

HPS lowers maintenance costs

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According to the Swedish paper "Underleverantören" [The Subcontractor], maintenance costs Swedish industry around SEK 400 billion (US\$ 47 billion) a year. What can be done to reduce this? According to Uddeholm tooling, it's a matter of choosing the right material. Experience speaks for itself.

Uddeholm Tooling in Hagfors is world-leading in HPS (high performance steel). HPS was previously only chosen for extra high-spec equipment but it is now proving to be the best option even for applications which have traditionally used lower quality engineering steel.

Since HPS is a more advanced product, the material costs are higher than for engineering steel. However, material accounts for an extremely small share of the total cost of the machine components and any calculations which go beyond the initial purchase show that higher quality significantly reduces maintenance costs.

Fewer and shorter interruptions in production, increased service life, lower consumption of replacement parts and improved quality of the end product are just some of the improvements noted.

Downtime running into millions

Given that the costs of downtime in a paper mill or a car factory can reach a few hundred thousand Swedish crowns an hour, it's clearly worth using better material.

Uddeholm Tooling, expects HPS components to last three to four times as long as products made of conventional engineering steel.

Thryggve Engström, a business developer with many years experience of HPS applications, illustrates this with an example:

"In our own machining plant we changed the feeding wheels on a lathe from standard engineering steel to Sverker 21, one of our wear resistant air-hardening steels. Although the material is four times more expensive, we are saving over SEK 100 000 (US\$ 12 000) per four-wheel machine over the lifecycle of the wheels."

"This is because each wheel can be turned several times and because the wheels become less worn and so don't require turning as often."

Sharing positive experiences

“We have many similar examples of improved economy in terms of maintenance and service at our plant,” says Thryggve. “We have switched material in overhead crane wheels, flywheels, pneumatic tube transport and gliding plates, and in all cases total costs have been reduced.”

As a result of these encouraging experiences, Uddeholm Tooling decided to offer the market HPS solutions as a replacement for engineering steel. Vital and high-wear components such as hooks, guide rails, dowel pins, special bolts, etc have been supplied to the paper industry, while companies in the fragmentation sector have purchased tyre-shredding components, for example.

“We are very proud of our customers on the automotive side. And I don’t just mean ordinary passenger cars but also extremely high-spec racing vehicles.”

It’s no coincidence that Uddeholm Tooling is the main sponsor of the Swedish Rally, or the Uddeholm Swedish Rally as it is now known. And of Anders “Charley” Karling, four-time European champion in the Super Twin class – the heaviest drag-racing class for motorcycles.

“A 350 kg machine which accelerates from 0 to 100 in less than a second needs the best material money can buy,” says Thryggve Engström. “And that’s what we’ve supplied.”

Elpress in Kramfors, a company which manufactures hydraulic presses for electrical connections, now uses HPS material and Per Fällström, the technical manager, is extremely satisfied:

“Many parts are exposed to very high, complex loads with pressing movements at up to 70 MPa hydraulic pressure. Being able to rely on the quality of the steel is crucial, which is why we have chosen Uddeholm’s HPS material for optimal durability and function. Quality costs but pays off in terms of overall economy. Moreover, it’s good to be able to use Swedish steel in Swedish-manufactured products.”

But you don’t need exceptional stresses in order to save money by using HPS. Since each period of downtime in production is expensive, many more machine components should be manufactured using high-performance materials.

A question of attitude

“We know that we have all the rational arguments,” continues Thryggve Engström, “but it’s just as much a question of influencing attitudes and routines.”

If you have got used to replacing a machine component once every three months, you don't always realise that you would be able to save large sums by buying better quality in the first place. It's like a tyre manufacturer offering a tyre which is four times as expensive but which lasts for the whole lifetime of the car. Or why not take the classic example of rust-free exhaust systems: we take the short-term view and buy what costs less at the moment, despite the fact that the overall economy will be better if we invest in quality.

Another aspect is that machine parts in HPS can be made lighter and smaller, which often saves money and reduces environmental impact. The risk of accidents is also reduced because a high-strength material can be exposed to higher stresses before giving way.

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