

Clouver Newsletter

Benchmark Page

Detect wear before the machine stops – compare machine values with a reference run

We show you how a customer compares the running behaviour of their punching machine in our IIoT platform Clouver with a self-defined reference run, in order to identify deviations in oil consumption early – and how this helps to decide when maintenance is useful.

Is the machine still running – but still working as intended?

At one of our customers, a punching machine in production consumes oil during the process.

For those responsible, the question arose whether over time more oil is being consumed than desired – and whether it is time to carry out maintenance so that consumption returns to the desired level.

To answer this, a point of comparison is needed: a recorded state in which the machine operates as it should.

⚠ What was sought, therefore, was a way to **regularly record a run on the machine and compare the measured values with one another**.

A reference run as the benchmark

For this, the Benchmark page in Clouver is used: a recorded reference run serves as the benchmark against which every further test run with current measured values can be measured. In the case of the punching machine, it is used for predictive maintenance – that is, for the question of when maintenance is worthwhile.

Record a reference run

There, a measured value – for example oil consumption – is recorded for a reference run.

Repeat the test regularly

The same test is repeated regularly, and the measured values can then be compared directly. Deviations, such as increased oil consumption, clearly indicate wear.

Compare values directly

In this way, the current machine data can be quickly and easily set against the reference values, changes over time can be recorded, and it can be ensured that the machines exhibit the desired operating behaviour.

How the desired state of the machine is recorded

The reference run shows the desired oil consumption of the punching machine during production – defined by the customer themselves. Using self-created test runs, the actual consumption can then be compared with this reference run.



The reference run of the punching machine: the desired oil consumption during production.

What the comparison revealed on the punching machine

Two test runs were carried out and compared against the reference run.

The first test run showed that the oil supply starts later than desired and that the punching machine also consumes too much oil during operation. The total quantity consumed might even have matched that of the reference run – only a detailed analysis of the consumption made it apparent that the machine is no longer working as intended.



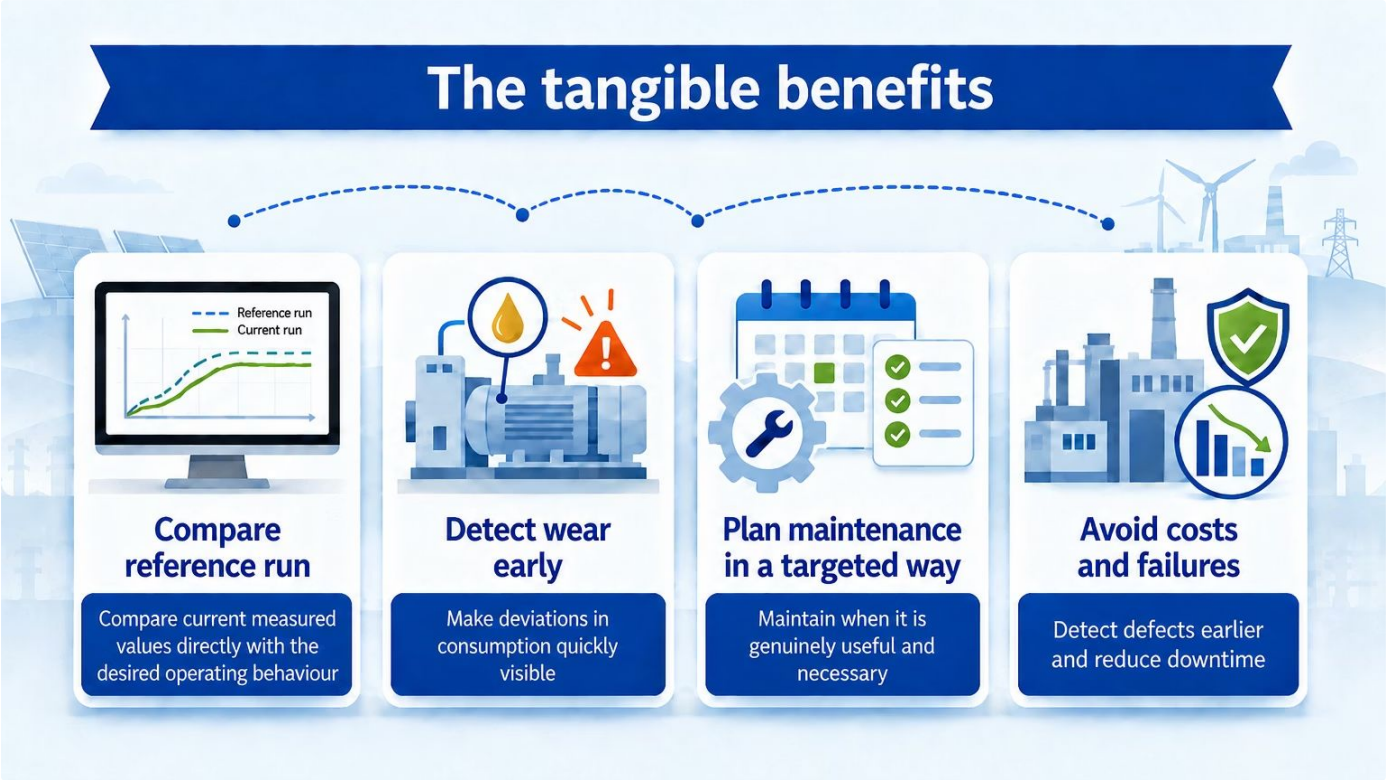
Test run 1 compared with the reference run: later start of the oil supply, higher consumption during operation.

In the second test run, it became clear that too much oil is being used in production. Oil is already being consumed before the start of the time window. Such a pattern may indicate a leak or a similar defect – and that was reason enough to schedule maintenance, in order to avoid unnecessary oil costs.



The second test run switched on: oil consumption detected before the start of the time window.

> "The reference run records how a machine is meant to run. If a test run deviates from it, that is a clear sign of wear."
>
> – Andre K., Product Owner IIoT, ProCom Automation



Maintenance when it is useful

The Predictive Maintenance feature makes such conditions in machines quick and clear to identify. This supports the decision of when maintenance is useful.

For maintenance, this means:

Wear on machines is detected through condition monitoring before they fail.

Costly repairs can be avoided by replacing components such as bearings early.

Long downtimes of entire machines, for example due to delivery times, are avoided.

A Method That Can Be Transferred

The principle is not tied to oil or to a particular type of machine. What matters is only that a process can be repeated under comparable conditions.

Example: Waterjet Cutter

On a waterjet cutter, the power consumption in production was recorded in the same way.



The same comparison on the waterjet cutter, here for power consumption over 600 seconds.

In principle, the feature can be used by any customer whose machines run recurring processes.

Typical Pitfall and How to Avoid It

The first test run on the punching machine shows this clearly: the total amount consumed can remain inconspicuous even though the machine is no longer working as intended. Only a precise analysis of consumption makes the deviation visible.

⚠ It is therefore important to deliberately define the reference run as the desired operating behaviour and to repeat the test regularly.

Quick Win of the Month



Select a single machine, create a test programme and record a reference run.



Then repeat the test regularly!



This is how you can tell whether the operating behaviour changes over time.

Book a free consultation now!

Would you like to know how you can integrate and use Clouver in your production?

Then book a personal consultation with us – **free of charge and without obligation**. Or write us an email with your questions. We look forward to hearing from you.

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Book an appointment now

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