



Shell Lubricants

GENERAL MANUFACTURING

Trial demonstrates average power consumption reduction of 13.9% for injection moulding machine using Shell Tellus EE

Average reduction in power consumption **13.9%**



Niigon Technologies is an injection moulding facility, manufacturing small high-end products for several industries including consumer packaging.

Company: Niigon Technologies Ltd.
Country: Canada
Application: Husky plastic injection moulding machine
Saving: Average 13.9% power reduction
Key edge: Shell Tellus EE

The customer is constantly seeking ways to improve competitiveness. Minimising energy consumption across its operation is key to achieving this objective. To help further improve Niigon’s performance, Shell recommended switching from a mineral based oil to the innovative, energy efficient, hydraulic oil Shell Tellus EE.

Shell Tellus EE was introduced to a Husky H160 injection moulding machine and electricity consumption was carefully monitored. The trial achieved a substantial power consumption reduction in the hydraulic system averaging 13.9%.

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DESIGNED TO MEET CHALLENGES



1 The Challenge:

The demand for increased efficiency in plastic injection moulding applications is greater than ever, to increase competitiveness in both product quality and price. As hydraulic systems are central to a quality manufacturing operation, Niigon Technologies needed a supplier that could improve hydraulic fluid effectiveness and help reduce costs.

3 The Outcome:

The test was conducted in three phases. The first measurements were taken with the 'old' oil, the second set of measurements with Shell Tellus EE without flushing the system, and the final tests were performed with a fully flushed system. The comparison of the results revealed a significant impact of Shell Tellus EE on reducing power consumption. Shell Tellus EE has also been shown capable of improving the productivity of injection moulding applications by:

- A lower energy consumption per cycle
- Increased speed of operation

2 The Solution:

Shell recommended switching from a mineral-based lubricant to Shell Tellus EE, an innovative, synthetic hydraulic fluid, specifically designed to help increase energy efficiency and prolong machine life.

Shell worked in collaboration with Niigon Technologies to conduct a carefully controlled trial. Shell Tellus EE was introduced to a Husky H160 injection moulding machine fitted with a power meter to measure electricity consumption in the hydraulic power circuit.

4 The Value:

The trial proved that Shell Tellus EE had a significant impact in helping reduce the energy consumption of the injection moulding machine in which it was used. With an average power consumption reduction of 13.9%*, this could add up to significant energy cost savings and help protect against energy price volatility.

* This demonstrates the exceptional benefits to be gained in more complex systems. Actual savings will depend on the specific details of your operation. Extensive field trials have shown a power consumption reduction of, on average, 8%.

The savings indicated are specific to the calculation date and mentioned site. These calculations may vary from site to site depending on application, operating conditions, current products being used, condition of the equipment and maintenance practices.

Shell Tellus EE

Hydraulic fluids to help energy efficiency

Shell Tellus EE hydraulic fluids are designed to help users improve the energy efficiency of their hydraulic systems without compromising the protection of the system or maintenance procedures of their equipment and operations. Shell Tellus EE has been found to improve energy efficiency in applications such as plastic injection moulding and metal pressing by an average of 8%¹. In addition, Shell Tellus EE is also designed to help equipment service life and lower maintenance costs through providing outstanding wear protection and long oil life capability.



Applications

Industrial hydraulic systems, particularly those systems with high intensity of hydraulic power usage such as injection moulding and high pressure metal pressing operations. Shell Tellus EE is also suitable for use in mobile hydraulic fluid power transmission systems and in marine applications.

Performance features and benefits

Energy efficiency

With the help of sophisticated system modelling, Shell Tellus EE has been designed to improve the energy efficiency of hydraulic systems through a specially developed formulation that balances the flow, frictional and power transmission characteristics of the fluid. Field evaluation has shown, on average, 8%¹ energy efficiency improvements in such applications.

Reduce maintenance costs

Shell Tellus EE offers outstanding performance in all the properties relevant to a hydraulic fluid such as hydraulic pump wear and resistance to breakdown in contact with water or other contaminants. Together with an oil life that exceeds the 10,000 hours maximum duration that can be measured in the industry Turbine Oil Stability Test (TOST), Shell Tellus EE offers you the capability to significantly extend oil change intervals, which can help reduce overall maintenance costs.

Greater equipment protection

In addition to meeting industry standards and OEM specification requirements, Shell Tellus EE provides an exceptional level of additional protection. For instance, Shell Tellus EE results in up to 68% less wear in the Vickers V104C pump wear test than the 50 mg pass/fail limits for many OEMs such as Cincinnati Machine (P-specification), Bosch-Rexroth (RD 90220-1) and Eaton (Vickers). Together with outstanding protection against sludge build up, valve sticking and corrosion, it can help extend equipment service life.

Specifications and approvals

Shell Tellus EE fluids have the following approvals:

Arburg
Bosch-Rexroth
CINCINNATI P-68 (ISO 32)
CINCINNATI P-70 (ISO 46)
DENISON HF-0
DENISON HF-1
DENISON HF-2
Eaton (Vickers) M-2950 S
Eaton (Vickers) I-286 S

Shell Tellus EE fluids meet the requirements of:

ASTM D6158 HM
ISO 11158 HM Type
KraussMaffei Technologies GmbH
Swedish Standard SS 15 54 34 AM
AFNOR NF-E 48-60

¹ Average of Shell and end-user evaluations. Actual energy savings may vary depending on application, current oil used, maintenance procedures, condition of equipment, operating conditions and intensity of hydraulic power usage



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