lead them to market maturity.
- Tool manufacturers can analyse and optimise cutting angles and other relevant parameters and thus broaden their portfolio of possibilities.
- Adhesive manufacturers adjust their formulations and

arrive at increasingly better results and satisfy their customers.

- Paper manufacturers obtain data about the properties and the ability of their printing substrates to be processed or bound.
- Research institutes and schools study the different causal relations between all kinds of quality-relevant parameters.

Summary

In this article you have seen how to handle and – as much as possible – eliminate probable uncertainties that come up in connection with the processes of perfect binding. The concept of quality assurance and process optimisation, as it is here described, rests on four solid fundamental pillars: You can measure precise, and fast, you analyse data, and finally you reintroduce the results profitably into the production process.

Thus you close the circle and secure for yourself highest quality, satisfied customers, as well as interesting and lucrative future orders.

So let yourself be induced to employ professional quality assurance profitably also in your company and thus set the course for competence and growth even more distinctly.

* www.qlibro.de