

Will-Fill automates and optimises metalworking fluid management

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Dierickx's add-on device Will-Fill provides the automatic adjustment and remote monitoring of metalworking fluid. Thanks to its built-in control unit there is hardly any deviation in metalworking fluid composition, level or condition. This is beneficial for tool life and machining accuracy, while emulsion consumption, machine downtime and emulsion management tasks are being reduced.

This case is one of the 15 smart product examples we have compiled for you in the Smart Product Inspirator

Discover all 15 examples

Will-Fill, developed, produced and marketed by mechanical engineering company Dierickx Tools, equips metalworking machines with a unique add-on that relieves operator workload and reduces the ecological footprint of production. The Will-Fill is an IoT-device that provides the automatic adjustment, remote monitoring and management of metalworking fluid. The product is most suited

for manufacturers in aerospace, aviation, semi-conductor, defence and medical applications.

Why this smart product

In many precision engineering and mechanical workshops, the focus is on the production process and machine output. Emulsion management is not a priority because taking care of the emulsion requires repetitive actions that can be easily forgotten. Thanks to the automated metalworking fluid control of Will Fill there is hardly any deviation in metalworking fluid composition, which is beneficial for tool life and machining accuracy, while emulsion consumption, machine downtime and emulsion management tasks are being reduced.

Value for the customer

Will-Fill is an add-on device that combines automatic measurement and analysis of a metalworking fluid with faultless filling, permanent conditioning, and timely reporting. Because the components are linked to a high-performance control unit, Will-Fill is able to regulate and adjust the fluid level and the fluid condition automatically, or alert the user via e-mail notification. All emulsion data is collected on the Will-Fill server and can be downloaded and consulted through a cloud dashboard, or it can be consulted locally.

Technology behind Will-Fill

The device comprises several sensors for fluid measurement (oil concentration, temperature, pH, electrical conductivity, etc.), an electromechanical dosing unit and a control unit. It has wired ethernet or Wi-Fi connectivity with the Will Fill server. This cloud-based solution was bought in as a custom-developed solution that is running on the Will-Fill server and being maintained fully in-house. The core of the company’s expertise, however, relies in the specific sensor technology that is required and combing different engineering fields (fluids, sensor technology, mechanical engineering, …), which is making all the difference for this application.

Capturing value

Will Fill is sold as a product. The majority of sales is for export to EU and worldwide. Service subscriptions are not yet commonplace in this market, although acceptance of cloud-based solutions is growing. Customers get a discount on the maintenance contract for the Will-Fill system itself if they opt for the cloud-based solution. Remote updates of the device and pro-active remote monitoring consultancy help to grow the acceptance of the cloud based solution.

Next steps

Having reached a consolidated version of their product, the company is now focusing on scaling up. Future improvements of the product could be to add more cloud-based intelligence and to improve the performance of Will Fill based on the collected usage data.
Smarter use of the sensors and software will extend the maintenance intervals of the device and reduce running costs even more. The first integrations with machine tool builders have been accomplished and more brands are expected to integrate in the near future. An existing distributor network will be crucial for supporting the international customers.

Smart Product Scenarios

To enhance your chances of success and guide your smart product innovation, Sirris offers you practical tools and guidelines. Our **Smart Product Inspirator** provides you with a framework for identifying valuable smart product ideas based on the 5 most common scenarios and 15 smart product examples illustrating these scenarios. With these carefully analysed scenarios we help you uncover the potential for success . The key scenarios for Will-Fill are: '**Smart autonomy** ' and ' **Smart maintenance**'.

Authors



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