

**Uddeholm** Steels for Powder Compacting

# THE ULTIMATE PROBLEM SOLVERS

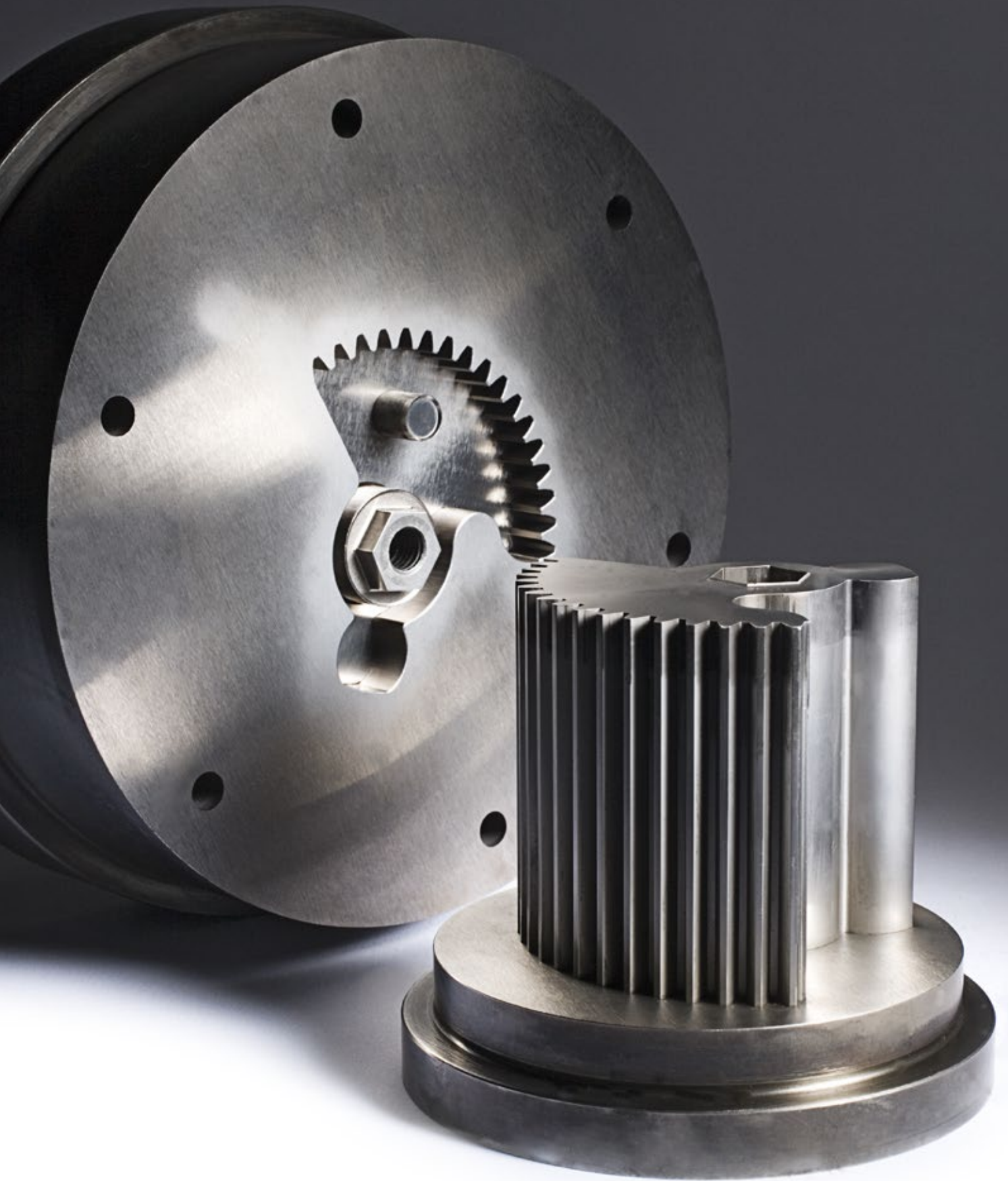


## **KEEP ON GOING!**

The life of your tool is crucial in powder compacting processes. With Uddeholm Steels for Powder Compacting, you can increase the life span of your tools. They often last twice as long as, or even longer than tools made of conventional tool steel or high speed steel.

Galling, adhesive wear and high friction are serious problems in many cold forming operations. After many years of analysing tooling problems, Uddeholm can now offer the best solutions to them. New production processes make this possible. Uddeholm Vancron has an internal surface coating that vastly reduces friction. This means that you do not need to surface coat any tools made of Uddeholm Vancron and that you can keep on producing long after your competitors have given up.

The Uddeholm Steels for Powder Compacting will solve any of the common tooling related problems that might occur during the powder compacting process. Furthermore, they are all easy to heat treat and have excellent dimensional stability. Keep on going with the Uddeholm Steels for Powder Compacting!



Classified according to EU Directive 1999/45/EC. For further information see our "Material Safety Data Sheets".

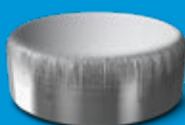
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## GET IT ALL FROM UDDEHOLM

Uddeholm Steels for Powder Compacting are great problem solvers. By using various combinations you can achieve superior results in your process. Uddeholm offers a complete programme of steel with properties that will improve your powder compacting business. This in turn will improve your economy, shorten your lead times and make it easier for you to keep your promises. You can get all the tool steel you need from Uddeholm.

### TOOL STEEL RECOMMENDATION



Cold Welding / Wear



Chipping / Wear



Total Breakage

### PROBLEM AREAS

- Less lubricants
- Abrasive powders
- Stainless powders
- Higher density

- Large production volumes
- High pressures
- Complicated geometries
- Abrasive powders

- Long core pins
- Thin walls
- Tight radii

### BEST SOLUTIONS

Uddeholm Vancron® / Uddeholm Vanadis® 8 SuperClean

Uddeholm Vanadis® 4 Extra SuperClean / Uddeholm Vanadis® 8 SuperClean

Uddeholm Unimax®

### ALTERNATIVE SOLUTIONS

Uddeholm Vanadis® 4 Extra SuperClean

Uddeholm Caldie®

Uddeholm Caldie®

Uddeholm Vanadis® 4 Extra SuperClean

### **Uddeholm Vancron® SuperClean**

#### **A REAL INNOVATION IN THE WORLD OF TOOLING!**

Uddeholm Vancron is the most modern powder metallurgical tool steel available on the market. In 2007 it received the EPMA award of merit because of its unique properties. With remarkable surface properties Uddeholm Vancron introduces a completely new approach to anti galling solutions and is an improved alternative to coatings and brittle cemented carbide. This means you can reduce the amount of lubrication in your powder to be pressed and attain higher densities and better properties. All in all this steel vastly improves the quality of the finished part and reduces the ejection force.

### **Uddeholm Vanadis® 4 Extra SuperClean**

#### **REDUCE DOWNTIME**

Uddeholm Vanadis 4 Extra is a third generation high alloy powder metallurgical tool steel. This makes it possible to combine a good chipping and cracking resistance with very good wear resistance, for complicated tooling and long runs. It is a highly robust material and you will experience fewer stoppages as well as improved total economy. Uddeholm Vanadis 4 Extra plays an important role as a universal problem solver in tooling for powder compacting.

### **Uddeholm Vanadis® 8 SuperClean**

#### **THE LONG RUN SOLUTION**

Uddeholm Vanadis 8 SuperClean is our latest innovation and especially suitable for very long run tooling where abrasive wear is the dominating problem. Its extremely high wear resistance and good cracking resistance make Uddeholm Vanadis 8 SuperClean very suitable for demanding powder compacting applications.

### **Uddeholm Caldie®**

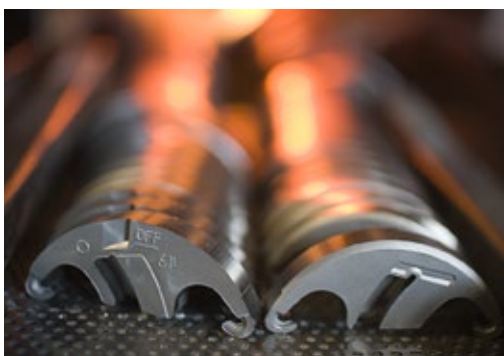
#### **TO AVOID CRACKING**

Uddeholm Caldie is an Electro Slag Remelted (ESR) matrix type cold work tool steel. It can be hardened to 62 HRC, giving it a very good combination of chipping and cracking resistance, as well as a high compressive strength. This means it is very useful for powder compacting where higher densities are wanted, or when problems with plastic deformation of the tooling occur. The high compressive strength also makes Uddeholm Caldie a perfect substrate material for surface coated tools.

### **Uddeholm Unimax®**

#### **SOLVES EXCESSIVE CHIPPING**

Uddeholm Unimax is an Electro Slag Remelted (ESR) matrix type cold work tool steel. An extremely high ductility makes Uddeholm Unimax the best problem solver in the event of premature tool failures caused by excessive chipping and cracking. It is a particularly good choice for tools of sensitive geometries (tight radii, bends, teeth etc.).



# #1 IN HIGH PERFORMANCE TOOL STEEL

Since 1668 we have been providing a wide range of innovative cutting-edge solutions for our customers in demanding segments. Our dedicated employees work in almost ninety countries and together we deliver improved competitiveness to clients worldwide. Welcome to Uddeholm, #1 in high performance tool steel.