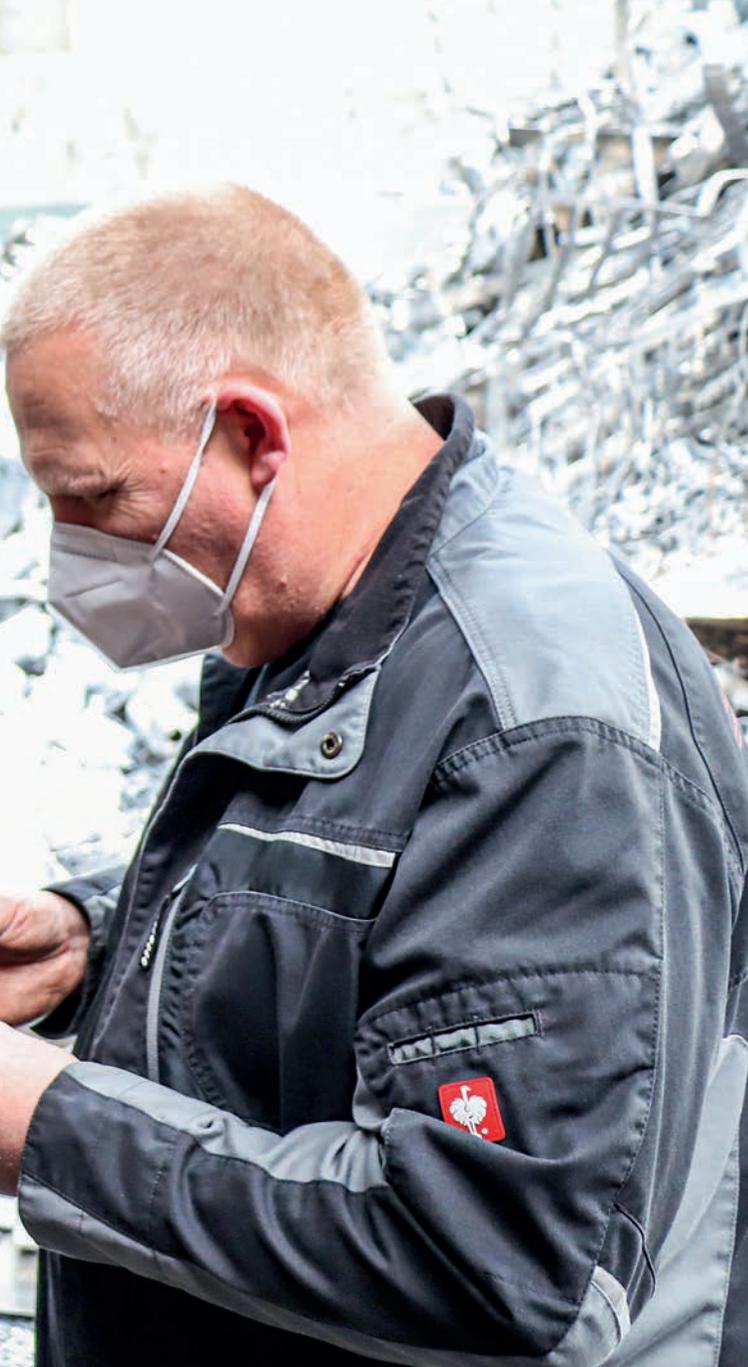




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## AN ALL-ROUNDER FOR HYDRAULIC MAINTENANCE

If the operator of a hydraulic system only uses condition monitoring – i.e. the recording of operational data – as a “snapshot”, they will not be maximising the possibilities offered by condition monitoring. The regular analysis of parameters, such as temperature, pressure and volume flow, at the same measuring point is much more meaningful. This being the situation, Stauff is expanding its “Diagtronics” range with a new measuring and diagnostic device.



Operators who use this strategy to record the measured data in the hydraulic system simply have more knowledge at their disposal. They can compare the data collected over time to gain early indications of ageing, wear, irregularities and possibly even impending failures. By contrast, the data can also give them the certainty that everything is “in the green zone” and that no maintenance is needed. “Condition monitoring” thus becomes the basis for undertaking preventive maintenance concepts.

If this goal is to be achieved, the question is then: What kind of technology is needed for this? And how do we create the necessary interfaces in the hydraulic system to record the data? The latter is comprehensively provided using the measuring couplings from the Stauff Test product range. They can be easily integrated into the hydraulic circuit and enable various sensors to be connected to monitor operating pressure, pressure peaks, temperature etc. – without the need for tools, leak-free and at system pressure.

Another question needs to be answered: How is the data evaluated? There is a lot to be said for doing this with the new Stauff PPC-Pad-Plus. This mobile hydraulic tester – in the form of a tablet for use in heavy-duty environments – enables all relevant parameters to be comprehensively checked using a single compact



**01** The user can select from different sensor connection modules

diagnostic tool. They include the aforementioned hydraulic parameters as well as machine-specific parameters, such as switching statuses, force and distance measurements or speed.

## MOBILE OR STATIONARY – IDEAL FOR USE IN THE FIELD

The PPC-Pad-Plus uses an illuminated 7-inch colour touchscreen as the human-machine interface. Its sophisticated menu navigation provides for intuitive operation, even in view of the many data recording and analysis options. The user can configure individual set-ups to enable recurring measurements to be performed with minimal effort – the user only needs to connect the relevant sensors to the device.

The diagnostic device has been designed from scratch for use in the field, in both stationary and mobile hydraulics. Its IP 65 protection rating also ensures reliable operation in humid conditions and in dusty or contaminated environments. Moulded soft plastic elements absorb shocks and the device is always comfortable to hold.

## DATA ANALYSIS – ULTRA-SIMPLE

The performance and flexibility of the device in terms of connection and data analysis is not immediately evident with the robust PPC-Pad-Plus device: up to a hundred channels can be connected, automatically recorded and interpreted directly on the display. The recorded data is collected in an integrated large measured value memory and can be made available on a PC for evaluation by analysis software. Different types of recording and evaluation types are possible with a sampling rate of up to one millisecond.

These functionalities enable even very complex diagnostic tasks to be performed with correspondingly high levels of knowledge acquisition, for instance on plastic injection moulding machines, forming systems and on larger mobile machines with complex hydraulic systems. In practice, a maintenance technician can easily determine ten to twenty readings simultaneously. Each single measurement provides the maintenance technician with deep insights into the system, e.g. by recording complete ma-



**02** The diversity of interfaces provides a key prerequisite for universal use

chine cycles with the required sampling rate, analysing them and/or comparing the values with previous measurements.

### MANY INTERFACES, INTERCHANGEABLE INPUT MODULES

The diversity of the interfaces is an essential prerequisite for the exceptional versatility of the device. This feature enables users to use the proven Stauff sensors but also, for the first time, to “listen into” existing CAN buses (CANopen, SAE-J 1039...) in a hydraulic system and even connect external CAN sensors.

The versatile analysis options are further enhanced by the modular design of the diagnostic and hydraulic tester. Users can select from various plug-in sensor connection modules, including a CAN module with two separate CAN bus networks and an analogue input module with and without galvanic isolation.

## ” PPC-PAD-PLUS IS AN IDEAL TOOL FOR THE COMPREHENSIVE CONDITION MONITORING OF A HYDRAULIC SYSTEM

In any case, users benefit from the fact that they can obtain a comprehensive picture of the hydraulic system or the machine with a single measuring process and relate the recorded hydraulic and electrical values to each other.

### ALSO IDEAL FOR TROUBLESHOOTING AND FAULT RECTIFICATION

These properties make the PPC-Pad-Plus device an ideal tool for the comprehensive condition monitoring of a hydraulic system. The comparison of measured values over a longer period of time, in particular, makes it possible to detect irregularities and, if necessary, counteract them. The PPC-Pad-Plus is also useful if faults arise on the machine caused by the hydraulic system. In this case, the maintenance technician simply connects up Stauff sensors for quick fault analysis, without the need for the sensors to be separately set up. This enables the technician to immediately obtain detailed information about the condition of the hydraulic system or the machine.

Whether it is used for a regular “health check of the hydraulic system” in relation to preventive maintenance or for quick fault analysis in the event of problems: in all cases, the PPC-Pad-Plus is a useful addition to the Stauff Diagtronics range – and an easy-to-use and valued diagnostic tool for maintenance.

Photos: Stauff

[www.stauff.com](http://www.stauff.com)

## TRAILBLAZING USERS: “HYDRAULIKWEHR” HYDRAULIC SERVICES



Any similarities with our well-known “blue light services” are quite intentional: “Hydraulikwehr”, the hydraulic services company based in Schwerte/Ruhr, is out on the road every day providing hydraulic services in their bright red and almost historic-looking vans. Like the fire service, they are often called out to provide rapid assistance in the event of failures and irregularities, but more often to provide preventive maintenance and regular service of complex hydraulic systems. Their satisfied customers are well-known steel and metalworking companies in the Ruhr region and in southern Westphalia.

A universal diagnostic tool, such as the PPC-Pad-Plus, provides real benefits for both tasks – preventive maintenance and rapid fault finding. When the PPC-Pad-Plus was announced, the company was therefore immediately interested in the device and was among the first to trial a test device in its challenging field work. Kai Langer, founder and Managing Director of Hydraulikwehr: “We have been thinking for some time about purchasing a versatile and high-quality universal measuring device. As Stauff is one of our long-standing partners, the announcement of the PPC-Pad-Plus came at just the right time. We will be able to expand our range of services at the same time saving time and offering our customers added value, We can now carry out a comprehensive ‘health check’ of the hydraulic system, including its electronics, with each diagnostic cycle.”