

A man in a green t-shirt and blue jeans is balancing on a large, compacted ball of crushed metal cans. He is leaning forward, looking down at the cans. The background is a dark, gravelly surface. The text "Improved recycling – go for a better steel" is overlaid on the image.

Improved recycling – go for a better steel

UDDEHOLM HIGH PERFORMANCE STEEL  
FOR THE RECYCLING INDUSTRY

## Stay sharp – improve your productivity

Demands on recycling are a natural part of industry today – metal, paper, plastic, tyres, porcelain. Everything can be recycled. To get the best results recycling really needs to be effective. But the process means extreme wear on knives and other components. Therefore it is crucial to choose materials that stay sharp and withstand the toughest strain.

The Uddeholm High Performance Steel programme offers materials with longer lifetime – even when the conditions are really tough. They are more expensive than standard engineering steel, but they pay for themselves through higher quality, better availability and fewer stoppages. Improve your efficiency and increase productivity by choosing Uddeholm High Performance Steel.

## Go for a better steel

Success comes from taking a different approach, not from doing what you've always done. Uddeholm High Performance Steel is a new concept in the world of steel, with new areas of application for Uddeholm's quality steel.

Uddeholm High Performance Steel is a concept whereby the superior properties of tool steel are harnessed and used in contexts other than pure tool applications. Thanks to improved strength and wear resistance, the steel have a longer life span. That means a better overall economy for you, your company and your customers. Go for a better steel. It pays.



Choosing the right steel is an important decision to make



## Recycle with better total economy

Higher demands on the recyclability of materials and products mean more and more processing of materials such as metal scrap, white goods, plastic, household waste, wood and tyres. In machines for recycling, blades/knives or hammers are mounted on shafts or alternatively screwed/welded onto a drum. Large stresses arise in the recycling process, in the form of abrasive and adhesive wear and chipping of the machine components. By using Uddeholm High Performance Steel you combine good toughness and ductility with high hardness for a high wear resistance. In this way you increase your machine availability by lengthening the time between your maintenance stops.

## Increase lifetime – save money

### METAL

*Uddeholm Impax® Supreme reduces down time*

When fragmenting metal oil filters, knives made of Uddeholm Impax Supreme – a steel delivered pre-tempered – has proven to work very well. After being machined, the knives have undergone induction hardening to enhance their strength where the stress is at its greatest. With knives made of Uddeholm Impax Supreme, the number of unplanned stoppages has been reduced.

*Good cutting results with Uddeholm Unimax®*

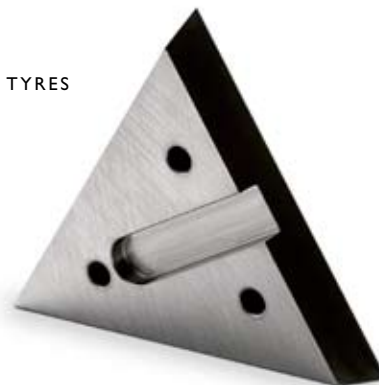
Hydraulic scrap metal cutters with an Uddeholm Unimax cutting edge are used in the demolition of different types of scrap metal and concrete. Results from true operating conditions show that Uddeholm Unimax has a long life span with no chipping, cracking or plastic deformation problems. Temperature is a crucial factor in this type of recycling. Uddeholm Unimax is the Uddeholm steel that has proven to give the best results at lower temperatures.

### TYRES

*Strongly increased productivity with Uddeholm Sleipner®*

The second step in the recycling process, saw-toothed knives and blades are used. In this step, resistance to wear is the most important. Uddeholm's hard and wear resistant materials work well here. Uddeholm Sleipner has a well-balanced combination of toughness and wear resistance to withstand both abrasive and adhesive wear. By using Uddeholm Sleipner in knives and blades for recycling of tyres, Uddeholm customers have increased productivity significantly.

KNIFE FOR RECYCLING OF TYRES





## WHITE GOODS

*Increased productivity with Uddeholm Calmax®*

Uddeholm Calmax knives used in recycling of white goods have resulted in strong productivity improvement. In the multiple-stage recycling of white goods such as refrigerators, several knives/blades of varying size are used. High demands are placed on the knives/blades concerning toughness, ductility and wear resistance. Uddeholm Calmax provides an excellent combination of these properties.

## PLASTIC

*Less chipping, cracking and wear with Uddeholm High Performance Steel*

In the granulation of industrial and household plastic, a sharp blade edge is required for efficient production. In order to obtain a sharp edge, the blade material must be hard. This is achieved in part by choosing steel with a high content of small carbides, so that chipping is reduced.

Good toughness and ductility in the material are also important so that the blade doesn't crack or chip. Uddeholm Sleipner is an excellent material for this purpose, as it combines a good hardness with a good toughness. When a medium to high chipping resistance is desired, Uddeholm Calmax is recommended for good performance. For maximum performance our Uddeholm Vanadis type PM steel with very small, evenly distributed carbides are well-suited to the granulation of plastic.

## HOUSEHOLD WASTE

*Uddeholm Impax® Supreme for operational security*

Household waste comprises everything from soft materials to metallic pieces. Uddeholm has successfully produced hammers and knives in flame-hardened Uddeholm Impax Supreme for recycling of household waste. Flame-hardening makes the hammer surface hard and thereby wear resistant, while the core remains tough, resisting total failure.

## PAPER

*Clipping of paper – less chipping with Uddeholm Vanadis™*

In clipping, a sharp cutting edge is essential, as a dull edge tends to pull off the material instead of clipping it. Steel grades with a high content of carbides, a high hardness, good toughness and ductility guarantee a sharp edge. The Uddeholm Vanadis steel grades with small and well-distributed carbides enable a sharp cutting edge with less risk of chipping.

UDDEHOLM is the world's leading supplier of tooling materials. This is a position we have reached by improving our customers' everyday business. Long tradition combined with research and product development equips Uddeholm to solve any tooling problem that may arise. It is a challenging process, but the goal is clear – to be your number one partner and tool steel provider.

Our presence on every continent guarantees you the same high quality wherever you are. ASSAB is our wholly-owned subsidiary and exclusive sales channel, representing Uddeholm in various parts of the world. Together we secure our position as the world's leading supplier of tooling materials. We act worldwide, so there is always an Uddeholm or ASSAB representative close at hand to give local advice and support. For us it is all a matter of trust – in long-term partnerships as well as in developing new products. Trust is something you earn, every day.

For more information, please visit [www.uddeholm.com](http://www.uddeholm.com), [www.assab.com](http://www.assab.com) or your local website.