



JUST BY CHANGING YOUR HYDRAULIC FLUID

CASE STUDY: Ghizzoni S.p.A. / Italy

The DYNAVIS® effect, extrapolated: Super savings by an excavator fleet

Italian construction company Ghizzoni S.p.A. is renowned in Europe as a specialist in excavation associated with pipeline laying. Their large projects require a sizable fleet of highly productive construction machinery, and this, in turn, generates significant fuel costs. Not surprisingly, Ghizzoni leaves no stone unturned in the quest for methods to lower fuel consumption. Giovanni Maffia, Ghizzoni construction engineer, is constantly on the lookout for new fuel savings options. Recently, one of his ongoing internet searches took him to www.dynavis.com – website of fuel-saving DYNAVIS® technology for hydraulic fluids. Giovanni liked what he learned from his visit to the site and contacted the DYNAVIS® Team at Evonik Industries. After a brief consultation by phone, the DYNAVIS® Team was on its way to northern Italy to meet with Giovanni and his colleagues and to put the fuel-saving DYNAVIS® technology to the test.

For over 60 years, Ghizzoni S.p.A., based in northern Italy, has focused on the construction of pipelines for oil, gas and water. They have always held a leading position in their market segment, and the October, 2013 merger that made them part of Nuova Ghizzoni S.p.A. only further reinforced their leading position in this challenging segment.

A project especially representative of Ghizzoni's experience and know-how in pipelaying excavation was the construction of the "Poggio Rentico – Cremona" connection, which was underway

from March, 2011 to December, 2012. This impressive project required the laying of a 48 inch pipeline spanning 114 km across Italy's Padan plain.

A fleet of New Holland crawler excavators was charged with the task of restoring the topsoil once the pipelaying was completed. For both Giovanni Maffia and the DYNAVIS® Team, the question was: "How much fuel could be saved by using a DYNAVIS®-formulated hydraulic fluid in a construction machinery fleet scenario like this one."



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Consultancy and support at the construction site

Giovanni and the Ghizzoni team introduced the DYNAVIS® team to the overall project, the site and the equipment deployed. As the DYNAVIS® consultants became more familiar with the details, they began examining the equipment and studying the operating conditions of the site in discussions with the Ghizzoni project manager and excavator operators.

As the test began, two New Holland E385B excavators had their hydraulic fluid reservoirs flushed and refilled with a DYNAVIS® formulated hydraulic fluid. Each was part of a fleet of 14 excavators of the same type, all focused on the task of restoring the topography of the 114 km route following the burial of the pipeline. Given the length of the pipeline, the project was an especially challenging project for both the men assigned to the task as well as their machines.

14 excavators – all focused on one daunting task!

With a fleet of 14 almost-identical excavators assigned to the singular task of restoring the topography of the pipeline route, the test enjoyed an inherent ability to accurately extrapolate test results from a limited sample of the excavators. In this way, the results obtained from a single excavator could be transferred to the fleet.

Precise recordkeeping

Professional operators of large fleets of construction equipment, like Ghizzoni, excel at gathering minute operating data and fuel consumption stats accurate down to an hour. For example: Ghizzoni's New Holland crawler excavator 385B with the asset number AZ663.2 showed 4,849 operating hours on its counter before the test start. Upon reaching operating hour 4,952 the first test evaluation was made. Fuel consumption of the 125 hours preceding the test was used as a comparable quantity.

The result: fuel consumption cut significantly

The test evaluation determined that the excavator had achieved an average reduction of fuel consumption of 9.89 %. The excavator had saved 35 EUR per day in fuel. More importantly, the results from this single excavator suggested that a monthly savings potential of 10,000 EUR could be achieved for the entire fleet. A test of a second excavator came with some additional variables. For example, the excavator had been used for several different tasks before the start of the test. So, with this test's deficiency in comparability acknowledged, it nonetheless turned in an impressive fuel savings result exceeding 18 %!

FACTS AND FIGURES

Construction machinery	New Holland E385B	
Capacity (hydr. fluid)	413 l	
Capacity (fuel)	580 l	
Used in	earth moving	
Work shift	8 h/day	
Hydraulic Fluid	DYNAVIS®-formulated Hydraulic Fluid	
Start of work	September 26, 2013	
Results on October 18, 2013	HLPD 46	DYNAVIS® Fluid ISO46
Average fuel consumption	32 l/h	29 l/h
Savings per hour	-	4.50 €
Savings per day (= 8 h)	-	36.- €
Savings per week	-	180.- €
Savings per month	-	720.- €

Savings per month with 14 excavators: 10,000.- €

All calculations based on a diesel price of 1.50€/l

The conclusion: official documentation of a 9.89 % reduction in fuel consumption, with the qualification that it may not, in all cases, represent the maximum savings potential. The test results speak volumes about the ability of DYNAVIS® technology to save fuel. And so do Giovanni Maffia and his colleagues at Nuova Ghizzoni. Just ask them.



Giovanni Maffia, Engineer at Nuova Ghizzoni S.p.A.:

"Since the very beginning the machine operators experienced a better handling of the machine. Also really important for us is an improvement of around 10 % in terms of fuel consumption. The hydraulic fluid with DYNAVIS® additive is a good choice."

Where to find hydraulic fluids formulated with DYNAVIS® technology? Visit dynavis.com