

# Out with the old...

... AND IN WITH THE NEW. A SIMPLE CHANGE OF HYDRAULIC FLUID CAN LEAD TO VASTLY IMPROVED PERFORMANCE AND ECONOMY FROM CONSTRUCTION VEHICLES

Manufacturers of construction equipment use all manner of high-tech tricks, including fully automated fleet management and satellite-directed 3D control, to make their machines even more efficient and cost-effective. But another, far simpler, way of achieving these aims is often overlooked, although its success rate could be as high as 80%: a change of hydraulic fluid! That should, however, preferably be formulated according to the Dynavis performance standard. This may initially cost a few euros more, but the extra expenditure rapidly and reliably pays off in terms of improved efficiency and reduced fuel consumption. It's a simple concept. But does it work in practice? And, if so, how?

Dynavis is not oil. It is an additive technology for hydraulic fluids that boosts their performance. As it optimises the fluid's properties over a wider range of application temperatures, these fluids are referred to as multigrade as opposed to conventional monograde fluids. The company behind the Dynavis brand is Evonik Industries, a German global player in specialty chemicals and therefore a guarantor of high and consistent product quality.

Conventional monograde fluids still make up the lion's share of hydraulic fluids used in construction equipment. But those wishing to switch to a true high-performance fluid in their construction machinery are now being shown the way forward by the blue and yellow seal on the product of their choice. The Dynavis brand name and the performance standard that is associated with it were first unveiled to the construction industry at Intermat in Paris in 2012.

### What happens when things get hot

Most of the movements of construction equipment are hydraulic in nature, so much of the fuel is therefore used for operating the hydraulic pump. This pump, however, is subject to what is known as internal leakage: the longer and more intensively the equipment is used, the hotter the fluid becomes and the higher the loss of efficiency. For example, hydraulic excavators pushed to the limits of their capacity in shifts lasting several hours especially benefit from hydraulic fluids formulated with Dynavis.

But Dynavis technology goes beyond reducing internal efficiency loss: it also breaks the vicious cycle in which hot hydraulic fluid is continuously heated

ABOVE: The operator does not even need to work out when Dynavis will start to pay off, as a calculator at [www.Dynavis.com](http://www.Dynavis.com) will provide the answer in seconds

further. Thanks to Dynavis, pump output remains stable even after several hours of operation under full-load conditions. The equipment's increased agility and performance results in more completed load cycles – and fuel savings of 5% or higher.

In the very first field test of high-performance hydraulic fluid formulated with Dynavis, operators noticed a big difference compared with conventional hydraulic fluid. Extensive and numerous field tests followed, which confirmed these initial findings over and over again. Experienced operators are excited about Dynavis. "I was amazed at how much faster I can work with this hydraulic fluid. With a standard fluid I could move 96 shovels in about 20 minutes; with Dynavis I could do 130 in the same time," says Friedel Brandt, an excavator operator for the past 30 years and winner of the Cat Operator Competition.

A calculator at [www.Dynavis.com](http://www.Dynavis.com) provides details of potential fuel savings in seconds. Using very little data, the Dynavis calculator can also work out the increase in efficiency, and the reduction in CO<sub>2</sub> emissions. The calculation is based on actual results

from extensive field tests, to ensure the values returned by the calculator are reliable.

And now Total, one of the world's largest oil producers, is launching a hydraulic fluid formulated with Dynavis technology – Total Equivis HE.

At Bauma this April, the Dynavis team came up with a unique demonstration of Dynavis capabilities that was kept secret all the way up until its dramatic presentation at the Sany Group stand. "We wanted trade-show visitors to be able to see for themselves the huge difference in performance between fluids with and without Dynavis formulation," says Rolf Fianke, aftermarket support manager for Dynavis.

With a pair of bicycles in side-by-side configuration, each connected to its own hydraulic pump and its own columnar reservoir of fluid, 'pedalling' visitors to the stand could literally feel the Dynavis difference in their legs, and see it as they advanced the fluid upward in their reservoir. **IVT**

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