

BMMS

Optimisation of cross-cutting quality

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For a long time now, IKS Klingelberg Group has devoted particular attention to the subject of "cross-cutting" at BMMS (Böhler Miller Messer und Sägen GmbH) in Waidhofen, Austria. Because when it comes to talking about optimising processes, it is necessary to know and analyse the factors they are influenced by and the effects these have.

Constantly swapping experience with technical sales staff at all of the company's sites, engineers from machine construction and metallurgy some time ago created a guideline in the form of an "Ishikawa" diagram (Fig. 1). This diagram reveals the influencing factors together with the direct effect they have on the process chain. Here, any process optimisation should always be based on the realisation that users also wish to achieve a certain efficiency boost. Because only then will a service manager be provided with the fundamental platform for any real optimisation: "The test is only at all worthwhile on the basis of exact monitoring and with a willingness on the client's part to assist us with the test".

The influencing factors or boundary conditions identified include vibration and zero-play knife drums and drives, a trouble-free as well as ideally adjusted forward-feed roller and catch section as well as an optimised regrinding service while at the same time adhering to the necessary tolerances for the purpose

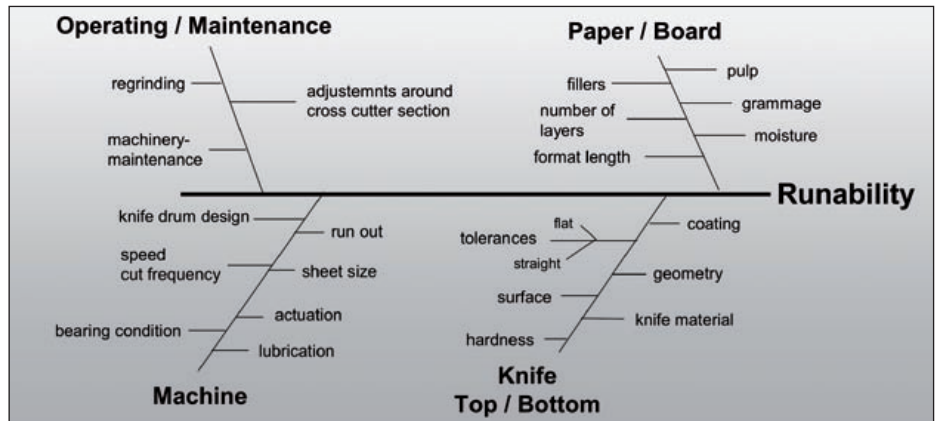


Fig 1: Influence on cutting quality

of assuring reproducible results. It is imperative to ensure the measurability of these influencing factors and to examine the way changes affect them. To a large extent, this involves creating optimum framework conditions and keeping reliable records that permit objective change assessment.

It is only once this has been done that it is possible to start analysing and assessing the influence products have. This includes paper quality (significant changes, such as the increasing use of abrasive fillers, inevitably lead to variations in cutting results), number of layers or knife quality. Knife quality frequently gives rise to a huge optimisation potential.

This is why IKS Klingelberg Group has developed innovative options at BMMS and, for instance, improved the availability of special materials in close cooperation with steel suppliers. In addition to

this, a hardening technique is employed that reduces distortion and stress, thereby necessitating less straightening work and optimising plane parallelism. Superfine surface polishing (dust reduction and improved service life) along with a special cutting-edge sharpening method (ready-to-use knives, lower running-in times and superfine cutting edges) also form part of the issues covered here.

Cross-cutting quality is governed by the interaction of many factors. Whereas simple problems can often be identified and eliminated, optimisation activities involve thorough studies of machine, service and the item being cut. This demands a smoothly functioning process chain within the interplay of equipment, maintenance and knife manufacturer in order, ultimately, on the basis of the right knife combination to optimise production as the key to operating profitability and customer satisfaction. ■)