



EARLY WARNING APP SPOTS DOWNTIME DANGER

What if you could know before a crucial pumping system is about to fail? JS Maintenance Mate® is a new, intelligent pump feature that monitors wear – and alerts operators in plenty of time.

Danish pump manufacturer JS Propotec, best known for its lamella meat processing pumps, has long been a first mover in its field. In 1982, the company was first to introduce a lamella pump that could capably handle the heavy demands of fish and meat processing industries. Today, with the latest in a long line of such innovations, JS Propotec is once again lifting industry pumping capabilities with an IoT (“internet of things”) solution called JS Maintenance Mate®.



The JS Maintenance Mate box enables LIVE pump data.

Soon to be standard on all JS Propotec pumps, and available as an easily retrofitted add-on to existing units, JS Maintenance Mate® is a small, electronic device that gives processing pump operators direct access to wear and tear data on individual pumps – or their entire fleet of pumps.

If a problem is identified, an alert is generated, and steps can be taken to avert a breakdown in good time. But that, according to the pump maker, is just scratching the surface.

Invisible downtime danger

The handling of meat processing by-products causes heavy wear and tear on pumping equipment. But until now, such wear and tear has been quite literally invisible until it causes a mechanical failure, forcing meat processing lines to a screeching halt and starting the cost clock ticking until spare parts arrive and repairs can be made.

The more advanced of today's pumps try to assist operators by sending an alarm signal if the unit stops working. In the absence of more timely information, that is good to know, of course, but JS Maintenance Mate® goes far beyond this simple level.

Predicting breakdowns

"The real magic of JS Maintenance Mate® is that it enables pump operators to 'see inside' each pump," says Rene Jensen, JS Propotec's Head of Sales. "Now, we're able to predict potential breakdowns with a high level of accuracy, enabling our customers to plan their preventative maintenance to coincide with other downtime operations."

With the popular pump manufacturer's usual attention to customer ease-of-use, JS Propotec has designed JS Maintenance Mate® to be a simple, straight-forward addition to its pumps. And, with the device standard on all the company's lamella pumps early in 2021, there is no additional cost for the new capability. The device can also be retrofitted to existing pumps via a handy connector kit that is swift to install.



*Rene Jensen, Head of Sales
JS Propotec A/S*

That's smart!

JS Maintenance Mate® is a front-runner in a new wave of IoT (Internet of Things) devices that digitally report data to the users of products ranging from fridges to industrial machinery, and which may, for example, also feed data to the manufacturer to support continuous product improvement. Such devices are designed from the outset to operate smoothly without requiring much attention – and JS Maintenance Mate® lives up to this requirement, too.

A QR code on the side of the device prompts the operator to download the free app. He or she then sets up a profile with pump number, email address and password, activating a SIM card within the device. If desired, the operator can then select the media type being pumped and adjust alarm thresholds. Encrypted data is then reported from device to app, enabling the customer to act swiftly to avert unnecessary downtime, and supplying useful inputs that can help JS Propotec's R&D team to further improve the company's products.

"Ease of use has been one of the most important design parameters for us for this new capability," Rene Jensen explains. "Anyone handy with a screwdriver and a wrench, and who knows how to install a smartphone, tablet or computer app can do the job! Then it can be as simple as checking the app every now and then and responding to any notifications."

Good vibrations

The bearing in such pumps is protected by a mechanical seal. If wear and tear cause the seal to leak, then media begins to enter the bearing, thus wearing the bearing down. JS Maintenance Mate® assesses such wear and tear by monitoring the RPMs, vibrations, and pressure in the bearing housing. A full overview of the pump's status is generated based on measurements of these vibrations, and the pump's temperature can also be determined. While these capabilities may, at first glance, seem relatively simple, an enormous amount of work was required to assess patterns of wear and failure across a variety of pump models pumping different types of by-products – then algorithms had to be developed and refined to reflect these patterns.

“We’ve spent thousands of hours in our pilot setup and out at customers in Poland, Germany, Sweden, and Denmark pumping media such as meat, fish, cutoffs of chicken, pig and cow to note the effect on pump vibrations as the lamellas begin to wear down,” says Rene Jensen. “After doing so, we arrived at four distinct scenarios that enable us to predict the timing of breakdowns with considerable accuracy. Over time, as the device gathers more and more data across many customer installations, we will become even more accurate.”

Once installed, each JS Maintenance Mate® device requires no further attention – there isn’t even a battery to replace, as power for the circuitry is provided by a small generator connected to the pump’s shaft, much like a small generator.



The JS Maintenance Mate box mounted on a JS Lamella pump.

Agile app

The JS Maintenance Mate® app displays live data on a color-coded ‘dashboard’. Individual pumps are shown as green if all is well, yellow where service and/or spare parts will soon be needed, and red if the pump is currently out of action. In fact, the device is even smart enough to indicate which spare parts may be advisable to have on hand – and information on these can be sent directly to JS Proputec or its authorized distributors to obtain a quote or place an order.

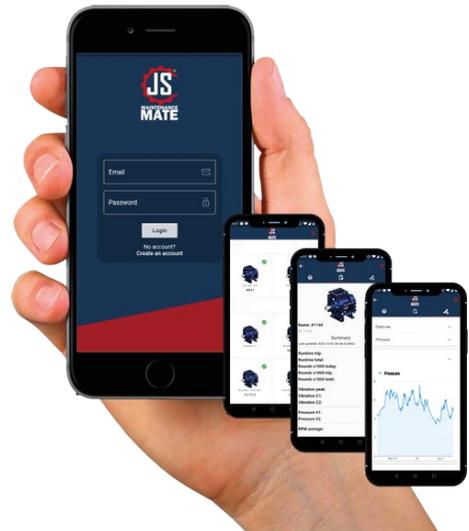
Data can also be extracted from the app in more detailed form, enabling sophisticated operators to obtain deeper insights using, for example, an Excel spreadsheet. How-to videos and other useful materials will be increasingly added to the app.

And, for the color-blind among us, the app’s interface integrates a system of smiley faces – all just part of the ease-of-use design specification.

A step forward for sustainability

With the food processing industry increasingly under scrutiny surrounding its consumption of energy and water, companies are eager to strike a blow for sustainability – and JS Maintenance Mate® has a contribution to make here, too.

“As the lamellas wear down, the operator tends to increase the RPMs beyond the initial, most efficient pump setting for a particular residual type,” says Rene Jensen. “Naturally, this requires more energy, and the pump or pumps are then running inefficiently, which is a burden not just on the planet, but on



The JS Maintenance Mate app enables 24/7 access to LIVE pump data. And you can download the app for FREE!

the customer's electricity budget, too. And the data provided by JS Maintenance Mate® may show, in fact, that it is possible to swap out smaller components rather than larger ones to return the pump to more efficient operation. That, in turn, also represents new savings for both the customer and the environment.”

Knowledge is power

It's often said that knowledge is power, and for both large and smaller meat processors, there's a lot to be gained from the data flowing from JS Maintenance Mate®.

As Rene Jensen explains, JS Proputec sees a great future for the new capability: “We like to compare JS Maintenance Mate® to the computer-based analysis a mechanic might run on a luxury car in the workshop, obtaining data that takes into account not just the model and age of the vehicle, but also how far, fast or hard you drive it – parameters that affect, for example, how often oil changes are required.”

“Eventually, JS Maintenance Mate® IoT devices will be able to provide even higher levels of context-sensitive, tailored intelligence that ensure razor-sharp accuracy both in terms of what might be about to go wrong, exactly when and exactly what to do about it,” he concludes.

Read more on our website: [XXXX](#)

About JS Proputec

JS Proputec A/S is a successful manufacturer of a wide range of patented and specialized products designed to ensure the durability and ease of operation required for some of the most demanding industrial processes in the world.

The company's product range spans from lamella pumps and grinders to pipe-cleaning systems and feed hoppers. Its products are used in a wide variety of applications, wherever pumping, grinding, dewatering and transportation is needed.



JS Proputec A/S, located in Hjørring, Denmark.