Did you Know?
Make-Ready Times

Explanation

The make-ready process is one of the most important parts of the print production process. As make-ready we define everything that is done in order to make the press ready for a print job. This means that with an increasing number of print jobs the number of make-readies increases and thus the time you spend with make-ready is getting more and more. Being efficient in this part of the process is crucial in order to increase productivity and at the end your overall business result.

Definitions

Make-Ready Time

The make-ready time starts with the first plate mounted and ends with the first printed good sheet. To be more precisely and better define areas of improvement the make-ready process can be split into two different parts. Those parts are called basic make-ready time and fine tuning time.

Basic Make-Ready Time

The basic make-ready time is defined as the time which is necessary to prepare the press for the upcoming job. It starts with the first plate mounted and ends with the first printed make-ready sheet. It includes things like plate change, ink and paper supply, etc. and is strongly affected by internal logistic processes.

Fine Tuning Time

The fine tuning time starts with the first printed make-ready sheet and ends with the first printed good sheet. This part of the make-ready process includes adjusting register and ink but also all the standstill times which occur due to waiting for customer approval, etc.

Effective & Standstill Times

With the effective & standstill time you can split each process step into another two different times.

The part of the progress where the machine is running is called **effective time**.
The part of the progress where the machine is not running is called **standstill time**.

Splitting a process into standstill and effective time provides you an even better overview about where you are losing time. Is it while machine is running, and you are doing adjustments or is it while machine stands still, and you are doing preparation work at the press or you have to wait for certain things?

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Causes and Influencing Parameters

Basic Make-Ready Time

An extended basic make-ready time often has to do with logistical issues (the standstill part of the basic make-ready time). Especially if you have a high number of jobs, the organization of print material, like plates and paper but also the right sequence of the print jobs becomes more difficult. The more print jobs you have, the more important it gets to arrange the right order of the jobs.

Always avoid unnecessary changes in paper format as this takes additional time for changing the paper but also adjusting the settings for paper run. Ensure to print as many jobs as possible with the same printing material.
In case of changes in print material, ensure that the necessary material is always on hand before you start the preparation for the new job.

Also, avoid unnecessary ink changes and try to always maintain a defined ink placement. This reduces the time you need to change the ink and clean the printing unit.

Other interruptions could be issues with the supply of the plates or even problems with the plate changing process itself. Ensure that you have the plates in place before you change to the new job. This is true for all other consumables and printing materials.

The right logistic is the key to keep the basic make-ready time low.

Fine Tuning Time

The fine tunning time is all about adjusting ink and register.

One of the major interruptions within this process step is reaching delta E in time.
The correct pre inking as well as presetting curves are crucial to get a stable ink flow and reaching delta E fast. Also, proper inking and dampening settings with good roller condition as well as the correct chemistry are very important too. If you have any issues here, correct them as soon as possible.

The correct pre inking and presetting curves are building the fundament for a stable print process. In case you are not reaching the delta E with the predefined ink profile, you need to do some adjustments by changing the settings of the ink zones.
The best way to do that is the use of an integrated color measuring device like Inpress Control. An integrated device measures and adjusts ink zones fully automatically. This is the fastest way reaching delta E.
With an external measuring device such as Axis or Image Control you can also measure the ink and adjust the zones automatically, but you have to pull a sheet and measure it outside of the press. This means you normally need to stop the press and thus loose time.
The most inefficient way would be pulling a sheet and doing adjustments manually. This takes a lot of time and adjustment are not even as accurate as the once done via a measuring device which means you might have to do a second or even a third pull.

A color measuring device helps a lot to reduce the fine tuning time. In case you don't have one, it might make sense to think about an upgrade of your press. It not only saves time, you will also reduce the number of waste sheets and have stable color during the job run.

In case you already have a color measuring device, there can also be issues with the system itself. Ensure that the measuring device is calibrated on a regular base and that all the settings are ok.

Beside of reaching delta E, register is another thing that needs to be adjusted. This can be done by an integrated measuring device as well or by the printer.

All the causes mentioned above belong to the efficient time within the fine tuning time. But there are also standstill times. Standstill time during the fine tuning time is often related to manual adjustments of ink or register or simply waiting for the approval from the customer.

General

In order to find out process interruptions it always makes sense to use an interruption log. There you can write down all interruptions the occur during print production. It provides you a better overview about your print process and all the interruptions that happen during print production. Use the interruption log to identify issues and try to solve them as soon as possible

Summary

The make-ready process is essential for an efficient print production. The shorter the run length of the print jobs and the higher the number of print jobs, the more important the make-ready process gets. In fact, if you have a high number of print jobs with very short run lengths, the make-ready time might even be higher than the production time.
Reducing this time slot to a minimum enables you to not only reduce time and eventually waste sheets but also boosts productivity and allows you to print additional jobs in the same time which at the end means more business opportunities.