



Metal treatments specialist increases daily capacity by 100% with a Finex Separator™

Chromin Maastricht BV improves productivity by moving from a manual sieve to the Finex Separator™.

Chromin



The metal treatments specialist helps companies in a range of industries to avoid wear and corrosion on components. Founded in 1977, Chromin works with customers in the automotive, food, chemical, and textile industries as well as general mechanical engineering companies. Chromin Maastricht BV also has a metallurgical laboratory for carrying out damage surveys and material analysis.

The Netherlands-based company specializes in combining diffusion techniques with complementary heat treatments to make components resistant to abrasion and adhesion. Chrome diffusion is a key treatment to improve the life span of components like plungers, bearing bushes, and ball valves. This uses chromium-containing powder to create a chromium (carbide) layer in the base metal through a chemical diffusion technique. Each component is placed in a heat-resistant container, along with the chromium powder, at temperatures of 800 to 1000 degrees Celsius.



Figure 1: Chromium Powder

The diffusion process creates a chrome layer with a depth of 15 to 200 microns and with a surface hardness of up to 2000 Vickers Hardness. The uniform structure of the chromium layer ensures there is no build-up on the edges or drop formation on the corners.

Once chromium diffusion is complete, the powder remaining from the process sticks to the components. As a result, the parts need to be separated from the powder and the excess powder recovered for future use.

This separation process was originally carried out using a hand sieve, but this was a very time-consuming and labor-intensive process. It required two full-time employees (FTEs) to manually operate the sieve and it was a physically demanding role. These staff spent almost all their time cleaning parts by hand.

After the sieving process, the operators used to do additional cleaning by compressed air. This cleaning led to a further issue: dust formation in high quantities. The open sieve and the compressed air meant dust particles were spread around the area where the sieving took place.

Due to the manual separation, there was no continuous separation process. The unpacking process (which is included in the separation process) in the heat-resistant containers had to be stopped to transfer the parts into the sieve. This created extra process steps to transfer the products into the sieving tray.

Given these challenges, Chromin Maastricht BV searched to find a solution to improve its separation process resulting in a partnership with Russell Finex being established.

“We’re very satisfied with the cooperation from Russell Finex. We now have a solution that has enabled us to double our daily capacity. At the same time we need fewer people to operate the separation process.”

- Spokesperson for Chromin



They continued "The Russell Finex representative supervised everything very well and did several tests when the separator was installed."

Chromin Maastricht BV chose to install a 40" **Finex Separator™**. The Finex Separator™ shakes off the excess powder from the parts and allows the powder to be recovered and reused. The design of the installation also maximizes the recovery of powder and so there is no need to disassemble the machine to remove residue powder.

With the help of the Finex Separator™, the company's capacity has now expanded from 20 containers per day to 40 containers per day. Working with the Finex Separator™ allows the containers to run with little interruption.

Another major benefit for Chromin Maastricht BV is that it now only requires one operator to run the separation process instead of the two FTEs it took previously. The Finex Separator™ has removed the time-consuming manual steps and improved efficiency.

Due to the fully enclosed design of the Finex Separator™, the recovery of chromium powder and the cleaning of the parts takes place without creating large amounts of dust compared to manual sieving. In addition, the Finex Separator™ is quiet in operation and requires very little maintenance. This is a huge process improvement providing a much safer environment for employees operating the equipment.

About Russell Finex

Founded in 1934, Russell Finex designs and manufactures sieving machines for a range of industries. With its head office in the U.K. and subsidiaries in Belgium, the U.S.A., India, Brazil, and China the company supplies to over 140 countries. Contact Russell Finex today to find out more about its range of sieves, separators, and filtration equipment.



Figure 2: Finex Separator™

The key benefits of using the Finex Separator™ are:

- **Increase throughput capacity** - Supports a higher volume of material
- **Automate labor-intensive activity** - Avoid manual sieving and save labor costs
- **Cleaner and safer operation** - Less dust compared to sieving by hand