



# METAL POWDERS

*Batch mixing technologies.*



**HOSOKAWA MICRON GROUP**

Process technologies for tomorrow.

# METAL POWDER PROCESSING SOLUTIONS

*Proven equipment, trusted around the world.*

In today's world many parts are made from metal or metal alloys. The base materials for this need mixing and sometimes agglomeration before they can be used in their end application.

Hosokawa Micron has these technologies available. Both the Nauta® conical mixer as well as the high intensity Cyclomix are ideally suited for this. This evidenced by the sheer amount of Hosokawa mixers being used in this industry today.

The applications covered by Hosokawa mixers are numerous. It ranges from 'standard' iron powder, tungsten carbide to uranium oxide and most importantly press iron powder.

Hosokawa mixers are applied for both basic powders as well as final mixing, right before pressing of the parts.

The powders described on the right have bulk densities ranging from 2 up to 7 kg/l. With our drives we are able to supply Nauta mixers in cantilevered design up to 10 m<sup>3</sup>.

The biggest advantage of the cantilevered design is that foreign parts can't enter the mixture. This results in huge savings in operational costs.



> Nauta® conical screw mixer

» EXTENSIVE TESTING & TOLLING FACILITIES



### **PRESS METAL POWDER**

Typically for press metal powder blends, the relatively heavy metal powder is mixed with relatively light lubricants. These lubricants should prevent that, during pressing, holes are created inside the moulds.

Basically there are two main reasons to mix the blend again, coming from the supplier. The first is that, because the blend consists of heavy metal and light lubricant powder, there is a risk of segregation during transport and handling. The second reason is that extra additives can be mixed in before pressing, thus producing unique and specific end products.



The press metal companies' main business can be found in the pressing of for example gear wheels, bushings and lobes for cams which are applied in the automotive industry.

A modern automobile contains on average 10 kg of sintered components, but there are big variations depending on its origin.

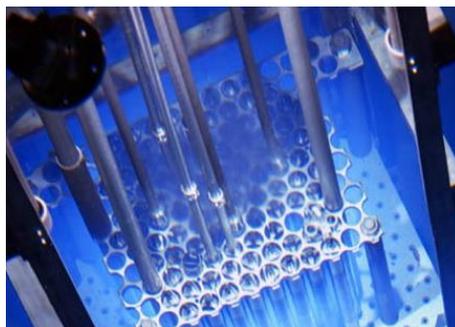
The use of sintered components is increasing outside the automotive sector. Parts produced from powder serve special functions in power tools, white goods, appliances, locks and pumps. These are just a few examples and the possibilities are endless.

### **TUNGSTEN CARBIDE (WC)**

For the production of tungsten carbide cutting tools also the pressing method can be used. At the fabrication plant the tungsten carbide can be mixed with additives, making the production of these tools very versatile and flexible. Also Hosokawa's granulator technology can be used to make sure that the powder flows quickly into the moulds.

### **URANIUM OXIDE**

Hosokawa supplied similar to the applications mentioned above, mixers to homogenise uranium oxide powder right before the pressing.



### **WELDING RODS**

Normally welding rod producers mix the ingredients that are used to cover the rods in a mixer before a binder is added. For flux core welding wire production Nauta® mixers are almost standard.



### **MAGNETS**

The same phenomena as for pressing gears can be seen when pressing magnets. The metal ingredients are mixed with a wax to enable the release from the mould without damaging the parts. Mixing is again performed by Nauta® mixers.



Another application is coating particles with oil to protect them against oxidation. For this process the Cyclomix is applied to create a uniform coating of each particle in a short cycle time.

# PLENTY OF REASONS TO GIVE US A CALL



## Combined advantage

The Hosokawa Group has several technology centres, each expert in one or more specific powder processing technologies. Combining this knowledge gives you the benefit of having just one supplier and contact.



## Vast experience

Hosokawa has decades of experience in providing solutions for metal powder processing. We have references all over the world, including the biggest names in the industry.



## R&D/test facilities

Hosokawa has extensive research and test facilities in Doetinchem, the Netherlands, perfectly outfitted to assist clients determining what the best system solution is for their specific process.



## Worldwide service

Hosokawa has a very responsive and smoothly operating service department. Our Service Team carries out repair and maintenance services onsite or in one of our fully-equipped workshops.

## More information

For detailed information and equipment and system specifications, please contact our office or visit us online.



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